



## **HAWAIIAN VOLCANO OBSERVATORY 1976 Annual Administrative Report**

**INTRODUCTORY NOTE BY THOMAS L. WRIGHT AND JENNIFER S. NAKATA**

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SUMMARY 76  
JANUARY TO DECEMBER 1976  
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FRED W. KLEIN, AND GARY S. PUNIWAI

CHRONOLOGICAL SUMMARY  
BY PETER W. LIPMAN

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U.S. DEPARTMENT OF THE INTERIOR  
U.S. GEOLOGICAL SURVEY

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## INTRODUCTORY NOTE

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

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

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

### Chronology

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

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

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

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

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

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HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 76  
JANUARY TO DECEMBER 1976

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This report is preliminary and has not been  
edited or reviewed for conformity with  
Geological Survey standards and nomencla-  
ture

*Menlo Park, California*

1978

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 76  
JANUARY TO DECEMBER 1976

BY  
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CHRONOLOGICAL SUMMARY  
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## INTRODUCTION

The Hawaiian Volcano Observatory (HVO) summaries present data gathered during the year together with a chronological narrative intended to describe in geologic terms the volcanic activity associated with the seismic events and tilt data included. The seismic, tilt, and chronological summaries are offered without interpretation as a source of preliminary data. The seismic summary is complete in the sense that all data routinely gathered by the observatory are included. The emphasis in collection of tilt and deformation data has recently shifted from quarterly measurements at a few water-tube tilt stations ("wet" tilt) to a larger number of continuously recording borehole tiltmeters and repeated measurements at numerous spirit-level tilt stations ("dry" tilt). To maintain continuity with past summaries, we will continue to publish weekly data from the Uwekahuna vault tiltmeter (Kilauea summit) and from water-tube tilt stations as they are reoccupied. A comprehensive summary of the numerous and varied tilt and deformation data now gathered is beyond the scope of this publication.

The HVO summaries have been published in various formats 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 format beginning with summary 74 (Koyanagi, et al.) for the year 1974. Summary 74 includes an extensive 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 use the data and understand the essentials of how it was gathered.

Publication of the summary represents a group effort by the staffs of the Hawaiian Volcano Observatory and the National Center for Earthquake Research in Menlo Park, California.

## 1976 CHRONOLOGICAL SUMMARY

No eruptive activity occurred at either Kilauea or Mauna Loa during 1976 -- the first such quiet year on the Island of Hawaii since 1966. Perhaps the most

impressive feature recorded at HVO was the continued high seismicity along Kilauea's south flank, reflecting aftershock activity from the November 1975 M = 7.2 earthquake.

The large deflation at the summit of Kilauea related to this earthquake finally bottomed out in February, with a total southeasterly tilt of 241 microradians at Uwekahuna Vault. Extensive Geodimeter and leveling studies of the entire Kilauea network, carried out during the winter and spring, showed that the Kilauea summit area subsided 1.7 meters, and that along the coast between Halape and Keauhou Landing subsidence was as much as 3.5 meters (Tilling et al., 1976). The entire Kilauea area moved seaward in a horizontal component, including areas mauka of the two main rift zones. Preliminary displacement solutions indicate a maximum horizontal displacement vector of 8-9 meters southward at Kalue.

Through the remainder of 1976 the Kilauea summit area showed a distinctive pattern of ground deformation, different from that observed for the past 10 years, that appears to reflect continued adjustment to effects of the 1975 earthquake and related aftershocks. Weak summit inflation--only a few microradians per month--was accompanied by sizable continued seaward horizontal motions of the entire summit area that tended to overwhelm the effect of the inflation. On June 21 and again on July 14 this pattern was interrupted by an abrupt 5-10 microradians of summit deflation accompanied by swarms of sharp earthquakes along the upper east rift zone. Both events were interpreted as marking draining of lava from the summit area into the the east rift zone, with accumulation of lava occurring mainly along upper parts of the rift system. Some connection with lower parts of the east rift zone was also indicated, however, by strikingly increased steaming, centered on the south flank of the prehistoric Heiheihulu cone, that broke out in the spring, and by sizable extensions along geodimeter lines in the same area.

An unusual episode of large prolonged aseismic deflation at the summit of Kilauea occurred in August and September. Deflation continued at a rate of almost 2 microradians per day, totaling about 40 microradians and finally stopping at about the same level reached during the major subsidence associated with the November, 1975 earthquake. During the deflation episode levels of seismic activity were in no way anomalous, and this deflation episode thus appears unique for the 20-year period for which modern tilt data are available. Previous deflations of similar magnitude have been associated either with a flank eruption or with pronounced local seismicity that marked the locus of shallow intrusive activity. At year's end Kilauea was again in a pattern of steady slow inflation.

Mauna Loa was characterized throughout 1976 by continued summit inflation, accompanied by a surprisingly low level of seismic activity. Earthquake frequency, which was at a high level for 14 months before the July 1975 summit eruption, decreased to near-background levels by late fall 1975 and fluctuated little during the following year. Dry-tilt and Geodimeter measurements showed, however, that the summit area had begun to reinflate immediately after the 1975 eruption, and inflation continued at a high rate through 1976. Tilt

occurred at a rate of 3-5 microradians per month, and Geodimeter lines across Mokuaweoweo extended by as much as 15 mm/month. Measurements at Mauna Loa's summit for the time interval August-December 1976 suggested a slight slowing in the rate of inflation, but the changes were too small to be interpreted with confidence. Much HVO staff effort during 1976 was directed to increasing the geodetic baseline control for Mauna Loa, especially Geodimeter and dry-tilt nets.

Reoccupation for the first time of the "super triangle" Geodimeter lines between Mauna Loa, Mauna Kea, and Hualalai, showed an outward directed displacement vector for the north rim of Mokuaweoweo consistent with summit inflation, and permitted for first time tying to a stable base line the geometry of summit inflation. Both these results and the dry-tilt data demonstrated that the center of Mauna Loa inflation is asymmetric with respect to Mokuaweoweo caldera, lying near the southeast margin of the caldera. This asymmetry is strikingly similar to that long and well documented at Kilauea.

The continued summit inflation of Mauna Loa, as well as the historic record for this volcano in which flank eruptions have typically followed summit activity within a few years, led to the forecast by HVO of a probable Mauna Loa rift eruption within three years after the July 1975 summit activity (Lockwood, et al., 1976). Considerable staff activity was directed toward briefing civil defense and other state and local government officials about contingency planning, should Mauna Loa erupt along its northeast rift and threaten Hilo. Additional planning and several field exercises were devoted to enhancing techniques of lava diversion. At the end of the year the HVO staff was becoming increasingly uncertain about the Mauna Loa prediction, however, because of the continued seismic lull as well as the obvious fact that the 25-year period of inactivity at Mauna Loa between 1950 and 1975 was itself atypical in terms of the historic record for this volcano. One obvious major need, for both Mauna Loa and Kilauea, is the reliable geologic understanding of recurrence intervals for different types of activity, that would extend our frame of reference back beyond the 150 years of written history for these volcanoes.

## SEISMIC INSTRUMENTATION

The network. The Hawaiian Volcano Observatory has installed and maintains an extensive telemetering seismometer network on the island of Hawaii. In January 1976 the seismometer network consisted of 40 stations spread over an area with a diameter of 125 kilometres on the island of Hawaii (Figs. 1 and 2). Of these 40 stations, two are low-gain multicomponent stations (optical), six are two-component, three are three-component, and twenty-nine are vertical only. The coverage is most complete on and around the main center of seismic and volcanic activity, Kilauea Volcano. Other stations in the network are part of a larger net located on other volcanoes of the island of Hawaii. With the exception of HIL, all seismometer signals from the short period network are telemetered to the observatory for recording. During 1976, station DAN on the southeast rift of Mauna Loa was added, and station SCA was moved a short distance and renamed WIL.

Figure 1 is a map of selected geographic and geologic features, and Figure 2 shows the seismic stations which were operated or added during the year. Table 1 lists all seismic stations operated by the U.S. Geological Survey in Hawaii during 1976. Listed are station name, three letter code, coordinates in degrees and minutes, elevation in meters, and other data described below.

Instrumentation and recording. Each telemetering station has a voltage controlled oscillator (VCO) for FM multiplex transmission to HVO via either hardwire or VHF radio. The VCO frequencies are listed in Table 1. These telemetering stations are now all of Type 1, the NCER standard system used in USGS seismic networks (see Table 2 for details). After discrimination, the analog signals from thirty-two stations are recorded on two Develocorders using 16mm microfilm. Beginning in late 1975, FM signals from the telemetering network were recorded directly on one inch magnetic tape. Selected larger events are copied onto condensed library tapes which are currently archived in Menlo Park.

Develocorder records are read on a film viewer with 20x magnification. Arrivals are read to the nearest 0.05 second. The recorded arrival times, amplitudes (where readable), and other key data are routinely sent to N.C.E.R. in Menlo Park for computer processing.

In addition to the standard stations, optical seismographs are maintained at Uwekahuna (HVO), Hilo, Maui, and on Oahu (Kipapa station operated by Honolulu Observatory). The less sensitive short period records are used primarily for S data and amplitude measurements for magnitude calculations to supplement readings from 16mm film. Optical seismographs listed in Table 1 are of four types. Types numbered three and four are electro-mechanical systems of high and low gain respectively. Hilo and Haleakala are each equipped with two low-gain Wood-Anderson torsion seismographs. Long period Press-Ewing seismographs record in three components in the Uwekahuna vault. The paper (optical) records as well as the 16mm develocorder microfilm are archived at HVO.

Seismograph response and calibration. Displacement response curves for the four short-period seismograph types in use are given in Figure 3. Types three and four are electro-mechanical systems recorded on paper records. The Type 1 curve gives the displacement magnification of the standard NCER system from ground motion at the seismometer to the seismic trace as seen on a 20x Develocorder film viewer. The curves plot the unit response which should be multiplied by the factors CAL listed in Table 1 to get the response for an

individual station. Individual CAL factors for Type 1 seismographs are equal to the peak-to-peak amplitude measured in mm on the 20x Developorder viewer of a 10 microvolt 5 Hz signal introduced to the preamp/VCO in place of the geophone. Calibration is normally done each time a station is visited, and major changes in attenuation or recalibrations are listed in Table 1 along with the dates they took place. Minor changes in CAL factors may not be listed if they are less than 20%.

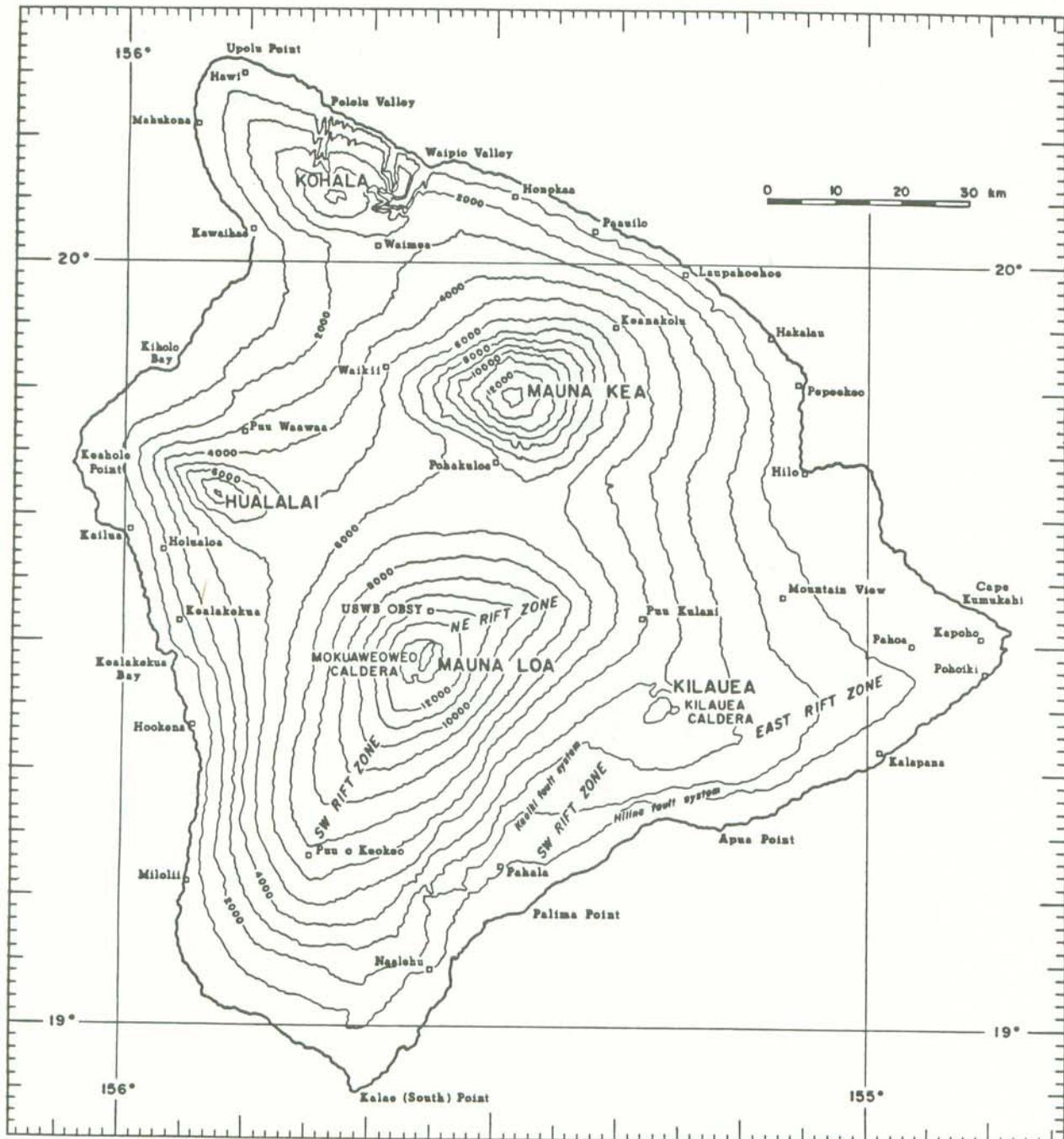


Figure 1 Map of the island of Hawaii showing principal settlements and selected geographic and geologic features.

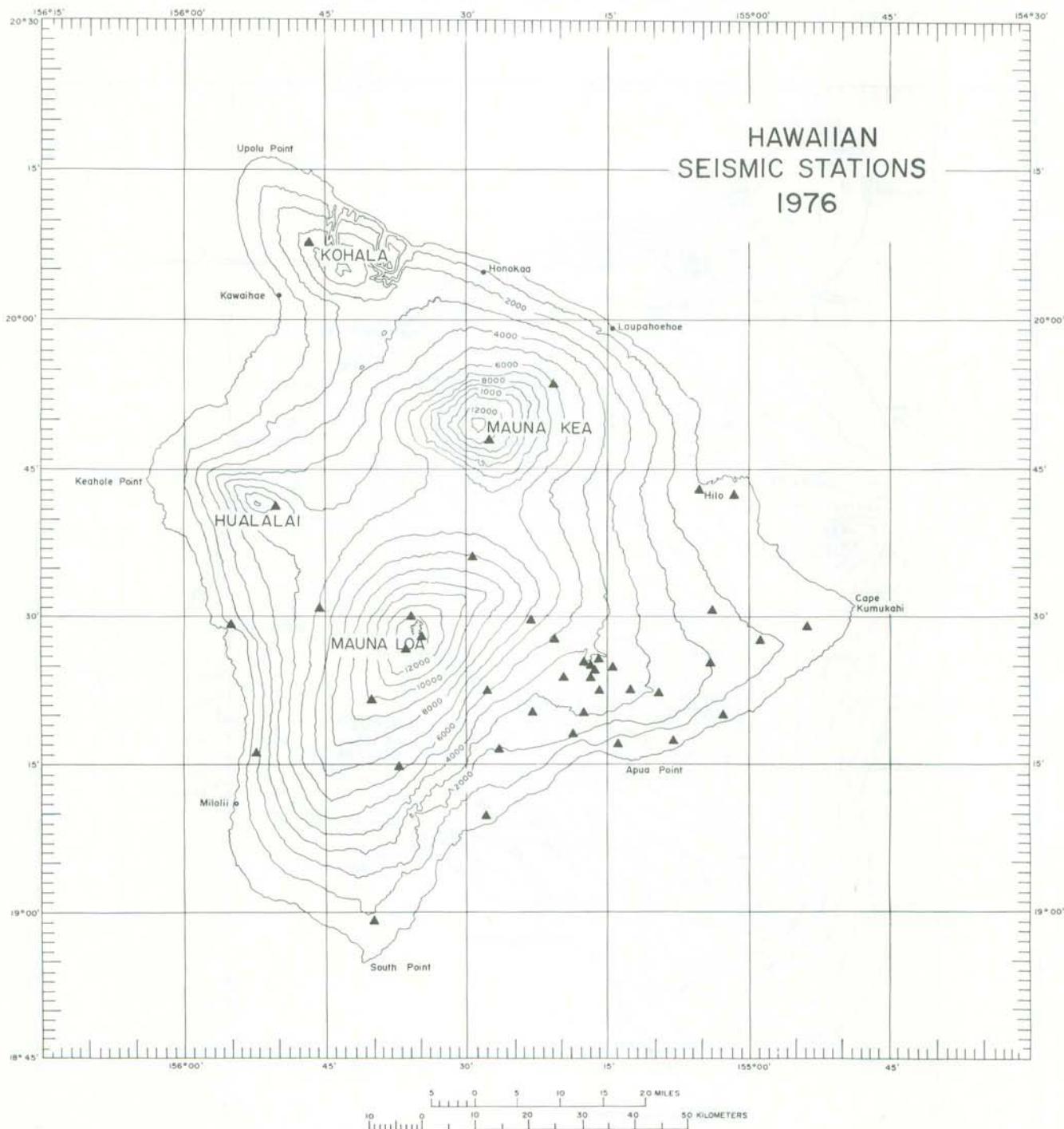


Figure 2 Map of the island of Hawaii showing seismic stations operated by the U.S. Geological Survey.

TABLE 1. Seismometer stations in Hawaii operated by the U. S. Geological Survey, 1976.

Station Name	Code	LAT-N	LON-W	Delay	ELEV	VCO	Old Type/Cal	Date of Change	New Type/Cal
AHUA	AHU	19 22.40	155 15.90	.06	1070	2380	1 3.8	76/09/29	1 4.3
AINAPO	AIN	19 22.50	155 27.62	.33	1524	1020	1 8.5		
	AINE					2380	1		
	AINN					2720	1		
CAPTAIN COOK	CAC	19 29.29	155 55.09	.15	323	1360	1 3.3	76/01/22	1 5.4
CONE PEAK	CPK	19 23.70	155 19.70	-.04	1038	1700	1 4.0		
	CPKH					1020	1		
DANDELION	DAN	19 21.42	155 40.04	-.07	3003	2380	none	76/05/10	1 4.8
DESERT	DES	19 20.20	155 23.30	-.10	815	680	1 4.8	76/03/16	1 4.2
ESCAPE ROAD	ESR	19 24.68	155 14.33	.01	1177	1360	1 1.7	76/09/21	1 2.0
HALE POHAKU	HPU	19 46.85	155 27.50	.42	3396	2720	1 4.5	76/10/02	1 4.7
HILINA PALI	HLP	19 17.96	155 18.63	.18	707	2040	1 5.0	76/01/05	1 4.0
HUALALAI	HUA	19 41.25	155 50.32	.58	2189	1700	1 2.2	76/01/27	1 2.6
HUMUULA	HSS	19 36.31	155 29.13	.35	2445	1700	1 6.2		
	HSSE					680	1		
	HSSN					2720	1		
KAAPUNA	KAA	19 15.98	155 52.28	.00	524	1020	1 4.9	76/12/01	1 5.2
KAENA	KAE	19 17.35	155 7.95	.15	37	2380	1 2.2	76/10/27	1 1.3
KAHUKU	KHU	19 14.90	155 37.10	.08	1939	1700	1 3.5		
KALALUA	LUA	19 24.55	155 04.25	-.02	622	1020	1		
KANEKII	KII	19 30.56	155 45.90	.18	1841	1700	1 7.1		
	KIIE					1020	1		
	KIIN					1360	1		
KAPAPALA RANCH	KPR	19 16.40	155 26.70	.05	610	1700	1 4.33	76/01/26	1 6.0
KEANAKOLU	KKU	19 53.39	155 20.58	.86	1863	2380	1 2.3		
KIPUKA NENE	KPN	19 20.10	155 17.40	.07	924	1360	1 5.0	76/08/16	1 6.4
KOHALA	KOH	20 7.69	155 46.77	.21	1166	2380	1 2.4		
MAUNA LOA	MLO	19 29.80	155 23.30	.24	2010	1360	1 10.5	76/01/29	1 10.0
	MLOH					2040	1		
MAUNA LOA X	MLX	19 27.60	155 20.70	.27	1474	1360	1 2.1		
	MLXH					2720	1		
MAKAOPUHI	MPR	19 22.07	155 9.85	-.01	881	2720	1 2.1	76/01/12	1 3.3
MOKUAWEOWEO	MOK	19 29.28	155 35.98	.28	4104	2040	1 7.5	76/09/23	1 5.4
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	.17	409	680	1 3.2	76/11/18	1 7.8
NATIONAL GUARD	NAG	19 42.12	155 1.72	.63	18	1360	1 8.5	76/02/11	1 10.2
NORTH PIT	NPT	19 24.90	155 17.00	-.06	1115	680	1 9.0	76/08/17	1 4.4
OUTLET	OTL	19 23.40	155 16.80	.02	1084	1360	1 4.15	76/09/22	1 4.9
	OTLH					2040	1		
PAU	PAU	19 22.62	155 13.10	-.06	994	2040	1 3.8		
	PAUH					1020	1		
POLIOKEAWE PALI	POL	19 17.02	155 13.47	.10	169	2720	1 4.8		
PUU HOHUAULA	PHO	19 28.90	154 53.40	.03	215	2720	1 4.8	76/01/06	1 1.9
PUU PILI	PPL	19 9.50	155 27.87	.24	35	1360	1 2.2		
RIM	RIM	19 23.90	155 16.60	.02	1128	1020	1 7.3		
	RIMH					2040	1		
SOUTH POINT	SPT	18 58.91	155 39.92	-.07	244	2040	1 3.6		
SOUTHWEST RIFT	SWR	19 27.26	155 36.30	.14	4048	1020	1 2.4		
SUMMIT CABIN	SCA	19 28.20	155 35.08	.30	4048	1700	1 11.5	76/12	off
TANGERINE	TAN	19 27.79	154 58.51	.02	351	1020	1	76/03/17	1 8.0
WAHAULA	WHA	19 19.90	155 2.92	.06	29	680	1 3.66	76/10/27	1 2.3
WALDRON LEDGE	WLG	19 25.49	155 15.69	-.02	1067	2380	1 2.2		
WILKINS	WIL	19 28.15	155 35.02	.30	4037	none	76/12		1 5/1

TABLE 1. (continued)

## Optical Seismographs

HALEAKALA Z	HAL	20	46.00	156	15.00		2090	3	0.71
HALEAKALA EW	HAE	20	46.00	156	15.00		2090	WA	1.0
HALEAKALA NS	HAN	20	46.00	156	15.00		2090	WA	1.0
HILO Z	HIL	19	43.20	155	5.30	.64	20	3.	1.0
HILO EW	HIE	19	43.20	155	5.30	.64	20	WA	1.0
HILO NS	HIN	19	43.20	155	5.30	.64	20	WA	1.0
KIPAPA	KIP	21	25.40	158	.90		76	3	0.56
UWEKAHUNA Z	UWE	19	25.40	155	17.60	.06	1240	3	0.7
UWEKAHUNA Z	USZ	19	25.40	155	17.60	.06	1240	4.	1.0
UWEKAHUNA EW	USE	19	25.40	155	17.60	.06	1240	4.	1.0
UWEKAHUNA	PEZ	19	25.40	155	17.60		1240	PE	
UWEKAHUNA	PEE	19	25.40	155	17.60		1240	PE	
UWEKAHUNA	PEN	19	25.40	155	17.60		1240	PE	

Table 2. -- Seismic Instrumentation Types

Type 1. Consists of:

- a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec. and 0.8 critically damped.
- b) Preamp/VCO Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 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. USGS Model J302 was introduced in 1974.

Type 3. Consists of:

- a) EV-17 - Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 2000X), or Observatory-built electromagnetic seismometer approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2Hz.

Experimental type amplifier systems are not given type numbers.  
Type 2 instruments have been discontinued.

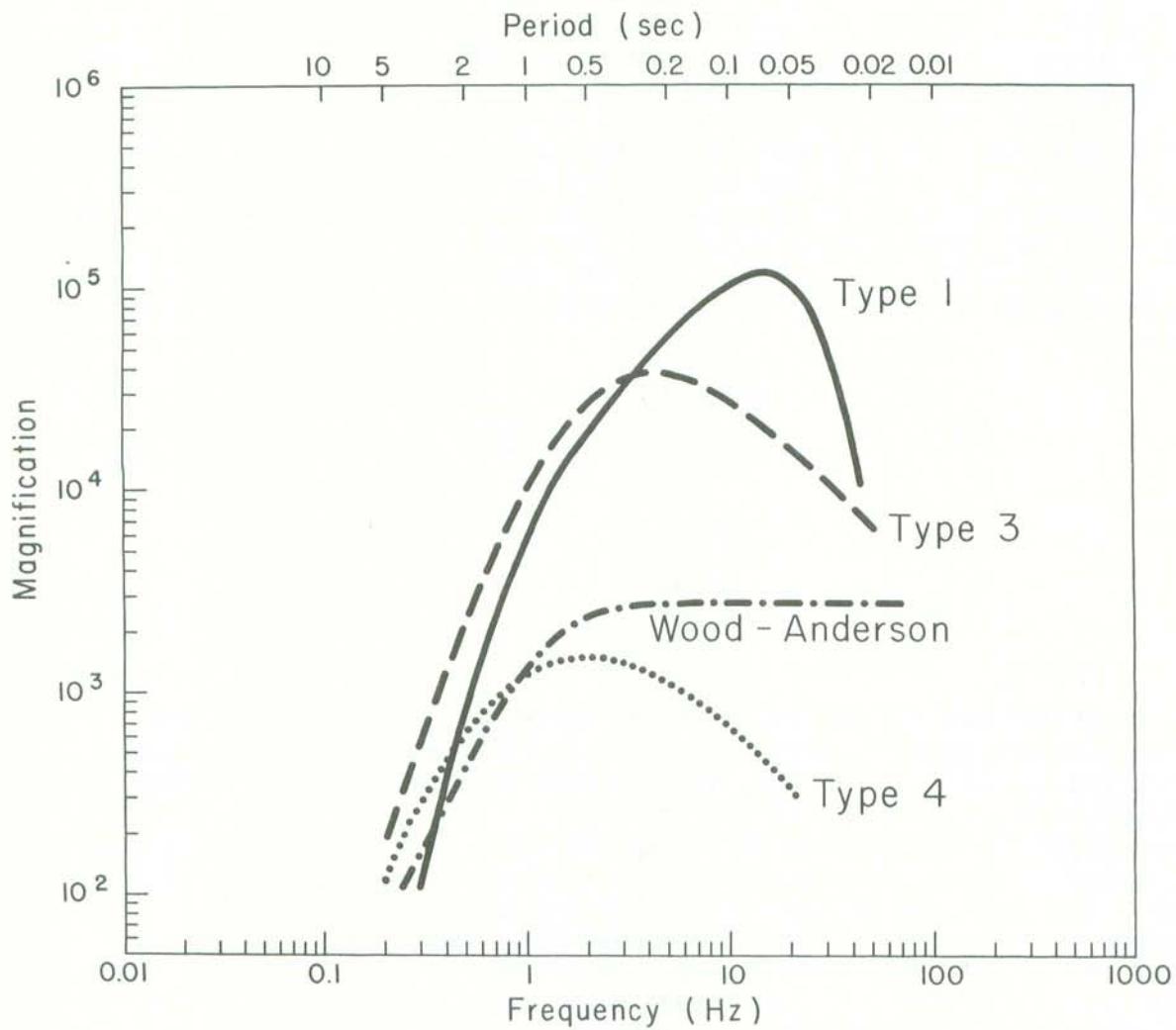


Figure 3. System response curves for the Wood-Anderson torsion seismograph and for the 3 different types of seismometers in use by the Hawaiian Volcano Observatory. Types 3 and 4 are electro-mechanical seismographs recorded optically on photographic paper. Type 1 is the standard NCER seismometer recorded on Develocorder film. 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 curves plot the unit response which should be multiplied by the factors CAL listed in Table 1 to get the response for an individual station.

## SEISMIC DATA PROCESSING

Earthquakes are located by the combined efforts of HVO and NCER in Menlo Park. Develocorder films are read at HVO, and lists of P and S arrival times, event amplitude and duration, clock correction, etc. are sent to Menlo Park. Data are then keypunched, computer locations are made using the program HYPOELLIPE (Lahr, et al., in preparation), and problem events are reread at HVO and rerun. Card and magnetic tape copies of all arrival time (phase) and output summary data (one card per event), are kept in Menlo Park. All computer output (including first motion plots) are on microfiche, and copies are available for inspection at HVO and in Menlo Park.

The crustal model used consists of flat, homogeneous layers and contains a embedded low velocity zone. It is a modified version of Crosson's (1976) model and is:

LAYER	VELOCITY (km/sec)	DEPTH TO TOP (km)
1	2.00	0.0
2	3.25	0.8
3	6.00	2.0
4	6.40	5.5
5	5.30	9.5
6	8.30	13.0

An empirical set of station delays or corrections were used in the locations, and are given in Table 1. They have been adjusted so the mean delay of Kilauea stations is zero, and are most appropriate for locating earthquakes on the south side of the island.

Magnitudes for most events were computed using both recorded amplitudes on calibrated stations and signal or coda duration on short-period vertical stations. Amplitude magnitudes used by HVO are based on readings from Wood-Anderson seismographs. Amplitudes read from other instruments are corrected to an equivalent Wood-Anderson amplitude using the curves of Figure 3 and CAL factors of Table 1. Amplitude magnitudes larger than 2.5 are generally based on the Wood-Anderson instruments in Hilo or Type 4 seismographs at Uwekahuna. Smaller events may occasionally include amplitude readings from stations AHU, KAA, OTL, or PPL.

Duration magnitudes are determined from the length of signal in seconds read from the Develocorder viewer. This time, also called the "F-P time" is measured from the first P arrival to the point where the earthquake signal has decayed to about twice the noise level, or to about 1 cm peak-to-peak on the Develocorder viewer. A plot of log (F-P time) versus local (amplitude) magnitude appears in Figure 4. The bilinear relation shown in the figure is an appropriate fit to the data sample and is used to compute all duration magnitudes. Duration times are only read from Type 1 seismographs. Because duration magnitudes are relatively insensitive to station response and can be determined using the high-gain short-period stations, it is felt that duration magnitudes are more accurate and complete at the lower magnitudes (below 2).

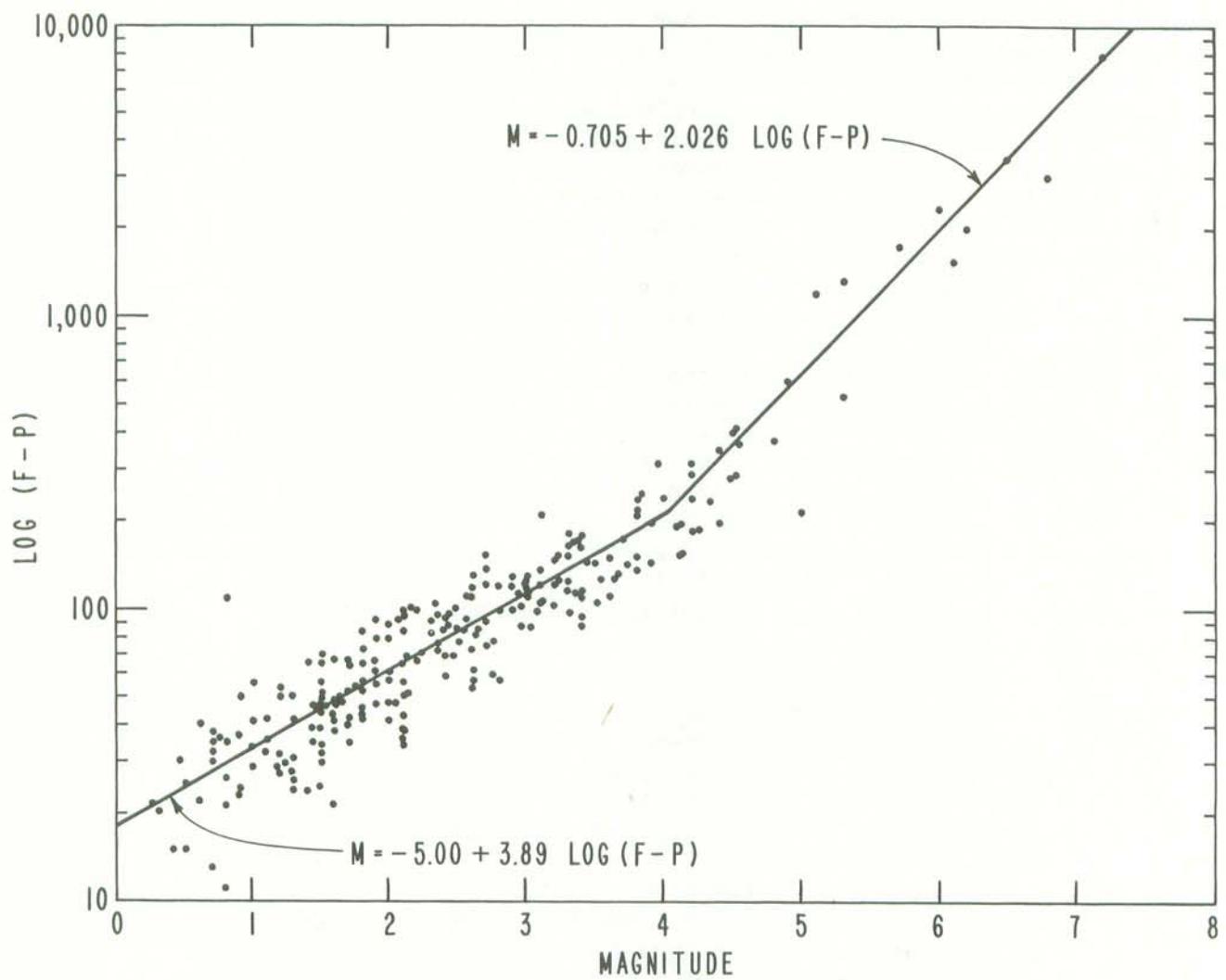


Figure 4. Relationship between signal duration (F-P time) and local magnitude for a large number of earthquakes which occurred during 1975 and 1976. Local magnitude is determined from amplitudes read on Wood-Anderson and other calibrated seismographs. The dual linear relationship between magnitude and  $\log(F-P)$  appears to hold over a magnitude range of 7 units.

## SEISMIC SUMMARY

The emphasis in both station coverage and detailed data analysis is on the highly active south flank of the island of Hawaii. Hundreds of earthquakes too small to locate are counted daily, and the set of located earthquakes in the Kilauea region is nearly complete above magnitude about 2.0 to 2.5. Many smaller events are located also. Substantial effort is made to locate earthquakes elsewhere on the island and within about 150 km of the island. Such coverage cannot be as complete as on the south flank, but nearly all events above magnitude 3.0 to 3.5 are located.

Data presented in the seismic summary is in four parts. Table 3 gives duration of harmonic tremor and numbers of earthquakes (most too small to locate) from several source regions around Kilauea. The source region is determined visually from signal character and pattern of arrival times at key stations. Maps showing computer located epicenters of all depths are given in Figures 5, 6, 7 and 8. The epicenter maps are on two scales, and show both all located earthquakes and large events only.

The list of computer locations constitutes the bulk of this summary, and is given in Table 5. Each earthquake in the list is assigned a three-letter code based on its location and in some cases on its depth. Figure 9 is a map of the regions used to assign the location codes. The latitude and longitude limits of rectangular regions are listed in Table 4. When the listed coordinates imply an overlap, precedence is given according to Figure 9. Table 6 relists the events in Table 5 for which either duration or amplitude magnitude is 3.5 or larger. It is felt that this list is a more objective measure of large earthquakes than a list of felt earthquakes.

Table 3. Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea. Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano. Earthquake categories are: Kilauea Summit 30 km, earthquakes from about 30 km beneath the summit region; Kilauea Summit long-period, earthquakes characterized by low-frequency waves from intermediate depths roughly 5-10 km beneath the summit region; Kilauea Summit Shallow, earthquakes from within a few km beneath the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone of Kilauea; Koae, earthquake from along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea; South Flank, faults on the south flank of Kilauea; Mauna Loa L-P, earthquakes characterized by low-frequency waves from Mauna Loa volcano; Mauna Loa S-P earthquakes from within a few kilometers beneath the summit of Mauna Loa; Offshore PPL, earthquakes from mostly offshore areas south of Puu Pili station.

