Hawaiian Volcano Observatory Summary 98; Part I, Seismic Data, January to December 1998

by Jennifer S. Nakata

Chronological Summary
by C. Heliker, D. Sherrod & C. Thornber

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INTRODUCTION

The Hawaiian Volcano Observatory (HVO) summary presents seismic data gathered during the year and a chronological narrative describing the volcanic events. The seismic summary is offered without interpretation as a source of preliminary data. It is complete in the sense that all data for events of $M \geq 1.5$ routinely gathered by the Observatory are included. The emphasis in collection of tilt and deformation data has shifted from quarterly measurements at a few water-tube tilt stations ("wet" tilt) to a larger number of continuously recording borehole tiltmeters, repeated measurements at numerous spirit-level tilt stations ("dry" tilt), and surveying of level and trilateration networks. Because of the large quantity of deformation data now gathered and differing schedules of data reduction, the seismic and deformation summaries are published separately.

The HVO summaries have been published in various forms since 1956. Summaries prior to 1974 were issued quarterly, but cost, convenience of preparation and distribution, and the large quantities of data dictated an annual publication beginning with Summary 74 for the year 1974. Summary 86 (the introduction of CUSP at HVO) includes a description of the seismic instrumentation, calibration, and processing used in recent years. The present summary includes enough background information on the seismic network and processing to allow use of the data and to provide an understanding of how they were gathered.

A report tabulating instrumentation, calibration, and recording history of each seismic station in the network by Klein and Koyanagi is available as a USGS Open-File Report [1]. It is designed as a reference for users of seismograms and phase data and includes and augments the information in the station table in this summary.

[1] Klein, F.W., and Koyanagi, R.Y., 1980, Hawaiian Volcano Observatory seismic network history, 1950-1979: U.S. Geological Survey Open-File Report 80-302, 84 p.

CHRONOLOGICAL SUMMARY 1998

by

Christina Heliker, Dave Sherrod, and Carl Thornber

1998, the sixteenth year of the Pu'u 'O'o - Kupaianaha eruption, was relatively quiet. The magmatic plumbing system beneath Pu'u 'O'o that was disrupted following the January 1997 collapse stabilized, resulting in little activity in the crater, no new flank vents, and nearly steady delivery of lava from the vents to the ocean via tubes.

The biggest event of the year was the eruptive surge on January 14 that produced fountains and flows from collapse pits on the south flank of Pu'u 'O'o. During this event, the Pu'u 'O'o crater briefly overflowed the east crater rim for the only time in 1998. Since then, we have had little of the spectacular crater activity that was common in 1997. By late January, persistent fume from cracks at the base of the east and north crater walls obscured our view even during good weather. Active lava was observed on the crater floor (either first-hand or by remote video) on only 15 days from February through December. More frequently, we've spotted pooled lava or spattering within the pits on the crater floor; the glow that is visible most nights confirms that lava is usually present within one or more of these pits. We assume that the decline in crater activity is due, at least in part, to ongoing downcutting of the flank vents through the 20+ m of tephra that underlies the shield, a process that was well documented in episodes 51-53. Since the vents inside and outside the crater are in hydraulic equilibrium, the downcutting on the flank is accompanied by lowering of the magma level within the crater.

As a result of the downcutting, the flank vents are conducting their business well below the surface, and the exact source of the lava feeding the tubes is a mystery. The episode 55 cone, May 12th vent, and the collapse pits between the May 12th vent and the minishield all produced flows during the January 14, 1998 event. Since then, we have seen nothing but incandescence in the aforementioned pits and within the pit that has formed over the episode 55 cone.

Downcutting also contributes to the ongoing collapse of the cone. In the last year, the collapse pit, Puka Nui, formed on the southwest flank of the cone and merged with a pit on the adjacent shield. Puka Nui is now more than 175 m in diameter and has eaten headward to the rim of the crater. There is little doubt that this side of the cone will soon collapse, carrying with it the current summit.

Eleven pauses occurred in the eruption during 1998, ranging in length from 11 to 53 hours. Pauses in May, July, and August were followed by substantial surface breakouts on the pali and coastal plain. The only large flow that was not associated with the January 14 surge or a pause originated at the 200-ft elevation in early October and extended to the ocean.

The episode 55 flow field expanded to both the east and west on the coastal plain (fig. C-1), but most of the growth overlapped flows emplaced earlier in this eruption. Only 0.8 km^2 of forest and grassland were covered in 1998. Ocean entries spanned the width of the episode 55 flow field during the last year, but no new land was added to the island, due to frequent bench collapses and erosion of inactive parts of the shoreline by wave action.

The lava flux in 1998 declined to levels comparable to those in episode 53 (February 1993-January 1997) but continued to be more variable than those during episode 53. In 1998, the flux ranged from 200,000 to 500,000 m^3/day (determined by J. Kauahikaua's Very Low Frequency profiles over the lava tubes), compared with an average of 600,000 m^3/day in 1997. Although the flux is lower than in 1997, lava samples collected since September 1997 have had the highest MgO content (9.0%) and eruption temperatures (averaging 1163°C) of the eruption.

Figure C-2 summarizes summit tilt, petrologic and gas-flux changes for Kilauea during 1998.

Table C-1. Eruption Statistics

Areas

Total area covered by lava, 3/83 - 12/98: 99.7 sq km (38.5 sq mi)

Episode	Area originally covered	Area exposed, 1/99
1-47 & 48A (mostly Pu'u 'O'o)	42 km^2	20.8 km^2
48 (Kupaianaha)	41	38.8
49 (between Pu'u 'O'o & Kupaianaha)	3.9	3.9
50-53 (Pu'u 'O'o flank vents)	26.4	15.2
54 (in & NE of Napau Crater)	0.24	0.24
55 (Pu'u 'O'o flank vents)	20.8	20.8

New territory covered in 1998: 0.8 km2

Net total of new land created, Dec 86 - Dec 98: 206 hectares (510 acres)#
Net new land created during episode 55 (2/97-12/98): 6.5 hectares (16 acres)
#These figures do not include new land that was claimed by wave erosion or collapse of the active lava bench. Due to these processes, new mapping in 1998 revealed a decrease in total acreage.

Volumes

Total, 1/83 thru 12/98 Approximately: 1,778 x 106 m3 (dense rock equivalent)

Episodes 1-47 (1/83 - 6/86)	385 x 10^6 m^3
Episode 48 (7/86 - 2/92)	500 x 10^6 m^3
Episode 49 (11/91)	11 x 10^6 m^3
Episode 50 (2/92 - 3/92)	4.5 x 10^6 m^3
Episode 51 (3/92 - 2/93)	32 x 10^6 m^3
Episode 52 (10/92)	2 x 10^6 m^3
Episode 53 (2/93 - 1/97)	535 x 10^6 m^3
Episode 54 (1/97)	0.3 x 10^6 m^3
Episode 55 (2/97 - ongoing)	308 x 10^6 m^3

Other fascinating facts

Height of Pu'u 'O'o cone: 198 m (650 ft). Cone has lost 57 m due to collapse since 1986
Dimensions of Pu'u 'O'o crater: 250 m x 400 m
Depth of Pu'u 'O'o crater floor, Jan 99: 40 m

Dimensions of episode 50-55 lava shield: 1800 x 800 m
Height of episode 50-55 lava shield: 80 m

Height of Kupaianaha lava shield: 56 m
Kupaianaha vent inactive since Feb 92

Thickness of lava at the coast:
15-25 m (50-80 ft) over Kalapana Gardens
25 m (80 ft) over Chain of Craters Road at Kamoamoa
Highway covered by lava flows from this eruption: 13 km (8 mi)

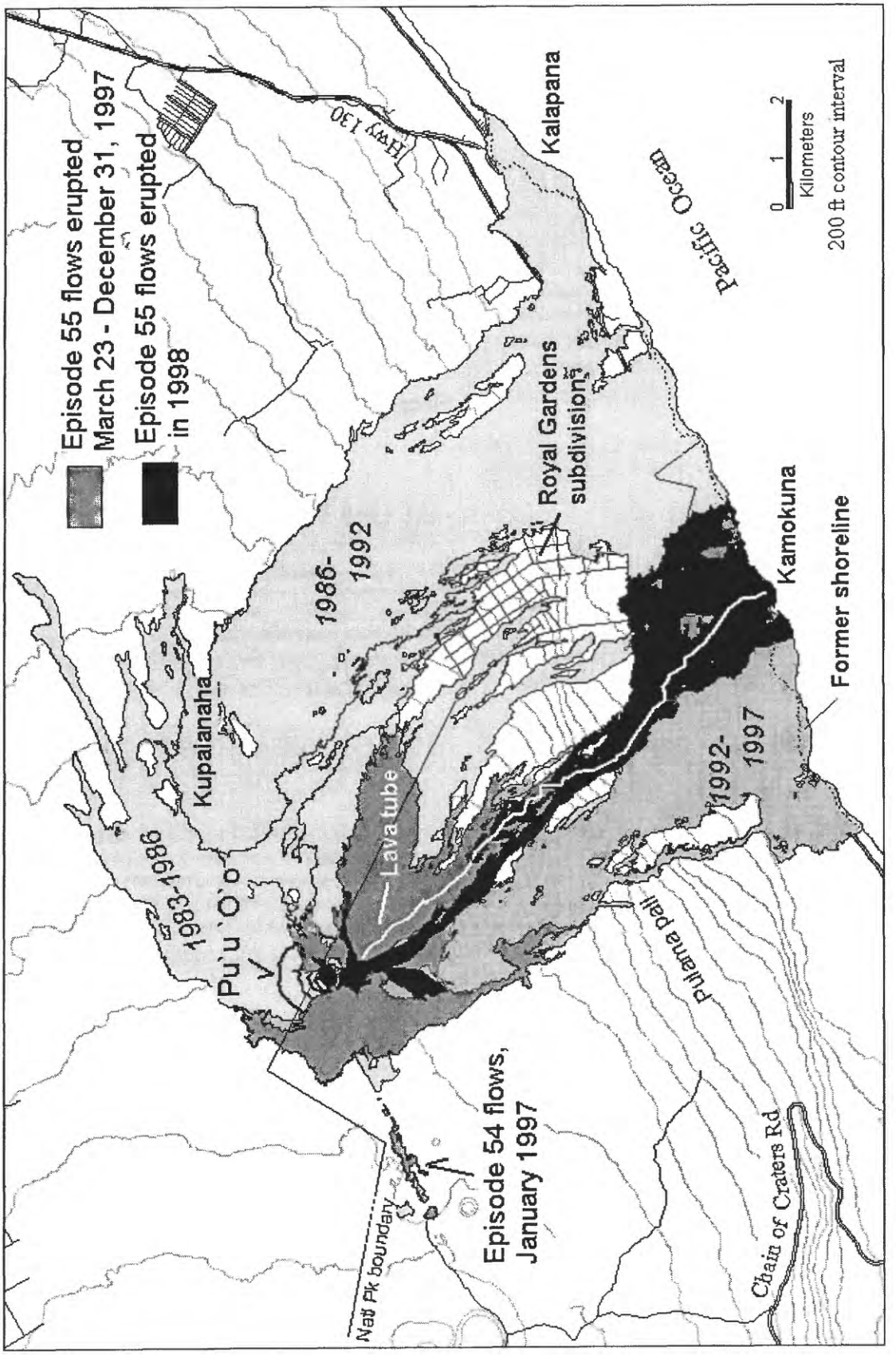


Figure C-1. Lava flows produced from 1983 through 1998.

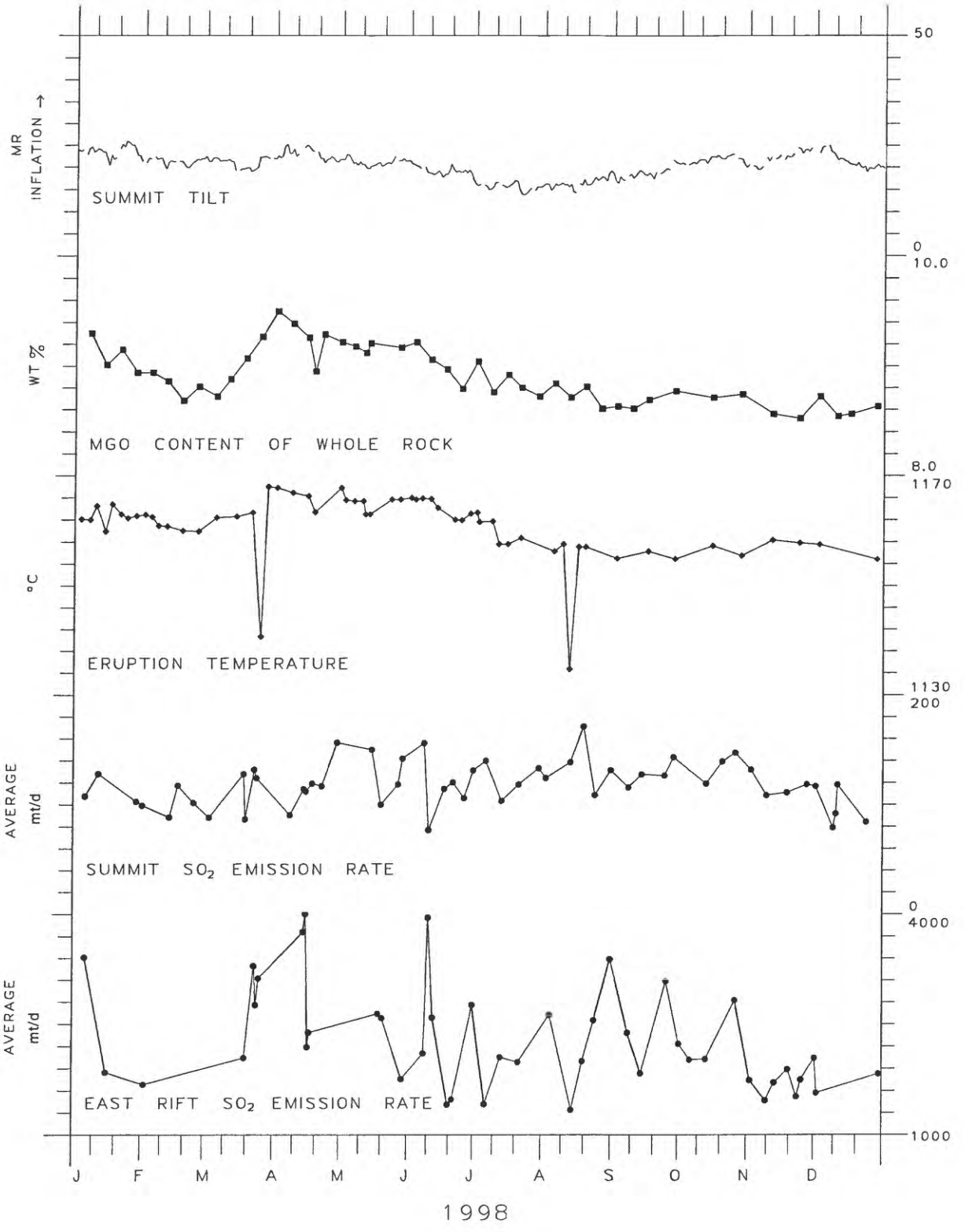


Figure C-2. Selected geodetic, petrologic and geochemical data for Kilauea, 1998.

SEISMIC INSTRUMENTATION

The network. The Hawaiian Volcano Observatory maintains an extensive telemetered seismic network on the Island of Hawai'i. The standard HVO field sensors, 1-Hz geophone, are deployed as single-component, vertical-only units or as three-component combinations of 1-vertical and 2 orthogonally-placed horizontal units. The 1998 network consisted of 51 station sites: 12 three-component, 1 seven-component (which included a low-gain vertical with a unity gain setting, and a three-component Kinemetric Force-Balance accelerometer), 1 four-component and 2 two-component (each site included a moderate-gain vertical with a 48db setting), and 35 vertical-component-only sites. The coverage is most dense on and around Kilauea Volcano. All seismic signals from the short-period network are telemetered to the Observatory for recording.

Figure 1 is a map of selected geographic and geologic features. Figure 2 shows the seismic stations operated on the Island of Hawaii during 1998. Figure 3 indicates the telemetry scheme for the seismic stations, and Figures 4a and 4b are expanded telemetry schemes at Kilauea summit: 4a, HVO seismic stations and 4b, broadband network installed by Menlo Park and maintained by HVO.

Table 1 lists seismic stations by names, four-letter station codes, coordinates in degrees and minutes, elevation in meters, and other data, as described below, pertaining to each station. The list includes all the stations operated by the U.S. Geological Survey in Hawai'i during 1998. A few seismic stations operated by the Pacific Tsunami Warning Center (NOAA) on the Islands of Hawai'i, O'ahu and Maui are also listed. Phase times from these stations are used to supplement local earthquakes and earthquakes that occur within the Hawaiian Archipelago but distant from the Hawai'i Island network.

Instrumentation and recording. Each telemetered station has a voltage-controlled oscillator (VCO) for FM multiplex transmission to HVO via radio. These telemetering stations are all of Type 1, Earthquake Hazards Team (EHT) standard system used in USGS seismic networks (see Table 2 for details). After discrimination at the receiver, the analog signals are converted to digital form as part of the routine computer-location processing and archiving. Continuous signals from the telemetered network are saved on 4-mm digital-audio tape (DAT) recording units. Three DAT recorders run in automatic rotation, as each 30-hr tape is filled. Optic recordings are coded in Table 1 as follows: H - Helicorder paper, and I - ink paper. DAT and paper records are archived at HVO.

Seismograph response and calibration. Displacement response curve for the short-period seismograph type in use is given in Figure 5. The Type 1 curve gives the displacement magnification of the standard EHT system from ground motion at the seismometer to the seismic trace, as seen on a 20x Develocorder film viewer. The curve plots the unit response, which is multiplied by a constant but known factor, CAL, to get the response for an individual station. Individual CAL factors for Type 1 seismographs are Develocorder-equivalent, peak-to-peak amplitudes, measured in millimeters, of a 100-microvolt 5 to 8-Hz signal introduced to the preamp/VCO in place of the geophone at the field station. The calibration process is normally performed each time a station is visited for other required maintenance.

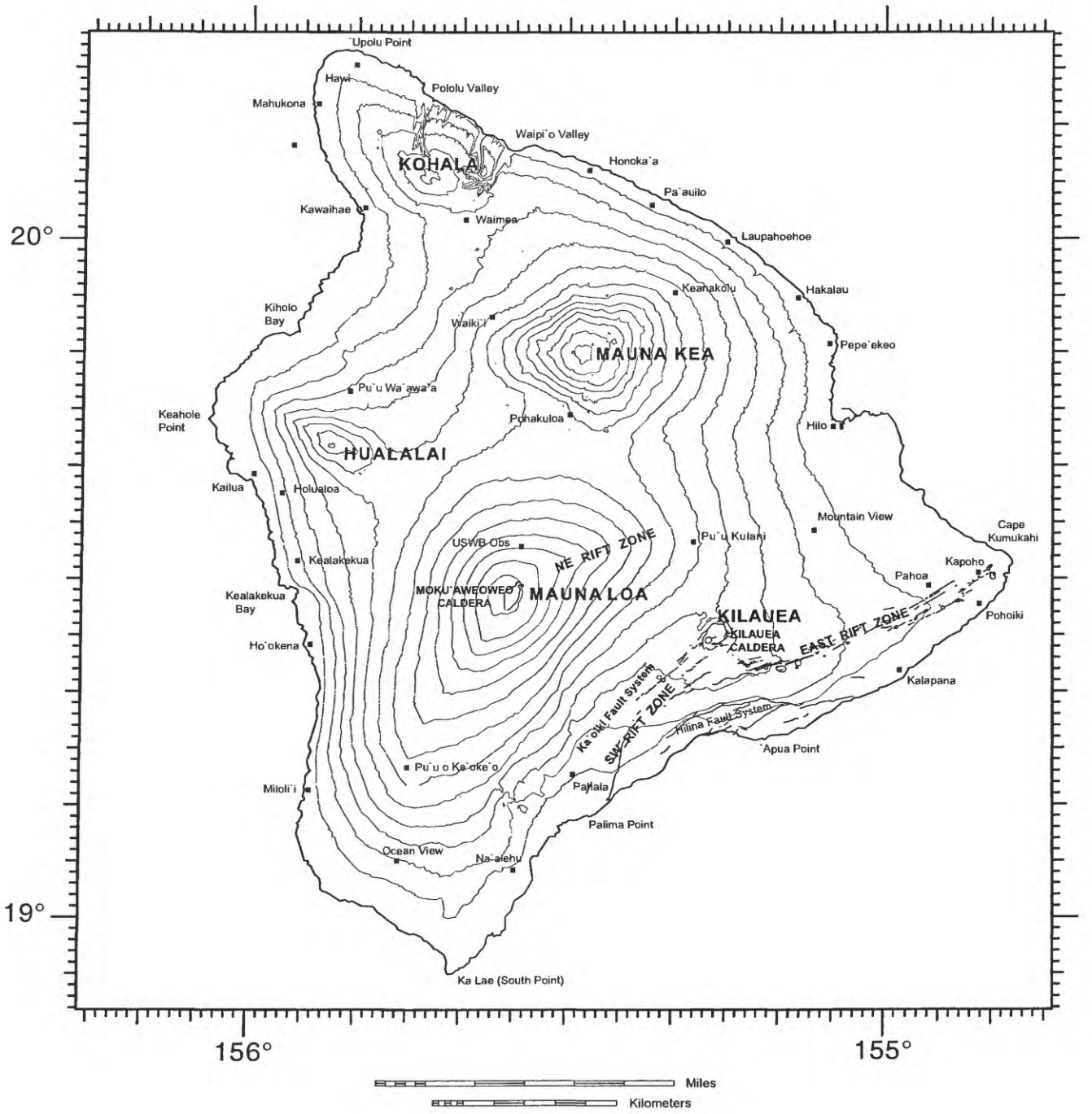


Figure 1. Map of the Island of Hawai'i, showing principal settlements and selected geographic and geologic features.

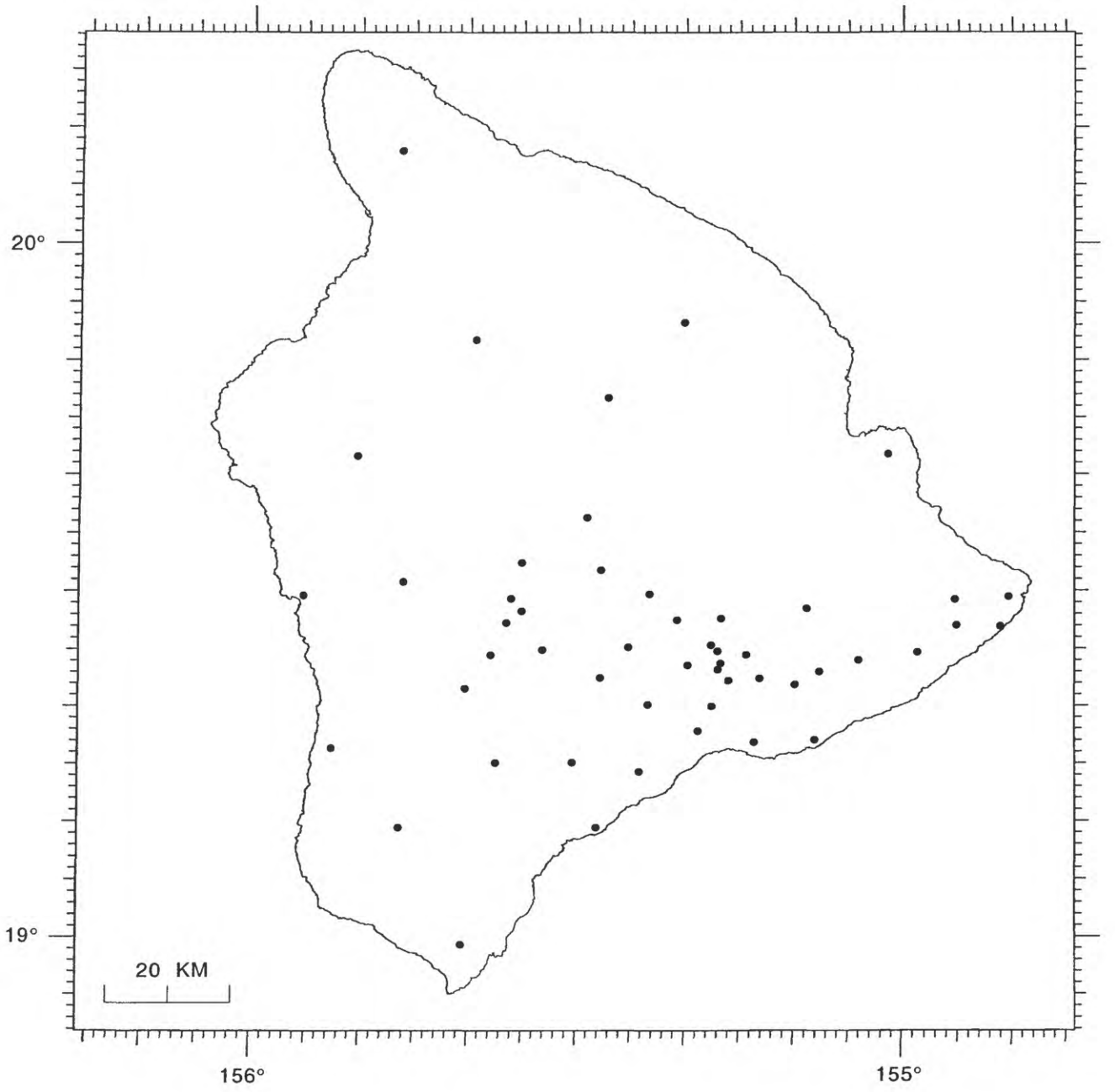


Figure 2. Seismic stations operational during 1998 on the Island of Hawai'i.

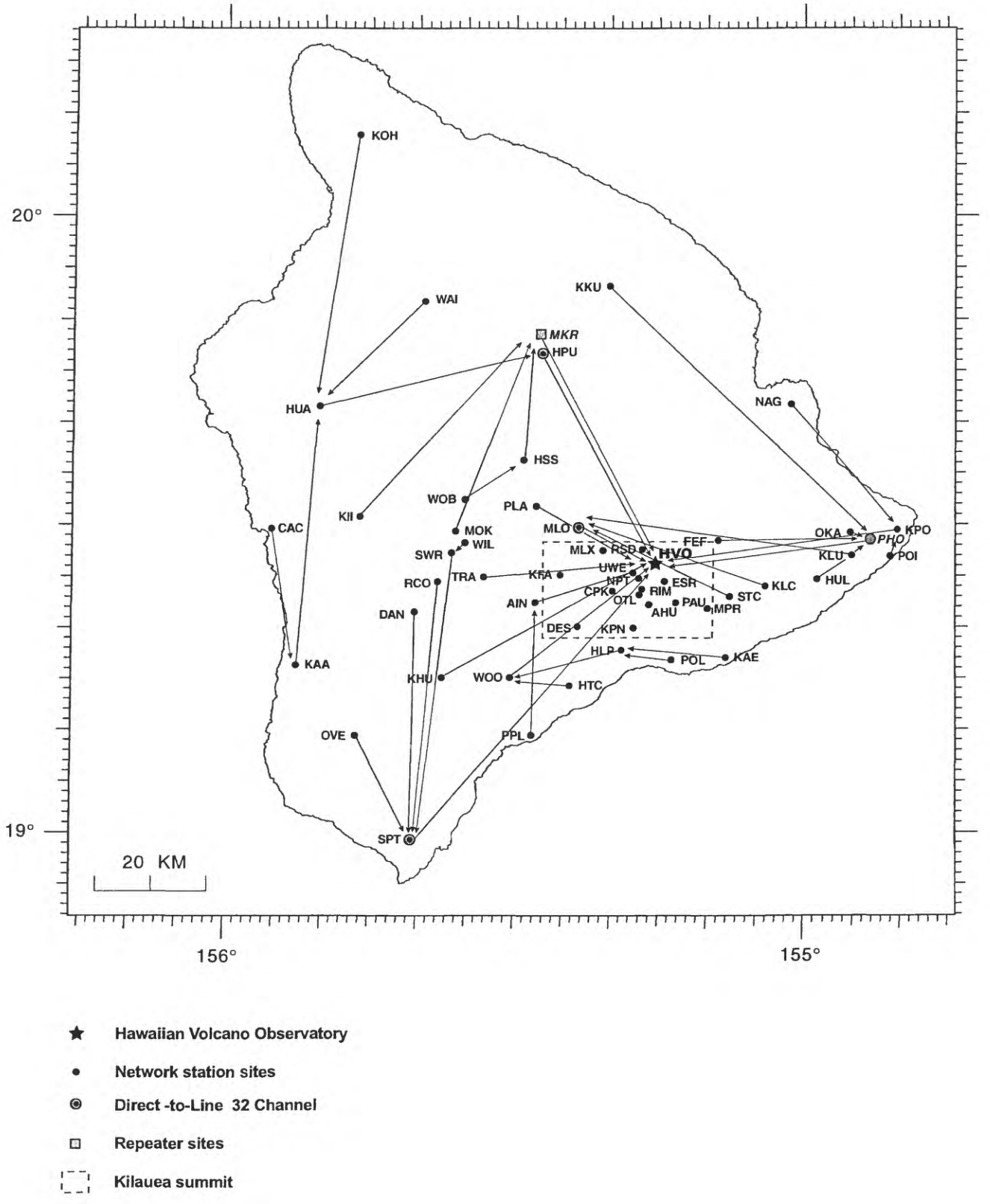
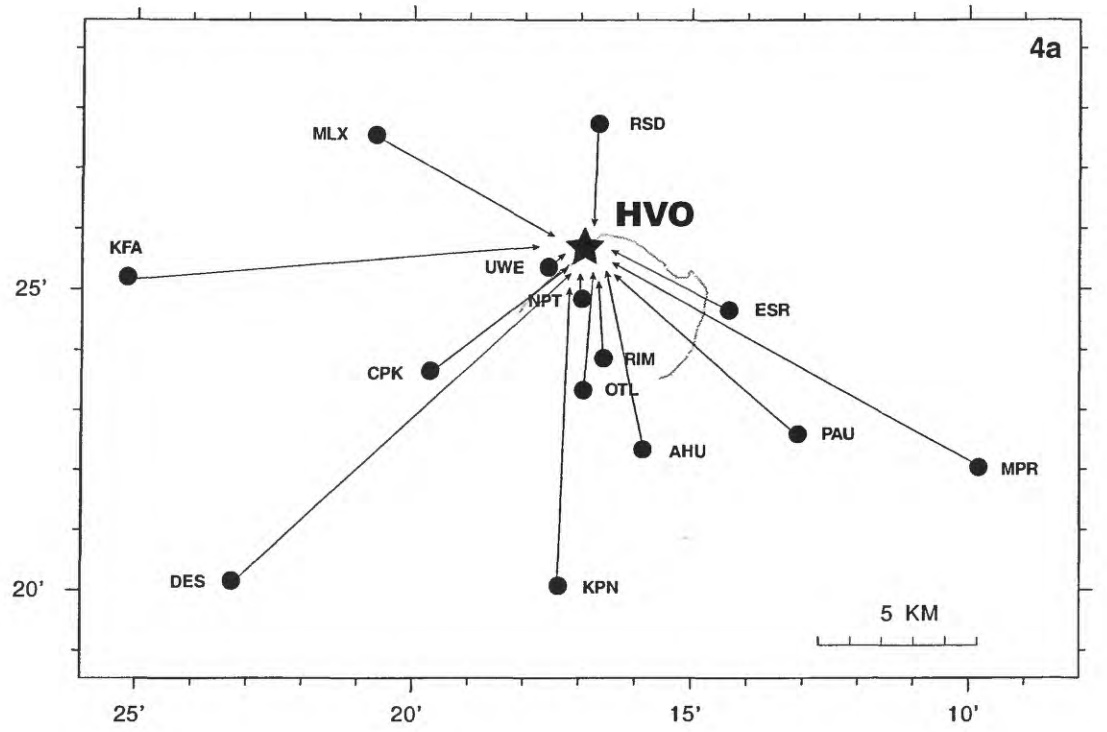
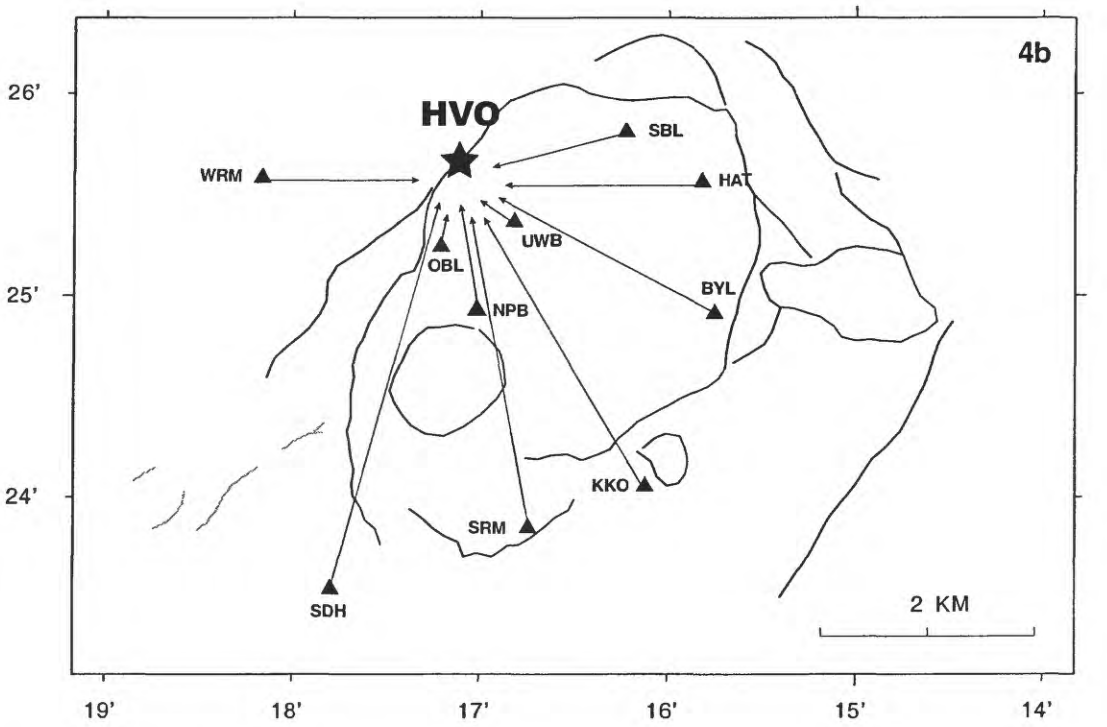


Figure 3. Telemetry scheme for the 1998 Hawaiian Volcano Observatory seismic network.





★ Hawaiian Volcano Observatory

● Network sites

▲ Broadband sites

Figure 4a. Expanded telemetry scheme for the 1998 Hawaiian Volcano Observatory seismic network at Kilauea summit, region outlined in Figure 3.

Figure 4b. Expanded telemetry scheme for the 1998 Menlo Park broadband network at Kilauea summit.

Table 1. Seismic stations in Hawai'i operated by the USGS in 1998.

STATION NAME	CODE	-LAT- D	M	-LON- D	M	ELEV (M)	DELAY 1	DELAY 2	CAL	SEIS TYPE	OPTIC RECORD
AHUA	AHUV	19	22.40	155	15.90	1070	-0.10	-0.13	3.1	E5	I
AHUA	AHUE	19	22.40	155	15.90	1070	-0.10	-0.13	3.0	E5 MW	
AHUA	AHUN	19	22.40	155	15.90	1070	-0.10	-0.13	3.0	E5 MW	
AINAPO	AINV	19	22.50	155	27.62	1524	0.13	0.17	6.8	L5	
AINAPO	AINE	19	22.50	155	27.62	1524	0.13	0.17	3.0	L5 MW	
AINAPO	AINN	19	22.50	155	27.62	1524	0.13	0.17	3.0	L5 MW	
AINAPO	AINZ	19	22.50	155	27.62	1524	0.13	0.17	0.0	L5	
CAPTAIN COOK	CACV	19	29.29	155	55.09	323	0.00	-0.16	1.1	L5	
CONE PEAK	CPKV	19	23.70	155	19.70	1038	-0.26	-0.07	6.0	L5	
DANDELION	DANV	19	21.42	155	40.04	3003	-0.27	0.03	4.3	E5	
DESERT	DESV	19	20.20	155	23.30	815	-0.29	-0.13	4.5	L5	I
DIAMOND HEAD,OA	DHHZ	21	16.12	157	48.25	137	0.00	0.00	0.0	S13	
ESCAPE ROAD	ESRV	19	24.68	155	14.33	1177	-0.17	-0.19	1.2	L5	
FERN FOREST	FEFV	19	28.70	155	8.91	691	0.01	0.05	0.0	L5	
HALEAKALA, MAUI	HKLZ	20	42.63	156	15.55	3051	0.00	0.00	0.0	S13	
HILINA PALI	HLPV	19	17.96	155	18.63	707	0.02	0.07	2.1	L5	
HONOLULU, OAHU	HONZ	21	19.30	158	0.50	2	0.00	0.00	0.0	S13	
HONOLULU, OAHU	HONE	21	19.30	158	0.50	2	0.00	0.00	0.0	S13	
HONOLULU, OAHU	HONN	21	19.30	158	0.50	2	0.00	0.00	0.0	S13	
HONUAPO	HPOZ	19	5.34	155	33.23	15	0.00	0.00	0.0	S13	
HALE POHAKU	HPUV	19	46.85	155	27.50	3396	0.31	0.17	3.3	L5	
HUMUULA SHEEP	HSSV	19	36.31	155	29.13	2445	0.20	0.35	4.0	L5	
HUMUULA SHEEP	HSSE	19	36.31	155	29.13	2445	0.20	0.35	3.0	L5 MW	
HUMUULA SHEEP	HSSN	19	36.31	155	29.13	2445	0.20	0.35	3.0	L5 MW	
HOT CAVES	HTCV	19	14.33	155	24.02	381	-0.16	-0.07	2.3	E4	
HUALALAI	HUAV	19	41.25	155	50.32	2189	0.67	0.38	2.8	L5	I
HEIHEIAHULU	HULV	19	25.13	154	58.72	369	-0.17	-0.16	1.6	L5	H
HEIHEIAHULU	HULE	19	25.13	154	58.72	369	-0.17	-0.16	3.0	E5 MW	
HEIHEIAHULU	HULN	19	25.13	154	58.72	369	-0.17	-0.16	3.0	L5 MW	
KAAPUNA	KAAV	19	15.98	155	52.28	524	-0.12	-0.01	3.3	E5	
KAENA POINT	KAEV	19	17.35	155	7.95	37	-0.01	0.06	1.4	L5	
KAOIKI FAULTS	KFAV	19	25.25	155	25.18	1579	0.13	0.17	0.0	L5	
KAHUKU	KHUV	19	14.90	155	37.10	1939	0.03	-0.03	5.0	E5	
KANEKII	KIIV	19	30.56	155	45.90	1841	0.15	0.37	3.0	L5	
KANEKII	KIIE	19	30.56	155	45.90	1841	0.15	0.37	3.0	L5 MW	
KANEKII	KIIN	19	30.56	155	45.90	1841	0.15	0.37	3.0	L5 MW	
KIPAPA, OAHU	KIPZ	21	25.40	158	0.90	2	0.00	0.00	0.0	S13	
KAILUA, KONA	KKHZ	19	39.40	156	1.12	1	0.00	0.00	0.0	S13	
KEANAKOLU	KKUV	19	53.39	155	20.58	1863	0.68	0.24	3.3	L5	
KALALUA CONE	KLCV	19	24.35	155	4.08	659	-0.25	-0.30	3.4	L5	
PUU KALIU	KLUV	19	27.48	154	55.26	271	-0.17	-0.30	3.4	L5	
KOHALA	KOHV	20	7.69	155	46.77	1166	-0.03	-0.17	6.3	L5	
KOHALA	KOHE	20	7.69	155	46.77	1166	-0.03	-0.17	3.0	L5 MW	
KOHALA	KOHN	20	7.69	155	46.77	1166	-0.03	-0.17	3.0	L5 MW	
KAPOHO CONE	KPCZ	19	30.02	154	50.51	134	0.00	0.00	0.0	S13	
KIPUKA NENE	KPNV	19	20.10	155	17.40	924	-0.11	-0.08	3.5	L5	
KAPOHO	KPOV	19	30.02	154	50.51	134	-0.09	-0.24	1.9	L5	
LAUPAHOEHOE	LPHZ	19	59.82	155	14.58	1	0.00	0.00	0.0	S13	
MAHUKONA	MHAZ	20	11.27	155	54.18	1	0.00	0.00	0.0	S13	

MAUNA LOA	MLOV	19	29.80	155	23.30	2010	0.03	0.08	5.6	L5	I
MAUNA LOA	MLOE	19	29.80	155	23.30	2010	0.03	0.08	3.0	L5 MW	
MAUNA LOA	MLON	19	29.80	155	23.30	2010	0.03	0.08	3.0	L5 MW	
MAUNA LOA X	MLXV	19	27.60	155	20.70	1475	0.06	0.15	3.0	L5	
MOKUAWEOWEO	MOKV	19	29.28	155	35.98	4104	0.15	0.16	4.2	L5	IH
MAKAOPUHI	MPRV	19	22.07	155	9.85	881	-0.17	-0.20	2.6	L5	I
MAKAOPUHI	MPRZ	19	22.07	155	9.85	881	-0.17	-0.20	0.1	L5	
NATIONAL GUARD	NAGV	19	42.12	155	1.72	18	0.54	0.30	4.0	R5	
NATIONAL GUARD	NAGE	19	42.12	155	1.72	18	0.54	0.30	3.0	R5 MW	
NATIONAL GUARD	NAGN	19	42.12	155	1.72	18	0.54	0.30	3.0	R5 MW	
NORTH PIT	NPTV	19	24.90	155	17.00	1115	-0.30	-0.18	3.0	L5	I
NORTH PIT	NPTE	19	24.90	155	17.00	1115	-0.30	-0.18	3.0	L5 MW	
NORTH PIT	NPTN	19	24.90	155	17.00	1115	-0.30	-0.18	3.0	L5 MW	
OOKA	OKAV	19	29.66	154	55.44	180	0.00	0.00	0.0	L5	
OPANA, OAHU	OPAZ	21	41.45	158	0.70	100	0.00	0.00	0.0	S13	
OUTLET	OTLV	19	23.38	155	16.94	1038	-0.19	-0.18	2.6	L5	
OUTLET	OTLZ	19	23.38	155	16.94	1038	-0.19	-0.18	0.0	L5	
OCEANVIEW EST	OVEV	19	9.21	155	45.92	1378	0.00	0.00	0.0	L5	
PAUAHI	PAUV	19	22.62	155	13.10	994	-0.21	-0.24	2.9	L4	
PAUAHI	PAUE	19	22.62	155	13.10	994	-0.21	-0.24	3.0	L5 MW	
PAUAHI	PAUN	19	22.62	155	13.10	994	-0.21	-0.24	3.0	L5 MW	
PUU ULAULA	PLAV	19	32.00	155	27.67	2992	-0.03	0.13	6.3	L5	I
POHOIKI	POIV	19	27.42	154	51.22	16	-0.09	-0.24	0.0	L5	
POLIOKEAWE PALI	POLV	19	17.02	155	13.47	169	-0.02	0.03	3.4	E5	
PUU PILI	PPLV	19	9.50	155	27.87	35	-0.15	-0.15	1.4	E5	
RED CONE	RCOV	19	24.36	155	37.79	3601	0.00	0.00	0.0	L5	
RIM	RIMV	19	23.90	155	16.60	1128	-0.21	-0.13	0.0	L5	
RAINSHED	RSDV	19	27.78	155	16.68	1270	0.06	0.15	0.0	L5	
SOUTH POINT	SPTV	18	58.91	155	39.92	244	-0.17	-0.22	2.8	L5	
SOUTH POINT	SPTE	18	58.91	155	39.92	244	-0.17	-0.22	3.0	L5 MW	
SOUTH POINT	SPTN	18	58.91	155	39.92	244	-0.17	-0.22	3.0	L5 MW	
STEAM CRACKS	STCV	19	23.30	155	7.67	765	-0.25	-0.30	3.4	L5	H
STEAM CRACKS	STCE	19	23.30	155	7.67	765	-0.25	-0.30	3.0	L5 MW	
STEAM CRACKS	STCN	19	23.30	155	7.67	765	-0.25	-0.30	3.0	L5 MW	
SOUTHWEST RIFT	SWRV	19	27.26	155	36.30	4048	0.01	0.04	5.6	E5	
TRAIL	TRAV	19	24.91	155	32.96	3207	0.00	0.00	0.0	L5	
UWEKAHUNA	URAV	19	25.40	155	17.60	1240	-0.21	0.00	0.0	R5	
UWEKAHUNA	URAE	19	25.40	155	17.60	1240	-0.21	0.00	3.0	R5 MW	
UWEKAHUNA	URAN	19	25.40	155	17.60	1240	-0.21	0.00	3.0	R5 MW	
UWEKAHUNA	UUGZ	19	25.40	155	17.60	1240	0.00	0.00	0.0	L0	
UWEKAHUNA	UWAZ	19	25.40	155	17.60	1240	0.00	0.00	0.0	F0	
UWEKAHUNA	UWAE	19	25.40	155	17.60	1240	0.00	0.00	0.0	F0	
UWEKAHUNA	UWAN	19	25.40	155	17.60	1240	0.00	0.00	0.0	F0	
WAIKII	WAIV	19	51.58	155	39.60	1433	0.20	0.35	0.0	L5	
WILKES CAMP	WILV	19	28.15	155	35.02	4037	0.22	0.17	2.6	E5	
WILKES CAMP	WILE	19	28.15	155	35.02	4037	0.22	0.17	3.0	L5 MW	
WILKES CAMP	WILN	19	28.15	155	35.02	4037	0.22	0.17	3.0	L5 MW	
WAIMANALO RG,OA	WMRZ	21	19.22	157	40.94	200	0.00	0.00	0.0	S13	
WEATHER OBSERV	WOBV	19	32.31	155	35.01	3396	0.00	0.00	0.0	E5	
WOOD VALLEY	WOOV	19	15.08	155	30.12	909	-0.15	-0.06	2.6	E5	

Table 2. Seismic instrument types

The codes in parentheses refer to the seismometer types listed in Table 1.

