



## **HAWAIIAN VOLCANO OBSERVATORY 1983 Annual Administrative Report**

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

**COMPILED BY JENNIFER S. NAKATA**

### **SUMMARY 83**

**SEISMIC DATA, JANUARY TO DECEMBER 1983**  
**BY JENNIFER S. NAKATA, ALVIN H. TOMORI,**  
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### **CHRONOLOGICAL SUMMARY**

**BY ROBERT W. DECKER**

### **OPEN-FILE REPORT 2007-1343**

**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 83

SEISMIC DATA, JANUARY TO DECEMBER 1983

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This report (map) is preliminary and has not been reviewed for conformity with  
U.S. Geological Survey editorial standards (and stratigraphic nomenclature).  
Any use of trade names is for descriptive purposes only and does not imply  
endorsement by the U.S.G.S.

Menlo Park, California

1984

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

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BY

JENNIFER S. NAKATA, ALVIN H. TOMORI, ROBERT Y. KOYANAGI, WILFRED R. TANIGAWA

CHRONOLOGICAL SUMMARY

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## INTRODUCTION

The Hawaiian Volcano Observatory (HVO) summary presents data gathered during the year together with a chronological narrative describing the volcanic events and significant observatory related activities. The seismic summary is 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 shifted from quarterly measurements at a few water-tube tilt stations ("wet" tilt) to a larger number of continuously recording borehole tiltmeters, repeated measurements at numerous spirit-level tilt stations ("dry" tilt), and surveying of level and trilateration networks. Because of the large quantity of deformation data now gathered and differing schedules of data reduction, the seismic and deformation summaries will be published separately.

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 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.

A report tabulating the instrumentation, calibration and recording history of each seismic station in the network by Klein and Koyanagi is available as a USGS open file report ("Hawaiian Volcano Observatory Seismic Network History 1950-79," U.S.G.S. open file report 80-302, 1980). It is designed as a reference for users of seismograms and phase data, and so includes and expands the information in the station table in this summary.

## CHRONOLOGICAL SUMMARY - 1983

by

Robert W. Decker

1983 was a busy year for both Hawaiian volcanic and seismic activity. The middle-east-rift eruption of Kilauea which began on January 3 continued intermittently throughout the year with 12 major phases of high-volume lava emission. Mauna Loa showed signs of unrest in terms of increased seismic activity and changing patterns of surface deformation, and the Observatory was rocked and damaged by intensity VIII to IX shaking from the magnitude 6.6 Kaoiki earthquake 12 kilometers beneath the southeast flank of Mauna Loa on November 16.

The middle-east-rift eruption of Kilauea was preceded by 24 hours of high seismicity, harmonic tremor and rapid summit deflation as the feeding dike of the eventual eruption was emplaced beneath a 10 km segment of the east rift zone from about 1 km west of Makaopuhi Crater to the vicinity of Pu'u Kamoamoa. Over the next 4 to 5 days the dike extended another 6 km downrift to about 2 km east of Kalalua. The eruptive outbreak occurred on the north rim of Napau Crater and moved eastward along a line of fissures for 8 kilometers. The volume of lava erupted in the first phase was approximately 11 million m<sup>3</sup>, but the amount of summit deflation (60 to 70 million m<sup>3</sup> from leveling data) indicates that at least 50 million m<sup>3</sup> of magma moved from the summit into the newly formed dike system.

Subsequent phases of the eruption occurred from the same dike system without new seismic swarms, indicating that the continuing eruption was using portions of the same conduit system established during the first phase. Phases 2 through 12 were remarkably similar in period, volume and summit tilt changes, suggesting a repetitive process controlled by some interaction of summit magma reservoir pressure and the gas content and pressure head of the lava column in the erupting dike. The major lava emission of phases 2 through 12 occurred on the following dates: (2) February 25-March 4; (3) March 28-April 9; (4) June 13-17; (5) June 29-July 3; (6) July 22-25; (7) August 15-17; (8) September 6-7; (9) September 15-17; (10) October 5-7; (11) November 6-7; and (12) November 30-December 1. The average time period between the main onsets of the major phases was 30 days; the shortest was 9 days, and the longest was 77 days. In general, the phases were of shorter duration as the eruption progressed. However, the volumes of the phases, with one exception, were remarkably similar; the average was  $11.9 \times 10^6$  m<sup>3</sup>, the largest (phase 3) was  $25.6 \times 10^6$  m<sup>3</sup>, and the smallest (phase 8) was  $7.6 \times 10^6$  m<sup>3</sup>. This combination of shorter eruption duration but similar eruption volume indicates that later phases (excluding phase 1) were erupted at higher eruption rates. This conclusion is supported by field estimates of eruption rates, and by the general increase in the rate of summit subsidence and harmonic tremor measured during each subsequent phase.

Table I. The middle-east-rift eruption of Kilauea, 1983 (Ed Wolfe).

Phase	Total Area Covered (x $10^6$ m $^2$ )	Total Volume of Lava (x $10^6$ m $^3$ )	Duration and Average Production Rate (total volume/duration)
1	4.8	11.0	96 hours; 104,000 m $^3$ /hour
2	2.7	11.5	lava shield: 360 hrs; 1400 m $^3$ /hour cone: 181 hrs; 60,000 m $^3$ /hr
3	7.9	25.6	288 hours; 90,000 m $^3$ /hour
4	2.2	10.9	100 hours; 110,000 m $^3$ /hour
5	3.4	12.9	90 hours; 143,000 m $^3$ /hour
6	2.8	9.4	73 hours; 120,000 m $^3$ /hour
7	3.7	10.3	57 hours; 180,000 m $^3$ /hour
8	2.0	7.6	24 hours; 315,000 m $^3$ /hour
9	2.1	8.6	50 hours; 173,000 m $^3$ /hour
10	2.7	14.0	60 hours; 232,000 m $^3$ /hour
11	4.3	12.1	43 hours; 281,000 m $^3$ /hour
12	3.0	8.1	35 hours; 231,000 m $^3$ /hour
TOTALS-1983	26.0	141.8	1457 hours = 61 days

All 12 phases of the 1983 eruption have a total volume of about  $140 \times 10^6$  m $^3$  and covered about 26 km $^2$  of land surface. (In Table I, the total area covered is less than the sum of the areas covered in each phase -- 41.6 km $^2$ ; this difference represents later phases resurfacing areas covered in earlier phases.) Most of the area covered by the new flows was dense ohia-fern forest, but some was barren flows from eruptions during the 1960's, and some was in a relatively undeveloped land subdivision called Royal Gardens. Phases 2 through 5 produced flows that entered Royal Gardens, destroying about 15 dwellings and covering about 330 empty house lots and their access roads. Flows from phases 6 through 12 came from the same vent area as phases 4 and 5; however, the main lava channel in these later phases developed on the northeast rather than the southeast side of the growing cinder and spatter cone. For this reason most of the flow volume in phases 6-12 stayed on the north side of the rift zone in the ohia-fern jungle. Phases 2 and 3 built a small lava shield capped by an 80 m high spatter and cinder cone at their principle vent area just south of Pu'u Kahauale'a. Phases 4 through 12 built another 80 m-high spatter and cinder cone just inside the National Park boundary about 1.5 km uprift from Pu'u Kahauale'a.

The erupted lavas before phase 5 were relatively low in magnesium content and the associated magmatic gases were low in carbon dioxide and high in sulfur dioxide. These data and the generally low eruption temperatures ( $1120^{\circ}$ - $1130^{\circ}\text{C}$ ) indicate that much of the erupted magma prior to July 1983 was stored at shallow levels in the summit or middle east rift zone for months to years prior to eruption. Even after phase 5 the C/S ratio of the gas remained low. Nevertheless, the total gas content was great enough to produce lava fountains during all of the major eruptive phases, reaching a maximum height of 300 m in phases 3 and 10.

Mauna Loa began to show signs of increasing unrest with a swarm of micro-earthquakes beneath its summit region in early March 1983. Earthquake counts increased to a maximum of 400 to 500 per day compared to a former background of 2 to 20 events per day. Deformation measurements indicated that the summit was continuing to inflate and that the center of the uplift had shifted to the east. Small earthquake swarms in June and July were followed by a major swarm in September that peaked at about 700 events per day. Following that swarm the number of microearthquakes per day beneath Mauna Loa decreased back to almost average levels by the end of 1983. The general similarity in the pattern of Mauna Loa earthquakes and deformation in 1983 compared to 1974 -- the year prior to the last eruption of Mauna Loa in July 1975 -- prompted HVO to issue a statement indicating a higher-than-average probability of an eruption of Mauna Loa during 1984.

During 1983 there were 35 earthquakes beneath the Hawaii region that equalled or exceeded magnitude 4, two that exceeded magnitude 5, and one that exceeded magnitude 6. The magnitude 5.1 earthquake occurred 9 km beneath the south flank of Kilauea on September 9. It was apparently another one of the larger earthquakes associated with the seaward displacement of the south flank of Kilauea.

On November 16, 1983, at 06:13 (HST) a magnitude 6.6 earthquake occurred at 12 km depth in the Kaoiki seismic zone beneath the southeast flank of Mauna Loa. The epicenter was slightly south of the mid-point of a line drawn between the summit calderas of Kilauea and Mauna Loa. The summit area of Kilauea was subjected to intensity VIII to IX shaking which did considerable damage but fortunately caused only a few minor injuries. Sectors of the crater rim road near Waldron Ledge fell into the caldera, and heavy damage was caused to roads where they cross or closely parallel the outer caldera escarpments of Kilauea. Considerable structural damage also occurred in Hilo. The total damage estimate was about \$7,000,000.

First-motion studies indicate a source mechanism of nearly east-west compression and north-south extension. A northeast-southwest, right-lateral strike-slip fault is the apparent fracture direction from both surface breaks on the Mauna Loa strip road and aftershock sequences of smaller Kaoiki earthquakes. The initial location of hundreds of aftershocks from this magnitude 6.6 earthquake suggest multiple fractures on conjugate slip planes allowing east-west contraction and north-south extension. The stress field that caused this large earthquake is interpreted to originate from the summit dilation of Mauna Loa and Kilauea as magma accumulates in their subsurface reservoir systems. Thus, although the earthquake is a tectonic earthquake in the sense that it represents shear failure from major compressive stresses, it can also be considered volcanic in origin because the stresses are generated by magmatic

pressures. As in much research, sharp distinctions between classes and types of phenomena become more blurred as investigations progress.