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes										Off- shore PPL	Remarks and Events of Interest		
				Kilauea Summit			Kilauea Flank				Mauna Loa						
	Deep	Inter- mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P					
Jan	2m	5m	20m	1	16	37	570	890	131	292	7	1	LPD-1, offshore-1 Kona-3 Power outage 1900-2100, LPD-1				
				1	9	78	481	807	128	266	2	11	3				
				5	84	131	451	116	126				Kona-3				
				5	6	146	469	865	141	59	1	2		3			
				17	216	325	656	99	59								
	3m			21	170	327	666	78	106		2	1	1	LPD-2 NER-1 Kona-2, LPD-1 LPD-2, NER-2 LPD-3			
				12	88	397	756	16	105		9	10					
				35	56	329	665	81	101		7	6					
				13	154	365	676	79	173		4	5					
				2	38	71	761	90	185		2	3					
	17m			5	44	88	369	664	93	151			2	LPD-2, LPD-12 LPD-2 LPD-2			
				2	40	66	310	670	75	128							
				3	9	89	329	915	114	142		2					
				1	59	113	391	985	99	150		16					
				9	37	85	439	926	77	158		11					
	10m			12	55	149	438	823	83	177		2	18	LPD-3 LPD-2, Kona-1 LPD-1, NER-2 Kona-1, LPD-3, NER-1 Kona-1, Kohala-1, 15 km-1, LPD-6			
				5	5	126	402	736	72	196		1					
				5	170	417	1035	72	208		3	6					
				2	34	125	432	922	96	132		14					
				2	41	109	353	912	94	102		18					
	31m			3	31	136	276	909	120	75		17	7	3	Kona-1, LPD-9, Kona-1 Kona-1 LPD-1 Mauna Kea-1, LPD-2 Kona-2, LPD-1, NER-2 LPD-3, NER-1		
				3	119	135	316	925	100	105		9	11				
				1	118	105	127	496	83	125		4	15				
				1	8	119	263	825	110	121		9	8				
				4	13	125	362	877	103	118		4	3				
	2m			3	20	126	313	819	146	88		9	9	1	Kona-1, LPD-9, Kona-1 Kona-1 LPD-1 Mauna Kea-1, LPD-2 Kona-2, LPD-1, NER-2 LPD-3, NER-1		
				1	14	94	266	691	93	73		25	5				
				3	11	87	326	884	103	120		10	5				
				9	118	329	1009	87	148		3	8	2				
				1	19	263	320	816	119	100		2	2				
	15m			2	14	227	294	892	284	92				3	Kona-1 LPD-2		

1/MOK-Tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank				Mauna Loa		Off-shore PPL	Remarks and Events of Interest	
	Deep	Inter- mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P			
Feb 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29	6m 2m 5m 4m <sup>1/</sup> 3m <sup>1/</sup> 20m 15m 4m 2m 36m 5m 9m 2m 25m 3m	3m <sup>1/</sup>	2m 10m 10m	1 1	11	123	326	934	134	110	3	3	1	1	Mauna Kea-1, Kona-2 LPD-1 Heavy rains, LPD-1 Electrical storm 15 km-1, LPD-1  Kona-2 LPD-1 NER-2, Kona-1 LPD-2, Kona-1 High winds Heavy rains High winds Heavy rains, Kona-1 Kona-1  Kohala-1, LPD-1, Kona-3  LPD-2 Kona-1 NER-2 LPD-1, NER-5 NER-4, Kona-1 NER-3 NER (2), Kona (2), Electrical storm
					23	146	246	995	143	215	7	7	1		
					23	141	261	985	151	241	1	4	1		
					13	192	167	790	69	65	5	9	1		
					3	72	242	582	87	107	1	5	1		
					15	155	237	691	38	91	11	1	1		
					11	87	216	752	86	126	7	7	3		
					8	100	228	776	90	74	1	1	1		
					2	86	213	807	92	71	3	4	1		
					24	326	183	903	161	70	4	4	1		
					6	208	231	874	150	72	10	1	1		
					7	146	175	600	97	67	4	4	1		
					1	67	41	222	25	70	8	8	1		
					104	174	530	54	93	1	5	6	1		
					71	31	253	43	59	2	8	2	1		
					122	123	612	68	50	2	8	2	1		
					150	150	646	68	62	2	8	2	1		
					9	183	165	732	90	60	12	12	1		
					10	202	219	779	74	48	8	8	1		
					22	141	145	660	41	79	3	3	1		
					8	98	202	551	43	73	1	1	1		
					23	118	221	593	41	59	2	2	1		
					1	64	126	717	56	34	4	4	1		
					6	120	121	655	65	31	5	9	1		
					26	511	119	750	27	99	1	28	1		
					4	14	263	64	627	15	51	2	16	1	
					2	8	143	52	858	20	99	2	9	1	
					1	12	65	835	25	98	4	8	1		
					25		177	857	74	97	6	3			

<sup>1/</sup>MOK-Tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes												
				Kilauea Summit			Kilauea Flank				Mauna Loa		Off-shore PPL	Remarks and Events of Interest		
	Deep	Inter- mediate	Shallow	30	KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P			
Mar 15	4m	7m <sup>1/</sup>	20m	1	1	97	174	677	72	92	2	4	1	Kona-2		
				1	2	103	192	754	56	77	3	1		LPD-2, Kona-2		
				1	29	220	152	880	81	74		5		NER-1, Kona-1		
					7	135	168	842	114	84		1				
					10	113	41	328	43	66	32	2				
					1	23	123	40	413	54	50	1	6			
					1	14	110	141	717	62	66	2	2			
						12	91	152	671	88	80	21	13			
						1	15	256	158	820	75	94	4	3		
						1	28	185	148	826	62	82	1	2	LPD-5	
						3	50	98	168	733	79	80	1	2	LPD-8, Kona-1	
						1	15	172	161	697	60	74	1	2	LPD-1	
						2	9	180	177	841	79	75	1	1	Kona-2	
						1	35	161	140	737	90	75	1	2	LPD-11	
						1	17	183	144	757	78	86	2	2	LPD-8	
						1	13	150	140	697	77	77	4	2	NER-1, LPD-7	
						1	15	128	156	804	79	83	11	3	LPD-2	
						3	42	185	139	791	77	86	7	8	Kona-2	
							34	130	52	1017	14	72	1	5	Mauna Kea-1	
						3	69	99	76	711	15	55	11	2		
						1	59	109	152	570	43	60		1	Kona-1	
						4	11	135	121	582	53	65	5	6	LPD-4	
						1	9	158	120	661	51	61	1	8	Kona-1	
							9	135	135	647	60	64	8	3	Offshore-1, Kona-1	
						2	5	146	132	641	79	86	11	13	Kona-3	
							6	129	39	316	48	49		10	1	
							79	143	38	346	58	69		5		
							1	82	107	552	65	36	7	9		Kona-2
						2	13	71	133	564	49	27	13	17		LPD-1
						2	9	70	101	471	43	44	13	20		LPD-1, Kona-2
						1	1	56	85	433	19	44	35	18		

<sup>1/</sup>MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes											Off- shore PPL	Remarks and Events of Interest												
				Kilauea Summit			Kilauea Flank				Mauna Loa																	
	Deep	Inter- mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P																
Apr 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	8m 2m <sup>1/</sup> 2m <sup>1/</sup> 20m 2m 6m 15m 5m 48m 3m <sup>1/</sup> 8m 10m 32m	2 2 2 3 1 2 2 3 2 2 1 1 2 2 7 28 3 2 8 9 2 2 2 2 1 1 2 2 2	17 191 87 104 121 147 186 169 163 161 172 18 166 99 91 114 160 452 137 70 118 105 107 11 209 261 13 223 15 178 155	8 22 17 4 24 4 11 3 11 29 2 1 2 2 2 7 28 3 2 8 9 2 2 2 2 1 1 2 2 2 2 1 1 2 2 2	62 438 191 87 121 147 186 169 163 161 172 18 166 99 91 114 160 452 137 70 118 105 107 11 209 261 13 223 15 178 155	81 99 74 102 77 110 103 58 37 55 115 186 88 93 94 37 30 110 118 109 125 101 75 104 129 142 104 131 629 135 52	488 711 714 486 449 594 654 815 579 573 589 475 475 527 494 273 338 972 546 448 532 484 432 584 636 583 507 629 572 354	33 49 65 21 48 43 6 11 6 17 37 48 37 37 41 37 47 91 54 49 55 50 27 68 67 75 71 78 65 10	68 51 56 48 35 47 46 40 34 61 45 32 46 61 64 70 38 63 42 53 52 57 68 71 49 75 56 70 54	22 7 7 3 7 5 5 3 9 5 3 3 2 20 7 5 11 5 2 9 8 2 1 4 5 9 11 11 6 2 6 13	10 6 5 2 5 4 4 4 9 6 12 2 5 5 3 6 1 11 3 3 1 1 1 1 1 1 11 6 6 6 13	LPD-1 Kona-2 LPD-1 Kona-3 High winds High winds High winds LPD-1 NER-3, Kona-1 Power outage 1200-1300 NER-1, Kona-1 Kona-1 Kona-1 Kona-1 Kona-1 Kona-2 Kona-1 Kulani-1, Offshore-1, LPD-1, Kona-1 Kulani-1 Kona-1 LPD-9 Kona-3 Kona-1, LPD-5, NER-5 Kona-2 LPD-6																

1/MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes											Remarks and Events of Interest		
				Kilauea Summit			Kilauea Flank				Mauna Loa		Off- shore PPL				
	Deep	Inter- mediate	Shallow	30KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P					
May 1	69m	10m	10m <sup>1/</sup>	2	23	177	132	424	54	65	2	9	1	1	Kona-1, Mauna Kea-1 LPD-53, NER-1		
2	17 <sup>4</sup> m	2m <sup>1/</sup>		1	9	190	133	458	77	104		3			Kona-3, LPD-12, NER-1		
3	22m				12	152	106	543	61	83	26	9			Kona-3, LPD-19, NER-5		
4					14	161	87	504	42	66	4	3			LPD-10, Kona-2		
5				1	5	172	87	633	50	72	10	6			Kulani-3, LPD-4, NER-6, Kona-3		
6					4	196	85	503	64	86	20	33			NER-1, Kona-1		
7					1	160	20	249	51	49	5	43					
8	40m					182	29	258	53	79	19	26					
9				1	2	117	94	471	36	64	10	10			Mauna Kea-1, NER-2, Kona-3		
10					8	157	86	557	64	76	18	8			NER-2, Kona-1		
11				2	32	182	86	474	53	81	17	8			NER-4		
12		5m			37	173	27	237	10	20	8	16			Kona-1, Mauna Kea-1		
13		2h			437	136	23	233	4	52	1	2					
14	23m				50	149	35	389	7	67	6	2					
15		20m		3	148	226	46	429	5	37	4	2					
16				1	47	94	97	486	44	77	32	14			Kona-2		
17		8m			49	199	106	462	67	97	12	9			LPD-5, Kona-1		
18				1	8	126	97	397	70	87	11	3	1		Mauna Kea-1, 15 km-1		
19				2	1	222	88	588	62	87	17	87			NER-1, Kona-1		
20					3	234	71	317	32	66	11	6					
21					6	204	86	373	45	59	10	3			LPD-7, Kona-1		
22					1	219	86	350	34	42	12	4			LPD-4		
23				1	5	244	61	405	47	50	7	8			NER-1		
24	3m	1m		2	2	237	75	388	38	63	15	4			NER-1		
25					9	274	82	446	37	75	11						
26				3	2	286	88	457	56	95	9	2			LPD-6		
27				3	1	257	85	396	42	61	5	2					
28						382	32	227	50	58		5					
29					2	326	32	385	66	36	1	3					
30					1	386	57	408	77	38	1	6					
31					13	290	113	525	55	22		1			Kohala-7		

1/MOK-tremor beneath Mauna Loa Volcano

Date (1976)		Tremor (m = minutes h = hours)		Earthquakes											Off- shore PPL	Remarks and Events of Interest	
				Kilauea Summit			Kilauea Flank				Mauna Loa						
		Deep	Inter- mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P				
Jun 18	1	5m	7m <sup>1/</sup>	5m <sup>1/</sup>		7	325	86	509	49	31	7	1			LPD-4, Kona-1	
	2					56	308	84	590	68	60	7	3			NER-1	
	3		4m <sup>1/</sup>		4	78	271	109	552	62	71	1	1			Kona-1	
	4	2m			7	91	332	105	686	76	52	3	1			Kona-2	
	5	22m	15m		1	302	299	91	498	47	34	2	2			Kohala-1, Kona-1	
	6				3	107	341	127	427	52	58	5	1			Kohala-5	
	7	16m	8m		1	10	276	74	393	51	47					Kona-1	
	8	10m				10	312	85	448	42	73	3	1				
	9	2m	28m <sup>1/</sup>		1	14	326	52	579	30	78	2	1			Mauna Kea-1	
	10	11m				79	335	56	544	78	61	2	1			Offshore-1, NER-8	
	11	5m	15m		1	98	294	28	429	18	39	7				NER-4	
	12					44	347	23	445	14	3	5	3			NER-2, Kona-1	
	13		3m		1	4	344	86	519	55	56	1	2			Kona-1	
	14	3m				6	241	86	373	44	38	3	2			NER-1, Kohala-1	
	15		6m			5	210	71	460	47	33	2	2			Kona-1	
	16					3	144	63	299	34	36	6	2				
	17	5m	28m <sup>1/</sup>			3	207	52	319	36	43	6	5			Kohala-1	
	18	6m				6	205	53	387	42	39	22	6			NER-1	
	19		15m			5	286	54	479	73	35	12	17			Mauna Kea-1	
	20				1	4	352	67	423	53	34	8	6			East Rift swarm	
	21		4m <sup>1/</sup>			6	142	39	3134	22	29	10	8			NER-5, Kona-2	
	22					27	133	73	828	59	56	29	8			NER-2	
	23		35m		1	14	126	87	660	23	51	14	10			NER-1, Kona-1	
	24					1	20	163	71	382	11	53	6	8			
	25		15m			15	218	20	253	54	31	2	2				
	26						298	30	257	64	31		7				
	27		4m <sup>1/</sup>			2	277	97	531	34	52	7	9			Kohala-1, Kona-1	
	28					4	8	231	72	440	20	32	17	2			
	29		35m			1	8	263	78	432	25	34	2	5			
	30						1	245	73	396	19	44	31	3		Kona-1	

1/MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank				Mauna Loa		Off-shore PPL	Remarks and Events of Interest	
	Deep	Inter- mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P			
Jul 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	21m			3	8	228	69	380	21	59	5	5			
					3	268	72	364	44	45	5	2		LPD-2	
					5	282	75	401	33	33		1		High winds	
					6	88	6	105	2	10		2		Kona-1	
					2	349	49	395	31	39		2		Kona-1	
					4	277	59	451	21	42				Power outage 2000-0700	
				2	7	117	38	188	17	21	1			Power outage 0100-0730,	
				1	24	125	46	352	19	26		2		Mauna Kea-1	
	6m					96	22	161	46	32		37		Kona-1	
						150	25	315	39	38		2		KOH-1, LPD-3	
					4	57	140	47	613	16		9		Kona-1, KOH-1, LPD-1,	
					1	17	119	40	636	28	32	1	2	NER-3	
	24m				8	126	42	767	46	41	4	2		NER-1, Kona-2	
					1	16	320	62	1677	26	42	3	4	Kona-1, LPD-1, NER-1	
						7	105	90	591	41	44	3	2	Kona-4, LPD-1, NER-1	
					2	9	106	55	534	39	49		5	Kona-3, LPD-1, NER-5	
					4	34	132	51	548	41	47	4		LPD-1, NER-4	
					2	28	138	46	435	40	46	2	4	NER-4, LPD-1, Kona-1	
					2	7	167	57	497	48	29	2	3		
					2	5	164	62	376	34	17	1	1	LPD-2	
					2	2	114	41	470	30	31	2	1	LPD-1, NER-1	
				3	27	160	57	478	48	26	2	1		LPD-1, Kona-1	
Aug 1 2 3 4 5 6 7 8 9 10	8m <sup>1/</sup>				12	329	19	525	19	21		2	1		
					9	319	49	732	9	29	4	6		LPD-1	
					2	193	45	439	33	45	2	3		Kona-1	
					3	341	63	422	38	28	1	3		LPD-4	
					9	221	59	587	23	34	9	3		LPD-2	
				2	20	254	64	560	34	29	28	3		LPD-1, Kona-1	
				1	13	245	64	435	53	30	6	1		LPD-2, Kona-1, NER-4	
				2	16	296	70	568	39	39	7	3		LPD-1	
				1	14	302	51	635	51	29		3			
Sep 1 2	7m	6m		3m <sup>1/</sup>											

<sup>1/</sup>MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank				Mauna Loa		Off-shore PPL	Remarks and Events of Interest	
	Deep	Inter- mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P			
Aug 20	5m			1	16	191	42	434	16	30	1	2		NER-1	
					7	184	55	350	26	40	19	19		Kona-2	
					4	144	59	282	20	33	5	11		LPD-1	
					1	176	42	302	30	19	6	28			
					5	257	59	469	38	41	13	12		Kona-1	
	7m			4	28	319	18	318	74	34	1	6			
					2	264	14	290	73	41	1	7		Kona-1	
					10	214	50	468	24	41		8			
					13	320	55	504	29	38	9	7			
					4	270	56	427	33	39	29	3		NER-1	
	7m <sup>1/</sup> / 2m <sup>1/</sup> 4m			10m <sup>1/</sup>	1	255	54	411	26	31	16	2		Kona-1	
					4	223	49	214	22	33		3		Kona-2	
					3	345	22	353	6	27	13	4		NER-1, Kona-2	
					6	431	20	494	6	21	12	6		Kona-1	
					10	262	33	494	30	48	3	26	3		
	2m			2	1	1	332	66	572	58	29	16	6		Kona-2, LPD-1
					4	267	68	584	47	98	14	7		LPD-1	
					2	201	61	652	44	32	4	3		NER-1, Kona-1	
					8	246	77	509	30	33	7	9		Kona-2	
					5	209	55	445	37	27	3	3		Distant-2, NER-2	
	3m			3m	11	238	63	521	68	38	4	1		LPD-3, NER-2	
					6	118	33	211	27	26	1	8	5		
					1	108	77	295	40	41	5	2		LPD-2, NER-1	
					5	65	85	301	39	28	11	1		LPD-12, Kona-1, NER-1	
					1	99	59	339	56	33	4	5		LPD-1, NER-3	
	5m			2	13	90	97	413	46	25	10	2		Kohala-1	
					3	146	21	196	41	32	2	11		Kona-3	
					4	131	21	211	42	28		1		NER-1	
					27	129	55	226	39	65	3	19	1	NER-4	
					13	153	63	303	43	35	1	2		LPD-3	
	52m 4m			2	13	167	82	322	43	44	2	3		Kona-3, LPD-1, Mauna Kea-1	

1/ MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquake											Remarks and Events of Interest
				Kilauea Summit			Kilauea Flank				Mauna Loa		Off- shore PPL		
	Deep	Inter- mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P			
21	Sep	10m	4m <sup>1/</sup>	10m <sup>1/</sup>	11	117	76	359	40	27					NER-5, Mauna Kea-1, Kona-1
					2	25	106	54	375	59	36	2	6	1	Mauna Kea-1, NER-4
					35	125	43	300	64	84	29	15	2		
					28	77	65	172	44	48	40	10			Kona-4, NER-1
					2	25	83	69	258	52	45	4	5	1	NER-2, Kona-1
					9	102	63	365	43	33	4	2			LPD-6, NER-1
					2	20	83	79	384	52	31	4	3		Mauna Kea-2
					2	10	52	71	261	15	29	4			Kona-1, LPD-1, NER-1
					3	7	72	56	225	23	33	3	1	3	LPD-1, Kona-2
					11	271	28	286	3	56	10	10	3		Kona-1
					11	363	12	291	1	171	10	1	2		LPD-2, NER-3
					2	21	211	76	334	35	200	5			Kohala-1
					1	7	171	54	320	34	116	13			LPD-2, Kona-3
					5	99	60	197	5	71	17	4			Mauna Kea-4
					3	75	39	212	8	62	10	2			
					2	17	78	80	299	26	83	6			Offshore-1, Kona-1
					2	7	82	74	330	49	80	4	4		LPD-2, Kohala-1
					1	55	209	75	339	40	56	12	3		NER-1
					16	99	72	340	38	82	29	1			
					3	15	65	76	287	26	69	31	2		LPD-4, Kona-3
					1	3	52	75	278	49	36	16	1		Kona-3
					2	11	79	67	352	38	41	15	1		
					27	87	76	342	40	47	16	2			NER-5, Kona-1
					22	70	24	155	42	45	2	9			
					127	81	28	131	38	35	14	7			Kona-1
					53	69	68	348	29	46	5	3	1		
					32	70		321		44	3	2			Kona-2, LPD-2, NER-1
					25	75	75	394	26	31	1	2			NER-1
					2	23	88	87	382	47	42		4		Kona-1
					53	84	81	421	40	30	10				Kona-1

<sup>1/</sup> MOK-tremor beneath Mauna Loa Volcano

## 1/MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank				Mauna Loa		Off-shore PPL	Remarks and Events of Interest	
	Deep	Inter- mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P			
23	Nov 1 2 3 4 5 6 7 8 9 10	9m <sup>1/</sup>  7m         3m <sup>1/</sup>		4	27	346	45	325	11	26	15	2		NER-1, LPD-8	
					21	285	32	307	34	32	3	2		Kona-2	
				1	20	302	34	187	18	23	2	4		LPD-1, NER-2	
					20	324	26	154	8	28	2	2		NER-1	
				2	24	256	45	135	14	41	4	8	2	NER-2, Kona-2	
					3	398	33	189	11	39	2	5		NER-1, Kona-2	
				2	3	349	24	211	12	38	3	8	1	LPD-3, NER-1	
					44	374	41	224	21	36	10	10		Distant-1, Kona-1	
				21	397	17	277	11	41	2	9		1	LPD-1	
				1	20	352	23	259	19	51	23	16		LPD-2	
	11 12 13 14 15 16 17 18 19 20	5m   80m <sup>1/</sup> 24m			9	321	21	208	9	27	7	4		Mauna Kea-1	
				1	1	317	15	155	50	30	1	8		Maui-1, LPD-1	
					2	549	23	161	42	28	2	6		Maui-1, NER-1	
				34	350	21	260	4	27		5			NER-1	
					5	322	24	303	1	30	1	5		LPD-2, Kona-1	
				3	9	384	14	181	3	29		1	1	Kona-1	
				1	23	468	15	173	5	39	45	2		NER-1	
					5	28	425	34	180	9	41	7	2	NER-5	
				1	39	370	36	127	46	34	347	21	1	NER-1	
					32	374	30	132	31	41	306	4		NER-1	
	21 22 23 24 25 26 27 28 29 30	19m 28m 5m 14m <sup>1/</sup> 20m 6m 47m 7m 3m <sup>1/</sup>		1	62	419	19	154	4	28	223	1		NER-1	
				2	51	385	32	166	9	29	152	39		Kona-2, LPD-2, NER-4	
					92	389	33	176	43	32	67	27	1		
				22	343	22	144	10	38	36	18		1	NER-5, Kona-2, LPD-2	
					28	354	21	186	10	26	17	46		NER-1, Kona-1	
				27	371	14	194	9	34	24	17			NER-4, Kona-4	
					14	364	26	203	5	36	7	17		LPD-1, NER-2, Kona-1	
				13	356	41	194	6	33	8	19			NER-2	
					13	388	30	159	1	21	14	17		Maui-1, NER-2	
				20	379	39	283	3	27	8	12			NER-1	

1/MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank				Mauna Loa		Off-shore PPL	Remarks and Events of Interest	
	Deep	Inter- mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P			
Dec	38m	5m	5m	2	13	406	43	274	2	45	2	9	3	NER-3, LPD-5, Kona-1 NER-2, Kona-1 NER-3 Kona-1 Kona-1 NER-2 Kona-1, NER-1 LPD-4 Mauna Kea-2, NER-4 Kulani-2, LPD-2 NER-2 LPD-7 NER-2, Kulani-1 NER-1 NER-1 Kona-1 NER-2, Kona-1 NER-1, Kona-2 NER-1 NER-1 LPD-7	
					19	345	30	275	15	41	11	2			
				3	396	28	209	35	38	1	4				
				4	431	22	220	37	26	2	4				
				13	332	32	273	6	53	5	4				
				18	403	33	203	2	29	6	2				
				2	23	383	30	207	7	30	3	2			
				1	14	493	26	185	1	29	4	10			
				17	467	38	193	3	26	6	5				
				12	272	44	176	15	25	2	4				
				19	167	42	143	37	38	13	7	3			
				2	19	333	48	245	2	17	7	10			
				23	486	20	217	32	26	7	5	2			
				1	42	319	48	266	15	11	7				
				12	501	114	474	72	13	15	2				
				4	767	20	147	35	23	9					
				2	4	358	64	496	10	20	5	3	1		
				1	3	161	26	211	4	8	3	4			
				20	303	30	146	5	57	8	21	3			
				1	18	372	39	270	7	10	4	8			
				3	19	422	24	259	11	21	8	1	1		
				7	338	49	232	1	11	5	17				
				24	296	21	264	8	20	10	1	1			
				3	32	318	21	258	5	24	14				
				1	19	311	35	330	9	20	3	1	1		
				1	9	355	38	377	9	24	4				
				20	361	25	299	18	12	8	4	1			
				1	5	481	28	338	21	19	8	2			
				1	20	296	26	355	18	21	15	2	1		
				519	19	168	77	4	9	8	7				
				414	5	137	37	37	9	9	1				

<sup>1/</sup> MOK-tremor beneath Mauna Loa Volcano

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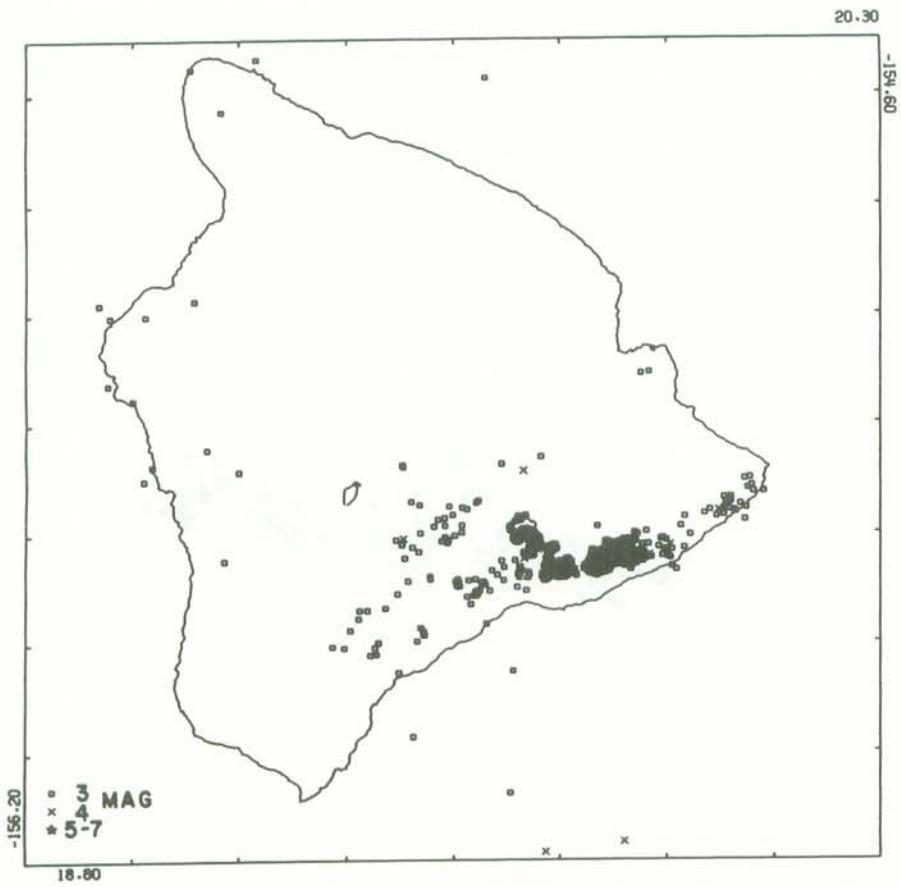


Figure 5 Epicenter plot of magnitude 3 and above earthquakes for the year 1976.

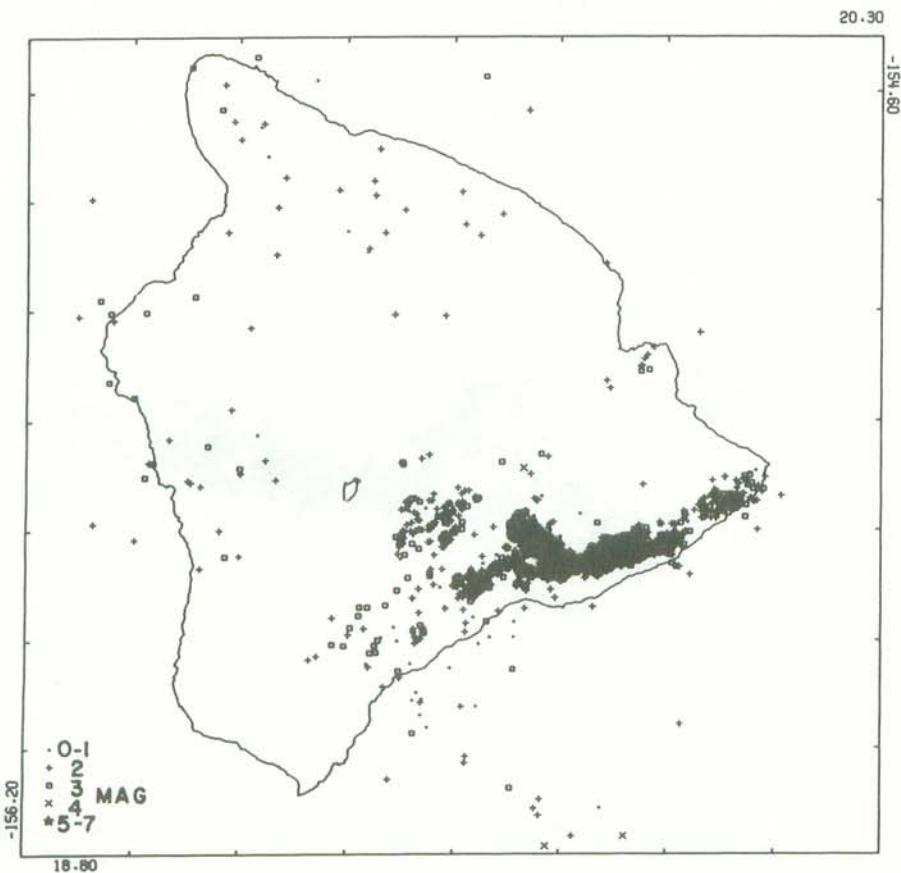


Figure 6. Epicenter plot of all events located for the year 1976. 25

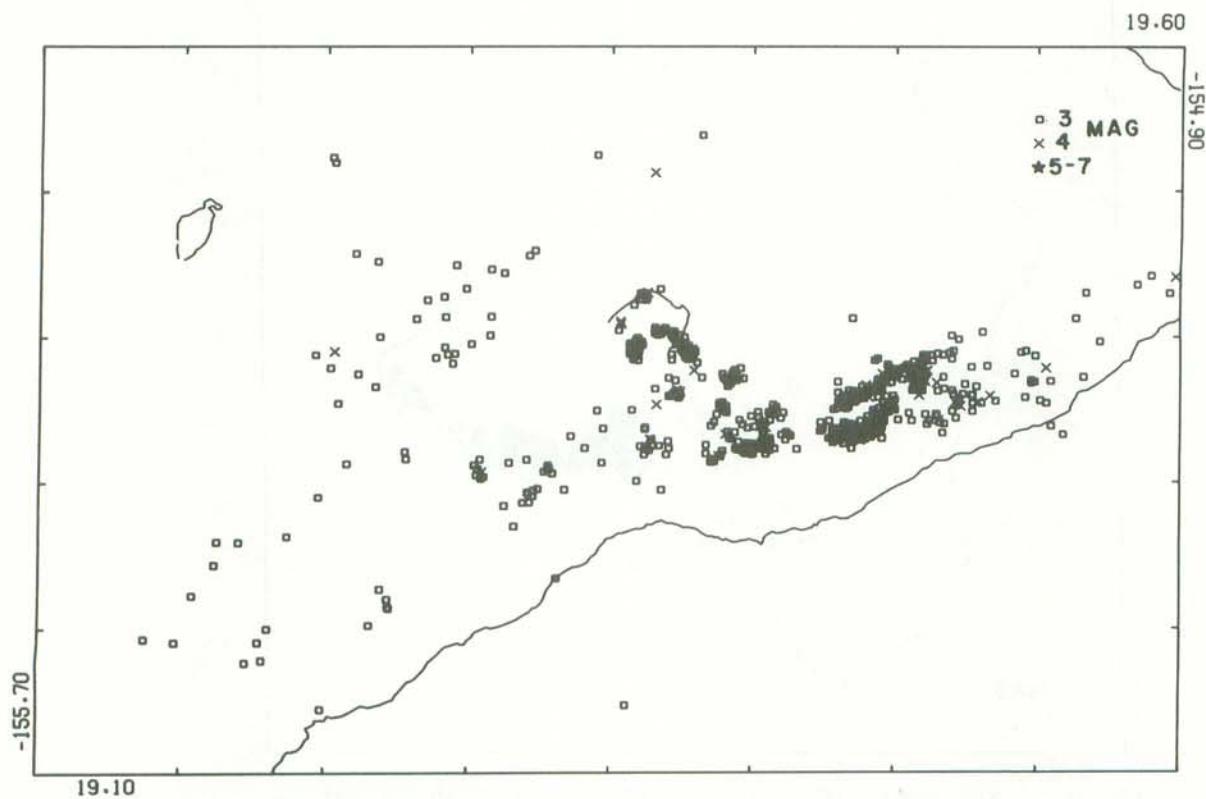


Figure 7. Epicenter plot of Mauna Loa and Kilauea earthquakes magnitude 3 and above for the year 1976.

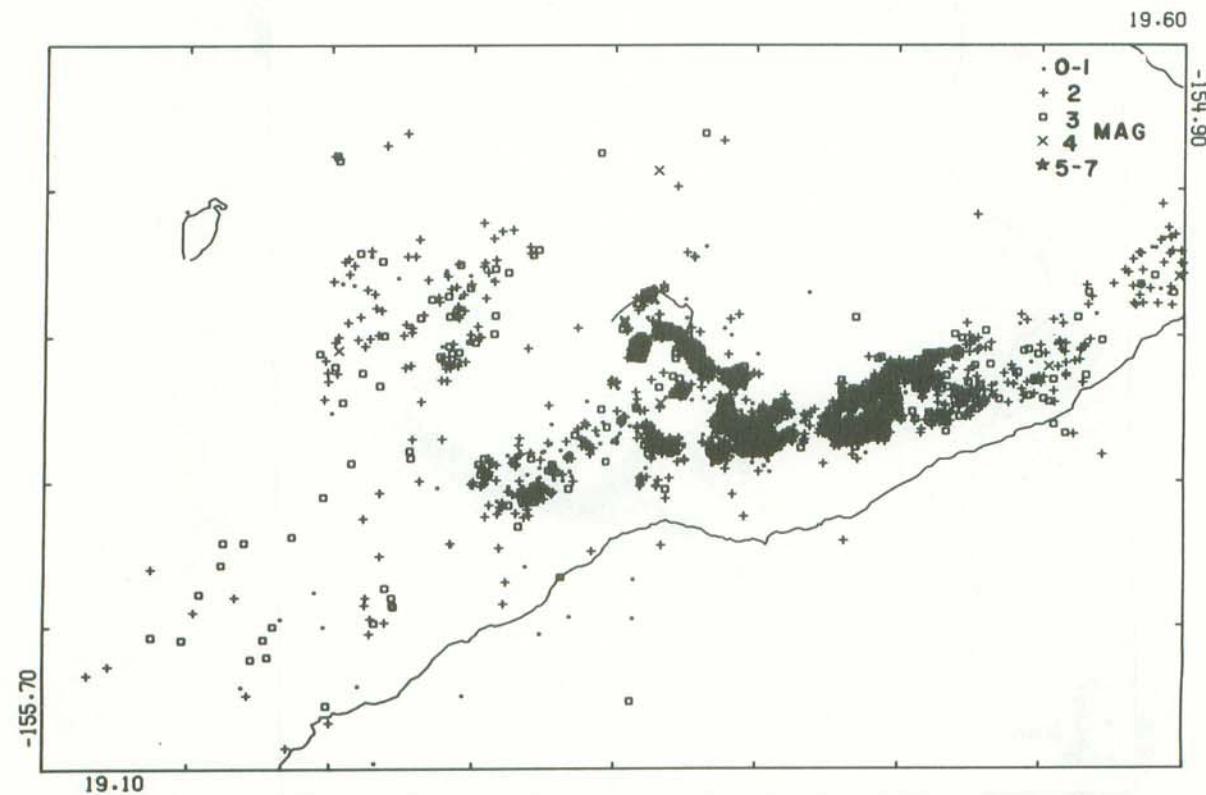


Figure 8. Epicenter plot of all Mauna Loa and Kilauea earthquakes located for the year 1976.

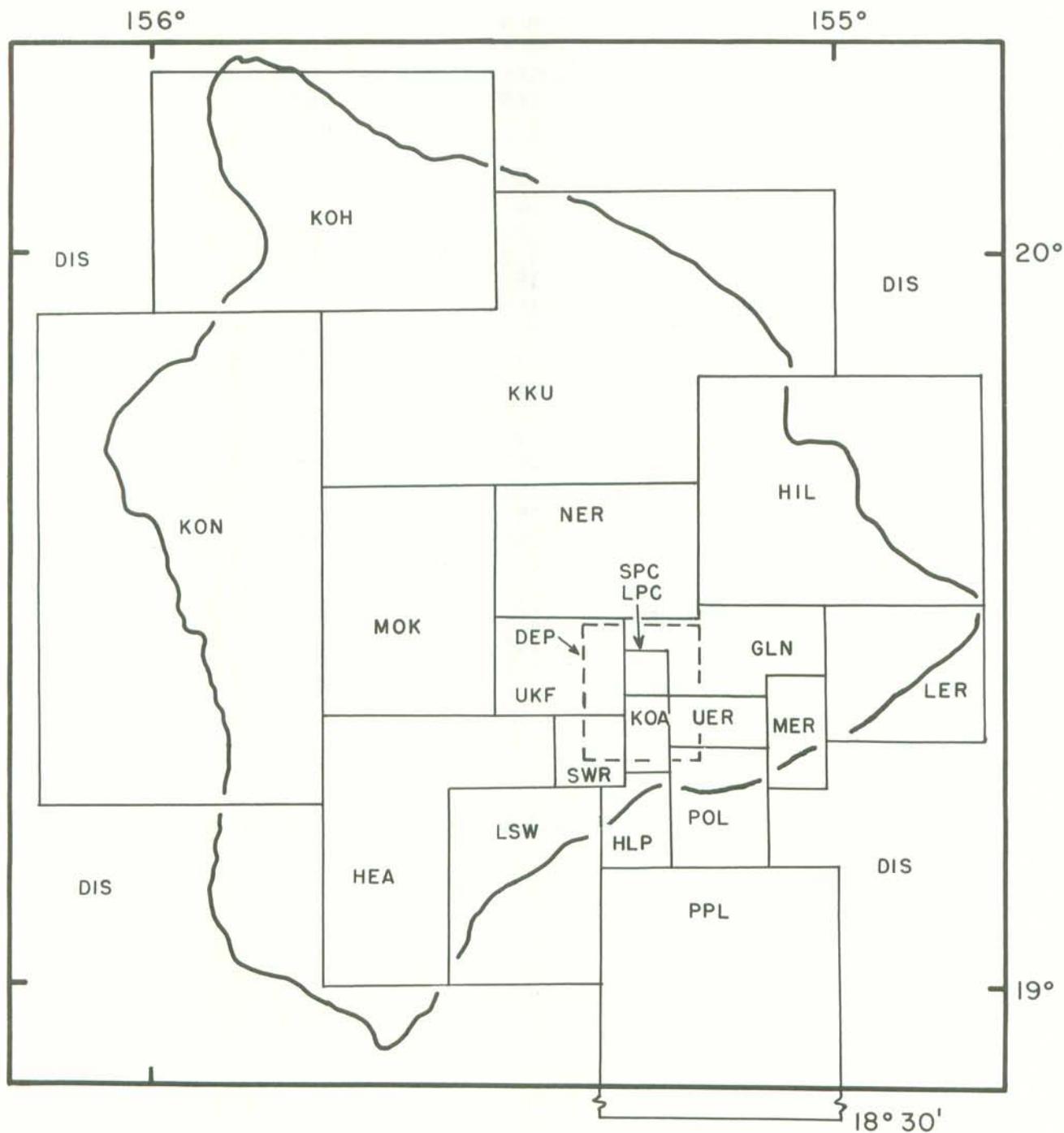


Figure 9. Map indicating limits of areas for specific mnemonic codes used in the remarks column of the earthquake summary. DEP is a code applied to earthquakes with depths greater than 13 kilometres in the Kilauea region. SPC is used for depths between 0 and 6 km, and LPC is used between 6 and 13 km.

Table 4. Coordinates of named regions.

Name	Limits								DEPTHS 0
	NORTH		SOUTH		EAST		WEST		
	D	M	D	M	D	M	D	M	
SPC	19	27	19	23	155	15	155	19	0 - 6
LPC	19	27	19	23	155	15	155	19	6 - 13
DEP	19	29	19	18	155	22	155	22	13 - 70
UER	19	23	19	19	155	6	155	15	
KOA	19	23	19	17	155	15	155	19	
SWR	19	22	19	16	155	19	155	25	
UKF	19	29	19	22	155	19	155	30	
MER	19	25	19	16	155	1	155	6	
LER	19	31	19	20	154	47	155	1	
POL	19	19	19	10	155	6	155	15	
LSW	19	16	19	0	155	21	155	34	
PPL	19	10	18	30	155	0	155	21	
HLP	19	17	19	10	155	15	155	21	
MOK	19	40	19	22	155	30	155	45	
GLN	19	31	19	23	155	1	155	19	
KON	19	55	19	15	155	45	156	10	
HEA	19	22	19	0	155	25	155	45	
KOH	20	15	19	55	155	30	156	0	
NER	19	40	19	29	155	12	155	30	
HIL	19	50	19	31	154	47	155	12	
KKU	20	5	19	40	155	0	155	45	
DIS	EVERYPLACE ELSE								
BLS	QUARRY BLAST								

When coordinates imply an overlap, precedence is given as shown in Figure 9.

Table 5 is a chronological listing of successfully located earthquakes. 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).

DEPTH - Depth of focus in km.

AMP MAG - Amplitude magnitude, if determined.

DUR MAG - Duration magnitude, if determined.

NR - Number of arrivals (P or S) used for solution.

NS - Number of S arrivals used for solution.

GAP DEG - Largest azimuthal separation in degrees between stations.

RMS SEC - Root mean square error of time residuals in sec.

$$\text{RMS} = \left( \sum R_i^2 / NR \right)^{1/2}$$

MIN DIS - Epicentral distance in km to the third nearest station.

ERH km - Standard error of the epicenter in km.

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

REMK - Remarks, three letter code for geographic location of event. See Figure 9 for location of mnemonic code.

Table 5 lists all events located during 1976. Table 6 lists only events of magnitude 3.5 or larger.