Type 1 (Codes E, L, R, and 4, 5) consists of:

a) Geophone - Electrotech EV-17 (E), Mark Products L4C (L) or Kinemetric Ranger SS1 (R). (L) and (R) are 1.0-sec. period moving-magnet vertical- or horizontal- (E-W and N-S) component seismometers adjusted for an output of 0.5 volts/cm/sec and 0.8, critically damped.

b) Preamp/VCO - USGS/OEVE Model J402 (4), J502 (5) voltage-controlled oscillator. Three db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Code (W) - Wood-Anderson torsion seismograph.

Code (MW) - Horizontal-component seismograph based on a Type 1 system and modified to 3x a Wood-Anderson response.

Code (F) - Kinemetric Force-Balance Accelerometer (FBA23).

Code (S13) – Geotech, 1Hz seismometer with A1 VCO operated by the Pacific Tsunami Warning Center.

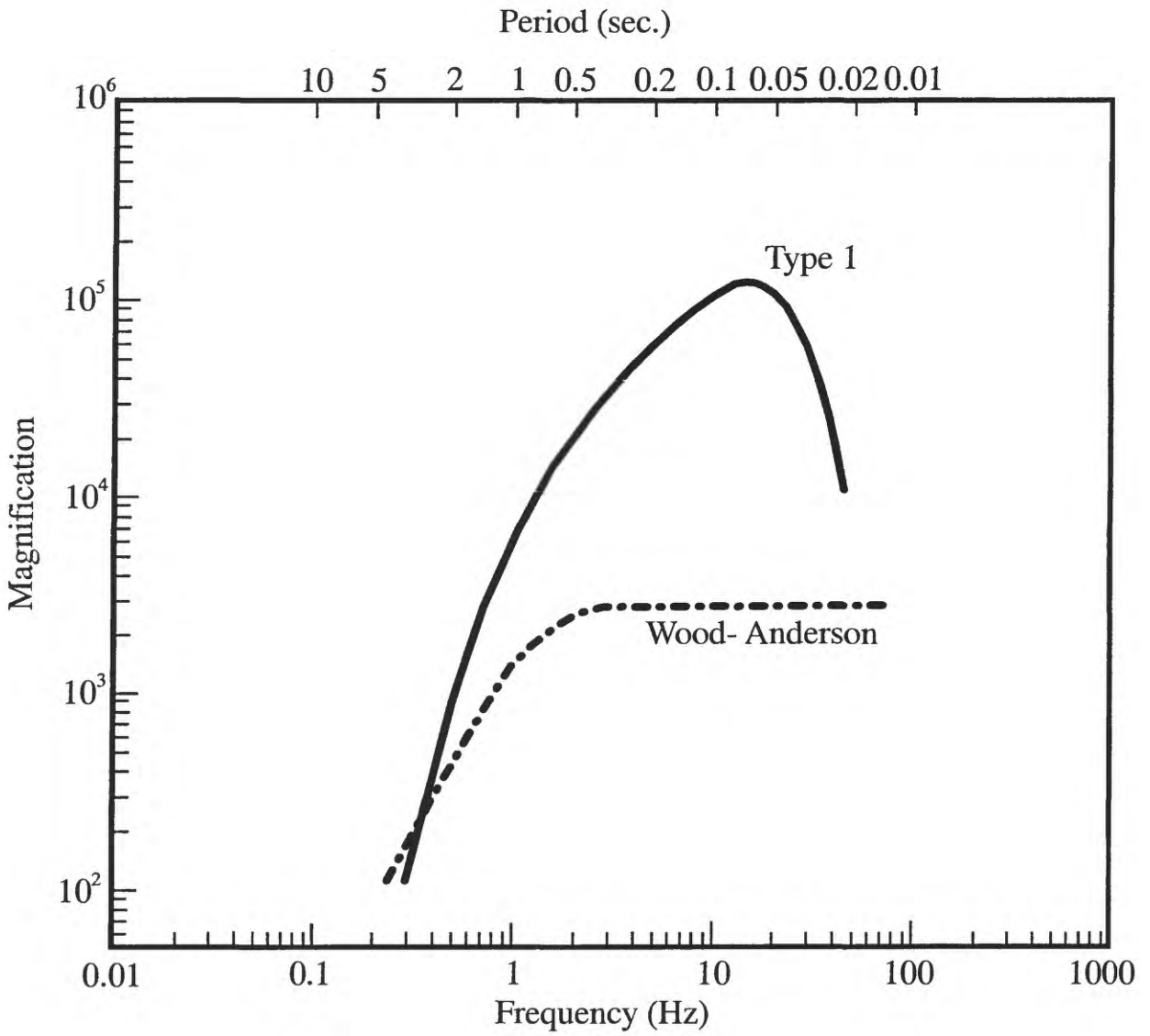


Figure 5. System-response curves for the Wood-Anderson torsion seismograph and for seismometers used by the Hawaiian Volcano Observatory. Type 1 is the standard OEVE seismometer system recorded on Develocorder film and DAT tape. The curve for Type 1 includes response of the geophone, all electronics including telemetry, Develocorder galvanometer, and projection of film by a 20x viewer. The curve plots the unit response, which should be multiplied by a constant but known factor (CAL) to get the response for an individual station.

SEISMIC DATA PROCESSING

Due to age and high cost of maintanance, Develocorder 'A' was discontinued on August 1, 1997. Daily count of classified micoearthquakes from source regions around Kilauea and Mauna Loa, and duration of tremor were also discontinued. Coda duration is measured in seconds from drum (ink or helicorder) records to determine a coda magnitude that is entered as an external magnitude in the final solution.

In 1986, HVO acquired a VAX 11-750 computer and adopted the CUSP (California Institute of Technology USGS Seismic Processing) routine. Discriminated analog signals are converted to digital form, and detected events are saved in real time. Detected events are demultiplexed, and P-picks are made by the computer, producing a rough location. Events are examined by an analyst, on a graphics terminal, to refine computer P-picks and to time additional P- and S-phases for a preliminary location. Binary CUSP files are tape-archived and translated into ASCII phase files. Locations and amplitude magnitudes are then determined, using the program HYPOINVERSE (Klein, 1989) [2]. Events are reworked and rerun, as needed, to produce a final solution. Magneto-optical copies of arrival times and output summary data are kept at HVO.

In July 1992, HVO acquired VAX workstations for timing earthquakes using a "generic" version of CUSP. In addition to timing P and S arrival signals, the VAX workstations are capable of measuring peak-to-peak amplitudes along with the associated period. This capability allowed the renewal of amplitude magnitude determinations from the network seismic stations. Amplitude data gathered from July 1992 to July 1997 became part of a test set to determine magnitude corrections for network stations. Results of newly determined magnitude corrections are detailed by Nakata and Okubo (1997) [3].

The crustal model used is specified by velocities at four depth points. Velocity at any depth is given by linear interpolation between points and uses a homogeneous half-space, as listed below:

VELOCITY (km/sec)	DEPTH (km)
1.9	0.0
6.5	4.6
6.9	15.0
8.3	≥16.5

Two empirical sets of station delays or corrections were used in the HYPOINVERSE locations and are given in Table 1. The delay models are separated by a circle of radius 34 km, centered at 19°22' N and 155°10' W. Delay model 1 is used for epicenters occurring within a circle of radius 31 km from the center. This region includes Kilauea and its south flank. A combination of the two delay models is used for epicenters that fall in a transition zone that is 6 km wide. Delay model 2 is applied to the rest of the island and offshore earthquakes. (For a detailed description, refer to Klein, (1989)[2].

Magnitudes for events are computed using recorded amplitudes on selected network vertical, Modified Wood-Anderson (MW) horizontal, and/or moderate and low gain stations. Amplitude readings are corrected to an equivalent Wood-Anderson amplitude using the curves of Figure 5 and CAL factors listed in Table 1.

Duration magnitude is determined by the length of signal, in seconds, read from drum recordings of Type 1 seismographs. This length of time is measured from the P arrival to the point where the earthquake signal has decayed to nearly the background noise level. Drum-recorded duration magnitude is calculated with a relationship equivalent to the develocorder viewer output.

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[2] Klein, F.W., 1989, User's guide to HYPOINVERSE: U.S. Geological Survey Open-File Report 89-314, 58 p.

[3] Nakata, J., and Okubo, P., 1997, Determination of station amplitude magnitude corrections for the Hawaiian Volcano Observatory telemetered seismograph network: Data from 1992-1997: U.S. Geological Survey Open-File Report 97-863, 73 p.

SEISMIC CATALOG

The emphasis in both station coverage and detailed data analysis is on the highly active south half of the Island of Hawai'i. The set of well-recorded earthquakes located in the Hawai'i Island region is nearly complete above magnitude 2.0. Many smaller events are located in the densely instrumented Kilauea area. Substantial effort is made to locate earthquakes elsewhere within the Hawaiian Archipelago. Such coverage cannot be as complete as in south Hawai'i, but nearly all events above magnitude 4.0 are located with limited precision.

Data presented in the seismic catalog are in three parts: (1) Maps showing computer-located hypocenters are given in Figures 10-23. The location maps are of different scales and provide hypocenters with magnitude thresholds set at 1.0, 2.0, 3.0, and 3.5, varying according to region. (2) The list of computer locations constitutes the bulk of this summary and is given in Table 4. Each earthquake in the list is assigned a three-letter code based on its general location and depth. Figures 6-9 are maps of the regions used to assign the location codes. The latitude and longitude limits of rectangular regions are listed in Table 3. When the listed coordinates overlap, precedence is given according to Figures 6-9. (3) Table 5 re-lists the events in Table 5 for which the preferred magnitude is 3.0 or larger. This list includes many of the earthquakes felt in Hawai'i.

Table 3. Names and coordinates of regions used for classifying earthquakes.

All earthquakes locate in one of the following groups, identified by a numerical class or three-letter code:

—Shallow:

1 SNC - Shallow north caldera (0-5 km)
2 SSC - Shallow south caldera (0-5 km)
3 SEC - Shallow east caldera (0-5 km)
4 SER - Shallow east rift (0-5 km)
5 SME - Shallow middle east rift (0-5 km)
6 KOA - Koa'e fault zone (0-5 km)
7 SSF - Shallow south flank (0-5 km)
8 SLE - Shallow lower east rift (0-5 km)

—Intermediate depth:

9 SF1 - Kilauea south flank (5-13 km) (west end)
10 SF2 - Kilauea south flank (5-13 km)
11 SF3 - Kilauea south flank (5-13 km)
12 SF4 - Kilauea south flank (5-13 km)
13 SF5 - Kilauea south flank (5-13 km) (east end)
14 LER - Lower east rift (5-99 km)
15 MLO - Mauna Loa (0-13 km)
16 LSW - Lower southwest rift zones of Kilauea and Mauna Loa (0-13 km)
17 GLN - Glenwood (0-13 km)
18 SWR - Southwest rift zone of Kilauea (0-13 km)
19 INT - Intermediate caldera (5-13 km)
20 KAO - Ka'oiki (0-13 km)

—Deep:

21 DEP - Deep Kilauea (>13 km) (below regions 1-13, 17-19)
22 DLS - Deep lower southwest rift zone of Kilauea and Mauna Loa (>13 km) (below region 16)
23 DML - Deep Mauna Loa (>13 km) (below regions 15, 20)

—Outer regions, all depths:

24 LOI - Lo'ihi
25 KON - South Kona
26 HUA - Hualalai
27 KOH - Kohala
28 KEA - Mauna Kea
29 HIL - Hilo
30 DIS - Distant, everywhere else

Table 3 (continued). The latitude and longitude limits of the regions are given below. If the coordinates overlap, precedence is given as in the maps.

No.	Code	N. Lat.	S. Lat.	W. Lon.	E. Lon.
1	SNC	19 28.0	19 24.5	155 19.0	155 14.0
2	SSC	19 24.5	19 22.0	155 19.0	155 16.5
3	SEC	19 24.5	19 22.0	155 16.5	155 14.0
4	SER	19 26.0	19 20.5	155 14.0	155 07.2
5	SME	19 26.0	———	155 07.2	155 00.0
6	KOA	19 22.0	19 20.5	155 17.0	155 14.0
7	SSF	———	19 10.0	155 17.0	155 00.0
8	SLE	19 32.0	19 16.0	155 00.0	154 40.0
9	SF1	19 22.0	19 10.0	155 17.0	155 14.5
10	SF2	19 26.0	19 10.0	155 14.5	155 12.3
11	SF3	19 26.0	19 10.0	155 12.3	155 09.1
12	SF4	19 26.0	19 10.0	155 09.1	155 05.3
13	SF5	19 26.0	19 10.0	155 05.3	155 00.0
14	LER	19 32.0	19 16.0	155 00.0	154 40.0
15	MLO	19 35.0	19 19.0	155 35.0	155 19.0
16	LSW	19 19.0	18 40.0	155 43.0	155 25.0
17	GLN	19 35.0	19 26.0	155 19.0	155 00.0
18	SWR	19 22.0	19 10.0	155 25.0	155 17.0
19	INT	19 28.0	19 22.0	155 19.0	155 14.0
20	KAO	19 30.0	19 19.0	155 32.0	155 19.0
21	DEP	19 35.0	19 10.0	155 25.0	155 00.0
22	DLS	19 19.0	18 40.0	155 43.0	155 25.0
23	DML	19 35.0	19 19.0	155 35.0	155 19.0
24	LOI	19 10.0	18 40.0	155 25.0	155 00.0
25	KON	19 39.0	19 00.0	156 20.0	155 43.0
26	HUA	19 55.0	19 39.0	156 20.0	155 43.0
27	KOH	20 25.0	19 55.0	156 20.0	155 34.0
28	KEA	20 25.0	19 35.0	155 34.0	154 40.0
29	HIL	19 47.0	19 32.0	155 09.0	154 40.0

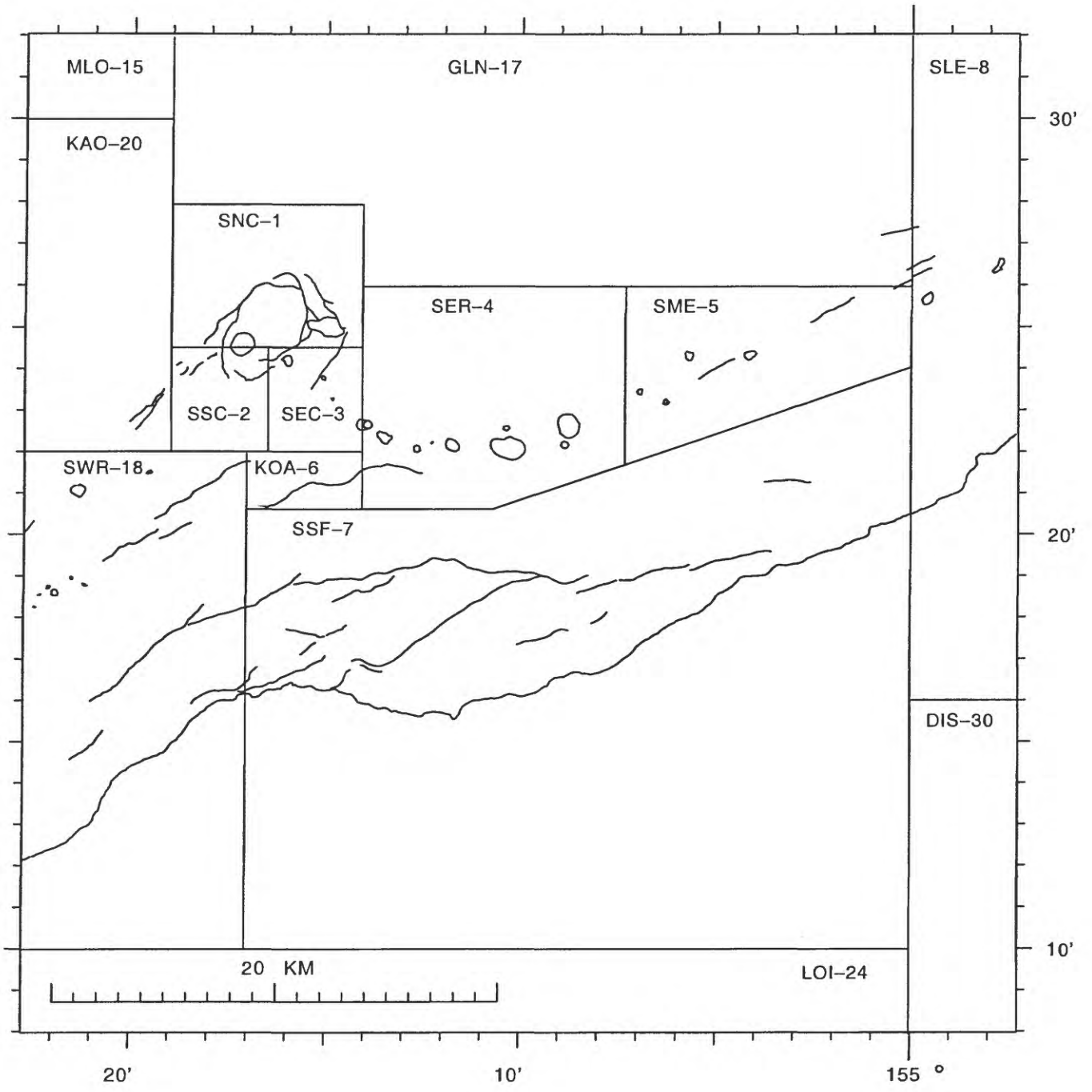


Figure 6. Earthquake classification, shallow (0-5 km deep), for Kilauea and the east flank of Mauna Loa.

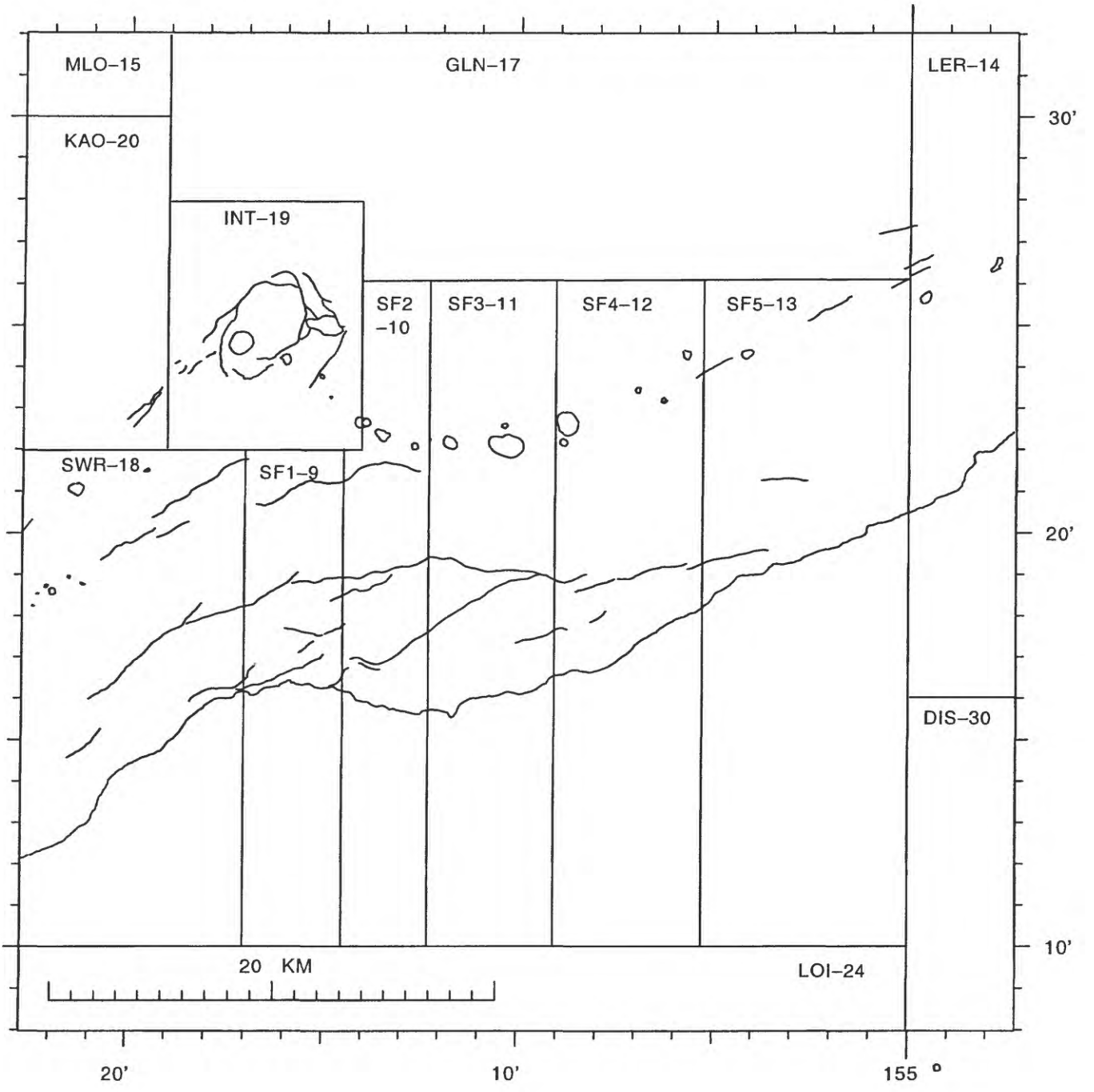


Figure 7. Earthquake classification, intermediate (5.1-13 km deep), for Kilauea and the east flank of Mauna Loa.

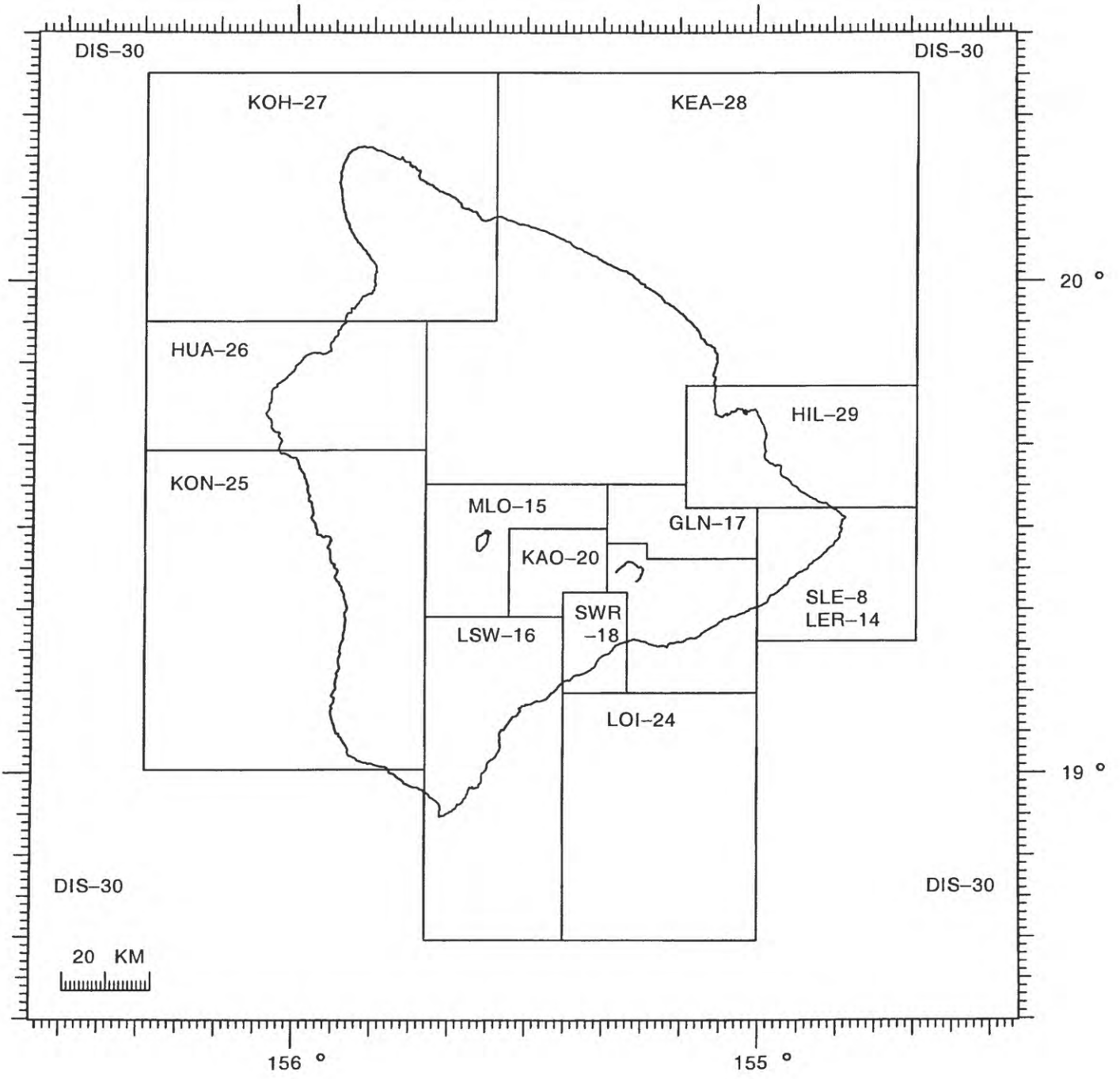


Figure 8. Earthquake classification, crustal (0-13 km deep), for the Island of Hawai'i.

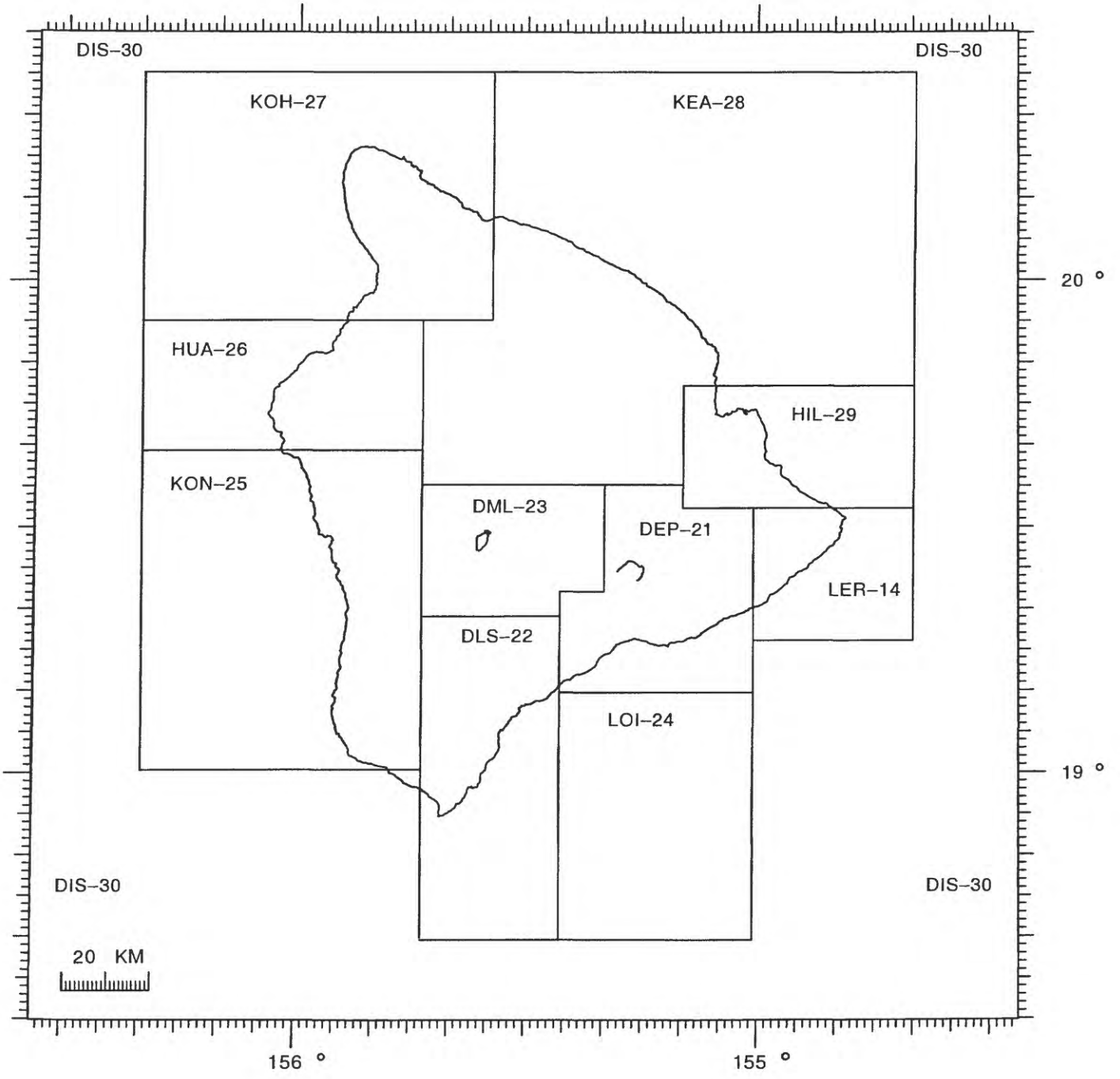


Figure 9. Earthquake classification, deep (greater than 13 km deep), for the Island of Hawai'i.

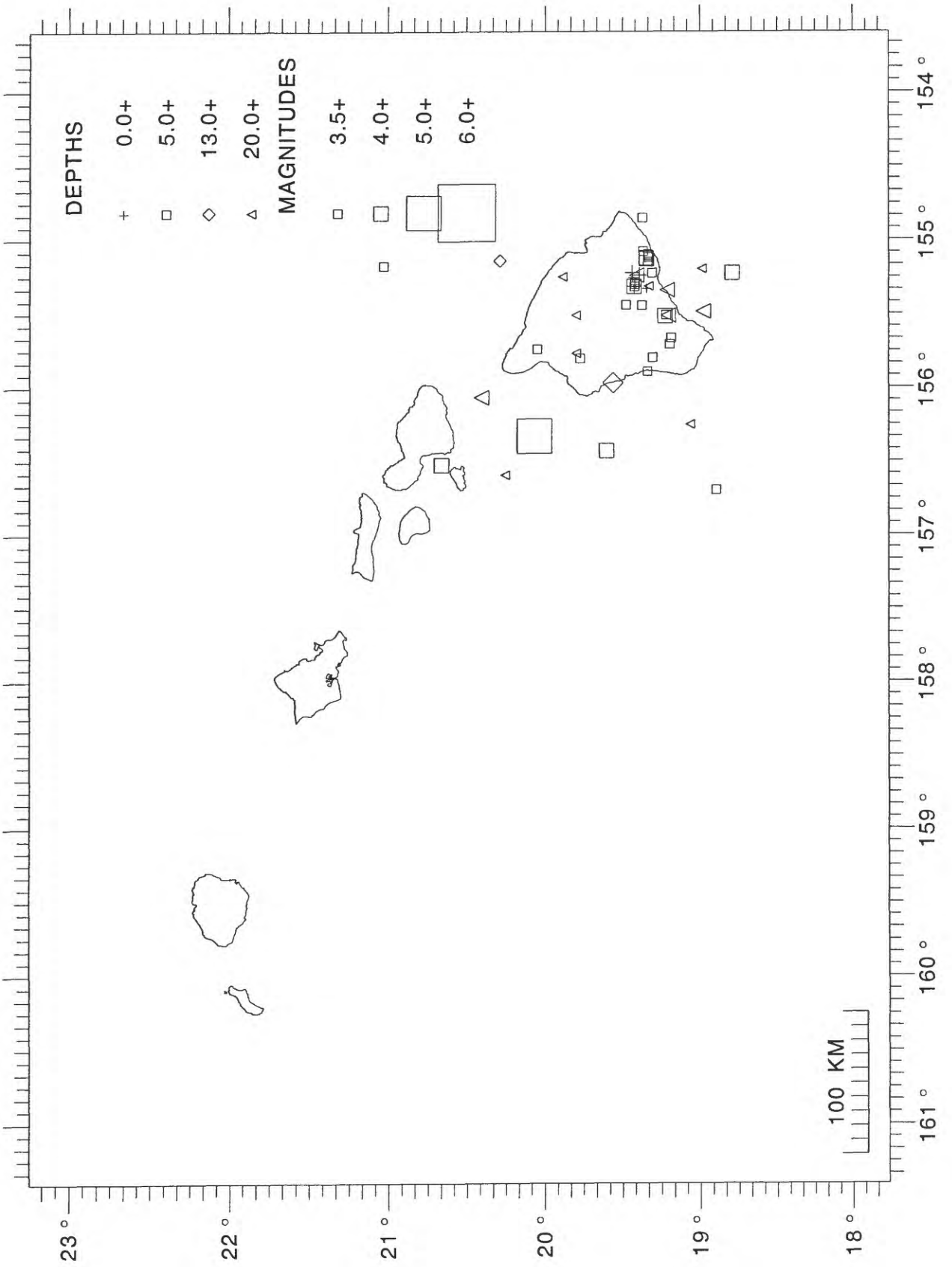


Figure 10. 1998 earthquake locations, Hawaiian Islands, 0–60 km depth, M>=3.5.

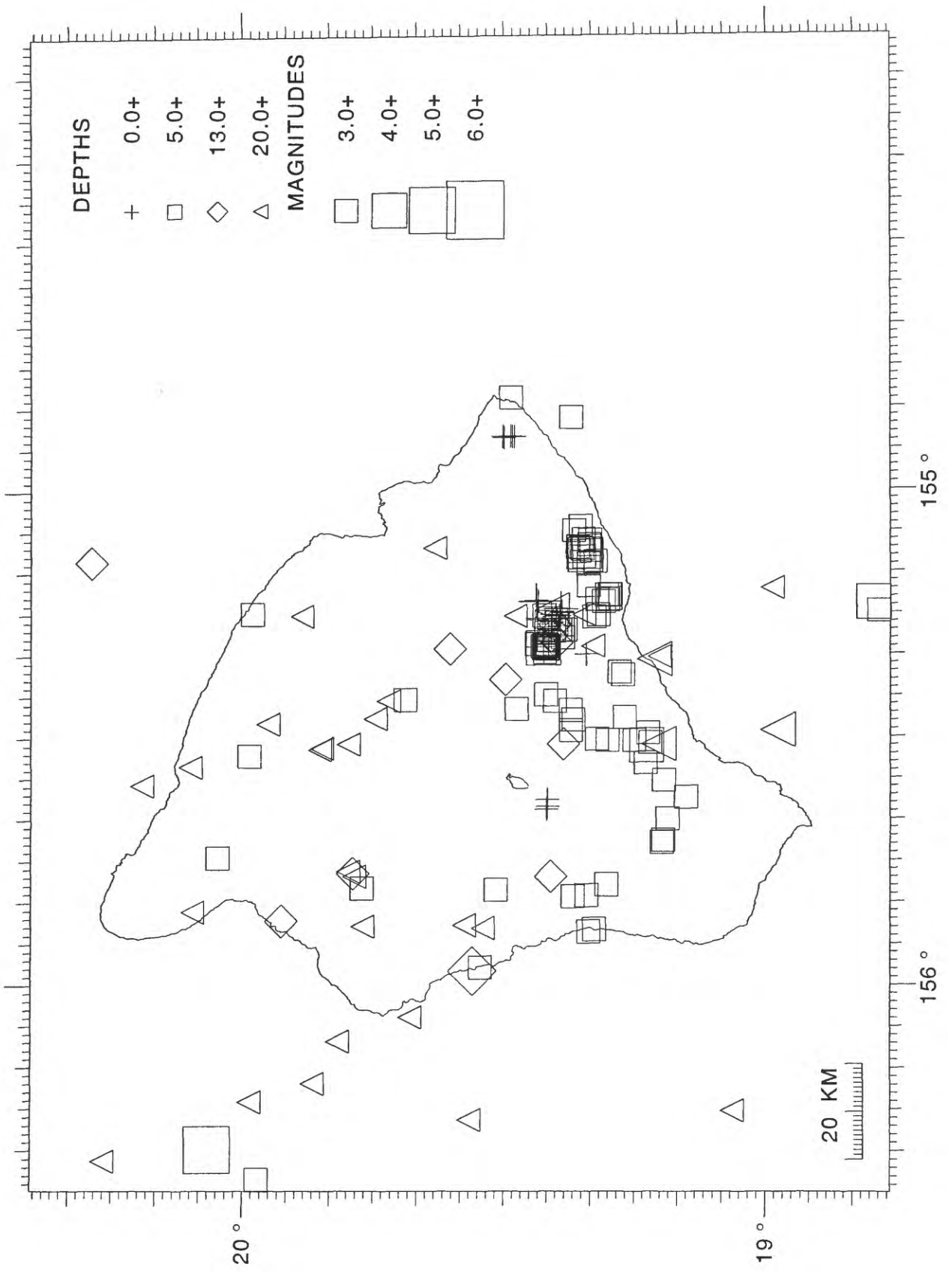
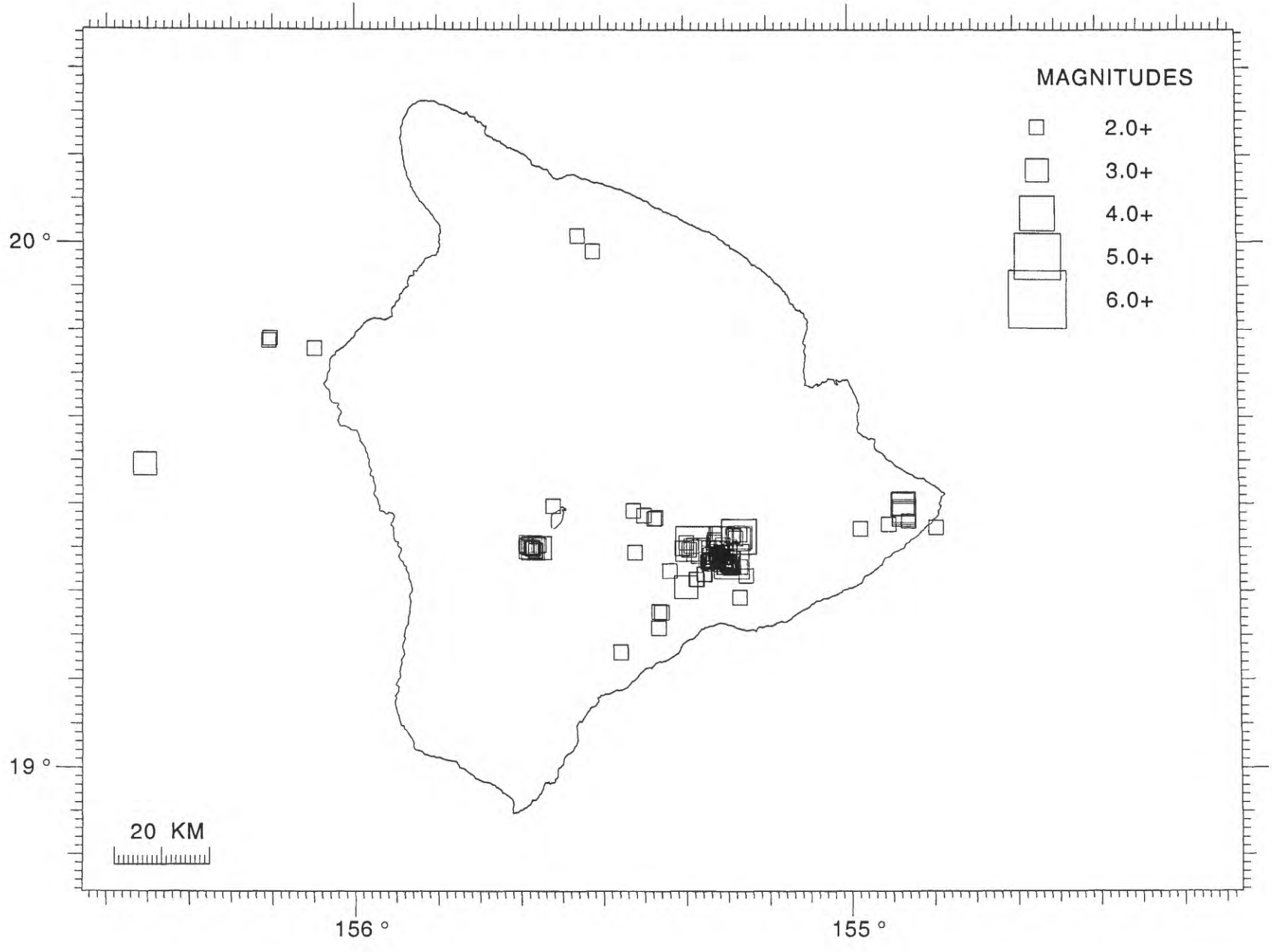


Figure 11. 1998 earthquake locations, Hawai'i Island, 0–60 km depth, M>=3.0.

Figure 12. 1998 earthquake locations, Hawai'i Island, shallow (0–5.0 km depth), M>=2.0.



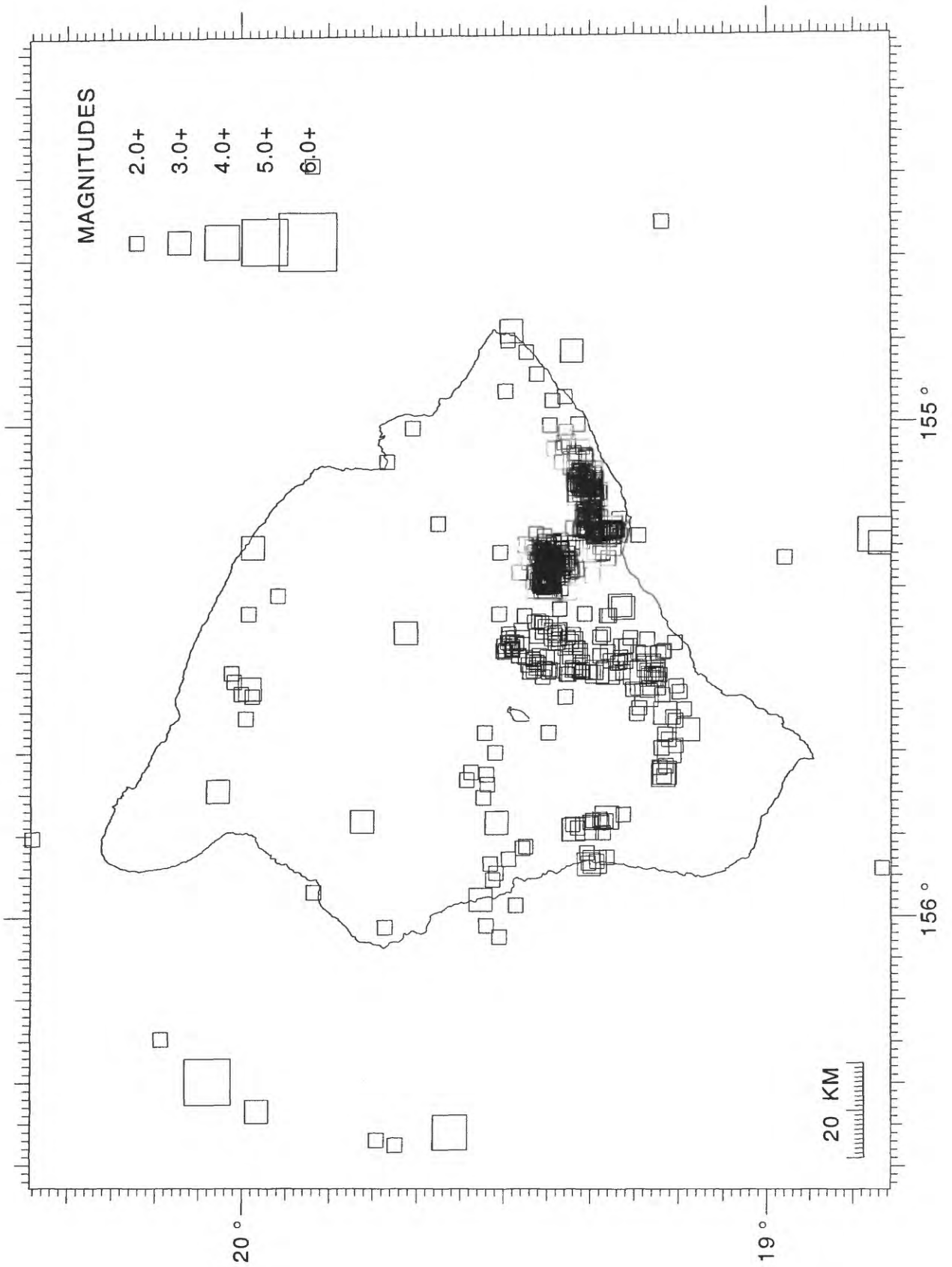


Figure 13. 1998 earthquake locations, Hawai'i Island, intermediate (5.1–13.0 km depth), M>=2.0.