The automatic earthquake location microprocessor designed by Rex Allen and Jim Ellis of the USGS in Menlo Park, CA, did a creditable job of locating in nearly real time the earthquake swarm that preceded and accompanied phase 1 of the 1983 Kilauea eruption. This allowed field observers to be in the remote area near Napau Crater at the time and location the eruption began.

Deformation studies again provided some interesting new results. The emplacement of the dike that initiated the 1983 eruption was associated with a nearly simultaneous increase in earthquakes and strain within the south flank of Kilauea. The coastline moved about 1 meter seaward in response to a 2 to 3 meter dilation of the rift zone. The difference between these displacements represents compression of the south flank of Kilauea between the middle east rift and the seacoast. The increase in south flank earthquakes apparently resulted from this increase in compressive stress from the injection of a new dike 12 km long reaching from a 3 km depth to the surface. Recording tiltmeters along the track of the intruding dike indicated a downrift migration rate of 1.9 km/hr in comparison to the downrift migration rate of the earthquakes of 0.7 km/hr. This suggests that the dike broke upward from a pre-existing molten core along the rift zone below 3 km following the injection of a pulse of new magma into the middle-east-rift pipeline.

The amount of summit subsidence and elevation of the eruption vents of Kilauea's east-rift-zone eruptions show a strong correlation indicating magma-static pressure control of the volume of magma that moves from the summit into the rift zone. Calculations of the relationship between radial summit tilt measured at HVO (Uwekahuna), and the change in elevation of the apex of the summit bulge of Kilauea, the volume change of the surface bulge, and change in the pressure in the shallow magma reservoir beneath the summit are approximately: 1 microradian of S 60 E tilt (deflation) = 5.5 mm subsidence = 330,000 m<sup>3</sup> decrease in volume = 0.9 bars pressure decrease.

Sulfur dioxide gas from Halemaumau has increased in volume from about 150 tons per day in 1982 to about 300 tons per day in 1983. The ratio of carbon to sulfur measured at Halemaumau is 17; the ratio at the 1983 eruption site on the middle east rift is 0.2. This dramatic loss of carbon dioxide appears to take place as magma moves into and is stored within the shallow magma reservoir system beneath the summit of Kilauea.

Self-potential (S-P) anomalies measured along the east rift of Kilauea have added some interesting insights into the 1983 eruption. An increase in S-P at Kalalua, downrift from the eruptive vents, supports seismic data which indicate that the intrusive dike on January 7, 1983, moved farther downrift than the eruptive vents. In addition, S-P increases at Escape Road near Mauna Ulu between October and November, 1982, suggest that new magma was moving into the upper east rift 2 months prior to the beginning of the 1983 eruption.

The apparent presence of iridium in fume from the 1983 eruption reported by W. H. Zoller et al in Science (December 9, 1983, p. 1118-1121) has added fuel to the hot debate about interpretation of the iridium anomaly at the Cretaceous-Tertiary boundary.

The observatory staff consists of 8 scientist and 16 support personnel. In addition 18 students and volunteers helped HVO during 1983. The staff monitored 48 seismic stations, 1204 electronic distance measurement lines, 275 km of level lines, 99 tilt stations, 15 recording tiltmeters, 13 strain gauges, 130 gravity stations, 12 self-potential lines, 1 controlled-source electromagnetic induction loop with 4 receiver stations, 21 gas-sampling and temperature sites, and many special devices to monitor the long-lasting eruption such as time-lapse cameras, video camera, trip wires, and portable tremor-monitoring seismometers. Many of HVO's monitors record continuously; others are observed at various intervals. The remote location of the eruption site required over 500 hours of helicopter support which posed serious problems of safety, expense, communication and logistics. The data reduction, graphics, and data storage of the overall monitoring program are largely handled by HVO's computer system.

Four USGS geologists continued their mapping projects on Hawaii. Their close affiliation with HVO has been essential during the 12 vigorous eruption phases that required 24 hour per day surveillance.

Four members of the combined HVO staff and geological affiliates were involved in investigations of Indonesian volcanoes, Pagan Volcano in the Marianas, Rabaul Volcano in Papua New Guinea, and of Mount St. Helens and Yellowstone.

HVO cooperated with 60 guest investigators during the year for time periods up to 2 months. Staff members and guest investigators presented 26 papers at scientific meetings and published 34 papers and 4 open-file reports. HVO also issued weekly, monthly and annual reports, as well as daily updates during the major eruptive phases.

Hawaii Volcanoes National Park estimated they had 2,800,000 visitors in 1983. About 50% of these visitors stopped at HVO to view Kilauea Caldera and to look in HVO's windows at the seismographs and the eruption chronology board. About 1600 visitors including 22 student groups, 4 professional-meeting groups and George Ariyoshi, Governor of Hawaii, toured the inner workings of the observatory. A new record to TV and news photographers was established with an estimated 300 visiting the observatory. Many of these were multiple visits throughout the year by the same news teams.

It was exhausting, but a great year at HVO.

## SEISMIC INSTRUMENTATION

The network. The Hawaiian Volcano Observatory maintains an extensive telemetering seismometer network on the island of Hawaii. In 1983 the seismometer network consisted of 51 stations; two are low-gain multicomponent stations (optical), nine are three-component, and 40 are vertical only. The coverage is most complete on and around Kilauea Volcano. With the exception of self-contained systems at Uwekahuna and Hilo stations, all seismometer signals from the short period network are telemetered to the observatory for recording.

Figure 1 is a map of selected geographic and geologic features, Figure 2 shows the seismic stations which were operated on the Island of Hawaii during the year, and Figure 3 indicates the telemetry scheme for the respective seismic stations. Table 1 lists all seismic stations operated by the U.S. Geological Survey in Hawaii during 1983. Listed are station names, three- and four-letter codes, coordinates in degrees and minutes, elevation in meters, and other data described below. In addition to seismometers listed in Table 1, a horizontal seismometer of Type 3 or H1 and a long-period, three-component set of Press-Ewing seismometers are operated in the Uwekahuna vault, all recorded on photographic paper.

Instrumentation and recording. Each telemetering station has a voltage controlled oscillator (VCO) for FM multiplex transmission to HVO via either hardwire or radio. These telemetering stations are now all of Type 1, the OEVE standard system used in USGS seismic networks (see Table 2 for details). After discrimination, the analog signals from 36 stations are recorded on two Developocorders using 16mm microfilm. FM signals from the telemetering network are also recorded directly on one-inch magnetic tape. Selected larger events are copied onto condensed FM library tapes which are currently archived in Menlo Park and archived in digital form at HVO as part of the routine location processing. The type of recording used for each station (in addition to magnetic tape for the telemetered stations) is coded in Table 1 as follows: D - Developocorder film, S - smoked paper drum, P - photographic paper, H - Helicorder paper.

In addition to the standard stations, optical seismographs are maintained at Uwekahuna (HVO), Hilo, Maui, and on Oahu (Honolulu station operated by the Pacific Tsunami Warning Center). The less sensitive optical records are used primarily for amplitude measurements for magnitude calculations to supplement readings from the high-gain stations. The paper (optical) records as well as the 16mm Developocorder microfilm are archived at HVO.

In late August, 1982, Rex Allen and Jim Ellis from the U.S. Geological Survey's Office of Earthquake Studies came to HVO to install their seismic monitoring system uniquely designed to automate picking of P-phase onset times, measuring coda lengths, and determining preliminary epicenters for adequately recorded earthquakes. The Hawaii picker is configured to monitor a maximum of 80 stations, but is currently wired to 45 stations. Attached to the picker are a Datasouth Printer and an Apple II microcomputer. The picker output is logged on a disk and printed out on chart paper within three minutes after the earthquake occurs. The data collected on disk is transferred to the Eclipse, the main computer system, on a daily basis using a second Apple II. The earthquake records are filtered and run through our standard location program (HYPOINVERSE). Summary listings and epicenter plots are prepared on chart paper, and the phase data are archived on tape. The picker output is routinely

compared with readings from our standard format. Modifications are being made to adapt the automated system to better accommodate seismic monitoring needs around Hawaii's active volcanoes.

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 OEVE system from ground motion at the seismometer to the seismic trace as seen on a 20x Developocorder film viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL, 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 Developocorder 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. CAL factors range from about 1 to 8, averaging about 4. A detailed history of CAL factors and other data is given in F.W. Klein and R.Y. Koyanagi, Hawaiian Volcano Observatory Seismic Network History 1950-79, U.S. Geological Survey Open File Report 80-302, 1980.