TABLE 5. HVO EARTHQUAKE SUMMARY LIST

PAGE 1

YEAR	MON	DA	HR	MN	SEC	LAT	N	LON	W	DEPTH			AMP	DUR	GAP	RMS	MIN	ERH	ERZ	REMK
										DEG	MIN	DEG			NS	DEG	SEC	DIS	KM	
1976	JAN	1	0	2	46.09	18	50.09	155	4.68	16.61	3.6	4.1	28	0	269	.10	54	3.9	29.5	PPL
		1	120	25.68	19	19.92		155	10.87	8.08	2.1	2.5	27	0	88	.15	7	.9	1.4	UER
		1	854	19.82	18	40.44		155	2.80	50.32	4.7	4.2	15	1	310	.08	78	6.0	14.1	PPL
		1	1536	47.31	19	21.71		155	15.08	9.34	3.5	3.9	30	0	60	.10	4	.4	.5	KOA
		1	2052	16.02	19	22.70		155	6.25	6.44	2.3	2.6	29	0	69	.15	8	.8	1.6	UER
		2	214	55.86	19	23.34		154	58.95	7.08	2.5	2.4	28	0	184	.13	10	1.2	.9	LER
		2	35	32.22	19	20.24		155	12.36	7.66	2.6	2.6	29	0	74	.13	6	.7	.9	UER
		2	311	36.82	19	22.40		155	4.31	7.06	2.3	2.5	27	0	94	.15	10	.9	1.5	MER
		2	198	23.79	19	20.05		155	7.69	7.11	2.9	3.4	27	0	93	.11	8	.6	1.1	UER
		2	2011	27.16	19	19.43		155	12.70	5.93	2.1	2.4	27	0	82	.14	7	.7	1.5	UER
		2	2018	21.43	19	22.31		155	7.00	5.98	2.3	2.5	30	0	68	.16	8	.9	2.0	UER
		3	137	13.34	19	20.42		155	19.29	9.13	2.5	2.7	30	0	51	.18	6	1.0	1.0	SWR
		3	537	1.25	19	17.60		155	20.78	7.87	2.1	2.6	29	0	125	.16	8	.9	1.3	SWR
		3	918	56.06	19	27.20		154	53.50	8.64	2.9	2.9	23	1	258	.11	19	2.4	.7	LER
		3	1352	3.34	19	17.38		155	22.08	6.00	1.9	2.3	23	0	133	.15	8	1.0	2.6	SWR
		3	1519	32.13	19	21.49		155	7.75	7.21	2.3	2.3	20	0	74	.12	9	.8	1.3	UER
		3	1532	22.26	19	19.75		155	19.42	6.54	1.9	2.4	25	0	61	.16	7	.9	1.8	SWR
		3	1834	25.26	19	19.67		155	13.34	6.62	2.2	2.8	28	0	68	.13	7	.7	1.0	UER
		3	2335	41.36	19	21.76		155	2.34	7.32	2.1	2.2	21	2	165	.15	13	1.5	1.1	MER
		4	157	55.96	19	27.42		154	55.81	7.82	2.3	2.3	25	1	243	.16	16	2.7	1.0	LER
30		4	451	7.70	19	22.45		155	1.51	3.28	2.4	2.7	22	0	179	.17	11	1.2	1.4	MER
		4	58	9.16	19	19.44		155	13.14	7.79	2.0	2.5	26	0	74	.15	7	.9	1.3	UER
		4	521	39.41	19	20.31		155	8.67	7.10	1.8	2.1	25	0	73	.14	9	.9	1.7	UER
		4	557	26.71	19	24.23		155	16.18	1.64	1.3	2.1	10	0	125	.07	3	.5	.3	SPC
		4	620	50.96	19	28.56		154	52.23	9.76	2.3	2.3	22	0	263	.17	22	6.9	.6	LER
		4	727	58.90	19	22.60		155	5.06	7.23	1.9	1.7	24	0	93	.13	8	.7	1.3	MER
		4	1256	39.63	19	24.52		154	59.04	5.88	2.6	2.8	25	0	210	.17	11	2.2	1.6	LER
		4	1424	2.39	19	20.89		155	10.70	7.80	2.8	3.1	29	0	71	.12	8	.6	.9	UER
		4	2030	30.24	19	22.75		155	5.62	7.46	2.6	3.1	27	0	85	.13	8	.7	1.1	MER
		4	2342	26.70	19	19.47		155	19.40	8.60	2.3	2.8	27	0	65	.15	7	.8	1.0	SWR
		5	634	43.45	19	19.67		155	19.29	8.75	2.4	2.6	29	0	59	.15	7	.8	1.0	SWR
		5	941	30.46	19	19.74		155	12.75	3.95	1.2	1.7	17	0	76	.14	7	.8	2.3	UER
		5	1021	16.61	19	22.38		155	6.78	4.08	1.0	1.8	18	1	105	.17	8	1.0	2.6	UER
		5	1052	19.62	19	20.05		155	16.62	7.16	1.5	1.4	9	0	170	.07	5	1.3	2.6	KOA
		5	111	4.18	19	17.76		155	25.50	7.09	1.9	1.5	22	0	122	.18	12	1.2	3.1	HEA
		5	1111	15.10	19	20.44		155	8.78	8.25	1.8	1.6	23	0	70	.07	9	.5	.8	UER
		5	1120	6.87	19	19.54		155	20.73	5.06	1.5	1.5	19	0	125	.18	6	1.2	1.4	SWR
		5	1130	28.44	19	18.41		155	19.91	1.90	1.2	1.4	14	0	189	.19	7	2.0	99.0	SWR
		5	1138	22.91	19	27.28		155	28.33	8.72	2.0	1.3	12	0	106	.07	12	.7	2.8	UKF
		5	1243	43.77	19	24.63		155	16.41	35.83	2.5	2.9	16	1	135	.09	4	1.8	2.7	DEP
		5	1249	24.10	19	19.19		155	21.08	6.87	1.6	1.2	17	0	136	.14	7	1.2	1.7	SWR
		5	1254	47.75	19	18.17		155	21.17	7.03	1.7	1.6	18	0	117	.13	8	.9	1.7	SWR
		5	1327	22.74	19	20.08		155	16.33	8.17	2.0	2.3	26	0	87	.14	6	.8	1.1	KOA
		5	1353	40.46	19	21.39		155	10.91	7.59	1.8	1.9	25	0	64	.12	9	.7	1.0	UER
		5	1417	59.77	19	21.97		155	6.41	7.27	1.9	2.2	24	0	76	.12	7	.7	1.2	UER
		5	1421	40.27	19	19.95		155	8.44	7.31	1.1	2.0	0	79	.13	10	1.0	2.0	UER	
		5	1439	4.26	19	18.41		155	11.89	1.17	2.2	2.3	24	1	121	.19	8	1.1	1.6	POL
		5	1451	29.28	19	14.52		155	21.79	7.76	1.9	1.4	22	0	155	.09	11	.6	1.3	LSW

HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HR	MN	SEC	LAT	N	LON	W	DEPTH			AMP	DUR	GAP	RMS	MIN	ERH	ERZ	REMK	
										DEG	MIN	DEG			NS	DEG	SEC	DIS	KM		
1976	JAN	5	1530	52.83	19	18.11		155	21.27	6.01	1.7	1.4	20	0	118	.13	8	.8	2.0	SWR	
		5	1625	59.31	19	17.82		155	21.31	6.99	1.7	1.1	15	0	158	.11	8	1.1	2.3	SWR	
		5	1629	32.01	19	17.89		155	21.54	3.36	1.7	1.1	21	0	119	.16	8	1.0	2.2	SWR	
		5	17	4	41.11	19	22.95		155	24.34	9.50	2.2	2.0	28	0	61	.11	8	.5	.7	UKF
		5	17	5	31.42	19	22.08		155	2.39	5.90	2.2	1.8	20	0	160	.16	13	1.2	2.4	MER
		5	1723	18.81	19	20.21		155	19.41	6.61	.9	11	6	0	108	.06	6	.6	1.5	SWR	
		5	1745	45.86	19	22.02		155	6.70	6.84	1.9	2.0	21	0	78	.15	8	1.0	1.8	UER	
		5	18	0	17.10	19	23.95		155	23.70	8.91	1.9	2.1	23	0	68	.11	7	.6	1.2	UKF
		5	2223	27.03	19	20.51		155	5.89	1.24	2.2	2.4	14	0	110	.21	8	1.5	55.7	MER	
		5	2311	21.63	19	15.61		155	8.29	3.81	2.1	2.2	20	0	221	.13	12	2.1	1.6	POL	
		5	2317	44.84	19	19.54		155	12.72	6.51	3.4	2.5	13	0	80	.17	7	1.5	3.0	UER	
		6	043	37.58	19	18.71		155	23												

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	YEAR	MON	DA	HRMN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ						
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	DEG	MIN	DEG	MIN	DEG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ								
1976	JAN	10	4	7	4.26	19	20.74	155	6.60	8.98	3.0	3.3	27	0	97	.09	7	.6	.7	UER	1976	JAN	13	439	6.71	19	21.31	155	8.43	6.97	1.4	23	0	68	.14	9	.9	2.0	UER
10	510	25.42	19	21.19	155	13.38	7.42	2.6	3.2	29	0	55	.15	6	.8	1.2	UER	13	459	26.05	19	17.79	155	22.49	6.23	1.3	21	0	116	.14	8	.9	2.3	SWR					
10	1029	7.83	19	20.24	155	18.33	29.43	2.9	3.0	32	0	62	.10	6	.8	1.4	DEP	13	516	41.93	19	21.32	155	11.19	8.81	1.1	21	0	90	.10	8	.7	1.2	UER					
10	11	8	15.74	19	23.44	155	.46	6.61	2.6	3.0	25	0	163	.14	9	.9	1.3	LER	13	534	23.25	19	19.88	155	7.06	8.35	1.9	1.2	21	0	153	.24	12	1.6	1.9	UER			
10	1534	51.74	19	24.06	155	24.14	10.75	2.5	2.7	24	0	64	.06	8	.4	.2	UKF	13	542	.26	19	20.15	155	6.91	5.66	.8	20	0	106	.12	7	.9	2.0	UER					
10	1652	22.99	19	20.72	155	6.85	7.08	2.5	2.8	25	0	95	.11	7	.7	1.2	UER	13	6	8	25.24	19	19.47	155	13.88	7.46	2.1	1.6	24	0	62	.14	6	.8	1.5	UER			
10	2051	50.55	19	22.04	155	8.34	8.57	2.4	2.8	27	0	64	.14	9	.9	1.2	UER	13	617	54.90	19	18.97	155	13.63	5.54	1.6	1.3	22	0	69	.12	7	.6	1.7	POL				
11	133	6.65	19	20.32	155	16.78	8.96	2.6	2.8	28	0	80	.09	5	.5	.6	KOA	13	638	8.13	19	23.66	154	59.36	4.41	1.2	21	0	175	.15	9	1.4	1.3	LER					
11	734	5.42	19	18.92	155	20.02	9.04	2.1	2.6	28	0	92	.12	6	.6	.8	SWR	13	659	19.41	19	28.12	154	54.60	4.02	1.3	21	0	168	.18	16	2.2	1.7	LER					
11	1226	9.77	20	1.20	155	36.98	17.99	2.7	2.7	25	5	172	.18	44	1.4	7.7	KOH	13	7	7	3.08	19	19.76	155	12.21	6.39	1.7	1.1	18	0	83	.14	6	.9	2.3	UER			
11	14	5	40.17	19	30.77	155	16.17	24.49	4.2	4.2	32	0	61	.11	13	.7	1.8	GLN	13	722	38.73	19	17.71	155	21.51	5.61	.9	19	0	121	.18	8	1.3	3.1	SWR				
12	348	32.91	19	21.90	155	6.67	9.31	3.0	3.2	28	0	76	.11	8	.7	.8	UER	13	745	54.53	19	19.72	155	12.37	5.98	1.8	1.5	25	0	82	.16	6	.9	1.8	UER				
12	829	10.09	19	20.43	155	13.19	5.95	2.0	2.1	15	0	166	.11	7	1.0	2.1	UER	13	847	23.20	19	20.26	155	13.91	8.24	1.3	15	0	70	.08	6	.6	1.4	UER					
12	855	17.11	19	19.55	155	15.23	7.34	1.2	2.0	20	0	97	.10	6	.7	1.2	KOA	13	921	23.76	19	23.12	155	4.90	7.28	1.9	19	0	97	.19	9	1.4	3.5	MER					
12	925	33.36	19	21.18	155	6.00	7.76	1.9	2.0	25	0	92	.13	7	.8	1.4	UER	13	943	28.27	19	19.28	155	20.30	5.34	.7	1.2	12	0	158	.04	6	.4	.6	SWR				
12	938	5.95	19	24.21	155	15.97	1.51	1.7	1.6	17	0	124	.13	3	.6	.3	SPC	13	955	34.85	19	20.40	155	17.73	7.29	1.8	2.4	22	0	65	.10	5	.6	1.1	KOA				
12	938	48.69	19	19.17	155	7.38	6.33	1.9	1.1	19	0	116	.12	8	.9	1.8	UER	13	1023	26.17	19	21.57	155	10.79	7.61	2.1	2.5	23	0	85	.12	8	.8	1.1	UER				
12	949	20.79	19	20.73	155	11.01	8.64	1.7	1.3	18	0	80	.09	8	.8	1.4	UER	13	1038	18.30	19	20.24	155	7.21	2.60	1.0	1.2	14	0	99	.14	8	1.0	16.3	UER				
12	951	31.95	19	24.13	155	15.93	1.57	1.6	1.7	12	0	121	.07	3	.4	.2	SPC	13	1046	45.80	19	19.98	155	17.77	7.34	.6	1.1	8	0	130	.06	6	1.0	2.6	KOA				
12	1045	1.26	19	24.06	155	15.92	1.57	1.8	2.2	15	0	113	.11	3	.5	.4	SPC	13	1118	46.07	19	21.34	154	59.75	3.76	1.4	1.8	14	2	206	.18	12	1.8	2.5	LER				
12	1113	38.78	19	21.03	155	13.43	9.30	2.7	2.9	29	0	55	.13	7	.7	.8	UER	13	1117	56.28	19	19.12	155	13.68	6.94	1.6	1.8	0	82	.12	7	.9	2.0	UER					
12	1133	11.32	19	19.87	155	16.08	7.55	1.7	1.7	23	0	88	.15	6	.9	1.3	KOA	13	1139	57.47	19	19.06	155	11.50	8.37	1.2	1.0	11	0	144	.02	7	.3	.6	UER				
12	1241	26.15	19	21.12	155	7.89	7.64	1.6	2.0	20	0	81	.09	9	.8	1.2	UER	13	1143	46.43	19	20.34	155	16.70	7.33	1.6	14	0	80	.06	6	.5	1.0	KOA					
12	1329	56.19	19	22.00	155	14.76	8.78	2.0	2.2	27	0	60	.16	4	.9	1.2	UER	13	1213	35.54	19	21.17	155	8.13	7.45	2.1	2.6	19	0	75	.12	9	.9	2.1	UER				
12	1344	56.35	19	19.59	155	12.47	6.16	2.4	2.9	29	0	83	.14	6	.8	1.3	UER	13	1248	57.81	19	20.68	155	2.94	6.82	2.1	2.8	18	0	131	.09	11	1.0	1.2	MER				
12	1416	43.09	19	19.70	155	12.62	5.03	.9	18	0	79	.12	8	.7	1.3	UER	13	1340	57.79	19	21.35	155	7.82	9.34	2.3	16	0	107	.08	9	.8	1.8	UER						
12	1442	51.60	19	20.10	155	8.54	8.13	1.2	19	0	89	.09	9	.8	1.1	UER	13	1412	34.18	19	17.04	155	21.97	3.41	1.1	1.7	20	2	126	.20	8	1.2	3.7	SWR					
12	1734	57.69	19	19.59	155	20.84	6.86	1.7	2.0	21	0	112	.12	6	.7	1.4	SWR	13	1423	19.98	19	21.60	155	2.62	5.94	1.0	9	1	157	.14	12	1.8	3.8	MER					
12	1737	34.49	19	19.64	155	16.30	6.86	1.0	16	0	98	.09	5	.6	1.3	KOA	13	1443	51.46	19	19.52	155	8.05	8.53	1.9	17	0	92	.07	9	.6	1.5	UER						
12	1746	24.82	19	20.46	155	13.11	7.40	1.3	21	0	63	.13	6	.9	1.6	UER	13	1531	34.65	19	20.82	155	11.08	6.79	1.1	1.5	14	0	72	.14	8	1.0	2.1	UER					
12	1755	32.61	19	21.63	155	6.21	9.23	2.4	2.3	25	0	82	.11	7	.7	.9	UER	13	16	1	35.23	19	22.29	155	6.54	6.56	2.2	2.9	22	0	71	.15	8	1.0	1.7	UER			
12	1840	8.08	19	21.52	155	6.77	7.07	1.9	1.9	23	0	81	.12	7	.8	1.6	UER	13	1616	33.99	19	22.30	155	5.23	7.08	2.1	16	0	88	.13	8	1.0	2.8	MER					
12	1950	16.70	19	27.96	154	55.00	4.21	2.5	2.1	26	0	165	.17	16	1.9	1.1	LER	13	1616	33.99	19	20.03	155	7.07	9.13	2.4	3.0	28	0	105	.11	7	.7	.7	UER				
12	2013	14.70	19	19.21	155	12.12	7.15	2.6	2.7	27	0	95	.14	7	.8	1.2	UER	13	1621	32.48	19	20.41	155	8.92	6.90	1.6	14	0	116	.12	8	1.1	2.7	UER					
12	2017	12.11	19	20.61	155	12.26	6.72	1.1	24	0	79	.13	7	.8	1.3	UER	13	1658	40.29	19	20.67	155	9.68	7.48	1.4	14	0	71	.11	7	1.0	2.2	UER						
12	2027	14.98	19	19.78	155	12.43	6.65	1.6	1.4	22	0	80	.15	6	.9	2.0	UER	13	1659	26.34	19	21.47	155	2.99	7.16	1.1	8	0	144	.03	12	.6	1.1	MER					
12	2043	54.80	19	20.78	155	13.66	6.90	.9	18	0	62	.11	7	.8	1.5	UER	13	17	8	36.59	19	24.83	154	59.12	10.25	1.1	8	0	163										

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT N	LONG W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	REMK			
					DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM			
1976	JAN	13	19	5	4.99	19	19.63	155	17.89	5.68	.7	1.2	11	0	131 .07	6	.7	1.3 KOA
		13	19	5	51.95	19	19.58	155	17.91	5.28	.7	1.3	11	0	82 .05	6	.5	.5 KOA
		13	1916	25.61	19	19.64	155	17.90	5.70	.7	1.6	12	0	80 .09	6	.8	1.4 KOA	
		13	1925	51.27	19	20.79	155	13.50	7.29	1.4	1.8	16	0	60 .11	7	.8	1.6 UER	
		13	1937	46.02	19	19.63	155	18.10	4.85	1.7	1.1	0	80 .04	6	.4	.8 KOA		
13	1953	6.27	19	24.75	155	16.62	13.29		1.1	21	0	91 .09	4	.7	1.0 DEP			
13	20	9	52.18	19	23.67	155	24.86	6.70	1.8	2.1	18	0	76 .09	9	.6	1.8 UKF		
13	2021	41.02	19	20.13	155	7.06	2.64		1.4	14	0	104 .12	7	.9	4.2 UER			
13	2026	40.00	19	24.03	154	49.89	5.72	2.4	2.0	21	1	283 .20	24	2.5	2.6 LER			
13	2027	43.11	19	26.29	155	23.23	4.00	1.1	1.3	11	2	131 .14	10	.7	3.3 UKF			
13	2046	33.27	19	23.57	155	25.32	7.29	1.3	1.5	14	0	133 .09	10	.9	2.0 UKF			
13	2113	55.98	19	21.91	155	5.20	7.99	1.8	2.2	21	0	86 .18	8	1.3	1.8 MER			
13	2126	44.80	19	20.89	155	8.44	7.22		2.0	17	0	72 .09	9	.7	1.7 UER			
13	22	5	3.17	19	21.65	155	5.70	.48	1.0	7	0	98 .07	7	1.0	99.0 MER			
13	22	9	25.35	19	19.21	155	12.18	7.36	1.3	15	0	94 .15	7	1.4	2.8 UER			
13	2230	19.30	19	20.37	155	17.65	7.39	.8	1.1	16	0	67 .13	5	1.0	1.9 KOA			
13	2243	35.00	19	20.88	155	9.02	7.47	.6	1.3	8	0	100 .05	8	.7	1.4 UER			
13	23	1	54.03	19	20.52	155	6.75	6.76	1.0	1.5	13	0	169 .16	9	1.8	4.2 UER		
13	23	2	57.90	19	19.85	155	16.29	6.29	1.2	17	0	93 .13	5	1.0	1.9 KOA			
13	23	5	28.72	19	20.14	155	10.65	6.88	1.1	1.2	16	0	166 .11	8	1.2	1.9 UER		
13	2318	9.76	19	21.67	155	6.83	7.04	1.3	18	0	78 .16	8	1.2	2.2 UER				
13	2320	27.73	19	20.79	155	10.90	7.71	1.1	17	0	82 .11	8	.8	1.6 UER				
13	2346	8.94	19	19.07	155	22.54	6.57		1.2	14	0	129 .15	9	1.5	2.7 SWR			
14	012	39.23	19	21.27	155	.77	5.86	1.3	1.3	19	0	218 .23	13	3.3	2.4 LER			
14	1	4	.00	19	19.80	155	11.59	6.74	2.3	23	0	87 .12	6	.7	1.6 UER			
14	2	9	22.85	19	18.39	155	11.43	5.57	1.1	1.0	15	0	127 .14	7	1.2	3.6 POL		
14	213	48.59	19	21.70	155	15.16	7.30	1.2	16	0	60 .11	4	.8	1.4 KOA				
14	235	46.78	19	20.19	155	7.68	7.20	2.2	2.6	25	0	91 .10	8	.6	1.0 UER			
14	248	37.61	19	21.73	155	8.39	8.71	2.5	3.1	29	0	65 .13	8	.7	.9 UER			
14	346	18.39	19	20.80	155	10.69	7.01	1.1	18	0	72 .13	8	1.0	1.9 UER				
14	4	8	56.19	19	22.03	155	1.09	6.33		1.5	20	0	173 .17	12	1.5	2.3 MER		
14	414	58.41	19	19.83	155	12.56	4.21	1.2	19	0	78 .17	6	1.0	1.7 UER				
14	427	6.56	19	18.76	155	12.16	8.00	1.0	6	0	125 .02	7	.7	2.0 POL				
14	434	15.09	19	17.89	155	23.46	5.18	1.4	16	0	149 .11	8	.8	1.0 SWR				
14	450	36.79	19	22.19	155	2.63	4.09	1.1	12	0	152 .11	13	1.0	1.7 MER				
14	452	14.09	19	27.05	155	23.54	9.62		1.6	17	0	93 .10	11	1.0	3.9 UKF			
14	544	41.32	19	21.81	155	15.43	8.33	2.0	23	0	59 .15	4	.9	1.5 KOA				
14	545	43.30	19	21.06	155	7.49	7.00	1.0	1.0	12	0	62 .16	8	1.5	3.9 UER			
14	552	5.89	19	26.39	155	27.18	8.45	1.1	1.1	11	0	118 .14	13	1.9	5.2 UKF			
14	556	19.84	19	20.16	155	7.18	7.84	1.6	19	0	101 .10	7	.7	1.0 UER				
14	557	15.92	19	19.99	155	12.71	4.55		2.1	21	0	73 .17	6	1.0	1.5 UER			
14	622	29.79	19	21.98	155	8.40	10.24	1.1	1.2	16	0	79 .08	9	.7	2.6 UER			
14	625	43.46	19	21.37	155	6.37	6.74	1.4	19	0	86 .14	7	1.0	2.0 UER				
14	629	57.79	19	21.21	155	12.16	8.64	1.0	14	0	65 .14	7	1.3	2.5 UER				
14	645	9.74	19	21.10	155	8.26	7.45	1.5	17	0	82 .12	9	1.1	2.2 UER				
14	710	50.60	19	18.07	155	20.58	5.69	1.1	13	0	205 .11	7	1.3	2.4 SWR				
14	713	54.91	19	18.55	155	16.67	6.45	1.6	22	0	113 .16	6	1.0	1.9 KOA				
14	722	26.97	19	19.90	155	12.47	5.90	2.0	23	0	77 .15	6	.9	2.2 UER				

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT N	LONG W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	REMK				
					DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM				
1976	JAN	14	729	16.68	19	21.77	155	2.87		5.00	1.2	13	0	147 .14	12	1.5	1.5 MER		
		14	729	42.23	19	21.48	155	7.07		4.96	1.0	8	0	106 .08	8	1.1	2.3 UER		
		14	746	12.78	19	26.17	155	29.54		8.83	1.1	1.0	11	0	137 .07	13	1.1	3.1 UKF	
		14	750	2.06	19	20.91	155	17.91		6.29	2.1	2.7	18	0	44 .13	5	.8	1.8 KOA	
		14	8	3	27.61	19	22.22	155	6.52		8.95	3.2	3.3	29	0	71 .11	8	.6	.7 UER
15	721	47.45	19	20.16	155	7.80	7.78	2.2	2.5	24	0	90 .12	9	.7	1.3 UER				
15	934	47.09	19	20.12	155	9.08	9.10	2.2	2.8	29	0	75 .11	8	.6	.5 UER				
15	1038	23.91	19	20.19	155	8.61	8.17	2.3	2.9	29	0	74 .08	9	.4	.5 UER				
15	1241	45.31	19	24.55	155	17.59	14.21	4.4	4.5	35	0	46 .09	4	.5	.8 DEP				
15	1259	26.09	19	24.65	155	17.60	16.07	4.5	4.7	34	0	46 .10	4	.6	1.0 DEP				
15	1357	51.81	19	23.20	155	3.84	7.69	2.5	2.9	29	0	109 .13	11	.8	.9 MER				
15	22	7	45.62	19	22.64	155	6.49	7.66	2.4	2.8	27	0	66 .11	8	.6	.9 UER			
15	2212	49.26	19	22.27	155	.08	5.60	2.5	2.7	28	0	185 .12	11	.9	1.2 LER				
15	2217	43.92	19	22.23	155	.24	5.65	2.5	3.1	27	0	183 .12	11	1.1	.9 LER				
15	2350	33.50	19	23.24	155	.08	6.85	2.4	3.1	27	0	171 .15	9	1.2	1.1 LER				
16	1428	39.50	19	28.36	155	22.35	7.93	2.9	2.8	28	0	99 .14	11	.7	1.4 UKF				
16	1929	13.84	19	22.49	155	6.53	8.43	3.7	4.0	29	0	68 .09	8	.7	.6 UER				
16	20	0	3.85	19	21.29	154	59.61	2.18	3.2	28	0	206 .12	12	1.2	1.5 LER				
16	2337	1.23	19	21.63	155	15.10	8.34	2.5	2.9	30	0	61 .14	4	.8	.9 KOA				
17	1813	28.37	19	19.85	155	11.47	7.45	2.3	2.8	27	0	87 .13	6	.7	1.2 UER				
17	2041	39.33	19	27.23	154	49.95	9.40	2.6	2.5	23	0	276 .14	25	4.4	.8 LER				
18	236	51.83	19	26.41	154	52.47	8.24	2.9	3.0	28	0	256 .12	21	2.2	.7 LER				
18	449	28.37	19	21.73	155	15.30	9.70	3.6	3.8	31	0	60 .09	4	.5	.3 KOA				
18	538	56.91	19	26.75	154	51.17	8.53	2.8	3.1	27	0	271 .14	23	3.4	.9 LER				
18	817	52.38	19	20.21	155	6.80	8.06	1.9	2.7	24	0	106 .12	7	.8	1.3 UER				
18	1137	26.46	19	22.20	154	59.44	1.73	2.4	3.1	25	0	195 .18	10	1.8	13.9 LER				
18	1319	21.23	19	22.92	155	5.79</td													

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	LON	W	DEPTH	AMP	DUR	GAP				RMS	MIN	ERH	ERZ	YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	LON	W	DEPTH	AMP	DUR	GAP				RMS	MIN	ERH	ERZ
														DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	REMK																
1976	JAN	21	1141	21.24	19	22.02	155	7.21	8.48	4.1	4.2	24	0	178	.12	10	1.3	.9	UER	1976	JAN	28	1620	18.59	19	20.49	155	6.90	9.29	2.8	2.7	29	0	99	.12	7	.8	.7	UER				
		21	1529	12.82	19	19.96	155	8.43	9.12	2.6	3.0	30	0	79	.12	10	.8	.5	UER			28	1845	25.87	19	19.74	155	11.33	8.79	2.5	3.1	26	0	90	.11	6	.6	.6	1.0	UER			
		21	2155	8.76	19	27.53	154	51.84	8.06	2.4	2.8	20	0	269	.14	21	3.2	.8	LER			28	2010	15.30	19	21.30	155	13.28	8.60	2.2	3.0	26	0	54	.12	6	.7	.7	1.0	UER			
		21	2225	24.22	19	23.91	155	3.29	8.20	2.5	3.0	25	0	125	.10	11	.8	.7	MER			29	2	24.32	19	11.55	155	37.53	9.85	3.0	3.4	25	0	97	.22	21	1.5	.7	HEA				
		22	348	48.29	19	21.78	155	7.25	7.27	2.1	3.0	26	0	74	.11	8	.5	.9	UER			29	5	0	56.17	19	20.61	155	6.46	9.04	3.2	3.4	27	0	102	.10	7	.7	.5	UER			
		22	412	3.95	19	20.09	155	8.49	8.50	2.8	3.4	28	0	77	.09	9	.5	.7	UER			29	1019	56.47	19	22.74	154	59.64	8.66	4.7	4.9	33	0	184	.14	10	1.2	.9	LER				
		22	737	4.20	19	22.60	155	1.15	6.77	2.3	2.8	23	0	162	.14	11	1.2	1.0	MER			29	1415	54.41	19	20.17	155	8.06	7.71	2.1	2.6	27	0	85	.13	9	.7	.9	UER				
		22	1332	4.59	19	24.32	155	17.42	14.89	2.4	2.7	32	0	40	.09	4	.5	.9	DEP			29	1423	57.95	19	23.24	155	4.59	7.59	2.1	2.9	25	0	141	.13	9	.9	.9	MER				
		22	2016	24.70	19	19.87	155	8.64	8.31	2.3	3.0	29	0	76	.09	9	.5	.7	UER			29	2346	47.54	19	20.12	155	7.66	5.51	2.2	2.5	29	0	93	.13	8	.8	1.6	UER				
		23	145	47.84	19	18.54	155	23.63	4.57	2.2	3.0	23	0	105	.13	9	.7	1.2	SWR			30	134	16.89	19	19.89	155	12.29	9.17	2.2	2.8	27	0	80	.11	6	.6	.9	UER				
		23	247	40.05	19	21.63	155	4.98	8.96	3.7	4.0	31	0	82	.13	9	.8	.6	MER			30	2027	14.32	19	19.31	155	13.25	10.09	2.8	3.1	26	0	74	.13	7	.8	.4	UER				
		23	52	52.40	19	19.57	155	9.99	8.17	1.8	2.8	29	0	93	.12	8	.7	1.2	UER			31	122	.20	19	26.61	155	22.54	9.17	3.1	3.1	29	0	74	.14	10	.7	1.2	UKF				
		23	659	12.14	19	19.33	155	11.82	8.54	2.0	2.7	21	0	96	.14	6	1.0	1.9	UER			31	8	7	17.22	19	24.13	155	15.64	1.88	2.2	2.7	23	0	63	.11	3	.5	.5	SPC			
		23	739	20.97	19	20.69	155	17.62	9.06	1.9	2.8	27	0	39	.14	5	.7	.5	KOA			31	1247	20.56	19	20.29	155	16.53	9.33	2.8	3.3	32	0	82	.11	6	.5	.4	KOA				
		23	752	20.09	19	19.46	155	13.97	7.02	2.1	2.8	21	0	64	.13	6	.8	1.8	UER			31	1345	48.81	19	25.27	154	54.51	8.15	2.2	2.3	25	0	220	.14	17	2.0	.9	LER				
		24	251	7.39	19	20.31	155	7.31	7.69	1.9	2.7	29	0	96	.13	8	.8	.7	UER			31	1632	9.40	19	20.77	155	7.37	7.36	1.9	2.7	28	0	88	.11	8	.6	1.0	UER				
		24	847	47.24	19	18.79	155	23.30	5.24	1.9	2.6	24	0	104	.14	8	.7	1.0	SWR			31	1759	11.76	19	27.86	154	53.62	8.41	2.4	3.3	24	0	217	.16	18	2.6	1.1	LER				
		24	1347	14.73	19	19.42	155	7.82	.48	2.4	3.1	23	0	99	.14	9	.9	6.1	UER			31	20	7	26.96	19	22.10	155	4.83	7.52	3.3	3.9	28	0	82	.13	9	.7	.9	MER			
		24	1455	43.66	19	26.10	155	10.39	.47	1.9	2.5	19	2	107	.13	3	.5	.2	SPC			2	11	2.34	19	21.81	155	15.11	8.31	1.9	2.5	26	0	59	.12	4	.6	.9	KOA				
		24	1643	26.73	19	20.42	155	16.65	8.84	1.9	2.6	22	0	79	.09	5	.5	1.0	KOA			2	1217	7.63	19	23.83	155	16.80	1.51	1.7	2.3	15	0	80	.10	3	.5	.3	SPC				
		25	016	42.31	19	19.50	155	12.69	6.23	2.0	2.5	25	0	81	.16	7	.9	1.8	UER			2	1433	23.44	19	21.26	155	8.25	9.31	2.1	2.5	26	0	71	.07	9	.4	.5	UER				
		25	126	15.87	19	18.91	155	7.73	5.04	1.9	2.5	15	0	110	.14	9	1.2	2.0	POL			3	739	57.67	19	20.75	155	4.02	5.57	2.0	2.5	25	0	114	.15	10	1.0	.7	MER				
		25	212	10.73	19	21.45	155	3.37	6.38	2.0	2.7	21	0	128	.14	11	1.1	1.9	MER			3	758	21.54	19	26.45	154	53.66	7.68	2.4	2.4	22	0	227	.17	19	2.9	1.4	LER				
		25	212	10.73	19	21.45	155	3.37	6.38	2.0	2.7	21	0	128	.14	11	1.1	1.9	MER			3	1350	16.10	19	54.09	155	43.97	8.91	2.7	2.4	10	0	347	.08	42	.9	.8	KU				
		25	213	16.98	18	18.26	155	14.22	9.86	2.9	2.8	22	0	257	.12	44	4.5	.7	PPL			3	1454	23.30	19	20.40	155	13.68	8.52	2.0	2.4	21	0	57	.08	6	.5	.9	UER				
		25	1851	48.54	19	23.90	155	15.30	1.62	2.2	2.7	18	0	96	.11	3	.5	.3	SPC			3	1642	13.45	19	22.68	155	5.95	8.74	3.4	3.7	30	0	72	.11	7	.6	.6	MER				
		25	1933	31.12	19	20.88	155	5.40	6.77	2.5	3.2	27	0	102	.14	8	.8	1.0	MER			3	1737	6.19	19	18.37	155	20.48	9.56	2.5	3.1	28	0	115	.15	6	.9	.7	SWR				
		26	956	9.68	19	19.50	155	16.73	8.05	2.7	3.0	26	0	98	.13	6	.7	1.1	KOA			3	2045	21.72	19	20.30	155	11.73	7.14	1.7	2.6	22	0	77	.12	7	.7	.7	UK				
		26	1055	58.65	19	25.79	154	54.45	8.49	3.0	3.4	27	0	216	.16	17	2.3	1.1	LER			3	2050	58.46	19	21.67	155	15.18	9.78	3.5	3.8	29	0	61	.08	4	.4	.3	KOA				
		26	1119	27.86	19	20.09	155	7.83	8.03	2.5	2.9	25	0	90	.14	9	.9	1.3	UER			3	21	3	35.93	19	23.25	155	4.70	8.07	2.3	2.9	25	0	91	.13	9	.9	1.4	MER			
		26	1123	6.89	19	47.51	155	30.71	31.84	2.9	2.6	31	1	95	.14	21	1.1	2.7	KUU			3	21	5	25.71	19	29.11	154	52.11	6.93	2.4	2.7	19	0	263	.18	20	4.1	1.4	LER			
		26	13	4.04	19	27.33	154	53.15	8.59	2.4	2.6	26	0	240	.17	19	2.8	.6	LER			4	5	2	37.85	19	23.38	155	.67	6.75	2.4	3.0	24	0	160	.08	9	.7	.5	LER			
		26	1622	3.95	19	25.35	154	55.72	7.29	2.1	2.7	26	0	20																													

HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT N	LON W	DEPTH	AMP	DUR	GAP				RMS	MIN	ERH	ERZ		
										DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG
1976	FEB	6	845	22.08	19	20.68	155	13.05	8.10	2.0	2.9	26	0	.62	.12	6	.7	.9	UER
		6	1848	31.45	19	25.60	155	25.49	9.42	2.4	2.5	28	0	.52	.11	11	.5	.8	UKF
		6	2346	29.99	19	29.53	154	51.34	7.77	2.7	2.8	23	0	.267	.16	22	3.4	1.0	LER
		7	5 8	55.01	19	21.36	155	8.16	11.20	2.2	2.7	17	0	.71	.07	9	.6	.4	UER
		7	529	35.26	19	20.15	155	6.69	9.14	2.4	2.8	27	0	109	.09	7	.5	.6	UER
		7	742	42.77	19	19.10	155	22.05	5.96	1.8	2.7	21	0	101	.14	8	.9	1.9	SWR
		7	2248	12.26	19	19.77	155	7.46	7.82	3.2	3.7	27	0	103	.09	8	.5	.8	UER
		7	2346	41.99	19	20.46	155	6.78	9.29	2.0	2.7	24	0	101	.09	7	.6	.5	UER
		8	2 5	10.83	19	22.44	154	58.92	6.61	2.1	2.4	23	3	197	.15	15	1.3	1.7	LER
		8	540	55.17	19	14.61	155	34.62	10.35	2.7	3.0	25	0	114	.19	19	1.6	.6	HEA
		8	9 3	49.18	19	19.43	155	19.10	9.06	1.7	3.2	27	0	.57	.13	7	.7	.8	SWR
		8	1441	32.43	19	18.01	155	19.77	6.64	2.0	2.8	24	0	123	.17	7	1.0	.9	SWR
		9	020	21.18	19	22.90	154	58.92	6.33	2.2	2.5	27	0	191	.15	10	1.4	1.1	LER
		9	929	57.42	19	24.25	155	16.15	1.76	1.7	2.2	16	1	70	.14	2	.6	.4	SPC
		9	1041	52.28	19	21.33	155	2.37	6.01	2.1	2.5	16	0	152	.10	12	.9	1.2	MER
		9	1216	48.31	19	25.73	155	28.18	9.31	2.7	2.6	26	0	49	.14	13	.8	1.4	UKF
		9	1457	17.20	19	21.86	155	3.61	5.97	2.0	2.5	18	0	122	.09	11	.6	1.1	MER
		9	1853	48.76	19	22.99	155	4.95	7.22	2.1	2.7	22	0	96	.11	9	.7	1.4	MER
		10	638	25.33	19	19.42	155	16.49	9.00	2.3	2.8	29	0	97	.11	6	.6	.9	KOA
		10	839	39.73	19	20.33	155	13.27	6.97	1.6	2.5	21	0	63	.13	6	.8	1.5	UER
34		10	1639	53.69	19	20.06	155	12.28	7.01	1.8	2.6	19	0	77	.10	6	.7	1.4	UER
		10	1646	17.38	19	18.26	155	23.24	5.05	1.1	1.9	15	0	146	.09	8	.6	.9	SWR
		10	1655	26.92	19	23.39	155	2.64	7.34	2.1	2.2	22	0	126	.12	11	1.0	.8	MER
		10	1744	30.45	19	23.71	155	16.70	1.68	1.6	2.2	15	0	80	.09	3	.5	.3	SPC
		10	1820	8.55	19	20.33	155	6.87	9.50	2.8	3.5	25	0	102	.09	7	.6	.6	UER
		10	1956	7.78	19	21.31	155	7.39	7.85	2.5	2.8	24	0	79	.10	8	.6	1.0	UER
		11	6 6	52.37	19	23.23	155	16.84	1.93	1.8	2.8	20	0	57	.13	2	.6	.3	SPC
		11	650	53.65	19	19.33	155	12.29	7.23	1.7	2.5	23	0	90	.11	7	.7	1.5	UER
		11	1457	22.73	19	28.20	154	49.40	8.01	2.5	2.4	19	0	277	.15	25	6.4	1.2	LER
		11	1513	39.03	19	27.49	154	52.44	9.25	2.5	2.9	21	0	264	.09	20	1.8	.6	LER
		11	1740	5.06	19	21.75	155	6.24	7.43	2.1	2.6	26	0	80	.13	9	.7	1.2	UER
		11	1847	3.99	19	20.21	155	7.08	6.83	1.9	2.2	24	0	102	.10	7	.6	1.2	UER
		11	21 6	34.24	19	20.74	155	8.68	8.56	1.8	2.6	25	0	70	.09	8	.5	.8	UER
		11	2219	30.53	19	17.81	155	21.24	5.70	1.7	2.4	22	0	121	.14	8	.8	2.3	SWR
		12	457	32.16	19	18.63	155	22.21	7.91	2.1	2.8	27	0	109	.12	9	.7	1.0	SWR
		12	618	26.21	19	21.67	155	3.51	7.25	3.2	3.8	28	0	109	.12	11	.8	.8	MER
		12	1531	19.56	19	20.84	155	6.41	6.99	2.1	2.6	23	0	97	.09	7	.5	1.0	UER
		12	1726	53.56	19	22.06	155	17.96	4.05	2.0	2.4	18	0	51	.12	4	.6	1.5	KOA
		12	1949	46.81	19	25.06	155	17.01	.90	1.7	2.6	12	0	150	.07	2	.6	.3	SPC
		12	2114	43.35	19	18.68	155	23.01	4.97	1.7	2.7	20	0	106	.11	8	.6	1.0	SWR
		13	049	51.86	19	31.33	155	57.70	9.68	3.6	3.1	27	0	234	.15	22	2.1	.4	KON
		13	712	29.09	19	22.12	155	4.99	7.14	2.9	3.1	28	0	80	.10	9	.5	1.0	MER
		13	1327	27.05	19	20.83	155	6.55	9.46	2.9	3.1	26	0	96	.09	7	.7	.6	UER
		13	2227	59.83	19	21.03	155	6.00	8.84	2.8	3.1	25	0	96	.10	7	.6	.9	UER
		14	049	47.22	19	22.07	155	3.02	7.14	2.7	3.1	24	0	124	.11	12	.7	1.0	MER
		14	1356	27.52	19	27.03	154	54.87	8.14	2.2	2.4	17	0	190	.14	17	2.1	1.0	LER
		14	2025	29.40	19	20.76	155	10.50	9.10	2.0	2.5	16	0	87	.08	8	.7	1.1	UER
		15	1028	53.34	19	21.44	155	6.00	8.39	2.3	3.1	16	0	111	.09	8	.7	1.1	UER

HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	LON	W	DEPTH			AMP	DUR	GAP			RMS	MIN	ERH	ERZ				
											DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	REMK	
1976	FEB	15	2319	46.79	19	19.25	155	12.36	7.37	2.4	3.0	25	0	91	.12	7	.7	1.4	UER							
		16	359	20.30	19	20.14	155	7.34	7.83	2.6	3.1	24	0	98	.15	8	.9	1.5	UER							
		16	845	26.30	19	19.53	155	15.31	8.20	1.6	1.5	18	0	98	.08	6	.6	1.2	KOA							
		16	856	10.72	19	22.39	155	13.22	4.14	2.1	2.7	19	0	51	.10	5	.6	1.2	UER							
		16	1043	59.96	19	20.61	155	6.47	7.85	2.1	1.4	21	0	102	.12	7	.9	1.5	UER							
		16	1045	24.32	19	21.15	155	2.59	5.93	2.2	1.5	23	0	164	.16	12	1.4	1.7	MER							
		16	1136	11.46	19	21.83	155	13.01	1.83	1.4	1.4	20	0	162	.04	6	.8	.4	UER							
		16	1219	34.16	19	19.49	155	12.58	7.33	1.8	2.0	22	0	83	.13	7	.9	1.7	UER							
		16	1320	37.99	19	19.90	155	7.24	11.54		1.4	16	0	105	.11	8	1.2	.5	UER							
		16	1411	48.31	19	20.56	155	6.58	8.42	2.5	2.7	24	0	101	.11	7	.7	.8	UER							
		16	1418	26.81	19	19.76	155	16.74	7.12		1.1	17	0	94	.12	5	.9	1.7	KOA							
		16	1419	2.53	19	19.79	155	15.16	8.11	1.6	1.6	20	0	91	.07	6	.5	.9	KOA							
		16	1517	21.38	19	19.74	155	15.31	8.01		1.1	18	0	93	.06	6	.5	1.0	KOA							
		16	1537	20.33	19	18.67	155	13.85	8.67		1.5	14	0	94	.07	7	.7	1.2	POL							
		16	1549	5.28	19	23.10	155	17.06	1.63	1.0	1.3	9	0	121	.06	3	.6	.3	SPC							
		16	17	0	23.77	19	19.24	155	20.99	5.87	1.6		19	0	123	.13	6	.9	2.0	SWR						
		16	17	0	39.01	19	21.69	155	15.15	9.48	2.9	3.3	27	0	64	.10	4	.6	.7	KOA						
		16	17	5	7.00	19	18.22	155	19.84	6.45		1.3	14	0	156	.09	7	1.2	1.6	SWR						
		16	19	3	54.17	19	26.90	155	52.60	9.16	1.0	12	0	275	.11	20	3.7	.9	LER							
		16	1917	22.52	19	23.57	155	2.52	7.62	2.1	1.5	19	0	144	.11	10	.8	1.3	MER							
		16	1918	32.94	19	22.04	155	1.85	5.18	2.1	1.6	19	0	177	.17	12	2.1	1.6	MER							
		16	1920	1.75	19	19.12	155	13.47	9.71	1.7	1.7	21	0	77	.13	7	.9	1.2	UER							
		16	20	3	28.08	19	20.84	155	29.96	8.63	2.0	1.4	21	0	58	.12	12	7	.9	1.2	HEA					
		16	2056	7.40	19	19.07	155	16.38	6.92		1.1	13	0	116	.05	6	.5	1.2	KOA							
		16	2128	39.21	19	30.54	154	50.09	8.85	2.5	1.6	19	0	320	.11	24	3.8	.8	LER							
		16	2150	33.41	19	22.91	155	.38	4.01		1.4	18	0	199	.26	10	2.8	2.1	LER							
		16	22	8	19.92	19	20.44	155	18.52	7.43		1.4	15	0	70	.06	6	.5	1.0	KOA						
		16	2222	37.86	19	18.56	155	21.19	1.50		1.4	15	0	111	.10	7	.7	.0	SWR							
		16	2241	46.16	19	19.16	155	15.44	7.00		.6	15	0	110	.06	6	.4	1.2	KOA							
		16	23	7	25.54	19	19.49	155	11.92	4.79	1.6	18	0	173	.10	6	.7	.9	UKF							
		17	017	15.37	19	28.07	154	51.61	7.74		1.2	18	0	267	.15	22	3.9	1.1	LER							
		17	026	5.94	19	21.16	155	4.01	6.67	2.5	2.6	23	0	102	.17	10	1.3	2.2	MER							
		17	029	17.69	19	17.57	155	20.63	7.21	2.1	2.3	25	0	126	.14	7	.9	1.2	SWR							
		17	054	2.35	19	23.71	155	24.25	9.95		1.1	15	0	63	.08	8	.7	1.2	UKF							
		17	140	55.45	19	17.71	155	22.50	7.88		1.2	15	0	157	.13	8	1.3	1.5	SWR							
		17	237	58.15	19	20.30	155	10.38	8.52		1.1	17	0	88	.09	7	.7	1.6	UER							
		17	241	6.19	19	20.62	155	8.52	7.60		.6	19	0	73	.13	9	1.0	1.3	UER							
		17	324	46.46	19	22.28	155	4.16	15.66		2.0	15	0	151	.12	10	2.8	4.4	MER							
		17	343	16.98	19	34.43	155	45.99	7.39	2.5	1.7	13	0	133	.15	20	1.5	2.2	KON							
		17	411	59.03	19	20.71	155	11.75	7.29		1.3	17	0	142	.15	7	1.4	2.4	UER							
		17	532	2.18	19	23.91	155	16.00	3.00	1.9	2.3	18	2	105	.15	3	.7	2.0	SPC							
		17	553	7.59	19	23.61	154	59.97	5.63	2.4	2.3	20	0	167	.13	9	1.3	2.0	LER							
		17	6	4	21.92	19	19.64	155	12.30	7.10		1.4	16	0	146	.08	6	.6	1.2	UER						
		17	6	6	42.83	19	19.86	155	7.69	7.30	1.9	2.2	24	0	96	.10	8	.6	.9	UER						
		17	610	22.45	19	24.03	155	13.06	8.10	1.6	1.5	19	0	62	.11	6	.7	1.3	GLN							
		17	7	4	6.97	19	20.36	155	9.35	7.62		1.4	20	0	73	.10	8	.7	1.4	UER						
		17	721	43.25	19	22.01	155	6.13	6.91		1.6	23	0	76	.14	7	.9	1.6	UER							
		17	726	57.11	19	24.41	155	16.22	1.83	.9	1.1	8	0	138	.04	3	.4	.2	SPC							

## HVO EARTHQUAKE SUMMARY LIST

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ORIGIN	TIME	LAT	N	LON	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	REMK
1976	FEB 17	752	16.59	19	24.14	155	15.93		1.67	1.7	2.2	14	0	113	.13	3	.7	.6	SPC														
	17 8 2	24.76	19	22.47	155	5.00	7.50		1.5	18	0	93	.12	9	.9	1.8	UER																
	17 1552	5.06	19	20.01	155	12.12	6.97	2.0	2.6	22	0	79	.12	6	.8	1.5	UER																
	17 17 0	21.74	19	17.65	155	21.11	7.08	2.0	2.5	17	0	123	.13	8	1.1	2.4	SWR																
	17 1931	59.20	19	13.23	155	34.04	9.39	2.7	2.9	22	1	122	.18	20	1.4	1.6	HEA																
18	425	36.76	19	20.12	155	7.47	8.12	2.5	3.0	25	0	96	.11	8	.7	.8	UER																
	18 514	37.65	19	20.25	155	6.71	6.79	1.9	2.8	23	0	107	.10	7	.6	1.2	UER																
	18 1050	47.59	19	27.07	154	52.51	8.67	2.4	2.1	21	1	259	.15	21	2.2	.8	LER																
	18 1840	52.61	19	25.82	155	16.46	.69	2.8	4.1	21	1	128	.15	2	.6	1.2	SPC																
	18 1848	55.63	19	25.49	155	16.45	.56	1.7	2.6	15	2	147	.10	2	.4	.2	SPC																
18	2020	23.77	19	17.41	155	21.18	7.48	1.9	2.6	21	0	126	.11	8	.8	1.3	SWR																
	19 616	29.44	19	19.27	155	11.88	7.32	2.2	2.7	22	0	97	.11	7	.7	1.6	UER																
	19 641	55.48	19	21.13	155	4.01	6.48	2.0	2.7	20	0	134	.11	10	.9	1.1	MER																
	19 938	41.33	19	28.56	154	49.92	9.13	2.4	2.3	19	2	274	.15	24	2.7	1.0	LER																
	19 2239	13.35	19	26.46	155	25.11	7.88	2.9	2.9	28	0	68	.12	11	.6	1.0	UKF																
19	2321	45.75	19	21.56	155	1.97	8.19	2.5	2.7	25	0	161	.11	13	1.0	.7	MER																
	20 533	1.70	19	22.31	155	6.34	7.99	2.2	2.6	24	0	73	.12	7	.7	1.1	UER																
	20 736	10.04	19	19.53	155	13.86	9.72	2.4	2.9	21	0	61	.10	6	.7	2.3	UER																
	20 1332	45.36	19	18.03	155	22.05	8.68	2.1	2.7	19	0	116	.11	9	.8	1.1	SWR																
	20 1951	14.91	20	24.95	156	1.29	31.75	5.1	4.6	5	0	162	.00	83	34.8	55.7	DIS																
21	136	29.96	19	17.27	155	21.66	7.51	2.4	2.9	27	0	125	.18	9	1.2	1.4	SWR																
	21 4 0	4.66	19	20.65	155	6.82	8.16	1.9	2.6	24	0	97	.09	7	.5	.8	UER																
	21 958	55.73	19	19.56	155	11.56	7.50	2.0	2.7	25	0	93	.09	6	.6	1.0	UER																
	22 1251	27.47	19	22.51	155	5.21	9.03	2.5	3.0	21	0	90	.08	8	.6	1.1	MER																
	22 1352	28.08	19	21.57	155	6.35	7.49	1.9	1.8	19	0	83	.14	7	1.1	2.0	UER																
22	2126	57.89	19	16.71	155	22.21	3.13	1.8	2.6	18	0	129	.15	8	1.0	3.8	SWR																
	23 020	8.08	19	21.12	155	13.18	8.54	2.0	2.6	21	0	57	.09	6	.6	1.0	UER																
	23 426	47.70	19	13.87	155	22.61	5.43	2.2	2.9	3	159	.12	12	.7	1.2	LSW																	
	23 7 2	28.80	19	22.18	155	12.98	2.77	1.4	2.4	15	0	62	.08	5	.6	1.5	UER																
	23 736	.02	19	20.37	155	8.35	9.46	2.2	2.8	19	0	78	.08	9	.6	1.1	UER																
23	855	49.91	19	22.98	155	4.92	7.48	2.6	3.0	22	0	87	.12	9	.7	1.2	MER																
	23 945	23.48	19	21.61	155	15.24	9.19	3.2	3.3	25	0	62	.11	4	.6	.9	KOA																
	23 950	13.85	19	24.83	155	24.75	10.34	2.6	2.9	18	0	86	.08	9	.6	.5	UKF																
	23 1150	2.34	19	24.75	155	24.63	9.03	2.8	2.8	20	0	85	.14	9	1.0	1.6	UKF																
	23 1731	16.80	19	20.74	155	12.92	8.33	2.3	2.9	25	0	62	.08	6	.5	.5	UER																
23	1828	47.92	19	19.09	155	7.94	6.94	1.9	2.2	20	0	100	.10	9	.8	1.7	UER																
	24 248	43.18	19	21.56	155	7.22	7.13	1.9	2.6	22	0	77	.09	8	.5	1.2	UER																
	24 550	19.19	19	22.20	155	6.65	8.59	4.2	4.2	29	0	71	.11	8	.6	.7	UER																
	24 6 4	15.91	19	22.12	155	6.24	7.09	1.9	2.2	23	0	87	.13	7	.7	1.4	UER																
	24 9 0	.18	19	27.51	155	28.33	11.12	1.9	2.1	19	0	71	.10	12	.6	.6	UKF																
24	1442	32.63	19	23.27	155	4.81	7.82	3.2	3.6	23	0	129	.11	9	.7	1.0	MER																
	24 1623	9.77	19	22.13	155	6.58	7.29	1.9	2.5	24	0	72	.10	8	.6	.9	UER																
	24 1918	30.56	19	21.12	155	7.96	9.38	3.1	3.5	31	0	76	.11	9	.7	.4	UER																
	25 325	47.55	19	20.09	155	13.08	6.90	1.7	2.5	24	0	67	.08	7	.5	.8	UER																
	25 1030	35.10	19	22.36	155	6.64	8.41	2.4	2.7	23	0	76	.10	8	.6	1.0	UER																
25	1035	50.63	19	19.85	155	7.92	8.26	2.2	2.7	25	0	91	.11	9	.6	.7	UER																
	25 1038	13.60	19	20.21	155	8.16	8.16	2.7	3.3	25	0	82	.13	9	.8	1.1	UER																
	25 1048	25.20	19	19.42	155	11.74	6.34	2.0	2.4	25	0	94	.14	6	.8	1.7	SWR																

## HVO EARTHQUAKE SUMMARY LIST

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ORIGIN	TIME	LAT	N	LON	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	REMK
1976	FEB 25	11	2	43.48	19	20.21	155	17.03	7.23	1.8	2.4	21	0	81	.13	5	.8	1.2	KOA														
	25 1348	20.37	19	22.17	155	6.35	8.98	3.9	4.2	31	0	73	.09	7	.5	.4	.4	UER															
	25 1957	6.62	19	20.08	155	8.61	8.16	2.0	2.6	28	0	75	.11	9	.5	.7	UER																
	25 2258	5.60	19	22.69	155	24.98	9.56	1.9	2.3	30	0	57	.15	9	.8	.5	.5	UKF															
	26 342	21.55	19	24.09	155	16.06	1.40	1.5	2.3	14	0	110	.13	3	.6	.4	.4	SPC															
26	1423	37.39	19	24.01	155	15.62	1.91	2.2	14	0	113	.06	3	.4	.3	.3	SPC																
	26 18 3	54.85	19	19.29	155	16.45	8.43	1.6	2.3	17	0	109	.05	6	.4	.6	.6	KOA															
	27 048	11.32	19	22.07	155	6.65	9.39	2.7	3.2	21	0	111	.07	8	.6	.5	.5	UER															
	27 1135	6.58	19	19.71	155	15.56	9.67	2.5	3.1	27	0	85	.09	6	.5	.5	.5	KOA															
	27 1526	18.92	19	21.13	155	10.99	8.35	2.5	3.1	25	0	68	.12	9	.6	.9	.9	UER															
27	1758	35.41	19	21.90	155	7.05	8.00	2.9	3.3	28	0	74	.09	8	.4	.7	.7	UER															
	28 622	37.16	19	23.32	155	24.62	9.39	2.9	3.1	27	0	60	.12	9	.5	.6	.6	UKF															
	28 1047	55.02	19	23.28	154	59.78	6.93	2.2	2.4	20	0	174	.12	9	1.2	1.2	LER																
	28 1112	2.43	19	21.16	155	7.35	9.48	2.3	2.6	23	0	82	.10	8	.6	.8	.8	UER															
	28 1212	55.61	19	23.21	155	4.68	8.07	2.7	3.3	24	0	91	.10	9	.5	.9	.9	SPC															
28	1526	58.09	19	18.04	155	26.26	8.14	1.9	2.5	24	0	95	.17	9	.9	1.6	HEA																
	28 1738	35.85	19	19.18	155	12.07	8.78	2.5	2.8	22	0	97	.09	7	.6	1.0	UER																
	28 2037	49.12	19	21.89	155	15.09	9.94	2.0	2.5	22	0	58	.08	5	.5	.7	.7	KOA															
	28 2355	25.89	19	22.42	155	6.36	8.12	3.3	3.6	25	0	69	.11	8	.6	.8	.8	UER															
	29 1133	.35	19	25.85	155	16.24	1.09	2.1	2.6	15	0	119	.16	4	1.0	.6	.6	SPC															
29	1446	11.92	19	17.73	155	21.09	8.34	2.7	3.2	24	0	122	.13	8																			

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	REMK			
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	REMK	
1976	MAR	2	2059	40.60	19	20.70	155	6.30	7.23	1.0	.25	0	101	.13	7	.8	1.6	UER		
		2	2114	17.46	19	21.34	155	7.14	6.76	1.9	2.0	25	0	81	.15	8	1.0	1.6	UER	
		2	2148	47.22	19	26.69	155	25.17	9.95	1.4	23	0	54	.11	11	.7	1.4	UKF		
		2	2153	27.15	19	19.50	155	12.15	8.00	1.0	18	0	88	.10	6	.7	1.5	UER		
		2	22	51.64	18	52.45	155	14.36	10.83	2.8	2.4	25	0	256	.11	46	3.6	99.0	PPL	
		2	2221	15.40	19	20.94	155	13.07	7.38	.9	21	0	59	.14	6	.9	1.7	UER		
		2	2229	31.30	19	24.31	155	13.34	8.95	.9	19	0	88	.09	6	.7	1.0	GLN		
		2	2249	16.06	19	21.44	155	14.21	9.48	1.3	22	0	59	.09	6	.6	.9	UER		
		2	223	13.23	19	19.22	155	11.79	6.91	2.4	2.6	29	0	99	.15	7	.9	1.4	UER	
		2	2325	22.48	19	22.05	155	1.35	6.08	2.0	23	0	167	.16	12	1.3	1.9	MER		
		3	045	21.56	19	19.98	155	8.41	8.38	1.1	19	0	80	.08	10	.5	.9	UER		
		3	046	50.86	19	17.41	155	21.78	1.99	1.5	20	2	123	.17	9	.9	1.6	SWR		
		3	1 3	50.67	19	20.68	155	17.61	8.14	1.5	1.5	24	0	39	.08	5	.4	.6	KOA	
		3	351	11.79	19	19.16	155	15.29	7.27	1.2	17	0	108	.05	6	.4	.9	KOA		
		3	420	49.25	19	18.89	155	21.16	7.02	1.9	2.2	26	0	103	.15	7	.8	1.7	SWR	
		3	428	59.39	19	19.91	155	18.74	28.07	1.1	23	0	68	.08	7	1.0	1.9	DEP		
		3	440	44.10	19	21.20	155	6.07	7.11	1.9	24	0	91	.13	7	.9	1.8	UER		
		3	530	16.50	20	9.93	155	15.68	3.24	2.9	2.7	18	2	299	.09	57	1.8	.7	DIS	
		3	6 0	57.64	19	25.16	155	28.11	8.82	2.5	2.5	33	0	43	.15	12	.7	1.0	UKF	
		3	6 2	6.99	19	25.06	155	27.87	8.42	2.3	2.1	28	0	55	.12	12	.6	1.2	UKF	
60		3	638	49.03	19	18.63	155	11.66	7.90	1.3	22	0	117	.14	7	1.0	2.0	POL		
		3	652	1.22	19	23.72	155	15.25	4.63	2.5	3.3	27	0	89	.12	3	.6	.7	SPC	
		3	726	36.53	19	17.21	155	22.98	6.23	1.4	19	0	120	.14	11	1.0	3.0	SHR		
		3	934	44.56	19	20.97	155	2.90	5.63	2.4	2.7	26	0	132	.14	11	1.0	1.4	MER	
		3	952	32.24	19	17.06	155	22.64	8.03	1.7	1.4	17	2	123	.13	11	.9	2.6	SWR	
		3	1249	50.81	19	20.06	155	7.18	8.98	2.6	2.8	25	0	103	.10	7	.7	.5	UER	
		3	13 6	10.20	19	25.61	155	16.53	.64	2.2	3.1	19	0	117	.12	4	.6	.5	SPC	
		3	1634	39.39	19	20.06	155	6.96	8.63	2.9	3.2	28	0	107	.09	7	.6	.5	UER	
		3	2048	47.28	19	22.24	155	5.11	8.43	2.0	2.6	21	0	79	.10	8	.6	1.2	MER	
		4	235	11.76	19	18.40	155	23.32	5.17	2.1	2.6	24	0	107	.14	8	.7	1.0	SWR	
		4	630	47.68	19	24.25	155	16.02	1.63	1.8	2.6	16	0	114	.07	3	.3	.2	SPC	
		4	422	8 42.63	19	21.48	155	7.76	8.64	2.5	3.2	27	0	74	.10	8	.6	.8	UER	
		4	2212	11.39	19	18.85	155	13.22	7.72	2.2	2.8	27	0	81	.12	8	.7	.9	POL	
		5	234	25.88	19	20.82	155	11.11	8.89	2.5	3.1	27	0	71	.13	8	.8	1.3	UER	
		5	316	52.46	19	24.76	155	7.80	11.10	2.6	3.2	30	0	75	.11	10	.8	.3	GLN	
		5	548	14.28	19	20.96	155	9.54	7.95	2.1	2.8	26	0	66	.14	7	.9	1.6	UER	
		5	710	6.93	19	24.11	155	16.01	1.39	1.9	3.0	17	0	112	.12	3	.5	.3	SPC	
		5	913	28.34	19	20.04	155	8.41	7.31	3.1	25	0	79	.14	9	.9	1.7	UER		
		5	1142	51.29	19	16.68	155	22.97	6.51	1.8	2.5	26	0	125	.18	8	1.1	2.6	SWR	
		5	2156	14.98	19	12.94	155	22.70	10.99	2.3	2.8	28	0	157	.14	12	1.1	.4	LSW	
		6	613	12.70	19	22.67	155	5.92	9.04	2.9	3.4	29	0	72	.11	7	.7	.7	MER	
		6	745	47.00	19	19.76	155	8.71	7.40	1.8	2.4	24	0	75	.12	9	.7	1.4	UER	
		6	8 9	26.31	19	23.29	155	24.90	10.26	2.5	3.1	29	0	58	.13	9	.7	.4	UKF	
		6	1149	5.00	19	21.23	155	13.35	9.49	2.7	3.3	27	0	54	.09	6	.5	.6	UER	
		6	1223	4.59	19	21.60	155	1.95	6.04	3.5	4.0	29	0	160	.11	13	.7	1.1	MER	
		6	19 3	44.53	19	23.31	155	16.99	1.90	2.6	3.4	16	0	62	.09	3	.5	.3	SPC	
		6	2338	34.21	19	22.37	155	3.94	7.40	2.8	3.3	19	0	112	.10	12	.8	1.8	MER	
		7	749	14.09	19	19.35	155	12.01	10.29	3.1	3.4	18	0	93	.09	6	.7	.8	UER	

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YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	REMK			
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	REMK	
1976	MAR	7	834	24.07	19	20.80	155	6.14	6.78	1.9	2.4	12	2	318	.17	16	4.6	2.3	UER	
		7	927	32.08	19	20.81	155	10.46	8.00	1.4	20	0	72	.11	8	.8	1.5	UER		
		7	10 5	39.83	19	18.04	155	20.21	6.96	1.3	10	0	127	.09	7	1.1	2.3	SWR		
		7	11 9	47.48	19	26.09	155	29.06	8.89	1.9	1.7	13	0	120	.12	13	1.3	6.6	UKF	
		7	1120	37.15	19	24.53	155	3.09	7.57	2.4	2.7	18	0	128	.11	13	.9	1.4	MER	
		7	1123	54.42	19	21.00	155	10.72	8.58	2.2	2.2	17	0	81	.07	8	.6	1.2	UER	
		7	12 0	51.74	19	20.47	155	12.47	8.27	1.3	22	0	69	.12	7	.8	1.6	UER		
		7	1319	55.56	19	23.59	155	16.84	8.77	1.4	2.0	15	0	68	.09	3	.4	.3	SPC	
		7	1416	9.40	19	19.12	155	12.32	5.93	1.1	19	0	94	.14	7	1.0	2.5	UER		
		7	1456	43.27	19	22.12	155	18.02	1.71	1.0	1.5	11	0	80	.08	4	.5	99.0	KOA	
		7	1457	37.14	19	20.47	155	17.83	6.83	1.3	2.1	17	0	65	.08	5	.5	1.0	KOA	
		7	1523	47.63	19	24.50	155	.84	6.94	1.6	20	0	169	.14	9	1.3	1.5	LER		
		7	1542	27.42	19	19.07	155	12.63	7.70	1.7	1.4	20	0	90	.09	7	.6	1.0	UER	
		7	1625	34.64	19	21.78	155	7.17	8.24	3.7	4.0	30	0	74	.12	8	.6	.8	UER	
		7	1635	3.83	19	23.78	155	16.93	1.76	1.6	2.1	4	0	47	.06	3	.3	.2	SPC	
		7	1818	56.52	19	20.54	155	13.31	8.04	1.3	22	0	60	.12	7	.8	1.4	UER		
		7	1825	1.59	19	26.59	155	25.21	10.64	1.3	16	0	71	.09	11	.9	.5</td			

## HVO EARTHQUAKE SUMMARY LIST

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	ORIGIN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	REMK			
1976	MAR	9	238	42.37	19	22.28	155	5.28	6.91	2.5	3.3	28	0	.77	.15	8	.8	1.2	MER																	
		9	443	59.18	19	23.79	154	59.19	6.54	2.2	2.6	28	0	175	.17	10	1.4	1.3	LER																	
		9	55	17.66	19	18.54	155	20.65	9.37	2.8	3.5	30	0	110	.09	6	.5	.4	SWR																	
		9	21	6	17.50	19	21.80	155	.77	5.81	2.1	2.4	24	0	183	.11	12	.8	1.0	LER																
		9	2322	22.80	19	19.13	155	13.65	8.07	2.0	2.6	24	0	67	.10	7	.6	1.0	UER																	
10	026	52.24	19	24.13	155	16.11	1.45	1.6	2.5	13	0	110	.08	3	.4	.3	SPC																			
10	049	26.40	19	19.95	155	6.79	7.13	1.8	2.6	27	0	74	.11	9	.7	1.3	UER																			
10	613	34.98	19	20.79	155	13.21	8.80	2.2	2.6	27	0	59	.10	6	.6	.8	UER																			
10	87	36.01	19	21.07	155	6.32	8.71	2.1	2.8	26	0	93	.09	7	.6	.6	UER																			
10	932	54.04	19	20.18	155	19.58	7.75	2.2	2.6	27	0	59	.12	6	.7	1.0	SWR																			
10	952	20.49	19	18.23	155	23.38	6.42	2.4	3.0	29	0	109	.18	8	.9	2.2	SWR																			
10	1832	40.95	19	20.30	155	7.13	9.05	2.8	3.6	26	0	99	.13	7	.9	.7	UER																			
10	2141	14.15	20	2.21	155	33.10	26.35	3.1	2.3	33	0	191	.14	30	1.4	3.9	KOH																			
11	231	33.54	19	20.62	155	6.56	8.50	2.2	3.0	29	0	100	.10	7	.7	.5	UER																			
11	40	10.65	19	21.49	155	15.22	8.77	2.0	2.8	28	0	63	.14	4	.7	.9	KOA																			
11	42	42.23	19	21.60	155	15.45	8.98	3.1	3.6	25	0	67	.11	5	.7	.8	KOA																			
11	628	31.83	19	21.75	155	15.30	9.27	2.0	2.7	29	0	60	.13	4	.5	.6	KOA																			
11	933	16.86	19	20.50	155	13.80	8.59	2.3	2.6	27	0	56	.10	6	.6	.9	UER																			
11	1019	32.18	19	20.34	155	8.05	8.10	2.4	2.7	25	0	83	.10	9	.5	.8	UER																			
11	1422	48.08	19	20.93	155	11.24	8.91	2.8	3.1	28	0	70	.13	8	.7	1.1	UER																			
12	339	5.14	19	19.64	155	15.77	34.35	2.9	2.8	31	0	88	.10	6	.9	1.6	DEP																			
12	518	.94	19	20.04	155	8.47	8.29	2.2	2.6	25	0	78	.09	9	.5	.7	UER																			
12	140	31.94	19	17.25	155	21.70	9.51	2.5	2.8	25	0	125	.14	9	.8	.7	SWR																			
12	21	11.24	19	19.65	155	11.66	7.41	2.2	2.8	23	0	90	.09	6	.6	1.1	UER																			
12	2110	17.30	19	30.03	154	50.74	9.18	3.3	3.4	12	1	269	.13	29	3.3	1.3	LER																			
13	616	16.38	19	8.69	155	30.14	11.26	3.5	3.5	28	3	156	.13	24	1.0	.4	LSW																			
13	1012	14.16	19	20.19	155	8.05	6.64	2.2	2.6	23	0	85	.13	9	.8	1.8	UER																			
13	1141	19.57	19	18.29	155	23.68	8.15	2.5	3.1	28	0	107	.15	9	.8	1.2	SWR																			
13	1642	37.02	19	19.15	155	22.00	5.87	2.2	2.8	23	0	100	.15	8	.8	1.8	SWR																			
13	2022	3.78	19	49.45	155	53.06	11.94	3.0	3.2	28	0	193	.19	37	1.9	.7	KON																			
14	322	32.68	19	23.66	155	16.68	2.26	2.2	2.9	21	0	75	.15	3	.7	1.9	SPC																			
14	354	42.19	19	19.33	155	12.51	7.51	2.4	2.7	27	0	87	.15	7	.9	1.1	UER																			
14	1114	58.13	19	22.94	155	25.02	7.89	2.2	2.3	24	0	57	.13	9	.7	1.4	UKF																			
14	2110	40.26	19	23.68	155	15.09	1.01	2.2	2.7	23	1	82	.15	3	.5	.5	SPC																			
15	1526	12.53	19	17.91	155	23.54	.77	1.9	2.3	26	2	111	.18	9	.7	.6	SWR																			
15	1532	25.41	19	19.47	155	12.38	6.93	2.2	2.6	24	0	86	.14	7	.9	1.4	UER																			
15	1555	26.14	19	17.96	155	23.60	8.83	2.2	2.8	27	0	110	.14	9	.9	1.0	SWR																			
15	1953	2.46	19	22.79	155	26.64	9.63	2.0	2.3	26	0	51	.13	12	.6	.5	UKF																			
16	648	16.94	19	21.82	155	7.13	9.27	2.8	3.0	27	0	74	.12	8	.7	.7	UER																			
16	122	32.67	19	19.65	155	7.51	8.94	2.2	2.8	21	0	103	.10	8	.9	.6	UER																			
16	2341	17.49	19	20.54	155	6.56	7.92	2.1	2.9	27	0	102	.11	6	.6	.9	UER																			
17	237	56.03	19	20.85	155	6.53	8.75	2.2	2.9	27	0	96	.13	7	.6	.8	UER																			
17	341	30.32	19	17.15	155	21.91	7.60	2.2	2.9	30	0	126	.16	9	.9	1.3	SWR																			
17	1158	28.69	19	20.06	155	12.10	6.94	2.3	2.7	26	0	79	.15	6	.8	1.2	UER																			
17	1443	31.14	19	20.14	155	8.51	7.00	2.1	2.7	27	0	77	.14	9	.8	1.3	UER																			
17	1936	18.08	19	19.83	155	12.36	6.54	1.6	2.4	26	0	80	.15	6	.9	1.4	UER																			
17	2332	40.10	19	20.84	155	6.80	9.29	2.5	2.9	30	0	93	.10	7	.7	.5	UER																			
18	541	43.63	19	21.20	155	10.66	7.86	1.8	2.6	26	0	68	.13	9	.8	1.1	UER																			

	ORIGIN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	YEAR	MON	DA	HRMN	SEC	DEG</
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YEAR	MON	DA	HRMN	SEC	LAT	N	LON	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	REMARKS					
																	DEG	MIN	DEG	MIN	KM	REMK
1976	APR	18	2312	14.03	19	21.00	155	13.19	9.17	2.3	3.0	23	0	.58	.11	6	.7	1.2	UER			
		19	1057	27.25	19	21.32	155	13.24	8.03	1.9	2.4	27	0	.55	.13	6	.6	.8	UER			
		19	1133	38.07	19	21.78	155	4.39	6.77	2.0	2.6	27	0	.88	.14	10	.8	1.1	MER			
		19	2029	.96	19	22.68	155	5.95	6.87	1.9	2.5	28	0	.72	.17	7	.9	1.4	MER			
		19	2241	58.01	19	19.47	155	12.55	7.02	2.1	2.8	30	0	.84	.16	7	.8	1.1	UER			
		20	144	52.25	19	20.41	155	12.42	7.29	2.6	3.3	29	0	.71	.15	7	.8	1.2	UER			
		20	311	19.36	19	19.68	155	12.43	7.06	2.1	2.7	29	0	.82	.12	6	.6	.9	UER			
		20	711	3.11	19	21.70	155	15.25	9.50	3.5	3.7	31	0	.60	.11	4	.5	.5	KOA			
		20	926	18.62	19	20.41	155	11.88	8.33	2.4	2.6	23	0	.75	.12	7	.8	1.5	UER			
		20	1511	28.63	19	22.78	155	1.20	6.83	2.4	2.7	23	0	.159	.14	10	1.2	1.1	MER			
		20	1925	44.68	19	21.26	155	6.34	8.14	1.9	2.5	23	0	.89	.12	7	.8	1.4	UER			
		20	1934	15.46	19	19.95	155	11.82	7.48	1.7	2.3	26	0	.83	.10	6	.6	.9	UER			
		21	1423	10.63	19	19.69	155	10.52	7.55	1.8	2.6	25	0	.105	.13	7	.9	1.3	UER			
		21	1813	34.49	18	47.70	155	.30	49.81	4.6	4.2	22	0	.278	.09	63	4.8	9.0	PPL			
		22	2 3	38.70	19	22.22	155	5.13	8.27	2.3	2.6	23	0	.79	.11	8	.6	1.0	MER			
		22	4 5	10.35	19	19.58	155	8.18	6.15	1.9	2.4	23	0	.88	.14	9	.9	2.0	UER			
		22	554	4.92	19	31.50	155	18.64	11.84	3.4	3.6	32	0	.61	.14	15	.8	.3	NER			
		22	833	.97	19	18.57	155	20.64	9.76	3.4	3.7	26	0	.109	.11	6	.7	.4	SWR			
		22	11 5	49.30	19	29.11	155	36.14	11.18	2.2	2.2	15	0	.103	.13	18	1.3	.5	MOK			
		22	2015	14.37	19	21.02	155	6.08	8.86	2.2	2.9	25	0	.95	.10	7	.6	.8	UER			
63		23	145	15.82	19	21.40	155	7.56	6.34	2.2	2.4	24	0	.76	.13	8	.8	1.9	UER			
		23	336	44.64	19	22.44	155	5.32	9.22	2.3	2.9	23	0	.78	.10	8	.7	.9	MER			
		23	1229	53.77	19	21.88	155	5.15	8.95	4.2	4.3	28	0	.77	.11	8	.7	.6	MER			
		23	1851	53.08	19	19.38	155	10.11	8.93	2.7	3.1	31	0	.99	.11	7	.6	.5	UER			
		24	358	29.49	19	21.85	155	2.57	6.02	2.2	2.6	25	0	.139	.13	13	.9	1.3	MER			
		24	1754	11.09	19	19.92	155	19.70	8.31	2.3	3.0	26	0	.64	.13	6	.6	.8	SWR			
		24	2055	31.31	19	20.88	155	11.18	8.14	2.3	2.7	27	0	.70	.14	8	.9	1.3	UER			
		25	825	21.65	19	19.80	155	15.66	7.12	2.0	2.5	16	0	.85	.09	6	.6	1.3	KOA			
		25	1449	11.98	19	16.55	155	21.85	6.99	2.3	2.9	25	0	.133	.12	8	.8	1.3	SWR			
		25	15 3	20.35	19	16.18	155	22.09	8.86	2.8	3.3	25	0	.141	.13	8	1.0	1.1	SWR			
		25	1632	28.03	19	22.87	155	4.63	7.52	2.3	2.6	26	0	.91	.13	9	.7	1.1	MER			
		25	1639	58.83	19	23.15	155	3.63	8.53	2.0	2.5	24	0	.109	.11	11	.7	.7	MER			
		25	1820	24.91	19	21.46	155	3.32	7.04	2.3	2.8	26	0	.115	.11	11	.8	.7	MER			
		26	637	17.42	19	19.99	155	12.45	8.69	2.2	2.7	25	0	.76	.14	6	.9	1.3	UER			
		26	8 4	4.58	19	23.32	155	16.87	1.94	1.7	2.7	18	0	.54	.10	5	.5	.4	SPC			
		26	1142	30.62	19	16.87	155	21.71	7.40	2.2	2.9	27	0	.130	.14	9	.9	1.3	SWR			
		26	2144	41.56	19	23.26	155	16.96	5.40	3.1	3.8	26	0	.44	.10	5	.4	.6	SPC			
		27	539	40.27	19	20.12	155	6.68	9.25	2.6	2.9	26	0	.110	.10	7	.7	.6	UER			
		27	1146	47.28	19	21.30	155	10.72	9.29	2.4	2.8	25	0	.68	.11	9	.7	.8	UER			
		27	1317	51.64	19	17.03	155	22.50	5.60	2.4	3.0	26	0	.124	.19	7	1.1	3.6	SWR			
		27	1340	12.13	19	24.37	155	15.72	3.09	2.7	3.4	27	0	.84	.13	3	.5	1.3	SPC			
		27	2121	24.52	19	24.09	155	15.87	1.57	1.8	2.5	22	0	.88	.13	3	.5	.3	SPC			
		27	22 3	57.51	19	24.09	155	15.91	1.46	2.0	2.9	16	0	.113	.09	3	.4	.2	SPC			
		28	259	47.08	19	21.64	155	3.31	6.74	2.3	2.6	26	0	.116	.14	11	.9	1.1	MER			
		28	322	6.29	19	19.33	155	12.37	7.53	2.2	2.7	28	0	.89	.14	7	.8	1.3	UER			
		28	1355	2.65	19	19.84	155	7.05	6.22	2.3	2.6	24	0	.110	.11	7	.8	1.7	UER			
		28	1611	50.88	19	23.69	154	59.17	8.21	2.5	2.5	26	0	.177	.14	10	1.5	1.0	LER			
		28	2148	17.39	19	20.83	155	7.98	7.53	2.1	2.6	28	0	.79	.13	9	.7	1.0	UER			

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## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LON	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	REMARKS					
																	DEG	MIN	DEG	MIN	KM	REMK
1976	APR	29	130	38.26	19	23.36	155	16.85	3.85	2.5	3.4	30	0	.53	.14	3	.6	.8	SPC			
		29	1334	51.60	19	25.63	155	16.50	.54	2.2	3.2	22	0	.48	.13	4	.6	.5	SPC			
		29	14 8	35.88	19	21.65	155	15.33	10.00	2.4	3.0	29	0	.61	.12	4	.6	.4	KOA			
		30	0 6	51.19	19	24.84	155	23.09	10.42	2.7	3.1	33	0	.76	.12	9	.6	.3	UKF			
		30	537	36.24	19	25.97	155	16.48	.55	1.0	1.6	8	0	.182	.09	4	.7	2.9	SPC			
		30	6 5	11.69	19	26.04	155	16.55	.74	1.0		7	0	.186	.10	4	1.0	3.0	SPC			
		30	1358	36.78	19	20.10	155	7.40	8.53	2.2	2.3	22	0	.98	.09	8	.6	.6	UER			
		30	14 3	40.66	19	5.42	155	28.55	29.61	2.5	3.0	17	0	.188	.18	23	2.8	6.5	LSW			
		30	1436	25.38	19	1																

## HVO EARTHQUAKE SUMMARY LIST

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	ORIGIN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	REMK
1976	MAY	9	614	43.37	19	21.55	155	7.95	9.72	3.4	3.6	30	0	.71	.08	9	.5	.3	UER															
		9	838	17.08	19	17.60	155	21.67	5.50	2.3	2.3	29	0	122	.15	9	.8	1.1	SWR															
10	827	4.45	19	23.27	155	4.48	7.73	3.5	3.6	32	0	.94	.12	10	.5	.8	MER																	
10	935	5.64	19	23.79	155	2.76	8.35	2.4	2.5	26	0	122	.10	10	.7	.6	MER																	
11	822	40.20	19	18.15	155	15.68	9.24	2.1	2.6	26	0	165	.11	8	.9	.9	KOA																	
11	919	43.50	19	20.39	155	7.10	9.47	2.9	3.1	26	0	.98	.08	7	.6	.4	UER																	
12	555	11.56	19	20.33	155	11.66	9.26	3.7	4.2	31	0	.77	.10	7	.6	.7	UER																	
12	931	3.08	19	24.05	155	28.01	9.63	2.2	2.6	26	0	.53	.12	13	.8	.4	UKF																	
12	11	6	21.18	19	24.16	155	15.76	3.63	2.2	2.9	20	0	108	.09	3	.5	1.0	SPC																
12	19	6	51.79	19	19.72	155	11.96	6.59	1.7	2.2	20	0	.86	.12	6	.8	1.8	UER																
12	2241	17.13	19	23.27	155	17.15	1.64	1.7	2.3	17	0	.56	.11	3	.6	.3	SPC																	
13	054	19.59	19	19.42	155	12.43	7.06	1.7	2.2	26	0	.86	.13	7	.8	1.3	UER																	
13	2	7	29.38	19	19.18	155	12.51	8.40	2.3	2.6	28	0	.90	.12	7	.8	1.0	UER																
13	635	36.89	19	21.44	155	7.41	7.77	2.2	2.5	25	0	.77	.11	8	.7	1.0	UER																	
13	638	10.77	19	21.20	155	7.40	8.22	2.2	2.6	25	0	.81	.09	8	.6	.8	UER																	
13	919	21.08	19	21.31	155	3.32	7.03	2.7	3.1	25	0	114	.10	11	.8	.7	MER																	
13	1141	.27	19	26.58	155	53.05	9.46	2.8	3.1	25	0	243	.10	20	1.6	.5	LER																	
13	1435	42.54	19	18.82	155	11.48	7.86	1.8	1.8	17	0	113	.08	7	.6	1.4	POL																	
13	1445	49.95	19	23.70	155	16.67	1.74	2.2	3.0	15	0	.77	.09	3	.5	.3	SPC																	
13	2313	46.61	19	17.66	155	21.40	5.78	1.9	2.5	21	0	128	.16	8	1.0	2.7	SWR																	
13	2315	32.50	19	17.21	155	21.25	6.67	1.7	2.1	19	0	133	.12	9	1.0	1.9	SWR																	
14	225	38.07	19	25.68	155	55.87	6.40	2.1	2.0	17	0	193	.13	15	2.1	3.2	LER																	
14	544	42.18	19	22.19	155	6.27	6.83	2.4	2.7	24	0	.72	.12	7	.7	1.1	UER																	
14	652	35.93	19	20.15	155	5.03	5.60	2.0	2.2	24	0	128	.12	8	.7	1.3	MER																	
14	815	43.80	19	22.72	154	59.26	6.26	2.2	2.5	24	0	189	.11	9	1.2	1.0	LER																	
14	912	42.17	19	17.38	155	30.51	9.56	3.1	3.2	28	0	100	.14	13	.9	.6	HEA																	
14	1950	4.15	19	19.99	155	9.18	8.73	2.0	2.5	27	0	.78	.09	8	.6	.7	UER																	
15	454	26.32	19	19.62	155	11.49	7.21	1.7	2.1	25	0	.92	.13	6	.8	1.5	UER																	
15	646	.77	19	20.42	155	7.73	7.33	2.0	2.4	22	0	.87	.10	8	.7	1.4	UER																	
15	740	51.48	19	19.91	155	12.13	7.45	2.5	2.8	28	0	.81	.10	6	.6	1.0	UER																	
15	744	1.63	19	26.74	154	52.76	3.63	2.4	2.5	19	3	259	.18	20	1.7	1.7	LER																	
15	850	2.45	19	22.38	155	12.98	3.14	2.1	2.4	21	0	.53	.12	5	.6	1.2	UER																	
15	14	9	19.99	19	22.99	155	30.24	8.89	2.4	2.4	26	0	45	.14	13	.7	1.1	MOK																
15	1444	.76	19	19.59	155	11.08	8.21	1.9	2.3	27	0	.95	.13	7	.8	1.3	UER																	
15	1846	23.74	19	20.02	155	8.57	7.56	2.1	2.2	25	0	.76	.11	9	.7	1.1	UER																	
15	1910	31.63	19	21.99	155	6.68	7.52	2.2	2.6	21	0	.74	.10	8	.6	1.0	UER																	
15	2139	58.45	19	25.77	155	16.76	4.02	2.6	3.3	31	0	.67	.18	5	.7	1.5	SPC																	
15	2150	24.66	19	23.83	155	16.84	1.19	2.0	2.7	18	0	.71	.12	3	.6	.4	SPC																	
16	324	19.34	19	24.19	155	16.06	1.67	1.3	2.2	14	0	124	.07	3	.4	.3	SPC																	
16	328	57.68	19	21.60	155	7.59	8.15	2.4	3.0	29	0	.74	.09	8	.5	.6	UER																	
16	4	7	9.40	19	27.24	155	14.62	31.65	2.3	2.4	35	0	.52	.11	8	.8	1.8	DEP																
16	436	33.24	19	24.15	155	15.79	1.78	1.8	2.6	18	0	.88	.10	3	.5	.4	SPC																	
16	926	39.90	19	27.69	155	14.13	23.57	2.1	1.9	32	0	.53	.11	9	.8	1.7	DEP																	
16	1239	20.42	19	19.96	155	16.10	7.66	1.5	2.0	27	0	.87	.11	6	.6	1.0	KOA																	
16	15	6	29.40	19	24.03	155	16.18	1.81	1.7	2.5	13	0	133	.08	3	.7	.4	SPC																
16	1542	42.10	19	23.25	155	14.38	4.43	2.0	2.4	24	0	.45	.14	5	.7	1.0	GLN																	
16	16	8	38.64	19	21.08	155	2.45	5.55	2.1	2.2	24	0	153	.19	12	1.3	1.6	MER																
16	1915	34.97	19	20.16	155	11.78	7.21	1.7	2.0	28	0	.79	.16	7	.9	1.5	UER																	

## HVO EARTHQUAKE SUMMARY LIST

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	ORIGIN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	REMK
1976	MAY	16	2153	5.05	19	24.57	155	29.29	9.23	2.4	2.2	28	0	.54	.12	13	.6	.9	UKF															
		16	2222	9.13	19	20.23	155	7.29	8.19	2.2	2.7	27	0	.98	.11	8	.6	.7	UER															
17	125	7.07	19	19.91	155	12.19	6.37	1.6	1.8	29	0	.80	.16	6	.9	1.6	UER																	
17	145	6.09	19	19.78	155	16.26	9.60	3.6	3.8	32	0	.91	.09	5	.5	.4	KOA																	
17	2	7	51.71	19	29.44	154	50.99	7.04	1.9	22	0	.269	.19	22	4.9	1.3	LER																	
17	627	30.37	19	22.69	155	6.25	8.12	2.6	3.0	29	0	.68	.12	8	.6	.8	UER																	
17	847	17.06	19	27.52	154	54.51	5.57	2.3	2.7	26	0	.189	.15	17	1.7	1.0	LER																	
17	953	41.08	19	17.90	155	21.21	7.60	2.1	2.5	27	0	.120	.14	8	.8	1.2	SWR																	
17	10	9	24.15	19	19.65	155	6.57	8.10	2.2	2.3	24	0	.124	.12	7	.9	.6	UER																
17	1016	34.64	19	19.48	155	12.27	6.63	2.0	2.1	27	0	.87	.12	6	.7	1.2	UER																	
17	1759	16.67	19	23.76	155	16.68	6.86	1.8	2.8	13	0	.65	.19	3	1.6	2.0	LPC																	
17	1840	32.47	19	25.27	154	56.03	6.60	2.1	2.5	20	0	.196	.13	14	1.6	1.1	LER																	
17	2054	49.19	19	19.66	155	8.60	9.51	3.0	3.6	28	0	.78	.09	10	.6	.2	UER																	
17	2136	18.60	19	20.42	155	4.64	7.41	3.1	3.4	30	0	.118	.12	8	.8	.6	MER																	
18	121	41.29	19	19.35	155	13.64	7.78	2.2	2.5	30	0	.66	.15	7	.8	1.2	UER																	
18	520	58.16	19	22.16	155	12.97	6.96	2.5	3.2	29	0	.55	.09	5	.4	.8	UER																	
18	616	41.31	19	19.76	155	7.48	8.63	3.5	4.0	32	0	.102	.12	8	.8	.6	UER																	
18	7	5	6.62	19	9.08	155	24.41	39.27	1.1	17	22	0	.225	.09	21	3.9	6.9	LSW																
18	1044	56.03	19	19.39	155	11.43	5.96	2.0	2.2	28	0	.97	.15	7	.9	1.8	UER																	
18	1348	50.13	19	21.84	155	17.85	24.01	2.0	1.8	28	0	.58	.08	4	.7	1.2	PPL																	
18	1410	58.49	19	19.45	155	15.87	9.91	2.4	2.8	30	0	.91	.10	6	.																			