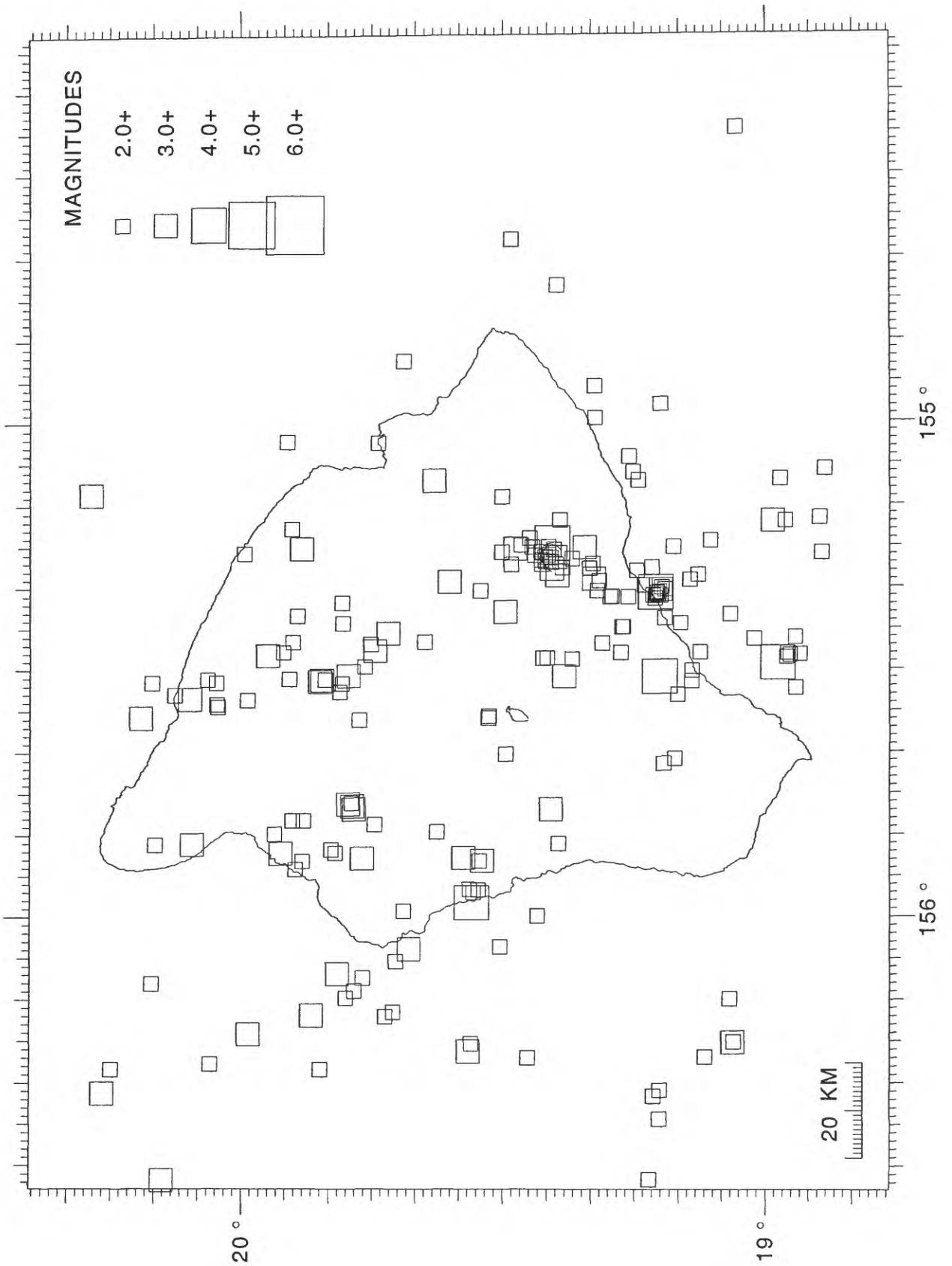


Figure 14. 1998 earthquake locations, Hawai'i Island, deep (13.1–60.0 km depth), M>=2.0.

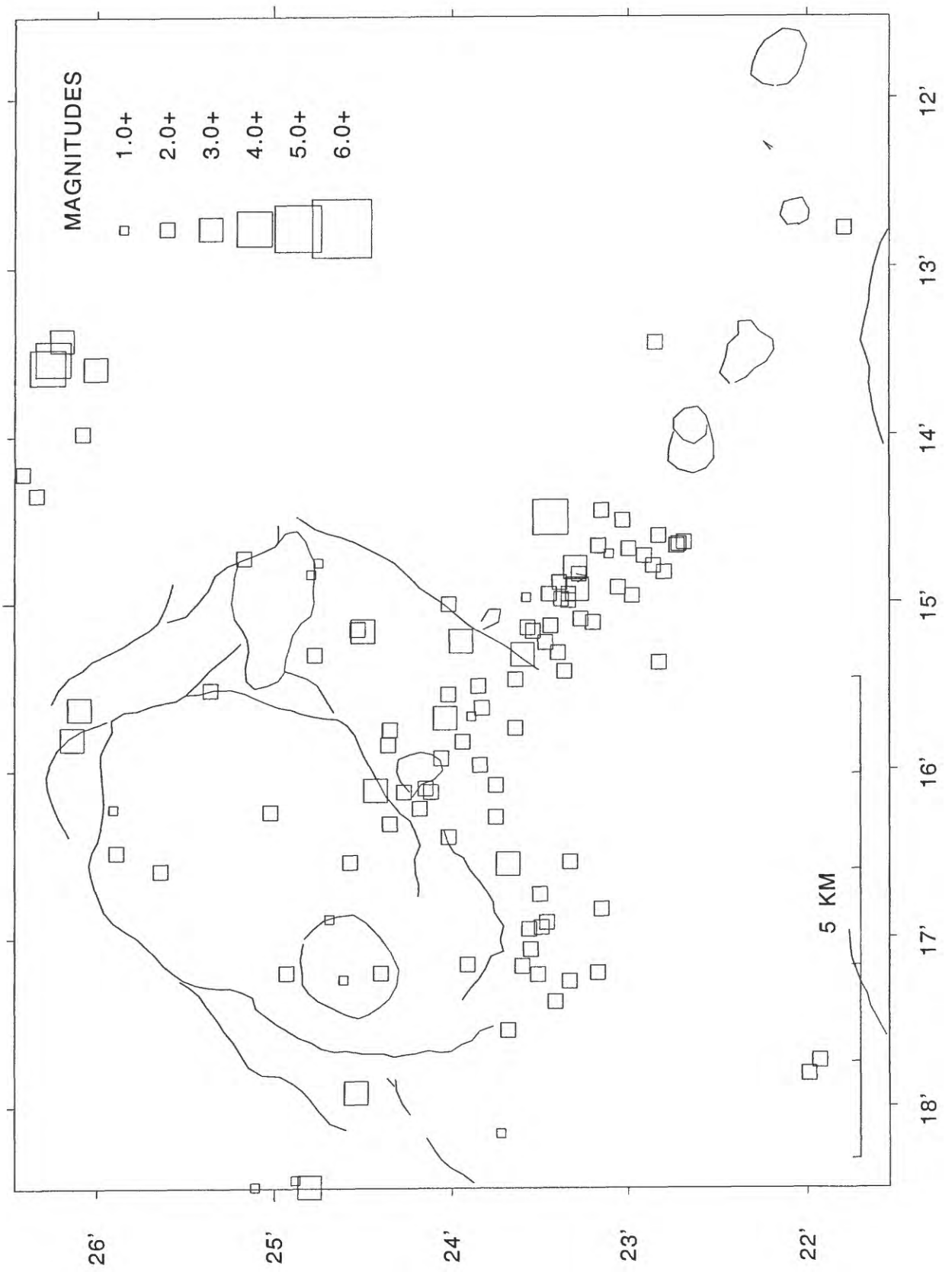


Figure 15. 1998 earthquake locations, Kilauea summit, shallow (0–5.0 km depth), M>=1.0.

Figure 16. 1998 earthquake locations, Kilauea summit, intermediate (5.1–13.0 km depth), M>=1.0.

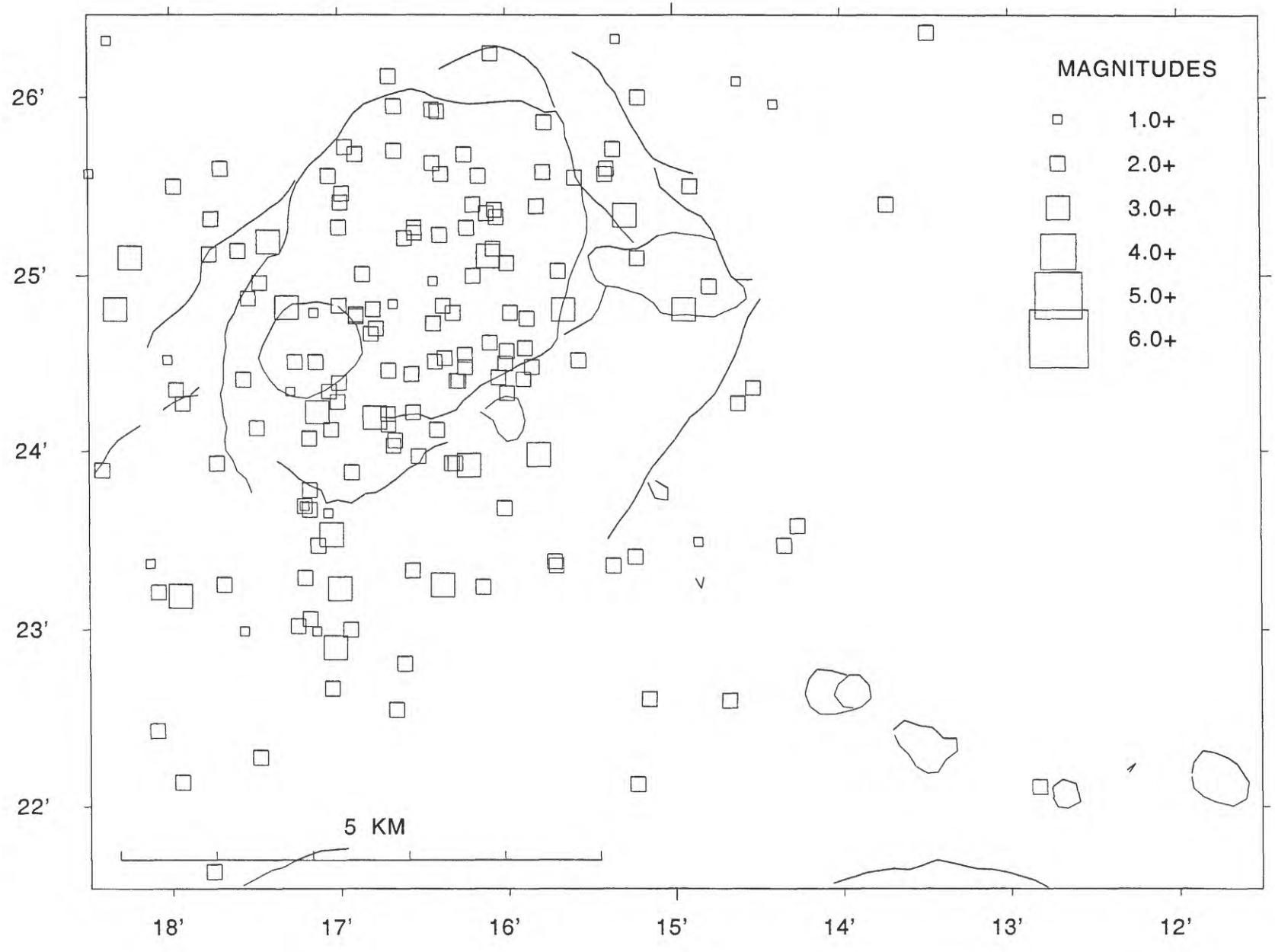
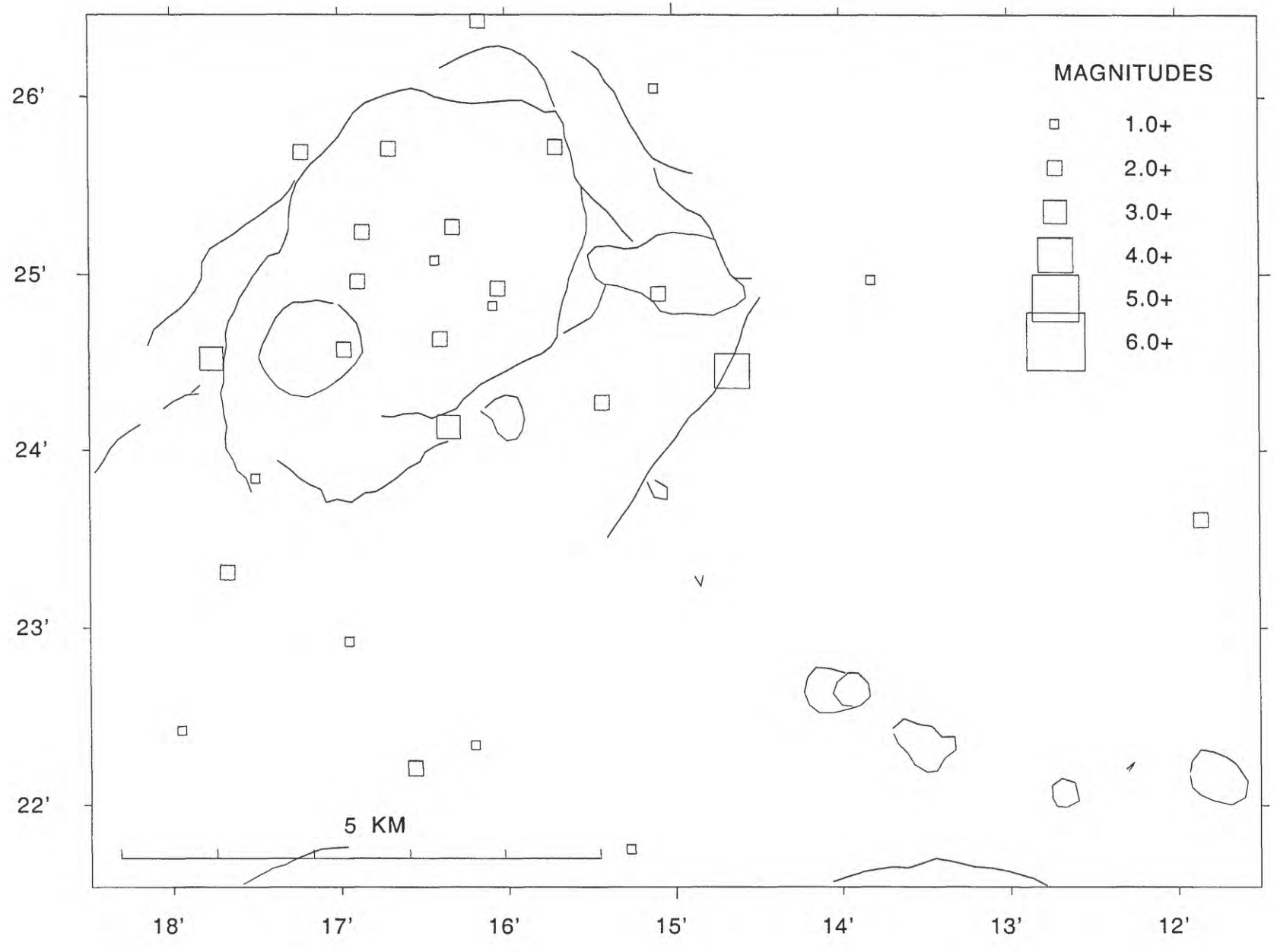


Figure 17. 1998 earthquake locations, Kilauea summit, deep (13.1–60.0 km depth), M>=1.0.



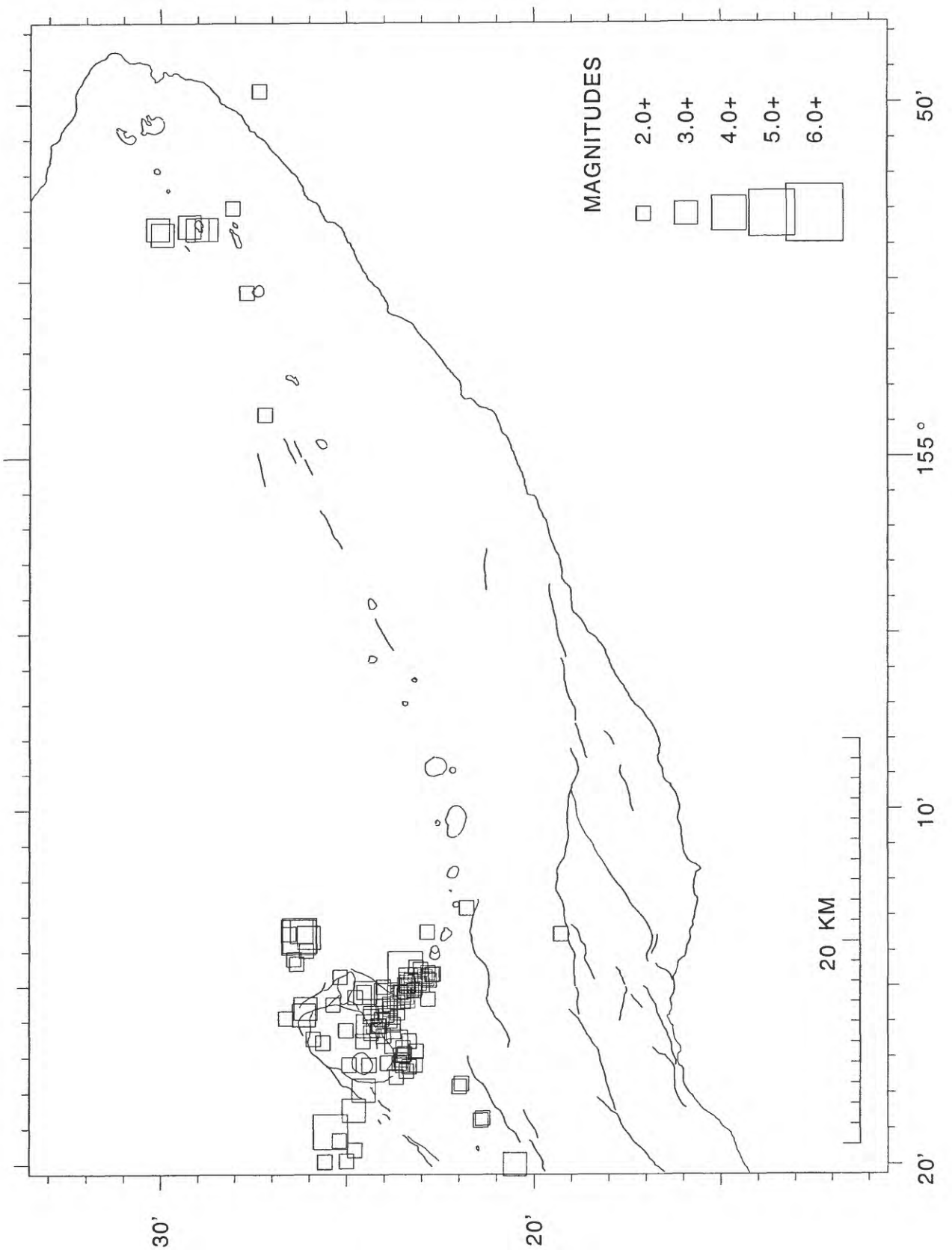


Figure 18. 1998 earthquake locations, Kilauea south flank, shallow (0–5.0 km depth), M>=2.0.

Figure 19. 1998 earthquake locations, Kilauea south flank, intermediate (5.1–13.0 km depth), M>=2.0.

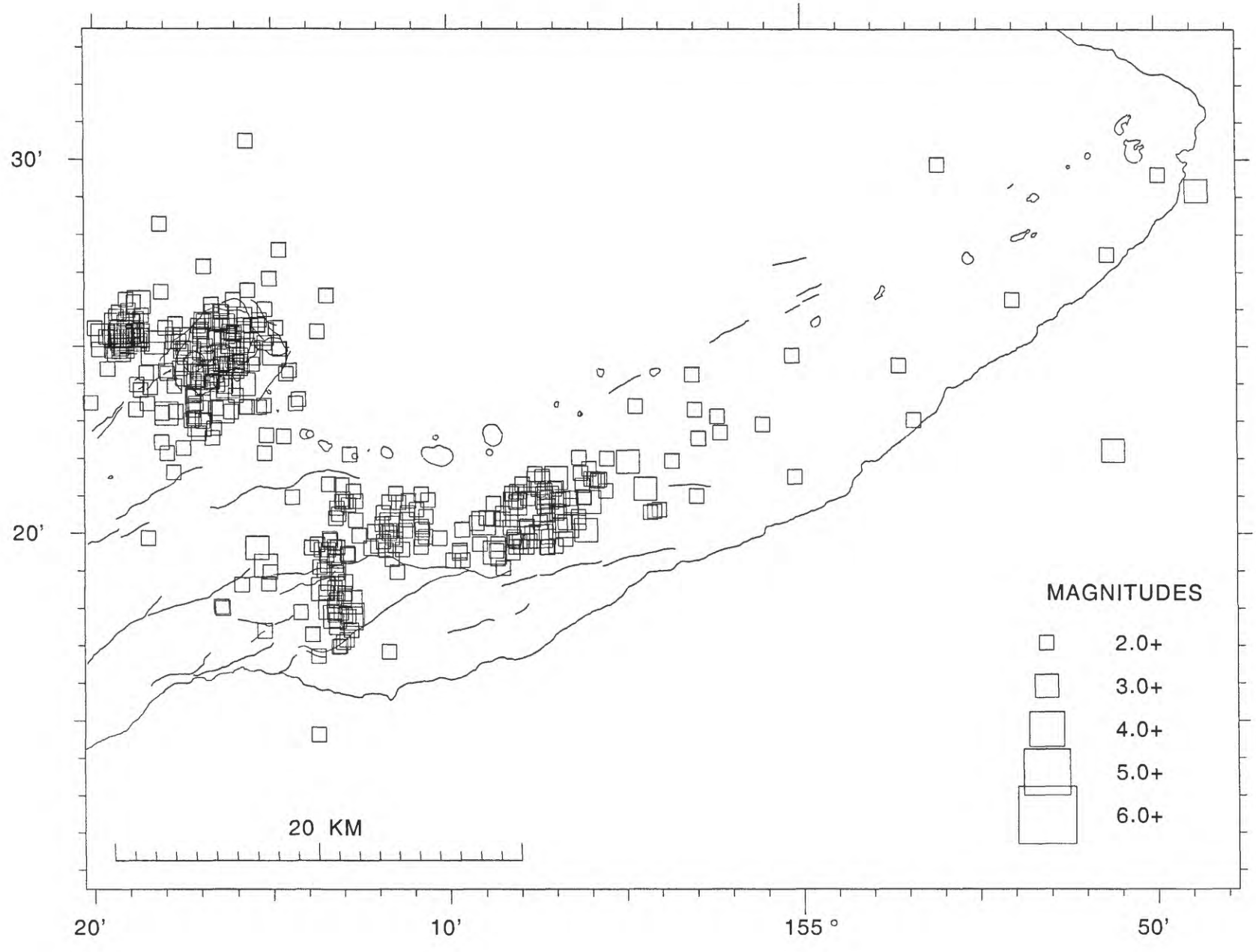


Figure 20. 1998 earthquake locations, Kilauea south flank, deep (13.1–60.0 km depth), M>=2.0.

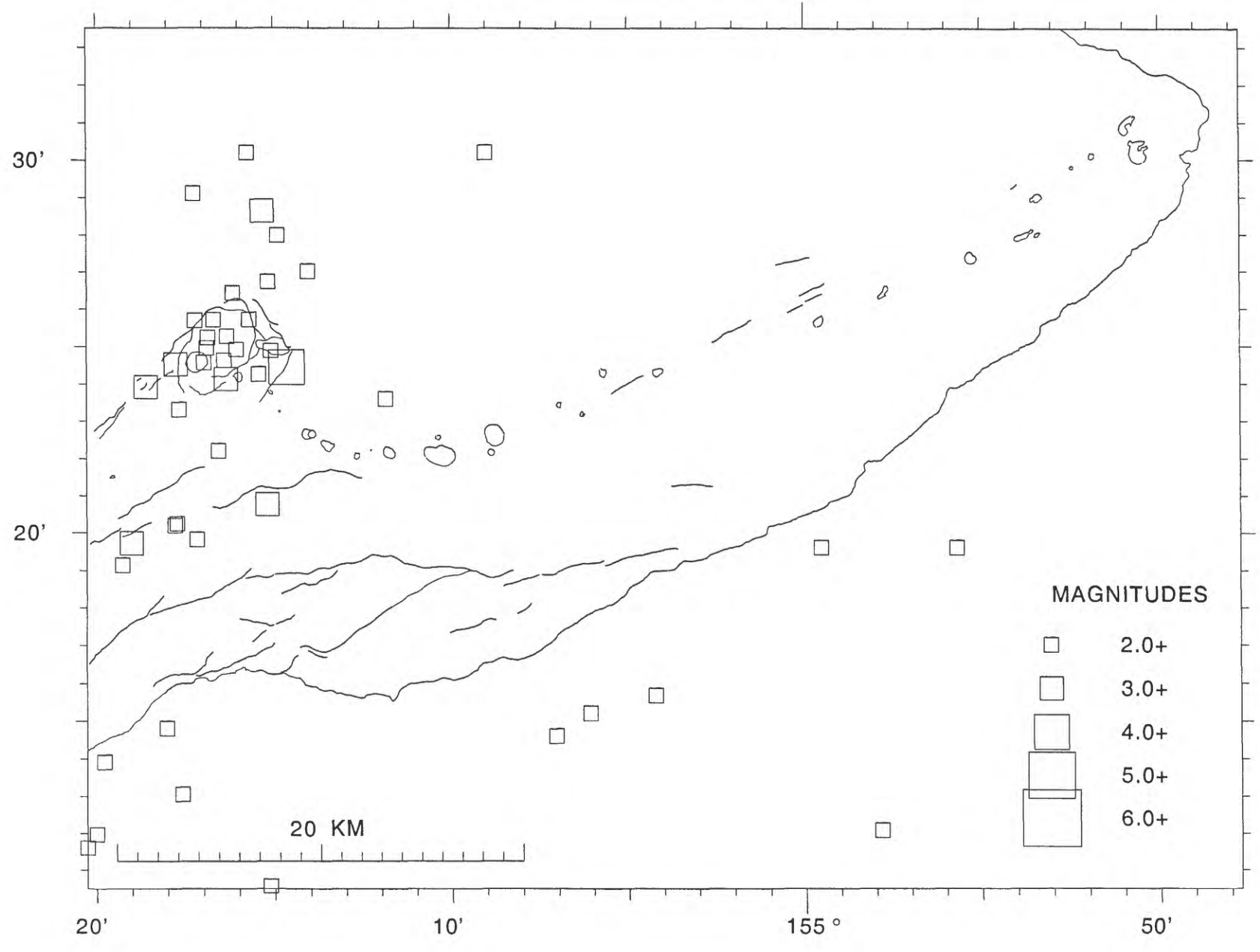


Figure 21. 1998 earthquake locations, Mauna Loa summit, shallow (0–5.0 km depth), M>=2.0.

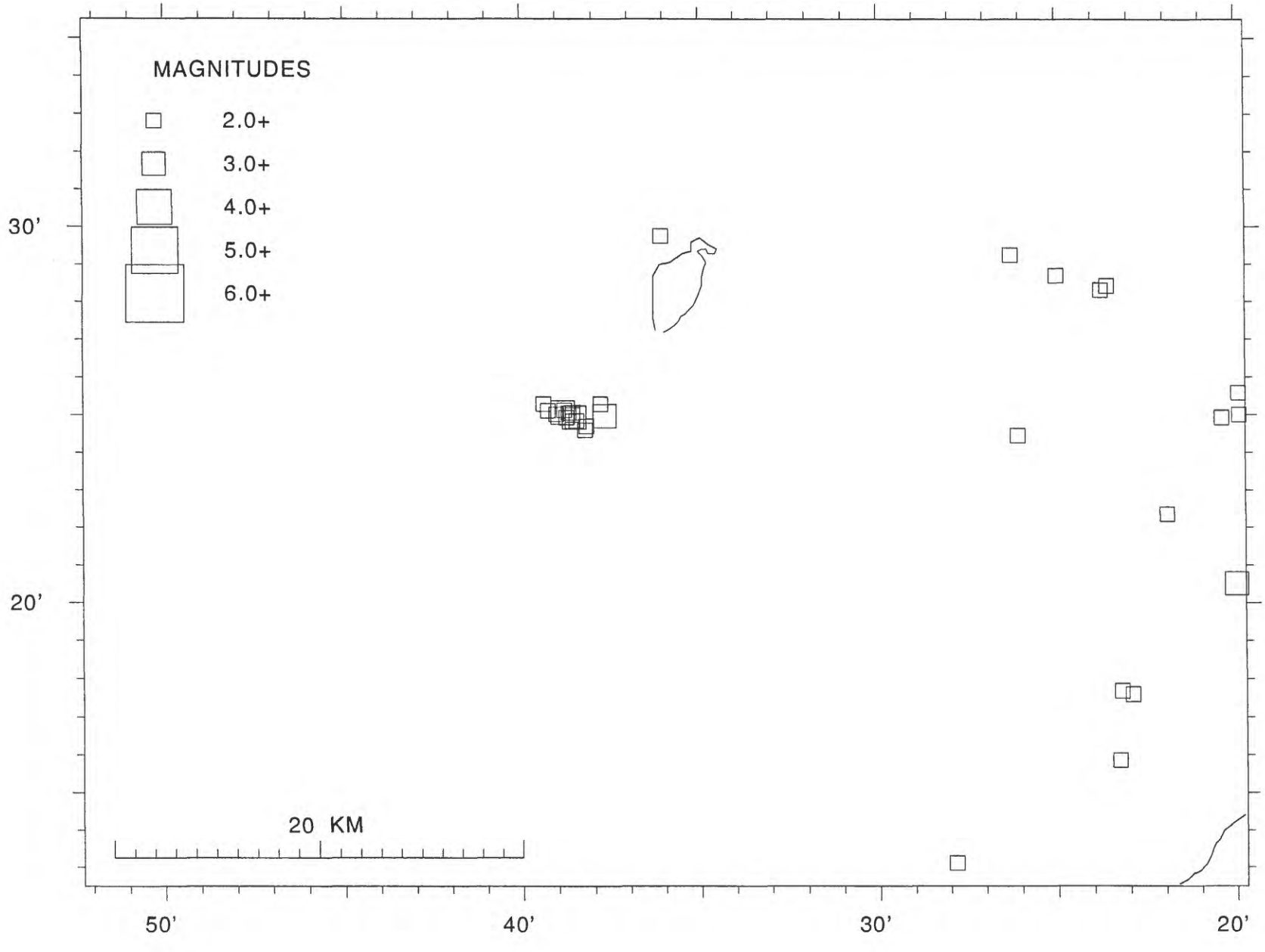


Figure 22. 1998 earthquake locations, Mauna Loa summit, intermediate (5.1–13.0 km depth), M>=2.0.

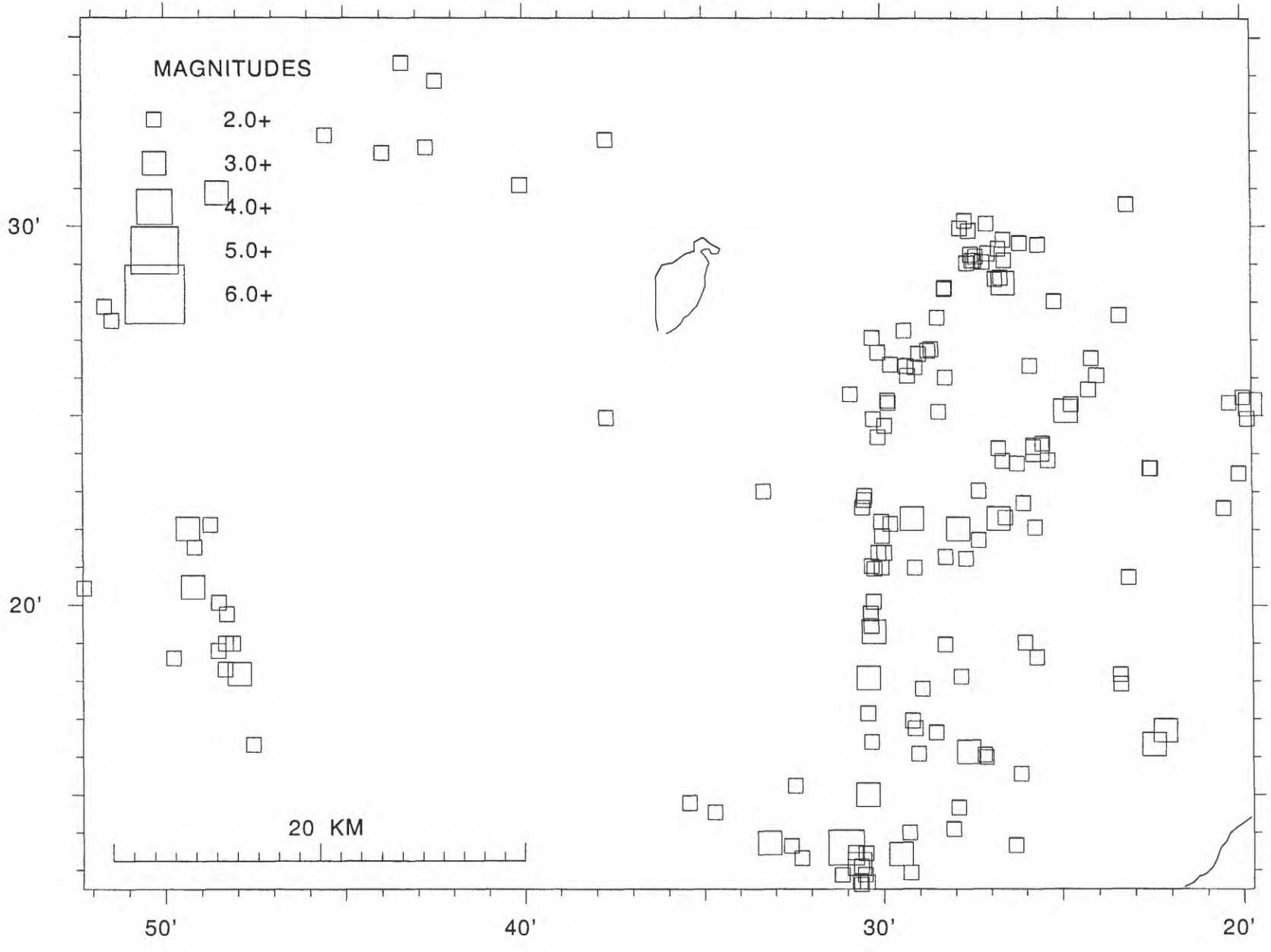


Figure 23. 1998 earthquake locations, Mauna Loa summit, deep (13.1–60.0 km depth), M>=2.0.

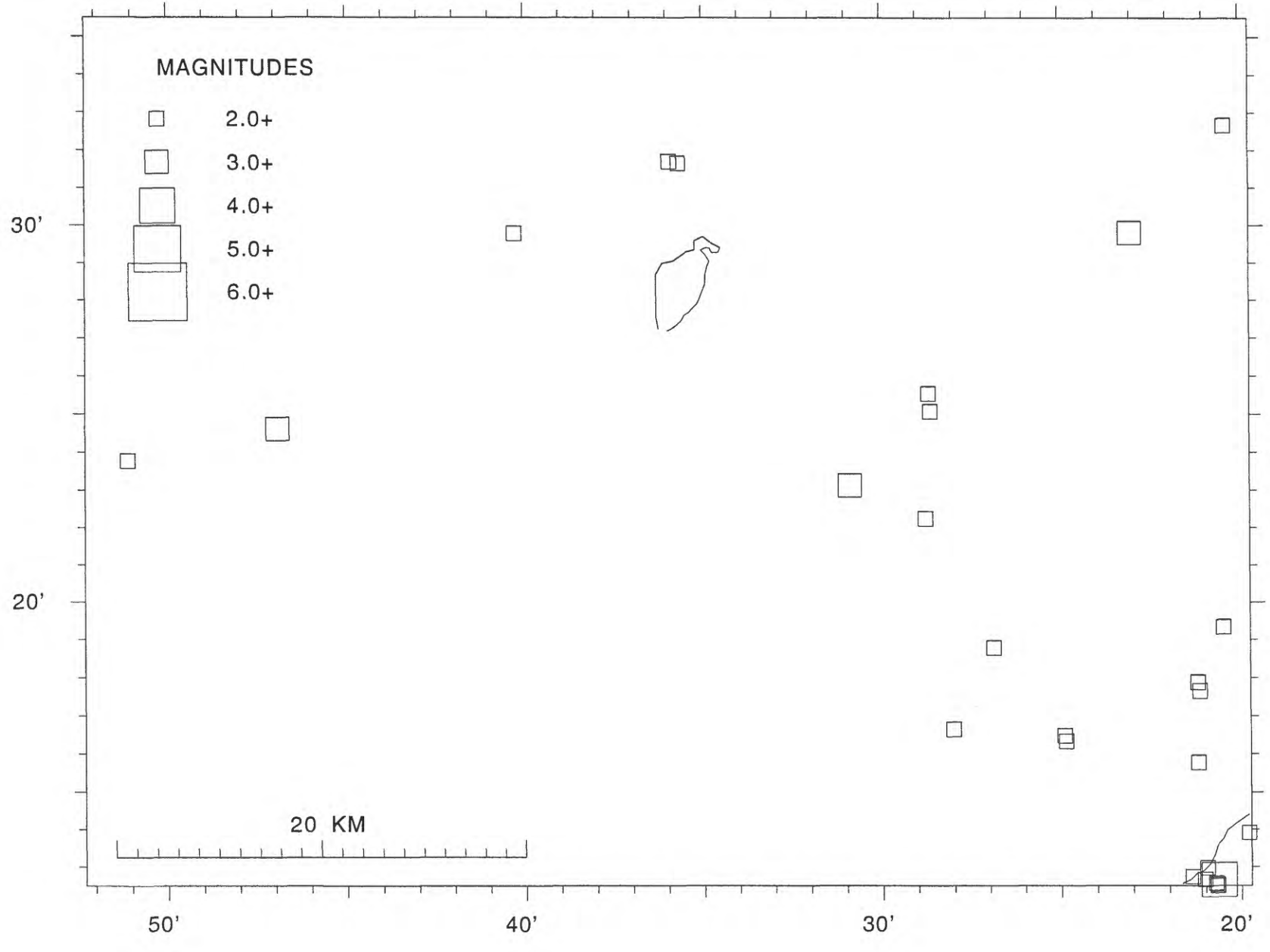


Table 4 is a chronological list of selected events successfully located during 1998. For each event, the following data are presented:

ORIGIN TIME - in Hawaiian Standard Time: date, hour (HR), minute(MN), and second (SEC).

EPICENTER - in degrees and minutes of north latitude (LAT N) and west longitude (LON W) in Old Hawaiian Datum.

DEPTH - Depth of focus in kilometers.

NRD - Number of P & S readings with final weights > 0.1.

NS - Number of S. readings with final weights > 0.1

RMS SEC - Root mean square travel time residuals, in seconds.

ERH km - Standard error of the epicenter, in kilometers.

ERZ km - Standard error of depth of focus, in kilometers.

LOC REMKS - Remarks, three-letter code for geographic location of events. See Figures 6-9 for location of mnemonic code. Additional one-letter codes have the following meanings:

F felt

L long-period character

T associated with harmonic tremor

B quarry or other blast

* the location program had a convergence problem, which usually means that the depth may be unreliable.

\- the depth was held fixed.

PREF MAG – The preferred magnitude chosen from the available magnitudes.
Preference set as: X-amplitude magnitude, if none
D-Develocorder duration magnitude, if none
U-external magnitude, usually calculated from drum records.

NRD – The total weight of amplitude magnitude readings from contributing stations.

AZ GAP - Largest azimuthal gap in degrees between azimuthally adjacent stations.

MIN DS – Distance to the nearest station, in kilometers.

Table 5 is a list of events of magnitude 3.0 or greater, selected from Table 4.

Table 4.

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ		PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	JAN	1	439	21.16	19	22.14	155	17.94	10.82	17	4	.08	1.4	.7	INTL	2.7U		192	3
98	JAN	2	432	41.42	19	24.12	155	17.05	12.89	16	4	.06	2.0	.9	INTL	2.2U		138	1
98	JAN	2	735	30.91	19	24.02	155	15.55	2.32	21	6	.10	.2	.3	SEC	2.5U		111	2
98	JAN	2	1836	13.04	19	29.87	154	56.13	11.46	23		.09	1.9	.8	LER	2.9U		239	5
98	JAN	2	2122	43.67	19	49.31	155	52.21	14.37	19	1	.10	1.5	.7	HUA	2.4U		204	15
98	JAN	3	532	37.53	19	51.86	155	56.97	10.88	22	2	.12	1.7	1.1	HUA	2.4U		225	34
98	JAN	3	1431	6.58	19	59.21	156	14.18	41.26	40	6	.12	1.1	1.5	KOH	3.2U		277	50
98	JAN	4	1601	57.89	19	23.84	155	17.50	15.97	39	11	.11	.6	.4	DEP	1.8U		64	1
98	JAN	5	541	47.77	19	24.52	155	17.76	14.11	21	4	.14	1.2	.6	DEP	3.4U		68	2
98	JAN	5	553	31.67	19	23.93	155	17.73	10.58	17	4	.11	1.2	.9	INTL	2.5U		136	2
98	JAN	5	655	26.13	19	19.08	155	19.85	33.21	35	8	.09	.7	1.0	DEP	1.5U		146	5
98	JAN	5	720	12.24	19	23.38	155	14.98	3.02	16	5	.10	.3	.4	SEC	2.3U		112	2
98	JAN	5	1127	40.48	19	22.29	155	29.19	11.02	43	12	.10	.3	.5	KAO	3.3U		73	3
98	JAN	5	1957	21.28	19	20.51	155	19.99	0.93	17	4	.09	.8	.6	SWRL	3.6U		206	8
98	JAN	5	2002	26.20	19	24.53	155	15.16	2.04	17	4	.10	.3	.4	SECL	2.9U		134	1
98	JAN	6	1049	47.32	19	25.97	155	19.03	5.36	32	10	.09	.4	.6	KAO	2.7U		92	3
98	JAN	6	1616	59.16	19	21.48	155	6.99	8.65	47	13	.10	.5	.4	SF4	3.0U		170	4
98	JAN	7	11	34.62	19	28.61	155	26.83	10.35	47	11	.12	.3	.6	KAO	2.4U		57	6
98	JAN	7	610	22.80	19	20.97	155	12.95	7.87	31	2	.10	.4	.6	SF2	1.7U		116	6
98	JAN	8	534	21.84	19	22.72	155	14.65	3.35	21	6	.09	.3	.4	SEC	2.2U		76	2
98	JAN	8	551	46.76	19	16.99	155	13.10	7.64	36	6	.10	.5	.7	SF2	2.5U		198	1
98	JAN	8	745	1.64	19	48.52	155	31.72	25.32	33	1	.10	.6	2.0	KEA	2.2U		101	21
98	JAN	9	630	51.34	19	29.11	155	26.57	8.98	41	11	.11	.3	.9	KAO	2.6U		95	6
98	JAN	9	1158	48.20	19	24.55	155	16.25	9.50	11	2	.09	1.0	.9	INTL	2.5U		136	1
98	JAN	9	1322	0.62	20	17.31	155	8.63	16.51	32	3	.11	1.8	13.6	KEA -	3.6U		269	69
98	JAN	10	815	52.94	19	23.58	155	14.97	2.56	17	5	.09	.3	.4	SEC	1.7U		79	2
98	JAN	10	1244	24.38	19	23.97	155	18.79	9.80	11	2	.11	2.0	1.2	INTL	2.4U		173	3
98	JAN	11	545	23.36	19	22.91	155	1.12	8.92	27	1	.12	1.3	.9	SF5	2.9U		193	11
98	JAN	11	858	33.72	19	26.19	155	18.88	6.64	30	3	.12	.5	.8	INT	2.7U		95	3
98	JAN	11	1159	29.61	18	56.93	155	28.11	45.65	23	6	.08	1.8	1.2	DLS			247	21
98	JAN	12	26	2.08	19	28.35	155	28.27	7.75	36	7	.12	.3	1.2	KAO	2.5U		64	7
98	JAN	12	36	1.04	19	28.38	155	28.25	8.24	26	2	.11	.4	1.3	KAO	2.0U		57	7
98	JAN	12	845	42.66	19	23.64	155	15.46	1.48	10	3	.05	.2	.6	SECL	2.4U		94	2
98	JAN	12	1029	17.30	19	24.93	155	17.21	3.67	11	3	.20	1.5	.4	SNCL	2.6U		133	0
98	JAN	12	1428	49.50	19	24.40	155	16.29	11.44	11	2	.14	1.7	1.3	INTL	2.8U		131	1
98	JAN	12	1649	19.39	19	24.60	155	46.92	13.26	36	5	.12	.6	.3	KON	3.3U		91	11
98	JAN	12	1657	33.24	19	26.00	155	15.21	12.75	11	3	.10	2.1	1.3	INTL	2.8U		219	3
98	JAN	12	1812	0.89	19	24.87	155	17.54	9.81	12	2	.05	1.5	.9	INTL	2.0U		135	1
98	JAN	12	1950	54.38	19	25.23	155	16.40	11.67	10	2	.08	1.6	1.2	INTL	2.6U		164	1
98	JAN	12	2102	32.51	19	25.00	155	16.20	10.10	12	2	.07	1.5	1.0	INTL	2.5U		154	1
98	JAN	12	2103	58.28	19	19.61	155	15.44	8.78	37	3	.12	.5	.6	SF1	3.1U		160	4
98	JAN	12	2348	21.20	19	11.76	155	30.61	13.08	33	5	.14	.6	.5	DLS	2.5U		131	6
98	JAN	13	209	43.66	19	25.27	155	17.00	11.11	10	2	.04	1.8	1.3	INTL	2.4U		159	1
98	JAN	13	1405	49.72	19	28.35	155	16.95	24.70	28	4	.08	1.0	1.1	DEP	1.5U		155	1
98	JAN	13	1642	14.00	19	26.32	155	18.37	11.79	11	3	.06	1.6	.9	INTL	1.8U		302	2