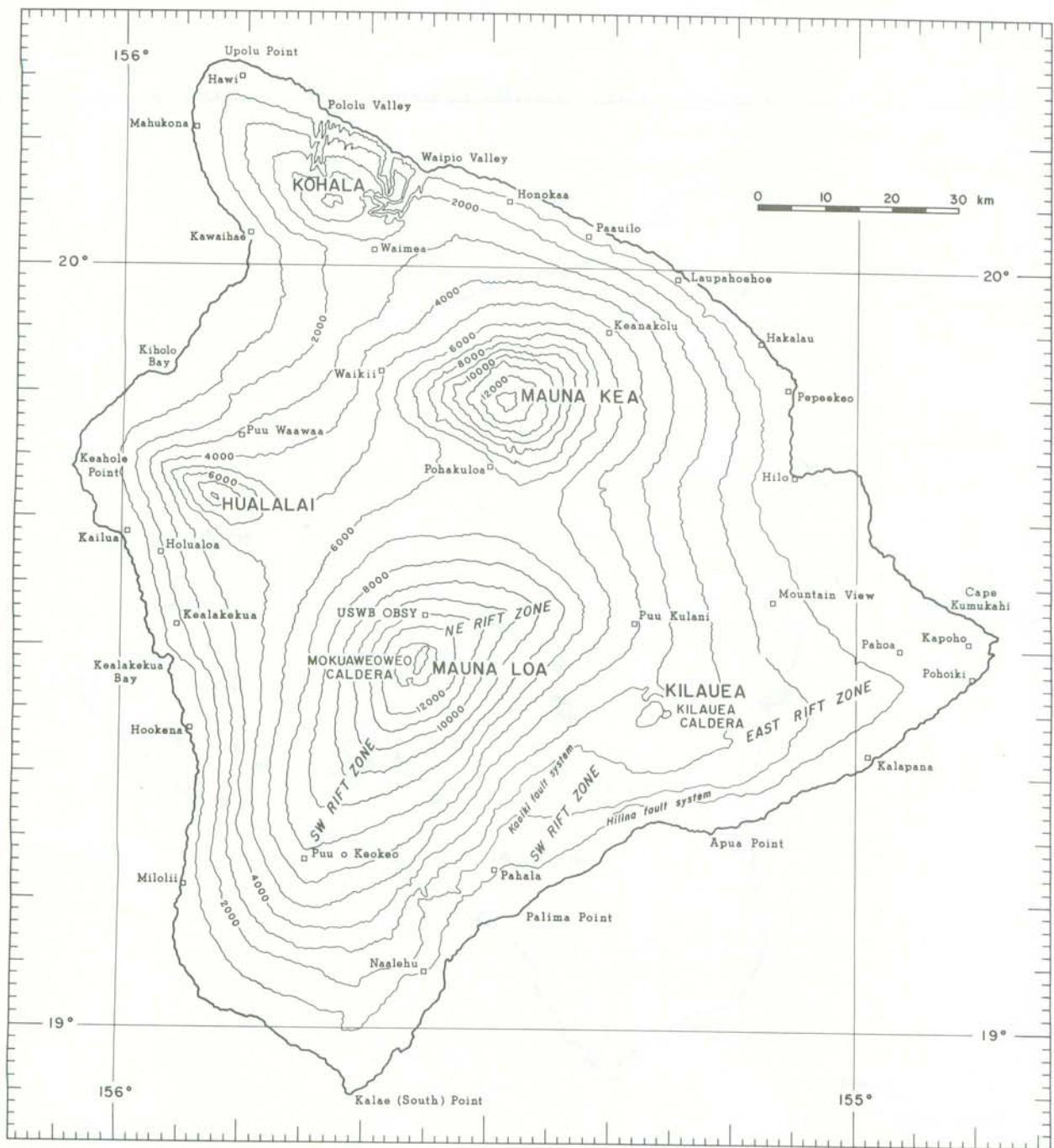


Figure 1. Map of the island of Hawaii showing principal settlements and selected geographic and geologic features.

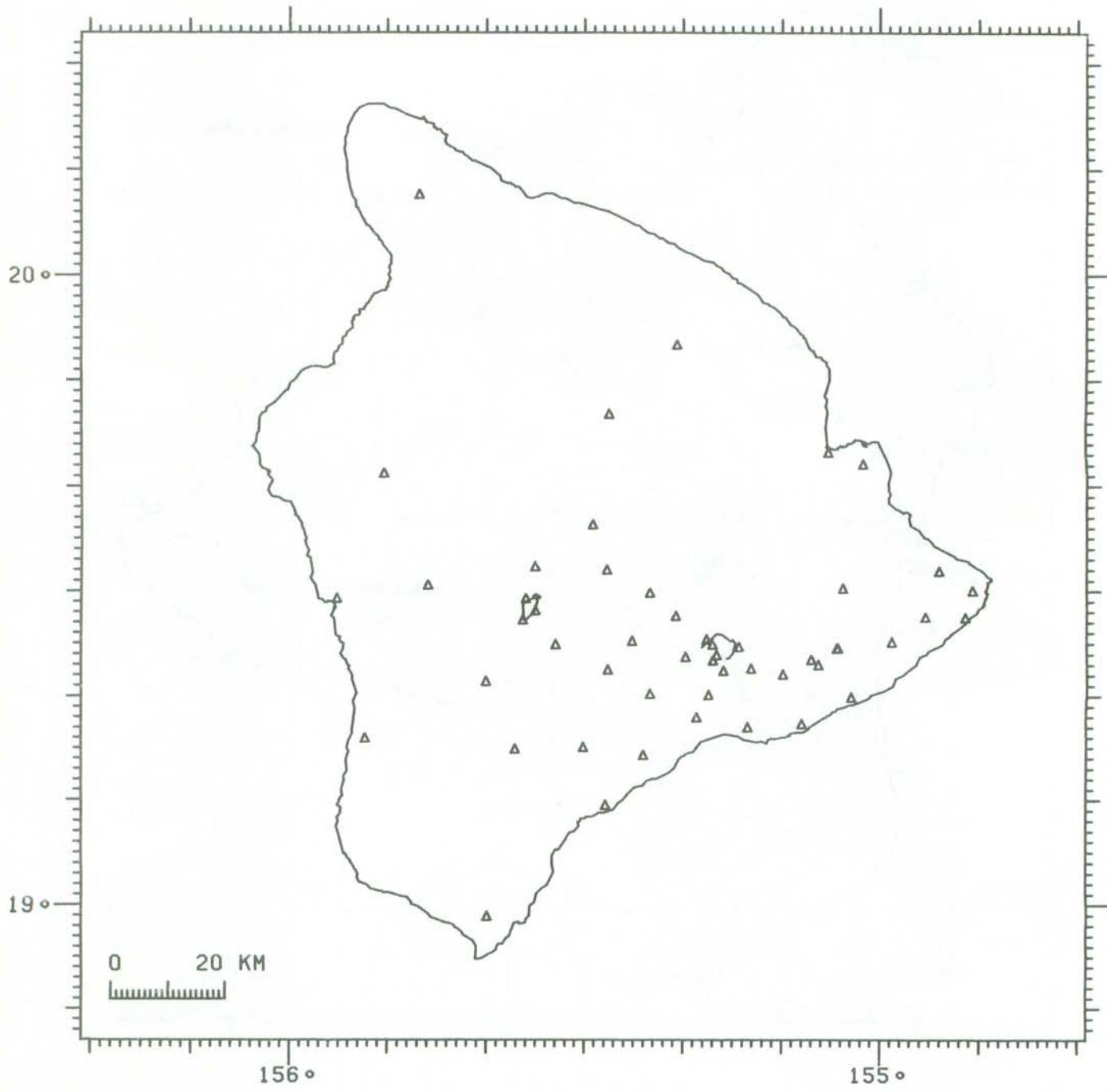


Figure 2. Map of the island of Hawaii showing seismic stations operational during 1983.

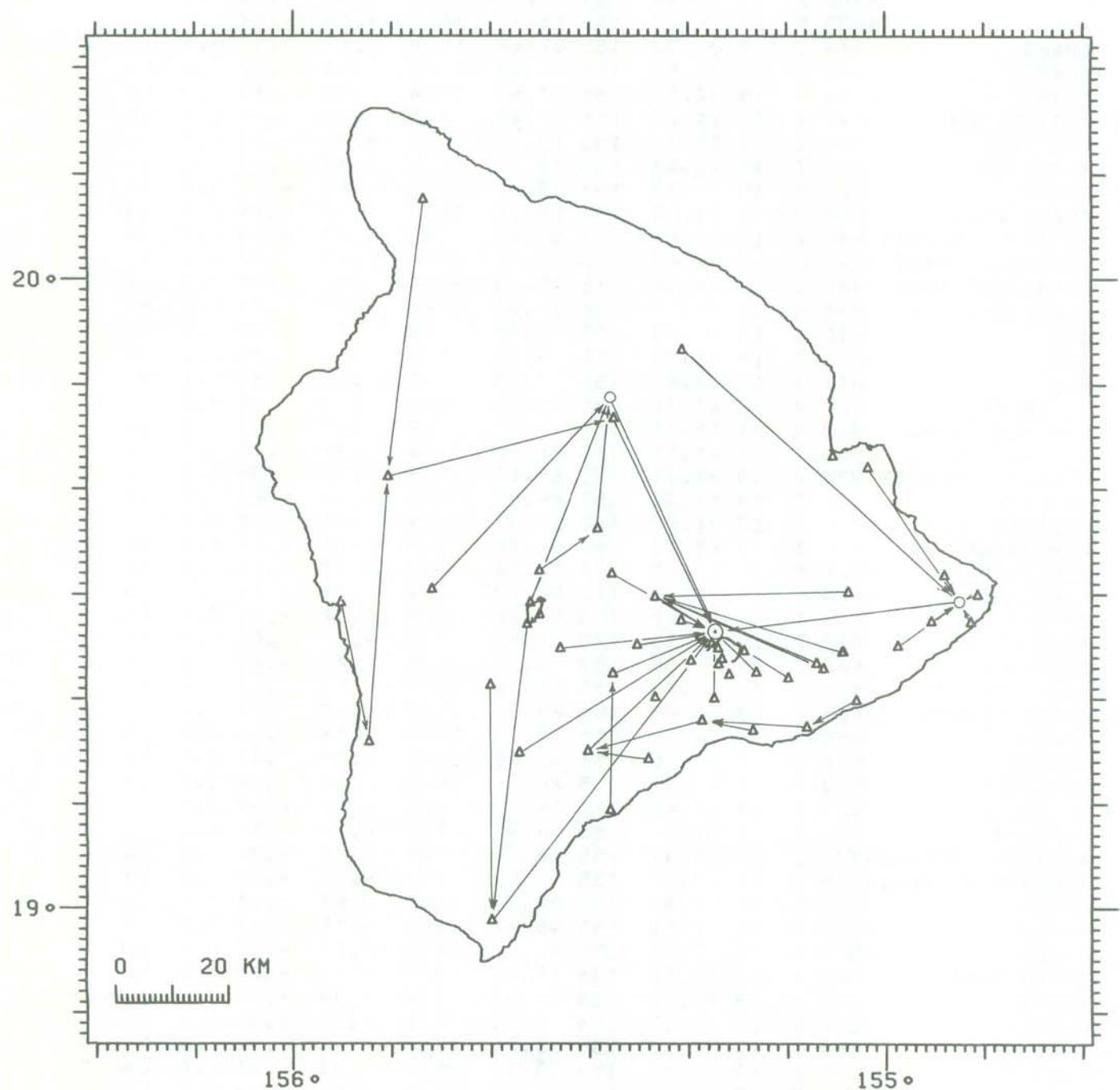


Figure 3. Map of the island of Hawaii showing the telemetry scheme for the Hawaiian Volcano Observatory seismic network.

Legend     $\Delta$  Seismometer location  
             $\circ$  Repeater Station

Table 1. Seismometer stations in Hawaii operated by the U.S. Geological Survey, 1983.