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HR	MIN	LAT	N	LON	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	REMK	
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	
1976	MAY	20	2313	38.38	19	20.68	155	6.73	8.32	2.2	2.6	28	0	.97	.10	7	.5	.6 UER
21	653	37.22	19	19.53	155	12.32	6.67	1.7	2.3	28	0	.86	.17	6	1.0	1.6	1.6 UER	
21	757	23.93	19	18.16	155	16.91	3.22	2.0	2.6	25	0	121	.20	6	1.2	2.1 KOA		
21	932	40.61	19	18.18	155	16.62	5.16	2.2	2.8	24	0	118	.13	6	.7	.8 KOA		
21	1439	48.98	19	21.19	155	48.03	11.24	3.1	2.8	27	0	136	.17	18	1.3	.6 KON		
21	1722	20.28	19	20.66	155	9.09	7.61	1.8	2.2	28	0	.67	.15	8	.8	1.2 UER		
21	1949	27.92	19	20.26	155	8.90	7.57	1.8	2.3	30	0	.70	.16	9	.8	1.2 UER		
21	1953	9.83	19	21.08	155	6.06	9.27	3.2	3.5	31	0	.94	.11	7	.8	.5 UER		
22	234	3.72	19	19.83	155	7.44	8.14	1.9	2.4	29	0	102	.10	8	.6	.5 UER		
22	253	55.36	19	23.69	154	58.91	6.21	2.2	2.3	27	0	180	.21	10	1.9	1.6 LER		
22	155	17.18	19	20.67	155	9.17	8.03	1.8	2.1	27	0	.67	.14	8	.9	1.0 UER		
22	1652	8.44	19	21.68	155	15.11	10.51	3.7	4.0	31	0	.60	.09	4	.5	.2 KOA		
22	2218	2.64	19	19.62	155	10.46	8.83	1.9	2.4	30	0	.94	.13	7	.6	.7 UER		
22	2234	32.49	19	20.62	155	7.60	8.08	2.0	2.5	26	0	.87	.14	8	.8	.8 UER		
23	427	55.52	19	28.66	155	23.60	6.82	2.1	2.0	25	0	.71	.16	13	.9	1.9 UKF		
23	449	33.07	19	20.42	155	4.25	7.73	2.0	2.6	31	0	.116	.11	9	.9	.6 MER		
23	557	57.33	19	18.06	155	16.88	9.64	2.4	3.1	31	0	.121	.12	6	.6	.6 KOA		
23	831	48.93	19	27.69	154	52.51	9.27	2.4	2.4	24	0	263	.13	20	2.3	.8 LER		
23	1311	13.83	19	22.06	155	6.12	6.09	1.9	2.6	28	0	.75	.15	7	.9	1.7 UER		
23	1731	20.18	19	20.44	155	6.81	9.38	4.0	4.0	31	0	.101	.11	7	.8	.5 UER		
23	1734	59.58	19	20.79	155	11.62	7.74	2.6	2.7	22	0	152	.18	8	1.4	1.3 UER		
23	183	25.75	19	20.49	155	6.72	7.74	1.9	2.2	26	0	.101	.12	7	.7	.8 UER		
23	2324	7.63	20	54.93	156	23.40	49.09	4.3	4.2	34	2	206	.14	169	3.2	1.6 DIS		
24	121	50.68	19	21.00	155	13.47	9.72	1.6	2.2	28	0	.55	.13	7	.8	.7 UER		
24	244	4.17	19	20.56	155	8.09	7.71	2.1	2.6	29	0	.80	.14	9	.7	1.0 UER		
24	546	55.74	19	21.12	155	13.49	9.67	2.0	2.4	29	0	.54	.13	7	.7	.5 UER		
24	816	57.79	19	24.34	155	19.58	12.20	2.0	2.0	30	0	.45	.11	5	.8	.3 UKF		
24	1130	17.52	19	19.15	155	11.82	6.95	1.7	2.1	27	0	.100	.13	7	.8	1.4 UER		
24	1234	49.03	19	6.27	155	28.08	23.18	1.8	2.4	4	185	.13	25	1.2	2.7 LSW			
24	1641	.12	19	24.02	155	15.79	1.50	1.5	2.5	15	0	.112	.11	5	.5	.3 SPC		
25	531	34.45	19	21.53	155	7.44	8.14	2.6	3.0	30	0	.76	.12	8	.6	.7 UER		
25	731	17.19	19	21.69	155	17.10	31.71	2.7	2.3	33	0	.47	.09	3	.7	1.4 DEP		
25	949	57.32	19	28.07	154	54.58	5.44	2.0	2.3	28	0	.171	.15	17	1.8	1.0 LER		
25	2113	38.98	19	21.94	155	2.03	6.09	2.1	2.2	29	0	.153	.14	12	.9	1.2 MER		
25	2146	49.04	19	21.10	155	13.21	8.70	1.6	2.1	27	0	.57	.14	6	.8	1.2 UER		
26	26	9.27	19	24.07	155	15.88	1.56	1.3	2.0	14	0	.113	.13	5	.6	.4 SPC		
26	650	54.40	19	20.59	155	4.29	5.19	2.0	1.9	27	0	.109	.18	9	1.4	1.1 MER		
26	85	30.60	19	19.65	155	7.54	9.03	1.9	2.2	28	0	.103	.15	8	1.2	.9 UER		
26	830	16.42	19	23.41	155	17.31	1.47	1.8	2.5	14	0	.55	.08	3	.5	.3 SPC		
26	1138	4.28	19	21.75	155	6.42	6.85	2.0	2.2	27	0	.83	.14	7	.8	1.2 UER		
26	1312	49.61	19	21.82	155	6.30	6.55	1.9	2.0	26	0	.78	.13	7	.8	1.2 UER		
26	1413	58.67	19	19.27	155	13.93	5.95	2.1	2.0	26	0	.65	.15	6	.9	1.6 UER		
26	163	34.91	19	19.83	155	11.02	8.34	2.3	2.6	28	0	.89	.15	7	.8	1.1 UER		
26	1738	12.45	19	19.61	155	8.16	9.10	2.7	3.2	29	0	.88	.09	9	.6	.5 UER		
26	1948	.19	19	19.86	155	8.74	8.40	2.2	2.4	28	0	.74	.10	9	.6	.6 UER		
26	2233	7.53	19	25.98	155	24.14	9.11	3.1	3.2	31	0	.66	.13	9	.6	1.1 UKF		
26	2238	9.00	19	19.93	155	7.70	7.59	1.9	2.4	28	0	.95	.13	8	.7	.7 UER		
26	2240	54.28	19	20.21	155	7.61	6.83	1.9	2.2	29	0	.93	.14	8	.8	1.3 UER		

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HR	MIN	LAT	N	LON	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	REMK	
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	
1976	MAY	26	2347	5.78	19	17.33	155	15.82	9.75	2.1	2.6	30	0	133	.13	6	.9	.3 KOA
27	022	54.32	19	22.12	155	17.92	4.77	1.8	2.2	15	0	.82	.13	4	.8	1.2 KOA		
27	026	.69	19	23.76	155	29.81	9.34	1.9	2.0	27	0	.50	.12	13	.6	.9 UKF		
27	250	24.48	19	23.68	155	16.92	2.71	1.8	2.4	19	0	.66	.11	3	.6	1.3 SPC		
27	337	33.64	19	20.19	155	7.21	8.24	2.1	2.1	28	0	100	.14	8	.8	1.0 UER		
27	1349	9.15	19	19.23	155	11.66	6.87	1.9	2.0	26	0	100	.12	7	.7	1.2 UER		
27	1357	40.84	19	23.27	155	30.48	9.93	2.9	3.1	32	0	.59	.14	13	.7	.4 MOK		
27	1816	44.71	19	24.66	154	59.46	6.58	2.3	2.5	26	0	198	.15	11	1.6	1.1 LER		
27	1921	31.12	19	27.28	154	53.30	9.49	2.6	2.8	29	0	234	.11	19	1.6	.6 LER		
27	1951	9.49	19	27.45	154	55.91	7.26	2.3	2.6	26	0	163	.15	15	1.5	.8 LER		
27	23	7	53.47	19	19.57	155	12.33	5.63	1.6	2.1	31	0	.85	.18	6	.9	.5 UER	
28	050	32.59	19	20.39	155	7.90	9.39	2.3	2.7	24	0	.85	.15	9	.9	.7 UER		
28	337	3.05	19	28.46	154	54.68	5.74	2.3	2.3	24	0	152	.15	16	1.6	1.1 LER		
28	719	23.27	19	24.04	155	15.67	1.50	1.6	2.3	18	0	113	.13	3	.6	.4 SPC		
28	12	8	45.51	19	23.03	155	4.84	8.11	3.3	3.7	26	0	.98	.09	9	.5	.6 MER	
28	1727	23.32	19	19.94	155	17.00	2.94	2.3	3.2	23	0	.57	.13	3	.6	1.3 SPC		
29	129	29.39	19	22.76	155	4.85	8.69	2.7	3.1	29	0	.87	.12	9	.8	.6 MER		
29	311	39.48	19	21.99	155	6.31	7.24	1.9	2.1	25	0	.76	.12	7	.6	.8 UER		
29	1220	55.60	19	23.63	155	16.90	1.73	1.5	2.1	29	0	107	.08	3	.7	.3 SPC		
29	1714	42.83	19	22.12	155	13.21	1.93	1.7	2.0	10	0	140	.06	5	.7	.3 MER		
30	11	2	26.73	19	22.14	155	13.14	5.89	2.3	2.9	24	0	.72	.11	6	.6	1.2 UER	
30	1131	14.78	19	21.91	155	12.92	2.04	1.7	1.8	22	0	.59	.09	5	.4	2.3 UER		
30	1229	9.53	19	23.32	155	14.97	3.28	1.9	2.2	20	0	.70	.13	3	.7	1.6 GLN		
30	1632	32.58	19	20.23	155	8.30	9.42	2										

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	ORIGIN TIME	LAT N	LON W	DEPTH AMP DUR			GAP RMS MIN			ERH	ERZ	YEAR	MON	DA	HRMN	SEC	ORIGIN TIME	LAT N	LON W	DEPTH AMP DUR			GAP RMS MIN			ERH	ERZ							
								KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	RMS	MIN	ERH	ERZ																		
1976	MAY	31	839	2.57	19 21.14	155	11.72	8.59	2.4	2.5	31	0	.65	.13	8	.7	.7	.UER		1976	JUN	5	247	2.62	19 21.34	155	7.95	7.89	1.8	2.0	26	0	.73	.14	9	.8	1.0	UER
31	853	52.70	20	8.80	155	48.76	28.95	3.0	2.1	18	2	.296	.18	.55	.16.0	.17.6	KOH		5	1056	54.18	19 20.12	155	11.51	7.81	2.0	2.0	24	0	.82	.10	7	.6	1.0	UER			
31	955	50.30	20	6.84	155	47.98	24.61	3.0	2.7	22	3	.137	.23	.54	.2.2	.3.4	KOH		5	1118	20.99	19 21.59	155	7.40	8.05	2.2	2.4	27	0	.75	.12	8	.6	.9	UER			
31	1036	53.70	20	8.17	155	45.75	22.80	2.9	1.8	21	0	.158	.10	.52	.2.6	.3.2	KOH		5	1344	44.20	19 25.52	155	16.52	.46	1.6	2.5	18	0	.117	.13	4	.7	.5	SPC			
31	1155	13.56	19	18.28	155	21.71	6.10	1.8	1.9	29	0	.115	.18	8	1.0	2.5	SWR		5	14	4	2.03	19 25.51	155	16.43	.32	1.0	2.1	13	0	.169	.18	4	1.5	1.0	SPC		
31	1156	46.16	19	19.68	155	12.10	7.07	1.7	2.0	25	0	.85	.12	6	.7	1.3	UER		5	17	0	54.97	19 17.89	155	16.87	9.01	1.7	2.2	31	0	.124	.13	6	.7	.9	KOA		
31	1713	23.66	19	20.96	155	13.37	8.79	2.2	2.5	30	0	.56	.13	6	.7	1.0	UER		5	1752	22.73	19 19.70	155	11.79	7.18	2.0	2.4	29	0	.68	.13	6	.7	1.2	UER			
31	1748	42.42	19	17.68	155	21.96	6.98	2.3	2.7	31	0	.120	.19	9	1.0	1.9	SWR		5	2046	3.20	19 3.73	155	27.66	45.20	2.6	2.6	23	2	.201	.11	23	2.1	1.4	LSW			
31	1750	40.98	19	23.78	155	17.01	2.64	1.7	2.1	19	0	.62	.10	3	.5	1.3	SPC		5	2138	30.53	19 20.50	155	4.09	6.45	2.5	3.0	28	0	.111	.15	9	.9	1.2	MER			
31	1921	7.38	19	23.83	155	16.85	3.64	2.2	2.5	24	0	.70	.15	3	.6	1.0	SPC		6	037	20.02	19 24.33	155	14.75	3.28	1.6	2.3	21	0	.97	.14	4	.8	1.2	GLN			
JUN	1	5	8	35.86	19	19.96	155	8.48	8.38	2.2	2.3	27	0	.79	.09	9	.5	.5	UER		6	343	14.87	19 19.33	155	16.37	9.52	3.1	3.4	32	0	.98	.08	6	.4	.3	KOA	
1	10	2	22	18.18	19	20.11	155	11.53	9.01	2.9	3.4	26	0	.82	.10	8	.5	.6	UER		6	5	0	54.19	19 19.34	155	11.88	6.82	1.7	1.9	29	0	.95	.13	6	.7	1.3	UER
1	1317	55.15	19	20.91	155	11.47	9.06	2.8	2.8	30	0	.69	.11	8	.5	.6	UER		6	913	19.19	19 20.57	155	12.87	8.43	2.8	2.2	22	0	.64	.13	7	.8	1.1	UER			
1	1343	15.00	19	27.56	154	51.91	9.36	2.6	2.5	20	0	.266	.11	.21	.2.3	.7	LER		6	1714	3.95	19 21.46	155	6.60	7.60	2.2	2.4	31	0	.83	.12	7	.6	.8	UER			
1	1616	16.40	19	41.36	155	2.92	2.31	3.0	3.2	29	0	.198	.17	.28	1.4	2.5	HIL		6	1928	59.14	19 20.29	155	17.04	30.88	2.3	2.1	31	0	.79	.09	5	.8	1.5	DEP			
1	1628	53.28	19	19.38	155	19.19	8.20	1.7	1.8	29	0	.60	.12	7	.7	1.0	SWR		7	719	47.08	19 18.52	155	13.32	8.05	2.1	2.3	27	0	.103	.15	8	1.1	1.5	POL			
1	1635	23.71	19	20.26	155	7.80	9.56	2.7	3.2	31	0	.88	.11	9	.8	.3	UER		7	1039	37.57	19 19.15	155	15.64	31.40	3.5	3.3	35	0	.93	.09	6	.7	1.3	DEP			
1	1923	8.13	19	21.88	155	4.98	7.32	2.0	2.1	27	0	.89	.15	9	.9	1.2	MER		7	1126	10.28	19 24.06	155	15.97	1.55	1.9	2.5	19	0	.107	.10	3	.4	.3	SPC			
1	2026	24.27	19	27.14	155	23.06	8.97	2.6	2.3	31	0	.85	.13	11	.6	1.2	UKF		7	2120	37.03	19 20.72	155	7.13	8.99	2.2	2.5	26	0	.91	.13	8	.9	.7	UER			
2	339	47.11	19	19.81	155	15.27	7.68	2.0	2.1	29	0	.81	.12	6	.7	1.0	KOA		7	2256	19.84	20 8.57	155	45.40	23.69	2.9	2.2	18	3	.159	.07	52	1.6	2.0	KOH			
42	2	353	38.16	19	22.14	155	.28	6.00	2.4	2.1	27	0	.212	.12	11	1.4	1.0	LER		8	210	10.84	19 25.58	155	17.10	.68	1.7	2.7	19	0	.116	.17	5	.9	.6	SPC		
2	851	36.92	19	25.97	154	55.43	7.57	2.2	2.3	23	0	.250	.13	17	3.1	1.3	LER		8	1413	49.47	19 21.76	155	3.30	6.36	2.2	2.8	27	0	.116	.15	11	.8	1.2	MER			
2	1514	25.55	19	23.90	155	15.26	3.82	2.2	2.6	22	0	.95	.12	3	.7	1.1	SPC		8	1743	32.63	19 27.01	154	54.14	8.82	2.3	2.4	24	0	.209	.18	18	2.6	1.0	LER			
2	2150	50.79	19	19.78	155	22.06	4.60	1.9	2.3	25	0	.89	.13	8	.6	1.2	SWR		8	1949	42.96	19 21.94	155	7.01	7.23	2.6	3.2	30	0	.73	.12	8	.6	.9	UER			
3	0	4	50.43	19	20.02	155	13.69	7.05	2.1	2.4	29	0	.60	.15	6	.8	1.1	UER		8	2132	46.00	19 20.70	155	13.26	7.69	1.9	2.4	30	0	.59	.14	6	.8	1.1	UER		
3	2	1	11.72	19	20.06	155	3.97	7.48	2.7	3.1	29	0	.135	.11	9	.9	.6	MER		9	831	22.18	19 19.56	155	12.43	6.92	2.4	2.8	31	0	.84	.14	6	.8	1.3	UER		
3	7	6	50.18	19	19.67	155	11.76	6.82	1.7	2.0	27	0	.89	.17	6	1.0	1.8	UER		9	1113	42.72	19 13.21	155	27.39	10.35	2.7	3.4	28	0	.142	.12	17	.9	.4	LSW		
3	922	35.52	19	20.98	155	10.75	9.24	2.2	2.5	25	0	.69	.08	8	.5	.6	UER		9	1133	6.46	19 12.34	155	17.20	42.70	1.3	1.8	32	0	.194	.07	19	1.5	3.3	HLP			
3	945	28.07	19	19.80	155	13.88	7.91	2.3	2.7	27	0	.60	.14	6	.8	1.1	UER		9	1137	4.34	19 21.10	155	13.20	8.87	2.2	2.6	29	0	.57	.12	6	.7	.9	UER			
3	1115	35.44	19	17.71	155	19.96	9.56	2.4	3.1	30	0	.126	.10	7	.6	.5	SWR		9	1439	43.64	19 19.74	155	7.54	7.74	2.2	2.5	27	0	.101	.12	8	.7	.6	UER			
3	1525	42.50	19	20.24	155	7.27	9.41	2.2	2.6	25	0	.98	.09	8	.7	.5	UER		9	1827	51.14	19 27.85	154	52.77	7.66	2.4	2.6	24	0	.260	.14	20	2.4	1.0	LER			
3	1845	24.60	19	19.76	155	25.32	8.27	1.8	2.2	29	0	.87	.18	7	1.0	1.5	HEA		9	2211	2.41	19 20.60	155	11.25	8.81	2.8	3.2	31	0	.74	.10	8	.6	.7	UER			
3	2038	53.35	19	26.63	154	51.90	8.94	2.4	2.3	29	0	.268	.14	22	2.5	.8	LER		10	015	3.85	19 20.07	155	7.32	8.55	3.3	3.7	32	0	.100	.11	8	.7	.6	UER			
3	23	5	23.47	19	22.17	155	25.12	9.38	2.2	2.3	34	0	.53	.14	10	.6	.7	UKF		10	746	33.78	19 10.32	155	39.32	8.16	2.7	2.7	26	0	.112	.20	21	1.3	1.5	HEA		
4	3	7	22.72	19	21.38	155	13.41	7.90	1.7	2.3	31	0	.53	.15	6	.8	1.0	UER		10	2018	53.34	19 21.25	155	8.41	8.42	2.2	2.8	26	0	.79	.11	9	.7	.8	UER		
4	446	13.06</																																				

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	KM	DEG	MIN	NR	NS	DEG	SEC	DIS	KM	KM	REMK	
1976	JUN	13	1421	41.00	19	20.20	155	8.22	9.25	3.0	3.4	29	0	.81	.09	9	.5	.4	UER									
			048	22.04	19	24.70	156	4.44	31.79	2.9	2.5	23	1	254	.15	39	3.2	1.4	KON									
			631	39.00	19	23.14	155	14.77	4.05	2.5	3.0	26	0	.61	.14	3	.7	1.0	GLN									
			74	21.03	19	20.00	155	7.43	7.94	2.2	2.5	26	0	.99	.14	8	.8	.9	UER									
			1417	15.19	19	24.25	155	15.84	4.37	3.2	3.9	24	0	109	.14	5	.8	1.0	SPC									
			1432	41.09	19	19.08	155	13.36	9.28	2.8	3.2	25	0	.74	.12	7	.8	1.0	UER									
			170	34.34	19	19.97	155	8.25	8.94	2.6	3.1	27	0	.83	.12	9	.8	.6	UER									
			423	39.28	19	21.37	155	8.37	8.16	2.9	3.3	31	0	.68	.08	9	.4	.4	UER									
			50	32.52	19	27.42	155	28.80	9.51	3.4	3.4	33	0	.62	.14	11	.6	.4	UKF									
			815	31.95	19	22.87	155	6.31	7.22	2.7	3.1	30	0	.69	.13	8	.6	1.0	UER									
			852	10.59	19	12.59	155	35.77	10.49	2.9	2.8	27	0	116	.18	23	1.3	.5	HEA									
			1846	41.01	19	23.47	155	16.96	3.39	2.3	3.0	23	0	.63	.13	3	.7	1.2	SPC									
			917	15.92	19	21.81	155	4.84	7.79	3.4	3.6	31	0	.79	.09	9	.5	.6	MER									
			1744	18.20	19	23.17	155	14.62	5.07	2.6	3.1	27	0	.56	.10	3	.4	.5	GLN									
			1746	33.78	19	24.39	155	23.84	9.46	2.4	2.7	31	0	.44	.13	8	.7	.9	UKF									
			2117	42.41	19	17.56	155	27.93	8.47	2.4	2.7	29	0	.45	.15	9	.7	1.3	HEA									
			97	39.53	19	19.32	155	11.99	6.74	2.5	2.8	30	0	.94	.14	6	.8	1.3	UER									
			955	13.71	19	18.98	155	13.65	6.96	2.5	3.0	29	0	.68	.16	7	.9	1.5	POL									
			121	11.60	19	22.53	155	6.06	7.50	3.4	3.6	28	0	.69	.11	7	.6	.9	UER									
			1426	16.76	19	23.08	155	4.73	7.32	2.3	2.6	21	0	.90	.13	9	.9	1.4	MER									
			1513	14.08	19	23.97	155	23.78	8.39	2.3	2.8	30	0	.45	.13	7	.6	.9	UKF									
			943	42.80	19	20.88	155	11.28	8.54	2.5	2.6	27	0	.70	.12	8	.6	.7	UER									
			1549	22.61	19	19.44	155	12.45	6.87	2.3	2.7	30	0	.86	.15	7	.8	1.1	UER									
			1748	13.42	19	19.31	155	11.76	9.26	2.6	2.9	29	0	.97	.13	7	.8	.7	UER									
			021	26.55	19	18.94	155	16.43	8.61	2.0	2.6	28	0	104	.12	6	.7	.9	KOA									
			025	11.27	19	23.50	155	15.04	4.82	3.1	3.4	29	0	.76	.10	3	.4	.5	SPC									
			36	23.81	19	11.44	155	32.81	10.64	3.1	3.5	23	0	132	.17	22	1.3	.6	LSW									
			1624	10.79	19	22.23	155	12.69	5.49	2.5	3.0	26	0	.79	.12	5	.7	.7	UER									
			344	51.92	19	22.34	154	58.91	6.71	2.5	2.7	29	0	199	.16	10	1.7	1.3	LER									
			453	37.14	19	54.73	155	33.65	19.98	2.7	2.4	28	1	140	.15	33	1.1	4.2	KKU									
			513	56.13	19	24.13	155	16.15	1.62	2.0	2.6	13	0	109	.16	3	1.0	.6	SPC									
			915	18.16	19	24.15	155	15.34	2.08	2.9	19	0	108	.10	3	.5	3.1	SPC										
			952	3.60	19	22.91	155	14.06	3.29	2.0	2.8	22	2	.61	.11	3	.6	1.2	UER									
			1427	49.74	19	22.00	155	13.04	7.19	2.5	3.1	23	0	.53	.08	7	.5	.9	UER									
			1446	46.29	19	22.41	155	11.88	1.40	1.9	2.1	20	0	.90	.10	6	.7	.5	UER									
			1456	11.34	19	22.24	155	12.61	3.43	2.0	2.2	22	0	.60	.14	5	.8	1.4	UER									
			1539	5.68	19	22.49	155	13.27	6.80	2.9	3.6	26	0	.54	.10	6	.5	1.0	UER									
			172	18.46	19	21.99	155	12.55	1.98	2.0	2.0	20	0	.59	.10	6	.5	18.3	UER									
			1742	57.46	19	22.29	155	12.95	2.94	1.9	2.1	21	0	.52	.11	5	.6	1.1	UER									
			1752	32.44	19	22.01	155	13.00	5.03	2.2	2.6	27	0	.51	.15	6	.7	.9	UER									
			1816	27.24	19	22.15	155	12.92	5.39	3.1	3.5	28	0	.50	.12	5	.5	.5	UER									
			1835	54.31	19	22.23	155	13.13	4.84	2.0	2.0	28	0	.49	.15	5	.6	.8	UER									
			1848	49.42	19	22.19	155	13.16	3.21	2.0	2.0	24	0	.49	.15	5	.8	1.4	UER									
			1859	45.86	19	22.15	155	13.41	6.57	2.7	2.7	27	0	.49	.09	6	.5	.8	UER									
			191	13.17	19	21.93	155	12.89	1.71	1.9	2.1	22	0	.52	.11	5	.5	.4	UER									
			193	34.10	19	22.27	155	13.13	6.15	3.4	3.7	27	0	.54	.09	6	.4	1.0	UER									
			196	27.29	19	22.29	155	13.03	4.43	2.0	2.4	26	0	.49	.15	5	.7	1.0	UER									
			1922	11.60	19	22.43	155	13.36	3.72	1.9	2.2	21	0	.85	.14	6	.7	1.4	UER									

HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	KM	DEG	MIN	NR	NS	DEG	SEC	DIS	KM	KM	REMK		
1976	JUN	21	1927	7.43	19	22.26	155	13.01	5.80	2.0	2.3	25	0	.49	.15	5	.7	1.2	UER										
		21	1935	13.32	19	22.49	155	13.34	2.92	2.0	1.9	22	0	.47	.11	6	.6	1.6	UER										
		21	1936	29.86	19	22.10	155	12.95	6.06	3.1	3.6	20	0	.61	.13	9	.8	2.6	UER										
		21	1941	6.18	19	22.17	155	13.05	5.65	2.5	2.7	29	0	.50	.18	6	.9	1.7	UER										
		21	1951	1.53	19	22.26	155	13.10	2.00	1.8	2.1	20	0	.49	.09	5	.4	1.1	UER										
		21	20	0	34.66	19	22.34	155	13.23	5.30	3.3	3.9	26	0	.63	.13	7	.6	1.7	UER									
		21	2012	17.12	19	22.66	155	14.04	4.14	2.1	2.1	23	0	.48	.														

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	REMK	
1976	JUN	22	425	46.32	19	22.34	155	14.13	.05	2.0	3.0	23	0	.51	.14	4	.5	.4	UER									
		22	433	38.46	19	19.99	155	7.00	9.15	2.6	3.2	29	0	108	.10	7	.8	.5	UER									
		22	522	1.67	19	22.19	155	14.30	.11	1.6	2.6	20	0	.53	.13	5	.6	.4	UER									
		22	531	10.65	19	23.17	155	14.78	1.64	1.5	1.9	14	0	.66	.09	3	.5	.3	GLN									
		22	549	44.07	19	21.87	155	14.32	1.09	1.8	2.3	22	0	.56	.11	5	.6	.6	UER									
		22	61	44.11	19	23.27	155	14.72	1.76	1.6	2.2	17	0	.66	.11	3	.5	.6	GLN									
		22	630	35.60	19	22.71	155	14.58	1.00	1.1	1.9	12	0	.67	.15	4	.6	.5	UER									
		22	643	13.21	19	22.46	155	14.04	.63	1.6	2.7	18	0	.79	.10	4	.5	.5	UER									
		22	646	41.04	19	23.16	155	14.52	1.75	1.4	2.0	18	0	.59	.14	3	.7	.9	GLN									
		22	710	31.16	19	22.62	155	14.51	.15	1.1	2.0	12	0	.85	.10	4	.6	.4	UER									
		22	742	17.23	19	23.55	155	15.16	1.52	1.5	2.1	14	0	.87	.09	3	.5	.3	SPC									
		22	86	25.88	19	22.45	155	14.22	.42	1.2	2.4	12	0	.83	.10	4	.5	.7	UER									
		22	88	17.17	19	20.02	155	8.63	7.78	2.0	2.5	27	0	.75	.10	9	.5	.8	UER									
		22	820	20.78	19	20.12	155	12.88	7.47	1.8	2.0	28	0	.70	.11	6	.6	.9	UER									
		22	833	7.26	19	23.41	155	14.88	2.00	1.7	2.3	12	0	.76	.04	3	.3	.0	GLN									
		22	1237	36.76	19	46.90	156	2.24	3.95	2.9	2.7	20	1	232	.14	47	1.5	1.9	KON									
		22	1451	34.89	19	22.92	155	14.21	4.07	2.2	2.7	19	0	.57	.11	3	.7	1.3	UER									
		22	2029	28.30	19	21.03	155	13.27	9.33	2.3	2.9	29	0	.57	.11	6	.5	.6	UER									
		22	2149	8.13	19	19.41	155	12.08	6.26	2.0	2.5	27	0	.91	.18	6	1.1	1.8	UER									
		22	2353	54.35	19	23.28	155	14.50	3.51	2.4	2.8	25	0	.45	.13	3	.6	1.1	GLN									
		23	052	25.03	19	21.58	155	15.54	2.17	2.9	3.7	29	0	.62	.16	4	.6	2.0	KOA									
		23	541	38.22	19	22.67	155	25.18	9.52	2.4	2.7	30	0	.56	.14	10	.7	.5	UKF									
		23	1413	10.74	19	19.80	155	8.64	8.13	2.4	2.9	26	0	.76	.12	9	.7	.7	UER									
		24	256	57.19	19	23.21	155	14.55	3.64	2.1	2.7	22	0	.47	.14	3	.8	1.2	GLN									
		24	152	4.26	19	27.10	154	53.51	7.72	2.7	2.8	21	0	.228	.15	19	2.7	1.0	LER									
		24	1640	8.68	19	19.15	155	13.50	8.33	2.2	2.7	25	0	.77	.12	7	.7	1.1	UER									
		24	1947	53.85	19	20.31	155	11.90	9.23	3.6	3.8	29	0	.76	.10	7	.5	.5	UER									
		24	2017	27.31	19	20.93	155	16.73	29.76	2.4	2.3	32	0	.70	.11	6	.9	1.6	DEP									
		25	129	52.49	19	23.27	155	16.91	3.77	2.5	3.5	25	0	.45	.14	3	.7	1.0	SPC									
		25	144	9.16	19	23.34	155	14.90	1.92	2.3	3.0	22	0	.68	.14	5	.7	14.1	GLN									
		25	814	31.80	19	14.07	155	20.29	7.31	2.8	3.4	29	0	.157	.15	12	1.0	1.6	HLP									
		25	171	29.50	19	23.24	155	4.20	8.38	2.5	2.9	18	0	.99	.11	10	1.0	1.7	MER									
		26	1523	50.27	19	27.76	154	47.28	7.56	2.8	2.6	18	0	.295	.07	29	9.0	2.6	LER									
		26	2248	37.68	19	19.44	155	16.02	9.18	2.6	2.9	28	0	.93	.09	5	.6	.7	KOA									
		27	2318	7.02	19	23.19	155	14.56	5.09	2.5	2.9	27	0	.55	.09	3	.4	.4	GLN									
		28	86	54.39	21	1.41	156	3.54	4.00	3.4	3.1	3	2	.360	.00	35	99.0	93.0	DIS									
		28	110	39.55	19	31.66	155	45.13	9.55	2.5	2.5	21	0	.77	.20	17	1.3	.7	KON									
		28	1546	13.68	19	40.37	155	6.79	7.63	2.5	2.7	9	0	.270	.11	36	4.5	50.8	HIL									
		28	2318	53.52	20	7.18	156	20.46	13.21	3.2	2.3	6	2	.220	.06	72	1.6	.0	DIS									
		29	13	38.30	19	22.79	155	5.72	7.34	2.5	2.7	27	0	.75	.14	7	.8	1.1	MER									
		29	1627	14.88	19	17.84	155	16.24	7.83	2.6	2.9	30	0	.123	.14	5	.8	1.0	KOA									
		29	1748	6.12	19	20.61	155	8.02	9.15	2.5	2.9	26	0	.80	.08	9	.5	.4	UER									
		30	139	6.56	19	21.50	155	3.27	6.21	2.6	3.0	27	0	.117	.16	11	1.0	1.4	MER									
		30	617	47.31	20	13.33	155	39.55	6.64	3.2	.8	12	1	.286	.12	71	2.0	1.2	KOH									
JUL	1	057	3.81	19	19.48	155	11.93	8.61	2.4	2.9	28	0	.91	.14	6	.8	1.0	UER										
1	1817	26.42	19	26.98	155	24.65	6.41	2.4	2.8	29	0	.56	.15	11	.7	2.1	UKF											
2	031	28.57	19	23.42	155	14.71	3.31	2.6	3.3	28	0	.45	.18	3	.8	1.4	GLN											
2	211	2.44	19	19.48	155	10.97	8.57	2.2	2.5	29	0	.97	.11	7	.6	.8	UER											

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YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	REMK		
1976	JUL	2	557	37.96	19	15.78	155	31.62	9.65	2.6	3.0	28	0	119	.20	14	1.3	.8	LSW										
		2	1311	55.49	19	21.68	155	15.01	8.61	2.4	2.9	29	0	60	.11	4	.6	.6	KOA										
		2	2317	39.84	19	9.45	155	33.74	36.18	2.5			28	0	120	.21	18	2.3	6.1	LSW									
		3	039	27.62	19	23.54	155	16.86	3.35	2.4	3.1	27	0	67	.11	3	.5	.8	SPC										
		3	1325	6.86	19	19.32	155	12.52	6.60	2.0	2.5	28	0	87	.15	7	.9	1.4	UER										
		4	87	6.30	19	19.12	154	57.40	10.28	2.4	2.6	21	0	239	.18	16	4.2	.7	DIS										
		4	1215	28.20																									