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ		PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	JAN	13	1812	57.36	19	25.37	155	16.07	10.67	15	2	.09	1.3	1.0	INTL	2.0U		160	2
98	JAN	13	1959	48.33	19	24.84	155	16.68	10.73	11	2	.05	1.3	1.4	INTL	1.9U		148	1
98	JAN	14	216	18.70	19	24.21	155	16.71	11.75	11	3	.06	1.9	1.1	INTL	2.2U		117	1
98	JAN	14	747	15.54	19	24.03	155	16.68	9.40	12	3	.08	2.2	1.0	INTL	2.1U		112	0
98	JAN	14	908	31.25	19	27.59	155	14.80	11.36	9	2	.09	2.8	1.1	INTL	2.5U		260	5
98	JAN	14	1721	42.21	19	25.07	155	28.63	13.54	33	3	.11	.4	.8	DML	2.3U		39	5
98	JAN	14	1853	19.91	19	27.58	155	21.05	6.68	9	2	.30	6.0	4.3	KAO			337	7
98	JAN	14	1857	33.32	19	25.02	155	16.25	1.42	15	4	.09	.3	.3	SNC	2.4U		154	1
98	JAN	14	1858	17.19	19	23.60	155	15.31	3.11	34	8	.11	.3	.3	SEC	3.1U		85	2
98	JAN	14	1928	27.24	19	23.59	155	15.05	2.77	26	4	.13	.3	.3	SEC			78	2
98	JAN	14	1929	36.78	19	24.73	155	16.30	1.40	10	2	.07	.3	.5	SNC			152	1
98	JAN	14	1930	0.98	19	23.57	155	15.15	3.31	14	3	.06	.3	.5	SEC	2.2U		85	2
98	JAN	14	1937	56.67	19	24.63	155	16.26	0.89	9	2	.11	.4	.6	SNC			146	1
98	JAN	14	1958	6.46	19	22.80	155	14.82	3.06	25	4	.10	.2	.3	SEC	2.7U		72	2
98	JAN	14	2003	4.32	19	23.50	155	16.74	2.92	25	4	.11	.3	.2	SSC	2.6U		44	0
98	JAN	14	2003	54.00	19	23.06	155	14.91	2.59	14	4	.10	.3	.4	SEC	2.3U		83	2
98	JAN	14	2005	18.18	19	23.34	155	14.99	2.24	12	4	.09	.3	.6	SEC	2.0U		105	2
98	JAN	14	2013	59.31	19	23.29	155	15.21	3.32	18	6	.11	.3	.4	SEC			76	2
98	JAN	14	2014	20.83	19	23.42	155	15.19	2.66	16	4	.10	.3	.4	SEC			81	2
98	JAN	14	2014	34.01	19	23.41	155	15.13	2.92	18	6	.10	.3	.4	SEC			79	2
98	JAN	14	2014	50.90	19	23.72	155	15.12	3.04	12	3	.11	.4	.8	SEC			94	2
98	JAN	14	2015	19.18	19	23.68	155	14.94	3.51	34	4	.11	.3	.3	SEC			50	2
98	JAN	14	2019	47.70	19	23.20	155	15.12	2.97	21	7	.11	.3	.4	SEC	2.5U		63	2
98	JAN	14	2041	22.69	19	24.57	155	16.55	1.52	15	4	.09	.3	.3	SNC	2.5U		137	1
98	JAN	14	2103	56.23	19	23.11	155	14.71	3.40	13	2	.06	.4	.6	SEC	1.3U		76	2
98	JAN	14	2157	13.92	19	23.72	155	18.16	2.36	15	6	.07	.5	.5	SSCL	1.9U		137	3
98	JAN	14	2244	40.56	19	24.11	155	15.94	0.66	24	4	.10	.2	.3	SECL			119	1
98	JAN	14	2300	51.45	19	25.33	155	15.95	5.02	9	4	.10	1.0	1.2	INT	1.5U		200	2
98	JAN	14	2347	25.88	19	25.07	155	16.00	8.35	12	4	.09	1.7	1.3	INTL	2.0U		163	2
98	JAN	15	13	38.84	19	25.56	155	17.06	9.91	11	2	.11	1.8	1.3	INTL	2.2U		167	1
98	JAN	15	30	27.58	19	25.60	155	17.70	12.20	12	3	.14	2.0	1.3	INTL	2.3U		157	0
98	JAN	15	42	42.46	19	23.21	155	18.08	12.88	12	1	.08	1.1	1.5	INTL	2.9U		138	2
98	JAN	15	59	45.74	19	24.27	155	17.93	9.00	11	1	.06	.8	1.4	INTL	2.7U		135	2
98	JAN	15	116	58.28	19	25.19	155	17.42	11.04	10	1	.05	1.5	1.3	INTL	3.6U		137	1
98	JAN	15	147	43.25	19	24.18	155	16.23	4.03	11	2	.08	.4	.3	SECL	2.4U		120	1
98	JAN	15	150	27.51	19	24.27	155	17.39	1.49	9	1	.10	.6	.4	SSCL			134	1
98	JAN	15	200	21.05	19	24.34	155	17.06	9.26	10	2	.08	.9	1.1	INTL	2.7U		128	1
98	JAN	15	236	51.32	19	22.28	155	17.48	8.83	19	5	.08	.6	.9	INTL	2.4U		121	2
98	JAN	15	254	15.20	19	22.67	155	17.05	7.69	13	4	.11	.9	1.4	INTL	2.9U		152	1
98	JAN	15	301	41.72	19	25.95	155	16.67	10.55	13	3	.15	1.5	1.2	INTL	2.6U		177	2
98	JAN	15	308	59.20	19	25.27	155	16.24	11.93	11	2	.12	2.3	1.8	INTL	2.7U		168	1
98	JAN	15	321	59.36	19	24.28	155	17.01	9.58	12	3	.20	1.9	1.3	INTL	2.4U		127	1
98	JAN	15	329	44.35	19	21.63	155	17.76	8.82	16	4	.06	1.5	.8	SWRL	2.7U		232	4
98	JAN	15	339	23.28	19	23.67	155	17.18	11.29	22	7	.07	.9	.6	INTL	2.8U		116	1
98	JAN	15	344	40.82	19	22.60	155	14.68	8.06	10	3	.14	1.6	1.2	INTL	2.4U		217	2

YR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	N RD	N S	RMS SEC	ERH KM	ERZ KM	LOC REMKS	PREF MAG	N RD	AZ GAP	MIN DS
98	JAN	15	355	19.90	19	24.77	155	15.31	2.98	11	3	.09	.6	.7	SNCL	2.7U		156	2
98	JAN	15	401	21.77	19	19.86	155	18.49	9.42	17	4	.08	1.3	1.4	SWRL	2.6U		205	7
98	JAN	15	424	49.76	19	23.24	155	16.15	12.48	26	7	.10	.8	.5	INTL	2.9U		75	1
98	JAN	15	440	22.71	19	22.55	155	16.67	8.19	22	5	.12	.6	.6	INTL	2.7U		50	1
98	JAN	15	449	26.66	19	22.81	155	16.62	8.72	11	4	.10	1.3	1.0	INTL	2.8U		137	1
98	JAN	15	506	44.50	19	32.09	156	1.05	9.56	20	4	.17	1.7	1.0	KON	2.1U		289	12
98	JAN	15	510	16.19	19	24.06	155	16.67	12.21	13	3	.14	1.7	1.1	INTL	2.9U		112	0
98	JAN	15	517	25.47	19	24.35	155	16.32	4.57	7	2	.04	.7	1.5	SECL	2.4U		131	1
98	JAN	15	524	23.90	19	23.36	155	15.37	7.95	13	3	.12	.7	1.3	INTL	2.6U		105	2
98	JAN	15	544	39.00	19	26.48	155	18.10	10.63	10	2	.10	1.9	1.2	INTL	2.6U		181	2
98	JAN	15	600	59.26	19	23.47	155	17.13	9.62	15	3	.11	1.0	.8	INTL	2.9U		123	0
98	JAN	15	615	42.95	19	20.97	155	14.45	6.19	10	3	.08	1.2	2.5	SF2L	2.8U		232	4
98	JAN	15	639	49.68	19	24.82	155	17.31	12.14	21	5	.08	1.0	.6	INTL	3.0U		100	1
98	JAN	15	653	36.49	19	25.33	155	16.06	10.39	25	9	.09	1.0	.6	INTL	2.8U		159	2
98	JAN	15	707	35.98	19	23.82	155	18.68	8.55	11	3	.08	.8	1.0	INTL	2.8U		173	3
98	JAN	15	728	39.99	19	23.91	155	18.60	13.40	18	5	.06	.9	.6	DEPL	3.0U		141	3
98	JAN	15	803	46.21	19	23.33	155	16.57	5.34	11	2	.17	1.1	.9	INTL	2.6U		85	1
98	JAN	15	824	57.87	19	24.22	155	17.13	5.15	13	1	.14	.7	1.0	INTL	3.2U		121	1
98	JAN	15	842	1.51	19	25.12	155	17.77	12.34	17	4	.09	1.4	1.0	INTL	2.9U		125	1
98	JAN	15	904	13.35	19	24.19	155	16.79	9.97	13	3	.08	1.2	1.3	INTL	3.0U		117	1
98	JAN	15	932	41.21	19	23.46	155	18.49	5.64	14	3	.13	1.1	1.1	INTL	2.9U		163	3
98	JAN	15	1001	31.13	19	24.07	155	17.18	10.03	12	2	.09	1.0	1.0	INTL	2.8U		124	1
98	JAN	15	1025	13.75	19	23.38	155	15.72	11.12	21	5	.09	.8	.7	INTL	2.8U		83	2
98	JAN	15	1051	0.11	19	23.30	155	18.82	5.96	13	3	.11	1.0	.9	INTL	2.9U		181	3
98	JAN	15	1120	8.35	19	23.19	155	17.95	11.39	11	1	.12	1.3	1.8	INTL	3.0U		135	2
98	JAN	15	1150	44.90	19	25.92	155	16.41	6.56	11	2	.10	2.1	1.0	INTL	2.7U		181	2
98	JAN	15	1220	5.92	19	22.43	155	18.09	10.72	17	4	.09	.7	.9	INTL	2.8U		130	3
98	JAN	15	1241	38.30	19	22.35	155	21.94	4.56	11	3	.13	1.0	12.6	KAOL-	2.8U		228	9
98	JAN	15	1308	19.59	19	23.89	155	18.41	8.76	11	3	.06	1.8	1.4	INTL	2.4U		147	3
98	JAN	15	1337	4.61	19	23.93	155	16.33	6.86	14	3	.11	1.0	.7	INTL			101	0
98	JAN	15	1337	47.82	19	22.00	155	6.23	6.20	13	2	.08	.6	1.0	SF4			138	3
98	JAN	15	1426	21.81	19	23.53	155	17.05	11.34	13	2	.09	1.1	1.4	INTL	3.0U		121	0
98	JAN	15	2204	0.38	19	18.95	155	13.90	7.94	31	3	.12	.4	.8	SF2	1.5U		77	4
98	JAN	15	2314	58.12	19	22.91	155	14.72	2.04	17	5	.09	.3	.4	SEC	2.1U		75	2
98	JAN	15	2354	34.41	19	20.36	155	23.95	14.04	29	1	.11	.6	1.0	DEP	1.7U		66	8
98	JAN	16	259	18.93	19	25.70	155	16.67	9.93	15	4	.07	1.1	.9	INTL	2.3U		170	2
98	JAN	16	610	58.08	19	20.93	155	8.46	7.40	30	4	.09	.6	.8	SF4	1.7U		155	3
98	JAN	16	655	9.96	19	24.81	155	16.80	11.62	16	4	.07	1.1	.9	INTL	2.4U		144	0
98	JAN	16	818	11.69	19	24.51	155	17.26	10.93	16	4	.10	1.2	.8	INTL	2.4U		116	1
98	JAN	16	1032	4.67	19	24.49	155	17.49	13.09	12	4	.06	1.8	1.0	DEPL	2.5U		176	1
98	JAN	16	1443	57.76	19	14.66	155	27.92	12.58	28	3	.12	.4	.9	LSW	2.0U		84	4
98	JAN	16	1657	12.75	19	25.35	155	16.12	12.85	10	3	.09	2.2	1.1	INTL	2.3U		198	2
98	JAN	16	1800	28.86	19	10.74	155	4.36	49.01	23	3	.09	2.4	1.0	DEP	1.6U		282	20
98	JAN	16	1824	50.85	19	24.70	155	16.78	10.94	14	3	.10	1.6	1.1	INTL	2.6U		137	1
98	JAN	16	1933	32.34	19	24.62	155	16.10	10.11	11	2	.08	.9	1.0	INTL	2.2U		142	2

YR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	N RD	N S	RMS SEC	ERH KM	ERZ KM	LOC REMKS	PREF MAG	N RD	AZ GAP	MIN DS
98	JAN	16	2033	44.59	19	24.42	155	16.05	10.99	10	3	.06	2.8	.8	INTL	2.9U		134	1
98	JAN	16	2247	44.65	19	24.51	155	16.43	9.28	13	3	.12	1.5	1.1	INTL	2.2U		135	1
98	JAN	17	147	21.90	19	24.79	155	16.32	5.11	12	3	.04	.7	.6	INTL	2.6U		145	1
98	JAN	17	432	44.06	19	25.63	155	16.44	11.32	12	4	.06	1.3	.9	INTL	2.3U		178	2
98	JAN	17	649	2.86	19	24.49	155	16.05	10.93	11	5	.09	1.2	.9	INTL			141	1
98	JAN	17	1020	53.88	19	24.27	155	14.62	11.77	19	4	.09	1.0	.8	INTL	2.5U		81	1
98	JAN	17	1421	50.44	19	25.71	155	16.70	13.33	19	5	.09	1.2	.9	DEPL	2.7U		153	2
98	JAN	17	2004	5.70	19	25.56	155	16.17	9.04	18	4	.07	.9	.7	INTL	2.2U		164	2
98	JAN	18	21	12.50	19	24.57	155	16.97	13.34	19	4	.11	1.2	.9	DEPL	2.2U		113	1
98	JAN	18	838	52.52	19	24.13	155	16.35	13.89	22	5	.10	1.1	.7	DEPL	3.1U		111	1
98	JAN	18	1127	50.20	19	23.75	155	16.09	4.20	9	2	.13	.8	1.0	SECL	2.5U		111	1
98	JAN	18	1243	4.43	19	25.11	155	16.11	8.24	11	3	.08	1.8	.9	INTL	3.2U		164	2
98	JAN	18	1347	24.79	19	24.67	155	16.81	9.10	10	2	.06	1.3	1.8	INTL	2.7U		128	1
98	JAN	18	1502	39.83	19	23.29	155	17.21	7.89	16	5	.09	.7	.9	INTL	2.6U		117	1
98	JAN	18	1629	20.61	19	24.96	155	17.47	9.54	11	4	.18	1.8	1.3	INTL	2.2U		132	1
98	JAN	18	1745	6.05	19	24.93	155	38.53	3.36	27	5	.10	.5	.4	MLO	3.1U		181	2
98	JAN	18	2053	45.24	19	24.13	155	17.49	9.77	13	3	.09	.9	.9	INTL	2.6U		129	2
98	JAN	18	2338	11.63	19	20.73	155	7.23	7.34	27	4	.08	.9	.6	SF4	2.7U		201	5
98	JAN	19	1030	28.87	19	25.24	155	16.86	13.67	14	3	.12	1.8	1.3	DEPL	2.4U		156	1
98	JAN	19	1239	50.73	19	21.41	155	18.76	4.71	11	3	.09	1.0	2.4	SWRL	2.4U		256	5
98	JAN	19	1449	49.88	19	18.72	155	14.75	6.79	28	1	.07	.4	.9	SF1	1.7U		100	4
98	JAN	19	1651	45.96	19	26.12	155	16.70	11.99	12	2	.12	1.6	1.4	INTL	2.7U		189	2
98	JAN	20	17	47.18	19	25.92	155	19.29	7.37	4211		.11	.3	.6	KAO	2.7U		73	3
98	JAN	20	119	35.68	19	19.90	155	8.19	8.76	32	4	.11	.5	.4	SF4	2.9U		116	5
98	JAN	20	135	12.28	19	25.55	155	15.59	10.51	20	5	.09	.9	.6	INTL	2.7U		156	3
98	JAN	20	526	35.15	19	24.59	155	15.89	12.36	12	3	.09	1.7	1.1	INTL	2.5U		139	2
98	JAN	20	808	53.03	19	23.93	155	16.33	7.81	20	5	.08	.6	.6	INTL	2.9U		101	0
98	JAN	20	832	2.80	19	23.68	155	16.02	11.45	11	4	.16	2.6	1.3	INTL	2.4U		116	1
98	JAN	20	1028	3.94	19	20.96	155	6.20	7.06	30	4	.09	.6	.6	SF4	2.1U		148	5
98	JAN	20	1533	0.32	20	0.76	155	33.00	0.54	35	6	.13	.8	.3	KEA	2.5U		208	27
98	JAN	20	1733	16.64	19	21.44	155	5.81	10.17	4010		.11	.5	.4	SF4	2.5U		149	5
98	JAN	20	2119	49.06	19	23.64	155	15.75	1.07	16	3	.09	.2	.4	SECL	2.2U		95	2
98	JAN	20	2150	42.17	20	7.67	155	33.05	25.40	31	2	.15	1.6	3.1	KEA	2.3U		240	24
98	JAN	20	2318	37.96	19	24.53	155	16.37	9.68	19	3	.08	.9	.7	INTL	2.6U		130	1
98	JAN	21	42	27.77	19	23.36	155	15.41	0.19	18	3	.08	.2	.3	SECL	2.8U		98	2
98	JAN	21	256	37.89	19	11.65	155	42.60	7.56	5115		.15	.4	.7	LSW	3.5U		70	7
98	JAN	21	423	6.34	19	25.68	155	16.25	8.59	20	4	.11	.8	.7	INTL	2.5U		154	2
98	JAN	21	609	4.71	19	19.78	155	8.04	6.95	36	7	.10	.4	.8	SF4	2.0U		121	4
98	JAN	21	622	25.18	19	11.74	155	43.01	7.84	40	6	.16	.5	1.3	LSW	2.8U		69	7
98	JAN	21	708	24.62	19	23.30	155	14.79	3.85	37	5	.10	.3	.4	SEC	3.1U		60	3
98	JAN	21	1029	29.88	19	24.73	155	16.44	8.75	23	4	.11	.8	.6	INTL	2.5U		137	1
98	JAN	21	1359	21.86	19	24.63	155	16.40	13.23	19	4	.10	.9	.8	DEPL	2.8U		133	1
98	JAN	21	1846	21.26	19	25.70	155	24.23	9.26	37	7	.09	.3	.9	KAO	2.0U		48	7
98	JAN	21	1923	42.38	19	23.78	155	17.18	9.46	19	4	.11	.8	.7	INTL	2.5U		71	1
98	JAN	21	1940	50.82	19	25.01	155	16.86	8.95	17	4	.09	1.0	.8	INTL	2.3U		151	0

ORIGIN TIME					LAT N	LON W	DEPTH	N	N	RMS	ERH	ERZ			PREF	N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG MIN	DEG MIN	KM	RD	S	SEC	KM	KM	LOC	REMKS	MAG	RD	GAP	DS
98	JAN	21	2136	28.61	19 19.26	155 8.58	9.11	30	2	.08	.5	.7	SF4		1.5U		106	4
98	JAN	21	2347	0.94	19 25.24	155 16.55	9.97	18	4	.09	1.0	.7	INTL		2.0U		156	1
98	JAN	22	215	19.05	19 19.61	155 12.23	9.06	4311		.11	.4	.6	SF3		2.5U		86	5
98	JAN	22	234	16.22	19 24.78	155 16.90	10.06	19	4	.07	.9	.7	INTL		2.4U		131	0
98	JAN	22	607	56.14	19 25.57	155 16.39	10.57	18	4	.06	1.1	.8	INTL		2.3U		162	2
98	JAN	22	705	41.93	19 23.29	155 14.92	3.69	33	8	.11	.3	.4	SEC		3.1U		68	2
98	JAN	22	802	35.65	19 23.15	155 15.10	3.41	21	7	.09	.3	.4	SEC				70	2
98	JAN	22	833	43.47	19 23.54	155 15.17	3.37	18	4	.10	.3	.4	SEC		2.3U		84	2
98	JAN	22	951	14.42	19 23.65	155 17.07	11.28	18	4	.09	.9	.6	INTL		1.8U		70	1
98	JAN	22	1051	27.57	19 22.98	155 14.96	3.12	20	7	.10	.3	.4	SEC		2.1U		68	2
98	JAN	22	1542	1.31	19 23.53	155 17.63	10.50	19	4	.09	1.1	.8	INTL				85	1
98	JAN	22	1709	40.92	19 25.40	155 13.73	8.97	17	4	.08	.9	.7	SF2L		2.1U		230	2
98	JAN	22	1926	54.27	19 25.27	155 16.55	10.94	19	4	.09	1.1	.8	INTL		2.7U		152	1
98	JAN	22	1953	6.53	19 17.68	155 23.22	3.10	33	2	.10	.3	.9	SWR		2.4U		99	5
98	JAN	22	2053	6.22	19 25.41	155 16.99	10.72	18	4	.09	.8	.8	INTL		2.2U		156	1
98	JAN	22	2105	2.38	19 22.92	155 16.95	15.32	18	4	.09	1.4	.6	DEPL		1.9U		114	1
98	JAN	22	2135	35.62	19 26.33	155 15.34	9.30	18	4	.11	1.0	.7	INTL		1.7U		176	4
98	JAN	22	2327	7.35	19 23.92	155 16.23	11.92	18	4	.10	1.3	.9	INTL		3.0U		103	1
98	JAN	22	2349	10.96	19 20.48	155 10.96	9.10	34	4	.09	.4	.7	SF3		1.8U		78	4
98	JAN	23	19	24.35	19 24.41	155 15.90	11.20	19	4	.10	.8	.7	INTL		2.5U		131	2
98	JAN	23	136	29.24	19 25.58	155 15.78	10.83	19	4	.08	1.0	.8	INTL		2.7U		170	2
98	JAN	23	306	40.99	19 24.77	155 16.90	9.74	19	4	.07	.9	.7	INTL		2.4U		128	0
98	JAN	23	409	18.47	19 24.83	155 16.38	8.64	17	3	.12	1.1	.9	INTL		2.4U		146	1
98	JAN	23	419	24.15	19 24.21	155 16.60	10.73	18	4	.09	1.1	.8	INTL				105	1
98	JAN	23	530	53.22	19 25.44	155 16.00	10.76	20	4	.08	.9	.6	INTL				163	2
98	JAN	23	610	54.61	19 24.04	155 15.69	2.37	18	4	.09	.3	.4	SECL		3.3U		114	2
98	JAN	23	803	40.31	19 24.33	155 16.00	9.05	20	4	.11	.6	.6	INTL		2.8U		123	1
98	JAN	23	913	13.02	19 23.88	155 16.93	10.40	16	4	.08	.9	.6	INTL		2.8U		113	2
98	JAN	23	1112	30.74	19 22.90	155 17.03	11.74	25	8	.09	.6	.6	INTL		3.0U		67	1
98	JAN	23	1223	35.47	19 21.99	155 17.81	4.26	16	6	.09	.5	.7	SWRL		2.7U		172	3
98	JAN	23	1237	38.96	19 24.28	155 18.52	11.00	17	4	.08	1.2	.7	INTL		2.5U		131	3
98	JAN	23	1318	11.00	19 23.69	155 17.21	5.46	22	6	.08	.6	.5	INTL		2.9U		71	1
98	JAN	23	1439	39.60	19 24.81	155 15.66	11.93	22	8	.08	1.2	.8	INTL		3.1U		142	2
98	JAN	23	1741	37.73	19 23.91	155 17.16	3.12	19	4	.09	.5	.3	SSCL		2.8U		72	1
98	JAN	23	1927	33.28	19 23.97	155 16.53	7.96	17	3	.10	.9	.7	INTL		2.9U		96	0
98	JAN	23	2019	3.43	19 23.60	155 17.17	3.29	24	6	.09	.3	.2	SSC		2.4U		71	1
98	JAN	23	2035	14.02	19 22.85	155 13.45	3.39	17	4	.11	.5	.4	SERL		2.5U		126	1
98	JAN	23	2208	25.16	19 23.85	155 15.50	1.58	19	4	.10	.2	.3	SECL		2.8U		99	2
98	JAN	24	8	58.35	19 25.71	155 15.36	8.31	19	4	.10	.9	.7	INTL		2.5U		174	3
98	JAN	24	157	3.39	19 24.29	155 15.94	15.62	20	5	.09	1.5	.7	DEPL				121	1
98	JAN	24	948	22.49	19 24.27	155 16.13	4.98	19	4	.11	.6	.6	SECL		2.4U		121	1
98	JAN	24	1157	4.49	19 23.06	155 17.18	11.54	18	4	.08	.8	.7	INTL		2.9U		68	1
98	JAN	24	1407	7.64	19 24.69	155 15.62	0.56	20	3	.10	.2	.4	SNCL				137	2
98	JAN	24	1829	57.05	19 26.19	155 15.10	11.30	19	4	.07	1.1	.7	INTL				181	3
98	JAN	24	1926	38.07	19 24.40	155 16.30	11.02	17	4	.07	1.1	.7	INTL		2.4U		131	1

ORIGIN TIME					LAT N	LON W	DEPTH	N	N	RMS	ERH	ERZ			PREF	N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG MIN	DEG MIN	KM	RD	S	SEC	KM	KM	LOC	REMKS	MAG	RD	GAP	DS
98	JAN	24	2018	35.52	19 24.22	155 16.56	11.20	19	4	.11	.8	.7	INTL		2.3U		108	1
98	JAN	24	2113	6.65	19 25.15	155 16.08	9.56	19	4	.08	.9	.7	INTL		2.7U		152	2
98	JAN	24	2236	23.82	19 23.36	155 15.71	10.56	19	4	.09	.8	.7	INTL		2.5U		85	2
98	JAN	25	9	52.14	19 25.40	155 16.20	9.81	20	4	.12	.9	.8	INTL		2.5U		152	2
98	JAN	25	219	31.03	19 24.02	155 15.01	1.22	20	4	.11	.2	.3	SECL		2.9U		91	2
98	JAN	25	246	25.56	19 19.64	155 8.14	9.34	40	5	.09	.5	.5	SF4		2.4U		117	4
98	JAN	25	414	29.50	19 24.50	155 16.01	9.92	20	4	.10	.9	.8	INTL		2.4U		129	2
98	JAN	25	551	14.24	19 24.44	155 16.57	12.08	20	4	.08	1.0	.8	INTL		2.6U		124	1
98	JAN	25	825	38.79	19 28.65	155 15.32	31.95	5719		.10	.6	.6	DEPF		3.3U		125	3
98	JAN	25	1140	13.70	20 2.77	155 34.51	29.96	33	4	.11	1.0	2.4	KOH		2.4U		213	23
98	JAN	25	1843	41.43	19 54.15	155 26.64	38.58	38	5	.11	1.0	1.7	KEA		2.4U		185	33
98	JAN	26	1032	59.92	19 20.84	155 6.05	9.09	43	9	.10	.5	.4	SF4		3.1U		152	5
98	JAN	26	1609	30.27	19 12.23	155 41.95	6.29	32		.15	.5	1.5	LSW		2.6U		80	9
98	JAN	27	331	3.31	19 19.85	155 13.41	9.75	40	8	.12	.4	.6	SF2		2.6U		119	5
98	JAN	27	628	25.45	19 12.53	155 18.40	50.72	39	6	.10	.9	1.4	DEPT				188	10
98	JAN	27	819	14.74	19 26.13	155 18.91	6.01	27	5	.10	.4	.7	INT		1.5U		95	3
98	JAN	27	1557	14.81	19 20.17	155 7.84	8.71	40	7	.12	.5	.6	SF4		2.9U		125	5
98	JAN	27	1655	3.23	19 24.93	155 20.08	1.31	17	5	.09	.3	.5	KAO		1.4U		102	4
98	JAN	27	1729	44.48	19 24.80	155 18.48	4.84	4811		.12	.3	.5	SNCF		3.9U		50	2
98	JAN	27	1851	12.22	19 25.06	155 18.72	5.54	26	5	.08	.3	.6	INT		2.0U		71	2
98	JAN	27	1851	15.16	19 24.81	155 18.33	5.38	40	9	.11	.3	.5	INT		3.0U		65	2
98	JAN	27	1957	57.57	19 25.26	155 19.06	5.35	42	9	.11	.3	.7	KAO		2.7U		61	3
98	JAN	27	2001	43.05	19 25.43	155 19.20	5.30	4912		.12	.3	.6	KAOF		4.1U		65	3
98	JAN	27	2003	0.91	19 25.10	155 18.24	5.49	34	7	.09	.3	.5	INTF		3.7U		70	1
98	JAN	27	2006	59.17	19 25.30	155 19.08	6.09	25	9	.10	.5	.9	KAOF		3.0U		75	3
98	JAN	27	2008	13.76	19 25.40	155 19.25	7.42	40	9	.09	.3	.5	KAOF		3.0U		65	3
98	JAN	27	2008	26.10	19 25.30	155 19.75	6.81	38	9	.08	.3	.7	KAOF		3.0U		85	4
98	JAN	27	2008	39.24	19 25.31	155 18.90	6.32	25	7	.10	.4	.7	INTF		3.0U		121	2
98	JAN	27	2009	57.31	19 25.38	155 19.21	5.92	4512		.10	.3	.7	KAOF		3.1U		77	3
98	JAN	27	2011	57.40	19 25.43	155 19.08	4.98	46	9	.12	.3	.7	KAOF		4.1U		64	3
98	JAN	27	2014	29.35	19 25.20	155 19.20	6.49	33	9	.09	.3	.6	KAOF		3.4U		82	3
98	JAN	27	2014	56.11	19 25.26	155 19.27	6.14	4312		.10	.3	.6	KAOF		3.1U		63	3
98	JAN	27	2018	37.85	19 25.19	155 19.03	6.43	42	9	.10	.3	.6	KAOF		2.5U		60	3
98	JAN	27	2021	46.85	19 24.92	155 20.39	2.58	35	7	.10	.3	.7	KAOF		2.0U		56	5
98	JAN	27	2024	32.49	19 26.18	155 18.73	7.92	4611		.11	.3	.4	INTF		3.2U		71	2
98	JAN	27	2028	46.73	19 25.04	155 19.29	6.36	40	9	.10	.3	.6	KAOF		2.3U		61	3
98	JAN	27	2031	18.58	19 25.20	155 19.33	4.72	27	7	.10	.4	.9	KAOF		2.0U		72	3
98	JAN	27	2032	53.73	19 25.54	155 19.01	5.51	4712		.11	.3	.6	INTF		3.0U		64	2
98	JAN	27	2034	10.89	19 24.94	155 19.28	5.90	35	9	.09	.3	.7	KAOF		2.5U		66	3
98	JAN	27	2042	5.34	19 24.65	155 19.44	5.79	27	5	.09	.4	1.0	KAO		1.9U		60	4
98	JAN	27	2042	51.51	19 24.68	155 19.77	3.85	25	6	.11	.4	1.1	KAO		1.8U		59	4
98	JAN	27	2043	59.84	19 24.68	155 19.74	4.55	27	7	.10	.3	1.2	KAO		1.7U		87	4
98	JAN	27	2046	4.39	19 25.37	155 19.01	5.71	4612		.12	.3	.6	INTF		3.4U		62	2
98	JAN	27	2048	35.81	19 25.16	155 19.30	5.45	31	7	.10	.3	.8	KAO		2.4U		71	3
98	JAN	27	2054	59.28	19 25.22	155 19.13	5.41	27	7	.10	.4	.9	KAO		1.7U		74	3

ORIGIN TIME					LAT N	LON W	DEPTH	N	N	RMS	ERH	ERZ	LOC	PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG MIN	DEG MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	JAN	27	2058	25.16	19 25.24	155 19.53	5.89	39	9	.10	.3	.7	KAOF	2.4U		65	3
98	JAN	27	2104	55.63	19 25.26	155 18.87	6.40	38	9	.09	.3	.5	INT	2.8U		59	2
98	JAN	27	2117	52.53	19 24.78	155 19.59	4.24	29	5	.10	.3	1.0	KAO	2.0U		62	4
98	JAN	27	2127	42.56	19 24.97	155 18.75	6.99	21	5	.07	.4	.8	INT	1.7U		87	2
98	JAN	27	2131	26.05	19 24.78	155 19.20	5.73	21	5	.10	.5	1.2	KAO	1.5U		93	3
98	JAN	27	2137	38.77	19 25.31	155 19.10	6.29	4411		.12	.3	.6	KAOF	3.1U		62	3
98	JAN	27	2143	19.06	19 25.00	155 19.36	5.79	4612		.11	.3	.7	KAOF	3.3U		61	3
98	JAN	27	2232	46.69	19 24.90	155 19.62	3.25	28	6	.10	.3	.7	KAO	1.8U		64	4
98	JAN	27	2234	48.67	19 25.27	155 19.06	5.35	38	9	.11	.3	.7	KAOF	2.1U		74	3
98	JAN	27	2242	9.73	19 25.00	155 19.90	3.57	28	6	.12	.3	.9	KAO	2.0U		63	4
98	JAN	27	2246	25.55	19 25.31	155 19.23	6.01	5013		.13	.3	.6	KAOF	3.6U		63	3
98	JAN	27	2250	56.97	19 24.90	155 19.28	5.71	4411		.11	.3	.7	KAOF	3.4U		66	3
98	JAN	27	2256	33.88	19 25.27	155 19.36	5.65	36	7	.13	.3	.8	KAO	2.3U		64	3
98	JAN	27	2306	9.49	19 25.16	155 19.36	5.64	3910		.11	.3	.8	KAOF	2.3U		71	3
98	JAN	27	2337	56.42	19 24.86	155 19.44	4.64	27	8	.10	.4	1.0	KAO	1.6U		64	3
98	JAN	28	253	54.60	19 25.11	155 18.48	4.92	34	8	.10	.3	.5	SNC	1.9U		72	2
98	JAN	28	655	6.40	19 24.95	155 19.24	5.95	36	8	.09	.3	.7	KAO	2.4U		67	3
98	JAN	28	716	2.19	19 21.44	155 5.75	10.26	35	4	.08	.5	.3	SF4	2.1U		150	5
98	JAN	28	825	14.38	19 25.39	155 18.91	5.62	4712		.11	.3	.6	INTF	3.3U		78	2
98	JAN	28	833	35.55	19 25.00	155 19.11	5.97	27	7	.07	.4	.7	KAO	1.6U		69	3
98	JAN	28	1042	50.92	19 24.92	155 19.85	7.52	32	8	.09	.3	.8	KAO	2.2U		93	4
98	JAN	28	1635	27.76	19 25.29	155 18.75	6.33	41	9	.10	.3	.6	INTF	3.0U		59	2
98	JAN	29	404	15.54	19 24.91	155 19.53	5.05	30	8	.08	.3	.9	KAO	2.1U		65	3
98	JAN	30	458	13.58	19 24.85	155 19.61	7.39	34	7	.10	.3	.7	KAO	1.8U		61	4
98	JAN	30	805	43.28	19 18.22	155 13.21	7.72	32	4	.10	.4	.9	SF2	2.3U		93	2
98	JAN	30	944	16.15	19 24.50	155 15.17	2.78	21	4	.11	.4	.4	SECL	3.1U		125	2
98	JAN	30	1315	37.47	19 26.00	155 28.24	10.82	43	9	.10	.3	.9	KAO	2.7U		45	7
98	JAN	30	1625	5.99	20 5.97	155 33.56	30.85	39	6	.12	1.2	2.0	KEAF	3.0U		218	23
98	JAN	30	1844	26.32	19 20.24	155 11.91	8.60	32	3	.09	.4	.6	SF3	2.3U		78	5
98	JAN	30	1951	35.56	19 10.57	155 15.13	52.58	35	6	.09	1.2	1.3	DEP	2.5U		217	12
98	JAN	31	1004	17.02	19 45.91	155 29.68	15.21	41	6	.11	.6	.4	KEA	2.5U		101	4
98	JAN	31	1153	5.54	19 23.23	155 17.00	9.25	18	4	.10	.9	.7	INTL	3.2U		114	0
98	JAN	31	1908	38.73	19 24.81	155 14.94	6.40	21	4	.12	.6	.7	INTL	3.1U		151	1
98	FEB	1	333	18.06	19 24.34	155 17.29	10.98	21	3	.10	.6	.8	INTL	1.7U		57	1
98	FEB	1	340	39.51	19 20.88	155 7.64	5.08	24	2	.09	.7	1.4	SF4	2.3U		185	4
98	FEB	1	508	46.46	19 23.25	155 16.39	10.46	23	5	.09	.7	.6	INTL	3.3U		69	1
98	FEB	1	512	20.73	19 24.48	155 16.25	8.19	16	4	.08	1.0	.8	INTL	2.5U		134	1
98	FEB	1	606	4.43	19 18.97	155 15.08	7.02	30	2	.11	.4	1.0	SF1	2.3U		92	5
98	FEB	1	2057	43.54	20 2.84	155 44.62	10.33	42	6	.10	.8	1.0	KOHF	3.6U		148	10
98	FEB	2	1430	22.71	19 30.21	155 15.74	24.70	5316		.11	.6	.7	DEP	2.8U		130	5
98	FEB	2	2218	26.33	19 22.87	155 17.36	8.14	20	4	.12	.6	.6	INTL			97	1
98	FEB	3	633	19.26	19 24.14	155 26.75	12.15	43	9	.11	.3	.8	KAO	2.8U		36	3
98	FEB	3	1802	8.17	19 20.56	155 4.30	11.59	38	9	.10	.5	.3	SF5	2.1U		177	8
98	FEB	4	458	44.08	19 21.11	155 8.11	8.03	38	8	.09	.4	.5	SF4	2.1U		115	4
98	FEB	4	1924	31.52	19 24.95	155 19.21	6.54	4211		.11	.3	.6	KAO	2.7U		68	3

ORIGIN TIME					LAT N	LON W	DEPTH	N	N	RMS	ERH	ERZ	LOC	PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG MIN	DEG MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	FEB	4	1928	10.75	19 25.02	155 19.06	6.50	33	9	.10	.3	.7	KAO	2.1U		70	3
98	FEB	4	1935	6.40	19 24.76	155 19.49	4.87	25	6	.10	.4	1.1	KAO	1.8U		92	4
98	FEB	5	45	58.79	19 22.02	155 27.90	11.54	34	3	.10	.3	1.2	KAO	3.0U		40	9
98	FEB	5	701	40.18	19 25.32	155 18.81	6.21	36	7	.10	.3	.6	INT	2.7U		77	2
98	FEB	5	1716	16.67	19 23.41	155 15.24	9.57	17	4	.07	.8	.6	INTL	2.8U		100	2
98	FEB	6	1656	53.04	19 20.09	155 6.15	6.86	18	2	.10	.7	1.1	SF4	3.6U		158	6
98	FEB	7	1605	45.36	19 34.54	156 25.31	1.06	40	7	.13	1.8	.7	DIS	3.1U		283	62
98	FEB	7	1616	28.59	19 24.61	155 17.25	1.58	13	2	.09	.4	.2	SNCL	1.6U		80	1
98	FEB	7	1841	25.12	19 25.26	155 19.65	6.50	38	7	.09	.3	.8	KAO	2.4U		70	4
98	FEB	7	1906	42.15	19 20.54	155 11.87	9.11	4511		.10	.3	.5	SF3	2.4U		80	4
98	FEB	8	600	54.46	19 23.95	155 15.23	3.45	18	4	.11	.4	.5	SECL	3.1U		101	2
98	FEB	8	1635	16.92	19 20.26	155 11.63	8.60	27	2	.11	.5	.8	SF3	2.0U		80	5
98	FEB	8	1643	49.48	19 33.86	155 42.45	10.69	19	3	.14	.9	1.1	MLO	2.0U		213	9
98	FEB	8	1748	57.66	19 24.91	155 18.99	5.91	20	4	.09	.4	1.0	INTL	1.9U		108	3
98	FEB	9	3	36.20	19 20.10	155 7.72	7.66	30	6	.09	.7	.7	SF4	1.8U		185	5
98	FEB	9	402	54.42	19 24.88	155 18.44	4.90	32	8	.10	.3	.5	SNC	1.6U		67	2
98	FEB	9	1032	14.90	19 24.20	155 18.70	7.99	11	2	.11	.8	1.3	INTL	1.4U		152	3
98	FEB	9	2224	21.82	19 15.32	155 18.44	29.72	34	6	.12	.8	.8	DEP	1.7U		179	5
98	FEB	10	228	53.14	19 16.55	155 30.09	9.23	34	5	.14	.4	.8	LSW	1.9U		63	3
98	FEB	10	454	38.90	19 21.42	155 7.50	6.70	26	4	.08	.7	.6	SF4	1.9U		191	3
98	FEB	10	2044	35.36	19 24.97	155 16.44	10.21	10	2	.09	.9	1.1	INTL	1.1U		151	2
98	FEB	10	2145	54.54	19 27.34	154 49.64	4.93	16	2	.14	1.8	1.7	SLEF	2.0U		317	10
98	FEB	10	2238	16.34	19 24.52	155 18.02	10.52	11	2	.09	.9	1.1	INTL	1.5U		131	3
98	FEB	11	48	4.41	19 26.97	155 30.15	13.55	24	3	.11	.5	1.3	DML	1.5U		45	6
98	FEB	11	539	23.26	19 20.75	155 23.17	9.52	34	5	.12	.4	.8	SWR	2.4U		66	1
98	FEB	11	814	17.07	19 26.25	155 16.09	8.99	12	4	.08	1.6	.8	INTF	2.6U		213	3
98	FEB	11	818	15.11	19 20.99	155 29.12	10.42	28	3	.09	.4	1.1	KAO	2.4U		42	10
98	FEB	11	1557	42.10	19 26.72	155 17.26	8.73	10	2	.09	2.3	1.1	INTL			200	3
98	FEB	11	1558	15.76	19 22.02	155 30.32	11.35	32	3	.10	.3	.8	KAO	1.6U		45	5
98	FEB	11	1604	10.11	19 26.67	155 30.11	11.75	29	6	.12	.4	1.0	KAO	2.2U		67	6
98	FEB	12	919	52.52	19 28.07	154 52.94	1.00	17	1	.13	1.2	.5	SLEF	2.3U		310	4
98	FEB	12	1653	5.17	19 20.97	155 30.24	11.59	37	3	.09	.4	1.0	KAO	2.2U		50	5
98	FEB	13	27	33.22	18 56.07	155 28.21	35.66	45	7	.08	.9	1.7	DLS	2.4U		241	21
98	FEB	13	1553	2.53	19 22.07	155 19.77	28.63	29	4	.11	.9	1.5	DML	1.6U		92	6
98	FEB	13	1849	31.49	19 25.40	155 39.45	2.23	14	4	.08	.6	.4	MLO	1.7U		123	3
98	FEB	14	138	29.60	19 19.62	155 13.92	6.73	4210		.12	.3	.7	SF2	2.5U		63	5
98	FEB	14	359	6.83	19 18.41	155 13.17	7.23	35	4	.15	.5	.9	SF2	2.2U		90	3
98	FEB	14	445	52.12	19 20.04	155 10.98	8.50	35	5	.10	.4	.6	SF3	1.6U		87	4
98	FEB	14	2327	27.86	18 53.63	156 41.91	9.85	37	7	.12	7.7	10.6	DIS -	3.6U		318	96
98	FEB	15	59	40.93	19 17.93	155 23.39	6.78	4713		.12	.3	1.0	SWR	2.5U		95	4
98	FEB	15	108	55.14	19 19.77	155 48.30	9.31	32	5	.12	.4	.6	KON	2.4U		146	10
98	FEB	15	834	30.98	19 21.28	155 28.26	11.57	30	1	.12	.4	1.0	KAO	2.1U		40	3
98	FEB	16	728	32.37	19 23.84	155 15.97	3.45	26	7	.10	.4	.3	SEC	2.7U		135	1
98	FEB	16	801	2.39	18 55.75	155 31.02	37.67	24	6	.09	1.8	1.2	DLS	1.8U		264	17
98	FEB	16	1004	8.36	19 19.27	155 13.34	9.20	42	9	.13	.4	.6	SF2	3.4U		125	6