STATION NAME	CODE	---LAT---		---LON---		ELEV (M)	DELAY 1	DELAY 2	CAL	SEIS	OPTIC
		D	M	D	M						
AHUA	AHU Z	19	22.40	155	15.90	1070	-.10	-.13	2.1	E4	SD
AHUA	AHUE E	19	22.40	155	15.90	1070	-.10	-.13	.0	E4	
AHUA	AHUN N	19	22.40	155	15.90	1070	-.10	-.13	.0	E4	
AINAPO	AIN Z	19	22.50	155	27.62	1524	.13	.17	5.5	L4	D
AINAPO	AINE E	19	22.50	155	27.62	1524	.13	.17	.0	L4	
AINAPO	AINN N	19	22.50	155	27.62	1524	.13	.17	.0	L4	
CAPTAIN COOK	CAC Z	19	29.29	155	55.09	323	.00	-.16	1.1	L4	D
CONE PEAK	CPK Z	19	23.70	155	19.70	1038	-.26	-.07	6.0	L4	D
DANDELION	DAN Z	19	21.42	155	40.04	3003	-.27	.03	7.0	L4	D
DESERT	DES Z	19	20.20	155	23.30	815	-.29	-.13	3.0	E4	SD
ESCAPE ROAD	ESR Z	19	24.68	155	14.33	1177	-.17	-.19	2.0	L4	D
HAWAIIAN BEACHES	HAB Z	19	31.89	154	53.89	92	-.09	-.24	1.0	L4	
HALEAKALA, MAUI	HAE E	20	46.00	156	15.00	2040	.00	.00	1.0	W	P
HALEAKALA, MAUI	HAL Z	20	46.00	156	15.00	2090	.00	.00	.7	H1	P
HALEAKALA, MAUI	HAN N	20	46.00	156	15.00	2090	.00	.00	1.0	W	P
HILO	HIE E	19	43.20	155	5.30	20	.54	.30	1.0	W	P
HILO	HIL Z	19	43.20	155	5.30	20	.54	.30	1.0	H1	P
HILO	HIN N	19	43.20	155	5.30	20	.54	.30	1.0	W	P
HILINA PALI	HLP Z	19	17.96	155	18.63	707	.02	.07	2.2	L4	D
HONOLULU, OAHU	HON Z	21	19.30	158	.50	2	.00	.00	.0	H1	P
HALE POHAKU	HPU Z	19	46.85	155	27.50	3396	.31	.17	3.7	L4	D
HUMUULA SHEEP ST	HSS Z	19	36.31	155	29.13	2445	.20	.35	5.3	L4	D
HOT CAVES	HTC Z	19	14.33	155	24.02	381	-.16	-.07	.0	E4	
HUALALAI	HUA Z	19	41.25	155	50.32	2189	.67	.38	3.6	L4	D
HEIHEIAHULU	HUL Z	19	25.13	154	58.72	369	-.17	-.16	1.6	E4	DS
HEIHEIAHULU	HULE E	19	25.13	154	58.72	369	-.17	-.16	.0	E4	
HEIHEIAHULU	HULN N	19	25.13	154	58.72	369	-.17	-.16	.0	L4	
KAAPUNA	KAA Z	19	15.98	155	52.28	524	-.12	-.01	2.8	L4	
KAENA POINT	KAE Z	19	17.35	155	7.95	37	-.01	.06	1.4	L4	D
KAHAUALEA	KAH Z	19	24.58	155	4.36	625	-.25	-.30	.0	L4	D
KAOIKI FAULTS	KFA Z	19	25.26	155	25.14	1579	.13	.17	.0	E	H
KAOIKI FAULTS	KFB Z	19	25.26	155	25.14	1579	.13	.17	.0	TE	S
KAHUKU	KHU Z	19	14.90	155	37.10	1939	.03	-.03	2.7	E4	D
KANEKII	KII Z	19	30.56	155	45.90	1841	.15	.37	2.9	L4	D
KEANAKOLU	KKU Z	19	53.39	155	20.58	1863	.68	.24	1.2	L4	D
PUU KALIU	KLU Z	19	27.48	154	55.26	271	-.17	-.30	2.9	L4	D
KAMOAMOA	KMM Z	19	23.47	155	6.98	750	-.25	-.30	2.4	L4	D
KAMOAMOA EAST-WEKMME	E	19	23.47	155	6.98	750	-.25	-.30	.0	L4	
KAMOAMOA NORTH-SKMMN	N	19	23.47	155	6.98	750	-.25	-.30	.0	L4	
KOHALA	KOH Z	20	7.69	155	46.77	1166	-.03	-.17	1.5	L4	D
KOHALA	KOHE E	20	7.69	155	46.77	1166	-.03	-.17	2.2	L4	
KOHALA	KOHN N	20	7.69	155	46.77	1166	-.03	-.17	2.2	L4	
KIPUKA NENE	KPN Z	19	20.10	155	17.40	924	-.11	-.08	3.5	E4	D
KAPOHO	KPO Z	19	30.02	154	50.51	134	-.09	-.24	.0	L4	DH
KALALUA	LUA Z	19	24.55	155	4.25	622	-.25	-.30	2.5	L4	DH
MAUNA LOA	MLO Z	19	29.80	155	23.30	2010	.03	.08	5.8	L4	SD
MAUNA LOA	MLOE E	19	29.80	155	23.30	2010	.03	.08	.0	L4	D
MAUNA LOA	MLON N	19	29.80	155	23.30	2010	.03	.08	1.5	L4	
MAUNA LOA X	MLX Z	19	27.60	155	20.70	1475	.06	.15	3.0	L4	
MOKUAWEO	MOK Z	19	29.28	155	35.98	4104	.15	.16	5.5	L4	DH
MAKAOPUHI	MPR Z	19	22.07	155	9.85	881	-.17	-.20	2.4	L4	D
MOUNTAIN VIEW	MTV Z	19	30.25	155	3.75	409	-.02	.01	5.0	E4	D
NATIONAL GUARD	NAG Z	19	42.12	155	1.72	18	.54	.30	4.5	E4	D
NORTH PIT	NPT Z	19	24.90	155	17.00	1115	-.30	-.18	3.0	E4	SD
NORTH PIT	NPTE E	19	24.90	155	17.00	1115	-.30	-.18	.0	E4	
NORTH PIT	NPTN N	19	24.90	155	17.00	1115	-.30	-.18	.0	E4	
OUTLET	OTL Z	19	23.38	155	16.94	1038	-.19	-.18	4.9	L4	
PAUAHI	PAU Z	19	22.62	155	13.10	994	-.21	-.24	2.4	L4	SD
PAUAHI	PAUE E	19	22.62	155	13.10	994	-.21	-.24	.0	L4	

Table 1 (continued)

PAUAHI	PAUN	N	19	22.62	155	13.10	994	-.21	-.24	.0	L4
PUU ULAULA	PLA	Z	19	32.00	155	27.67	2992	-.03	.13	5.4	L D
POHOIKI	POI	Z	19	27.42	154	51.22	16	-.00	-.24	.0	L4
POLIOKEAWE PALI	POL	Z	19	17.02	155	13.47	169	-.02	.03	2.8	E4 D
PUU PILI	PPL	Z	19	9.50	155	27.87	35	-.15	-.15	1.4	E4 D
PUU KAMOAMOA	PUK	Z	19	23.00	155	6.25	704	-.25	-.30	.9	L4 D
RIM	RIM	Z	19	23.90	155	16.60	1128	-.21	-.13	.0	L4
SOUTH POINT	SPT	Z	18	58.91	155	39.92	244	-.17	-.22	2.8	L4 D
SOUTH POINT	SPT	E	18	58.91	155	39.92	244	-.17	-.22	.0	L4
SOUTH POINT	SPTN	N	18	58.91	155	39.92	244	-.17	-.22	.0	L4
SOUTHWEST RIFT	SWR	Z	19	27.26	155	36.30	4048	.01	.04	5.6	E4 D
TRAIL	TRA	Z	19	24.91	155	32.96	3207	.00	.00	.0	L4 D
UWEKAHUNA	UEE	E	19	25.40	155	17.60	1240	-.21	.00	1.5	E
UWEKAHUNA	UEN	N	19	25.40	155	17.60	1240	-.21	.00	1.5	E
UWEKAHUNA	UEZ	Z	19	25.40	155	17.60	1240	-.21	.00	1.5	E
UWEKAHUNA	USE	E	19	25.40	155	17.60	1240	-.21	.00	1.0	S P
UWEKAHUNA	USZ	Z	19	25.40	155	17.60	1240	-.21	.00	1.0	S P
WAHAULA	WHA	Z	19	19.90	155	2.92	29	-.10	-.04	1.5	E4 D
WILKES CAMP	WIL	Z	19	28.15	155	35.02	4037	.22	.17	2.6	E4 D
WEATHER OBSERVAT	WOB	Z	19	32.31	155	35.01	3396	.00	.00	.0	E4
WOOD VALLEY	WOO	Z	19	15.08	155	30.12	909	-.15	-.06	4.6	E4 D

Table 2. Seismic Instrumentation Types

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

Type 1. (Codes E, L, and 4) Consists of:

- a) Geophone - Electrotech EV-17 (E) or Mark Products L4C (L) 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 - USGS/OEVE Model J302 or J402 (4) voltage controlled oscillator. Three db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 3. (Code H1) Consists of:

Electrotech EV-17 or observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier, galvanometer driver, and 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