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YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	LON	W	DEPTH		AMP	DUR	GAP		RMS	MIN	ERH	ERZ	REMK
											DEG	MIN			NR	NS	DEG	SEC	DIS	KM	KM
1976	JUL	14	1044	58.74	19	19.64	155	16.28			8.01	.6	9	0	98	.03	5	.4	1.2	KOA	
		14	1049	26.62	19	22.39	155	13.32			2.00	.8	7	0	133	.03	5	.5	.2	UER	
		14	1057	55.09	19	23.97	155	29.69	9.58	1.9	2.1	21	0	51	.12	13	.7	2.2	UKF		
		14	1342	48.03	19	22.31	155	13.08	5.27		1.5	14	0	78	.16	5	1.2	2.8	UER		
		14	1346	56.49	19	22.31	155	12.89	2.92		1.6	12	0	105	.06	5	.5	1.2	UER		
		14	1348	44.93	19	21.59	155	12.87	1.26		1.3	13	0	82	.16	6	1.0	1.2	UER		
		14	1353	13.97	19	21.96	155	12.95	1.80	1.7	1.8	12	0	100	.07	5	.6	.3	UER		
		14	1356	20.35	19	22.30	155	12.83	5.32	2.6	3.3	22	0	77	.14	7	.7	1.0	UER		
		14	1359	47.28	19	22.20	155	12.85	1.95		1.9	13	0	103	.06	5	.5	.2	UER		
		14	14 8	2.09	19	22.33	155	12.97	2.99	2.0	2.6	15	0	70	.08	5	.6	2.2	UER		
		14	1414	38.07	19	22.65	155	12.76	4.88	3.1	3.8	25	0	97	.14	8	.7	1.0	UER		
		14	1419	34.16	19	22.57	155	12.80	5.49	2.6	3.3	23	0	62	.13	5	.7	1.5	UER		
		14	1427	7.70	19	22.05	155	12.90	.06	1.4	1.4	7	0	117	.06	5	.9	99.0	UER		
		14	1435	40.85	19	21.94	155	12.51	1.42		1.2	12	0	104	.19	6	1.4	1.1	UER		
		14	1442	40.90	19	22.25	155	13.12	1.79	1.7	2.2	14	0	91	.09	5	.7	.4	UER		
		14	1447	12.28	19	22.74	155	14.12	2.13	1.5	1.5	14	0	85	.06	4	.4	5.7	UER		
		14	1448	13.27	19	22.25	155	12.38	1.34	2.6	2.8	18	0	100	.14	8	.9	.6	UER		
		14	1450	43.68	19	22.43	155	12.59	1.74	2.0	1.9	16	0	111	.11	5	.8	.3	UER		
		14	1452	39.70	19	22.31	155	12.92	1.83	1.7	1.8	14	0	103	.08	5	.6	.3	UER		
		14	1458	44.07	19	22.33	155	12.65	1.77		2.2	17	0	81	.11	5	.7	.4	UER		
45		14	15 1	34.25	19	21.98	155	13.09	1.68		1.4	10	0	144	.05	5	.5	.3	UER		
		14	1511	51.94	19	22.48	155	13.24	2.70	2.0	2.4	18	0	68	.11	5	.6	1.5	UER		
		14	1520	25.87	19	21.92	155	12.72	1.60	1.4		13	0	99	.07	6	.5	.4	UER		
		14	1521	47.00	19	22.21	155	12.78	2.93	1.8	2.2	18	0	76	.10	5	.6	1.4	UER		
		14	1524	11.01	19	22.00	155	12.83	6.26	2.5	2.6	24	0	74	.10	6	.6	1.3	UER		
		14	1525	42.58	19	21.81	155	12.50	1.02	1.4	1.1	12	0	107	.09	6	.7	.9	UER		
		14	1527	55.57	19	21.91	155	12.84	1.35	1.9	2.7	18	0	91	.11	5	.6	.6	UER		
		14	1534	38.56	19	22.00	155	12.76	1.31	1.4	1.5	14	0	100	.07	6	.5	.4	UER		
		14	1536	54.46	19	22.19	155	13.04	5.48	2.2	3.1	20	0	74	.09	6	.6	.6	UER		
		14	1554	3.24	19	22.55	155	12.64	1.42		2.3	14	0	113	.13	5	.1	.5	UER		
		14	16 0	26.25	19	22.35	155	12.44	1.59		2.3	13	0	112	.07	5	.7	.3	UER		
		14	16 1	56.14	19	22.72	155	12.51	5.32	2.3	3.0	22	0	89	.14	5	.7	.8	UER		
		14	16 7	55.43	19	22.58	155	13.59	4.84		2.2	13	0	96	.12	6	1.0	2.9	UER		
		14	1610	1.70	19	22.13	155	13.15	1.90	1.8	1.9	12	0	86	.08	5	.7	.3	UER		
		14	1621	47.06	19	22.73	155	12.64	1.71		1.8	14	0	117	.06	5	.5	.2	UER		
		14	1625	19.53	19	22.36	155	12.57	2.03	2.2	3.0	19	0	82	.10	5	.5	1.7	UER		
		14	1630	19.56	19	22.31	155	12.34	1.67	2.6	3.4	21	0	84	.10	6	.6	.4	UER		
		14	1633	40.14	19	22.22	155	12.44	1.54	1.4	1.7	14	0	109	.08	6	.7	.3	UER		
		14	1640	10.43	19	22.38	155	12.64	1.74	1.7	1.6	15	0	82	.08	5	.6	.3	UER		
		14	1654	6.82	19	23.24	155	11.92	.14	1.4	1.6	12	0	178	.19	5	1.8	1.4	GLN		
		14	1655	59.12	19	22.63	155	12.59	1.66	1.7	2.0	15	0	115	.09	5	.7	.3	UER		
		14	1657	17.12	19	22.29	155	12.60	4.42	2.2	2.2	16	0	109	.10	5	.8	1.4	UER		
		14	17 5	55.96	19	22.55	155	12.74	6.41	2.6	3.0	20	0	96	.05	9	.5	.9	UER		
		14	1735	2.97	19	22.53	155	12.60	3.62	2.1	2.4	17	0	61	.07	5	.5	1.0	UER		
		14	1742	8.11	19	22.39	155	12.51	2.75	1.7	2.1	16	0	82	.09	5	.6	1.5	UER		
		14	1744	53.86	19	22.43	155	12.52	5.69	2.0	2.2	18	0	50	.09	5	.5	1.1	UER		
		14	1749	59.37	19	22.47	155	12.04	4.11	2.2	2.9	25	0	89	.16	6	1.0	1.4	UER		
		14	1831	22.31	19	20.10	155	9.02	8.64	2.2	2.6	24	0	74	.11	11	.8	.6	UER		

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YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	LON	W	DEPTH		AMP	DUR	GAP		RMS	MIN	ERH	ERZ	REMK	
											DEG	MIN			NR	NS	DEG	SEC	DIS	KM	KM	
1976	JUL	14	2035	22.09	19	23.42	155	14.77			1.10	1.9	2.1	13	0	70	.09	3	.4	.3	GLN	
		14	2037	13.06	19	23.25	155	14.65			1.18	1.9	2.6	20	0	63	.11	3	.4	.4	GLN	
		14	2119	30.82	19	22.99	155	14.61			.29	1.8	2.7	19	0	65	.16	3	.6	.7	UER	
		14	2221	43.49	19	22.19	155	14.04			2.00	1.7	2.1	14	0	71	.11	5	.7	.0	UER	
		14	2241	51.36	19	19.97	155	9.08			7.70	2.4	2.9	28	0	77	.14	9	.9	1.2	UER	
		14	2311	54.50	19	21.36	155	14.72			.22	1.4	1.4	12	0	83	.08	5	.5	2.5	UER	
		15	016	56.78	19	22.66	155	14.33			.43	1.2	1.4	11	0	92	.05	4	.3	.3	UER	
		15	2	30.44	19	25.37	155	16.21			.48	1.3	1.1	1	0	151	.19	4	1.5	.8	SPC	
		15	218	36.34	19	22.16	155	12.61			1.93	1.4	1.8	13	0	106	.05	6	.4	.2	UER	
		15	221	48.51	19	23.06	155	14.77			2.00	1.1	1.8	10	0	115	.20	3	1.7	0	GLN	
		15	248	8.31	19	22.69	155	14.71			.33	1.9	2.8	20	0	69	.12	4				

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YEAR	MON	DA	HR	MIN	SEC	ORIGIN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	REMK
1976	JUL	24	2053	44.16	19	23.05	155	6.85		8.47	2.9	3.1	29	0	65	.08	9	.4	.6	GLN										
		24	2346	30.98	19	23.34	155	14.74		5.03	3.3	3.9	28	0	45	.12	5	.5	.6	GLN										
		25	114	38.87	19	20.00	155	13.14		7.85	2.1	2.5	25	0	68	.08	7	.5	.8	UER										
		25	2252	54.61	19	18.85	155	13.75		9.50	2.7	3.2	32	0	66	.13	7	.8	.7	POL										
		26	418	4.91	19	23.28	155	14.50		5.04	2.5	2.9	29	0	49	.12	3	.5	.6	GLN										
		26	1533	8.29	19	21.82	155	6.10		7.86	2.7	2.9	30	0	79	.11	7	.7	.6	UER										
		27	714	26.85	19	22.27	155	4.89		9.39	4.0	4.1	32	0	83	.12	9	.9	.5	MER										
		27	128	15.96	19	11.97	155	30.27		42.28	2.8		24	0	157	.18	19	4.4	8.3	LSW										
		27	2037	12.69	19	23.49	155	14.57		4.70	3.6	4.0	30	0	46	.12	3	.5	.6	GLN										
		27	2214	6.43	19	21.46	155	7.59		8.01	2.9	3.3	29	0	75	.11	8	.6	.8	UER										
		27	2339	53.27	19	20.02	155	7.00		7.60	2.4	2.9	25	0	107	.11	7	.6	.9	UER										
		28	358	37.44	19	19.57	155	11.52		6.81	2.4	3.0	28	0	93	.15	6	.9	1.5	UER										
		28	163	19.82	19	23.73	155	23.92		9.67	3.5	3.3	31	0	66	.12	7	.6	.5	UKF										
		28	1839	6.19	19	19.63	155	14.28		7.35	2.2	2.7	26	0	68	.11	6	.6	1.0	UER										
		28	2334	22.78	19	20.13	155	8.57		8.29	2.6	3.1	28	0	76	.12	9	.7	.6	UER										
		29	135	59.43	19	23.64	155	14.75		2.58	2.2	2.8	22	0	68	.12	3	.6	1.9	GLN										
		29	257	38.83	19	23.54	155	14.64		4.17	2.7	3.1	22	0	62	.13	3	.7	1.1	GLN										
		29	341	.63	19	20.96	155	2.70		6.24	2.5	3.0	30	0	143	.12	11	.9	.7	MER										
		29	856	57.57	19	29.17	154	50.55		7.76	2.9	3.3	27	0	271	.15	23	3.7	.9	LER										
		29	1043	12.25	19	21.46	155	6.24		7.77	2.4	2.7	28	0	85	.15	7	.9	.8	UER										
46		29	1429	54.89	19	21.79	155	7.74		7.69	2.5	3.0	25	0	79	.14	8	.6	1.1	UER										
		29	1953	6.94	19	19.51	155	15.94		8.90	2.5	2.9	29	0	91	.14	6	.8	.8	KOA										
		29	2246	35.39	19	23.07	155	15.42		4.91	2.9	3.3	28	0	72	.19	4	.8	.9	SPC										
		30	26	31.54	19	19.60	155	11.24		8.26	2.8	3.0	30	0	93	.13	6	.8	.8	UER										
		30	59	43.69	19	20.40	155	6.66		8.04	3.8	4.1	33	0	104	.09	7	.5	.4	UER										
		30	82	34.99	19	20.50	155	6.76		9.26	2.7	3.1	29	0	100	.09	7	.7	.4	UER										
		30	1825	47.04	19	21.28	155	6.13		8.59	2.8	3.4	31	0	89	.12	7	.8	.5	UER										
		30	2319	14.05	19	20.27	155	12.19		8.62	3.0	3.5	31	0	75	.13	6	.6	.6	UER										
		31	943	46.96	19	21.17	155	6.20		8.36	2.9	2.8	0	91	.12	7	.8	.6	UER											
		31	955	24.01	19	23.46	155	14.73		5.17	3.1	3.3	20	0	64	.10	5	.5	.6	GLN										
		31	1137	1.21	19	19.48	155	18.24		8.80	2.3	2.8	27	0	95	.11	5	.7	.8	KOA										
		31	1312	44.26	19	19.89	155	16.31		7.86	2.2	2.9	28	0	90	.14	5	.8	1.0	KOA										
		31	1651	36.05	19	24.28	155	15.86		4.61	3.3	3.8	29	0	109	.12	3	.5	.6	SPC										
AUG	1	92	55.71	19	21.57	155	6.35		8.22	2.7	3.2	17	0	180	.09	15	1.5	.9	UER											
	1	1151	33.27	19	23.19	155	14.53		1.76	3.0	3.3	21	0	46	.12	3	.6	31.5	GLN											
	1	151	17.48	19	21.84	155	5.26		8.16	3.4	3.4	29	0	78	.11	8	.7	.5	MER											
	1	1639	18.04	19	23.58	155	14.80		6.21	3.6	3.8	25	0	85	.12	6	.6	1.2	GLN											
	1	1647	19.81	19	23.34	155	14.65		1.46	2.5		18	0	68	.11	3	.5	.4	GLN											
	1	1648	10.58	19	23.46	155	14.62		1.98	2.5	2.8	16	0	70	.12	3	.5	23.4	GLN											
	2	253	49.48	19	16.57	155	23.50		5.36	2.3	2.6	26	0	134	.16	9	.9	1.2	SWR											
	2	637	1.42	19	21.52	155	15.11		9.87	3.2	3.5	29	0	62	.10	5	.6	.4	KOA											
	3	330	17.09	19	19.35	155	12.62		8.48	3.0	3.4	33	0	85	.15	7	.8	.9	UER											
	3	523	31.91	19	26.50	154	53.67		8.88	3.0	3.5	27	0	227	.09	19	1.4	.5	LER											
	4	2124	8.35	19	23.45	155	14.47		4.18	2.3	2.9	24	0	53	.14	3	.7	1.0	GLN											
	4	224	20.39	19	23.42	155	14.57		2.58	2.1	2.6	26	0	45	.15	3	.6	1.9	GLN											
	5	957	20.60	19	24.14	155	15.89		1.54	2.2	3.0	19	0	108	.11	3	.5	.3	SPC											
	6	338	55.38	19	22.71	155	5.58		8.12	3.2	3.6	30	0	76	.11	8	.6	.6	MER											
	6	755	40.42	19	22.51	155	5.92		8.05	2.3	2.9	26	0	71	.13	7	.8	1.1	MER											

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YEAR	MON	DA	HR	MIN	SEC	ORIGIN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	REMK	
1976	AUG	6	1450	31.83	19	24.22	155	15.33		1.26	2.3	3.2	18	0	115	.09	3	.4	.4	SPC											
		7	131	45.35	19	21.29	155	2.69		6.59	3.3	3.8	27	0	140	.11	12	.8	.8	MER											
		7	1142	19.32	19	19.17	155	11.98		9.06	3.1	3.8	23	0	98	.10	7	.7	.9	UER											
		7	1414	31.87	19	23.67	155	7.77		7.91	2.8	3.3	21	0	97	.10	9	.8	.9	UER											

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YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	LON	W	DEPTH	AMP	DUR	GAP				RMS	MIN	ERH	ERZ	REMK					
														DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	REMK
1976	AUG	20	022	45.09	19	21.89	155	4.98	7.61	2.3	2.8	28	0	78	.13	9	.7	.9	MER								
		20	328	30.79	19	22.07	155	4.96	6.88	2.6	3.3	29	0	80	.16	9	.9	1.3	MER								
		20	116	22.66	19	22.10	155	4.77	6.43	2.3	2.5	25	0	95	.15	9	.9	1.0	MER								
		20	1225	43.17	19	20.51	155	6.51	7.35	2.6	2.8	27	0	103	.13	7	.8	1.2	UER								
		20	1319	23.28	19	21.83	155	15.11	8.54	2.1	2.6	25	0	59	.13	4	.8	.9	KOA								
		21	254	17.41	19	27.09	155	27.86	9.70	2.9	3.0	35	0	43	.13	13	.6	.3	UKF								
		21	1557	4.96	19	19.74	155	8.01	8.16	2.4	2.9	27	0	90	.11	9	.6	.6	UER								
		21	1951	14.24	19	19.52	155	12.59	7.66	2.4	2.7	30	0	82	.15	7	.8	1.2	UER								
		22	53	18.27	19	20.68	155	13.66	8.43	2.1	2.5	31	0	56	.16	7	.8	1.0	UER								
		22	1626	55.87	19	22.95	155	14.34	4.34	2.2	3.3	22	0	66	.12	3	.7	1.1	UER								
		22	179	18.33	19	24.93	155	24.87	9.48	2.4	2.9	23	0	58	.10	9	.5	.8	UKF								
		22	1726	14.98	19	20.50	155	7.45	8.32	2.2	2.6	24	0	83	.11	9	.7	.7	UER								
		22	1736	37.78	19	20.76	155	13.61	9.58	2.5	2.8	24	0	62	.09	7	.6	.4	UER								
		23	1132	2.33	19	24.21	155	2.29	7.46	2.9	3.4	28	0	127	.11	9	.7	.6	MER								
		23	1834	23.30	19	23.49	155	21.71	9.75	2.1	2.5	23	0	54	.09	9	.5	.3	UKF								
		23	2349	7.25	19	20.17	155	7.32	7.38	2.4	2.9	29	0	98	.10	8	.6	.8	UER								
		24	29	23.73	19	20.94	155	11.09	7.11	2.1	2.5	27	0	70	.15	8	.9	1.3	UER								
		24	1937	1.90	19	17.51	155	21.61	5.87	2.1	2.6	33	0	123	.18	9	.9	2.0	SWR								
		25	206	32.36	19	19.95	155	9.96	8.45	2.3	2.7	27	0	85	.12	7	.7	.8	UER								
		26	319	43.60	19	21.78	155	15.08	10.15	3.6	4.0	31	0	59	.10	4	.6	.3	KUA								
47		26	710	45.38	19	21.62	155	8.82	8.87	2.2	2.7	26	0	68	.09	9	.5	.5	UER								
		26	736	13.04	19	19.66	155	15.91	8.21	2.0	2.6	29	0	89	.14	6	.8	1.0	KOA								
		26	1451	14.03	19	19.84	155	10.64	8.40	2.2	2.7	27	0	89	.12	7	.7	.8	UER								
		27	050	44.29	19	22.17	155	8.40	7.91	2.5	3.0	31	0	61	.16	8	.7	1.0	UER								
		28	734	59.95	19	21.41	154	59.85	1.88	2.5	3.2	18	1	203	.12	12	1.4	1.0	LER								
		28	1859	55.45	19	21.29	155	13.39	9.66	3.0	3.6	30	0	55	.09	6	.5	.3	UER								
		28	1817	47.52	19	22.02	155	6.76	7.62	2.3	2.9	22	0	73	.12	8	.8	1.5	UER								
		28	1331	42.73	19	20.00	154	58.91	4.78	2.5	3.0	14	3	238	.18	14	2.2	1.4	LER								
		29	1549	6.23	19	21.24	155	1.53	7.40	2.1	2.1	21	0	184	.19	13	2.2	1.4	MER								
		29	2036	25.54	19	27.89	154	52.91	7.68	2.9	3.5	18	0	258	.14	19	3.2	1.0	LER								
		29	237	14.28	19	20.27	155	13.78	8.39	2.0	2.4	17	0	69	.09	6	.6	.9	UER								
		30	654	13.35	19	21.46	155	6.12	6.70	2.1	2.4	23	0	86	.12	7	.8	1.2	UER								
		30	1035	50.88	19	20.62	155	13.08	7.84	2.1	2.7	28	0	62	.16	6	.8	1.1	UER								
		30	2143	46.64	19	20.57	155	12.13	9.01	2.3	2.9	31	0	71	.15	7	.7	.8	UER								
		30	224	23.91	19	12.31	155	32.08	41.68	2.5	1.8	31	0	84	.18	20	2.0	5.2	LSW								
		31	258	14.50	19	20.57	155	6.67	8.34	2.2	2.6	30	0	100	.12	7	.7	.6	UER								
		31	1041	8.47	19	23.42	155	29.67	10.18	4.0	4.1	35	0	40	.13	13	.6	.3	UKF								
		31	1120	3.78	19	20.57	155	7.40	8.36	2.2	2.7	28	0	90	.12	8	.6	.7	UER								
		31	140	38.53	19	19.89	155	7.01	9.05	3.4	3.8	30	0	110	.12	7	.9	.6	UER								
		31	2041	8.04	19	19.60	155	11.81	7.73	2.2	2.5	28	0	90	.11	6	.6	.9	UER								
		SEP	1	029	52.15	19	56.50	155	31.85	15.73	2.8	2.5	36	3	158	.17	53	1.0	20.6	KOH							
		1	639	35.71	19	23.90	155	28.55	9.11	2.2	2.6	31	0	47	.14	14	.7	1.1	UKF								
		1	1729	10.43	19	22.31	155	4.23	7.69	2.5	2.9	25	0	95	.14	10	.9	1.0	MER								
		1	2034	34.25	19	19.40	155	11.06	8.39	2.7	3.4	33	0	99	.15	7	.8	.9	UER								
		2	1020	26.76	19	21.18	155	3.20	7.62	3.5	4.0	31	0	118	.11	11	.8	.5	MER								
		2	201	49.06	19	2.71	154	58.44	37.61	2.8	2.4	31	4	278	.11	37	2.3	2.6	DIS								
		2	2216	9.45	19	23.44	155	3.52	7.29	2.6	3.0	29	0	111	.12	11	.6	.9	MER								
		3	116	1.41	19	19.60	155	7.75	7.68	2.4	2.5	30	0	99	.11	8	.5	.7	UER								

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YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	LON	W	DEPTH	AMP	DUR	GAP				RMS	MIN	ERH	ERZ	REMK				
														DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	KM	REMK
1976	SEP	3	116	55.89	19	19.77	155	10.60	8.90	3.1	3.5	33	0	91	.12	7	.7	.6	UER							
		3	728	27.24	19	20.91	155	16.92	2.52	1.8	2.5	18	0	69	.15	5	.8	2.5	KOA							
		3	126	55.99	19	21.06	155	8.06	8.45	2.9	3.1	26	0	75	.10	9	.5	.6	UER							

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YEAR	MON	DA	HRMN	TIME	LAT	N	LON	W	DEPTH			AMP	DUR	GAP	RMS	MIN	ERH	ERZ	KM	REMK
									KM	MAG	NR									
1976	SEP	11	9 7	52.44	19	26.17	154	56.96	7.23	1.8	2.1	15	0	171	.13	13	1.3	1.5	LER	
		11340	15.00	19	22.56		155	3.02	7.67	2.2	2.4	25	0	123	.09	12	.7	.6	MER	
		11343	14.39	19	21.50		155	6.10	8.20	2.1	2.4	22	0	85	.11	7	.7	1.4	UER	
		11185	5 40.11	19	22.71		155	26.87	10.00	1.8	2.3	25	0	52	.09	12	.5	.3	UKF	
		112352	35.00	19	20.23		155	13.29	8.19	1.8	2.4	22	0	64	.08	6	.5	1.0	UER	
	12	357	16.74	19	26.10		154	58.09	3.46	2.1	2.3	14	0	159	.13	11	1.4	1.9	LER	
	121234	51.87	19	20.08		155	8.51	8.22	2.3	2.9	29	0	77	.13	9	.6	.7	UER		
	121321	43.29	19	25.81		154	58.01	4.47	2.8	3.3	27	0	164	.18	11	1.4	1.1	LER		
	133 9	22.53	19	21.98		155	7.39	8.30	2.8	3.0	30	0	70	.11	9	.5	.6	UER		
	131248	4.32	19	20.90		155	13.10	9.42	2.8	3.4	28	0	59	.11	6	.5	.5	UER		
	131515	8 52.32	19	17.48		155	13.01	9.78	2.4	2.7	28	0	132	.12	9	.9	.5	POL		
	132352	29.13	19	20.19		155	8.41	8.66	2.3	2.8	28	0	78	.13	9	.6	.8	UER		
	14229	17.68	19	29.06		154	51.98	6.81	2.4	2.9	23	0	264	.18	21	4.0	1.3	LER		
	141235	57.19	19	20.49		155	4.17	3.63	2.3	2.8	22	0	113	.10	9	.7	1.2	MER		
	152 1	25.72	19	21.97		155	5.05	8.83	3.6	4.0	32	0	78	.12	8	.8	.5	MER		
	151212	1	7.67	19	23.00		155	5.20	7.67	2.9	3.4	30	0	83	.12	8	.6	.8	MER	
	151425	48.59	19	22.19		155	6.77	7.44	2.1	2.8	25	0	71	.13	8	.8	1.1	UER		
	151955	22.63	19	24.87		155	26.11	7.19	2.2	2.6	30	0	55	.15	10	.7	1.7	UKF		
	16617	22.41	19	22.54		155	6.25	7.12	2.4	2.8	29	0	67	.15	8	.8	1.1	UER		
	16936	28.04	19	26.73		154	56.49	1.97	2.4	2.7	16	0	168	.19	14	1.8	36.1	LER		
88	161458	38.48	19	23.15		155	25.26	8.86	2.2	2.8	29	0	55	.13	10	.7	1.0	UKF		
	161756	58.39	19	20.37		153	39.53	49.87	3.4	3.4	26	0	338	.0914	65	59.9	12.7	DIS		
	17230	2.96	19	19.84		155	8.78	8.28	2.5	3.1	28	0	75	.12	9	.6	.6	UER		
	171147	19.10	19	12.89		155	27.36	9.59	2.8	3.2	29	0	112	.17	15	1.2	.5	LSW		
	171313	10.77	19	21.63		155	2.71	7.02	2.7	3.1	27	0	136	.14	12	1.0	.8	MEH		
	171815	39.62	19	17.14		155	22.76	7.43	2.2	2.7	30	0	122	.17	7	.9	1.5	SWR		
	171930	18.72	19	24.74		155	14.95	40.57	2.3	2.8	23	0	64	.11	4	1.3	3.8	DEP		
	182 1	45.88	19	22.28		155	4.69	6.89	2.3	2.6	28	0	86	.13	9	.7	1.1	MER		
	181114	58.11	19	19.28		155	13.35	6.94	2.2	2.6	30	0	72	.15	7	.8	1.3	UER		
	181857	17.42	19	19.56		155	12.13	6.94	2.2	2.6	28	0	87	.14	6	.6	1.2	UER		
	181914	51.75	19	20.52		155	4.87	5.63	2.4	2.7	28	0	114	.13	8	.8	1.2	MER		
	191544	11.51	19	21.01		155	17.09	1.23	2.0	3.0	13	2	117	.10	4	.7	.4	KOA		
	192019	26.41	19	23.91		155	2.62	7.50	2.3	2.9	27	0	124	.14	10	1.0	.9	MER		
	192344	15.17	19	24.02		155	2.98	8.53	2.3	2.8	29	0	117	.12	10	.8	.6	MER		
	20141	19.40	19	20.07		155	7.25	9.24	2.6	3.1	26	0	101	.10	8	.7	.5	UER		
	201716	38.31	19	21.98		155	6.57	6.60	2.3	2.6	28	0	75	.15	7	.8	1.3	UER		
	201730	8.99	19	21.40		155	30.29	9.48	2.3	2.6	29	0	38	.13	12	.5	1.0	HEA		
	201928	25.90	19	21.88		155	16.12	.78	2.0	3.1	21	0	59	.18	4	.7	3.2	KOA		
	21343	27.57	19	20.53		155	6.89	9.09	2.7	3.2	31	0	98	.10	7	.6	.4	UER		
	21935	49.78	19	20.78		155	6.54	9.32	3.2	3.8	29	0	97	.11	7	.7	.5	UER		
	211621	37.29	19	21.12		155	6.98	6.55	2.4	2.8	25	0	86	.15	7	.9	1.6	UER		
	21192	22.92	19	24.88		155	12.74	5.95	2.2	2.5	30	0	46	.14	7	.7	1.2	GLN		
	212153	2.31	19	19.27		155	16.15	9.35	2.0	2.5	24	0	97	.09	6	.6	.9	KOA		
	22415	3.69	19	20.02		155	11.99	7.07	2.4	2.6	28	0	80	.15	6	.8	1.1	UER		
	221232	25.30	19	22.13		155	6.29	7.67	2.2	2.6	26	0	73	.13	7	.8	1.0	UER		
	221718	48.04	19	21.32		155	13.23	9.47	2.2	2.7	27	0	55	.12	6	.6	.7	UER		
	231521	21.61	19	16.96		155	22.87	6.00	2.1	2.6	25	0	123	.19	8	1.1	3.4	SWR		
	24123	38.61	19	20.03		155	8.68	8.11	2.4	2.7	25	0	74	.14	9	.8	1.0	UER		

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## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	TIME	LAT	N	LON	W	DEPTH			AMP	DUR	GAP	RMS	MIN	ERH	ERZ	KM	REMK
									KM	MAG	NR									
1976	SEP	24	157	2.29	19	21.20	155	13.37	9.66	2.6	3.1	33	0	54	.11	6	.6	.3	UER	
		241228	18.91	19	19.90		155	8.12	9.28	1.9	3.1	20	0	86	.10	9	.8	.9	UER	
		24174	22.14	19	21.12		155	49.63	12.22	2.6	3.3	24	0	121	.22	18	2.4	1.9	KON	
		242251	31.28	19	20.61		155	6.68	8.95	2.9	3.7	32	0	99	.11	7	.7	.5	UER	
		254 2	.06	19	27.33		155	21.50	6.01	2.3	3.3	24	0	78	.15	9	.7	2.2	UKF	
		251554	55.88	19	26.77		155	23.09	10.24	3.0	3.2	23	0	74	.12	11	.6	.9	UKF	
		251720	50.41	19	20.43		155	6.84	9.07	2.7	3.3	26	0	101	.11	7	.8	.5	UER	
		26650	44.95	19	24.75		155	26.23	8.54	2.3	3.2	24	0	60	.14	11	.9	1.5	UKF	
		261834	20.45	19	20.96		155	11.21	7.76	2.3	2.7	25	0	69	.13	8	.8	1.2	UER	
		27331	14.06	19	15.55		155	7.41	40.45	2.7	1.6	35	5	260	.14	47	2.4	4.7	PPL	
		27846	57.71	19	25.51		155	25.78	10.29	2.9	3.2	32	0	48	.12	11	.6	.3	UKF	
		27127	54.08	19	19.69		155	12.59	8.60	2.7	3.1	27	0	79	.15	7	.9	1.0	UER	
		27228	8.42	19	22.77		155	6.27	7.47	2.6	3.0	30	0	69	.13	8	.7			

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HR	MIN	LAT	N	LON	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	REMK		
1976	OCT	7	22	9	14.10	19	22.00	155	6.20	6.90	2.4	2.8	29	0	76	.15	7	.9	1.4	UER								
		8	1358	8.12	19	19.79	155	8.58	9.29	2.5	3.2	25	0	77	.11	9	.7	.5	UER									
		8	1629	29.80	19	33.19	155	51.58	26.50	3.3	3.3	37	2	147	.18	15	1.3	2.8	KON									
		8	2253	53.01	19	23.12	155	6.72	9.17	3.2	3.7	29	0	66	.12	9	.7	.7	GLN									
		9	1611	53.75	19	22.74	155	29.83	9.87	2.9	3.2	31	0	88	.16	14	.4	.4	UKF									
10		5	1	26.28	19	30.12	155	15.57	9.40	2.2	2.7	31	0	101	.15	13	.7	1.1	GLN									
10		10	650	59.28	19	20.57	155	4.54	6.43	2.0	3.1	28	0	112	.14	8	.8	1.2	MER									
10		1217	16.39	19	22.12	155	6.45	7.12	2.4	2.6	23	0	73	.15	9	.9	1.4	UER										
10		13	5	45.84	19	21.56	155	8.13	9.31	2.6	3.4	29	0	69	.11	9	.7	.5	UER									
10		1740	38.75	19	19.56	155	11.03	8.26	2.2	2.6	25	0	95	.11	7	.7	.9	UER										
10		1931	50.85	19	24.02	155	27.76	9.21	2.5	3.0	32	0	44	.17	13	.8	1.4	UKF										
11		1619	5.05	19	21.00	155	11.17	9.61	2.2	2.6	24	0	76	.11	8	.8	.5	UER										
11		1619	57.69	19	23.44	155	2.60	7.78	2.2	2.5	23	0	127	.12	11	.8	1.0	MER										
11		1621	5.02	19	23.43	155	2.08	8.71	1.2	9	0	136	.06	10	.8	1.8	MER											
11		2011	47.47	19	29.51	155	43.95	10.18	2.3	2.5	21	0	69	.17	14	1.1	.6	MOK										
12		1437	51.22	19	11.69	155	28.32	6.91	2.2	2.7	20	0	112	.19	16	1.4	3.2	LSW										
12		19	8	39.31	19	20.50	155	3.80	5.78	2.0	2.3	22	0	105	.16	9	1.1	1.4	MER									
12		1914	14.39	19	27.27	155	14.65	31.91	2.5	2.9	32	0	53	.10	8	.7	1.8	DEP										
12		23	4	48.64	19	53.05	155	6.89	30.22	2.4	2.0	32	6	241	.15	38	1.3	1.6	KKU									
13		18	8	2.45	19	20.30	155	16.46	30.62	2.5	2.8	33	0	82	.10	6	.8	1.4	DEP									
13		2120	48.49	19	22.93	155	4.75	7.61	2.4	2.7	24	0	89	.10	9	.5	.8	MER										
13		2237	40.67	19	20.27	155	11.90	9.04	1.7	2.5	26	0	77	.13	7	.7	.9	UER										
13		2328	39.99	19	17.04	155	23.32	6.52	1.9	2.9	24	0	120	.16	8	.9	2.1	SWR										
14		819	48.75	19	26.51	154	55.23	9.05	2.8	3.3	16	0	192	.15	16	2.4	1.3	LER										
14		950	49.25	19	15.19	155	18.97	49.01	2.3	2.2	31	0	158	.11	10	1.4	3.2	HLP										
14		1211	17.59	19	19.35	155	12.53	7.63	2.0	2.7	23	0	86	.13	7	.8	1.4	UER										
14		1336	20.13	19	25.24	155	17.17	9.16	1.2	1.9	10	0	147	.11	5	1.7	2.6	LPC										
14		1417	8.59	19	22.19	155	5.00	7.47	2.0	2.7	23	0	92	.11	8	.7	.9	MER										
14		1818	15.65	19	27.54	155	21.27	6.92	2.7	3.0	27	0	50	.12	9	.6	1.2	UKF										
14		1818	16.87	19	27.41	155	21.61	6.29	2.4	2.8	23	0	88	.12	9	.6	1.7	UKF										
14		2317	6.95	19	22.67	155	5.12	9.09	2.7	3.5	28	0	82	.12	8	.8	.8	MER										
15		020	38.91	19	19.55	155	13.95	7.73	2.5	3.2	29	0	63	.14	6	.8	1.1	UER										
15		148	28.41	19	24.16	155	26.60	9.53	2.1	2.8	30	0	49	.11	12	.5	.4	UKF										
15		1256	17.65	19	15.54	155	33.64	8.20	2.5	3.0	23	0	173	.19	17	1.7	1.9	LSW										
15		2355	13.79	19	26.94	155	24.56	7.55	2.6	3.1	26	0	58	.13	10	.7	1.6	UKF										
16		1921	20.53	19	20.28	155	9.75	9.11	2.1	2.3	23	0	78	.08	7	.5	.6	UER										
17		312	22.68	19	19.63	155	12.22	10.04	2.5	3.3	26	0	85	.09	6	.6	.3	UER										
17		557	16.75	19	20.04	155	8.27	9.33	2.7	3.6	29	0	82	.10	9	.6	.4	UER										
17		949	11.99	19	21.60	155	6.07	8.78	2.6	3.6	26	0	83	.12	7	.7	.9	UER										
17		15	8	26.18	19	21.96	155	27.94	9.58	2.8	3.3	31	0	54	.15	10	.8	.4	HEA									
17		2242	15.07	19	22.09	155	5.06	7.96	2.0	2.6	24	0	79	.08	8	.5	.8	MER										
17		2245	7.10	19	20.74	155	4.25	6.29	2.0	2.7	23	0	102	.09	9	.6	.7	MER										
18		044	30.52	19	5.14	155	27.64	44.67	2.4	2.4	25	2	185	.11	24	1.7	1.4	LSW										
18		128	50.67	19	26.32	155	25.94	9.55	2.3	2.9	32	0	32	.12	12	.5	.5	UKF										
18		133	50.08	19	23.87	155	26.87	9.43	2.1	2.9	26	0	53	.12	13	.6	.7	UKF										
18		739	15.52	19	26.63	154	56.55	4.92	2.4	2.9	26	4	172	.20	14	1.3	1.4	LER										
18		1754	8.90	19	19.62	155	11.69	7.39	2.0	2.9	27	0	91	.14	6	.8	1.2	UER										
18		1932	50.31	19	37.23	155	48.93	11.15	1.8	2.4	20	0	126	.16	27	1.3	.6	KON										

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## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HR	MIN	LAT	N	LON	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	REMK	
1976	OCT	18	2249	24.00	19	31.39	155	58.23	9.80	2.4	2.7	17	0	237	.15	23	3.0	.6	KON								
		19	25	45.98	19	26.14	154	55.82	8.27	2.7	3.2	21	0	187	.12	15	1.4	.8	LER								
		19	457	23.72	19	19.82	155	52.42	10.80	2.7	2.9	19	0	167	.17	22	1.6	.6	KON								
		19	851	1.02	19	22.31	155	4.68	7.04	2.0	2.5	26	0	87	.11	9	.6	.8	MER								
		19	1037	26.00	19	17.90	155	24.10	7.21	1.8	2.7	21	0	108	.15	10	1.0	1.9	SWR								
19		2311	50.41	19	20.31	155	6.99	9.03	2.7	3.6	28	0	101	.11	7	.7	.5	KON									
20		237	28.37	19	50.09	155	10.55	51.18	2.8	2.9	31	3	265	12.50	2.7	3.3	PPL										
20		327	6.96	19	17.82	155	21.02	5.16	1.7	2.9	21	0	122	.11	8	.7	1.										