ORIGIN TIME						LAT N	LON W	DEPTH	N	N	RMS	ERH	ERZ	LOC	PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC		DEG MIN	DEG MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	FEB	16	1050	31.86		19 18.09	155 13.12	8.12	29	4	.09	.5	.6	SF2	1.7U		100	2
98	FEB	16	1849	44.01		19 25.16	155 18.97	6.18	39	10	.10	.3	.6	INT	2.7U		112	2
98	FEB	16	2327	37.15		19 12.00	154 35.79	6.16	29		.13	12.3	3.2	DIS -	2.8U		317	44
98	FEB	17	140	10.85		19 20.88	155 8.05	6.83	35	5	.11	.4	.6	SF4	2.5U		117	4
98	FEB	17	526	23.10		19 20.01	155 7.69	9.17	27	4	.09	.8	.5	SF4	2.0U		186	5
98	FEB	17	1709	12.65		19 10.95	155 28.57	33.22	27	5	.08	.9	1.0	DLS	1.3U		110	3
98	FEB	17	1955	51.05		18 58.38	155 6.91	17.05	33	4	.56	5.3	43.7	LOI -	2.0U		267	35
98	FEB	17	2119	9.38		19 29.11	154 37.89	45.22	38	8	.12	1.8	1.0	DIS	2.6U		307	31
98	FEB	17	2339	29.16		19 23.15	155 14.45	3.78	35	5	.12	.4	.5	SEC	2.8U		100	3
98	FEB	18	346	32.70		19 25.06	155 38.57	3.04	16	3	.09	.8	.5	MLO	2.4U		183	2
98	FEB	18	711	48.26		20 44.27	157 25.05	34.73	19	1	.11	3.6	4.6	DIS	3.1U		186	98
98	FEB	18	1735	11.79		19 25.34	155 20.35	9.36	30	5	.10	.4	.9	KAO	2.0U		96	4
98	FEB	19	1040	51.40		21 0.96	155 37.81	6.87	22	3	.09	8.9	11.1	DIS -	2.8U		333	100
98	FEB	19	1822	55.76		19 11.75	155 41.45	13.72	24	4	.12	.5	.5	DLS	2.3U		141	9
98	FEB	19	2045	33.37		19 16.66	155 28.54	10.74	37	5	.12	.3	.6	LSW	2.8U		56	4
98	FEB	20	3	48.15		19 45.42	156 9.69	46.96	22	4	.10	1.4	1.8	HUA	1.6U		254	50
98	FEB	20	318	12.31		20 45.38	154 51.90	20.01	22	3	.10	2.3	10.5	DIS -	2.5U		333	125
98	FEB	20	1149	19.50		19 54.79	155 2.33	45.84	39	7	.11	1.5	1.6	KEA	2.7U		272	46
98	FEB	20	1353	49.30		19 20.38	155 8.79	8.19	31	4	.09	.6	.7	SF4	2.7U		146	4
98	FEB	20	1451	1.47		19 20.47	155 12.89	8.48	27	4	.09	.5	.7	SF2	1.5U		67	4
98	FEB	21	144	12.62		19 18.19	155 52.75	12.26	18	2	.12	1.0	.5	KON	2.1U		231	4
98	FEB	21	523	38.37		19 20.30	155 53.46	9.30	20	6	.18	1.0	1.3	KON	2.1U		229	8
98	FEB	21	1557	41.48		19 54.61	155 31.13	26.38	29	4	.11	1.6	1.3	KEA	2.3U		270	16
98	FEB	22	2331	50.50		18 57.49	155 28.08	40.19	51	17	.10	.7	1.1	DLS	2.9U		232	21
98	FEB	23	932	47.56		19 59.01	155 31.13	1.03	28	4	.12	1.5	.8	KEA	2.3U		282	23
98	FEB	23	1313	2.38		19 18.50	155 13.62	30.63	26	3	.08	.9	1.1	DEP	1.4U		74	3
98	FEB	23	2111	40.08		19 24.79	155 17.15	10.84	12	1	.06	.8	1.3	INTL	1.5U		85	0
98	FEB	23	2251	19.18		19 18.61	155 49.77	8.78	22	4	.13	.6	1.3	KON	2.1U		136	7
98	FEB	23	2309	55.74		19 46.13	156 7.43	44.22	22	5	.10	2.2	2.7	HUA	2.0U		294	47
98	FEB	24	133	15.21		19 7.55	155 27.98	32.16	41	5	.10	.7	.9	DLS	2.2U		171	4
98	FEB	24	434	58.20		19 23.17	155 17.21	2.92	16	3	.08	.4	.3	SSC	2.1U		76	1
98	FEB	24	455	15.28		19 19.60	155 8.42	4.81	26	3	.07	.7	1.6	SSF	1.9U		158	4
98	FEB	24	1007	41.24		19 55.99	155 20.79	6.41	24	4	.14	1.2	1.2	KEA	2.6U		303	21
98	FEB	24	1535	3.69		19 29.20	155 27.37	7.99	32	5	.10	.4	1.1	KAO	2.3U		86	5
98	FEB	26	509	16.52		19 51.67	155 10.19	42.29	17	3	.08	1.6	1.5	KEA	1.7U		292	32
98	FEB	26	634	7.69		19 8.69	155 34.08	5.90	19	4	.11	.8	2.4	LSW	1.7U		191	11
98	FEB	26	1229	16.28		19 21.94	155 3.68	7.77	36	7	.14	.6	.8	SF5	2.6U		167	7
98	FEB	26	2248	27.53		19 19.75	155 1.40	9.73	28	2	.08	1.1	.5	SF5	1.8U		221	13
98	FEB	27	2247	2.69		19 28.03	155 25.17	11.57	37	6	.10	.4	.8	KAO	2.2U		51	5
98	FEB	27	2256	1.39		19 43.49	155 4.71	10.15	13	4	.09	.9	1.1	HIL	2.0U		257	34
98	FEB	28	35	36.24		19 20.58	155 6.91	6.19	25	2	.09	.8	.8	SF4	2.0U		211	5
98	FEB	28	1137	25.02		18 57.23	155 28.32	40.75	34	7	.08	1.4	1.1	DLS	2.0U		244	21
98	FEB	28	1722	23.90		19 26.33	155 18.96	5.77	28	7	.13	.5	.9	INT	1.6U		153	3
98	FEB	28	1803	49.18		19 33.63	155 58.33	13.55	43	5	.12	1.7	.7	KONF	4.1U		243	10
98	MAR	1	1439	27.95		19 25.15	155 18.70	8.08	18	5	.09	.5	.7	INTL	2.4U		113	2

ORIGIN TIME						LAT N	LON W	DEPTH	N	N	RMS	ERH	ERZ	LOC	PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC		DEG MIN	DEG MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	MAR	1	1519	15.96		19 24.41	155 17.57	11.65	10	2	.07	1.9	1.4	INTL	2.6U		85	1
98	MAR	2	1006	55.32		19 13.57	155 30.16	36.04	31	4	.07	.8	1.2	DLS	1.9U		103	3
98	MAR	2	1132	11.44		19 29.52	155 25.61	11.75	36	6	.09	.4	.8	KAO	2.2U		87	4
98	MAR	2	1136	49.02		19 24.97	155 13.82	21.90	29	3	.09	.8	1.0	DEP	1.4U		156	5
98	MAR	2	1932	32.36		19 19.52	155 8.77	6.98	23	6	.08	.5	.9	SF4F	1.3U		145	4
98	MAR	3	651	27.64		19 16.83	155 11.73	11.31	29	5	.13	.7	.5	SF3	2.1U		164	7
98	MAR	3	854	29.06		19 19.48	155 11.52	7.87	21	5	.08	.4	.9	SF3	1.5U		95	6
98	MAR	3	1056	29.06		19 8.71	155 19.15	33.31	37	6	.11	1.1	.9	LOI	2.4U		194	13
98	MAR	3	1704	42.12		19 14.09	155 28.07	7.18	33	4	.16	.4	1.0	LSW	2.5U		91	4
98	MAR	3	1959	22.49		18 57.48	155 27.95	39.76	37	6	.08	1.5	1.0	DLS	1.8U		243	21
98	MAR	3	2127	26.28		19 23.00	155 14.68	3.55	13	2	.04	.3	.5	SEC	2.0U		76	2
98	MAR	3	2247	0.53		19 21.36	155 18.70	3.59	37	5	.12	.3	.7	SWR	2.9U		43	3
98	MAR	4	515	24.92		19 24.49	154 57.26	6.07	21	3	.15	1.0	.9	LER	2.1U		203	7
98	MAR	4	700	30.82		19 30.15	155 27.68	8.10	38	8	.11	.4	1.0	MLO	2.8U		94	3
98	MAR	4	725	41.79		18 53.18	155 5.71	13.44	31	5	.19	5.9	8.4	LOI #	2.1U		296	45
98	MAR	4	1134	29.29		18 57.61	155 28.56	41.10	30	7	.08	1.5	1.1	DLS	2.1U		270	22
98	MAR	4	1656	42.85		19 19.43	155 12.88	9.74	34	4	.11	.6	.7	SF2	2.1U		172	6
98	MAR	4	1657	51.24		19 19.46	155 12.90	10.51	32	3	.11	.6	.8	SF2	2.7U		172	6
98	MAR	4	1740	13.00		19 19.81	155 13.38	9.17	32	2	.11	.6	.9	SF2	2.4U		169	5
98	MAR	4	2117	8.12		19 19.73	155 13.48	9.28	28	4	.12	.7	.8	SF2	1.5U		169	5
98	MAR	4	2320	6.72		19 49.23	156 14.46	10.15	19	4	.12	6.9	9.9	HUA -	1.6U		307	61
98	MAR	5	32	2.67		19 10.27	155 15.77	47.25	26	5	.10	1.5	1.0	DEP	1.1U		219	13
98	MAR	5	320	16.87		19 19.91	155 9.31	6.41	26	6	.09	.6	.8	SF3	1.3U		210	4
98	MAR	5	801	45.71		19 26.63	155 28.99	10.43	29	4	.07	.3	1.0	KAO	2.0U		68	8
98	MAR	5	2058	51.84		19 19.64	155 13.27	9.61	39	5	.13	.6	.7	SF2	2.9U		169	6
98	MAR	5	2208	24.32		19 18.99	155 12.87	4.08	23	4	.11	.4	1.3	SSF	1.5U		149	4
98	MAR	6	952	49.97		19 20.49	155 7.24	9.43	25	3	.08	.9	.4	SF4	2.4U		248	5
98	MAR	6	1832	7.90		19 25.14	155 19.15	6.89	34	7	.10	.3	.7	KAO	1.9U		109	3
98	MAR	7	107	13.82		19 37.63	155 49.63	15.04	42	8	.12	.8	.4	KON	2.5U		163	7
98	MAR	7	335	50.90		19 19.88	155 3.39	7.53	24	5	.11	.7	.9	SF5	1.7U		195	9
98	MAR	7	922	56.14		19 10.01	155 32.76	10.38	40	7	.14	.4	1.0	LSW	2.5U		116	9
98	MAR	7	1230	1.80		19 32.41	155 53.17	26.14	46	4	.11	.6	1.1	KON	3.4U		158	7
98	MAR	7	1400	19.67		18 53.49	155 28.23	45.92	25	5	.09	2.0	1.2	DLS	1.5U		267	23
98	MAR	7	1555	18.67		19 34.54	155 52.82	23.87	41	5	.11	.7	1.1	KON	3.0U		166	10
98	MAR	7	2113	12.46		19 32.74	155 53.21	27.28	32	4	.08	.6	.9	KON	2.1U		201	13
98	MAR	7	2140	10.39		19 21.39	155 29.96	11.94	28	3	.09	.4	1.1	KAO	2.0U		45	5
98	MAR	7	2217	21.54		19 20.97	155 7.33	9.50	44	10	.12	.4	.5	SF4	2.8U		130	4
98	MAR	8	323	10.43		19 17.89	155 13.14	6.41	32	4	.11	.5	.9	SF2	1.6U		104	2
98	MAR	8	700	9.30		19 26.64	155 30.08	10.42	25	5	.10	.4	1.1	KAO	1.9U		44	6
98	MAR	8	704	21.76		19 54.72	155 57.46	45.22	22	5	.11	1.8	2.2	HUA	1.7U		318	28
98	MAR	8	1453	21.78		19 59.70	155 35.88	11.11	30	5	.09	.9	.9	KOH	2.4U		195	24
98	MAR	8	2303	50.16		19 22.34	155 16.20	24.40	42	8	.12	.6	.9	DEP	1.7U		79	1
98	MAR	9	210	35.55		19 7.77	155 18.53	37.73	43	6	.09	.8	1.1	LOI	2.7U		199	15
98	MAR	9	653	46.47		19 20.98	155 6.22	7.15	28	5	.09	.5	.5	SF4	2.1U		148	5
98	MAR	9	1446	17.30		19 33.67	156 27.93	7.19	18	4	.14	9.4	12.1	DIS -	1.8U		324	74

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ			PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	MAR	9	1832	47.20	19	21.34	155	23.38	10.18	27	3	.10	.4	.8	SWR	1.6U		50	2
98	MAR	10	337	14.84	19	20.10	155	13.03	8.24	35	6	.13	.4	.7	SF2	1.9U		69	5
98	MAR	12	1248	37.49	19	21.52	155	7.39	6.80	30	6	.10	.8	.7	SF4	2.3U		196	3
98	MAR	12	2252	24.59	19	43.53	156	12.08	41.07	41	5	.13	1.1	1.3	HUA	2.6U		259	38
98	MAR	13	2203	2.02	19	24.69	155	38.19	3.05	19	4	.16	.6	.6	MLO	2.0U		100	1
98	MAR	13	2249	55.04	19	20.59	155	4.18	7.96	30	2	.10	.5	.4	SF5	2.3U		178	8
98	MAR	14	1155	19.20	19	25.91	155	16.23	3.65	18	4	.09	.6	.5	SNCL	1.9U		80	2
98	MAR	15	817	38.24	19	20.10	155	10.76	8.46	29	5	.12	.5	.9	SF3	2.0U		93	4
98	MAR	15	1828	42.88	19	22.99	155	17.14	12.31	28	4	.10	.5	.7	INT	1.1U		59	1
98	MAR	16	235	32.90	19	12.09	154	57.86	15.54	17	1	.13	3.4	1.4	DIS	2.0U		267	20
98	MAR	16	1027	39.45	19	32.67	155	20.41	54.67	31	3	.11	1.5	1.5	DML	2.0U		193	7
98	MAR	16	1033	2.98	19	18.26	155	12.99	9.71	28	4	.12	.6	.8	SF2	2.3U		139	8
98	MAR	16	1039	37.04	19	18.21	155	13.18	7.30	32	4	.11	.5	.8	SF2	1.7U		94	2
98	MAR	16	1625	6.24	19	21.02	155	11.45	8.36	28	4	.11	.5	.7	SF3	1.9U		99	3
98	MAR	17	1217	9.46	20	15.04	156	18.36	13.20	23	5	.14	7.3	10.0	KOH	- 2.2U		306	57
98	MAR	18	501	56.27	19	11.73	155	27.73	8.14	32	5	.11	.4	.7	LSW	2.8U		111	4
98	MAR	18	533	31.60	19	29.19	155	33.47	17.75	22	5	.12	.5	.7	DML	1.4U		58	3
98	MAR	18	943	8.81	19	26.74	155	15.16	28.50	32	7	.09	.8	.8	DEP	2.0U		169	5
98	MAR	18	1544	24.65	19	21.12	155	8.02	9.33	31	6	.08	.6	.4	SF4	2.6U		171	4
98	MAR	19	430	52.14	19	19.55	155	11.80	9.91	37	5	.11	.5	.5	SF3	2.9U		93	5
98	MAR	19	531	56.41	19	24.13	155	35.06	7.32	17	6	.08	.5	.9	MLO	1.8U		64	4
98	MAR	19	1636	28.88	19	13.65	155	32.57	8.45	35	4	.17	.5	1.1	LSW	2.3U		119	5
98	MAR	19	1640	40.81	19	20.54	155	12.92	7.89	29	3	.10	.5	.7	SF2	1.6U		65	4
98	MAR	20	150	18.83	19	20.29	155	6.36	7.60	31	4	.10	.4	.4	SF4	2.0U		145	6
98	MAR	20	236	51.54	19	26.26	155	19.10	6.08	21	5	.11	.6	1.0	KAO	2.0U		158	3
98	MAR	20	642	59.55	19	21.91	155	4.95	9.69	43	6	.11	.6	.4	SF5F	3.5U		145	5
98	MAR	20	1942	44.82	19	18.81	155	48.54	10.95	37	7	.10	.5	.3	KON	2.6U		140	8
98	MAR	21	26	59.46	19	23.95	154	48.77	44.89	19	5	.08	2.4	1.0	LER	1.2U		269	12
98	MAR	21	110	21.18	19	32.73	155	57.89	12.00	34	5	.09	1.1	.4	KON	3.2U		238	8
98	MAR	22	435	23.76	19	27.19	154	58.77	1.74	16	1	.08	.9	.7	SLE	2.4U		142	6
98	MAR	22	2332	32.45	19	19.63	154	55.70	42.75	43	7	.11	1.2	.8	LER	2.7U		227	14
98	MAR	22	2345	37.95	19	31.65	155	35.67	14.11	41	8	.10	.6	.3	DML	2.5U		122	2
98	MAR	23	914	30.09	19	21.24	155	27.69	10.61	33	2	.11	.4	1.0	KAO	2.4U		43	2
98	MAR	23	2114	1.33	19	19.46	155	30.33	10.54	31	5	.09	.3	.8	KAO	2.1U		58	7
98	MAR	24	339	17.75	18	46.75	156	33.09	7.07	19	3	.10	8.7	11.1	DIS	- 2.2U		336	93
98	MAR	25	1233	25.85	19	47.80	155	30.78	22.39	51	13	.10	.5	1.2	KEAF	3.5U		144	6
98	MAR	25	1329	31.81	19	19.79	155	30.34	10.68	28	3	.08	.3	.9	KAO	2.1U		56	7
98	MAR	25	1407	59.40	19	37.92	155	7.04	38.71	48	10	.09	.8	1.0	HILF	3.4U		181	25
98	MAR	25	1703	58.00	19	25.12	155	38.81	2.55	18	5	.08	.6	.3	MLO	2.4U		188	2
98	MAR	25	2022	58.66	19	19.54	155	8.69	5.50	26	4	.08	.5	1.0	SF4	2.0U		148	4
98	MAR	25	2117	24.28	19	19.44	155	13.49	9.50	25	2	.11	.6	.8	SF2	2.0U		124	6
98	MAR	25	2242	54.13	19	22.03	155	6.35	9.65	31	3	.08	.5	.4	SF4	2.7U		137	3
98	MAR	26	915	44.00	19	42.43	156	27.53	7.21	24	5	.13	7.8	10.0	DIS	- 2.0U		322	65
98	MAR	26	1953	28.99	19	20.89	155	6.98	8.53	29	2	.09	.6	.6	SF4	2.3U		129	5
98	MAR	29	1030	28.84	21	1.66	155	10.62	6.97	44	7	.13	7.7	9.7	DIS	- 3.8U		315	118

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ			PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	MAR	29	1242	14.56	19	30.61	156	2.43	8.51	18	5	.10	1.0	.8	KON	2.1U		300	13
98	MAR	29	1932	15.34	19	21.04	155	30.31	10.94	32	4	.08	.3	.9	KAO	2.4U		49	5
98	MAR	30	513	43.87	19	23.00	155	33.32	7.47	29	5	.08	.3	.9	MLO	2.6U		46	4
98	MAR	30	1745	22.22	19	23.93	155	16.31	10.64	10	2	.15	2.3	1.4	INTL	2.1U		102	1
98	MAR	30	1759	56.60	19	12.17	156	20.89	41.19	22	3	.09	2.0	2.6	DIS	2.7U		312	51
98	MAR	30	2014	52.86	19	16.70	155	22.17	7.31	43	8	.14	.4	1.1	SWR	3.2U		130	5
98	MAR	30	2254	44.63	19	51.00	156	18.42	27.33	25	1	.11	3.0	5.3	HUA	2.9U		322	68
98	MAR	31	348	54.57	19	25.68	155	16.90	8.51	12	3	.08	1.1	.6	INTL	2.1U		185	1
98	MAR	31	653	21.04	19	48.05	156	9.83	37.38	35	5	.10	1.8	2.3	HUA	2.8U		314	36
98	MAR	31	658	58.78	19	12.10	155	30.65	38.24	29	5	.08	.7	.9	DLS	1.8U		80	6
98	MAR	31	814	38.93	19	26.15	155	59.96	33.58	26	3	.08	2.2	1.1	KON	2.0U		286	23
98	MAR	31	1743	16.37	19	31.35	155	55.48	8.56	20	3	.15	1.5	.9	KON	2.7U		270	17
98	MAR	31	2005	22.25	19	9.07	155	37.40	8.97	37	6	.14	.4	1.0	LSW	3.0U		107	11
98	MAR	31	2309	21.09	19	26.32	155	25.86	6.96	28	4	.12	.4	1.5	KAO	2.9U		50	8
98	APR	1	1950	42.69	19	44.74	155	27.72	24.33	41	6	.08	.8	1.0	KEA	3.1U		107	4
98	APR	3	1145	20.47	19	21.77	155	30.42	10.59	32	4	.08	.4	.8	KAO	1.9U		46	5
98	APR	4	152	46.67	19	56.97	156	10.66	44.86	23	3	.08	2.2	2.9	KOH	1.9U		321	46
98	APR	4	850	54.49	19	10.43	155	39.33	8.47	30	5	.15	.5	1.4	LSW	2.5U		89	9
98	APR	5	43	51.94	19	23.44	155	14.49	4.34	47	11	.13	.3	.6	SECF	4.1U		98	3
98	APR	5	310	58.05	19	10.23	155	29.30	34.05	33	4	.07	.6	1.0	DLS	1.7U		104	3
98	APR	5	1236	2.76	19	23.27	155	15.10	3.32	18	6	.07	.3	.4	SEC	2.0U		76	2
98	APR	5	1709	43.83	19	23.34	155	14.95	3.35	23	6	.08	.3	.4	SEC	2.6U		73	2
98	APR	5	2017	47.76	19	23.45	155	14.95	3.60	20	3	.08	.4	.4	SEC	2.8U		76	3
98	APR	5	2029	52.55	19	18.66	155	13.16	9.88	35	4	.09	.5	.7	SF2	2.9U		133	7
98	APR	5	2036	23.70	19	18.08	155	13.26	8.07	32	3	.10	.5	.8	SF2	2.2U		93	2
98	APR	6	1328	2.21	19	29.95	155	27.82	5.74	26	4	.09	.3	1.4	KAO	2.5U		88	4
98	APR	6	1504	32.06	19	33.30	155	43.56	10.83	15	2	.09	1.0	1.3	KON	1.6U		217	7
98	APR	7	528	14.11	19	29.12	155	17.25	23.54	29	5	.08	1.2	.8	DEP	2.2U		179	3
98	APR	7	828	36.61	18	55.39	155	10.87	17.46	29	5	.17	2.0	16.1	LOI	- 1.9U		286	40
98	APR	7	1203	7.32	19	25.27	155	16.32	13.10	13	3	.16	2.1	1.5	DEPL	2.3U		167	1
98	APR	7	1539	5.34	19	16.96	155	29.20	10.84	27	4	.12	.4	1.1	LSW	2.4U		56	4
98	APR	7	2031	12.28	19	29.59	154	49.91	10.85	20	3	.10	1.8	.5	LER	2.8U		287	1
98	APR	8	1009	31.56	18	56.58	155	19.92	17.09	19	3	.10	1.6	11.8	LOI	- 1.4U		250	28
98	APR	8	1028	19.76	19	20.29	155	7.45	7.40	29	4	.12	.6	.7	SF4	2.8U		132	5
98	APR	8	1344	40.58	19	15.78	155	21.19	32.08	38	7	.11	.7	1.1	DEP	2.3U		144	6
98	APR	8	1654	3.85	19	20.07	155	48.52	9.97	25	4	.12	.6	.6	KON	2.0U		184	10
98	APR	9	52	24.53	19	12.19	155	30.91	37.76	52	11	.07	.6	.9	DLSF	4.0U		81	6
98	APR	9	714	15.90	19	33.89	155	56.68	17.10	25	4	.13	1.3	1.0	KON	2.5U		233	9
98	APR	9	828	51.21	19	23.46	155	16.91	3.26	17	3	.08	.5	.3	SSC	2.2U		75	0
98	APR	9	1219	51.51	19	11.20	155	38.57	8.15	35	6	.18	.6	1.3	LSW	2.5U		156	7
98	APR	9	1930	10.66	19	29.24	155	26.26	4.05	31	7	.11	.3	1.1	KAO	2.3U		99	5
98	APR	10	2009	48.36	19	23.03	155	14.51	3.55	14	5	.06	.3	.5	SEC	2.3U		118	3
98	APR	10	2052	22.99	19	24.10	155	25.65	10.92	39	8	.13	.4	.7	KAO	3.0U		32	5
98	APR	11	202	12.83	19	34.33	155	43.39	7.19	23	3	.11	.6	1.9	KON	2.2U		124	8
98	APR	11	838	31.28	19	45.21	155	26.90	24.83	29	3	.08	1.4	1.2	KEA	2.3U		159	3

ORIGIN TIME				LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ		LOC	PREF	N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	APR	12	847	3.27	19	19.34	155	20.47	29.28	4211		.12	.7	1.0	DEP	2.5U		86	4
98	APR	13	409	44.31	19	18.20	155	47.95	11.14	38	6	.11	.6	.3	KONF	3.6U		126	9
98	APR	13	552	48.70	19	26.28	155	29.08	11.43	26	4	.09	.4	1.0	KAO	2.0U		44	7
98	APR	13	1645	14.59	19	17.30	155	13.89	7.50	33	5	.10	.5	.8	SF2	2.7U		115	1
98	APR	13	1906	17.61	19	23.79	155	10.04	40.72	18	5	.20	2.6	1.3	DEP	1.8U		228	3
98	APR	13	2205	21.45	19	18.37	155	15.47	6.08	26	5	.10	.4	.8	SF1	1.9U		109	4
98	APR	13	2343	32.90	19	18.32	155	48.34	10.37	22	4	.11	.5	.8	KON	2.4U		132	8
98	APR	15	1750	1.69	19	14.81	155	18.02	43.03	17	5	.06	1.8	.7	DEP	2.3U		204	6
98	APR	15	1831	30.73	19	24.44	155	30.12	12.53	31	5	.10	.4	1.0	KAO	2.2U		34	5
98	APR	15	2213	30.96	19	12.58	156	21.76	39.85	19	4	.10	2.2	3.2	DIS			327	52
98	APR	15	2316	38.20	20	31.74	156	0.77	6.89	29	3	.09	6.9	9.0	DIS -	2.5U		319	95
98	APR	16	140	19.57	19	12.21	156	24.36	39.95	22	4	.09	2.0	3.0	DIS	2.0U		313	57
98	APR	16	534	46.60	19	22.02	155	49.37	12.63	40	5	.11	.5	.3	KONF	3.4U		119	12
98	APR	16	1402	47.67	20	0.22	155	32.81	11.88	26	5	.11	1.1	1.8	KEA	2.6U		207	28
98	APR	16	1516	57.50	19	24.84	155	38.47	3.14	23	5	.14	.4	.4	MLO	2.7U		106	1
98	APR	16	1949	56.08	19	23.94	155	15.83	3.35	25	7	.08	.3	.3	SEC	2.4U		110	1
98	APR	16	2104	25.49	19	49.94	155	22.07	30.40	36	9	.10	.9	1.2	KEA	1.9U		252	11
98	APR	17	503	35.49	19	19.88	155	11.62	6.31	38	6	.10	.4	.7	SF3	2.1U		87	5
98	APR	17	928	27.90	19	27.25	156	17.01	38.34	42	9	.09	1.5	1.8	KON	2.7U		292	48
98	APR	17	946	32.11	19	42.63	156	11.55	34.62	35	7	.11	1.2	2.0	HUA	2.7U		258	37
98	APR	17	2118	20.99	19	28.68	155	27.81	10.27	32	5	.10	.4	.9	KAO	1.7U		73	6
98	APR	17	2226	32.63	19	20.93	155	7.91	7.53	30	3	.09	.6	.6	SF4	1.3U		176	4
98	APR	18	522	55.87	19	17.61	155	12.99	8.61	31	5	.11	.5	.7	SF2	1.7U		125	1
98	APR	18	1448	12.04	20	9.13	156	31.78	33.99	38	7	.10	1.3	2.3	DIS	3.0U		308	78
98	APR	19	1319	55.45	19	1.18	155	28.60	41.45	38	5	.08	.9	1.1	DLS	1.8U		209	15
98	APR	19	1739	53.36	19	29.06	155	27.18	5.57	34	9	.11	.3	1.9	KAO	2.3U		87	5
98	APR	20	1803	55.82	19	19.56	155	13.44	9.53	40	9	.10	.4	.6	SF2	2.3U		122	6
98	APR	21	1405	46.11	19	16.14	155	27.63	11.19	39	9	.13	.4	1.0	LSW	3.0U		65	5
98	APR	21	1628	37.91	19	29.44	155	16.47	24.64	38	6	.10	.6	.7	DEP	1.9U		155	8
98	APR	22	338	31.26	19	51.99	156	11.97	43.91	37	8	.11	1.2	1.8	HUA	3.0U		264	43
98	APR	22	604	18.81	19	29.17	155	26.36	5.73	34	9	.10	.3	1.3	KAO	1.9U		97	5
98	APR	22	1052	24.36	20	3.94	155	31.21	13.98	29	2	.11	2.9	4.1	KEA	2.5U		206	28
98	APR	22	1148	22.70	19	14.79	155	35.43	5.91	39	6	.14	.4	2.7	LSW	2.9U		70	9
98	APR	22	1629	12.24	19	23.30	155	3.03	7.35	28		.11	.7	.6	SF5	2.5U		159	8
98	APR	22	1738	58.63	19	20.51	155	13.14	7.81	32	2	.12	.4	.8	SF2	2.2U		64	4
98	APR	22	1932	24.39	19	25.28	155	39.38	2.15	27	3	.13	.6	.4	MLO	2.7U		188	3
98	APR	23	50	35.29	19	29.25	155	27.51	7.81	36	8	.12	.3	1.0	KAO	2.0U		82	5
98	APR	23	651	31.28	19	28.65	155	26.67	10.19	38	7	.10	.3	.8	KAO	2.4U		85	6
98	APR	23	1954	21.22	19	39.04	155	26.68	24.56	35	6	.08	.6	.8	KEA	2.2U		116	7
98	APR	23	2117	45.63	19	21.84	155	30.02	10.07	34	3	.07	.3	.9	KAO	2.3U		44	4
98	APR	23	2140	12.24	19	28.20	155	23.37	24.15	33	7	.11	.5	1.0	DML	1.9U		101	3
98	APR	24	456	22.88	19	17.52	155	29.48	44.21	24		.11	1.1	3.6	DLST			49	5
98	APR	25	255	59.98	19	21.14	155	5.58	7.78	39	9	.13	.5	.6	SF4	2.3U		153	5
98	APR	25	651	26.83	18	58.73	155	25.87	36.52	36	5	.09	1.1	1.4	DLS	1.6U		226	20
98	APR	25	922	29.85	19	21.61	155	6.30	8.44	35	8	.09	.5	.5	SF4	2.5U		141	4

ORIGIN TIME				LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ		LOC	PREF	N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	APR	25	1503	44.21	19	19.02	155	13.55	9.51	36	6	.10	.4	.7	SF2	2.0U		70	4
98	APR	25	1722	37.49	19	20.68	155	13.15	7.54	34	4	.09	.4	.6	SF2	1.5U		62	4
98	APR	25	1905	34.99	19	22.78	155	30.52	10.24	41	9	.10	.3	1.0	KAO	2.4U		30	5
98	APR	25	1919	27.10	19	22.58	155	30.56	10.81	4711		.08	.3	.6	KAO	2.9U		31	5
98	APR	25	2004	21.66	19	20.87	155	11.15	8.11	4010		.12	.4	.6	SF3	2.4U		82	3
98	APR	27	208	31.08	19	21.19	155	7.50	7.32	39	6	.14	.5	.6	SF4	2.3U		126	4
98	APR	27	1505	29.73	19	22.57	155	20.52	11.73	28	4	.09	.4	1.1	KAO	2.2U		45	6
98	APR	29	444	44.75	19	47.85	156	4.92	1.71	24	4	.11	1.5	1.3	HUA	2.4U		292	28
98	APR	29	550	31.46	19	20.57	155	20.49	29.77	28	3	.12	.9	1.4	DEP	1.7U		64	5
98	APR	29	1907	43.31	19	19.29	155	11.94	5.87	30	5	.09	.4	1.0	SF3	1.7U		96	5
98	APR	29	2023	31.49	19	25.11	155	39.26	2.30	16	3	.10	.8	.6	MLO	2.2U		197	3
98	APR	29	2332	25.69	19	19.83	155	8.21	9.17	34	5	.08	.5	.5	SF4	2.6U		116	5
98	APR	30	17	59.83	19	16.00	155	27.13	10.63	30	4	.10	.3	.6	LSW	2.4U		68	6
98	APR	30	1609	0.41	19	24.26	155	25.51	8.59	34	5	.10	.4	.9	KAO	2.3U		35	5
98	APR	30	2113	44.76	19	24.97	155	37.68	2.80	31	6	.12	.3	.3	MLO	3.1U		116	1
98	APR	30	2147	54.14	19	1.11	155	26.36	39.62	29	5	.09	1.5	1.0	DLS	1.4U		231	16
98	MAY	1	1025	27.59	19	19.49	155	8.23	7.35	29	5	.10	.7	.8	SF4	2.2U		165	4
98	MAY	1	1424	58.35	18	46.68	155	54.20	10.68	23	5	.09	1.3	.8	DIS	2.4U		312	34
98	MAY	1	1813	1.10	19	25.27	155	18.83	7.28	22	3	.09	.8	1.0	INT	1.9U		120	2
98	MAY	1	1828	41.54	19	20.07	155	11.28	8.37	31	6	.09	.4	.7	SF3	1.6U		85	4
98	MAY	1	2020	46.92	19	40.55	155	0.59	7.14	25	5	.13	.8	1.1	HIL	2.0U		234	26
98	MAY	1	2106	11.33	19	19.28	155	9.64	8.97	29	4	.08	.5	.6	SF3	2.6U		116	5
98	MAY	2	705	12.44	19	23.77	155	51.10	13.92	24	3	.13	1.0	.4	KON	2.8U		207	15
98	MAY	2	1505	19.39	19	16.79	155	19.49	8.24	26	5	.11	.5	.7	SWR	1.9U		141	3
98	MAY	3	133	2.13	19	19.72	155	19.01	33.86	5314		.10	.6	.8	DEPF	3.8U		52	3
98	MAY	3	409	33.76	19	19.14	155	19.26	31.85	41	7	.10	.7	1.0	DEP	2.3U		68	2
98	MAY	3	812	13.14	19	20.59	155	12.75	9.16	29	5	.10	.5	.6	SF2	1.9U		130	4
98	MAY	3	829	21.08	19	21.29	155	6.25	8.82	34	4	.10	.5	.4	SF4	2.5U		144	4
98	MAY	3	1303	25.10	19	21.73	155	27.32	11.90	31	5	.10	.4	.8	KAO	2.7U		45	2
98	MAY	3	1843	47.43	19	19.28	155	13.51	4.92	29	4	.12	.4	1.4	SSF	2.0U		69	4
98	MAY	5	115	24.13	19	30.88	155	48.52	9.85	44	9	.14	.6	.3	KON	3.0U		95	5
98	MAY	5	749	42.49	19	14.53	155	34.72	8.30	40	9	.17	.4	1.3	LSW	2.6U		107	4
98	MAY	5	1702	37.23	19	19.63	155	7.24	6.83	24	3	.10	.9	1.0	SF4	2.0U		203	4
98	MAY	5	2207	20.68	19	19.57	155	53.32	12.52	4011		.09	1.0	.3	KONF	3.3U		228	7
98	MAY	5	2223	36.52	19	20.23	155	53.60	12.14	45	8	.12	.8	.3	KONF	3.8U		189	8
98	MAY	5	2253	11.02	19	19.33	155	53.26	12.89	20	3	.12	1.5	.5	KON	2.0U		227	6
98	MAY	6	535	43.97	19	18.02	155	13.39	7.71	35	7	.11	.5	.7	SF2	3.0U		88	2
98	MAY	6	938	14.18	19	10.48	155	40.87	13.26	28	4	.10	.5	.4	DLS	2.5U		162	9
98	MAY	6	1500	8.62	19	13.16	155	30.68	12.99	4211		.13	.5	.6	LSWF	3.5U		133	4
98	MAY	6	1505	53.27	19	12.88	155	30.52	9.62	27	4	.13	.4	.7	LSW	2.3U		113	4
98	MAY	6	1510	50.32	19	12.68	155	30.47	9.81	29	5	.13	.4	.8	LSW	2.4U		115	4
98	MAY	6	1616	17.78	19	12.69	155	30.66	12.37	35	6	.13	.4	.8	LSW	2.7U		117	5
98	MAY	6	1825	48.25	19	25.74	155	19.09	6.20	29	6	.11	.6	.9	KAO	2.5U		142	3
98	MAY	6	1832	2.10	19	13.05	155	30.50	10.02	37	6	.13	.5	.7	LSW	1.6U		112	4
98	MAY	6	2248	28.47	19	25.53	155	28.68	13.71	26	2	.11	.4	.8	DML	2.3U		42	6

ORIGIN TIME					LAT N	LON W	DEPTH	N	N	RMS	ERH	ERZ	LOC	PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG MIN	DEG MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	MAY	7	342	19.73	19 12.61	155 30.63	9.75	27	4	.14	.4	.7	LSW	2.0U		118	5
98	MAY	7	450	59.90	19 47.09	156 8.98	43.40	32	5	.10	2.3	1.3	HUA	2.4U		313	34
98	MAY	7	1315	33.75	19 13.60	155 31.05	8.01	5716		.19	.5	.7	LSWF	4.3U		67	3
98	MAY	7	1332	11.69	19 12.37	155 31.20	7.58	23	4	.16	.6	1.1	LSW	2.0U		163	5
98	MAY	7	1805	23.11	19 21.19	155 4.44	9.05	3810		.10	.5	.6	SF5	3.2U		165	7
98	MAY	7	2023	12.08	19 13.47	155 30.80	12.46	4411		.12	.4	.8	LSWF	2.9U		129	3
98	MAY	7	2357	8.23	19 23.31	155 17.67	14.19	23	3	.13	.7	.8	DEPL	2.2U		72	1
98	MAY	8	850	24.22	19 28.62	155 27.00	8.43	28	5	.10	.4	1.1	KAO	1.7U		81	6
98	MAY	9	550	18.78	19 20.24	155 16.54	31.58	24	3	.12	.9	1.3	DEP	1.7U		85	4
98	MAY	9	1421	45.39	19 25.14	155 17.60	9.03	16	3	.11	1.1	.8	INTL	2.4U		98	0
98	MAY	9	2013	20.66	19 25.36	155 15.52	0.03	13	3	.15	.4	.6	SNCL#	2.4U		186	2
98	MAY	10	136	54.58	19 13.66	155 26.32	8.44	32	2	.11	.4	.7	LSW	2.4U		126	4
98	MAY	10	831	53.14	19 25.49	155 19.97	8.11	35	7	.11	.4	.8	KAO	2.5U		71	4
98	MAY	10	1108	37.31	19 19.85	155 6.73	7.88	25	4	.08	1.1	.8	SF4	2.1U		219	5
98	MAY	10	1522	1.84	19 17.40	155 14.76	8.45	27	5	.08	.5	.6	SF1	1.7U		157	2
98	MAY	10	1818	19.57	19 25.21	155 16.61	10.16	15	3	.14	1.5	1.2	INTL	2.2U		157	1
98	MAY	11	1200	17.62	19 36.21	156 26.04	9.46	44	9	.15	2.0	3.3	DISF	4.0U		238	56
98	MAY	11	1634	36.45	19 20.29	155 6.74	9.02	31	5	.08	.6	.4	SF4	2.7U		146	6
98	MAY	12	1620	3.11	19 18.72	155 13.38	6.92	27	4	.10	.5	.9	SF2	1.8U		79	3
98	MAY	12	2317	19.27	19 24.74	155 29.94	9.71	28	8	.08	.3	.9	KAO	2.0U		48	6
98	MAY	12	2328	31.64	19 0.41	155 27.66	46.55	38	6	.09	1.3	.9	DLS	1.9U		214	17
98	MAY	13	903	31.17	19 24.83	155 17.00	11.90	13	2	.06	1.8	1.1	INTL	2.1U		124	0
98	MAY	13	1009	45.44	19 24.83	155 38.58	3.49	16	4	.11	.6	.5	MLO	2.2U		107	2
98	MAY	13	1230	12.39	19 24.52	155 15.57	6.39	14	3	.12	.7	.9	INTL	2.4U		136	2
98	MAY	13	1318	28.73	19 24.15	155 16.71	9.15	18	4	.12	.7	.6	INTL	2.2U		96	0
98	MAY	13	2318	48.07	19 23.02	155 17.25	11.23	10	3	.16	4.2	1.5	INTL	2.5U		210	1
98	MAY	13	2357	20.78	19 24.89	155 15.09	13.12	11	2	.10	1.6	1.4	DEPL	2.3U		163	1
98	MAY	14	3	1.32	19 26.63	155 15.91	3.61	10	2	.12	1.1	1.3	SNCL	2.0U		193	4
98	MAY	14	31	55.24	19 3.71	156 15.13	39.31	21	4	.11	2.2	2.7	KON	2.1U		307	46
98	MAY	14	138	0.74	19 26.43	155 16.16	17.92	27	3	.12	.8	1.0	DEP	2.1U		137	3
98	MAY	14	427	42.90	19 20.94	155 7.79	7.76	29	4	.11	.7	.5	SF4	2.3U		181	4
98	MAY	14	739	57.09	19 58.34	156 23.49	6.91	14	3	.08	8.6	11.2	DIS -	3.2U		342	83
98	MAY	14	1041	26.23	19 21.00	155 30.04	10.30	33	5	.08	.4	.7	KAO	2.3U		47	5
98	MAY	14	1112	18.96	19 3.78	156 15.21	36.84	39	3	.09	1.8	1.5	KON	3.7U		284	46
98	MAY	14	1215	9.17	19 23.25	155 17.69	6.22	15	5	.10	.7	.8	INTL	2.4U		86	1
98	MAY	14	1516	17.92	19 19.84	155 11.53	6.37	35	5	.12	.4	.8	SF3	2.6U		88	5
98	MAY	15	401	22.75	19 25.36	155 17.87	5.07	11	2	.18	1.0	1.0	INTL	2.3U		85	0
98	MAY	15	1343	37.51	19 24.51	155 17.14	9.31	16	4	.10	.8	.6	INTL	2.5U		79	1
98	MAY	16	312	13.39	19 25.05	155 38.69	3.21	24	5	.12	.7	.6	MLO	2.9U		185	2
98	MAY	16	2145	35.53	20 44.66	155 56.85	6.94	38	3	.11	7.2	9.6	DIS -	3.3U		322	70
98	MAY	16	2312	18.34	19 22.73	155 14.66	3.43	27	4	.12	.3	.4	SEC	2.8U		70	2
98	MAY	17	11	2.51	19 41.33	155 25.43	12.09	38	8	.14	.5	.5	KEA	3.0U		134	11
98	MAY	17	435	59.35	19 25.40	155 29.85	12.66	27	5	.10	.5	1.0	KAO	2.0U		66	6
98	MAY	17	1720	56.64	19 25.46	155 16.98	7.00	12	2	.08	1.5	1.0	INTL	2.4U		101	1
98	MAY	17	2311	10.69	19 19.64	155 10.81	6.98	24	2	.11	.5	1.0	SF3	2.5U		94	5

ORIGIN TIME					LAT N	LON W	DEPTH	N	N	RMS	ERH	ERZ	LOC	PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG MIN	DEG MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	MAY	18	757	47.11	19 26.07	155 24.01	10.52	29	6	.09	.4	.9	KAO	2.5U		53	6
98	MAY	18	1830	8.46	19 43.20	155 25.58	22.72	40	7	.10	.7	1.1	KEA	3.4U		118	8
98	MAY	19	349	5.54	20 9.42	156 14.71	6.69	23	6	.14	9.0	11.6	KOH -	2.7U		318	67
98	MAY	19	1211	20.99	19 23.68	155 17.55	3.23	13	3	.13	.5	.6	SSC	2.4U		94	1
98	MAY	20	651	48.90	19 55.28	155 27.90	13.76	19	4	.07	1.6	.6	KEA	2.9U		315	16
98	MAY	20	1435	58.83	20 15.98	156 21.24	32.06	42	4	.12	1.7	3.6	DIS	3.2U		319	84
98	MAY	20	1653	3.61	19 25.94	155 30.77	13.30	21	2	.10	.6	1.4	DML	1.8U		67	4
98	MAY	21	126	38.46	19 23.40	155 15.30	3.12	19	5	.07	.3	.3	SEC	2.6U		82	2
98	MAY	21	348	45.38	19 29.17	154 48.83	10.68	18	2	.08	1.1	.3	LER	3.1U		280	3
98	MAY	21	654	54.38	19 20.23	155 11.65	9.55	31	5	.12	.5	.6	SF3	3.2U		80	5
98	MAY	21	1906	8.15	19 25.57	155 30.87	10.60	35	6	.09	.3	1.1	KAO	2.3U		45	8
98	MAY	22	6	57.86	19 32.40	155 45.51	9.78	28	5	.11	.8	.3	KON	2.7U		131	3
98	MAY	22	515	50.54	20 9.63	156 40.36	6.61	36	6	.12	9.3	11.9	DIS -	3.0U		331	102
98	MAY	22	2109	25.97	19 25.10	155 28.43	10.14	29	5	.09	.4	.8	KAO	2.8U		56	5
98	MAY	23	311	7.95	19 9.80	155 24.41	42.64	16	4	.12	1.7	1.5	LOIF	2.1U		238	8
98	MAY	23	1011	4.69	19 25.69	155 17.22	15.05	27	3	.08	.5	.6	DEP	2.2U		91	1
98	MAY	23	1731	0.90	19 19.31	155 30.26	11.38	44	9	.11	.3	.6	KAO	3.4U		58	7
98	MAY	24	1020	59.24	19 44.80	155 48.74	31.63	32	6	.09	1.3	1.2	HUA	2.5U		271	7
98	MAY	24	1649	17.87	19 36.18	155 19.30	13.48	41	7	.12	.6	.4	KEA	3.4U		159	14
98	MAY	24	1812	15.52	19 26.58	155 30.28	10.19	21	4	.11	.4	1.1	KAO	1.9U		44	6
98	MAY	25	2122	28.94	19 40.79	156 3.92	27.47	43	7	.11	1.2	2.0	HUAF	3.4U		236	37
98	MAY	25	2306	28.54	19 28.69	155 25.00	3.63	26	4	.11	.3	.9	KAO	2.4U		62	4
98	MAY	26	545	24.51	19 23.33	155 17.26	2.94	16	3	.08	.4	.3	SSC	2.2U		77	1
98	MAY	26	618	6.19	19 28.70	155 58.57	12.64	16	1	.12	1.8	.8	KON	2.4U		280	26
98	MAY	26	940	23.52	20 1.32	155 30.28	9.31	21	2	.11	1.2	2.2	KEA	2.7U		225	31
98	MAY	26	2321	4.86	19 48.51	155 21.80	32.52	30	4	.12	1.1	1.4	KEA	2.9U		212	10
98	MAY	27	1503	10.90	19 20.10	155 30.26	10.06	34	4	.08	.3	.7	KAO	2.5U		54	6
98	MAY	27	1726	55.53	19 20.48	155 49.24	12.14	41	8	.12	.6	.3	KON	3.3U		145	10
98	MAY	28	852	25.36	19 19.65	155 7.84	6.82	35	7	.11	.4	.7	SF4	2.5U		126	4
98	MAY	28	1035	15.90	19 20.20	155 6.69	6.34	32	5	.10	.5	.9	SF4	3.7U		191	6
98	MAY	28	1611	34.22	19 24.75	155 14.76	4.01	22	7	.10	.4	.4	SNC	1.5U		157	1
98	MAY	29	105	39.32	19 11.18	155 40.03	10.27	35	5	.15	.4	.7	LSW	3.7U		81	9
98	MAY	30	53	28.59	19 23.51	155 17.22	2.87	15	3	.12	.5	.3	SSC	2.2U		77	1
98	MAY	30	846	37.91	19 27.59	155 28.46	10.87	32	5	.09	.4	1.1	KAO	2.5U		56	8
98	MAY	30	1003	56.71	19 29.10	155 27.47	7.95	4411		.10	.3	.8	KAO	2.8U		79	5
98	MAY	30	1019	58.00	19 29.03	155 27.62	7.23	31	7	.10	.3	1.3	KAO	2.6U		79	5
98	MAY	30	1101	59.73	19 18.09	155 30.40	11.82	34	5	.10	.4	1.0	LSW	3.2U		65	6
98	MAY	31	1139	35.79	19 28.43	155 59.57	7.68	18	5	.11	1.3	1.3	KON	1.7U		312	24
98	MAY	31	2106	33.57	19 22.54	155 2.94	8.22	28	3	.14	.7	.8	SF5	2.4U		166	8
98	JUN	1	322	52.89	19 30.38	156 3.64	44.26	21	5	.08	1.6	.9	KON	2.0U		266	31
98	JUN	2	244	43.95	19 59.24	155 32.21	7.44	36	4	.14	.6	.7	KEA	3.2U		178	24
98	JUN	3	506	35.50	19 22.09	155 29.95	12.70	28	3	.08	.4	1.0	KAO	1.9U		45	7
98	JUN	3	602	58.96	19 22.21	155 30.04	11.80	39	6	.10	.3	.7	KAO	2.5U		42	4
98	JUN	3	648	35.89	19 19.91	155 7.22	7.88	31	3	.08	.5	.7	SF4	2.2U		140	5
98	JUN	3	1802	52.24	19 31.70	155 35.92	14.32	33	9	.10	.6	.3	DML	2.3U		150	2