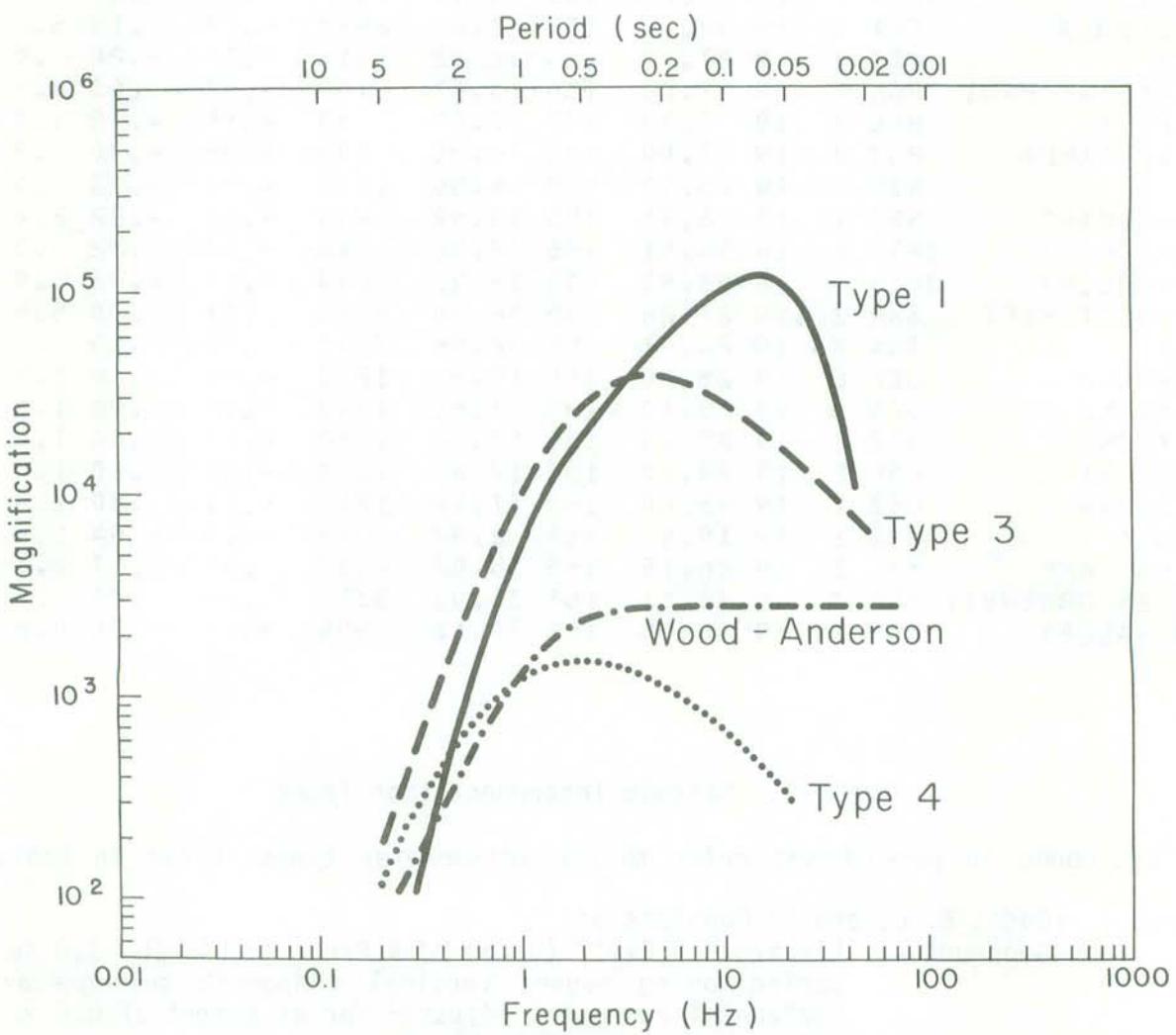
Type 4. (Code S) Consists of:

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 2 Hz.

Type 2 instruments have been discontinued.

Code (W) is a Wood-Anderson torsion seismograph.

Codes (TE) and (S5) are experimental seismometers.



**Figure 4.** 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 OEVE seismometer recorded on Develocorder film and magnetic tape. The curve for Type 1 includes response of the geophone, all electronics including telemetry, Develocorder galvanometer, and projection of film by a 20X viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL), to get the response for an individual station.

## SEISMIC DATA PROCESSING

Develocorder films are scanned on a daily basis for earthquakes, and coda durations are measured for magnitude determination. Events are digitized, timed, and located on the Eclipse computer at HVO. Computer locations are made using the program HYPOINVERSE (Klein, F.W., Hypocenter location program HYPOINVERSE, U.S.G.S. Open file report 78-694, 1978), and problem events are reread and rerun. Magnetic tape copies of all arrival time and output summary data are kept in Menlo Park and HVO.

The crustal model used is specified by velocities at 4 depth points. Velocity at any depth is given by linear interpolation between points and uses a homogeneous half-space below.

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

Two empirical sets of station delays or corrections were used in the locations, and are given in Table 1. Delay model 1 is used for events on Kilauea and its south flank, and delay model 2 applies to the rest of the island and offshore earthquakes. The delay models are in fact separated by a circle of radius 34 km centered at 19°22'N and 155°10'W.

Magnitudes for most events were computed using both recorded amplitudes on low gain or Wood-Anderson stations, and signal or coda duration on selected short-period vertical stations. Amplitudes read from other than Wood-Anderson instruments are corrected to an equivalent Wood-Anderson amplitude using the curves of Figure 3 and CAL factors. 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, OTL, PPL, KHU, or WIL.

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 nearly to the noise level. A bilinear relation 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).

The equations used in magnitude determination are:

$$\begin{aligned} \text{duration } < 210 \text{ sec} \quad M &= -5.2 + 3.89 \log(F-P) + .013 Z + .0037 D \\ \text{duration } > 210 \text{ sec} \quad M &= -.905 + 2.026 \log(F-P) + .013 Z + .0037 D \end{aligned}$$

where Z and D are the depth and epicentral distance in km, respectively.

## SEISMIC SUMMARY

The emphasis in both station coverage and detailed data analysis is on the highly active south half 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. 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 are given in Figures 8-13. The epicenter maps are on different 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 depth. Figures 4-7 are maps 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 Figures 4-7. Table 6 relists the events in Table 5 for which either duration or amplitude magnitude is 3.0 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.

Earthquake categories are:

- 1) Kilauea summit, short period caldera: shallow earthquakes beneath the caldera.
- 2) Kilauea summit, long period caldera: earthquakes characterized by low frequency signatures, often originating 5-10 km below the caldera.
- 3) Kilauea summit 30 km: deep earthquakes about 30 km beneath the summit region.
- 4) Kaoiki and southwest rift: earthquakes beneath the southwest rift of Kilauea, western parts of the Koae faults and adjacent Kaoiki fault system.
- 5) Upper east rift: earthquakes in the upper and middle east rift zone, the adjacent parts of the south flank, and eastern parts of the Koae faults.
- 6) Lower east rift: earthquakes in the lower east rift zone and adjacent parts of the south flank.
- 7) Offshore PPL: earthquakes from offshore areas south of the Puu Pili station, including Loihi seamount.
- 8) Mauna Loa long period: low frequency events near Mauna Loa summit.
- 9) Mauna Loa short period: shallow earthquakes in the Mauna Loa caldera region.

Tremor is separated into four categories: shallow, intermediate and deep Kilauea, and Mauna Loa. Depth is inferred on the basis of relative amplitudes on seismographs.

KILAUEA SUMMIT      KILAUEA FLANK      MAUNA LOA TREMOR (MINUTES)

I	I	SHORT LONG	I	KAO.	UP.	LOW.	OFF-	I	T	KILAUEA	MAUNAI	
I	I	DATE	I	PER.	PER.	30	I	& SW EAST EAST SHORE	INT.	LOA	I	
I	I	1983	I	CALDERA	KM	I	RIFT	RIFT RIFT PPL	I	PER.	I	
I	I	I	I	I	I	I	I	I	I	I	I	
I	JAN	1	I	29	1	I	23	1963	2	I	2 I 480	
I	2	I	73	1	I	30	5977	7	I	T1440	I	
I	3	I	11		I	38	1348	4	I	2 T1440	I	
I	4	I	10		3	I	40	2709		I	T1440	
I	5	I	326	23	I	39	1345	2	I	1 T1440	I	
I	6	I	129		I	29	1598	4	I	2 T1440	I	
I	7	I	88		1	I	20	639	2	I	1 T1440	I
I	8	I	3		1	I	27	266	2	I	1 T1440	I
I	9	I	14	18	3	I	24	186	32	I	4 T1440	I
I	10	I	5		I	30	137	2	I	1 T1440	I	
I	11	I			I	24	184	3	I	3 T1440	I	
I	12	I	4		2	I	44	221	2	I	2 T1440	35
I	13	I			2	I	30	203	3	I	5 T1440	40
I	14	I			2	I	30	102	2	I	10 T1440	4
I	15	I	1	4	1	I	41	147	2	I	1 T1440	I
I	16	I	3		I	35	206	7	I	14 T1440	I	
I	17	I	3	6	I	30	189	10	I	17 T1440	I	
I	18	I	2		1	I	25	232	5	I	4 T1440	I
I	19	I	1		1	I	17	298	6	I	3 T1440	I
I	20	I	3	2	I	33	177	4	I	1 T1440	I	
I	21	I	4		3	I	20	216	25	I	1 T1440	I
I	22	I	8	1	2	I	27	189	14	I	T1440	I
I	23	I	10	2		I	24	227		I	T1440	I
I	24	I	7	1	I	33	194	8	I	T1440	2 4	
I	25	I	13	8	I	34	203	1	I	1 T1440	I	
I	26	I	14	26	I	35	166	1	I	1 T1440	I	
I	27	I	12	1	2	I	35	158		I	12 T1440	5
I	28	I	13	10		I	26	187	3	I	1 T1440	I
I	29	I	7	8	1	I	34	185	1	I	2 T1440	28
I	30	I	16	11	1	I	40	228	4	I	1 T1440	I
I	31	I	9	2	1	I	9	163	1	I	T1440	I
I	FEB	1	I	12		I	20	149	20	I	4 T1440	I
I	2	I	13			I	39	162	6	I	2 T1440	I
I	3	I	19		1	I	29	102	6	I	5 T1440	I
I	4	I	15	4	I	19	97	8	3	I	2 T1440	I
I	5	I	9	3	I	19	123	1	I	6 T1440	I	
I	6	I	18	2	1	I	28	101	1	I	15 T1440	19
I	7	I	16	1	10	I	17	97		I	1 T1440	I
I	8	I	18	69		I	34	146	4	I	17 T1440	I
I	9	I	19	4	2	I	34	140	5	I	3 T1440	I
I	10	I	17	1	I	17	89	5	I	10 T1440	I	
I	11	I	10	3	2	I	51	96	18	I	T1440	I
I	12	I	5	4	2	I	71	83	8	I	1 T1440	I
I	13	I	16		2	I	37	110	4	I	1 T1440	30
I	14	I	15	8	I	29	114	2	I	8 T1440	2	

KILAUEA SUMMIT      KILAUEA FLANK      MAUNA LOA TREMOR (MINUTES)