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	LN	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	
					DEG	MIN	DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM
1976	OCT	27	1224	6.58	19	20.74	155	7.15	8.73	2.2	3.3	25	0	91	.10	8	.6	.8 UER	
		27	2151	55.51	19	19.37	155	15.59	8.28	1.6	2.6	20	0	90	.08	6	.5	1.0 KOA	
		27	23	7	56.51	19	22.22	155	3.07	7.39	2.6	20	0	122	.11	12	.7	.9 MER	
		28	041	27.13	19	31.19	155	29.70	6.20	2.4	3.3	28	0	71	.18	11	.8	2.7 NER	
		28	523	59.88	19	23.32	155	2.97	7.44	1.8	2.5	24	0	121	.17	11	1.1	1.5 MER	
		28	654	13.13	19	20.02	155	8.56	8.42	1.8	3.0	25	0	76	.12	9	.7	.8 UER	
		28	1355	4.31	19	19.31	155	15.66	8.94	1.8	2.6	17	0	107	.07	6	.5	1.0 KOA	
		28	1550	20.88	19	21.22	155	11.13	8.72	2.4	3.3	21	0	86	.12	9	.8	1.5 UER	
		28	2115	42.14	19	47.34	156	6.27	27.21	2.0	2.2	19	3	245	.12	51	1.7	2.4 KON	
		29	349	37.04	19	29.88	154	51.33	4.03	2.3	3.0	19	2	267	.17	22	2.1	1.2 LER	
		29	355	23.61	19	59.00	155	29.64	35.77	2.3	2.5	38	4	184	.16	34	1.2	2.0 KKU	
		29	1915	42.40	19	27.77	154	52.22	7.97	2.7	2.6	25	1	264	.17	21	2.2	1.1 LER	
		30	045	4.00	19	21.49	155	7.29	8.05	2.4	3.0	27	0	78	.13	6	.7	1.0 UER	
		30	427	3.82	19	20.46	155	7.96	7.64	2.0	2.3	21	0	83	.09	9	.6	.8 UER	
		30	9	3	54.74	19	19.89	155	8.41	8.22	2.2	3.1	27	0	80	.09	10	.5	.5 UER
		30	1538	56.43	19	26.14	155	24.11	10.63	2.0	2.8	23	0	66	.11	9	.6	.7 UKF	
		30	1810	37.14	19	29.21	155	53.48	9.87	1.9	2.3	15	0	101	.14	23	1.5	.6 KON	
		31	349	34.14	19	20.30	155	13.16	9.16	2.1	2.8	27	0	64	.13	6	.8	.9 UER	
		31	610	19.67	19	20.07	155	11.40	9.37	2.4	23	0	83	.08	7	.5	.6 UER		
		31	138	17.70	19	23.44	154	59.07	5.89	1.6	2.1	13	0	181	.12	9	1.7	3.3 LER	
NOV		31	1649	45.78	19	20.39	155	7.71	7.47	2.4	21	0	88	.10	8	.7	1.3 UER		
		31	2149	10.28	19	9.11	155	33.51	34.26	2.5	28	0	125	.14	18	1.5	3.8 LSW		
		1	151	46.87	19	28.31	155	22.82	5.71	2.2	2.7	22	0	69	.14	12	.8	2.0 UKF	
		1	442	1.53	19	18.76	155	29.13	9.50	2.4	3.3	28	0	39	.15	11	.9	1.1 HEA	
		1	746	10.02	19	29.77	154	53.55	3.69	1.7	2.6	16	0	203	.17	18	3.4	2.3 LER	
50	1	746	10.02	19	29.77	154	53.55	3.69	1.7	2.6	16	0	203	.17	18	3.4	2.3 LER		
	1	813	50.79	19	19.76	155	12.00	7.16	2.0	2.8	16	0	85	.16	6	1.2	3.3 UER		
	1	10	1	23.83	19	21.14	155	6.69	6.81	1.8	2.7	22	0	88	.12	7	.7	1.5 UER	
	1	12	6	42.52	19	31.40	155	29.79	8.38	2.3	3.0	22	0	100	.16	12	.9	2.7 NER	
	1	1533	42.80	19	41.88	155	2.97	1.15	2.0	2.8	10	0	248	.14	32	3.8	53.9 HIL		
	1	1617	56.56	19	26.02	155	24.73	8.30	1.7	2.7	24	0	58	.16	10	.9	1.9 UKF		
	2	1410	32.35	19	56.54	155	49.39	27.97	2.4	2.7	29	4	181	.16	42	1.5	1.9 KOH		
	2	1756	55.87	19	25.95	154	54.99	8.42	1.7	13	2	223	.12	16	2.0	.9 LER			
	2	1815	46.37	19	19.10	155	13.42	10.12	3.7	4.0	29	0	73	.08	7	.5	.2 UER		
	2	1915	4.41	19	26.81	154	53.90	9.95	1.5	13	0	230	.17	18	3.8	.9 LER			
	2	1936	16.05	19	22.50	155	5.86	8.74	3.3	3.7	29	0	71	.12	7	.7	.7 MER		
	2	2230	6.49	19	19.48	155	15.96	8.42	1.7	2.6	24	0	92	.11	5	.7	1.0 KOA		
	3	219	26.43	20	18.63	155	51.04	25.97	2.3	7	2	317	.04	72	3.6	3.4 DIS			
	3	331	51.36	19	20.70	155	5.81	8.14	2.4	23	0	105	.11	8	.7	.8 MER			
	3	432	28.66	19	27.41	154	54.62	5.13	2.0	2.4	17	2	188	.15	17	1.8	1.3 LER		
	3	740	57.15	19	20.83	155	6.91	5.98	2.4	21	0	92	.15	7	1.0	2.0 UER			
	3	755	23.35	19	20.87	155	9.70	8.59	1.9	2.7	26	0	68	.12	7	.6	.6 UER		
	3	19	3	51.33	19	19.88	155	16.48	35.27	2.2	2.3	31	0	91	.09	5	.8	1.5 DEP	
	4	238	59.98	19	20.78	155	6.19	8.02	1.9	2.7	26	0	100	.11	7	.6	.9 UER		
	4	313	43.13	19	26.62	155	25.39	7.42	2.0	2.6	27	0	95	.14	11	.8	1.5 UKF		
	4	315	31.39	19	20.86	155	11.48	7.00	1.8	2.6	13	0	79	.09	9	.9	1.8 UER		
	4	324	18.85	19	25.36	154	56.12	9.74	1.5	2.2	12	0	219	.11	14	2.4	.6 LER		
	4	358	26.17	19	19.31	155	11.56	7.35	1.7	2.4	22	0	99	.11	7	.7	.6 UER		

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YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	LN	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	
							DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM
1976	NOV	4	413	37.02	19	20.69	155	3.13	6.55	2.4	18	0	117	.10	10	1.1	1.5	MER	
		4	623	1.37	19	19.94	155	10.30	9.57	2.0	2.8	23	0	.87	.10	7	.8	.3	UER
		4	103	59.29	19	22.32	155	2.67	7.04	2.0	2.3	21	0	132	.11	12	.9	.7	MER
		4	1024	12.35	19	19.71	155	8.59	8.79	2.6	2.1	0	78	.10	10	.7	.8	UER	
		4	1444	55.87	19	24.38	155	16.14	2.59	2.3	3.1	19	0	115	.13	3	.8	2.4	SPC
		4	168	48.74	19	21.08	155	6.66	7.89	3.0	3.1	27	0	.90	.13	7	.8	.8	UER
		4	1748	16.84	19	19.79	155	17.04	8.21	1.5	2.5	17	0	90	.13	5	1.1	1.7	KOA
		4	2248	54.88	19	19.81	155	7.69	8.82	2.4	3.1	25	0	.97	.11	8	.7	.6	UER
		5	223	44.13	19	25.29	154	58.03	5.94	2.1	12	0	170	.06	11	.7	.9	LER	
		5	258	29.68	19	21.38	155	8.19	8.37	2.7	3.4	27	0	.70	.12	9	.6	.7	UER
		5	621	14.13	19	15.31	155	22.90	3.45	2.7	24	0	137	.14	9	.9	1.7	LSW	
		5	1134	27.13	19	19.41	155	15.52	9.72	2.7	3.3	26	0	.88	.09	6	.5	.5	KOA
		5	1257	6.56	19	21.94	155	6.98	7.83	2.0	2.6	23	0	.73	.12	8	.7	1.0	UER
		5	1347	48.53	19	22.97	154	58.54	5.04	2.0	2.3	16	0	194	.14	10	2.4	1.4	LER
		5	1446	58.16	19	19.91	155	11.78	9.25	2.1	22	0	.84	.08	6	.6	.9	UER	
		5	209	9.86	19	23.86	154	57.91	7.70	2.4	17	0	190	.15	11	2.0	1.4	LER	
		5	2041	33.38	19	21.04	155	16.09	34.12	2.7	2.8	32	0	.70	.09	5	.7	1.6	DEP
		5	2121	4.40	19	28.02	155	23.17	5.64	1.8	2.6	23	0	.50	.12	12	.6	2.2	UKF
		6	613	36.76	19	22.20	155	25.36	9.65	1.6	2.5	22	0	.57	.14	10	.9	.9	UKF
		6	1211	14.62	19	31.39	155	29.90	5.61	2.5	2.8	24	0	101	.16	11	.8	8.5	NER
		6	139	54.50	19	19.80	155	7.20	8.34	2.0	2.4	26	0	108	.12	8	.7	.8	UER
		6	1412	14.23	19	22.92	155	4.72	8.22	2.1	2.4	21	0	.90	.08	12	.4	.7	MER
		6	1450	54.92	19	22.31	155	.05	7.05	2.0	16	0	185	.10	10	1.1	1.2	LER	
		6	1738	37.07	19	28.01	154	52.20	7.44	1.8	2.5	19	3	264	.15	21	1.6	1.0	LER
		6	1835	41.51	19	21.26	155	2.55	7.31	2.1	2.5	20	0	147	.08	12	.9	.6	MER
		6	2340	47.26	19	23.58	155	25.04	9.75	3.3	3.6	50	0	.57	.12	9	.6	.5	UKF
		7	237	55.24	19	20.86	155	12.18	9.66	2.0	2.9	24	0	.67	.09	7	.6	.4	UER
		7	648	39.25	19	19.68	155	6.85	8.71	2.1	2.8	25	0	117	.09	7	.6	.5	UER
		7	725	32.18	19	23.38	155	16.98	1.62	1.0	2.1	10	0	.63	.10	3	.7	.3	SPC
		7	727	30.26	19	24.16	155	16.02	1.59	1.8	2.5	15	0	113	.10	3	.5	.3	SPC
		7	1050	25.98	19	19.50	155	12.23	7.16	2.0	2.7	21	0	.88	.12	6	1.0	1.5	UER
		7	1111	13.83	19	22.08	154	58.21	7.81	2.2	2.6	14	0	209	.06	12	1.0	.7	LER
		7	1536	37.69	19	19.45	155	11.66	7.59	1.7	2.7	23	0	.94	.12	6	.8	1.5	UER
		7	1623	.27	19	20.11	155	18.82	29.06	2.4	29	0	54	.09	7	.8	1.5	DEP	
		7	1854	56.85	19	15.54	155	34.53	8.80	2.2	3.0	21	0	169	.20	18	1.6	2.7	HEA
		8	015	24.88	19	19.78	155	7.64	7.38	1.9	2.8	25	0	.98	.13	8	.8	1.5	UER
		8	434	7.94	19	20.49	155	11.11	9.18	1.7	2.6	22	0	.77	.09	8	.6	.9	UER
		8	645	46.31	19	20.05	155	13.18	9.66	1.8	2.5	24	0	.67	.11	6	.7	.5	UER
		8	1250	18.48	19	22.16	155	30.12	9.82	1.8	2.4	21	0	.72	.10	12	.7	3.2	MOK
		8	1315	6.64	19	23.30	155	17.21	1.52	1.4	2.5	12	0	.57	.08	3	.5	.3	SPC
		8	1818	20.39	19	18.93	155	13.55	9.65	1.7	2.7	22	0	.72	.11	7	.7	.7	POL
		8	1916	18.84	19	23.02	155	4.35	7.54	1.6	2.5	17	0	.96	.10	10	.7	1.5	MER
		8	1951	5.80	19	22.36	155	6.00	7.92	2.9	3.7	29	0	.70	.10	7	.5	.7	UER
		9	040	2.31	19	26.05	154	56.15	7.21	1.6	2.2	13	0	184	.06	14	.7	.9	LER
		9	516	25.14	19	22.71	155	4.62	7.36	2.6	24	0	.90	.12	9	.6	.9	MER	
		9	813	11.48	19	20.99	155	13.19	8.61	2.5	20	0	58	.11	6	.8	1.4	UER	
		9	1217	8.24	19	26.02	154	54.58	8.63	1.9	2.7	14	0	211	.20	17	4.2	2.0	LER
		9	1419	44.59	19	19.08	155	13.92	10.04	1.7	2.7	25	0	.88	.12	7	1.0	.4	UER

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	ORIGIN TIME	LAT N DEG MIN	LON W DEG MIN	DEPTH KM	AMP MAG	DUR NR	GAP NS	RMS DEG	MIN DIS	ERH KM	ERZ KM	REMK
1976	NOV	9	1533	3.39	19 20.60	155 4.14	8.06	3.8 4.1	32	0 107	.12	9	.9	.6	MER	
		9	1717	32.00	19 20.74	155 3.67	6.84	2.0 2.6	21	0 96	.10	9	1.0	1.2	MER	
		9	1728	43.41	19 20.87	155 3.80	6.81	2.0 2.7	19	0 89	.10	10	.7	1.3	MER	
		9	1741	28.81	19 20.08	155 6.34	8.28	1.7 2.5	24	0 79	.09	9	.5	.7	UER	
		9	2034	15.64	19 20.59	155 6.37	8.85	2.0 2.7	26	0 103	.10	7	.7	.8	UER	
		9	2034	58.98	19 20.15	155 7.40	10.08	1.8 2.7	17	0 97	.11	8	1.0	1.4	UER	
		9	2056	7.84	19 20.09	155 6.88	7.89	1.8 2.6	22	0 107	.12	7	.8	1.0	UER	
		10	015	34.81	19 23.88	155 16.93	1.71	1.6 2.7	16	0 76	.06	3	.3	.2	SPC	
		10	632	14.88	19 21.90	155 4.41	8.45	2.0 2.7	20	0 88	.11	10	.8	1.3	MER	
		10	1047	26.68	19 20.86	155 11.54	10.01	1.7 2.7	21	0 73	.10	8	.7	.4	UER	
		10	121	6.21	19 20.90	155 11.79	10.01	2.0 2.7	23	0 68	.08	8	.6	.3	UER	
		10	125	28.09	19 4.70	155 23.12	24.26	2.4 2.7	30	4 208	.18	26	1.8	3.5	LSW	
		10	1815	16.62	19 20.71	155 11.73	9.94	3.1 3.7	29	0 71	.10	7	.7	.3	UER	
		11	058	35.60	19 19.50	155 22.10	5.18	1.4 2.7	19	0 120	.08	8	.5	.8	SWR	
		11	224	.30	19 27.31	154 50.41	8.91	2.0	9	0 290	.11	24	5.9	1.3	LER	
		11	239	39.05	19 20.64	155 12.59	7.62	1.6 2.5	25	0 66	.16	7	.9	1.5	UER	
		11	437	56.93	19 45.58	154 56.39	35.85	2.5 2.6	33	3 235	.17	31	1.9	2.5	HIL	
		11	716	27.18	19 21.41	155 4.99	7.45	2.1 2.8	24	0 87	.13	9	.8	1.1	MER	
		11	932	29.44	19 19.39	155 11.62	10.16	1.9 3.0	21	0 96	.09	7	.7	.5	UER	
		11	1222	23.64	19 23.89	155 16.93	1.75	1.9 3.3	17	0 67	.06	3	.3	.2	SPC	
51		11	1236	10.71	19 21.49	155 3.55	7.17	1.8 2.7	15	0 123	.09	11	1.0	1.3	MER	
		11	1313	10.42	19 23.22	155 17.08	1.63	.9 1.8	10	0 82	.04	3	.3	.1	SPC	
		11	140	41.65	19 23.32	155 17.02	1.76	1.8 3.1	15	0 61	.06	3	.3	.2	SPC	
		11	2249	14.00	19 22.10	155 6.99	6.81	1.8 2.4	21	0 71	.11	8	.7	1.5	UER	
		12	059	37.05	19 27.66	154 55.37	5.13	1.6	8	0 182	.11	15	1.9	1.3	LER	
		12	220	18.69	19 25.75	154 54.64	8.37	1.8	9	0 238	.12	17	3.5	2.2	LER	
		12	222	44.23	19 27.56	154 50.71	7.68	2.1	9	0 289	.19	25	11.9	2.5	LER	
		12	319	12.69	19 27.28	155 26.81	9.43	1.9 2.7	22	0 63	.09	14	.5	.9	UKF	
		12	722	55.05	19 23.56	155 16.91	1.77	1.1 2.1	9	0 69	.06	5	.5	.3	SPC	
		12	1654	46.51	19 21.34	155 2.46	7.12	3.5 4.1	31	0 148	.13	12	1.0	.7	MER	
		12	207	7 21.45	19 56.64	155 36.00	11.20	3.5	26	0 145	.14	28	1.9	.7	KOH	
		12	208	44.96	19 57.41	155 22.84	8.23	2.7 2.8	19	0 193	.15	40	1.8	1.1	KKU	
		13	918	49.51	19 13.99	155 17.17	11.03	2.1	12	0 242	.08	16	1.8	4.5	HLP	
		13	1114	3.35	19 21.97	155 5.07	9.18	3.7 4.1	28	0 77	.11	8	.7	.6	MER	
		13	2050	29.48	19 26.25	155 23.13	8.13	2.0 2.7	26	0 80	.15	10	.8	1.5	UKF	
		14	419	23.06	19 25.52	155 16.52	15.46	3.0 3.3	31	0 48	.07	4	.5	.7	DEP	
		14	59	13.44	19 19.16	155 16.56	9.52	2.2 3.2	28	0 102	.12	6	.8	1.3	KOA	
		14	522	45.80	19 23.26	155 16.87	1.79	1.7 2.6	16	0 46	.12	3	.7	.3	SPC	
		14	120	51.05	19 21.30	155 2.32	6.85	2.1 3.0	22	0 154	.10	12	1.0	.8	MER	
		14	1817	5.50	19 26.35	154 52.34	8.14	2.4 3.0	18	2 259	.10	21	1.2	.7	LER	
		14	2040	36.96	19 20.18	155 8.52	8.83	2.3 3.0	28	0 76	.13	9	.6	.7	UER	
		14	2325	14.40	19 23.66	155 16.89	1.78	1.3 2.7	14	0 67	.06	3	.3	.2	SPC	
		15	233	42.09	19 23.40	154 58.30	6.03	1.9 2.9	20	0 191	.17	11	1.9	1.6	LER	
		15	53	6.85	19 9.95	155 40.19	8.16	2.5 2.9	17	2 206	.22	22	2.0	4.1	HEA	
		15	917	7.99	19 20.80	155 13.02	8.22	2.3 3.8	0 69	.12	6	1.0	1.8			
		15	1035	59.09	19 21.07	155 8.43	8.36	2.7 3.2	28	0 70	.11	9	.6	.7	UER	
		15	1316	45.28	19 22.02	155 5.73	7.59	1.7 2.6	22	0 79	.10	7	.6	1.0	MER	
		15	2252	45.71	19 24.11	155 16.09	1.36	1.5 2.6	14	0 110	.06	3	.3	.2	SPC	

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	ORIGIN TIME	LAT N DEG MIN	LON W DEG MIN	DEPTH KM	AMP MAG	DUR NR	GAP NS	RMS DEG	MIN DIS	ERH KM	ERZ KM	REMK
1976	NOV	16	040	34.83	19 24.14	155 16.14	1.61	1.5	2.7	12	0 119	.07	3	.5	.3	SPC
		16	056	29.30	19 22.38	155 4.87	8.16	2.2	3.0	23	0 84	.13	9	.9	.9	MER
		16	223	35.43	19 22.59	155 4.70	9.20	3.6	4.1	32	0 88	.12	9	.8	.5	MER
		16	3	20.89	19 14.42	155 37.56	9.37	1.8	2.6	17	0 105	.20	19	1.5	2.7	HEA
		16	85	27.98	19 23.53	155 16.76	1.92	1.1	2.3	10	0 73	.07	3	.6	.3	SPC
		16	1123	22.09	19 23.38	155 16.98	1.89	2.1	3.0	13	0 63	.07	3	.5	.3	SPC
		16	123	48.16	19 17.80	155 16.22	8.09	1.7	2.9	17	0 127	.11	5	.8	1.7	KOA
		16	1944	33.56	19 25.78	155 16.72	.43	2.3	3.4	14	0 164	.10	4	.8	.6	SPC
		17	551	48.55	19 32.32	155 14.17	24.99	3.7	3.7	32	0 66	.11	17	.7	2.1	NER
		17	721	14.03	19 19.80	155 12.30	7.59	1.7	2.6	23	0 81	.12	6	.8	1.5	UER
		17	1213	8.59	19 23.05	155 16.84	1.96	2.1	3.0	16	0 53	.14	3	.8	.5	SPC
		18	433	18.19	19 20.83	155 13.50	9.65	2.3	3.1	27	0 56	.10	7	.6	.4	UER
		18	1444	25.76	19 16.61	155 21.65	7.40	1.8	2.7	17	0 133	.12	9	1.1	2.3	SWR
		18	1555	41.88	19 23.66	154 58.15	6.37	1.7	2.5	10	0 189	.11	11	1.6	1.6	LER
		18	1744	19.43	19 23.72	155 2.06	8.27	2.4	3.2	19	0 134	.12	10	.9	1.5	MER
		18	2122	58.71	19 23.28	155 17.02	9.16	1.3	2.4	12	0 59	.05	3	.5	.2	SPC
		19	2224	43.77	19 23.87	155 16.89	3.79	3.0	3.8	24	0 69	.13	3	.7	1.0	SPC
		19	318	8.70	18 59.10	155 22.58	31.13	2.9	3.2	31	0 227	.10	33	1.8	3.2	DIS
		19	352	14.10	19 23.55	154 58.13	4.97	2.4	3.2	22	0 191	.11</				

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	REMARK		
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	REMARK
1976	NOV	23	1541	47.61	19	25.99	154	53.66	8.14	2.4	3.3	18	0	230	.11	19	2.4	1.0	LER
		23	1713	2.44	19	21.17	155	6.05	8.49	2.5	3.2	23	0	92	.09	7	.6	1.1	UER
		23	2224	54.58	19	23.09	155	17.05	1.69	1.6	3.0	14	0	43	.06	3	.3	.2	SPC
		24	03	2.50	19	20.16	155	7.21	8.49	2.1	3.0	24	0	100	.09	8	.6	.9	UER
		24	852	54.62	19	20.03	155	11.43	8.74	1.7	2.7	24	0	84	.11	7	.7	.9	UER
		24	1157	37.56	19	20.94	155	6.25	8.39	2.2	3.2	23	0	96	.11	7	.8	.8	UER
		25	637	27.42	19	23.47	155	17.06	2.70	2.2	3.3	18	0	63	.12	3	.6	1.5	SPC
		25	736	1.38	18	56.53	155	31.28	27.37	2.0	2.4	23	4	256	.13	35	2.2	1.4	DIS
		25	843	33.53	19	21.79	155	15.34	9.33	1.5	2.4	16	0	60	.06	4	.5	1.0	KOA
		25	115	40.25	19	23.74	155	16.95	1.68	2.5	3.2	14	0	72	.05	3	.5	.2	SPC
		25	1430	34.57	19	28.87	154	49.83	9.94	1.8	2.4	14	1	318	.17	24	4.3	.7	LER
		25	185	14.53	19	26.99	154	54.07	8.67	2.3	2.9	14	0	212	.10	18	1.8	.7	LER
		25	1935	7.12	19	19.98	155	10.77	9.07	2.2	3.0	22	0	86	.12	7	.9	.9	UER
		25	2135	11.02	19	21.18	155	6.21	9.54	2.7	3.0	25	0	91	.11	7	.8	.5	UER
		26	27	22.64	19	22.78	155	2.75	7.24	2.4	3.2	23	0	128	.09	12	.6	1.2	MER
		26	349	14.70	19	24.25	155	16.07	1.61	2.1	3.2	18	0	114	.07	3	.5	.2	SPC
		26	635	59.15	19	20.96	155	13.06	8.93	1.7	2.5	19	0	59	.09	6	.7	1.2	UER
		26	1012	29.35	19	24.87	155	.80	7.29	2.6	20	0	142	.12	10	.9	1.0	LER	
		26	1015	58.54	19	24.23	155	15.87	4.49	3.1	3.8	27	0	46	.13	3	.6	.8	SPC
		26	1317	4.61	19	19.19	155	13.78	8.32	2.0	2.5	20	0	64	.09	7	.6	1.2	UER
		26	1329	45.02	19	24.30	155	16.19	1.73	1.4	2.6	12	0	115	.05	3	.4	.2	SPC
		26	2216	46.21	19	19.47	155	15.73	9.83	1.9	2.9	24	0	90	.11	6	.7	.5	KOA
		26	236	5.48	19	25.34	154	55.11	8.11	2.5	9	0	209	.13	17	2.9	1.7	LER	
		27	335	34.05	19	20.41	155	11.58	8.58	1.7	2.5	22	0	76	.13	8	.9	1.7	UER
		27	58	16.98	20	13.71	155	20.55	23.32	2.5	3.3	15	1	301	.04	81	7.1	10.4	DIS
		27	638	5.52	19	29.79	155	58.65	10.31	2.6	3.3	23	3	238	.22	26	2.8	.7	KON
		27	927	38.80	19	22.46	155	5.10	7.99	2.2	3.0	23	0	81	.12	11	.7	1.1	MER
		27	1241	14.98	19	25.42	155	25.45	7.23	2.1	2.9	19	0	69	.11	10	.7	1.6	UKF
		27	1915	36.46	19	23.89	155	16.88	1.70	1.4	2.8	12	0	78	.06	3	.4	.2	SPC
		28	242	55.65	19	22.49	155	28.67	9.80	2.1	3.1	26	0	48	.11	12	.5	.4	UKF
		28	256	42.01	19	23.37	155	16.91	2.02	1.6	2.9	18	0	64	.10	3	.5	1.3	SPC
		28	539	52.58	19	20.31	155	12.84	8.61	1.6	2.8	24	0	68	.11	7	.7	1.1	UER
		28	1214	16.32	19	23.53	155	17.17	2.29	2.7	3.6	21	0	56	.12	3	.5	1.6	SPC
		28	1426	29.42	19	26.92	155	29.05	9.55	2.3	2.8	24	0	58	.11	11	.7	.5	UKF
		28	2021	5.24	19	17.59	155	21.53	7.52	2.0	3.4	24	0	122	.13	9	.8	1.3	SWR
		29	51	27.55	19	21.16	155	6.42	8.99	2.2	3.4	25	0	90	.10	8	.6	.8	UER
		29	76	30.61	19	18.85	155	13.58	7.42	2.6	19	0	71	.14	7	1.0	2.0	POL	
		29	93	47.43	19	27.09	154	51.98	7.75	2.6	17	1	267	.15	21	1.7	1.3	LER	
		29	1036	25.35	19	21.22	155	13.41	9.68	1.6	2.8	16	0	57	.08	7	.7	1.9	UER
		29	1041	.19	19	28.96	154	50.85	8.21	2.5	13	0	316	.10	23	5.4	1.0	LER	
		29	1858	15.46	19	26.56	155	29.26	10.18	1.9	2.6	22	0	68	.13	12	.7	.9	UKF
		29	2210	28.00	20	57.05	156	23.23	42.02	3.3	3.7	3	2	360	.00	25	89.7	41.8	DIS
		30	120	37.03	19	19.28	155	13.87	9.04	1.7	2.6	20	0	63	.10	6	.6	1.2	UER
		30	1746	10.06	19	19.46	155	11.39	9.31	3.3	3.8	28	0	96	.10	7	.6	1.6	UER
		30	1818	45.29	19	19.34	155	11.28	9.65	3.0	3.5	29	0	100	.11	7	.7	.3	UER
		30	1937	30.25	19	19.52	155	16.21	9.60	2.5	3.4	32	0	94	.11	5	.6	.7	KOA
DEC	1	020	25.96	19	20.75	155	13.63	8.46	2.6	2.6	26	0	55	.09	7	.6	.9	UER	
	1	257	42.94	19	23.11	155	17.14	1.47	1.4	2.7	14	0	48	.05	3	.3	.2	SPC	

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	REMARK			
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	REMARK	
1976	DEC	1	444	17.47	19	21.64	155	15.23	9.40	3.1	3.8	32	0	61	.10	4	.5	.6	KOA	
		1	622	59.48	19	19.72	155	8.66	8.64	1.9	2.9	22	0	76	.10	9	.5	.7	UER	
		1	1057	37.57	19	20.35	155	13.42	9.40	1.7	2.7	18	0	63	.06	6	.5	1.0	UER	
		1	11	0	36.04	19	20.60	155	13.22	9.40	1.6	2.6	20	0	62	.10	6	.8	1.1	UER
		1	1527	12.27	19	12.33	155	28.29	43.57	1.9	2.0	15	1	111	.13	17	2.5	2.7	LSW	
		2	015	33.29	19	23.63	155	17.18	1.45	1.4	2.6	14	0	61	.07	3	.4	.2	SPC	
		2	1448	40.65	19	23.23	155	17.24	1.55	1.8	2.9	17	0	55	.09	3	.5	.3	SPC	
		2	1613	44.54	19	22.06	155	6.75	8.42	2.9	3.4	27	0	73	.10	8	.5	.7	UER	
		2	2251	2.35	19	21.27	154	59.39	8.58	2.5	18	0	208	.16	12	2.4	1.6	LER		
		3	118	17.02	19	27.29	155	26.47	8.90	2.0	2.8	26	0	62	.13	14	.7	1.2	UKF	
		3	859	30.21	19	27.99	155	26.31	11.59	2.7	22	0	64	.13	14	.9	.4	.4	UKF	
		3	20	2	9.78	19	20.00	155	10.47	9.64	2.2	3.2	25	0	86	.12	7	.9	.4	UER
		3	2138	39.19	19	21.09	155	6.83	9.02	2.6	2.7	26	0	88	.09	7	.6	.4	UER	
		3	2232	4.31	19	23.64	155	16.89	3.01	2.2	3.4	20	0	44	.10	3	.5	1.0	SPC	
		4	050	43.65	19	22.51	155	.92	9.29	2.8	3.2	29	0	168	.11	11	1.0	.6	SPC	
		4	341	14.24	19	59.34	155	43.82	12.89	2.7	2.8	29	5	143	.15	37	.7	1.0	KOH	
		4	350	50.82	19	20.05	155	8.13	8.82	3.0	3.8	29	0	85	.11	9	.7	.5	UER	
		4	6	5	1.49	19	19.94	155	8.36	8.49	1.9									

## HVO EARTHQUAKE SUMMARY LIST

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	ORIGIN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ						
	YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	REMK
976 DEC 9 652 26.91 19 21.16	155	13.11	8.00	2.1	3.1	29	0	.57	.12	6	.6	1.0	UER							
9 7 0 16.58 19 21.08	155	6.39	8.21	2.2	3.1	28	0	.92	.13	7	.7	1.1	UER							
9 732 24.37 19 19.95	155	7.31	8.62	1.9	2.8	23	0	103	.13	8	.9	.8	UER							
9 1129 32.75 19 17.70	155	21.87	6.19	1.9	2.6	21	0	120	.16	9	1.0	2.7	SWR							
9 1345 55.47 19 23.41	155	16.94	3.96	2.3	3.1	19	0	.65	.10	3	.5	.9	SPC							
9 15 7 28.68 19 22.16	155	6.15	8.26	2.2	3.4	24	0	107	.11	7	.7	.7	UER							
9 1528 49.90 19 23.73	155	17.19	2.76	3.0	3.8	24	0	.62	.13	3	.6	1.3	SPC							
9 22 9 30.12 19 19.76	155	26.57	9.01	1.6	2.7	27	0	.79	.12	6	.7	1.2	HEA							
10 848 45.65 19 23.33	155	4.18	8.37	2.9	3.3	33	0	.99	.13	10	.8	.6	MER							
10 9 7 58.59 19 23.48	155	17.27	2.91	2.6	24	0	.39	.13	3	.6	1.4	SPC								
10 1416 27.06 19 23.37	155	16.98	1.82	2.1	3.0	20	0	.46	.12	3	.6	.3	SPC							
10 1715 33.79 19 41.54	155	2.02	7.85	2.9	3.0	22	0	203	.19	28	2.4	2.0	HIL							
10 1729 59.80 19 43.14	155	2.25	.67	2.5	2.4	12	0	255	.17	30	6.2	9.0	HIL							
10 1750 10.37 19 27.07	155	29.45	9.75	2.2	2.1	26	0	.72	.11	12	.6	.4	UKF							
11 1118 4.17 19 19.92	155	12.65	10.16	2.0	2.5	25	0	.75	.09	6	.6	.3	UER							
11 1255 47.62 19 22.79	155	6.46	7.20	2.2	2.5	23	0	.74	.15	8	1.0	1.7	UER							
11 1751 47.04 19 20.75	155	12.04	9.40	2.3	3.5	24	0	.69	.10	7	.7	.9	UER							
11 2339 36.54 19 12.14	155	28.13	9.82	2.9	3.1	27	1	105	.20	17	1.5	.6	LSW							
12 11 5 54.81 19 21.53	155	4.32	6.35	2.0	2.8	22	0	.99	.10	10	.6	.9	MER							
12 1218 56.88 19 13.62	155	27.69	8.40	2.2	3.1	26	0	140	.15	16	1.0	1.4	LSW							
12 14 5 44.83 19 24.84	155	16.13	13.52	2.1	2.6	25	0	.74	.08	3	.5	.8	DEP							
12 16 2 52.48 19 20.35	155	13.73	10.14	2.2	3.2	25	0	.57	.10	6	.6	.3	UER							
12 1832 4.84 19 25.95	155	15.92	.17	1.8	3.1	12	0	158	.07	4	.5	.5	SPC							
12 1841 37.39 19 19.77	155	8.10	8.26	1.9	2.6	23	0	.88	.10	9	.6	.8	UER							
12 2336 58.55 19 21.49	155	3.73	6.29	2.0	2.8	22	0	149	.15	11	1.0	1.3	MER							
12 2357 29.50 19 25.13	155	24.70	8.69	1.6	2.6	21	0	.76	.09	4	.5	1.2	UKF							
13 348 59.94 19 24.35	155	26.59	9.02	1.8	2.6	25	0	.57	.11	12	.6	1.0	UKF							
13 5 0 .72 19 23.42	155	17.00	1.92	2.0	3.0	21	0	.38	.09	3	.4	.3	SPC							
13 6 8 17.28 19 19.21	155	12.05	6.81	1.7	2.9	26	0	.96	.13	7	.8	1.4	UER							
13 1726 42.07 19 20.20	155	7.42	9.67	3.4	4.0	29	0	.96	.12	8	.9	.4	UER							
13 2241 58.50 19 21.24	155	13.44	9.28	1.9	2.5	23	0	.56	.10	6	.7	.9	UER							
14 4 6 22.77 19 22.38	154	58.08	6.57	2.5	3.1	21	0	207	.16	12	2.1	1.7	LER							
14 636 30.37 19 19.83	155	12.63	9.08	2.1	2.6	25	0	.77	.12	6	.8	1.0	UER							
14 12 2 42.38 20 1.02	155	23.25	10.14	2.4	2.4	19	2	222	.10	45	1.4	.3	KKU							
14 1352 21.29 19 19.75	155	8.43	8.75	2.2	2.8	26	0	.81	.10	10	.5	.6	UER							
14 1725 32.35 19 24.80	155	28.76	9.81	2.2	2.9	32	0	.42	.13	13	.7	.4	UKF							
15 120 24.52 19 27.67	155	21.64	7.90	2.4	2.7	21	0	.98	.10	10	.6	1.2	UKF							
15 330 9.83 19 26.11	154	53.83	8.93	1.7	2.6	18	0	226	.12	18	2.5	1.0	LER							
15 440 42.94 19 19.60	155	11.94	9.81	2.9	3.5	33	0	.89	.12	6	.7	.3	UER							
15 2210 34.16 19 17.22	155	21.67	7.46	1.8	2.5	26	0	126	.16	9	1.0	1.5	SWR							
16 5 4 15.78 19 32.32	155	26.82	25.15	2.2	2.5	31	0	.67	.10	17	.7	1.8	NER							
16 6 2 37.42 19 20.84	155	4.59	7.39	2.0	2.6	24	0	102	.11	9	.8	1.0	MER							
16 21 8 48.78 19 19.01	155	13.85	7.03	1.9	2.8	22	0	.65	.13	7	.8	1.8	UER							
16 2121 35.55 19 25.32	155	17.05	.57	2.2	3.7	19	0	.48	.14	4	.7	.2	SPC							
17 0 13 40.53 19 23.38	155	16.97	1.93	1.6	2.8	17	0	.46	.06	3	.5	.2	SPC							
17 335 18.12 19 25.57	155	16.50	.46	1.7	3.2	15	0	126	.16	4	1.0	.6	SPC							
17 339 14.61 19 25.69	155	16.70	.80	2.9	4.1	28	0	.48	.10	4	.5	.5	SPC							
17 1916 54.17 19 20.40	155	7.72	8.33	2.6	3.0	29	0	.88	.10	8	.7	.5	UER							

## HVO EARTHQUAKE SUMMARY LIST

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	ORIGIN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ							
	YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	REMK	
1976 DEC 17 2031 43.29	19	20.00	155	6.92	9.49	3.2	3.7	31	0	104	.09	7	.7	.5	UER						
18 4 1 .60	19	20.14	155	7.01	9.39	4.8	4.9	32	0	104	.09	7	.6	.5	UER						
18 553 36.78	19	21.45	155	6.33	8.47	2.1	2.8	28	0	85	.12	7	.7	.9	UER						
18 612 27.81	19	21.10	155	7.75	8.36	2.5	2.8	29	0	78	.11	9	.6	.7	UER						
18 615 24.37	19	21.89	155	6.82	6.79	2.3	3.0	25	0	75	.12	8	.7	1.1	UER						
18 814 39.99	19	20.27	155	7.49	8.91	2.4	2.8	28	0	93	.13	8	.9	.6	UER						
18 857 47.82	19	13.44	155	30.67	34.79	2.4	2.4	14	2	196	.18	26	3.7	3.2	LSW						
18 1050 39.49	19	23.96	155	15.31	2.26	2.4	3.2	23	0	45	.09	3	.4	2.1	SPC						
18 1412 15.18	19	23.64	155	2.95	7.90	2.0	2.5	27	0	120	.12	11	.8	.8	MER						
18 18 2 22.18	19	20.08	155	13.27	8.41	2.0	2.6	30	0	65	.16	6	.9	1.2	UER						
19 110 33.88	19	21.66	155	7.83	6.53	2.8	3.3	14	0	71	.10	9	.8	1.5	UER						
19 145 7.14	19	21.38	155	8.29	7.92	2.4	3.0	14	0	69	.08	10	.7	.9	UER						
19 1650 36.91	19	20.39	155	8.04	8.88	2.4	3.1	25	0	83	.08	9	.6	.4	UER						
20 117 53.65	19	20.26	155	6.60	9.54	1.9	2.7	24	0	108	.13	7	.8	1.0	UER						
20 1932 28.54	19	23.15	155	25.41	8.84	2.2	3.0	26	0	54	.13	10	.7	.9	KOA						
20 2239 50.19	19	23.17	155	1																	

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DAY	HR	MIN	SEC	LAT N DEG MIN	LON W DEG MIN	DEPTH KM	AMP MAG	DUR HR	GAP			RMS DIS	MIN KM	ERR KM	ERZ REMK
											NR	NS	DEG				
1976	DEC	25	2341	2.27	19	23.95	155 16.92	1.66	1.3	2.4	15	0	68	.04	3	.2	.1 SPC
		26	019	57.97	19	23.40	155 14.94	1.97	1.5	2.4	13	0	78	.05	5	.3	.0 GLN
		26	113	52.87	19	19.76	155 11.41	7.97	2.3	3.0	26	0	89	.12	6	.7	1.0 UER
		26	429	27.16	19	19.52	155 8.67	8.35	1.9	2.6	19	0	79	.09	10	.6	1.3 UER
		26	522	31.71	19	23.66	155 17.02	1.90	1.9	2.9	18	0	62	.10	3	.5	.3 SPC
		26	632	44.40	19	23.16	155 14.55	3.52	1.7	2.5	14	0	59	.06	3	.5	1.2 GLN
		26	649	31.72	19	23.23	155 14.55	3.79	1.6	2.5	15	0	59	.05	3	.5	.8 GLN
		26	1043	22.34	19	23.93	155 16.87	1.66	1.7	3.0	15	0	70	.05	3	.3	.2 SPC
		26	1753	31.54	19	23.31	155 14.66	4.05	2.0	2.9	16	0	59	.06	3	.4	.8 GLN
		26	1835	51.58	19	25.92	155 28.49	9.69	1.9	2.7	19	0	61	.06	14	.4	.3 UKF
		26	1843	17.19	19	22.82	155 25.07	9.56	1.7	2.8	22	0	56	.07	10	.4	.6 UKF
		26	2343	9.16	19	47.76	155 58.54	7.82	2.9	3.5	19	0	220	.19	42	.8	1.6 KUN
		27	323	21.53	19	18.74	155 23.17	5.66	1.5	2.5	22	0	105	.13	8	.8	1.8 SWR
		27	326	19.72	19	24.50	155 26.84	10.20	2.0	2.6	24	0	51	.10	12	.5	.4 UKF
		27	415	20.58	19	23.61	155 14.75	5.22	3.3	4.0	30	0	44	.12	5	.4	.6 GLN
		27	526	2.45	19	23.31	155 14.88	3.62	1.8	2.5	15	0	67	.06	3	.4	.9 GLN
		27	67	22.11	19	19.25	155 12.78	7.88	1.9	2.8	25	0	84	.14	7	.4	1.5 UER
		27	624	27.46	19	19.45	155 16.55	9.63	3.1	3.5	32	0	97	.10	6	.6	.5 KOA
		27	919	27.01	19	24.00	155 14.89	2.89	2.5	3.4	21	0	82	.12	4	.6	1.5 GLN
		27	1213	54.01	19	11.42	155 36.25	10.20	3.1	3.2	26	0	118	.20	20	1.4	.6 HFA
54		27	1637	24.48	19	23.22	155 17.11	1.59	1.3	2.2	11	0	59	.06	3	.4	.2 SPC
		27	1730	1.84	19	20.36	155 13.49	9.33	2.0	2.9	20	0	64	.08	6	.5	.8 UER
		28	733	51.20	19	21.28	155 29.50	9.54	2.7	3.0	26	0	72	.12	11	.8	.6 HEA
		28	82	13.60	19	21.91	155 14.98	9.64	2.3	2.8	28	0	58	.12	4	.7	.4 UER
		28	1517	36.61	19	23.88	155 16.86	1.94	2.8	3.5	19	0	70	.09	3	.4	.2 SPC
		28	1624	41.58	19	18.38	155 23.56	5.15	2.1	2.7	19	0	107	.08	9	.5	.8 SWR
		28	1937	4.91	19	19.21	155 12.16	9.77	3.2	3.8	29	0	95	.11	7	.7	.3 UER
		29	159	18.76	19	22.00	155 18.17	1.56	1.9	2.6	15	0	53	.09	4	.5	.0 KOA
		29	345	37.31	19	23.32	155 17.19	1.52	2.4	3.4	18	0	55	.05	5	.2	.1 SPC
		29	40	7.59	19	23.31	155 17.07	1.54	1.4	2.3	11	0	60	.07	3	.3	.5 SPC
		29	452	11.12	19	29.80	154 49.05	8.70	1.8	2.5	11	0	321	.10	26	.2	1.2 LER
		29	811	17.14	19	19.33	155 12.41	8.77	2.5	3.6	27	0	88	.12	7	.7	1.0 UFR
		29	106	7.76	19	26.16	154 52.91	8.90	2.4	2.2	15	0	246	.09	20	.1	.8 LER
		29	1110	25.46	19	23.51	155 14.92	2.95	2.4	2.9	15	0	77	.06	3	.4	1.2 GLN
		29	1242	18.25	19	19.80	155 11.17	7.25	2.0	2.6	23	0	89	.11	7	.7	1.1 UER
		29	156	16.40	19	23.12	155 14.61	3.54	2.1	2.9	14	0	61	.05	3	.5	.8 GLN
		29	1644	25.63	19	19.84	155 11.26	9.15	2.4	3.5	24	0	88	.09	6	.5	.7 UER
		29	1810	.90	19	23.05	155 4.55	7.59	2.0	2.5	18	0	96	.09	10	.6	1.3 MER
		29	1926	26.92	19	23.48	155 14.49	4.59	3.0	3.8	24	0	54	.10	3	.5	.8 GLN
		29	2035	20.16	19	20.53	155 11.57	8.17	2.2	3.0	22	0	74	.15	7	1.0	1.9 UER
		30	047	41.50	18	27.18	155 20.11	11.66	3.8	4.1	9	0	316	.07	92	23.3	.0 DIS
		30	419	51.59	19	19.52	155 15.93	9.58	3.0	3.8	30	0	91	.08	6	.4	.3 KOA
		31	842	9.41	19	17.54	155 21.51	6.11	2.0	3.0	19	0	123	.13	9	.9	2.4 SWR
		31	1841	52.01	19	23.09	155 17.45	2.85	2.5	2.8	20	0	127	.16	3	1.0	1.7 SPC
		31	193	1.25	19	22.33	155 15.54	9.24	2.9	3.4	25	0	130	.11	4	.7	.6 KOA
		31	2251	16.02	19	21.63	155 2.73	6.81	2.4	3.2	18	0	206	.12	14	2.1	1.2 MER