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ				AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	JUN	3	1953	59.21	19	29.96	154	53.68	0.11	26		.18	.9	2.1	SLEF#	3.2U		140	6
98	JUN	3	2246	54.23	19	8.51	155	31.50	49.38	34	5	.09	1.1	1.0	DLS	2.1U		200	7
98	JUN	4	122	46.81	19	31.94	155	43.94	7.38	22	6	.14	.5	1.0	KON	2.1U		104	4
98	JUN	4	552	43.16	19	17.59	155	22.93	3.86	27	2	.13	.4	1.4	SWR	2.6U		105	5
98	JUN	4	1855	7.34	19	16.63	155	28.02	33.76	33	7	.10	.7	1.1	DLS	2.2U		57	5
98	JUN	4	2133	1.96	18	57.77	155	12.01	42.55	27	3	.10	2.7	1.9	LOI	2.1U		302	35
98	JUN	5	214	31.33	19	4.61	155	27.35	50.52	24	4	.11	1.7	1.2	DLST			190	9
98	JUN	5	2310	47.43	19	7.54	155	29.24	36.97	27	4	.10	1.6	1.2	DLST			166	4
98	JUN	5	2319	9.07	19	7.46	155	25.79	46.46	35	6	.13	1.5	1.2	DLST			217	5
98	JUN	5	2319	34.85	19	6.72	155	26.84	43.51	25	2	.13	1.8	1.4	DLST			219	5
98	JUN	5	2335	29.51	19	9.03	155	27.67	47.79	24	3	.15	1.7	1.3	DLST			171	1
98	JUN	6	649	22.99	19	21.12	155	12.72	8.33	34	4	.14	.5	.7	SF2	2.2U		61	3
98	JUN	6	859	51.13	19	22.22	155	49.85	10.74	29	3	.13	1.0	.5	KON			183	12
98	JUN	7	16	18.17	19	25.32	155	17.76	9.24	14	2	.09	.8	.9	INTL	2.6U		80	0
98	JUN	7	27	2.53	19	23.03	154	56.84	6.48	13	3	.20	2.9	5.3	LER	2.3U		210	9
98	JUN	7	546	12.13	19	10.16	155	28.14	29.76	21	4	.13	.9	1.2	DLST			89	1
98	JUN	7	556	8.84	19	8.26	155	29.20	36.11	18	4	.09	1.4	1.0	DLST			229	3
98	JUN	7	723	23.41	19	21.59	155	19.94	30.56	29	4	.10	1.0	1.1	DEP	1.5U		63	5
98	JUN	7	751	5.78	19	4.21	155	36.56	50.91	21	3	.14	2.5	1.1	DLST			286	18
98	JUN	10	31	30.34	19	12.08	155	29.01	31.72	24	5	.08	.7	1.0	DLS	1.6U		86	5
98	JUN	11	1149	7.70	19	12.89	156	21.61	42.04	20	4	.10	2.3	3.2	DIS	2.1U		326	52
98	JUN	13	235	50.74	19	26.26	154	54.03	7.22	28	4	.11	.9	.6	LER	2.0U		214	3
98	JUN	13	1110	27.46	19	26.82	155	15.07	5.18	19	3	.11	.6	1.3	INTL	2.6U		170	4
98	JUN	13	1141	16.45	19	11.79	155	42.86	6.34	39	6	.16	.5	1.6	LSW	3.2U		68	7
98	JUN	14	1318	45.21	19	20.92	155	6.81	7.33	42	10	.10	.4	.7	SF4	2.6U		138	5
98	JUN	14	1603	28.56	19	23.83	155	15.63	0.12	29	6	.14	.2	.3	SEC	2.6U		49	2
98	JUN	15	646	23.85	19	17.80	155	28.91	9.67	31	4	.11	.4	1.0	LSW	2.5U		97	9
98	JUN	15	1429	0.37	19	48.78	156	10.44	4.27	20	5	.11	1.5	.9	HUA	2.0U		318	54
98	JUN	15	1745	40.83	19	29.70	155	16.65	10.26	30	5	.09	.5	.6	GLN	1.9U		108	4
98	JUN	16	1423	24.36	19	21.51	155	0.22	7.85	29	6	.13	1.3	.6	SF5	2.5U		263	13
98	JUN	16	1812	23.23	19	15.55	155	26.16	9.71	29	3	.13	.5	1.4	LSW	2.8U		129	10
98	JUN	17	1222	19.10	19	8.08	155	9.49	44.50	35	5	.10	1.5	1.0	LOI	1.9U		264	17
98	JUN	17	1252	30.96	19	13.11	155	27.86	0.01	34	6	.15	.3	.4	LSW #	2.8U		104	7
98	JUN	17	2133	15.59	19	30.89	157	23.82	6.36	31	5	.15	10.2	13.2	DIS -	3.4U		336	163
98	JUN	18	1041	45.80	19	11.61	155	20.27	48.66	33	5	.11	1.0	1.3	DEP	2.2U		173	8
98	JUN	19	626	19.54	19	22.69	155	14.64	3.43	19	5	.09	.4	.4	SEC	2.2U		157	2
98	JUN	19	1212	16.80	19	22.69	155	2.32	7.03	31	4	.14	.6	.7	SF5	2.2U		172	9
98	JUN	19	2344	50.74	19	30.09	154	53.53	1.37	26	2	.12	.6	.8	SLE	3.2U		137	3
98	JUN	20	836	3.76	19	19.08	155	8.50	6.94	34	6	.11	.4	.6	SF4	2.0U		106	3
98	JUN	20	1016	2.48	19	20.07	155	11.25	7.07	32	5	.10	.4	.8	SF3	2.2U		85	4
98	JUN	20	1432	14.47	19	12.25	155	20.57	47.15	46	10	.10	.8	1.0	DEP	2.8U		169	7
98	JUN	20	2028	42.32	19	12.03	155	20.83	47.17	26	4	.10	1.0	1.3	DEP	1.4U		184	7
98	JUN	21	27	35.48	19	12.53	155	20.68	44.07	43	9	.10	.8	1.0	DEP	2.7U		166	7
98	JUN	21	221	35.74	19	12.65	155	20.64	46.48	49	13	.10	.7	.9	DEPF	4.2U		166	7
98	JUN	21	357	2.13	19	22.32	155	26.57	11.33	44	10	.13	.3	.6	KAO	2.8U		39	2

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ				AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	JUN	21	430	13.56	19	11.74	155	20.09	49.90	30	5	.12	1.3	1.3	DEP	1.7U		172	8
98	JUN	22	904	10.13	19	20.08	155	11.92	7.55	27	5	.11	.4	.9	SF3	1.9U		81	5
98	JUN	22	1316	40.12	19	22.88	155	30.50	7.35	18	3	.06	.5	1.2	KAO	2.0U		84	5
98	JUN	25	308	44.53	19	15.00	155	30.44	9.40	45	14	.17	.4	.9	LSWF	3.3U		93	1
98	JUN	25	318	1.06	19	25.00	155	38.58	2.99	30	6	.10	.4	.4	MLO	2.9U		105	2
98	JUN	25	559	27.82	19	12.73	155	21.37	43.33	36	8	.09	.9	1.0	DEP	2.3U		162	5
98	JUN	25	1007	31.75	19	17.65	155	13.28	5.01	27	6	.10	.4	.8	SF2	2.0U		103	1
98	JUN	26	1542	18.98	19	23.12	155	30.88	13.60	34	4	.09	.4	1.0	DML	3.4U		42	5
98	JUN	27	11	7.74	20	4.00	156	19.89	7.00	32	2	.10	7.7	9.9	KOHF-	5.1U		325	67
98	JUN	27	1009	32.77	19	12.66	155	21.03	43.47	29	1	.10	1.1	2.3	DEP	2.9U		176	6
98	JUN	27	1422	44.60	19	19.93	155	7.43	5.76	31	2	.11	.5	.9	SF4	3.8U		134	5
98	JUN	28	1015	20.27	19	19.45	155	11.15	6.73	27	5	.12	.4	1.1	SF3	1.9U		99	5
98	JUN	28	1651	31.12	19	16.40	155	30.33	10.10	29	3	.12	.4	1.1	LSW	2.7U		74	2
98	JUN	28	1730	30.88	19	18.01	155	16.40	8.17	34	6	.11	.4	.7	SF1	2.7U		124	4
98	JUN	28	1731	31.37	19	18.05	155	16.43	8.32	33	5	.12	.4	.6	SF1	2.6U		122	4
98	JUN	29	1133	5.58	19	32.08	155	42.72	9.63	31	6	.13	.6	.9	MLO	2.2U		187	6
98	JUN	30	648	57.75	19	26.72	155	28.73	11.15	34	8	.11	.3	.9	KAO	2.2U		49	8
98	JUN	30	1059	56.34	19	12.56	155	20.72	45.20	36	6	.11	.9	1.1	DEP	2.5U		195	7
98	JUL	1	219	46.11	19	19.67	155	12.04	9.70	31	4	.10	.5	.7	SF3	2.5U		88	5
98	JUL	1	355	56.87	19	12.98	155	8.48	44.97	30	4	.10	1.4	1.3	DEP	1.9U		220	8
98	JUL	1	1415	18.69	19	15.11	155	5.78	45.30	27	2	.10	1.6	1.4	DEP	1.8U		212	6
98	JUL	2	456	51.71	19	11.67	155	20.48	47.63	29	5	.10	1.0	1.1	DEP	1.6U		172	8
98	JUL	2	840	8.12	19	37.65	155	12.23	12.05	25	5	.11	.5	.6	KEA	2.1U		159	20
98	JUL	2	2109	9.74	19	28.78	154	53.54	0.37	34	4	.18	.8	.5	SLEF	3.2U		165	4
98	JUL	3	140	24.54	19	20.15	155	8.30	7.37	29	4	.11	.8	.9	SF4	2.3U		163	4
98	JUL	3	426	54.84	19	12.44	155	21.15	44.14	28	2	.10	1.0	1.7	DEP	1.5U		178	6
98	JUL	3	556	29.93	19	13.72	155	33.18	8.45	38	6	.20	.5	1.1	LSWF	3.0U		75	6
98	JUL	4	326	16.30	19	12.16	155	20.71	46.82	36	4	.10	.9	1.3	DEP	1.7U		183	7
98	JUL	4	815	32.25	19	23.37	155	18.13	8.68	11	3	.13	1.4	.9	INTL	1.9U		163	2
98	JUL	4	1306	16.14	19	22.11	155	12.83	6.46	15	3	.07	.6	1.5	SF2	2.2U		105	5
98	JUL	4	1614	0.35	19	18.42	155	13.18	8.13	25	3	.11	.5	.9	SF2	1.9U		90	3
98	JUL	4	1720	31.76	19	58.96	155	33.13	7.72	20	2	.11	1.3	.8	KEA	2.9U		210	24
98	JUL	5	606	21.78	19	19.70	155	13.75	8.01	28	3	.13	.5	.9	SF2	2.1U		120	6
98	JUL	5	859	44.91	19	19.79	155	8.13	5.48	28	2	.10	.4	1.0	SF4	2.2U		117	5
98	JUL	5	1327	0.38	19	46.21	155	52.87	29.53	42	8	.11	.7	1.1	HUA	3.2U		197	10
98	JUL	5	1912	30.37	20	3.61	156	17.74	14.14	19	3	.15	8.4	12.6	KOH -	2.2U		316	63
98	JUL	5	2227	23.68	19	20.24	155	17.73	32.41	40	9	.11	.7	1.0	DEP	2.9U		73	4
98	JUL	6	1744	11.17	19	54.28	155	12.85	39.91	28	5	.09	1.7	1.7	KEA	2.0U		266	30
98	JUL	8	412	55.87	20	1.03	155	31.33	10.36	34	4	.15	1.1	.9	KEA	2.9U		214	27
98	JUL	8	1217	48.38	19	26.76	155	28.64	9.33	31	6	.09	.3	1.2	KAOF	2.0U		49	8
98	JUL	8	1601	24.80	19	25.08	155	16.43	20.69	31	5	.08	.8	.7	DEP	1.8U		106	1
98	JUL	8	1937	17.44	19	16.34	155	22.48	8.84	38	6	.17	.5	.7	SWR	3.4U		132	5
98	JUL	9	114	52.61	19	12.39	155	20.89	43.36	44	10	.11	.7	.9	DEP	2.8U		167	7
98	JUL	9	446	53.98	19	20.27	155	9.05	7.56	38	5	.16	.6	.8	SF4	3.7U		99	4
98	JUL	9	1902	48.42	19	12.15	155	20.98	43.16	32	4	.11	1.0	1.2	DEP	1.6U		181	7

ORIGIN TIME					LAT N	LON W	DEPTH	N	N	RMS	ERH	ERZ			PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG MIN	DEG MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	JUL	9	2329	52.52	19 25.28	155 18.65	7.56	34	9	.13	.5	.7	INT	2.8U		75	2
98	JUL	10	219	38.80	19 10.47	155 36.27	8.96	23	3	.13	.5	1.1	LSW	2.0U		101	8
98	JUL	11	349	12.63	20 47.73	156 1.15	6.77	36	4	.10	7.6	9.8	DIS -	2.9U		325	124
98	JUL	11	557	11.26	19 19.43	155 11.61	6.20	26	5	.09	.4	1.0	SF3	1.9U		97	6
98	JUL	11	1828	56.64	19 18.42	155 13.29	7.30	26	4	.10	.5	.8	SF2	1.8U		86	3
98	JUL	11	2123	37.40	19 20.28	155 6.42	7.66	30	5	.12	.5	.6	SF4	1.9U		150	6
98	JUL	12	1805	39.82	19 21.31	155 13.42	7.73	38	5	.14	.4	.7	SF2	2.8U		55	5
98	JUL	12	2011	59.10	19 26.37	154 57.02	4.10	14	3	.12	.6	1.1	SLE	1.7U		181	4
98	JUL	13	145	43.49	19 30.22	155 9.02	23.60	42	9	.11	.6	.8	DEP	2.3U		136	13
98	JUL	13	934	41.36	20 24.15	155 50.34	6.40	21	3	.14	10.1	12.4	KOH -	2.3U		330	79
98	JUL	13	2025	6.45	19 20.53	155 30.88	10.81	30	5	.06	.3	.7	KAO	1.9U		55	7
98	JUL	13	2040	55.97	19 19.67	155 7.01	12.32	20	3	.09	.7	.4	SF4	2.3U		147	5
98	JUL	14	120	39.60	19 21.93	155 17.73	3.13	20	4	.13	.4	.7	SWR	2.2U		62	3
98	JUL	14	127	14.76	19 29.79	155 40.28	28.84	39	10	.09	.6	.8	DML	2.2U		74	8
98	JUL	14	450	27.98	19 20.64	155 7.94	10.04	44	8	.14	.6	.4	SF4F	4.1U		175	4
98	JUL	14	635	12.70	19 20.68	155 49.93	11.05	27	5	.13	.6	.4	KON	1.6U		175	10
98	JUL	15	1704	21.20	19 11.52	155 20.80	48.02	29	7	.11	1.1	1.2	DEP	1.7U		172	8
98	JUL	15	2119	51.46	19 20.44	155 6.36	6.33	30	4	.12	.5	.8	SF4	2.1U		149	6
98	JUL	16	343	30.68	19 20.56	155 13.03	7.20	27	4	.11	.4	.9	SF2	1.8U		77	6
98	JUL	16	552	16.51	19 19.31	155 11.63	6.26	27	5	.09	.4	.9	SF3	2.2U		99	5
98	JUL	16	2142	16.76	19 19.33	155 8.65	8.27	37	6	.11	.5	.7	SF4	2.3U		103	4
98	JUL	16	2304	3.94	19 38.20	155 10.36	45.93	33	6	.09	1.3	1.1	KEA	1.8U		187	22
98	JUL	18	21	36.91	19 19.62	155 13.18	7.09	29	4	.13	.4	1.0	SF2	2.1U		72	5
98	JUL	18	1307	2.66	19 23.44	155 15.14	3.14	16	4	.10	.4	.4	SEC	2.2U		80	2
98	JUL	18	1450	35.54	19 24.43	155 16.12	1.83	19	4	.11	.3	.2	SEC	3.0U		89	1
98	JUL	18	2121	13.96	20 10.32	156 8.08	40.57	23	4	.11	2.5	4.9	KOH	2.1U		317	83
98	JUL	19	520	38.55	19 30.49	155 15.72	11.22	38	8	.08	.4	.3	GLN	2.1U		113	5
98	JUL	19	854	55.39	19 20.20	155 17.79	32.46	45	9	.12	.7	.8	DEP	2.5U		73	1
98	JUL	19	1142	8.18	19 20.22	155 6.89	7.41	23	3	.12	.6	.8	SF4	2.3U		143	6
98	JUL	19	2216	11.41	19 19.35	155 13.27	7.56	33	3	.15	.5	.9	SF2	2.3U		74	4
98	JUL	20	1526	24.91	19 23.49	155 16.94	3.04	16	4	.05	.5	.3	SSC	2.4U		100	0
98	JUL	20	2018	50.67	19 20.76	155 12.86	8.81	24	2	.10	.5	.9	SF2	2.0U		81	6
98	JUL	21	243	46.96	19 19.80	155 7.75	7.39	27	4	.11	.4	.7	SF4	2.1U		129	5
98	JUL	22	548	1.49	19 21.06	155 8.25	9.73	27	2	.11	.6	.5	SF4	2.1U		114	3
98	JUL	22	1431	57.37	19 23.82	155 25.36	10.70	25	4	.12	.4	.8	KAO	2.2U		47	5
98	JUL	22	1542	28.97	19 47.82	155 46.30	22.66	39	5	.09	.7	2.2	HUAF	3.8U		168	32
98	JUL	23	251	1.13	19 20.44	155 10.66	7.19	33	4	.12	.4	.8	SF3	2.9U		78	3
98	JUL	23	521	1.03	19 19.87	155 10.28	8.36	31	5	.12	.5	.7	SF3	2.1U		89	4
98	JUL	24	638	4.21	19 23.56	155 16.95	2.88	11	5	.07	.8	.4	SSC	2.1U		166	0
98	JUL	24	1542	12.38	19 19.03	155 13.15	9.04	37	5	.12	.5	.7	SF2	2.9U		128	8
98	JUL	25	40	19.21	19 17.92	155 13.27	7.16	29	5	.11	.4	.7	SF2	2.0U		96	2
98	JUL	25	1417	6.79	18 56.58	155 26.13	39.23	35	8	.09	1.1	.9	DLS	2.1U		238	25
98	JUL	25	2050	44.44	19 24.79	155 15.98	11.43	15	4	.24	2.1	1.6	INT	2.3U		106	2
98	JUL	26	1649	34.66	19 21.75	155 15.27	27.86	30	3	.13	.9	1.3	DEP	1.7U		61	2
98	JUL	27	1219	18.65	19 22.22	154 51.22	12.19	47	12	.13	.9	.4	LER	3.6U		250	10

ORIGIN TIME					LAT N	LON W	DEPTH	N	N	RMS	ERH	ERZ			PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG MIN	DEG MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	JUL	27	1515	17.18	19 29.75	155 36.09	1.89	11	4	.07	.8	.2	MLO	2.5U		184	1
98	JUL	27	1541	52.12	19 25.01	155 39.03	3.07	22	5	.11	.5	.4	MLO	2.8U		192	2
98	JUL	28	224	29.88	18 57.91	155 29.64	39.08	23	5	.10	1.7	1.1	DLS	1.5U		249	18
98	JUL	28	601	7.25	19 21.59	155 7.60	7.06	36	5	.10	.4	.7	SF4	2.7U		123	3
98	JUL	28	1024	3.50	18 17.11	155 9.78	7.07	24	6	.13	9.8	12.6	DIS -	2.3U		330	108
98	JUL	28	2121	36.57	19 28.28	155 18.14	8.27	32	7	.09	.5	.5	GLN	2.1U		134	3
98	JUL	29	423	20.67	19 22.29	155 26.76	11.48	49	11	.13	.3	.4	KAO	3.5U		39	2
98	JUL	29	1917	39.74	19 49.02	156 10.31	3.58	22	2	.08	1.9	1.2	HUA	2.5U		315	38
98	JUL	30	553	9.61	20 14.79	156 45.41	7.02	23	5	.13	9.6	11.9	DIS -	2.2U		338	114
98	JUL	30	706	57.76	19 11.95	155 33.12	9.37	33	5	.14	.6	.9	LSW	2.4U		142	8
98	JUL	31	249	14.67	19 17.65	155 21.14	36.73	53	17	.10	.6	.7	DEP	2.5U		125	4
98	JUL	31	418	40.51	18 54.51	155 32.90	36.66	32	6	.08	1.1	1.4	DLS	1.7U		265	15
98	JUL	31	1908	9.40	19 29.41	155 26.73	9.82	26	6	.13	.4	.9	KAO	2.2U		101	5
98	AUG	1	703	42.96	19 26.35	155 29.77	12.24	42	11	.08	.3	.9	KAO	2.1U		66	6
98	AUG	1	847	38.11	19 28.41	155 23.59	2.56	37	7	.11	.3	.5	KAO	2.9U		45	3
98	AUG	1	959	51.61	19 22.83	155 15.36	3.60	15	3	.09	.5	.5	SECL	2.0U		115	1
98	AUG	1	1552	16.70	19 24.92	155 38.75	3.12	17	3	.10	.5	.5	MLO	2.5U		110	2
98	AUG	2	638	0.47	19 28.30	155 23.76	3.00	37	6	.12	.3	.6	KAO	2.7U		75	3
98	AUG	3	1306	5.65	19 26.06	155 29.29	10.11	28	6	.10	.3	1.1	KAO	2.4U		42	7
98	AUG	3	1438	59.49	19 59.37	155 33.67	15.30	32	4	.11	.9	1.4	KEA	2.7U		175	25
98	AUG	3	2212	51.66	19 22.83	155 14.60	3.26	17	5	.06	.3	.5	SEC	2.4U		78	2
98	AUG	4	108	40.08	19 24.12	155 16.42	6.23	14	2	.12	.7	.9	INTL	2.3U		77	1
98	AUG	4	225	55.23	19 24.27	155 15.43	13.54	14	3	.09	1.1	.9	DEPL	2.3U		126	2
98	AUG	4	313	14.76	19 19.28	155 9.90	6.49	28	3	.07	.4	.9	SF3	2.5U		109	5
98	AUG	4	933	11.50	19 16.33	155 24.86	34.81	34	4	.10	.7	1.2	DEP	2.2U		72	4
98	AUG	4	1200	16.50	19 11.42	155 20.44	47.22	25	6	.10	1.4	1.0	DEP	1.8U		216	8
98	AUG	4	1257	52.49	19 10.52	155 19.59	52.28	31	5	.10	1.6	1.1	DEP	1.6U		227	10
98	AUG	4	1411	48.96	19 15.85	155 24.94	35.37	24	5	.10	.9	1.2	DEP	1.6U		102	3
98	AUG	4	1437	21.01	19 55.58	155 52.25	14.71	24	4	.10	1.9	1.0	KOH	3.0U		298	27
98	AUG	4	2222	30.48	19 20.04	155 12.12	7.52	46	11	.14	.4	.6	SF3	2.6U		80	5
98	AUG	5	339	37.20	19 9.78	155 20.62	56.00	13		.11	5.2	10.4	LOIT-			246	10
98	AUG	5	1543	49.08	20 5.71	155 51.15	28.84	43	6	.10	.9	1.2	KOH	3.0U		242	8
98	AUG	6	20	40.51	19 59.69	155 15.79	16.34	19	4	.12	2.2	13.7	KEA -	2.5U		280	31
98	AUG	6	402	57.40	19 10.35	155 22.47	33.98	37	6	.11	.9	1.1	DEP	1.8U		173	8
98	AUG	6	647	48.64	19 25.27	154 53.76	9.20	21	4	.12	1.3	.6	LER	1.7U		271	5
98	AUG	6	801	6.46	19 19.12	155 11.21	6.18	24	3	.09	.4	1.2	SF3	1.7U		107	6
98	AUG	6	1146	19.93	19 20.90	155 6.92	6.41	29	3	.10	.6	.7	SF4	2.2U		137	5
98	AUG	6	1220	48.96	19 24.35	155 17.97	7.54	13	2	.11	.9	.9	INTL	2.2U		79	2
98	AUG	7	329	45.97	19 25.81	155 19.37	7.59	28	7	.14	.6	.9	KAO	2.0U		87	3
98	AUG	7	654	42.78	19 14.63	155 7.07	39.01	37	6	.11	1.4	.9	DEP	2.1U		224	5
98	AUG	7	1227	34.21	19 24.39	155 17.00	11.49	12	1	.12	1.2	1.5	INTL	2.5U		103	1
98	AUG	7	1231	20.32	19 25.34	155 29.83	10.38	34	5	.10	.4	1.0	KAO	2.3U		71	7
98	AUG	7	1339	44.15	19 10.85	155 4.34	46.42	32	5	.11	1.8	1.2	DEP	1.6U		241	14
98	AUG	7	1346	50.79	19 25.93	155 16.44	8.56	12	2	.11	.9	.8	INTL	2.2U		128	2
98	AUG	7	1354	53.04	19 15.22	155 26.96	9.67	22	4	.10	.4	.8	LSW	1.8U		145	5

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ			PREF N		AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	AUG	7	1524	59.31	19	11.53	155	41.78	8.56	27		.14	.7	1.2	LSW	2.6U		161	8
98	AUG	7	2033	27.56	19	26.05	155	15.11	13.27	14	2	.13	1.8	1.2	DEPL	1.9U		191	3
98	AUG	7	2200	51.94	19	25.72	155	16.96	11.08	14	3	.11	.9	1.0	INTL	2.4U		98	1
98	AUG	7	2333	1.39	19	20.27	155	9.24	5.84	31	4	.09	.4	.7	SF3	2.2U		96	3
98	AUG	7	2348	35.37	19	24.94	155	14.79	11.38	15	4	.13	1.5	1.1	INTL	2.2U		152	1
98	AUG	8	500	12.68	19	24.35	155	15.76	3.34	13	3	.06	.4	.5	SECL	2.0U		108	2
98	AUG	8	706	0.64	19	19.81	155	7.83	9.72	24	2	.10	.9	.6	SF4	1.7U		169	5
98	AUG	8	950	30.64	19	20.18	155	10.97	6.58	28	3	.07	.4	1.0	SF3	1.5U		89	4
98	AUG	8	1157	31.49	19	24.57	155	16.00	12.41	16	3	.10	1.1	.8	INTL	2.3U		96	2
98	AUG	8	1318	10.32	19	25.15	155	19.19	7.27	28	8	.11	.4	.9	KAO	2.0U		72	3
98	AUG	8	1527	46.99	19	18.51	155	13.59	9.80	4411		.11	.3	.4	SF2F	3.8U		79	3
98	AUG	8	1558	23.01	19	18.95	155	13.20	9.33	33	8	.11	.4	.6	SF2	2.8U		81	4
98	AUG	9	330	51.85	19	19.56	155	13.64	9.22	36	5	.13	.5	.7	SF2	2.3U		64	5
98	AUG	9	407	25.04	19	28.34	155	26.98	9.42	35	4	.12	.3	1.0	KAO	1.7U		68	7
98	AUG	9	454	2.30	19	19.65	155	8.00	6.51	31	6	.11	.5	.8	SF4	2.1U		121	4
98	AUG	9	1543	17.12	19	8.50	155	30.23	43.02	25	3	.12	1.1	1.3	DLS	2.6U		206	5
98	AUG	10	507	18.24	19	17.88	155	27.78	9.67	28	1	.14	.5	1.4	LSW	1.9U		47	7
98	AUG	10	1037	32.77	19	25.74	155	18.80	7.17	27	7	.11	.5	.9	INT	2.3U		86	2
98	AUG	10	2050	20.39	19	47.33	155	46.54	15.05	40	5	.09	.6	1.0	HUA	3.1U		149	13
98	AUG	10	2247	44.04	19	21.39	155	30.12	10.24	36	5	.09	.3	.7	KAO	2.3U		45	5
98	AUG	11	141	3.25	19	21.04	155	10.79	9.21	32	3	.11	.5	.8	SF3	2.1U		79	3
98	AUG	11	155	56.98	19	19.86	155	10.78	10.01	36	7	.11	.5	.7	SF3	2.5U		93	4
98	AUG	11	1024	22.39	19	22.00	155	5.55	7.72	25	5	.09	.5	.5	SF4	2.3U		147	4
98	AUG	11	1726	41.25	19	27.06	155	30.26	11.50	28	7	.13	.4	1.0	KAO	2.0U		46	6
98	AUG	11	2216	17.16	19	17.29	155	15.37	7.20	22	3	.13	.5	.9	SF1	1.4U		153	3
98	AUG	11	2259	28.75	19	48.29	155	55.28	29.83	19	3	.10	1.8	1.1	HUA	1.6U		286	16
98	AUG	12	45	9.23	19	24.37	155	18.50	7.71	21	4	.12	.5	.8	INTL			82	2
98	AUG	12	49	42.70	19	24.66	155	15.51	11.32	18	3	.11	.8	.9	INTL			107	2
98	AUG	12	51	42.67	19	23.69	155	17.21	8.40	14	3	.08	1.1	.8	INTL	1.9U		127	1
98	AUG	12	52	51.39	19	23.58	155	14.27	5.92	18	6	.10	.6	.8	INTL	2.7U		129	2
98	AUG	12	142	0.07	19	26.22	155	13.93	7.73	24	7	.12	.7	.7	GLNL			190	3
98	AUG	12	150	19.88	19	24.48	155	15.85	12.94	14	3	.09	1.6	1.0	INTL	2.9U		100	2
98	AUG	12	159	15.61	19	25.86	155	15.77	11.25	16	4	.14	1.0	.9	INTL	2.4U		147	3
98	AUG	12	459	12.64	19	46.30	155	48.32	12.49	41	5	.08	.6	.4	HUAF	3.7U		162	10
98	AUG	12	634	35.67	19	28.51	155	26.60	8.55	4410		.10	.3	.5	KAOF	3.6U		83	6
98	AUG	12	639	17.92	19	16.06	155	27.18	10.35	23	4	.10	.4	.9	LSW	2.3U		67	5
98	AUG	12	937	53.57	19	24.12	155	16.13	3.29	18	3	.06	.4	.3	SECL	2.2U		79	1
98	AUG	12	1014	56.94	19	21.10	155	13.07	8.54	32	6	.12	.4	.7	SF2	1.9U		84	6
98	AUG	12	1110	6.97	19	47.16	155	46.91	22.85	39	5	.11	.8	2.1	HUA	3.3U		182	31
98	AUG	12	1122	28.16	19	47.45	155	46.18	23.89	26	4	.10	.9	2.2	HUA	2.9U		168	31
98	AUG	13	731	14.08	19	25.59	155	45.37	15.31	24	5	.10	.6	.3	KON	1.8U		140	9
98	AUG	13	1048	7.64	19	20.94	155	6.58	6.97	28	3	.11	.5	.6	SF4	2.0U		141	5
98	AUG	13	2102	19.12	18	57.00	155	18.45	22.57	20	5	.07	1.6	2.9	LOI	1.6U		303	28
98	AUG	13	2132	32.59	19	23.61	155	11.86	27.33	42	7	.11	.7	.8	DEP	2.5U		104	5
98	AUG	13	2202	9.91	19	34.78	155	35.02	14.42	18	4	.14	.7	.3	DML	1.7U		139	5

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ			PREF N		AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	AUG	14	517	6.06	19	6.98	156	16.90	36.83	19	6	.09	2.7	5.4	KON	2.1U		317	70
98	AUG	14	1933	48.69	19	42.32	156	5.42	35.98	22	4	.12	2.4	1.6	HUA	2.6U		300	26
98	AUG	15	419	51.27	19	19.71	155	9.16	5.18	30	5	.11	.4	1.2	SF3	2.2U		94	5
98	AUG	15	1535	29.90	19	23.94	154	43.39	37.94	26	4	.11	2.3	.9	LER	2.3U		302	17
98	AUG	15	1744	41.92	20	15.31	156	35.84	35.29	33	5	.11	1.5	2.3	DIS	3.6U		314	87
98	AUG	15	2239	46.06	20	10.27	155	31.58	26.18	14	2	.08	1.9	4.3	KEA	2.3U		241	27
98	AUG	16	812	58.91	19	20.71	155	7.33	8.99	25	3	.13	.5	.8	SF4	2.3U		131	5
98	AUG	17	255	51.49	19	26.53	155	24.15	8.52	31	5	.08	.3	.7	KAO	2.4U		58	6
98	AUG	17	2221	4.64	19	13.32	156	31.65	29.75	29	5	.11	2.0	4.0	DIS	2.6U		333	69
98	AUG	18	541	41.61	19	10.75	155	35.85	10.74	33	5	.15	.5	.9	LSW	2.8U		100	8
98	AUG	18	812	16.82	19	33.44	155	57.11	20.23	29	5	.11	1.5	4.4	KON	2.4U		278	33
98	AUG	18	929	33.64	19	13.07	155	17.60	36.10	22	3	.10	1.1	1.2	DEP	2.5U		186	9
98	AUG	18	1201	21.15	19	29.52	155	52.97	8.88	22	3	.21	2.2	.8	KON	2.5U		256	13
98	AUG	18	1334	12.13	19	12.07	155	20.31	47.50	4111		.10	.9	.7	DEP	3.3U		213	8
98	AUG	18	1335	50.36	19	11.97	155	20.01	48.00	27	4	.10	1.5	1.2	DEP	2.5U		217	8
98	AUG	19	1757	4.53	20	2.87	155	34.21	35.62	27	5	.11	2.2	3.5	KOH	2.5U		306	50
98	AUG	19	1909	5.00	19	18.79	155	13.48	6.96	25	7	.10	.4	.9	SF2	1.3U		74	3
98	AUG	19	2225	10.05	19	29.65	155	26.59	6.53	25	6	.11	.4	1.1	KAO	2.0U		106	5
98	AUG	20	1513	19.68	20	28.61	156	4.20	29.80	19	3	.11	2.3	2.7	DIS	2.7U		337	49
98	AUG	21	234	59.31	19	24.25	155	3.11	7.45	31	6	.10	.5	.7	SF5	2.7U		148	8
98	AUG	21	311	17.62	19	20.84	155	13.02	9.74	33	5	.13	.5	.7	SF2	2.4U		81	6
98	AUG	21	911	39.87	19	20.36	155	11.21	10.31	23	2	.10	.6	1.1	SF3	2.0U		118	4
98	AUG	21	1144	55.93	18	57.00	155	27.97	42.57	15	4	.11	3.2	2.4	DLS	1.6U		313	33
98	AUG	21	1253	11.50	18	58.62	155	29.26	36.40	4213		.09	.8	1.2	DLSF	4.0U		286	20
98	AUG	21	1421	48.67	19	29.86	155	30.09	6.47	13	5	.13	.5	2.1	KAO	1.7U		70	6
98	AUG	21	1934	43.71	18	54.45	155	29.70	40.17	23	4	.09	2.2	1.4	DLS	1.6U		282	28
98	AUG	21	2110	51.76	19	16.37	155	15.34	39.75	30	5	.11	1.1	1.2	DEP	1.7U		175	3
98	AUG	22	318	9.41	19	24.69	155	16.89	2.03	13	4	.14	.6	.3	SNC	1.9U		126	0
98	AUG	22	1124	22.52	19	20.77	155	15.20	33.54	4111		.11	.7	.8	DEP	3.1U		71	3
98	AUG	22	2135	3.47	19	24.14	155	29.76	9.85	22	3	.08	.4	.8	KAO	1.5U		94	5
98	AUG	23	134	29.83	19	20.19	155	7.82	7.95	32	5	.10	.5	.6	SF4	2.3U		125	5
98	AUG	23	618	12.70	19	20.72	155	29.72	10.01	25	4	.11	.4	.9	KAO	1.9U		47	5
98	AUG	23	1802	20.91	19	14.82	155	29.61	10.04	26	5	.10	.4	.8	LSW	1.9U		109	1
98	AUG	23	2132	23.03	19	10.89	155	19.39	51.32	21	5	.10	1.5	1.2	DEP	1.7U		219	10
98	AUG	23	2346	57.57	19	26.10	155	15.63	1.64	31	6	.12	.3	.4	SNC	3.5U		115	3
98	AUG	24	806	57.50	19	17.87	155	21.19	33.57	3610		.11	.7	1.0	DEP	2.4U		122	4
98	AUG	24	959	40.61	19	24.54	155	17.92	4.62	3911		.11	.3	.4	SNCF	3.1U		59	2
98	AUG	25	239	55.57	19	27.15	155	16.90	9.32	13	2	.10	1.4	.9	INTL	2.3U		191	3
98	AUG	25	1858	16.39	19	24.76	155	15.88	10.94	17	3	.11	1.1	.7	INTL	2.1U		107	2
98	AUG	25	2351	34.47	19	19.36	155	9.08	6.77	24	3	.09	.5	1.0	SF4	1.7U		93	4
98	AUG	26	712	36.93	19	30.72	154	52.57	43.45	26	7	.09	2.2	1.7	LER	1.6U		308	30
98	AUG	26	736	40.80	19	25.39	155	15.82	11.21	14	3	.08	1.4	.8	INTL	2.4U		165	2
98	AUG	26	818	20.41	19	18.66	155	15.12	8.21	29	6	.09	.4	.8	SF1	2.0U		97	4
98	AUG	26	1811	4.35	19	25.57	155	15.41	12.43	12	1	.07	1.3	1.3	INTL	2.5U		159	3
98	AUG	26	2133	22.40	19	25.18	155	18.76	6.66	34	9	.13	.4	.6	INT	3.0U		74	2

ORIGIN TIME				LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ			PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	AUG	27	118	50.59	19	25.72	155	15.70	13.91	12	2	.15	1.7	1.5	DEPL	2.3U		147	3
98	AUG	27	634	8.16	19	12.50	155	30.97	6.02	23	4	.13	.6	1.2	LSW	1.7U		145	5
98	AUG	27	1043	59.51	19	22.61	155	15.16	8.02	10	1	.12	1.6	1.0	INTL	2.3U		196	1
98	AUG	27	1320	33.66	19	30.52	155	27.72	4.69	18	6	.11	.3	1.0	MLO	1.8U		97	3
98	AUG	27	1505	18.03	19	22.77	155	2.39	8.49	28	4	.13	.8	.6	SF5	1.9U		170	9
98	AUG	27	1519	38.50	19	23.48	155	20.09	8.06	12	4	.10	1.9	3.3	KAOL	2.2U		188	6
98	AUG	27	1820	2.73	19	25.72	155	18.89	5.62	19	6	.10	.5	.9	INT	1.6U		90	2
98	AUG	27	2045	59.61	19	24.96	155	16.89	13.36	15	3	.06	1.4	1.0	DEPL	2.3U		92	0
98	AUG	27	2135	49.29	19	20.89	155	10.60	8.52	34	7	.14	.5	.7	SF3	2.5U		79	3
98	AUG	27	2141	5.01	19	20.18	155	10.79	8.45	30	5	.10	.4	.8	SF3	2.6U		83	4
98	AUG	28	705	6.05	19	12.87	155	31.16	6.95	33	6	.14	.5	.8	LSW	2.2U		142	4
98	AUG	28	726	59.12	19	24.46	155	16.71	8.57	12	2	.13	.8	1.0	INTL	2.5U		84	1
98	AUG	28	1237	58.83	19	12.21	155	30.68	9.98	24	5	.11	.4	.7	LSW	2.2U		146	5
98	AUG	28	2051	55.01	19	24.08	155	16.48	9.13	13	3	.12	1.0	.9	INTL			103	0
98	AUG	29	239	58.61	19	19.67	155	11.53	10.08	34	8	.10	.5	.5	SF3	2.7U		91	5
98	AUG	29	403	36.60	19	33.98	156	16.30	30.56	34	5	.09	1.4	2.0	KON	3.4U		282	38
98	AUG	29	1700	36.24	19	24.15	155	16.11	2.57	10	2	.09	.4	.5	SECL	2.4U		120	1
98	AUG	29	2248	17.75	19	20.20	155	10.07	7.59	23	4	.11	.5	.9	SF3	1.4U		82	3
98	AUG	29	2309	47.31	19	25.50	155	17.98	11.69	12	3	.11	2.2	1.4	INTL	2.1U		156	1
98	AUG	30	533	53.57	19	24.74	155	16.15	13.05	13	3	.15	1.7	1.2	DEPL	2.8U		101	2
98	AUG	30	844	43.12	19	10.59	155	28.95	31.31	35	6	.09	.9	.8	DLS	1.7U		148	3
98	AUG	30	1531	32.72	19	24.36	155	15.85	2.69	17	3	.07	.2	.3	SECL	2.5U		105	2
98	AUG	30	1607	17.24	19	19.81	155	11.55	10.20	25	2	.10	.6	1.0	SF3	1.9U		89	5
98	AUG	31	12	48.97	19	22.13	155	15.23	6.50	17	4	.10	.9	.7	INTL	2.4U		201	1
98	AUG	31	440	48.46	19	19.00	155	48.33	7.54	27	1	.12	.6	1.3	KON	2.0U		139	9
98	AUG	31	1715	39.10	19	18.75	155	48.31	9.67	28	7	.13	.5	.7	KON	1.7U		136	9
98	AUG	31	2312	46.09	19	26.51	155	15.69	11.50	10	3	.07	1.9	1.0	INTL	2.6U		209	4
98	SEP	1	131	46.45	19	27.66	155	23.38	10.59	4112		.11	.3	.5	KAO	2.8U		87	4
98	SEP	1	1133	58.64	19	23.47	155	14.35	7.66	10	2	.08	1.0	1.1	INTL	2.4U		221	2
98	SEP	1	1653	14.98	19	4.32	155	30.03	55.52	28	6	.16	2.2	1.3	DLST			270	10
98	SEP	1	1930	16.40	19	22.12	155	48.75	8.99	30	6	.13	.4	.7	KON	2.7U		112	13
98	SEP	1	2300	1.79	19	25.28	155	37.80	3.21	27	4	.15	.5	2.1	MLO	2.7U		78	8
98	SEP	3	636	7.30	19	24.94	155	37.69	5.97	23	5	.13	.5	2.1	MLO	2.6U		130	8
98	SEP	3	1728	25.87	19	22.07	155	18.74	12.37	27	3	.09	.5	.9	INT	1.6U		36	4
98	SEP	4	827	5.22	19	20.76	155	7.92	5.91	24	1	.14	1.0	1.3	SF4	1.5U		176	4
98	SEP	4	1301	59.07	19	15.21	155	6.10	44.81	34	6	.12	1.5	1.2	DEP	2.8U		265	5
98	SEP	4	1550	29.02	19	21.35	155	7.50	8.26	4413		.13	.4	.5	SF4	3.3U		125	4
98	SEP	5	1237	21.78	20	2.94	155	31.57	29.57	31	6	.08	1.0	1.6	KEA	2.8U		221	28
98	SEP	5	1412	31.94	19	58.85	155	14.97	8.11	30	6	.09	.7	1.2	KEA	3.2U		241	48
98	SEP	5	1534	46.48	20	27.01	154	55.99	3.52	19	3	.09	8.4	6.8	DIS -	3.1U		318	110
98	SEP	5	2101	49.03	19	16.48	155	17.08	36.85	23	4	.11	1.1	1.6	DEP	1.8U		152	4
98	SEP	6	436	11.71	19	29.56	155	26.13	5.15	25	7	.10	.4	1.4	KAO	2.3U		88	5
98	SEP	6	1355	55.22	18	55.47	155	10.82	42.81	29	5	.10	2.2	1.3	LOI			284	40
98	SEP	6	1623	42.93	19	51.07	155	31.48	21.23	4714		.09	.6	1.4	KEAF	3.4U		164	10
98	SEP	6	2251	30.17	19	50.50	155	31.21	21.24	27	5	.09	1.3	1.0	KEA	2.3U		281	9