I	I	SHORT LONG	I	KAO.	UP.	LOW.	OFF-	I	I	KILAUEA	MAUNAI
I	I	DATE	I	PER.	PER.	30	I	& SW EAST	EAST	SHOREI	LONG
I	I	1983	I	CALDERA	KM	I	RIFT	RIFT	RIFT	PPL	IPER.
I	I	IFEB15	I	18		I	30	118	4	I	1 T1440
I	I	16	I	14	1	5	I	34	122	9	I
I	I	17	I	14	1		I	35	57	12	I
I	I	18	I	12		1	I	25	112	5	I
I	I	19	I	34	1		I	36	105	6	I
I	I	20	I	26		1	I	23	92	8	I
I	I	21	I	28	1	1	I	25	96	5	I
I	I	22	I	23	16		I	28	85	13	I
I	I	23	I	18		1	I	30	75	17	I
I	I	24	I	30			I	31	87	29	I
I	I	25	I	12			I	67	59	18	I
I	I	26	I	9			I	74	58	16	I
I	I	27	I	19	1	1	I	20	70	5	I
I	I	28	I	13			I	19	76	8	I
IMAR	1	I	21	3	3	3	I	30	72	7	I
I	I	2	I	20	2	1	I	27	62	9	I
I	I	3	I	5	2		I	19	69	22	I
I	I	4	I	5		2	I	45	111	6	I
I	I	5	I	18			I	23	105	15	I
I	I	6	I	11	8	2	I	18	111	1	I
I	I	7	I	14	3	1	I	32	87	14	I
I	I	8	I	28	8	1	I	31	123	18	I
I	I	9	I	24	6		I	27	115	21	I
I	I	10	I	14			I	40	105	5	I
I	I	11	I	19	4		I	29	106	3	I
I	I	12	I	29	11		I	43	118	3	I
I	I	13	I	23	3	5	I	35	103	1	I
I	I	14	I	17	1		I	22	100	20	I
I	I	15	I	33	8		I	28	65	16	I
I	I	16	I	23	6		I	26	94	17	I
I	I	17	I	13	2	3	I	22	75	2	I
I	I	18	I	18	7	3	I	51	90	16	I
I	I	19	I	22	14	1	I	20	93	28	I
I	I	20	I	21	10	2	I	74	397		I
I	I	21	I	29	3	3	I	55	167	21	I
I	I	22	I	21	1		I	37	172	16	I
I	I	23	I	24	2		I	30	175	21	I
I	I	24	I	62	14	1	I	39	101	2	I
I	I	25	I	28	6		I	35	115	1	I
I	I	26	I	20		1	I	20	140	5	I
I	I	27	I	13	1	1	I	32	93	5	I
I	I	28	I	12	3	1	I	27	72	4	I
I	I	29	I	14			I	30	61	1	I
I	I	30	I	8			I	25	61		I
I	I	31	I	15	1	1	I	32	55	1	I

KILAUEA SUMMIT      KILAUEA FLANK      MAUNA LOA TREMOR (MINUTES)

I	ISHORT LONG	I	KAO.	UP.	LOW.	OFF-	I	T	KILAUEA	MAUNAI
I	DATE	I	PER.	PER.	30	I & SW	EAST EAST	SHOREILONG	INT.	LOA I
I	1983	I	CALDERA	KM	I	RIFT	RIFT	RIFT	PPL	IPER.
I	-----	I	-----	I	-----	I	-----	I	-----	I
I	AAPR 1	I	12	2	1	I	27	51	I	12 T1440
I	2	I	32		5	I	34	45	4	I 10 T1440
I	3	I	14	6	I	I	19	52	7	I 1 13 T1440
I	4	I	37	13	1	I	23	42	8	I 6 25 T1440
I	5	I	53	13	I	I	27	40	11	I 33 T1440 17 3 15 I
I	-----	I	-----	I	-----	I	-----	I	-----	I
I	6	I	42	10	I	I	26	51	2	I 28 T1440
I	7	I	48	3	1	I	34	28	I	I 1 18 T1440
I	8	I	40		I	I	15	69	10	I 21 T1440
I	9	I	10	104	1	I	34	114	10	I 27 T1440
I	10	I	12	32	2	I	20	110	10	I 6 21 T1440 20 I
I	-----	I	-----	I	-----	I	-----	I	-----	I
I	11	I	11	13	2	I	27	198	16	I 40 T1440 2 I
I	12	I	23	10	I	I	39	285	12	I 1 47 T1440 4 I
I	13	I	17		I	I	20	296	4	I 11 12 T1440
I	14	I	13	8	I	I	39	222	5	I 5 T1440 5 I
I	15	I	17	7	I	I	17	250	10	I 4 12 T1440
I	-----	I	-----	I	-----	I	-----	I	-----	I
I	16	I	12	2	I	I	34	240	9	I 2 3 T1440
I	17	I	14	1	I	I	20	409	14	I 8 T1440
I	18	I	16	3	1	I	21	396	10	I 2 8 T1440 4 I
I	19	I	27	2	2	I	35	325	14	I 1 15 T1440
I	20	I	17	1	1	I	27	195	6	I 2 9 T1440
I	-----	I	-----	I	-----	I	-----	I	-----	I
I	21	I	15	7	2	I	35	312	4	I 3 T1440 4 I
I	22	I	16		1	I	20	448	4	I 8 T1440
I	23	I	15		I	I	21	432	6	I 2 2 T1440 23 I
I	24	I	35	2	I	I	29	260	7	I 4 11 T1440
I	25	I	15		I	I	20	269	11	I 7 T1440 3 I
I	-----	I	-----	I	-----	I	-----	I	-----	I
I	26	I	23		I	I	21	271	13	I 7 T1440
I	27	I	17	2	I	I	13	309	9	I 1 8 T1440
I	28	I	13	3	I	I	34	110	4	I T1440 2 I
I	29	I	23	2	I	I	37	221	1	I 1 5 T1440
I	30	I	22	2	1	I	36	214	7	I 2 26 T1440
I	-----	I	-----	I	-----	I	-----	I	-----	I
IMAY	1	I	28	3	I	I	30	149	7	I 1 46 T1440
I	2	I	20		2	I	25	165	5	I 5 T1440 5 I
I	3	I	5	3	2	I	27	134		I 13 T1440 27 I
I	4	I	37	4	I	I	23	202	9	I 34 T1440 3 I
I	5	I	34	3	2	I	20	149	6	I 9 T1440 5 I
I	-----	I	-----	I	-----	I	-----	I	-----	I
I	6	I	34	1	I	I	20	264	12	I 12 T1440
I	7	I	30	1	1	I	30	258	11	I 4 T1440
I	8	I	30	4	1	I	29	164	4	I 7 T1440
I	9	I	36	3	I	I	12	126	5	I 4 T1440 4 I
I	10	I	48	1	1	I	23	196	9	I 12 T1440 16 I
I	-----	I	-----	I	-----	I	-----	I	-----	I
I	11	I	36	2	1	I	23	247	13	I 11 T1440
I	12	I	34	3	1	I	34	139	1	I 1 4 T1440 6 I
I	13	I	42		2	I	31	231	10	I 2 13 T1440
I	14	I	34		I	I	26	242	7	I 11 T1440 28 I
I	15	I	39	4	I	I	17	144	6	I 6 T1440 4 I

## KILAUEA SUMMIT      KILAUEA FLANK      MAUNA LOA      TREMOR (MINUTES)

I	I	SHORT LONG	I	KAO.	UP.	LOW.	OFF-	I	I	KILAUEA	MAUNAI
I	I	DATE	I	PER.	PER.	30	I	& SW EAST EAST SHOREI	LONG SHORT	INT.	LOA I
I	I	1983	I	CALDERA	KM	I	RIFT	RIFT RIFT	PPL	IPER.	PER. I SHAL. DEEP I
I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
I	I	MAY 16	I	46	3	I	42	228	9	I	22 T1440
I	I	17	I	42	3	2	I	29	149	6	I 2 22 T1440 4
I	I	18	I	59	3	I	29	210	16	I	57 T1440 3
I	I	19	I	45		I	31	175	5	I	23 T1440 10
I	I	20	I	39	1	1	I	40	217	9	I 1 45 T1440
I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
I	I	21	I	35		I	23	234	11	I 3 40 T1440	43
I	I	22	I	38	1	1	I	22	129	5	I 13 T1440 7
I	I	23	I	65		I	21	189	10	I 1 23 T1440	
I	I	24	I	71	5	I	17	222	13	I 35 T1440	
I	I	25	I	59	2	I	24	208	12	I 7 T1440	
I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
I	I	26	I	103	37	2	I	11	150	2	I 9 T1440
I	I	27	I	58	2	2	I	23	156	8	I 2 T1440 5
I	I	28	I	34		I	25	192	10	I 8 T1440	
I	I	29	I	26	1	2	I	24	181	8	I 6 T1440 4
I	I	30	I	39		I	27	243	14	I 3 10 T1440 7	
I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
I	I	31	I	37	1	I	27	203	2	I 1 14 T1440	
I	JUN 1	I	51	3	I	35	184	17	I 1 10 T1440	6	
I	I	2	I	45	1	3	I	33	127	4	I 1 7 T1440
I	I	3	I	73	2	I	32	176	6	I 1 36 T1440 9	
I	I	4	I	119	5	I	25	197	14	I 10 54 T1440	
I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
I	I	5	I	56		2	I	26	132	6	I 3 88 T1440 3
I	I	6	I	41	1	3	I	24	136	5	I 1 29 T1440
I	I	7	I	47		1	I	19	184	6	I 2 37 T1440
I	I	8	I	35	1	1	I	20	159	7	I 2 44 T1440
I	I	9	I	31	11	1	I	7	131	2	I 1 5 88 T1440
I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
I	I	10	I	63	2	I	19	164	14	I 1 101 T1440	
I	I	11	I	110	1	I	27	168	11	I 1 99 T1440	
I	I	12	I	52		3	I	25	141	5	I 60 T1440
I	I	13	I	48		I	27	40	11	I 1 52 T1440	
I	I	14	I	25	1	I	25	36	12	I 2 47 T1440 4	
I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
I	I	15	I	30		I	24	48	8	I 56 T1440	
I	I	16	I	16		I	16	23	12	I 1 65 T1440 7	
I	I	17	I	15	2	2	I	50	92	3	I 2 21 T1440
I	I	18	I	15		I	33	171	6	I 21 T1440	
I	I	19	I	27		I	21	201	9	I 1 24 T1440 16 3	
I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
I	I	20	I	21	2	I	20	262	4	I 3 15 T1440	
I	I	21	I	26		1	I	16	257	11	I 27 T1440
I	I	22	I	34	3	I	14	353	2	I 22 T1440	
I	I	23	I	42	2	I	15	302	5	I 1 10 T1440	
I	I	24	I	50	1	1	I	21	315	10	I 3 12 T1440
I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
I	I	25	I	75	2	1	I	21	379	13	I 10 T1440 15
I	I	26	I	67	3	2	I	33	277	7	I 5 12 T1440
I	I	27	I	97		I	18	394	10	I 2 23 T1440	
I	I	28	I	72		I	22	448	6	I 6 65 T1440 2	
I	I	29	I	29	1	1	I	32	69	2	I 2 48 T1440