TABLE 6. HVO SUMMARY LIST - MAG 3.5 AND ABOVE

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YEAR	MON	DA	HRMN	SEC	LAT N DEG MIN	LON W DEG MIN	DEPTH KM	AMP MAG	DUR MAG	GAP NR	RMS NS	MIN DEG	ERH DIS	ERZ KM	REMK
1976	JAN	1	0 2	48.09	18 50.09	155 4.68	16.61	3.6	4.1	28	0	269 .10	54	3.9	29.5 PPL
		1	854	19.82	18 40.44	155 2.80	50.32	4.7	4.2	15	1	310 .08	78	6.0	14.1 PPL
		1	1536	47.31	19 21.71	155 15.08	9.34	3.5	3.9	30	0	60 .10	4	.4	.5 KOA
		7	016	39.36	19 18.69	155 20.66	9.64	3.7	3.7	30	0	106 .11	6	.7	.4 SWR
		7	144	33.33	19 27.20	154 53.21	7.69	3.8	3.9	28	1	238 .09	19	.9	.5 LER
		11	14 5	40.17	19 30.77	155 16.17	24.49	4.2	4.2	32	0	61 .11	13	.7	1.8 GLN
		15	1241	45.31	19 24.55	155 17.59	14.21	4.4	4.5	35	0	46 .09	4	.5	.8 DEP
		15	1259	26.09	19 24.65	155 17.60	16.07	4.5	4.7	34	0	46 .10	4	.6	1.0 DEP
		16	1929	13.84	19 22.49	155 6.53	8.43	3.7	4.0	29	0	68 .09	8	.7	.6 UER
		16	20 0	3.85	19 21.29	154 59.61	2.18	3.2	3.8	25	0	206 .12	12	1.2	1.5 LER
		18	449	28.37	19 21.73	155 15.30	9.70	3.6	3.8	31	0	60 .09	4	.5	.3 KOA
		18	14 5	10.92	19 21.77	155 7.01	9.35	3.6	4.0	30	0	76 .10	8	.6	.5 UER
		18	1413	37.89	19 21.65	155 7.62	7.03	3.6	3.7	31	0	73 .09	8	.5	.7 UER
		18	2357	46.47	19 22.56	155 5.92	7.94	3.6	3.5	32	0	71 .10	7	.5	.7 MER
		21	1141	21.24	19 22.02	155 7.21	8.48	4.1	4.2	24	0	178 .12	10	1.3	.9 UER
		23	247	40.05	19 21.63	155 4.98	8.96	3.7	4.0	31	0	82 .13	9	.8	.6 MER
		23	820	14.11	19 21.82	155 7.92	8.91	3.2	3.5	26	0	79 .10	8	.6	.7 UER
		27	535	51.38	19 21.20	155 6.17	8.69	3.6	3.8	31	0	91 .11	7	.7	.5 UER
		27	2226	28.16	19 20.28	155 6.64	9.25	4.0	4.1	31	0	107 .10	7	.7	.5 UER
		29	1019	56.47	19 22.74	154 59.64	8.66	4.7	4.9	33	0	184 .14	10	1.2	.9 LER
FEB		31	20 7	26.96	19 22.10	155 4.83	7.52	3.3	3.9	28	0	82 .13	9	.7	.9 MER
		3	1642	13.45	19 22.68	155 5.95	8.74	3.4	3.7	30	0	72 .11	7	.6	.6 MER
		3	2050	58.46	19 21.67	155 15.18	9.78	3.5	3.8	29	0	61 .08	4	.4	.3 KOA
		5	1149	4.48	19 21.42	155 8.12	8.14	3.1	3.6	28	0	71 .12	9	.7	.9 UER
		5	1919	16.71	19 20.45	155 7.11	9.27	3.2	3.6	28	0	96 .08	7	.6	.4 UER
		7	2248	12.26	19 19.77	155 7.46	7.82	3.2	3.7	27	0	103 .09	8	.5	.8 UER
		10	1820	8.55	19 20.33	155 6.87	9.50	2.8	3.5	25	0	102 .09	7	.6	.6 UER
		12	618	26.21	19 21.67	155 3.51	7.25	3.2	3.8	28	0	109 .12	11	.8	.8 MER
		13	049	51.86	19 31.33	155 57.70	9.68	3.6	3.1	27	0	234 .15	22	2.1	.4 KON
		18	1840	52.61	19 25.82	155 16.46	.69	2.8	4.1	21	1	128 .15	2	.6	1.2 SPC
		20	1951	14.91	20 24.95	156 1.29	31.75	5.1	4.6	5	0	162 .00	83	34.8	55.7 DIS
		24	550	19.19	19 22.20	155 6.65	8.59	4.2	4.2	29	0	71 .11	8	.6	.7 UER
		24	1442	32.63	19 23.27	155 4.81	7.82	3.2	3.6	23	0	129 .11	9	.7	1.0 MER
		24	1918	30.56	19 21.12	155 7.96	9.38	3.1	3.5	31	0	76 .11	9	.7	.4 UER
		25	1348	20.37	19 22.17	155 6.35	8.98	3.9	4.2	31	0	73 .09	7	.5	.4 UER
MAR		28	2355	25.89	19 22.42	155 6.36	8.12	3.3	3.6	25	0	69 .11	8	.6	.8 UER
		29	1941	58.83	19 20.28	155 6.61	9.13	3.1	3.5	27	0	107 .11	7	.8	.5 UER
		6	1223	4.59	19 21.60	155 1.95	6.04	3.5	4.0	29	0	160 .11	13	.7	1.1 MER
		7	1625	34.64	19 21.78	155 7.17	8.24	3.7	4.0	30	0	74 .12	8	.6	.8 UER
		9	5 5	17.66	19 18.54	155 20.65	9.37	2.8	3.5	30	0	110 .09	6	.5	.4 SWR
		10	1832	40.95	19 20.30	155 7.13	9.05	2.8	3.6	26	0	99 .13	7	.9	.7 UER
		11	4 2	42.23	19 21.60	155 15.45	8.98	3.1	3.6	25	0	67 .11	5	.7	.8 KOA
		13	616	16.38	19 8.69	155 30.14	11.26	3.5	3.5	28	3	156 .13	24	1.0	.4 LSW
		19	1324	30.32	19 21.32	155 3.43	8.11	3.9	4.1	29	0	110 .12	11	.8	1.0 MER
		20	1313	19.86	19 19.83	155 6.53	9.21	3.1	3.5	27	0	120 .09	7	.7	.5 UER
		21	931	33.54	19 22.23	155 15.26	9.78	3.3	3.6	20	0	55 .11	4	.8	1.6 KOA
		21	2031	24.60	19 20.22	155 8.61	8.42	3.2	3.6	27	0	74 .11	9	.6	.7 UER
		22	2048	26.94	19 21.85	155 5.03	8.75	3.3	3.5	29	0	77 .11	8	.7	.6 MER

## HVO SUMMARY LIST - MAG 3.5 AND ABOVE

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YEAR	MON	DA	HRMN	TIME SEC	LAT N DEG MIN	LON W DEG MIN	DEPTH KM	AMP MAG	DUR MAG	GAP NR NS	RMS DEG SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	MAR	23	15	6	3.24	19 18.82	155 18.38	9.48	3.7 3.9	30 0	84 .13	8	.6	.7	KOA
		26	844	47.75	19 20.67	155 10.80	9.43	2.9 3.5	18 0	74 .08	8	.6	.6	1.2	UER
		29	5	9	52.00	19 21.83	155 15.19	9.73	3.7 4.0	27 0	59 .12	4	.7	.5	KOA
		30	1452	10.26	19 20.01	155 7.32	9.50	3.4 3.7	29 0	101 .10	8	.8	.5	UER	
	APR	2	814	6.50	19 20.62	155 6.50	9.37	4.6 4.6	33 0	101 .10	7	.6	.4	UER	
1976	JUN	2	914	11.70	19 38.57	155 59.93	6.64	3.4 3.6	24 2	221 .21	29	1.6	1.2	KON	
		2	955	3.26	19 19.86	155 12.98	8.41	3.6 3.9	28 0	72 .09	7	.5	.7	UER	
		3	143	42.22	19 23.72	155 17.02	3.91	3.0 3.6	32 0	37 .16	3	.6	.9	SPC	
		6	312	52.13	19 20.59	155 12.54	9.21	3.4 3.7	29 0	67 .13	7	.8	.9	UER	
		11	1535	49.18	19 20.95	155 3.56	5.33	3.4 3.7	26 0	99 .14	10	1.0	.9	MER	
	MAY	12	726	23.45	19 18.94	155 21.56	9.41	3.0 3.5	27 0	103 .12	8	.7	.8	SWR	
		14	22	1	36.02	19 27.63	154 53.07	8.16	3.3 3.5	29 0	244 .15	19	2.3	.9	LER
		20	711	3.11	19 21.70	155 15.25	9.50	3.5 3.7	31 0	60 .11	4	.5	.5	KOA	
		21	1813	34.49	18 47.70	155 .30	49.81	4.6 4.2	22 0	278 .09	63	4.8	9.0	PPL	
		22	554	4.92	19 31.50	155 18.64	11.84	3.4 3.6	32 0	61 .14	15	.8	.3	NER	
1976	JUL	22	833	.97	19 18.57	155 20.64	9.76	3.4 3.7	26 0	109 .11	6	.7	.4	SWR	
		23	1229	53.77	19 21.88	155 5.15	8.95	4.2 4.3	28 0	77 .11	8	.7	.6	MER	
		26	2144	41.56	19 23.26	155 16.96	5.40	3.1 3.8	26 0	44 .10	5	.4	.6	SPC	
		1	1852	4.85	19 18.43	155 23.46	6.63	3.2 4.0	31 0	107 .17	9	.8	1.6	SWR	
		9	614	43.37	19 21.55	155 7.95	9.72	3.4 3.6	30 0	71 .08	9	.5	.3	UER	
	AUG	10	827	4.45	19 23.27	155 4.48	7.73	3.5 3.6	32 0	94 .12	10	.5	.8	MER	
		12	555	11.56	19 20.33	155 11.66	9.26	3.7 4.2	31 0	77 .10	7	.6	.7	UER	
		17	145	6.09	19 19.78	155 16.26	9.60	3.6 3.8	32 0	91 .09	5	.5	.4	KOA	
		17	2054	49.19	19 19.66	155 8.60	9.51	3.0 3.6	28 0	78 .09	10	.6	.2	UER	
		18	616	41.31	19 19.76	155 7.48	8.63	3.5 4.0	32 0	102 .12	8	.8	.6	UER	
1976	SEP	19	1712	5.53	19 19.80	155 7.74	9.29	3.8 4.1	31 0	96 .12	8	.8	.6	UER	
		21	1953	9.83	19 21.08	155 6.06	9.27	3.2 3.5	31 0	94 .11	7	.8	.5	UER	
		22	1852	8.44	19 21.68	155 15.11	10.51	3.7 4.0	31 0	60 .09	4	.5	.2	KOA	
		23	1731	20.18	19 20.44	155 6.81	9.38	4.0 4.0	31 0	101 .11	7	.8	.5	UER	
		23	2324	7.63	20 54.93	156 23.40	49.09	4.3 4.2	34 2	206 .14169	3.2	1.6	DIS		
	OCT	28	12	8	45.51	19 23.03	155 4.84	8.11	3.3 3.7	26 0	98 .09	9	.5	.6	MER
		31	627	21.09	20 14.77	155 53.55	31.66	3.6 3.3	9 0	303 .04	70	5.8	9.7	KOH	
		31	832	9.99	20 15.86	155 46.17	2.68	4.1 3.9	6 2	175 .07	75	10.1	5.6	DIS	
		4	2250	51.27	19 21.54	155 7.10	9.37	4.1 4.4	32 0	78 .12	8	.7	.5	UER	
		7	1039	37.57	19 19.15	155 15.64	31.40	3.5 3.3	35 0	93 .09	6	.7	1.3	DEP	
1976	NOV	10	015	3.85	19 20.07	155 7.32	8.55	3.3 3.7	32 0	100 .11	8	.7	.6	UER	
		10	22	5	5.23	19 19.78	155 8.51	9.55	3.2 3.7	33 0	79 .09	10	.6	.2	UER
		14	1417	15.19	19 24.25	155 15.84	4.37	3.2 3.9	24 0	109 .14	3	.8	1.0	SPC	
		16	917	15.92	19 21.81	155 4.84	7.79	3.4 3.6	31 0	79 .09	9	.5	.6	MER	
		18	12	1	11.60	19 22.53	155 6.06	7.50	3.4 3.6	28 0	69 .11	7	.6	.9	UER
	DEC	20	3	6	23.81	19 11.44	155 32.81	10.64	3.1 3.5	23 0	132 .17	22	1.3	.6	LSW
		21	1539	5.68	19 22.49	155 13.27	6.80	2.9 3.6	26 0	54 .10	6	.5	1.0	UER	
		21	1816	27.24	19 22.15	155 12.92	5.39	3.1 3.5	28 0	50 .12	5	.5	.5	UER	
		21	19	3	34.10	19 22.27	155 13.13	6.15	3.4 3.7	27 0	54 .09	6	.4	1.0	UER
		21	1936	29.86	19 22.10	155 12.95	6.06	3.1 3.6	20 0	61 .13	9	.8	2.6	UER	
1977	21	20	0	34.66	19 22.34	155 13.23	5.30	3.3 3.9	26 0	63 .13	7	.6	.7	UER	
	21	2015	12.03	19 22.81	155 5.04	9.38	3.2 3.5	30 0	84 .11	9	.7	.6	MER		
	21	2241	19.86	19 22.36	155 12.75	4.87	2.8 3.6	28 0	77 .16	5	.7	.9	UER		

## HVO SUMMARY LIST - MAG 3.5 AND ABOVE

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YEAR	MON	DA	TIME	LAT N	LON W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	
				DEG MIN	DEG MIN	KM	MAG	MAG	NR	NS	DEG SEC	DIS	KM	KM REMK
1976	JUN	22	3 4 39.56	19 22.64	155 14.46	2.53	3.2	4.0	32	0	50 .15	4	.6	1.5 UER
		22	341 9.92	19 23.13	155 14.60	5.37	3.0	3.5	30	0	46 .11	3	.4	.4 GLN
		23	052 25.03	19 21.58	155 15.54	2.17	2.9	3.7	29	0	62 .16	4	.6	2.0 KOA
		24	1947 53.85	19 20.31	155 11.90	9.23	3.6	3.8	29	0	76 .10	7	.5	.5 UER
		25	129 52.49	19 23.27	155 16.91	3.77	2.5	3.5	25	0	45 .14	3	.7	1.0 SPC
	JUL	5	140 43.57	19 24.07	155 3.59	8.08	3.1	3.6	21	0	119 .12	11	1.0	.8 MER
		6	1345 47.97	19 21.61	155 15.27	9.41	3.2	3.5	28	0	62 .09	4	.5	.6 KOA
		11	2326 10.83	19 21.11	155 13.35	9.48	3.2	3.5	31	0	55 .09	6	.5	.4 UER
		14	2 5 2.37	19 23.21	155 14.55	4.89	3.3	3.7	25	0	55 .12	3	.6	.7 GLN
		14	1414 38.07	19 22.65	155 12.76	4.88	3.1	3.8	25	0	97 .14	8	.7	1.0 UER
		15	854 39.83	19 21.66	155 7.67	7.81	3.3	3.5	28	0	72 .14	8	.7	.8 UER
		16	111 28.75	19 10.70	155 32.65	8.83	3.2	3.8	27	0	136 .18	23	1.3	1.4 LSW
		18	2331 25.59	19 19.83	155 7.64	9.32	3.4	4.0	27	0	98 .10	8	.8	.5 UER
		22	240 53.05	19 22.63	155 4.62	9.20	3.7	4.1	34	0	90 .13	9	.8	.5 MER
		22	2149 45.42	19 23.77	155 14.85	4.82	3.2	3.6	31	0	56 .14	3	.5	.7 GLN
		23	1938 17.12	19 20.05	155 8.39	9.55	3.7	4.0	32	0	80 .10	10	.6	.3 UER
		24	122 14.65	19 13.35	155 35.54	10.32	3.4	3.5	29	0	115 .19	17	1.2	.5 HEA
		24	2346 30.98	19 23.34	155 14.74	5.03	3.3	3.9	28	0	45 .12	3	.5	.6 GLN
		27	714 26.85	19 22.27	155 4.89	9.39	4.0	4.1	32	0	83 .12	9	.9	.5 MER
		27	2037 12.69	19 23.49	155 14.57	4.70	3.6	4.0	30	0	46 .12	3	.5	.6 GLN
		28	16 3 19.82	19 23.73	155 23.92	9.67	3.5	3.3	31	0	66 .12	7	.6	.5 UKF
		30	5 9 43.69	19 20.40	155 6.66	8.04	3.8	4.1	33	0	104 .09	7	.5	.4 UER
		30	2319 14.05	19 20.27	155 12.19	8.62	3.0	3.5	31	0	75 .13	6	.6	.6 UER
		31	1651 36.05	19 24.28	155 15.86	4.61	3.3	3.8	29	0	109 .12	3	.5	.6 SPC
AUG	1	1639	18.04	19 23.58	155 14.80	6.21	3.6	3.8	25	0	85 .12	6	.6	1.2 GLN
		2	637 1.42	19 21.52	155 15.11	9.87	3.2	3.5	29	0	62 .10	5	.6	.4 KOA
		3	523 31.91	19 26.50	154 53.67	8.88	3.0	3.5	27	0	227 .09	19	1.4	.5 LER
		6	338 55.38	19 22.71	155 5.58	8.12	3.2	3.6	30	0	76 .11	8	.6	.6 MER
		7	131 45.35	19 21.29	155 2.69	6.59	3.3	3.8	27	0	140 .11	12	.8	.8 MER
		7	1142 19.32	19 19.17	155 11.98	9.06	3.1	3.8	23	0	98 .10	7	.7	.9 UER
		9	13 9 33.49	19 23.37	155 14.62	4.99	3.4	3.7	30	0	45 .13	3	.5	.6 GLN
		10	19 3 47.59	19 19.17	155 13.31	10.12	3.5	3.8	32	0	74 .10	7	.6	.2 UER
		14	17 1 .37	19 21.44	155 8.07	8.44	3.2	3.6	29	0	71 .10	9	.5	.6 UER
		16	231 8.43	19 21.89	155 3.90	7.44	2.4	3.5	18	0	114 .08	10	.7	.6 MER
		26	319 43.60	19 21.78	155 15.06	10.15	3.6	4.0	31	0	59 .10	4	.6	.3 KOA
		28	1859 55.45	19 21.29	155 13.39	9.66	3.0	3.6	30	0	55 .09	6	.5	.3 UER
		29	2036 25.54	19 27.89	154 52.91	7.68	2.9	3.5	18	0	258 .14	19	3.2	1.0 LER
		31	1041 8.47	19 23.42	155 29.67	10.18	4.0	4.1	35	0	40 .13	13	.6	.3 UKF
		31	14 0 38.53	19 19.89	155 7.01	9.05	3.4	3.8	30	0	110 .12	7	.9	.6 UER
SEP	2	1020	26.76	19 21.18	155 3.20	7.62	3.5	4.0	31	0	118 .11	11	.8	.5 MER
		3	116 55.89	19 19.77	155 10.60	8.90	3.1	3.5	33	0	91 .12	7	.7	.6 UER
		3	1523 20.02	19 22.93	155 24.70	9.57	2.9	3.5	19	0	82 .11	9	.8	.8 UKF
		3	22 3 41.40	19 28.89	154 50.99	7.62	3.5	3.8	27	0	269 .14	22	3.2	.9 LER
		4	1310 54.24	19 19.79	155 16.32	9.62	3.9	4.0	33	0	91 .10	5	.5	.4 KOA
		6	534 15.20	19 26.46	154 54.22	7.97	3.5	4.0	30	0	214 .13	18	1.7	.7 LER
		6	1919 .38	19 21.23	155 16.05	4.52	3.6	4.2	26	0	76 .13	7	.7	1.0 KOA
		7	22 1 16.28	19 22.20	155 4.73	8.28	3.5	4.0	32	0	85 .12	9	.7	.6 MER
		8	4 1 55.52	19 18.45	155 20.83	9.51	3.2	3.6	29	0	113 .09	7	.5	.3 SWR

## HVO SUMMARY LIST - MAG 3.5 AND ABOVE

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YEAR	MON	DA	HRMN	TIME SEC	LAT N	LON W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	
					DEG MIN	DEG MIN	KM	MAG	MAG NR	NS	DEG SEC	DIS	KM	KM REMK	
1976	SEP	10	625	18.62	18 48.97	155 13.54	36.33	3.2	4.0 28	2	266 .14	53	2.1	8.1 PPL	
		11	5 4	30.51	19 22.13	155 4.22	7.61	3.6	4.0 28	0	94 .10	10	.6	.7 MER	
		15	2 1	25.72	19 21.97	155 5.05	8.83	3.6	4.0 32	0	78 .12	8	.8	.5 MER	
		21	935	49.78	19 20.78	155 6.54	9.32	3.2	3.8 29	0	97 .11	7	.7	.5 UER	
		24	2251	31.28	19 20.61	155 6.68	8.95	2.9	3.7 32	0	99 .11	7	.7	.5 UER	
	OCT	28	914	53.40	19 20.00	155 13.13	10.04	3.7	4.2 34	0	68 .10	7	.6	.2 UER	
		29	1258	3.96	19 21.97	155 5.10	8.69	3.3	3.8 29	0	77 .11	8	.8	.5 MER	
		3	753	8.58	19 19.79	155 7.26	9.29	3.4	3.6 31	0	107 .11	8	.8	.5 UER	
		3	1721	45.50	19 20.32	155 8.02	9.55	3.1	3.6 31	0	84 .10	9	.6	.3 UER	
		5	558	50.57	19 20.11	155 6.59	9.45	3.8	4.1 30	0	112 .11	7	.8	.5 UER	
NOV	OCT	5	955	39.64	19 22.19	155 4.79	7.46	3.5	3.9 30	0	84 .10	9	.5	.7 MER	
		6	822	12.93	19 18.17	155 23.49	6.08	2.6	3.6 30	0	109 .18	9	.9	2.0 SWR	
		7	311	37.96	19 22.68	155 5.39	9.26	3.5	3.9 31	0	79 .10	8	.6	.4 MER	
		8	2253	53.01	19 23.12	155 6.72	9.17	3.2	3.7 29	0	66 .12	9	.7	.7 GLN	
		14	2317	6.95	19 22.67	155 5.12	9.09	2.7	3.5 28	0	82 .12	8	.8	.8 MER	
	NOV	17	557	16.75	19 20.04	155 8.27	9.33	2.7	3.6 29	0	82 .10	9	.6	.4 UER	
		17	949	11.99	19 21.60	155 6.07	8.78	2.6	3.6 26	0	83 .12	7	.7	.9 UER	
		19	2311	50.41	19 20.31	155 6.99	9.03	2.7	3.6 28	0	101 .11	7	.7	.6 UER	
		21	225	25.95	19 27.18	154 51.82	8.48	2.9	3.5 30	0	267 .09	22	1.7	.5 LER	
		22	1243	23.91	19 20.29	155 11.42	10.38	3.4	4.1 12	0	104 .16	8	1.4	2.0 UER	
DEC	NOV	22	1411	25.90	19 21.20	155 3.33	8.19	3.5	3.9 28	0	113 .11	11	.9	.6 MER	
		24	519	46.49	19 20.02	155 8.19	9.32	2.6	3.5 26	0	84 .10	9	.7	.5 UER	
		26	7 7	25.35	19 21.74	155 15.18	9.98	3.3	3.6 27	0	62 .11	4	.7	.5 KOA	
		2	1815	46.37	19 19.10	155 13.42	10.12	3.7	4.0 29	0	73 .08	7	.5	.2 UER	
		2	1936	16.05	19 22.50	155 5.86	8.74	3.3	3.7 29	0	71 .12	7	.7	.7 MER	
	DEC	6	2340	47.26	19 23.58	155 25.04	9.75	3.3	3.6 30	0	57 .12	9	.6	.5 UKF	
		8	1951	5.80	19 22.36	155 6.00	7.92	2.9	3.7 29	0	70 .10	7	.5	.7 UER	
		9	1533	3.39	19 20.60	155 4.14	8.06	3.8	4.1 32	0	107 .12	9	.9	.6 MER	
		10	1815	16.62	19 20.71	155 11.73	9.94	3.1	3.7 29	0	71 .10	7	.7	.3 UER	
		12	1654	46.51	19 21.34	155 2.46	7.12	3.5	4.1 31	0	148 .13	12	1.0	.7 MER	
1977	DEC	12	20	7 21.45	19 56.64	155 36.00	11.20	3.5		26	0	145 .14	28	1.9	.7 KOH
		13	1114	3.35	19 21.97	155 5.07	9.18	3.7	4.1 28	0	77 .11	8	.7	.6 MER	
		16	223	35.43	19 22.59	155 4.70	9.20	3.6	4.1 32	0	88 .12	9	.8	.5 MER	
		17	551	48.55	19 32.32	155 14.17	24.99	3.7	3.7 32	0	66 .11	17	.7	2.1 NER	
		18	2224	43.77	19 23.87	155 16.89	3.79	3.0	3.8 24	0	69 .13	3	.7	1.0 SPC	
	JAN	26	1015	58.54	19 24.23	155 15.87	4.49	3.1	3.8 27	0	46 .13	3	.6	.8 SPC	
		28	1214	16.32	19 23.53	155 17.17	2.29	2.7	3.6 21	0	56 .12	3	.5	1.6 SPC	
		29	2210	28.00	20 57.05	156 23.23	42.02	3.3	3.7 3	2	360 .00	25	89.7	41.8 DIS	
		30	1746	10.06	19 19.46	155 11.39	9.31	3.3	3.8 28	0	96 .10	7	.6	.6 UER	
		30	1818	45.29	19 19.34	155 11.28	9.65	3.0	3.5 29	0	100 .11	7	.7	.3 UER	

## HVO SUMMARY LIST - MAG 3.5 AND ABOVE

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YEAR	MON	DA	HRMN	SEC	LAT N DEG MIN	LON W DEG MIN	DEPTH KM	AMP MAG	DUR MAG	GAP			RMS DEG	MIN DIS	ERH KM	ERZ KM	REMK
										NR	NS	DEG SEC					
1976	DEC	13	1726	42.07	19 20.20	155 7.42	9.67	3.4	4.0	29	0	96	.12	8	.9	.4	UER
		15	440	42.94	19 19.60	155 11.94	9.81	2.9	3.5	33	0	89	.12	6	.7	.3	UER
		16	2121	35.55	19 25.32	155 17.03	.57	2.2	3.7	19	0	48	.14	4	.7	.2	SPC
		17	339	14.61	19 25.69	155 16.70	.80	2.9	4.1	28	0	48	.10	4	.3	.5	SPC
		17	2031	43.29	19 20.00	155 6.92	9.49	3.2	3.7	31	0	109	.09	7	.7	.5	UER
		18	4 1	.60	19 20.14	155 7.01	9.39	4.8	4.9	32	0	104	.09	7	.6	.5	UER
		26	2343	9.16	19 47.76	155 58.54	7.82	2.9	3.5	19	0	220	.19	42	3.8	1.6	KON
		27	415	20.58	19 23.61	155 14.75	5.22	3.3	4.0	30	0	44	.12	3	.4	.6	GLN
		27	624	27.46	19 19.45	155 16.53	9.63	3.1	3.5	32	0	97	.10	6	.6	.5	KOA
		28	1517	36.61	19 23.88	155 16.86	1.94	2.8	3.5	19	0	70	.09	3	.4	.2	SPC
		28	1937	4.91	19 19.21	155 12.16	9.77	3.2	3.8	29	0	95	.11	7	.7	.3	UER
		29	811	17.14	19 19.33	155 12.41	8.77	2.6	3.6	27	0	88	.12	7	.7	1.0	UER
		29	1644	25.63	19 19.84	155 11.26	9.15	2.9	3.5	24	0	88	.09	6	.5	.7	UER
		29	1926	26.92	19 23.48	155 14.49	4.59	3.0	3.8	24	0	54	.10	3	.5	.8	GLN
		30	047	41.50	18 27.18	155 20.11	11.66	3.8	4.1	9	0	316	.07	92	23.3	.0	DIS
		30	419	51.59	19 19.52	155 15.93	9.58	3.0	3.8	30	0	91	.08	6	.4	.3	KOA

## TILT INSTRUMENTATION

In addition to the seismic network, a network of spirit-level tilt stations (dry), borehole tiltmeters, and water-tube (wet) tilt stations is maintained. The network is located on the summits and flanks of Kilauea and Mauna Loa Volcanoes. In December 1976 the tilt network consisted of:

73 spirit level tilt stations (dry)

8 borehole tiltmeters

10 water-tube tilt stations (wet)

1 continuous recording Ideal-Arrowsmith tiltmeter

Dry and wet tilt stations are generally occupied at irregular intervals. Critical stations are measured more frequently than the entire network. Digital borehole tiltmeters data are telemetered by VHF radio and recorded at the observatory. An Ideal-Arrowsmith mercury-pool capacitor-type tiltmeter with a 1 m base is located at the Uwekahuna vault, and the analog signal is recorded at the observatory.

## TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 8.

Table 7.--Tilt Coordinates at Uwekahuna

Date (1976)		N-S	E-W
Jan	4	573	402
	11	569	401
	18	567	399
	25	564	401
Feb	1	562	401
	8	560	399
	15	569	398
	22	558	398
	29	575	396
Mar	7	556	396
	14	557	392
	21	556	393
	28	556	391
Apr	4	556	389
	11	557	388
	18	558	390
	25	558	387
May	2	558	388
	9	559	388
	16	560	390
	23	561	387
	30	561	385
Jun	6	562	384
	13	561	382
	20	560	382
	27	559	383

Table 7.--Tilt Coordinates at Uwekahuna (Continued)

Date (1976)		N-S	E-W
Jul	4	560	380
	11	559	382
	18	558	387
	25	558	385
Aug	1	558	380
	8	558	382
	15	558	379
	22	556	377
	29	582	389
Sep	5	549	399
	12	545	408
	19	540	412
	26	536	412
Oct	3	535	410
	10	534	407
	17	536	402
	24	537	397
	31	538	393
Nov	7	539	388
	14	539	386
	21	541	382
	28	541	381
Dec	5	543	379
	12	543	377
	19	543	373
	26	544	369

Table 8.--U.S. Geological Survey water-tube tiltmeter stations in Hawaii

Station	Symbol	Location		Frequency of reading	Base length M	Description
		Lat. N. Deg.	Long. W. Deg. Min.			
Tree Molds	TM	19 - 26.3	155 - 17.3		50.79	NS. and EW.
Sand Spit	SS	19 - 24.1	155 - 16.8		25.40	Equilateral triangle.
Keamoku	Kea	19 - 25.1	155 - 19.0		47.55	do
Ahua Kamokukolau	Kam	19 - 22.7	155 - 16.6		50.79	do
Kipuka Nene	KN	19 - 19.4	155 - 16.7		47.73	do
Hilina Pali	HP	19 - 18.2	155 - 18.6		47.73	do
Kapapala Ranch	Kap	19 - 20.5	155 - 23.8		50.79	do
Mehana	M	19 - 26.2	155 - 14.3		25.00	do
Uwekahuna	U	19 - 25.5	155 - 17.4		50.79	do
Uwekahuna Vault		19 - 25.4	155 - 17.6	Daily	3.48	NS. and EW.

Table 9. Tilt coordinates and changes at bases around Kilauea caldera. (See fig.10)

Tilt base	Date (1976)	Tilt coordinates		Rate ( $10^{-6}$ rad/mo) and direction of tilting since last reading	Date of last reading (1975)
		N-S	E-W		
Uwekahuna (U on fig.10)	11 May	597.6	346.8	8.96 N73.7°W	19 Dec
Tree Molds (TM)	11 May	494.7	513.3	1.50 N47.7°W	16 Dec
Sand Spit (SS)	14 Apr	805.8	855.2	12.69 S44.0°E	18 Dec
Keamoku (Kea)	13 Apr	576.5	496.6	7.49 S33.9°E	17 Dec
Ahua Kamokukolau (Kam)	14 Apr	703.6	554.9	12.14 N6.8°W	18 Dec
Kipuka Nene (KN)	21 Apr	156.2	576.7	4.65 N41.0°W	15 Dec
Hilina Pali (HP)	15 Apr	309.7	550.8	6.80 N30.9°W	15 Dec
Kapapala (Kap)	13 Apr	513.9	517.4	3.10 S69.0°E	17 Dec
Mehana (M)	12 Apr	548.8	560.2	3.39 S7.8°W	16 Dec

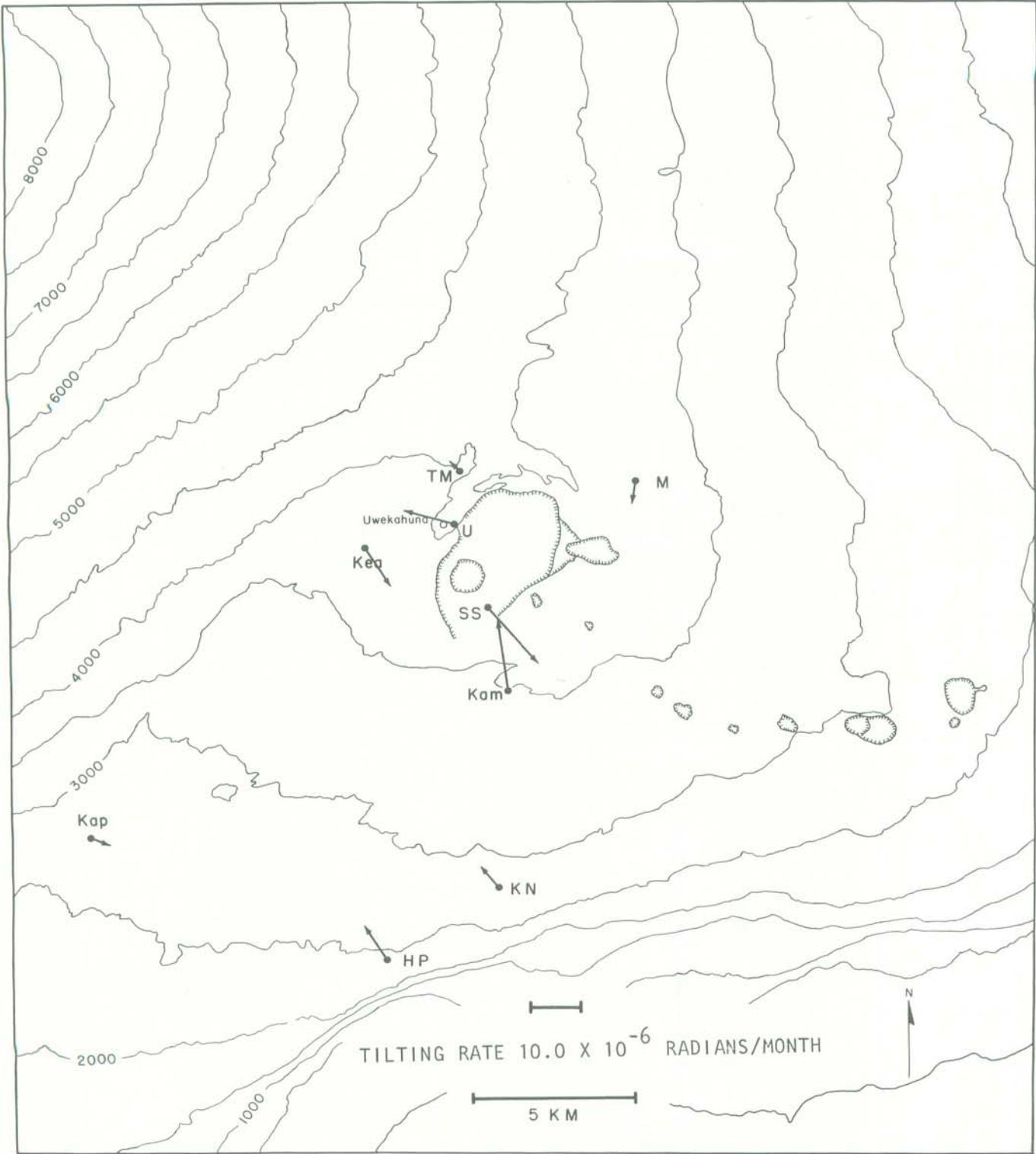


Figure 10 December 1975 to April 1976 tilting of the ground around Kilauea Caldera. The vector depicting tilt at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base watertube tiltmeters. See Table 8 for explanation of abbreviations.

Table 10. Tilt coordinates and changes at bases around Kilauea caldera. (See fig.11)

Tilt base	Date (1976)	Tilt coordinates		Rate ( $10^{-6}$ rad/mo) and direction of tilting since last reading		Date of last reading (1976)
		N-S	E-W			
Uwekahuna (U on fig.11)				Not Occupied This Epoch		
Tree Molds (TM)				Not Occupied This Epoch		
Sand Spit (SS)				Not Occupied This Epoch		
Keamoku (Kea)				Not Occupied This Epoch		
Ahua Kamokukolau (Kam)				Not Occupied This Epoch		
Kipuka Nene (KN)	28 Sep	164.6	564.0	2.82	$N57.8^{\circ}W$	21 Apr
Hilina Pali (HP)				Not Occupied This Epoch		
Kapapala (Kap)	27 Sep	514.7	522.1	0.85	$N80.0^{\circ}E$	13 Apr
Mehana (M)	27 Sep	535.9	558.6	2.32	$S7.2^{\circ}W$	12 Apr

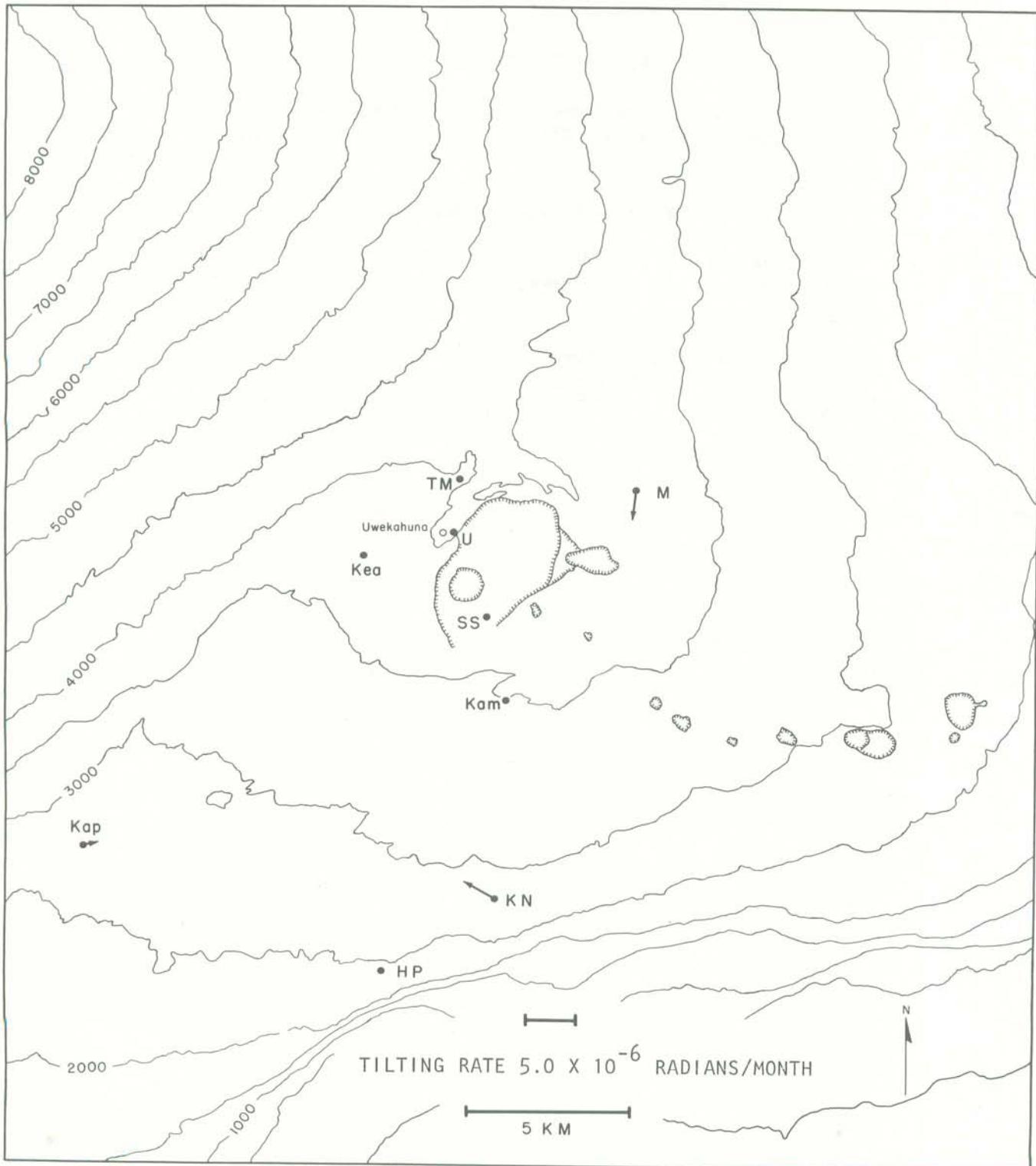


Figure 11      April to September 1976 tilting of the ground around  
Kilauea Caldera.

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