ORIGIN TIME				LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ			PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	SEP	7	940	55.42	19	50.85	155	31.31	20.27	3911		.11	1.0	1.4	KEAF	3.0U		255	10
98	SEP	7	1343	8.72	19	18.88	155	13.26	4.69	18	2	.09	.4	1.5	SSF	1.7U		81	3
98	SEP	7	1357	20.66	19	15.68	155	4.24	38.96	28	3	.09	1.5	1.1	DEP	2.0U		231	7
98	SEP	7	1644	32.05	19	15.52	155	6.79	41.98	32	4	.10	1.4	1.4	DEP	1.3U		260	4
98	SEP	8	1205	31.05	19	20.67	155	13.19	8.69	32	8	.12	.4	.8	SF2	2.3U		87	6
98	SEP	8	1402	12.42	19	18.92	155	13.78	9.36	25	3	.10	.5	.9	SF2	1.9U		74	4
98	SEP	8	1605	3.80	19	23.49	155	14.86	9.44	15	3	.09	.9	1.1	INTL	1.9U		190	2
98	SEP	8	1628	46.86	19	15.39	155	7.11	41.12	26	3	.10	1.4	1.7	DEP	1.1U		270	4
98	SEP	8	1708	20.58	19	59.31	155	23.02	8.00	32	7	.10	.9	1.1	KEA	2.2U		209	24
98	SEP	8	2157	42.21	19	13.08	155	32.45	6.97	28	3	.13	.5	1.0	LSW	1.7U		150	6
98	SEP	8	2338	25.22	19	26.44	155	29.52	10.42	29	6	.07	.4	1.0	KAO	1.9U		83	8
98	SEP	9	22	9.42	19	20.53	155	13.77	6.59	25	3	.09	.4	.8	SF2	1.5U		84	5
98	SEP	9	1050	14.75	19	27.99	155	14.90	29.70	4314		.11	.6	.7	DEP	2.6U		123	3
98	SEP	9	1545	7.04	19	27.48	155	15.63	30.26	31	7	.08	.9	.8	DEP	1.6U		154	5
98	SEP	9	1653	27.40	19	15.29	155	7.18	42.02	28	5	.09	1.3	1.4	DEP	1.3U		257	4
98	SEP	10	224	15.13	19	24.79	155	14.83	0.23	18	3	.10	.3	.5	SNCL	1.7U		149	3
98	SEP	10	309	34.21	19	19.12	155	15.16	9.09	33	5	.13	.4	.8	SF1	1.6U		99	5
98	SEP	10	1126	41.90	19	20.79	155	8.77	5.89	26	2	.09	.6	1.0	SF4	2.0U		145	3
98	SEP	10	1210	28.96	19	19.10	155	12.13	7.32	27	5	.10	.4	.9	SF3	1.9U		99	5
98	SEP	10	1238	20.58	18	59.22	155	12.01	43.67	5115		.10	.8	1.4	LOIF	3.5U		241	33
98	SEP	10	2035	24.08	19	23.33	155	16.55	4.01	20	5	.10	.5	.4	SSCL	2.2U		91	1
98	SEP	10	2135	3.21	19	19.90	155	8.25	8.94	22	2	.10	.6	.8	SF4	1.7U		164	5
98	SEP	10	2316	58.06	19	20.18	155	11.51	10.59	29	3	.10	.5	.7	SF3	1.8U		82	5
98	SEP	11	12	59.20	19	25.60	155	15.40	12.83	18	3	.09	1.1	.8	INTL	2.5U		136	3
98	SEP	11	207	52.57	19	20.74	155	6.57	8.67	34	6	.12	.5	.4	SF4	2.4U		145	5
98	SEP	11	319	13.93	19	16.41	155	7.61	42.74	37	5	.11	1.0	1.4	DEP	1.6U		213	2
98	SEP	11	2055	46.79	19	20.54	155	6.98	8.41	29	5	.11	.6	.4	SF4	2.0U		140	5
98	SEP	11	2347	45.36	19	14.32	155	12.52	31.87	30	5	.11	1.1	1.3	DEP	1.0U		206	5
98	SEP	12	445	39.16	19	20.63	155	10.92	8.36	35	6	.14	.5	.7	SF3	2.2U		75	3
98	SEP	12	548	37.82	19	12.01	155	39.62	10.18	33	6	.16	.6	.9	LSW	2.6U		101	7
98	SEP	12	933	4.87	19	14.93	155	5.72	45.78	29	3	.11	1.9	1.7	DEP	1.6U		268	6
98	SEP	13	249	52.05	19	16.55	155	30.68	10.48	26	4	.13	.4	.9	LSW	1.7U		85	3
98	SEP	13	307	3.43	19	25.34	155	15.29	12.96	12	2	.10	1.5	1.0	INTL	3.0U		181	3
98	SEP	13	1729	33.03	19	19.48	155	9.72	8.74	30	4	.09	.5	.8	SF3	2.6U		95	5
98	SEP	13	1820	53.59	19	20.57	155	10.95	7.77	28	3	.11	.5	1.0	SF3	1.7U		90	3
98	SEP	13	1846	26.95	19	19.21	155	13.96	6.22	26	5	.11	.4	1.0	SF2	1.8U		75	4
98	SEP	13	1908	22.32	19	25.84	155	18.66	6.29	33	7	.11	.4	.6	INT	2.8U		87	2
98	SEP	14	2229	36.73	19	21.66	157	6.80	6.92	25	3	.14	10.3	12.7	DIS -	3.3U		336	139
98	SEP	15	439	17.91	19	25.40	155	18.89	8.22	32	7	.13	.5	.8	INT	2.1U		61	2
98	SEP	15	918	4.55	19	15.62	155	7.70	40.92	28	3	.11	1.7	1.8	DEP	1.4U		253	3
98	SEP	15	1129	36.26	19	2.44	155	25.49	38.56	38	9	.09	.8	.7	DLS	1.9U		208	14
98	SEP	15	1716	31.05	19	19.94	155	12.56	8.38	29	5	.10	.5	.7	SF2	2.0U		77	6
98	SEP	15	2015	48.71	19	27.02	155	14.05	17.82	12	2	.11	2.6	1.7	DEPL	2.6U		273	5
98	SEP	16	1030	26.11	20	11.55	155	35.79	38.60	40	6	.10	1.2	1.5	KOHF	3.2U		248	20
98	SEP	16	2307	31.07	19	18.71	155	12.95	10.01	3911		.12	.4	.5	SF2	2.9U		92	3

YR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	N RD	N S	RMS SEC	ERH KM	ERZ KM	LOC REMKS	PREF MAG	N RD	AZ GAP	MIN DS
98	SEP	17	438	6.06	19	11.59	155	35.34	12.63	35	5	.12	.5	.5	LSW	3.0U		122	7
98	SEP	17	528	53.69	19	25.50	155	14.90	7.76	12	3	.17	2.5	1.1	INTL	2.4U		234	4
98	SEP	17	626	44.09	19	18.63	155	15.87	6.73	25	3	.12	.5	1.0	SF1	2.2U		116	5
98	SEP	17	1956	44.06	19	16.08	155	29.03	11.19	31	5	.12	.4	.7	LSW	2.2U		60	3
98	SEP	17	2210	16.34	19	14.62	155	13.72	5.73	25	4	.12	.8	1.4	SF2	2.0U		198	4
98	SEP	17	2235	39.00	19	12.81	155	15.60	28.17	24	3	.11	1.5	1.5	DEP	1.1U		206	9
98	SEP	18	1220	0.10	19	31.10	155	40.08	9.61	30	4	.11	.6	.8	MLO	2.5U		122	8
98	SEP	18	1705	5.52	19	8.06	155	23.65	39.97	26	3	.07	1.2	1.1	LOI	1.3U		216	8
98	SEP	18	1730	56.76	19	15.47	155	12.43	7.59	30	4	.12	.7	.8	SF2	1.8U		203	3
98	SEP	18	2131	9.49	19	20.70	155	7.11	9.03	28	1	.08	.5	.5	SF4	1.5U		136	5
98	SEP	18	2210	0.83	19	14.56	155	13.58	5.91	25	3	.12	.8	1.3	SF2	1.8U		199	5
98	SEP	18	2223	50.41	19	21.41	155	5.82	9.34	32	6	.12	.8	.5	SF4	2.8U		245	5
98	SEP	19	12	51.53	19	22.15	155	29.79	11.95	33	3	.13	.4	1.0	KAO	2.2U		41	4
98	SEP	19	608	15.98	19	16.18	155	14.64	6.26	26	3	.08	.5	.9	SF1	1.9U		178	3
98	SEP	19	809	23.46	19	17.88	155	13.08	7.29	32	3	.14	.5	.9	SF2	2.1U		108	2
98	SEP	19	818	0.00	19	18.76	155	12.98	7.11	27	1	.09	.4	1.1	SF2	1.6U		90	3
98	SEP	19	938	6.55	19	22.99	155	17.57	12.53	28	2	.08	.4	.7	INT	1.2U		32	1
98	SEP	19	1052	38.21	19	17.41	155	12.80	8.58	30	3	.12	.6	.9	SF2	2.2U		149	1
98	SEP	19	1306	41.30	19	17.78	155	12.87	7.42	27	3	.10	.5	.8	SF2	2.2U		123	2
98	SEP	19	1312	44.81	19	17.16	155	12.92	7.78	33	6	.11	.5	.8	SF2	2.5U		169	1
98	SEP	19	1344	35.66	19	18.17	155	12.81	10.40	32	4	.11	.6	.9	SF2	3.1U		139	9
98	SEP	19	1403	49.54	19	17.09	155	13.02	7.34	28	3	.13	.6	1.0	SF2	2.0U		170	1
98	SEP	19	1424	17.60	19	17.49	155	13.22	10.71	29	3	.13	.6	1.1	SF2	2.6U		150	9
98	SEP	19	1435	25.02	19	14.83	155	32.98	9.46	26		.14	.4	1.0	LSW	1.5U		109	5
98	SEP	19	1501	47.35	19	17.82	155	12.97	6.59	29	3	.11	.5	1.0	SF2	2.2U		116	2
98	SEP	19	1731	26.27	19	17.41	155	12.79	6.45	29	3	.10	.5	.9	SF2	2.5U		149	1
98	SEP	19	1817	59.15	19	17.73	155	12.79	9.53	37	8	.12	.4	.7	SF2	3.3U		147	9
98	SEP	19	2201	44.96	19	17.53	155	14.83	6.32	26	3	.10	.4	.9	SF1	1.7U		127	3
98	SEP	19	2257	4.58	19	17.83	155	12.75	9.81	38	8	.14	.5	.8	SF2	3.0U		145	8
98	SEP	20	114	17.47	19	17.24	155	12.95	5.93	21	2	.07	.5	.9	SF2	1.6U		159	1
98	SEP	20	157	32.91	19	17.72	155	12.84	6.18	30	3	.11	.4	.9	SF2	1.9U		127	2
98	SEP	20	201	15.66	19	18.42	155	13.50	7.51	27	3	.09	.4	.8	SF2	2.4U		77	3
98	SEP	20	312	24.24	19	16.97	155	13.14	8.23	30	3	.12	.6	.8	SF2	2.6U		157	1
98	SEP	21	159	48.88	19	11.58	155	37.96	7.94	31	3	.14	.5	1.0	LSW	2.2U		87	6
98	SEP	21	216	45.93	19	17.90	155	14.22	7.12	26	3	.09	.4	.9	SF2	2.0U		109	2
98	SEP	21	309	45.99	19	18.39	155	12.97	9.99	31	3	.12	.5	.8	SF2	2.5U		136	9
98	SEP	21	1251	26.98	19	12.05	155	20.76	46.25	33	3	.10	.9	1.4	DEP	1.5U		169	7
98	SEP	21	1545	20.85	19	25.03	155	15.69	10.32	22	3	.10	.8	.6	INTL	2.8U		123	2
98	SEP	21	1837	43.96	19	9.50	155	34.92	8.02	39	8	.13	.5	1.2	LSW	2.9U		116	11
98	SEP	21	2120	14.99	19	17.77	155	13.26	8.40	36	6	.12	.5	.6	SF2L	3.0U		101	1
98	SEP	22	1	21.97	19	25.06	155	38.85	3.15	28	2	.12	.6	.5	MLO	3.2U		189	2
98	SEP	22	223	34.59	19	20.62	155	9.84	7.33	27	3	.08	.4	.7	SF3	1.5U		114	3
98	SEP	22	1041	38.18	19	19.22	155	15.72	9.29	25	2	.10	.5	.8	SF1	1.5U		95	3
98	SEP	23	744	58.38	19	16.72	155	13.72	7.17	27	4	.13	.6	.8	SF2	2.0U		183	1
98	SEP	23	747	24.21	19	25.10	155	15.22	10.50	15	5	.12	2.0	1.0	INTL	2.7U		221	3

YR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	N RD	N S	RMS SEC	ERH KM	ERZ KM	LOC REMKS	PREF MAG	N RD	AZ GAP	MIN DS
98	SEP	23	1240	33.76	19	20.38	155	11.30	6.97	28	3	.12	.5	1.1	SF3	1.7U		84	4
98	SEP	23	1329	55.55	19	29.88	155	27.57	5.78	30	5	.13	.4	1.6	KAO	2.4U		91	4
98	SEP	23	1330	9.25	19	30.07	155	27.07	6.38	35	7	.09	.3	1.1	MLO	2.8U		110	4
98	SEP	23	1528	37.74	19	29.98	155	43.74	7.73	23	4	.11	.8	1.3	KON	1.3U		139	4
98	SEP	23	1615	50.67	19	19.49	155	8.74	9.68	41	8	.12	.4	.5	SF4	3.4U		103	4
98	SEP	23	1829	43.10	19	16.70	155	30.61	9.44	32	2	.13	.4	.7	LSW	1.9U		79	3
98	SEP	23	2050	52.17	19	48.79	155	32.73	15.87	30	4	.10	1.2	1.8	KEA	2.1U		254	24
98	SEP	23	2216	29.42	19	46.39	155	52.43	13.01	33	5	.12	1.1	.5	HUA	2.3U		185	10
98	SEP	24	7	49.94	19	23.11	155	2.60	0.02	30	5	.14	.8	.3	SSF #	1.9U		165	9
98	SEP	24	1427	21.20	19	18.67	155	13.45	8.95	3810		.12	.4	.7	SF2	2.8U		77	3
98	SEP	25	39	9.16	19	49.79	155	51.79	15.16	39	6	.11	.8	1.0	HUA	2.5U		193	16
98	SEP	25	228	52.95	19	22.48	155	30.09	10.32	27	2	.08	.4	.9	KAO	1.5U		41	4
98	SEP	25	540	45.49	19	17.40	155	15.24	11.23	30	3	.13	.6	.9	SF1	2.3U		160	9
98	SEP	25	930	39.87	19	19.69	155	11.40	9.47	29	3	.09	.5	.9	SF3	1.9U		92	5
98	SEP	25	1630	14.44	19	17.64	155	13.11	7.41	24	2	.10	.5	1.1	SF2	1.5U		117	1
98	SEP	25	1630	35.55	19	19.46	155	13.84	29.00	34	5	.11	.8	1.2	DEP	1.5U		61	5
98	SEP	26	312	43.90	19	10.73	155	12.65	37.49	33	3	.10	1.5	1.7	DEP	1.8U		235	12
98	SEP	26	1727	48.48	19	26.42	155	14.22	2.80	27	6	.10	.4	.9	SNCF	2.9U		170	5
98	SEP	26	2114	21.89	18	59.20	155	14.75	39.02	31	3	.08	1.7	1.4	LOI	1.5U		251	30
98	SEP	27	711	11.34	20	0.16	156	40.14	6.75	24	3	.11	9.1	11.6	DIS -	2.2U		335	94
98	SEP	27	1508	53.46	19	19.91	155	10.68	7.03	32	3	.10	.5	.9	SF3	2.1U		94	4
98	SEP	27	1643	44.31	18	58.03	155	16.44	10.04	21		.13	3.3	.8	LOI	2.8U		270	29
98	SEP	27	1650	14.08	19	43.70	156	1.27	8.05	27	2	.11	2.0	1.0	HUA	2.4U		282	20
98	SEP	27	1716	11.66	19	27.51	155	51.45	9.64	30	3	.15	1.2	.6	KON	2.6U		180	11
98	SEP	27	1906	47.99	19	12.12	155	21.03	44.63	41	9	.09	.8	1.1	DEP	2.4U		167	7
98	SEP	27	1941	23.52	19	23.00	155	16.94	9.59	14	3	.07	1.5	.9	INTL	2.6U		191	1
98	SEP	27	2156	12.56	19	26.28	155	13.59	0.80	4410		.19	.4	.4	GLNF	4.6U		130	6
98	SEP	27	2210	26.79	19	26.34	155	14.35	1.27	21	6	.10	.3	.7	SNCF	2.1U		171	5
98	SEP	27	2224	46.61	19	26.54	155	13.50	0.71	20	5	.09	.3	.5	GLN	2.4U		176	6
98	SEP	27	2351	14.85	19	26.09	155	14.62	7.18	15	5	.08	.7	1.6	INT	1.8U		161	5
98	SEP	28	0	24.42	19	25.96	155	14.40	7.05	16	5	.10	.7	1.9	INT	1.8U		161	5
98	SEP	28	107	50.81	19	25.89	155	16.49	1.75	17	5	.13	.4	.5	SNC	2.2U		112	2
98	SEP	28	153	19.89	19	24.06	155	15.93	3.77	25	5	.11	.4	.3	SEC	2.8U		105	1
98	SEP	28	159	49.86	19	26.25	155	13.54	0.63	4010		.11	.3	.3	GLNF	4.1U		149	6
98	SEP	28	217	31.11	19	26.37	155	13.48	5.72	17	5	.10	.6	2.7	GLNF	2.0U		184	6
98	SEP	28	223	39.95	19	26.01	155	13.60	2.25	22	7	.09	.4	.7	GLNF	3.1U		173	6
98	SEP	28	508	13.11	19	26.20	155	13.43	3.65	34	7	.12	.4	1.2	GLNF	3.3U		172	6
98	SEP	28	1015	39.12	19	11.74	155	29.23	34.17	33	5	.09	.6	1.0	DLS	1.7U		76	5
98	SEP	28	1447	54.55	19	19.72	155	8.65	9.43	35	4	.09	.5	.6	SF4	2.0U		106	5
98	SEP	28	1940	32.69	20	3.39	156	40.77	6.16	20	5	.12	9.0	11.8	DIS -	1.9U		327	113
98	SEP	28	2039	12.59	19	20.78	155	7.59	9.52	4310		.10	.5	.3	SF4F	4.8U		175	5
98	SEP	28	2044	50.24	19	19.64	155	7.27	6.74	28	4	.09	.7	.5	SF4	2.6U		201	4
98	SEP	28	2048	38.75	19	19.57	155	7.86	4.34	19	4	.10	.5	1.4	SSF	.9U		127	4
98	SEP	28	2052	14.93	19	19.26	155	7.01	7.50	19	5	.06	.8	.8	SF4	1.4U		214	4
98	SEP	28	2058	47.95	19	19.55	155	6.61	7.03	22	6	.06	.7	.6	SF4	1.1U		226	5

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ			PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	LOC	REMKS	MAG	RD	GAP	DS
98	SEP	28	2118	47.73	19	19.38	155	6.99	6.62	16	3	.12	1.2	1.0	SF4		1.0U		214	4
98	SEP	28	2129	57.79	19	19.31	155	6.71	7.57	29	5	.10	.8	.4	SF4		1.4U		223	4
98	SEP	28	2136	37.88	19	20.30	155	5.89	6.61	20	5	.13	.8	1.1	SF4		1.4U		160	6
98	SEP	28	2142	48.87	19	20.12	155	8.38	6.18	31	4	.10	.5	.8	SF4		1.5U		112	4
98	SEP	28	2219	35.68	19	20.67	155	5.94	7.05	18	3	.10	.6	.7	SF4		1.4U		154	6
98	SEP	28	2220	24.45	19	20.46	155	7.00	6.65	26	5	.10	.8	.8	SF4		1.5U		209	5
98	SEP	28	2235	6.01	19	19.81	155	7.45	8.13	27	4	.09	.9	.7	SF4		1.7U		195	5
98	SEP	28	2300	56.27	19	20.70	155	7.51	6.99	17	4	.08	.8	.9	SF4		.8U		191	5
98	SEP	29		22	35.52	19	19.50	155	7.16	6.28	17	4	.11	.9	1.1	SF4		.8U		207	4
98	SEP	29		321	16.39	19	16.11	155	15.31	5.86	25	4	.13	.7	1.1	SF1		1.3U		179	4
98	SEP	29		428	37.91	19	19.91	155	8.59	5.90	22	4	.10	.6	1.1	SF4		1.3U		152	5
98	SEP	29		447	11.79	19	19.49	155	7.50	7.16	16	5	.07	.6	1.0	SF4				194	4
98	SEP	29		457	27.59	19	20.20	155	6.83	1.19	14	3	.16	.9	1.1	SSF				215	6
98	SEP	29		705	26.81	19	20.19	155	6.55	6.79	25	4	.09	1.0	.8	SF4		1.5U		224	6
98	SEP	29		707	9.12	19	19.59	155	7.55	4.53	21	3	.09	.9	2.0	SSF		1.0U		191	4
98	SEP	29		719	41.88	19	19.63	155	7.55	5.66	17	3	.05	.8	1.3	SF4		1.1U		191	4
98	SEP	29		823	33.18	19	19.88	155	8.59	7.07	13	4	.05	.6	1.2	SF4		.9U		152	5
98	SEP	29		839	37.66	19	19.83	155	8.70	5.40	16	4	.08	.6	1.5	SF4		1.5U		148	5
98	SEP	29		851	45.55	19	20.87	155	6.91	6.33	15	2	.08	.9	1.0	SF4		1.3U		212	5
98	SEP	29	1057	22.75	19	20.84	155	8.14	9.16	41	8	.11	.4	.5	SF4		2.9U		116	4
98	SEP	29	1134	48.18	19	19.94	155	8.42	7.36	28	4	.07	.6	.8	SF4		1.4U		159	5
98	SEP	29	1353	37.45	19	18.18	155	23.40	5.64	34	4	.13	.4	1.4	SWR		2.8U		93	4
98	SEP	29	1846	24.07	19	19.78	155	8.69	6.51	21	3	.08	.6	.9	SF4		1.6U		148	5
98	SEP	29	2003	56.24	19	53.88	155	54.19	43.44	25	4	.07	1.8	1.4	HUA		2.0U		316	24
98	SEP	29	2229	11.08	19	19.85	155	8.31	7.04	28	4	.09	.5	.8	SF4		1.6U		114	5
98	SEP	30		648	20.39	19	27.33	155	11.96	28.93	26	3	.10	1.3	1.2	DEP		.9U		220	8
98	SEP	30		908	52.44	19	20.06	155	7.87	6.64	22	6	.12	.5	.9	SF4		1.3U		179	5
98	SEP	30	1017	29.69	19	19.19	155	7.86	6.91	21	5	.08	.8	.9	SF4		1.3U		181	3
98	SEP	30	1024	57.19	19	19.25	155	14.74	7.19	20	4	.07	.5	.9	SF1		.8U		90	5
98	SEP	30	1212	50.35	19	19.21	155	13.00	7.72	32	5	.10	.4	.7	SF2		1.7U		81	4
98	SEP	30	1924	40.14	19	6.35	155	14.38	29.54	37	7	.11	1.2	1.2	LOI		2.2U		236	20
98	SEP	30	2043	43.19	19	19.51	155	9.92	10.59	22	5	.09	.5	.8	SF3		1.1U		110	5
98	SEP	30	2327	7.62	19	19.47	155	8.00	6.75	14	3	.08	.6	.9	SF4		1.0U		174	4
98	OCT	1		7	55.33	19	20.28	155	6.13	6.61	27	4	.10	.5	.7	SF4		1.3U		156	6
98	OCT	1		50	50.23	19	19.74	155	9.11	7.70	27	4	.10	.5	.8	SF4		1.7U		96	4
98	OCT	1		412	14.70	19	21.06	155	7.64	7.17	21	3	.11	.6	.5	SF4		.8U		185	4
98	OCT	1		628	54.74	19	20.12	155	11.16	7.80	26	6	.09	.4	.8	SF3		1.3U		86	4
98	OCT	1		900	59.16	19	23.12	155	2.41	7.21	26	5	.11	1.3	.6	SF5		2.3U		292	9
98	OCT	2		617	55.79	18	46.97	155	14.81	9.39	30	5	.10	1.2	1.2	LOI		3.3U		311	47
98	OCT	3		16	6.82	19	27.78	155	24.84	9.78	24	4	.11	.4	1.0	KAO		1.1U		57	5
98	OCT	3	1249	23.92	19	23.89	155	15.68	4.74	14	3	.09	.6	.9	SECL		1.6U		108	2
98	OCT	3	1402	35.81	19	12.46	155	20.95	42.96	34	7	.10	1.0	1.0	DEP		1.6U		177	6
98	OCT	3	1628	33.47	19	20.22	155	6.89	10.42	35	4	.12	.9	.4	SF4		2.7U		213	6
98	OCT	3	2348	17.63	19	20.85	155	13.05	9.50	34	6	.13	.4	.6	SF2		2.3U		65	3
98	OCT	4	1000	47.32	19	18.96	155	11.48	6.48	28	4	.09	.4	.9	SF3		2.0U		110	5

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ			PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	LOC	REMKS	MAG	RD	GAP	DS
98	OCT	4	2214	36.49	19	14.95	155	29.18	44.59	25	5	.07	.7	1.1	DLS		1.6U		154	2
98	OCT	5	111	2.37	19	10.30	155	26.80	11.55	25	5	.12	.6	.5	LSW		1.7U		164	2
98	OCT	5	355	51.24	19	20.23	155	7.17	5.91	32	5	.10	.6	.9	SF4		1.3U		203	5
98	OCT	5	817	56.27	19	24.36	155	14.53	7.99	12	2	.05	1.5	1.1	INTL		2.6U		242	4
98	OCT	5	1208	44.79	19	18.27	155	12.94	9.70	23	4	.11	.6	.8	SF2		1.3U		102	2
98	OCT	5	2209	48.12	19	15.75	155	12.91	50.09	20		.10	2.2	4.4	DEP		1.3U		188	3
98	OCT	6	151	2.46	19	24.87	155	19.28	6.81	32	8	.13	.4	.9	KAO		2.3U		66	3
98	OCT	6	257	18.38	19	27.47	154	51.36	9.14	28	6	.11	1.3	.6	LER		2.9U		314	7
98	OCT	6	435	43.89	19	18.38	155	13.21	8.96	30	4	.10	.5	.6	SF2		1.8U		90	3
98	OCT	6	1712	43.01	19	13.99	155	29.29	11.26	25	5	.11	.4	.7	LSW		2.0U		91	2
98	OCT	6	2137	23.46	19	19.26	155	9.66	8.86	23	4	.08	.5	.7	SF3		1.3U		100	5
98	OCT	7	126	17.73	19	18.00	155	46.74	7.97	24	5	.14	.5	1.8	KON		1.7U		103	10
98	OCT	7	1727	36.78	19	20.23	155	7.24	4.84	25	1	.08	.8	1.6	SSF		1.4U		201	5
98	OCT	7	2245	21.95	19	21.76	155	4.33	6.24	25	1	.12	.7	1.3	SF5		1.6U		162	7
98	OCT	8	1142	46.57	19	25.64	155	16.60	3.20	14	3	.08	.5	.3	SNCL		2.0U		119	2
98	OCT	8	1850	7.45	19	24.45	155	14.65	30.15	43	8	.10	.6	.7	DEPF		4.3U		108	4
98	OCT	9	1922	39.83	19	23.39	155	4.73	6.13	23	3	.08	1.3	.8	SF5		2.4U		249	5
98	OCT	9	2204	29.82	19	24.76	155	0.28	9.04	26	1	.12	.9	.6	SF5		2.1U		165	10
98	OCT	10	136	36.40	19	22.52	155	29.97	9.63	35	5	.09	.3	.9	KAO		1.9U		43	4
98	OCT	10	154	4.63	19	24.87	155	19.06	7.55	30	6	.12	.4	.7	KAO		2.0U		66	3
98	OCT	10	319	20.39	19	19.49	155	8.53	8.07	28	5	.09	.4	.6	SF4		1.8U		108	4
98	OCT	10	1259	1.84	19	52.21	155	47.60	15.16	25	2	.11	1.0	2.4	HUA				168	21
98	OCT	10	1259	31.71	19	22.23	155	28.77	47.02	31	5	.10	.9	1.3	DML		2.6U		37	2
98	OCT	10	1529	9.98	19	19.73	155	6.63	8.44	24	4	.07	1.0	.4	SF4		1.5U		223	5
98	OCT	10	1841	53.20	19	56.29	155	49.89	15.44	28	7	.11	1.9	2.8	KOH		2.4U		309	28
98	OCT	10	2009	19.18	19	54.25	155	48.27	18.32	29	6	.12	1.5	4.0	HUA		2.3U		281	24
98	OCT	11	242	27.97	19	1.35	155	26.36	39.81	4612		.09	.9	1.1	DLS		2.6U		212	15
98	OCT	11	256	36.45	19	20.63	155	4.04	6.16	34	6	.12	.6	.9	SF5		2.2U		179	8
98	OCT	11	1726	8.98	19	19.97	155	8.19	4.81	25	5	.08	.5	1.3	SSF		1.0U		167	5
98	OCT	12	1839	44.55	19	29.28	155	27.03	6.88	32	8	.12	.3	1.1	KAO		2.2U		93	5
98	OCT	12	2042	32.87	19	20.53	155	8.50	8.84	29	5	.11	.7	.6	SF4		2.6U		155	4
98	OCT	13		0	5.17	19	31.96	155	41.47	1.09	23	4	.10	.6	.7	MLO		1.6U		149	8
98	OCT	13		215	42.01	19	21.19	155	7.04	9.37	31	4	.08	.5	.3	SF4		2.3U		133	4
98	OCT	13		357	54.97	19	20.55	155	8.06	8.12	26	2	.12	.8	.7	SF4		1.5U		171	4
98	OCT	13		548	32.03	19	22.88	155	2.06	0.06	30	4	.12	.7	.3	SSF		1.8U		172	10
98	OCT	13		706	8.42	19	57.05	155	28.27	36.61	39	6	.11	1.0	1.6	KEA		3.2U		191	19
98	OCT	13		927	6.90	19	21.79	155	12.77	3.04	25	5	.09	.3	.4	SER		2.6U		92	2
98	OCT	13		958	31.98	19	19.70	155	9.88	6.20	29	3	.09	.4	1.1	SF3		1.3U		112	4
98	OCT	14	1734	48.80	19	19.44	155	12.61	6.73	22	4	.08	.4	.9	SF2		1.5U		84	5
98	OCT	15		410	37.24	19	16.76	155	29.20	32.57	31	5	.09	.7	1.1	DLS		1.8U		54	3
98	OCT	15		733	36.53	19	20.00	155	11.71	8.15	27	4	.10	.5	.8	SF3		2.0U		84	5
98	OCT	15	1322	46.85	19	16.34	155	47.57	7.70	27	6	.12	.4	1.4	KON		2.1U		100	8
98	OCT	15	1707	26.34	19	23.46	154	50.77	38.94	32	4	.11	1.8	1.1	LER		1.9U		295	11
98	OCT	15	1916	56.53	19	9.92	155	29.28	35.77	24	5	.09	1.1	.9	DLS		1.1U		161	3
98	OCT	15	2250	47.78	19	21.76	155	6.38	9.08	24	4	.09	.4	.5	SF4		1.3U		138	4

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ			PREF N		AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS	
98	OCT	16	1157	54.42	19	18.96	155	14.75	7.13	25	4	.09	.4	.8	SF1	1.7U		96	4	
98	OCT	16	1229	34.17	18	53.53	155	15.88	15.94	27	5	.09	2.3	7.9	LOI	2.3U		267	36	
98	OCT	16	1642	28.25	19	19.09	155	13.07	8.58	27	4	.10	.5	.8	SF2	1.7U		82	4	
98	OCT	17	525	52.09	19	19.83	155	17.17	33.31	37	6	.12	.8	1.2	DEP	2.2U		89	4	
98	OCT	17	535	39.57	19	13.57	155	20.62	43.36	27	6	.12	1.0	.9	DEP	1.6U		168	6	
98	OCT	17	706	40.90	19	46.54	155	36.10	14.82	27	6	.13	1.0	.4	KEA	2.2U		198	15	
98	OCT	17	1130	30.43	19	20.10	155	13.10	7.09	29	6	.07	.4	.7	SF2	1.5U		68	5	
98	OCT	17	1803	10.22	19	20.95	155	7.25	9.62	35	6	.12	.5	.4	SF4	3.0U		131	4	
98	OCT	17	2251	13.53	19	26.31	155	29.33	12.61	33	7	.11	.3	.7	KAO	2.0U		45	7	
98	OCT	18	246	37.76	19	44.63	156	26.95	7.00	23	4	.12	8.8	11.5	DIS -	2.5U		323	64	
98	OCT	18	459	57.50	18	50.72	155	9.88	48.64	23	5	.12	2.5	1.7	LOI	1.5U		284	47	
98	OCT	18	626	26.25	19	19.95	155	12.16	6.99	31	6	.09	.4	.7	SF3	1.8U		81	5	
98	OCT	18	705	24.31	19	20.44	155	12.68	8.34	22	4	.08	.5	.6	SF2	1.4U		85	6	
98	OCT	18	853	59.56	19	20.58	155	7.95	9.01	22	2	.08	1.1	.7	SF4	1.4U		231	4	
98	OCT	18	1305	59.86	19	19.55	155	11.86	5.85	30	4	.11	.4	1.0	SF3	1.5U		92	5	
98	OCT	18	1730	42.35	19	20.44	155	52.24	6.80	30	6	.16	.8	.8	KON	2.0U		209	8	
98	OCT	19	222	51.67	19	20.99	155	2.99	7.59	25	3	.12	.7	.6	SF5	2.0U		185	9	
98	OCT	19	540	4.66	19	20.34	155	47.42	11.32	24	5	.09	.4	.6	KON	1.8U		141	12	
98	OCT	19	612	26.86	19	22.70	155	26.06	12.91	28	3	.12	.4	.9	KAO	2.0U		41	3	
98	OCT	19	1929	45.02	19	22.47	155	30.23	10.26	26	4	.07	.3	.7	KAO	1.3U		54	5	
98	OCT	20	103	24.37	19	11.94	155	7.61	46.67	28	3	.10	1.3	1.2	DEP	1.3U		226	10	
98	OCT	20	309	18.28	19	9.21	155	17.59	3.13	24	3	.14	1.0	2.1	LOI	1.8U		223	15	
98	OCT	20	856	58.73	20	11.61	155	37.22	29.65	22	6	.21	1.7	1.7	KOH	1.2U		252	18	
98	OCT	20	1635	20.25	19	19.02	155	13.85	7.43	31	4	.11	.4	.8	SF2	1.7U		66	4	
98	OCT	20	1650	25.01	18	55.33	155	33.81	39.71	26	6	.08	1.8	1.2	DLS	1.5U		261	13	
98	OCT	21	816	42.16	19	20.94	155	7.26	7.56	34	5	.10	.7	.6	SF4	2.3U		227	7	
98	OCT	21	817	37.36	19	20.37	155	8.50	8.05	41	9	.13	.4	.6	SF4	2.9U		110	4	
98	OCT	21	1033	42.43	19	20.09	155	8.52	7.00	23	5	.10	.6	.9	SF4	1.3U		154	4	
98	OCT	22	942	46.65	19	21.86	155	25.33	12.80	25	5	.09	.4	.8	KAO	1.8U		47	4	
98	OCT	22	947	22.99	19	15.85	155	23.29	4.26	30	5	.12	.4	1.1	SWR	2.3U		121	3	
98	OCT	22	1027	50.79	19	20.92	155	13.02	9.34	31	3	.12	.5	.7	SF2	2.3U		66	3	
98	OCT	22	1851	22.60	19	2.09	155	25.98	41.15	29	3	.08	1.4	.9	DLS	1.4U		209	14	
98	OCT	22	2006	40.71	20	0.14	155	7.26	9.11	32	5	.11	1.6	3.1	KEA	1.9U		238	58	
98	OCT	22	2251	26.60	19	18.54	155	13.53	8.25	35	6	.12	.4	.7	SF2	1.9U		75	3	
98	OCT	23	37	2.67	19	18.28	155	13.30	8.09	27	5	.09	.4	.7	SF2	1.0U		88	2	
98	OCT	23	121	0.82	19	37.14	155	11.97	15.61	33	8	.11	.9	.9	KEA	1.5U		177	19	
98	OCT	23	147	13.77	19	23.98	155	15.81	10.07	17	3	.13	1.1	.9	INTL	3.0U		120	1	
98	OCT	23	230	2.85	19	19.02	155	26.03	9.89	37	7	.13	.3	.7	KAO	2.0U		58	5	
98	OCT	23	332	43.52	19	21.85	155	6.38	7.72	32	5	.12	.5	.7	SF4	1.7U		138	4	
98	OCT	23	1206	54.94	19	23.28	155	14.83	3.80	20	6	.07	.4	.4	SEC	2.2U		110	2	
98	OCT	24	251	38.46	19	20.20	155	8.19	7.24	28	2	.10	.5	.7	SF4	1.1U		116	5	
98	OCT	24	252	11.58	19	20.38	155	7.83	8.19	28	2	.09	.5	.6	SF4	1.8U		124	5	
98	OCT	24	739	0.55	19	22.06	155	25.72	10.89	42	10	.13	.4	.6	KAO	2.3U		39	3	
98	OCT	24	1049	45.66	19	21.45	155	5.92	9.86	36	6	.09	.4	.4	SF4	2.6U		147	5	
98	OCT	24	1149	32.06	19	25.41	155	20.46	7.91	26	5	.09	.5	1.1	KAO	1.3U		61	4	

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ			PREF N		AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS	
98	OCT	24	1223	10.80	19	25.17	155	14.73	4.88	14	3	.07	1.0	1.3	SNC	2.8U		237	4	
98	OCT	24	2017	17.50	19	29.03	155	51.79	9.29	24	2	.20	1.7	.8	KON	1.6U		202	11	
98	OCT	24	2019	38.96	19	24.02	155	16.40	3.69	19	6	.11	.6	.3	SEC	2.0U		97	0	
98	OCT	25	325	33.31	19	17.15	155	30.44	7.87	35	4	.14	.4	1.1	LSW	2.2U		71	4	
98	OCT	25	546	38.44	19	25.13	155	24.86	11.82	43	13	.10	.3	.5	KAO	3.2U		51	7	
98	OCT	25	728	7.99	19	11.16	155	41.27	9.19	30	4	.15	.6	1.0	LSW	1.3U		150	9	
98	OCT	25	1158	27.74	19	24.40	155	17.21	2.80	18	3	.11	.5	.3	SSCL	2.9U		73	1	
98	OCT	25	1453	55.07	19	26.50	154	56.28	36.94	29	4	.05	1.2	1.1	LER	1.5U		187	3	
98	OCT	25	1602	41.21	19	20.24	155	18.27	18.49	32	10	.09	.5	.8	DEP	1.6U		64	2	
98	OCT	25	1923	49.02	19	16.10	155	29.49	9.36	24	1	.13	.4	1.1	LSW	1.9U		58	2	
98	OCT	25	2356	23.52	19	28.57	155	28.50	9.60	32	10	.13	.4	.9	KAO	1.7U		111	7	
98	OCT	26	52	51.72	19	12.05	155	20.36	45.90	35	4	.10	1.1	1.3	DEP	1.5U		186	8	
98	OCT	26	524	42.57	19	52.98	155	48.26	21.80	33	7	.10	1.1	2.3	HUA	2.2U		277	22	
98	OCT	26	2021	40.02	19	15.88	155	28.83	10.55	22	4	.12	.4	.8	LSW	1.6U		67	3	
98	OCT	27	512	52.46	19	18.21	155	22.89	33.07	30	5	.11	.8	1.3	DEP	1.6U		99	4	
98	OCT	27	713	5.30	19	37.34	155	52.10	38.67	26	4	.08	1.5	1.1	KON	1.7U		202	8	
98	OCT	27	1832	24.92	19	19.91	155	11.70	8.36	26	5	.10	.5	.8	SF3	1.9U		86	5	
98	OCT	27	2225	30.30	20	39.76	156	31.68	10.91	19	3	.13	9.5	13.2	DISF-	4.0U		336	130	
98	OCT	28	109	49.60	19	18.32	155	18.87	34.31	28	3	.10	1.0	1.2	DEP	1.4U		84	1	
98	OCT	28	456	9.14	19	13.43	155	29.54	9.84	42	9	.14	.5	.8	LSWF	3.3U		77	3	
98	OCT	28	456	13.06	19	19.54	155	16.52	6.90	20	4	.12	.6	1.1	SF1			102	5	
98	OCT	28	504	34.70	19	12.93	155	29.26	6.43	33	6	.16	.4	1.0	LSW	2.3U		99	4	
98	OCT	28	1202	8.97	19	12.49	155	20.67	43.56	35	5	.10	.9	1.1	DEP	2.0U		179	7	
98	OCT	28	1823	53.51	19	20.79	155	8.16	8.29	39	8	.13	.5	.6	SF4	3.1U		115	4	
98	OCT	29	339	1.53	19	20.03	155	7.42	7.54	28	3	.10	.7	.7	SF4	2.2U		134	5	
98	OCT	29	457	9.34	19	20.86	155	12.66	8.32	32	5	.13	.5	.8	SF2	2.4U		75	3	
98	OCT	29	2259	19.95	19	13.32	155	32.28	6.50	31	5	.17	.6	1.2	LSW	2.2U		121	5	
98	OCT	30	214	42.53	19	20.54	155	11.18	9.35	38	7	.11	.5	.5	SF3	2.6U		76	4	
98	OCT	30	946	41.17	19	46.64	156	52.20	7.26	19	4	.12	9.0	11.1	DIS -	2.5U		329	109	
98	OCT	30	1502	14.57	19	20.58	155	13.10	7.83	26	4	.08	.4	.7	SF2	1.6U		63	4	
98	OCT	31	1617	9.45	19	20.35	155	12.66	6.75	34	4	.14	.5	.9	SF2	2.4U		71	4	
98	NOV	1	435	14.24	19	17.38	155	13.20	6.58	27	4	.11	.5	.8	SF2	1.5U		126	1	
98	NOV	1	628	12.93	19	17.68	155	13.22	6.17	32	6	.13	.5	1.0	SF2	2.4U		107	1	
98	NOV	1	709	42.03	19	16.47	155	24.90	36.26	35	5	.10	.7	1.1	DEP	2.3U		71	4	
98	NOV	1	1115	26.08	19	32.29	155	37.68	11.61	29	4	.09	.6	.5	MLO	2.2U		135	5	
98	NOV	1	1614	30.91	19	20.40	155	13.22	6.75	26	4	.12	.5	.9	SF2	2.0U		64	4	
98	NOV	1	2329	41.95	19	22.77	155	2.21	6.34	32	7	.14	.7	1.0	SF5	1.5U		172	7	
98	NOV	2	714	12.29	19	24.39	155	19.61	5.46	32	8	.11	.4	1.2	KAO	2.1U		56	4	
98	NOV	2	726	52.86	19	17.02	155	24.87	7.45	28	1	.12	.4	1.1	SWR	1.9U		74	5	
98	NOV	2	1115	55.51	19	21.53	155	49.19	9.32	39	9	.16	.6	.5	KON	2.7U		171	12	
98	NOV	2	1306	6.33	18	56.55	155	32.34	40.49	34	5	.07	1.5	1.1	DLS	2.3U		248	14	
98	NOV	2	1616	46.73	19	44.37	155	2.49	38.10	33	3	.10	1.2	1.9	HIL	2.6U		217	30	
98	NOV	2	1736	13.97	19	19.26	155	9.79	8.40	30	5	.08	.4	.6	SF3	1.9U		101	5	
98	NOV	3	1319	32.10	19	24.91	155	30.24	12.88	31	3	.10	.4	.7	KAO	2.0U		45	5	
98	NOV	3	1709	16.63	19	22.33	155	30.41	12.23	23	3	.09	.4	1.0	KAO	1.1U		45	5	