KILAUEA SUMMIT      KILAUEA FLANK      MAUNA LOA      TREMOR (MINUTES)

		ISHORT LONG	I KAO.	UP.	LOW.	OFF-	I	T	KILAUEA	MAUNAI
I	DATE	I PER.	PER.	30	I & SW	EAST EAST	SHOREI	LONG SHORT	INT.	LOA
I	1983	I CALDERA	KM	I RIFT	RIFT	RIFT	PPL	I PER.	I SHAL.	DEEP
I	JUN 30	I	26	I	24	16	7	I	7	114 T1440
I	JUL 1	I	27	I	15	21	6	I	9	164 T1440
I	2	I	41	I	23	23	4	I	2	99 T1440
I	3	I	16	1 1	I	35	563	I	13	1440
I	4	I	17	I	27	557	8	I	5	38 T1440
I	5	I	15	I	11	980	2	I	46	1440
I	6	I	22	2	I	22	1286	I	34	1440
I	7	I	21	1	I	21	785	I	75	1440
I	8	I	24	5 2	I	21	1226	I	31	1440
I	9	I	30	7	I	18	1564	I	23	1440
I	10	I	40	1 1	I	29	1058	I	14	1440
I	11	I	37	4 1	I	19	1320	I	5	26 T1440
I	12	I	59	4	I	15	1825	I	15	1440
I	13	I	49	5 1	I	14	1754	I	12	11 T1440
I	14	I	50	I	27	966	6	I	34	21 T1440
I	15	I	63	9	I	13	1750	I	2	1440
I	16	I	98	I	17	1920	2	I	5	22 T1440
I	17	I	67	1 4	I	18	1259	I	19	14 T1440
I	18	I	88	1	I	17	1169	I	16	15 T1440
I	19	I	94	2	I	36	1183	I	16	1440
I	20	I	101	11	I	24	1071	I	3	8 T1440
I	21	I	76	I	14	606	9	I	4	10 T1440
I	22	I	84	I	22	111	4	I	17	1440
I	23	I	50	3	I	11	37	I	1	14 T1440
I	24	I	83	3	I	19	23	I	4	3 T1440
I	25	I	39	162	I	17	458	I	3	12 T1440
I	26	I	25	8	I	31	756	I	7	1440
I	27	I	22	I	15	757	9	I	11	1440
I	28	I	18	I	32	606	9	I	4	15 T1440
I	29	I	21	I	20	697	13	I	4	9 T1440
I	30	I	19	4 1	I	19	638	I	1	17 T1440
I	31	I	27	6 2	I	28	552	I	1	13 T1440
I	AUG 1	I	34	4	I	17	636	I	1	26 T1440
I	2	I	36	8 1	I	16	581	I	1	57 T1440
I	3	I	53	3	I	14	608	I	1	81 T1440
I	4	I	34	2	I	8	338	I	1	23 T1440
I	5	I	51	7	I	16	410	I	1	45 T1440
I	6	I	75	8	I	18	415	I	1	17 T1440
I	7	I	88	6	I	40	343	I	4	22 T1440
I	8	I	119	9 2	I	20	385	I	22	1440
I	9	I	94	8	I	31	424	I	31	1440
I	10	I	81	5 2	I	25	395	I	4	19 T1440
I	11	I	54	10	I	50	255	I	2	36 T1440
I	12	I	87	4 1	I	18	195	I	1	17 T1440
I	13	I	149	1 1	I	19	258	I	1	38 T1440

## KILAUEA SUMMIT KILAUEA FLANK MAUNA LOA TREMOR (MINUTES)

I	I	SHORT LONG	I	KAO.	UP.	LOW.	OFF-	I	I	KILAUEA	MAUNAI	
I	I	DATE	I	PER.	PER.	30	I	& SW EAST	EAST	SHOREI	LONG INT.	
I	I	1983	I	CALDERA	KM	I	RIFT	RIFT	RIFT	PPL	IPER.	
I	I		I							T SHAL.	DEEP	
I	I		I								I	
I	AUG	14	I	104	1	I	17	214	7	I	25 I1440	
I	15	I	44	26	I	I	12	69	4	3 I	42 I1440	
I	16	I	95	5	I	I	17	45		I	64 I1440	
I	17	I	49	2	I	I	14	343	8	I	83 I1440	
I	18	I	18	1	I	I	15	394	10	I	2 69 I1440	
I	I		I								I	
I	19	I	17	1	1	I	16	518	13	I	1 89 I1440	
I	20	I	24	4	2	I	21	573	4	I	1 90 I1440	
I	21	I	29	2	1	I	24	680	10	I	39 I1440	
I	22	I	27	14	I	I	23	781	11	I	61 I1440	
I	23	I	43	5	I	I	21	734	13	I	5 64 I1440	
I	I		I								I	
I	24	I	32	3	I	I	18	733	12	I	37 I1440	
I	25	I	29		2	I	32	621	5	I	52 I1440	
I	26	I	50	3	1	I	6	428	9	I	3 66 I1440	
I	27	I	47	1	I	I	11	324	8	I	2 56 I1440	
I	28	I	55	2	3	I	41	540	6	I	9 50 I1440	
I	I		I								I	
I	29	I	76	2	I	I	21	712	13	I	1 66 I1440	
I	30	I	80	2	4	I	18	720	8	I	3 44 I1440	
I	31	I	83	3	I	I	21	790	14	I	71 I1440	
I	SEP	1	I	103		3	I	19	366	9	I	7 62 I1440
I	2	I	85	1	1	I	26	490	14	I	12 119 I1440	
I	I		I								I	
I	3	I	11	1	I	I	19	433	2	I	11 226 I1440	
I	4	I	121	3	I	I	17	306	9	I	3 156 I1440	
I	5	I	129	4	I	I	28	463	9	I	4 100 I1440	
I	6	I	41	1429	2	I	15	38		I	2 145 I1440	
I	7	I	15	1837	I	I	16	444	8	I	40 I1440	
I	I		I								I	
I	8	I	32		1	I	26	503	7	I	1 74 I1440	
I	9	I	19	4	1	I	12	716	10	I	2 119 I1440	
I	10	I	36	1	I	I	20	524	6	I	4 94 I1440	
I	11	I	30		1	I	37	398	6	I	9 238 I1440	
I	12	I	49	1	I	I	15	334	11	I	4 339 I1440	
I	I		I								I	
I	13	I	60	2	I	I	514	5		I	10 682 I1440	
I	14	I	71		1	I	11	353	4	I	15 613 I1440	
I	15	I	35	1	I	I	27	97	6	I	13 355 I1440	
I	16	I	86	1	I	I	23	33	14	I	17 454 I1440	
I	17	I	45	354	1	I	17	401	23	I	2 222 I1440	
I	I		I								I	
I	18	I	38	1	1	I	17	772	10	I	10 220 I1440	
I	19	I	26	2	1	I	16	498	3	I	6 195 I1440	
I	20	I	23	4	I	I	29	644	16	I	11 220 I1440	
I	21	I	23		I	I	12	458	16	I	3 196 I1440	
I	22	I	39	2	I	I	17	344	9	I	10 134 I1440	
I	I		I								I	
I	23	I	49	1	1	I	13	453	9	I	4 115 I1440	
I	24	I	58	2	I	I	20	380	14	I	2 135 I1440	
I	25	I	57	2	1	I	15	342	7	I	86 I1440	
I	26	I	79	5	I	I	21	457	8	I	94 I1440	
I	27	I	77	3	1	I	12	359	12	I	123 I1440	
I	I		I								I	

KILAUEA SUMMIT      KILAUEA FLANK      MAUNA LOA      TREMOR (MINUTES)

I	ISHORT LONG	I	KAO.	UP.	LOW.	OFF-	I	I	KILAUEA	MAUNAI
I	DATE	I	PER.	PER.	30	I & SW EAST	EAST SHORE	LONG SHORT	INT.	LOA I
I	1983	I	CALDERA	KM	I	RIFT	RIFT	RIFT	PPL	IPER.
I		I			I				PER.	T SHAL. DEEP
I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I										
I	SEP28	I	92	1	I	12	310	7	I	3 115 T1440
I	29	I	82		I	23	228		I	125 T1440
I	30	I	97	3	I	12	289	6	I	1 213 T1440
IOCT	1	I	97		I	22	288	3	I	5 178 T1440
I	2	I	124	1	I	23	317	6	I	2 126 T1440
I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I										
I	3	I	154	5	I	10	223	16	I	4 96 T1440
I	4	I	123	2	I	19	153	3	I	8 48 T1440
I	5	I	47	38	I	36	34		I	1440
I	6	I	64		I	15	23	1	I	10 134 T1440
I	7	I	60	331	I	20	117	4	I	15 71 T1440
I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I										
I	8	I	23	13	I	10	241	6	I	23 54 T1440
I	9	I	18	5	I	21	241	8	I	13 42 T1440
I	10	I	24	2	I	24	330	5	I	6 23 T1440
I	11	I	30	4	I	15	364	8	I	6 65 T1440
I	12	I	35	5	I	19	372	4	I	25 98 T1440
I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I										
I	13	I	43	5	I	10	359	12	I	11 183 T1440
I	14	I	34	5	I	15	300	5	I	8 89 T1440
I	15	I	39	4	I	18	183	7	I	6 43 T1440
I	16	I	67	8	I	32	243	5	I	7 T1440 1
I	17	I	79	5	I	16	291	7	I	7 35 T1440 2
I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I										
I	18	I	90	1	I	22	346	13	I	13 24 T1440
I	19	I	111	1	I	27	315	19	I	14 48 T1440
I	20	I	71		I	45	443	18	I	9 49 T1440
I	21	I	100	2	I	9	249	11	I	12 32 T1440
I	22	I	66	2	I	15	157	6	I	1 7 T1440 10
I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I										
I	23	I	130	3	I	17	232	12	I	14 T1440 34
I	24	I	186		I	16	253	6	I	1 52 T1440 6
I	25	I	101		I	11	150	12	I	8 151 T1440
I	26	I	160	21	I	158	10		I	1 31 T1440
I	27	I	198		I	41	239	11	I	5 17 T1440
I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I										
I	28	I	141	1	I	15	219	14	I	26 117 T1440
I	29	I	142	2	I	11	163	8	I	13 55 T1440
I	30	I	131		I	39	221	6	I	6 35 T1440
I	31	I	103		I	12	151	16	I	4 37 T1440
INOV	1	I	113	1	I	17	305	5	I	5 35 T1440 4
I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I										
I	2	I	133	2	I	18	323	18	I	45 43 T1440
I	3	I	170	1	I	20	390	8	I	15 40 T1440
I	4	I	196	4	I	15	290	9	I	10 34 T1440 12 3
I	5	I	128	1	I	13	155	10	I	10 23 T1440
I	6	I	174	67	I	24	33	11	I	9 52 T1440
I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I										
I	7	I	16	283	I	13	57	17	I	52 T1440
I	8	I	30	897	I	18	772	6	I	1 31 T1440
I	9	I	29	185	I	15	402	6	I	33 T1440
I	10	I	28	174	I	16	388	17	I	5 44 T1440
I	11	I	24	12	I	20	161	10	I	28 T1440