ORIGIN TIME				LAT N	LON W	DEPTH	N	N	RMS	ERH	ERZ		PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG MIN	DEG MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	NOV	3	1739	35.51	19 19.86	155 8.27	7.98	22	4	.09	.5	.7	SF4	1.6U		114	5
98	NOV	3	2239	14.57	19 34.71	155 11.42	4.34	28	4	.09	.3	2.6	GLN	1.6U		132	16
98	NOV	3	2311	21.61	19 13.82	156 14.76	9.75	17	5	.10	2.4	2.5	KON			301	51
98	NOV	4	400	41.22	19 23.61	155 22.54	11.33	40	8	.11	.4	.5	KAO	2.3U		43	6
98	NOV	4	943	23.93	19 20.40	155 8.96	7.09	32	4	.11	.7	.9	SF4	2.0U		140	3
98	NOV	4	1848	12.91	19 25.10	155 38.86	3.05	17	4	.11	.6	.4	MLO	1.8U		113	2
98	NOV	5	205	58.08	19 21.10	155 7.11	9.03	41	8	.11	.4	.3	SF4	3.2U		129	4
98	NOV	5	546	47.63	19 23.39	155 14.88	3.14	20	4	.11	.4	.3	SEC	2.4U		126	3
98	NOV	5	1510	32.77	19 17.82	155 13.26	7.31	33	4	.11	.5	.7	SF2	2.0U		99	2
98	NOV	6	153	7.59	19 14.11	155 2.77	43.95	35	3	.11	1.6	1.0	DEP	1.1U		236	11
98	NOV	6	1248	43.85	19 20.58	155 7.45	7.10	27	1	.09	.7	.9	SF4	1.3U		175	5
98	NOV	6	1637	18.20	19 26.14	155 15.81	2.62	13	1	.14	.6	.9	SNCL	3.2U		151	3
98	NOV	7	1300	25.43	19 12.39	155 28.01	6.44	37	5	.15	.4	.8	LSWF	2.8U		102	5
98	NOV	7	1330	24.79	19 11.88	155 27.86	6.94	41	10	.14	.4	.6	LSWF	2.7U		108	4
98	NOV	7	1330	38.15	19 10.52	155 26.74	10.86	25	4	.14	.7	.9	LSWF	2.6U		158	3
98	NOV	7	1642	53.56	19 31.61	155 53.52	7.96	27	4	.20	2.1	.8	KON	2.1U		215	13
98	NOV	7	1912	8.37	19 28.17	155 29.29	8.28	30	5	.11	.4	1.2	KAO	1.7U		82	8
98	NOV	7	1931	17.15	19 26.08	155 13.98	1.55	16	4	.08	.4	1.0	SNC	2.3U		170	6
98	NOV	8	1600	34.65	19 56.55	155 36.20	48.51	36	4	.10	1.6	1.3	KOH	1.9U		262	28
98	NOV	8	1821	56.90	19 20.66	155 10.68	9.45	32	3	.09	.5	.6	SF3	1.5U		75	3
98	NOV	8	2256	34.47	19 26.33	155 29.34	10.11	29	6	.08	.3	.9	KAO	1.4U		72	8
98	NOV	9	126	11.05	19 20.82	155 11.43	9.43	39	6	.10	.4	.5	SF3	2.4U		72	4
98	NOV	9	237	41.65	19 20.16	155 7.50	9.74	30	1	.09	.4	.5	SF4	1.5U		130	5
98	NOV	9	458	21.38	19 25.11	155 19.10	7.81	46	16	.12	.3	.5	KAOF	3.0U		42	3
98	NOV	9	955	15.22	19 21.31	155 16.73	24.61	32	6	.11	.8	.8	DEP	1.8U		64	2
98	NOV	9	1702	28.28	19 17.13	155 15.67	26.19	22	4	.07	1.1	1.1	DEP	1.4U		159	4
98	NOV	9	2039	28.74	19 3.41	154 24.55	34.23	29	4	.13	2.0	3.7	DIS	2.3U		323	70
98	NOV	10	326	19.95	19 18.69	155 13.60	5.80	28	4	.11	.4	.9	SF2	1.5U		72	3
98	NOV	10	1354	36.35	19 29.80	155 23.03	15.43	44	12	.12	.5	.3	DML	3.0U		107	0
98	NOV	10	1430	49.72	19 21.15	155 7.32	6.74	28	4	.09	.8	.7	SF4	2.0U		198	4
98	NOV	10	1830	26.30	19 18.08	155 15.36	6.64	28	4	.12	.4	.8	SF1	1.9U		115	4
98	NOV	10	1957	48.72	19 25.57	155 18.48	6.81	21	5	.11	.8	1.0	INT	1.3U		80	2
98	NOV	10	2124	13.18	19 20.05	155 11.79	7.68	31	5	.12	.4	.9	SF3	2.6U		82	5
98	NOV	10	2243	2.83	19 27.88	155 51.65	12.95	26	4	.08	.9	.4	KON	2.4U		240	11
98	NOV	11	58	8.24	19 23.57	154 45.90	44.81	25	4	.08	2.1	1.0	LER	1.6U		322	18
98	NOV	11	2002	32.63	19 12.31	155 20.99	44.00	29	5	.11	1.2	1.0	DEP	1.5U		196	6
98	NOV	12	202	57.71	19 19.64	155 11.65	6.75	22	5	.08	.4	.9	SF3	1.5U		91	5
98	NOV	12	851	59.10	19 20.06	155 11.69	8.20	29	3	.13	.5	1.1	SF3	2.4U		85	5
98	NOV	12	906	25.47	19 22.21	155 16.56	26.30	32	4	.11	.8	1.0	DEP	2.5U		73	1
98	NOV	12	1133	52.47	19 22.43	155 56.56	9.47	22	3	.22	2.6	.9	KON	1.7U		264	14
98	NOV	12	2242	49.10	19 20.83	155 11.71	7.24	34	5	.15	.5	.9	SF3	2.9U		70	4
98	NOV	12	2331	6.07	19 29.79	155 22.66	14.16	28	6	.08	.4	.4	DML	1.9U		105	1
98	NOV	13	1606	53.38	19 18.98	155 15.21	7.05	25	4	.10	.4	.8	SF1	1.5U		102	4
98	NOV	14	120	25.89	19 18.54	155 13.25	6.13	33	6	.16	.5	1.1	SF2	2.2U		85	3
98	NOV	14	736	0.92	18 56.78	155 28.33	56.85	21	6	.13	2.6	1.1	DLS			291	23

ORIGIN TIME				LAT N	LON W	DEPTH	N	N	RMS	ERH	ERZ		PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG MIN	DEG MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	NOV	15	102	35.86	19 20.62	155 6.56	8.44	27	3	.09	.5	.4	SF4	1.9U		145	5
98	NOV	16	358	50.81	19 54.20	156 48.99	6.51	23	4	.13	9.8	12.4	DIS -	2.7U		336	105
98	NOV	16	2100	45.14	19 22.52	155 26.36	11.63	25	3	.10	.5	.8	KAO	1.9U		42	2
98	NOV	17	51	38.58	19 27.59	155 29.60	11.68	21	5	.12	.4	1.2	KAO	1.7U		67	8
98	NOV	17	121	47.36	19 48.42	155 24.38	23.21	24	5	.09	.7	1.2	KEA	2.2U		152	6
98	NOV	18	448	31.00	19 32.20	155 55.37	13.76	21	3	.12	1.0	.6	KON	1.5U		218	19
98	NOV	18	526	14.77	19 26.06	155 24.19	10.92	28	7	.12	.4	.9	KAO	1.4U		53	7
98	NOV	18	540	47.26	19 21.73	155 6.06	7.05	26	5	.10	.5	.7	SF4	2.0U		140	4
98	NOV	18	1031	59.87	19 19.62	154 59.56	36.71	35	4	.12	1.5	1.3	LER	2.2U		223	10
98	NOV	18	1553	6.80	18 53.80	155 11.63	42.88	25	6	.13	2.1	1.7	LOI	2.0U		288	41
98	NOV	18	1556	54.40	19 23.02	155 27.32	10.95	27	6	.11	.4	.8	KAO	2.0U		39	1
98	NOV	19	1440	22.63	19 21.05	155 11.51	10.35	31	3	.10	.5	.6	SF3	2.2U		79	3
98	NOV	21	1114	19.80	19 3.06	154 25.16	7.51	29	4	.16	8.4	11.2	DIS -	2.8U		324	69
98	NOV	22	554	25.76	20 24.43	156 4.18	27.71	44	12	.11	1.2	1.9	KOHF	4.5U		320	43
98	NOV	22	2140	25.41	19 18.13	155 27.84	11.24	27	5	.12	.4	.8	LSW	2.0U		80	7
98	NOV	23	1508	21.47	19 19.54	155 9.72	9.37	30	5	.09	.4	.6	SF3	2.1U		93	5
98	NOV	23	1608	16.02	20 9.92	155 51.20	29.66	27	5	.10	1.5	.9	KOH	2.7U		296	9
98	NOV	23	1630	18.74	19 21.46	155 6.00	8.59	31	3	.09	.5	.3	SF4	2.6U		146	4
98	NOV	23	1949	46.12	19 24.82	155 16.08	14.21	22	3	.08	1.0	.5	DEP	1.3U		186	2
98	NOV	23	2150	35.05	19 33.66	156 15.36	38.16	25	6	.13	1.9	2.0	KON	2.1U		301	46
98	NOV	24	1926	53.66	18 56.34	155 28.72	38.82	31	5	.08	1.7	1.2	DLS	1.9U		266	24
98	NOV	25	38	9.38	19 26.71	154 49.84	40.90	30	2	.11	1.7	1.4	LER	1.5U		278	10
98	NOV	25	826	33.00	19 11.59	155 23.78	48.20	40	6	.11	.9	1.1	DEP	2.6U		163	5
98	NOV	25	1448	38.09	19 23.47	155 15.24	3.07	23	6	.15	.3	.4	SEC	2.7U		60	2
98	NOV	26	44	3.75	19 22.42	155 17.95	25.56	25	3	.11	.8	1.4	DEP	1.4U		48	3
98	NOV	26	348	8.48	19 20.48	155 11.77	7.39	31	6	.11	.4	.7	SF3	1.8U		76	4
98	NOV	26	906	57.05	19 20.37	155 13.30	7.90	24	4	.11	.5	.9	SF2	1.9U		98	6
98	NOV	27	120	6.12	18 56.08	155 29.19	39.49	20	5	.10	2.0	1.4	DLS	1.4U		286	25
98	NOV	27	1504	54.01	19 24.18	155 25.77	11.21	36	6	.11	.3	.8	KAO	2.2U		35	9
98	NOV	27	2338	58.28	19 29.09	155 27.42	6.62	33	9	.11	.3	1.4	KAO	2.1U		73	5
98	NOV	28	830	0.64	19 12.97	155 20.96	44.49	53	16	.11	.7	.8	DEP	2.8U		163	6
98	NOV	28	1015	13.33	19 16.76	155 29.12	11.67	27	4	.12	.4	1.0	LSW	2.4U		54	4
98	NOV	30	401	29.90	19 10.13	155 33.14	32.49	41	8	.08	.6	.8	DLS	2.5U		113	9
98	NOV	30	1217	50.00	19 23.17	155 14.66	3.42	20	7	.08	.3	.4	SEC	2.5U		92	3
98	DEC	1	1222	4.81	19 19.57	155 11.33	6.58	34	5	.12	.4	.8	SF3	2.4U		95	5
98	DEC	1	1348	31.02	19 19.55	155 11.58	6.74	25	4	.06	.4	1.0	SF3	1.7U		94	6
98	DEC	1	2055	35.80	19 24.59	155 38.23	3.10	24	5	.14	.4	.3	MLO	2.5U		101	1
98	DEC	1	2058	23.15	19 23.74	155 26.23	11.13	43	9	.13	.3	.4	KAO	2.7U		32	3
98	DEC	1	2325	30.93	19 21.29	155 13.05	7.99	30	2	.12	.5	.8	SF2	2.1U		57	5
98	DEC	2	51	55.88	18 59.68	155 28.88	48.10	28	5	.08	1.6	1.2	DLS	1.6U		218	18
98	DEC	2	1503	11.18	19 19.14	155 15.20	7.51	39	6	.14	.4	.7	SF1	3.0U		90	4
98	DEC	3	302	31.41	19 21.75	156 52.49	19.76	22	4	.13	2.8	12.4	DIS -	3.4U		324	106
98	DEC	3	602	16.42	19 20.24	155 7.75	7.81	20	3	.10	.5	.5	SF4	1.8U		124	5
98	DEC	3	917	33.15	19 29.54	155 55.01	13.78	19	3	.09	1.3	.5	KON	1.9U		244	25
98	DEC	3	925	5.07	19 22.61	155 2.41	8.16	24	4	.11	.6	.8	SF5	1.7U		171	8

ORIGIN TIME				LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ			PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	DEC	3	1426	14.70	19	18.63	155	25.70	8.94	31	4	.14	.4	.9	LSW	2.2U		62	5
98	DEC	3	1920	29.97	19	20.85	155	12.93	7.21	27	4	.13	.4	.9	SF2	2.2U		62	6
98	DEC	4	519	43.19	19	19.10	155	13.68	7.59	29	6	.10	.4	.7	SF2	2.0U		82	4
98	DEC	4	1655	58.22	19	53.64	155	23.40	19.64	23	8	.10	.9	.9	KEA	2.3U		232	5
98	DEC	4	2224	19.73	19	24.45	155	26.07	2.35	27	7	.12	.3	.8	KAO	2.3U		40	5
98	DEC	5	444	33.10	19	19.79	155	8.15	7.64	32	2	.11	.4	.6	SF4	2.8U		116	5
98	DEC	5	526	53.65	18	40.62	155	22.97	16.26	32	5	.10	2.6	13.3	LOI -	2.3U		301	45
98	DEC	5	1915	50.65	19	4.18	156	9.92	46.77	27	3	.08	2.2	1.5	KON	2.1U		286	38
98	DEC	6	2128	32.51	19	41.41	155	59.34	36.52	33	2	.10	1.1	1.5	HUA	2.5U		219	16
98	DEC	7	202	53.34	19	22.18	155	29.94	10.14	28	4	.09	.4	.7	KAO	1.8U		43	4
98	DEC	7	306	5.12	19	10.39	155	32.05	8.39	25	2	.14	.7	1.3	LSW	2.3U		145	9
98	DEC	7	1249	2.39	19	19.27	155	13.21	8.21	36	5	.12	.4	.7	SF2	2.5U		76	4
98	DEC	8	155	25.72	19	13.45	155	30.51	6.01	27	3	.19	.8	1.3	LSW	2.1U		173	3
98	DEC	8	1219	36.45	19	23.15	155	16.83	2.95	31	7	.13	.4	.2	SSC	2.7U		72	0
98	DEC	9	314	57.80	19	13.10	155	30.63	8.08	30	2	.14	.7	.9	LSWF	2.8U		178	4
98	DEC	9	358	18.45	19	22.04	155	30.07	10.41	24	4	.07	.3	.8	KAO	1.3U		45	4
98	DEC	9	555	52.68	19	13.60	155	20.13	41.67	23	4	.12	1.3	1.4	DEP	1.0U		199	7
98	DEC	9	623	58.49	19	20.41	155	7.41	5.47	25	5	.10	.6	1.0	SF4	1.8U		194	5
98	DEC	10	34	58.00	19	12.11	155	20.88	46.84	35	4	.11	1.0	1.3	DEP	1.6U		183	7
98	DEC	10	412	37.19	19	53.08	155	53.22	14.73	23	3	.15	2.6	1.8	HUA	2.2U		286	22
98	DEC	10	536	31.24	19	11.37	155	20.58	46.46	25	5	.10	1.4	1.2	DEP	1.2U		205	8
98	DEC	10	1148	54.38	19	30.60	155	23.16	10.01	31	8	.12	.5	.6	MLO	2.0U		64	2
98	DEC	11	557	41.03	19	13.91	155	19.79	41.75	29	5	.11	1.2	1.4	DEP	2.1U		212	7
98	DEC	11	2051	53.41	19	19.61	155	13.00	7.44	27	6	.09	.4	.7	SF2	1.9U		75	5
98	DEC	14	2328	59.85	19	21.35	155	14.66	38.61	28	4	.11	.8	1.3	DEP	1.6U		81	3
98	DEC	15	40	56.92	19	21.32	155	7.95	8.81	30	4	.09	.5	.5	SF4	2.8U		117	4
98	DEC	15	102	24.40	19	19.78	155	11.88	7.19	30	3	.15	.5	1.1	SF3	2.3U		86	6
98	DEC	15	1309	18.72	19	20.77	155	5.78	8.68	25	3	.09	.5	.7	SF4	1.8U		156	6
98	DEC	17	42	46.41	19	20.09	155	9.65	8.16	24	4	.09	.5	.6	SF3	2.4U		119	4
98	DEC	17	1402	11.36	19	23.62	155	22.57	10.56	29	4	.07	.4	.8	KAO	2.0U		45	6
98	DEC	17	1526	55.90	19	23.75	155	16.28	3.31	23	6	.11	.7	.3	SEC	2.7U		123	1
98	DEC	17	1626	27.01	19	23.68	155	16.56	3.17	26	6	.11	.5	.3	SSC	3.1U		101	0
98	DEC	17	1746	50.13	19	23.81	155	26.64	9.93	30	5	.09	.3	.6	KAO	2.2U		36	3
98	DEC	17	2339	3.05	19	19.41	155	13.99	9.12	23	2	.10	.5	.8	SF2	1.9U		125	6
98	DEC	18	140	47.50	19	49.05	156	6.90	34.54	34	7	.11	1.2	1.8	HUA	3.1U		248	49
98	DEC	18	943	18.49	19	27.25	155	29.37	11.11	34	9	.10	.3	.7	KAO	2.3U		48	8
98	DEC	18	1015	51.74	19	15.12	155	49.99	6.83	23	5	.18	.9	1.4	KON	1.6U		201	4
98	DEC	18	1509	8.03	19	21.60	155	30.58	10.45	21	3	.07	.4	.9	KAO	1.5U		47	5
98	DEC	18	1808	43.09	20	37.77	156	12.67	7.01	19	4	.10	7.6	9.5	DIS -	2.8U		325	71
98	DEC	18	2235	3.91	19	15.51	155	23.07	7.25	23	4	.12	.5	.9	SWR	1.6U		153	3
98	DEC	19	137	39.25	19	18.98	155	28.29	11.05	34	5	.12	.3	.6	LSW	2.7U		41	7
98	DEC	20	1158	41.95	19	31.51	155	34.86	19.79	30	7	.11	.5	.9	DML	1.9U		86	2
98	DEC	20	1251	53.43	19	26.62	155	22.81	9.88	23	4	.11	.4	1.0	KAO	1.7U		71	4
98	DEC	21	324	33.89	19	14.22	155	30.46	10.89	24	4	.10	.5	.7	LSW	1.9U		123	2
98	DEC	21	2214	44.21	19	25.70	155	29.53	13.40	22	3	.11	.4	.7	DML	1.9U		65	6

ORIGIN TIME				LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ			PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	DEC	22	1139	3.41	19	19.53	155	12.56	6.78	25	7	.11	.5	1.1	SF2	1.6U		139	7
98	DEC	22	1614	3.32	19	4.11	155	23.34	34.17	35	6	.11	1.6	1.1	LOI	2.7U		246	13
98	DEC	22	1708	5.95	19	23.55	155	17.07	2.96	14	4	.04	.6	.3	SSC	2.0U		79	0
98	DEC	22	1815	27.01	19	32.87	155	56.76	13.53	20	3	.11	1.7	.8	KON	2.2U		253	32
98	DEC	22	1930	44.99	19	23.41	155	17.38	2.55	14	5	.08	.7	.5	SSC	2.1U		78	1
98	DEC	24	301	57.73	19	18.77	155	26.88	50.78	34	5	.12	.7	1.3	DLS	2.4U		63	7
98	DEC	25	112	12.96	19	59.17	155	26.27	48.62	20	2	.10	2.0	1.4	KEA	1.3U		272	15
98	DEC	25	1544	22.36	19	15.24	155	32.46	9.34	22	3	.14	.5	1.1	LSW	2.0U		124	4
98	DEC	26	821	34.93	19	20.64	155	13.41	34.89	28	3	.10	1.0	1.3	DEP	1.6U		88	5
98	DEC	27	148	1.51	18	48.21	155	14.07	9.71	21	5	.08	1.2	1.2	LOI	1.9U		310	46
98	DEC	27	1023	4.68	19	24.92	155	16.05	18.56	40	7	.14	.6	.6	DEP	2.1U		85	2
98	DEC	27	1126	12.62	19	29.23	154	53.46	1.26	29	2	.19	.5	.6	SLEF	3.1U		161	4
98	DEC	27	1129	9.05	19	29.02	154	53.54	0.41	26	3	.14	.5	.4	SLEF	3.2U		171	4
98	DEC	27	1140	46.90	18	47.55	155	13.80	10.72	34	6	.10	1.2	1.4	LOIF	4.7U		299	47
98	DEC	27	1514	4.52	19	20.98	155	13.26	33.41	23	4	.08	.9	1.0	DEP	1.5U		81	5
98	DEC	27	2114	8.38	19	18.81	155	15.49	7.05	24	4	.09	.4	.9	SF1	1.6U		109	5
98	DEC	28	504	40.67	19	19.00	155	48.13	11.28	28	6	.09	.5	.3	KON	2.4U		122	9
98	DEC	28	616	59.06	19	30.98	155	54.66	10.91	25	4	.17	1.2	.5	KON	2.2U		210	15
98	DEC	28	1357	44.24	19	53.14	155	15.24	20.05	3811		.11	.8	1.8	KEAF	3.7U		217	9
98	DEC	29	230	17.53	19	20.22	155	3.48	6.08	24	3	.13	.8	1.0	SF5	1.7U		189	9
98	DEC	29	924	42.47	19	22.86	155	14.78	3.75	18	5	.11	.5	.5	SEC	2.7U		131	2
98	DEC	29	1137	29.06	19	28.69	155	27.25	6.95	22	3	.10	.4	1.5	KAO	1.7U		73	7
98	DEC	29	1639	5.24	19	7.96	155	27.56	29.50	26	5	.09	1.0	.9	DLS	1.4U		178	3
98	DEC	29	2113	9.93	19	20.61	155	10.88	9.31	31	5	.10	.4	.6	SF3	1.9U		76	3
98	DEC	31	18	44.41	19	41.42	154	52.54	45.99	29	3	.10	1.4	1.5	HIL	2.0U		236	16
98	DEC	31	1629	25.12	19	12.47	155	30.06	7.16	29	4	.17	.5	1.0	LSW	2.4U		70	5
98	DEC	31	1918	20.52	19	27.68	154	55.33	3.42	19	1	.16	.6	.5	SLE	2.5U		95	0
98	DEC	31	2106	29.92	19	25.30	155	24.71	10.97	42	8	.11	.3	.5	KAO	2.8U		36	7
98	DEC	31	2251	48.77	19	25.58	155	19.92	4.88	27	6	.12	.4	1.0	KAO	2.0U		47	4

Table 5.

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ	LOC	PREF N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	JAN	3	1431	6.58	19	59.21	156	14.18	41.26	40	6	.12	1.1	1.5	KOH	3.2U		277	50
98	JAN	5	541	47.77	19	24.52	155	17.76	14.11	21	4	.14	1.2	.6	DEP	3.4U		68	2
98	JAN	5	1127	40.48	19	22.29	155	29.19	11.02	4312		.10	.3	.5	KAO	3.3U		73	3
98	JAN	5	1957	21.28	19	20.51	155	19.99	0.93	17	4	.09	.8	.6	SWRL	3.6U		206	8
98	JAN	6	1616	59.16	19	21.48	155	6.99	8.65	4713		.10	.5	.4	SF4	3.0U		170	4
98	JAN	9	1322	0.62	20	17.31	155	8.63	16.51	32	3	.11	1.8	13.6	KEA -	3.6U		269	69
98	JAN	12	1649	19.39	19	24.60	155	46.92	13.26	36	5	.12	.6	.3	KON	3.3U		91	11
98	JAN	12	2103	58.28	19	19.61	155	15.44	8.78	37	3	.12	.5	.6	SF1	3.1U		160	4
98	JAN	14	1858	17.19	19	23.60	155	15.31	3.11	34	8	.11	.3	.3	SEC	3.1U		85	2
98	JAN	15	116	58.28	19	25.19	155	17.42	11.04	10	1	.05	1.5	1.3	INTL	3.6U		137	1
98	JAN	15	639	49.68	19	24.82	155	17.31	12.14	21	5	.08	1.0	.6	INTL	3.0U		100	1
98	JAN	15	728	39.99	19	23.91	155	18.60	13.40	18	5	.06	.9	.6	DEPL	3.0U		141	3
98	JAN	15	824	57.87	19	24.22	155	17.13	5.15	13	1	.14	.7	1.0	INTL	3.2U		121	1
98	JAN	15	904	13.35	19	24.19	155	16.79	9.97	13	3	.08	1.2	1.3	INTL	3.0U		117	1
98	JAN	15	1120	8.35	19	23.19	155	17.95	11.39	11	1	.12	1.3	1.8	INTL	3.0U		135	2
98	JAN	15	1426	21.81	19	23.53	155	17.05	11.34	13	2	.09	1.1	1.4	INTL	3.0U		121	0
98	JAN	18	838	52.52	19	24.13	155	16.35	13.89	22	5	.10	1.1	.7	DEPL	3.1U		111	1
98	JAN	18	1243	4.43	19	25.11	155	16.11	8.24	11	3	.08	1.8	.9	INTL	3.2U		164	2
98	JAN	18	1745	6.05	19	24.93	155	38.53	3.36	27	5	.10	.5	.4	MLO	3.1U		181	2
98	JAN	21	256	37.89	19	11.65	155	42.60	7.56	5115		.15	.4	.7	LSW	3.5U		70	7
98	JAN	21	708	24.62	19	23.30	155	14.79	3.85	37	5	.10	.3	.4	SEC	3.1U		60	3
98	JAN	22	705	41.93	19	23.29	155	14.92	3.69	33	8	.11	.3	.4	SEC	3.1U		68	2
98	JAN	22	2327	7.35	19	23.92	155	16.23	11.92	18	4	.10	1.3	.9	INTL	3.0U		103	1
98	JAN	23	610	54.61	19	24.04	155	15.69	2.37	18	4	.09	.3	.4	SECL	3.3U		114	2
98	JAN	23	1112	30.74	19	22.90	155	17.03	11.74	25	8	.09	.6	.6	INTL	3.0U		67	1
98	JAN	23	1439	39.60	19	24.81	155	15.66	11.93	22	8	.08	1.2	.8	INTL	3.1U		142	2
98	JAN	25	825	38.79	19	28.65	155	15.32	31.95	5719		.10	.6	.6	DEPF	3.3U		125	3
98	JAN	26	1032	59.92	19	20.84	155	6.05	9.09	43	9	.10	.5	.4	SF4	3.1U		152	5
98	JAN	27	1729	44.48	19	24.80	155	18.48	4.84	4811		.12	.3	.5	SNCF	3.9U		50	2
98	JAN	27	1851	15.16	19	24.81	155	18.33	5.38	40	9	.11	.3	.5	INT	3.0U		65	2
98	JAN	27	2001	43.05	19	25.43	155	19.20	5.30	4912		.12	.3	.6	KAOF	4.1U		65	3
98	JAN	27	2003	0.91	19	25.10	155	18.24	5.49	34	7	.09	.3	.5	INTF	3.7U		70	1
98	JAN	27	2006	59.17	19	25.30	155	19.08	6.09	25	9	.10	.5	.9	KAOF	3.0U		75	3
98	JAN	27	2008	13.76	19	25.40	155	19.25	7.42	40	9	.09	.3	.5	KAOF	3.0U		65	3
98	JAN	27	2008	26.10	19	25.30	155	19.75	6.81	38	9	.08	.3	.7	KAOF	3.0U		85	4
98	JAN	27	2008	39.24	19	25.31	155	18.90	6.32	25	7	.10	.4	.7	INTF	3.0U		121	2
98	JAN	27	2009	57.31	19	25.38	155	19.21	5.92	4512		.10	.3	.7	KAOF	3.1U		77	3
98	JAN	27	2011	57.40	19	25.43	155	19.08	4.98	46	9	.12	.3	.7	KAOF	4.1U		64	3
98	JAN	27	2014	29.35	19	25.20	155	19.20	6.49	33	9	.09	.3	.6	KAOF	3.4U		82	3
98	JAN	27	2014	56.11	19	25.26	155	19.27	6.14	4312		.10	.3	.6	KAOF	3.1U		63	3
98	JAN	27	2024	32.49	19	26.18	155	18.73	7.92	4611		.11	.3	.4	INTF	3.2U		71	2
98	JAN	27	2032	53.73	19	25.54	155	19.01	5.51	4712		.11	.3	.6	INTF	3.0U		64	2
98	JAN	27	2046	4.39	19	25.37	155	19.01	5.71	4612		.12	.3	.6	INTF	3.4U		62	2
98	JAN	27	2137	38.77	19	25.31	155	19.10	6.29	4411		.12	.3	.6	KAOF	3.1U		62	3
98	JAN	27	2143	19.06	19	25.00	155	19.36	5.79	4612		.11	.3	.7	KAOF	3.3U		61	3

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ	LOC	PREF	N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	JAN	27	2246	25.55	19	25.31	155	19.23	6.01	5013		.13	.3	.6	KAOF	3.6U		63	3
98	JAN	27	2250	56.97	19	24.90	155	19.28	5.71	4411		.11	.3	.7	KAOF	3.4U		66	3
98	JAN	28	825	14.38	19	25.39	155	18.91	5.62	4712		.11	.3	.6	INTF	3.3U		78	2
98	JAN	28	1635	27.76	19	25.29	155	18.75	6.33	41	9	.10	.3	.6	INTF	3.0U		59	2
98	JAN	30	944	16.15	19	24.50	155	15.17	2.78	21	4	.11	.4	.4	SECL	3.1U		125	2
98	JAN	30	1625	5.99	20	5.97	155	33.56	30.85	39	6	.12	1.2	2.0	KEAF	3.0U		218	23
98	JAN	31	1153	5.54	19	23.23	155	17.00	9.25	18	4	.10	.9	.7	INTL	3.2U		114	0
98	JAN	31	1908	38.73	19	24.81	155	14.94	6.40	21	4	.12	.6	.7	INTL	3.1U		151	1
98	FEB	1	508	46.46	19	23.25	155	16.39	10.46	23	5	.09	.7	.6	INTL	3.3U		69	1
98	FEB	1	2057	43.54	20	2.84	155	44.62	10.33	42	6	.10	.8	1.0	KOHF	3.6U		148	10
98	FEB	5	45	58.79	19	22.02	155	27.90	11.54	34	3	.10	.3	1.2	KAO	3.0U		40	9
98	FEB	6	1656	53.04	19	20.09	155	6.15	6.86	18	2	.10	.7	1.1	SF4	3.6U		158	6
98	FEB	7	1605	45.36	19	34.54	156	25.31	1.06	40	7	.13	1.8	.7	DIS	3.1U		283	62
98	FEB	8	600	54.46	19	23.95	155	15.23	3.45	18	4	.11	.4	.5	SECL	3.1U		101	2
98	FEB	14	2327	27.86	18	53.63	156	41.91	9.85	37	7	.12	7.7	10.6	DIS -	3.6U		318	96
98	FEB	16	1004	8.36	19	19.27	155	13.34	9.20	42	9	.13	.4	.6	SF2	3.4U		125	6
98	FEB	18	711	48.26	20	44.27	157	25.05	34.73	19	1	.11	3.6	4.6	DIS	3.1U		186	98
98	FEB	28	1803	49.18	19	33.63	155	58.33	13.55	43	5	.12	1.7	.7	KONF	4.1U		243	10
98	MAR	7	1230	1.80	19	32.41	155	53.17	26.14	46	4	.11	.6	1.1	KON	3.4U		158	7
98	MAR	7	1555	18.67	19	34.54	155	52.82	23.87	41	5	.11	.7	1.1	KON	3.0U		166	10
98	MAR	20	642	59.55	19	21.91	155	4.95	9.69	43	6	.11	.6	.4	SF5F	3.5U		145	5
98	MAR	21	110	21.18	19	32.73	155	57.89	12.00	34	5	.09	1.1	.4	KON	3.2U		238	8
98	MAR	25	1233	25.85	19	47.80	155	30.78	22.39	5113		.10	.5	1.2	KEAF	3.5U		144	6
98	MAR	25	1407	59.40	19	37.92	155	7.04	38.71	4810		.09	.8	1.0	HILF	3.4U		181	25
98	MAR	29	1030	28.84	21	1.66	155	10.62	6.97	44	7	.13	7.7	9.7	DIS -	3.8U		315	118
98	MAR	30	2014	52.86	19	16.70	155	22.17	7.31	43	8	.14	.4	1.1	SWR	3.2U		130	5
98	MAR	31	2005	22.25	19	9.07	155	37.40	8.97	37	6	.14	.4	1.0	LSW	3.0U		107	11
98	APR	1	1950	42.69	19	44.74	155	27.72	24.33	41	6	.08	.8	1.0	KEA	3.1U		107	4
98	APR	5	43	51.94	19	23.44	155	14.49	4.34	4711		.13	.3	.6	SECF	4.1U		98	3
98	APR	9	52	24.53	19	12.19	155	30.91	37.76	5211		.07	.6	.9	DLSF	4.0U		81	6
98	APR	10	2052	22.99	19	24.10	155	25.65	10.92	39	8	.13	.4	.7	KAO	3.0U		32	5
98	APR	13	409	44.31	19	18.20	155	47.95	11.14	38	6	.11	.6	.3	KONF	3.6U		126	9
98	APR	16	534	46.60	19	22.02	155	49.37	12.63	40	5	.11	.5	.3	KONF	3.4U		119	12
98	APR	18	1448	12.04	20	9.13	156	31.78	33.99	38	7	.10	1.3	2.3	DIS	3.0U		308	78
98	APR	21	1405	46.11	19	16.14	155	27.63	11.19	39	9	.13	.4	1.0	LSW	3.0U		65	5
98	APR	22	338	31.26	19	51.99	156	11.97	43.91	37	8	.11	1.2	1.8	HUA	3.0U		264	43
98	APR	30	2113	44.76	19	24.97	155	37.68	2.80	31	6	.12	.3	.3	MLO	3.1U		116	1
98	MAY	3	133	2.13	19	19.72	155	19.01	33.86	5314		.10	.6	.8	DEPF	3.8U		52	3
98	MAY	5	115	24.13	19	30.88	155	48.52	9.85	44	9	.14	.6	.3	KON	3.0U		95	5
98	MAY	5	2207	20.68	19	19.57	155	53.32	12.52	4011		.09	1.0	.3	KONF	3.3U		228	7
98	MAY	5	2223	36.52	19	20.23	155	53.60	12.14	45	8	.12	.8	.3	KONF	3.8U		189	8
98	MAY	6	535	43.97	19	18.02	155	13.39	7.71	35	7	.11	.5	.7	SF2	3.0U		88	2
98	MAY	6	1500	8.62	19	13.16	155	30.68	12.99	4211		.13	.5	.6	LSWF	3.5U		133	4
98	MAY	7	1315	33.75	19	13.60	155	31.05	8.01	5716		.19	.5	.7	LSWF	4.3U		67	3
98	MAY	7	1805	23.11	19	21.19	155	4.44	9.05	3810		.10	.5	.6	SF5	3.2U		165	7

ORIGIN TIME				LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ	LOC	PREF	N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	MAY	11	1200	17.62	19	36.21	156	26.04	9.46	44	9	.15	2.0	3.3	DISF	4.0U		238	56
98	MAY	14	739	57.09	19	58.34	156	23.49	6.91	14	3	.08	8.6	11.2	DIS -	3.2U		342	83
98	MAY	14	1112	18.96	19	3.78	156	15.21	36.84	39	3	.09	1.8	1.5	KON	3.7U		284	46
98	MAY	16	2145	35.53	20	44.66	155	56.85	6.94	38	3	.11	7.2	9.6	DIS -	3.3U		322	70
98	MAY	17	11	2.51	19	41.33	155	25.43	12.09	38	8	.14	.5	.5	KEA	3.0U		134	11
98	MAY	18	1830	8.46	19	43.20	155	25.58	22.72	40	7	.10	.7	1.1	KEA	3.4U		118	8
98	MAY	20	1435	58.83	20	15.98	156	21.24	32.06	42	4	.12	1.7	3.6	DIS	3.2U		319	84
98	MAY	21	348	45.38	19	29.17	154	48.83	10.68	18	2	.08	1.1	.3	LER	3.1U		280	3
98	MAY	21	654	54.38	19	20.23	155	11.65	9.55	31	5	.12	.5	.6	SF3	3.2U		80	5
98	MAY	22	515	50.54	20	9.63	156	40.36	6.61	36	6	.12	9.3	11.9	DIS -	3.0U		331	102
98	MAY	23	1731	0.90	19	19.31	155	30.26	11.38	44	9	.11	.3	.6	KAO	3.4U		58	7
98	MAY	24	1649	17.87	19	36.18	155	19.30	13.48	41	7	.12	.6	.4	KEA	3.4U		159	14
98	MAY	25	2122	28.94	19	40.79	156	3.92	27.47	43	7	.11	1.2	2.0	HUAF	3.4U		236	37
98	MAY	27	1726	55.53	19	20.48	155	49.24	12.14	41	8	.12	.6	.3	KON	3.3U		145	10
98	MAY	28	1035	15.90	19	20.20	155	6.69	6.34	32	5	.10	.5	.9	SF4	3.7U		191	6
98	MAY	29	105	39.32	19	11.18	155	40.03	10.27	35	5	.15	.4	.7	LSW	3.7U		81	9
98	MAY	30	1101	59.73	19	18.09	155	30.40	11.82	34	5	.10	.4	1.0	LSW	3.2U		65	6
98	JUN	2	244	43.95	19	59.24	155	32.21	7.44	36	4	.14	.6	.7	KEA	3.2U		178	24
98	JUN	3	1953	59.21	19	29.96	154	53.68	0.11	26		.18	.9	2.1	SLEF#	3.2U		140	6
98	JUN	13	1141	16.45	19	11.79	155	42.86	6.34	39	6	.16	.5	1.6	LSW	3.2U		68	7
98	JUN	17	2133	15.59	19	30.89	157	23.82	6.36	31	5	.15	10.2	13.2	DIS -	3.4U		336	163
98	JUN	19	2344	50.74	19	30.09	154	53.53	1.37	26	2	.12	.6	.8	SLE	3.2U		137	3
98	JUN	21	221	35.74	19	12.65	155	20.64	46.48	49	13	.10	.7	.9	DEPF	4.2U		166	7
98	JUN	25	308	44.53	19	15.00	155	30.44	9.40	45	14	.17	.4	.9	LSWF	3.3U		93	1
98	JUN	26	1542	18.98	19	23.12	155	30.88	13.60	34	4	.09	.4	1.0	DML	3.4U		42	5
98	JUN	27	11	7.74	20	4.00	156	19.89	7.00	32	2	.10	7.7	9.9	KOHF-	5.1U		325	67
98	JUN	27	1422	44.60	19	19.93	155	7.43	5.76	31	2	.11	.5	.9	SF4	3.8U		134	5
98	JUL	2	2109	9.74	19	28.78	154	53.54	0.37	34	4	.18	.8	.5	SLEF	3.2U		165	4
98	JUL	3	556	29.93	19	13.72	155	33.18	8.45	38	6	.20	.5	1.1	LSWF	3.0U		75	6
98	JUL	5	1327	0.38	19	46.21	155	52.87	29.53	42	8	.11	.7	1.1	HUA	3.2U		197	10
98	JUL	8	1937	17.44	19	16.34	155	22.48	8.84	38	6	.17	.5	.7	SWR	3.4U		132	5
98	JUL	9	446	53.98	19	20.27	155	9.05	7.56	38	5	.16	.6	.8	SF4	3.7U		99	4
98	JUL	14	450	27.98	19	20.64	155	7.94	10.04	44	8	.14	.6	.4	SF4F	4.1U		175	4
98	JUL	18	1450	35.54	19	24.43	155	16.12	1.83	19	4	.11	.3	.2	SEC	3.0U		89	1
98	JUL	22	1542	28.97	19	47.82	155	46.30	22.66	39	5	.09	.7	2.2	HUAF	3.8U		168	32
98	JUL	27	1219	18.65	19	22.22	154	51.22	12.19	47	12	.13	.9	.4	LER	3.6U		250	10
98	JUL	29	423	20.67	19	22.29	155	26.76	11.48	49	11	.13	.3	.4	KAO	3.5U		39	2
98	AUG	4	1437	21.01	19	55.58	155	52.25	14.71	24	4	.10	1.9	1.0	KOH	3.0U		298	27
98	AUG	5	1543	49.08	20	5.71	155	51.15	28.84	43	6	.10	.9	1.2	KOH	3.0U		242	8
98	AUG	8	1527	46.99	19	18.51	155	13.59	9.80	44	11	.11	.3	.4	SF2F	3.8U		79	3
98	AUG	10	2050	20.39	19	47.33	155	46.54	15.05	40	5	.09	.6	1.0	HUA	3.1U		149	13
98	AUG	12	459	12.64	19	46.30	155	48.32	12.49	41	5	.08	.6	.4	HUAF	3.7U		162	10
98	AUG	12	634	35.67	19	28.51	155	26.60	8.55	44	10	.10	.3	.5	KAOF	3.6U		83	6
98	AUG	12	1110	6.97	19	47.16	155	46.91	22.85	39	5	.11	.8	2.1	HUA	3.3U		182	31
98	AUG	15	1744	41.92	20	15.31	156	35.84	35.29	33	5	.11	1.5	2.3	DIS	3.6U		314	87

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ	LOC	PREF	N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	AUG	18	1334	12.13	19	12.07	155	20.31	47.50	4111		.10	.9	.7	DEP	3.3U		213	8
98	AUG	21	1253	11.50	18	58.62	155	29.26	36.40	4213		.09	.8	1.2	DLSF	4.0U		286	20
98	AUG	22	1124	22.52	19	20.77	155	15.20	33.54	4111		.11	.7	.8	DEP	3.1U		71	3
98	AUG	23	2346	57.57	19	26.10	155	15.63	1.64	31	6	.12	.3	.4	SNC	3.5U		115	3
98	AUG	24	959	40.61	19	24.54	155	17.92	4.62	3911		.11	.3	.4	SNCF	3.1U		59	2
98	AUG	26	2133	22.40	19	25.18	155	18.76	6.66	34	9	.13	.4	.6	INT	3.0U		74	2
98	AUG	29	403	36.60	19	33.98	156	16.30	30.56	34	5	.09	1.4	2.0	KON	3.4U		282	38
98	SEP	4	1550	29.02	19	21.35	155	7.50	8.26	4413		.13	.4	.5	SF4	3.3U		125	4
98	SEP	5	1412	31.94	19	58.85	155	14.97	8.11	30	6	.09	.7	1.2	KEA	3.2U		241	48
98	SEP	5	1534	46.48	20	27.01	154	55.99	3.52	19	3	.09	8.4	6.8	DIS -	3.1U		318	110
98	SEP	6	1623	42.93	19	51.07	155	31.48	21.23	4714		.09	.6	1.4	KEAF	3.4U		164	10
98	SEP	7	940	55.42	19	50.85	155	31.31	20.27	3911		.11	1.0	1.4	KEAF	3.0U		255	10
98	SEP	10	1238	20.58	18	59.22	155	12.01	43.67	5115		.10	.8	1.4	LOIF	3.5U		241	33
98	SEP	13	307	3.43	19	25.34	155	15.29	12.96	12	2	.10	1.5	1.0	INTL	3.0U		181	3
98	SEP	14	2229	36.73	19	21.66	157	6.80	6.92	25	3	.14	10.3	12.7	DIS -	3.3U		336	139
98	SEP	16	1030	26.11	20	11.55	155	35.79	38.60	40	6	.10	1.2	1.5	KOHF	3.2U		248	20
98	SEP	17	438	6.06	19	11.59	155	35.34	12.63	35	5	.12	.5	.5	LSW	3.0U		122	7
98	SEP	19	1344	35.66	19	18.17	155	12.81	10.40	32	4	.11	.6	.9	SF2	3.1U		139	9
98	SEP	19	1817	59.15	19	17.73	155	12.79	9.53	37	8	.12	.4	.7	SF2	3.3U		147	9
98	SEP	19	2257	4.58	19	17.83	155	12.75	9.81	38	8	.14	.5	.8	SF2	3.0U		145	8
98	SEP	21	2120	14.99	19	17.77	155	13.26	8.40	36	6	.12	.5	.6	SF2L	3.0U		101	1
98	SEP	22	1	21.97	19	25.06	155	38.85	3.15	28	2	.12	.6	.5	MLO	3.2U		189	2
98	SEP	23	1615	50.67	19	19.49	155	8.74	9.68	41	8	.12	.4	.5	SF4	3.4U		103	4
98	SEP	27	2156	12.56	19	26.28	155	13.59	0.80	4410		.19	.4	.4	GLNF	4.6U		130	6
98	SEP	28	159	49.86	19	26.25	155	13.54	0.63	4010		.11	.3	.3	GLNF	4.1U		149	6
98	SEP	28	223	39.95	19	26.01	155	13.60	2.25	22	7	.09	.4	.7	GLNF	3.1U		173	6
98	SEP	28	508	13.11	19	26.20	155	13.43	3.65	34	7	.12	.4	1.2	GLNF	3.3U		172	6
98	SEP	28	2039	12.59	19	20.78	155	7.59	9.52	4310		.10	.5	.3	SF4F	4.8U		175	5
98	OCT	2	617	55.79	18	46.97	155	14.81	9.39	30	5	.10	1.2	1.2	LOI	3.3U		311	47
98	OCT	8	1850	7.45	19	24.45	155	14.65	30.15	43	8	.10	.6	.7	DEPF	4.3U		108	4
98	OCT	13	706	8.42	19	57.05	155	28.27	36.61	39	6	.11	1.0	1.6	KEA	3.2U		191	19
98	OCT	17	1803	10.22	19	20.95	155	7.25	9.62	35	6	.12	.5	.4	SF4	3.0U		131	4
98	OCT	23	147	13.77	19	23.98	155	15.81	10.07	17	3	.13	1.1	.9	INTL	3.0U		120	1
98	OCT	25	546	38.44	19	25.13	155	24.86	11.82	4313		.10	.3	.5	KAO	3.2U		51	7
98	OCT	27	2225	30.30	20	39.76	156	31.68	10.91	19	3	.13	9.5	13.2	DISF-	4.0U		336	130
98	OCT	28	456	9.14	19	13.43	155	29.54	9.84	42	9	.14	.5	.8	LSWF	3.3U		77	3
98	OCT	28	1823	53.51	19	20.79	155	8.16	8.29	39	8	.13	.5	.6	SF4	3.1U		115	4
98	NOV	5	205	58.08	19	21.10	155	7.11	9.03	41	8	.11	.4	.3	SF4	3.2U		129	4
98	NOV	6	1637	18.20	19	26.14	155	15.81	2.62	13	1	.14	.6	.9	SNCL	3.2U		151	3
98	NOV	9	458	21.38	19	25.11	155	19.10	7.81	4616		.12	.3	.5	KAOF	3.0U		42	3
98	NOV	10	1354	36.35	19	29.80	155	23.03	15.43	4412		.12	.5	.3	DML	3.0U		107	0
98	NOV	22	554	25.76	20	24.43	156	4.18	27.71	4412		.11	1.2	1.9	KOHF	4.5U		320	43
98	DEC	2	1503	11.18	19	19.14	155	15.20	7.51	39	6	.14	.4	.7	SF1	3.0U		90	4
98	DEC	3	302	31.41	19	21.75	156	52.49	19.76	22	4	.13	2.8	12.4	DIS -	3.4U		324	106
98	DEC	17	1626	27.01	19	23.68	155	16.56	3.17	26	6	.11	.5	.3	SSC	3.1U		101	0

ORIGIN TIME					LAT N		LON W		DEPTH	N	N	RMS	ERH	ERZ	LOC	PREF	N	AZ	MIN
YR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	S	SEC	KM	KM	REMKS	MAG	RD	GAP	DS
98	DEC	18	140	47.50	19	49.05	156	6.90	34.54	34	7	.11	1.2	1.8	HUA	3.1U		248	49
98	DEC	27	1126	12.62	19	29.23	154	53.46	1.26	29	2	.19	.5	.6	SLEF	3.1U		161	4
98	DEC	27	1129	9.05	19	29.02	154	53.54	0.41	26	3	.14	.5	.4	SLEF	3.2U		171	4
98	DEC	27	1140	46.90	18	47.55	155	13.80	10.72	34	6	.10	1.2	1.4	LOIF	4.7U		299	47
98	DEC	28	1357	44.24	19	53.14	155	15.24	20.05	3811		.11	.8	1.8	KEAF	3.7U		217	9