KILAUEA SUMMIT      KILAUEA FLANK      MAUNA LOA      TREMOR (MINUTES)

I	ISHORT	LONG	I	KAO.	UP.	LOW.	OFF-	I	T	KILAUEA	MAUNAI			
I	DATE	I PER.	PER.	30	I	& SW	EAST	EAST	SHORE	LONG	INT.			
I	1983	I CALDERA	KM	I RIFT	RIFT	RIFT	PPL	I PER.	I PER.	I SHAL.	DEEP			
I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I														
INOV12 I 29 9 3 I 24 225 19 I 3 39 T1440 I	13 I 27 1 4 I 21 274 4 I 44 T1440 I	14 I 30 5 2 I 17 301 5 I 31 T1440 29 I	15 I 38 1 I 15 243 11 I 56 T1440 I	16 I 1 I 2191 252 28 I 26 T1440 I	17 I 70 28 I 1357 220 2 I 42 T1440 3 I	18 I 56 67 I 1144 145 I 8 48 T1440 I	19 I 86 3 22 I 958 149 I 31 T1440 4 I	20 I 113 2103 I 1178 344 9 I 2 30 T1440 I	21 I 60 1 27 I 641 282 1 I 1 22 T1440 I	22 I 43 7 64 I 831 265 6 I 3 18 T1440 3 I	23 I 17 8 78 I 781 267 6 I 4 9 T1440 I	24 I 457 14 I 608 267 1 I 96 T1440 41 I	25 I 52 3 10 I 587 227 5 I 33 T1440 36 I	26 I 38 23 I 603 235 6 I 1 33 T1440 11 I
I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I														
I 27 I 27 2 65 I 755 202 13 I 1 13 T1440 I	I 28 I 35 1 78 I 524 125 10 I 1 5 T1440 6 I	I 29 I 21 67 I 450 132 22 I 2 T1440 I	I 30 I 20 220 26 I 415 18 10 I 6 T1440 I	IDEC 1 I 9 10 3 I 267 521 5 I 5 16 T1440 2 I	I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I									
I 2 I 4 31 I 411 558 6 I 2 6 T1440 1440 I	I 3 I 17 697 51 I 450 607 5 I 2 8 T1440 I	I 4 I 8 198 35 I 299 377 8 I 1 10 T1440 I	I 5 I 24 10 64 I 405 407 7 I 4 14 T1440 18 I	I 6 I 20 4 30 I 348 383 2 I 45 T1440 4 I	I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I									
I 7 I 16 3 35 I 355 393 9 I 5 8 T1440 I	I 8 I 18 1 20 I 279 317 6 I 3 20 T1440 I	I 9 I 26 6 27 I 363 198 20 I 9 20 T1440 I	I 10 I 15 3 42 I 374 298 16 I 8 8 T1440 40 I	I 11 I 18 2 44 I 392 382 12 I 2 13 T1440 I	I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I									
I 12 I 20 8 35 I 319 377 7 I 1 17 T1440 I	I 13 I 28 12 37 I 275 345 6 I 4 26 T1440 13 I	I 14 I 20 10 3 I 222 339 I 1 32 T1440 4 I	I 15 I 19 3 3 I 199 421 3 I 2 41 T1440 36 I	I 16 I 27 1 7 I 181 407 4 I 3 11 T1440 I	I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I									
I 17 I 23 1 5 I 263 435 7 I 1 36 T1440 21 I	I 18 I 40 3152 I 261 398 4 I 2 10 T1440 I	I 19 I 33 3 26 I 191 366 9 I T1440 I	I 20 I 48 2 17 I 166 395 6 I 2 8 T1440 I	I 21 I 23 2 23 I 164 386 3 I 1 4 T1440 I	I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I									
I 22 I 52 1 10 I 176 509 5 I 1 32 T1440 I	I 23 I 48 3 25 I 155 261 12 I 3 36 T1440 I	I 24 I 61 31 I 153 203 9 I 3 11 T1440 I	I 25 I 169 6 16 I 130 171 3 I 5 T1440 10 I	I 26 I 93 3 26 I 173 292 6 I 12 T1440 7 I	I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I-----I									

	KILAUEA SUMMIT			KILAUEA FLANK			MAUNA LOA			TREMOR (MINUTES)					
I	ISHORT	LONG	I	KAO.	UP.	LOW.	OFF-	I	T	KILAUEA	MAUNAI				
I	DATE	I	PER.	PER.	30	I	& SW	EAST	EAST	SHOREI	LONG	SHORT	I		
I	1983	I	CALDERA	KM	I	RIFT	RIFT	RIFT	PPL	IPER.	PER.	T	SHAL.	DFEP	I
I	-----	I	-----	I	-----	I	-----	I	-----	I	-----	I	-----	I	
I	DEC27	I	56	19	I	157	403	11	I	6	18	T1440	I		
I	28	I	50	4	19	I	178	460	11	I	5	13	T1440	I	
I	29	I	55	25	I	141	418	7	I	3	47	T1440	I		
I	30	I	48	7	I	164	308	6	I	16	26	T1440	I		
I	31	I	54	36	I	166	1440	15	I	16	44	T1440	35	10	

Table 4. Coordinates of named earthquake regions.

--All earthquakes are in one of the following groups.

--Identified by a numerical class or 3-letter code:

--Shallow:

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

--Intermediate depth:

- 9 SF1 - Kilauea south flank (5-13 km) (west end)  
 10 SF2 - Kilauea south flank (5-13 km)  
 11 SF3 - Kilauea south flank (5-13 km)  
 12 SF4 - Kilauea south flank (5-13 km)  
 13 SF5 - Kilauea south flank (5-13 km) (east end)  
 14 LER - Lower east rift (5-99 km)  
 15 MLO - Mauna Loa (0-13 km)  
 16 LSW - Lower SW rifts of Kilauea & Mauna Loa (0-13 km)  
 17 GLN - Glenwood (0-13 km)  
 18 SWR - SW rift (0-13 km)  
 19 INT - Intermediate caldera (5-13 km)  
 20 KAO - Kaoiki (0-13 km)

--Deep:

- 21 DEP - Deep Kilauea (>13 km) (below regions 1-13, 17-19)  
22 DLS - Deep lower SW rift (>13 km) (below region 14)  
23 DML - Deep Mauna Loa (>13 km) (below regions 15, 20)

--Outer regions, all depths:

- Outer Regions, all depths.  
24 LOI - Loihi (all depths)  
25 KON - South Kona (all depths)  
26 HUA - Hualalai (all depths)  
27 KOH - Kohala (all depths)  
28 KEA - Mauna Kea (all depths)  
29 HIL - Hilo (all depths)  
30 DIS - Distant, everywhere else

Table 4 (continued)

--The latitude and longitude limits of the regions are given below.

--When the coordinates imply an overlap, precedence is given as in the maps.

No.	Code	N.Lat.	S.Lat.	W.Lon.	E.Lon.
1	SNC	19 28	19 24.5	155 19	155 14
2	SSC	19 24.5	19 22	155 19	155 16.5
3	SEC	19 24.5	19 22	155 16.5	155 14
4	SER	19 26	19 20.5	155 14	155 07.2
5	SME	19 26	-----	155 07.2	155 00
6	KOA	19 22	19 20.5	155 17	155 14
7	SSF	-----	19 10	155 17	155 00
8	SLE	19 32	19 16	155 00	154 40
9	SF1	19 22	19 10	155 17	155 14.5
10	SF2	19 26	19 10	155 14.5	155 12.3
11	SF3	19 26	19 10	155 12.3	155 09.1
12	SF4	19 26	19 10	155 09.1	155 05.3
13	SF5	19 26	19 10	155 05.3	155 00
14	LER	19 32	19 16	155 00	154 40
15	MLO	19 43	19 19	155 35	155 19
16	L SW	19 19	18 40	155 43	155 25
17	GL N	19 43	19 26	155 19	155 00
18	SWR	19 22	19 10	155 25	155 17
19	INT	19 28	19 22	155 19	155 14
20	KAO	19 30	19 19	155 32	155 19
21	DEP	19 43	19 10	155 25	155 00
22	DLS	19 19	18 40	155 43	155 25
23	DML	19 43	19 19	155 35	155 19
24	LOI	19 10	18 40	155 25	155 00
25	KON	19 39	19 00	156 20	155 43
26	HUA	19 55	19 39	156 20	155 43
27	KOH	20 25	19 55	156 20	155 34
28	KEA	20 25	19 43	155 43	154 40
29	HIL	19 47	19 32	155 09	154 40

Figure 5. Earthquake classification, shallow 0-5 km deep  
Kilauea and east flank Mauna Loa.

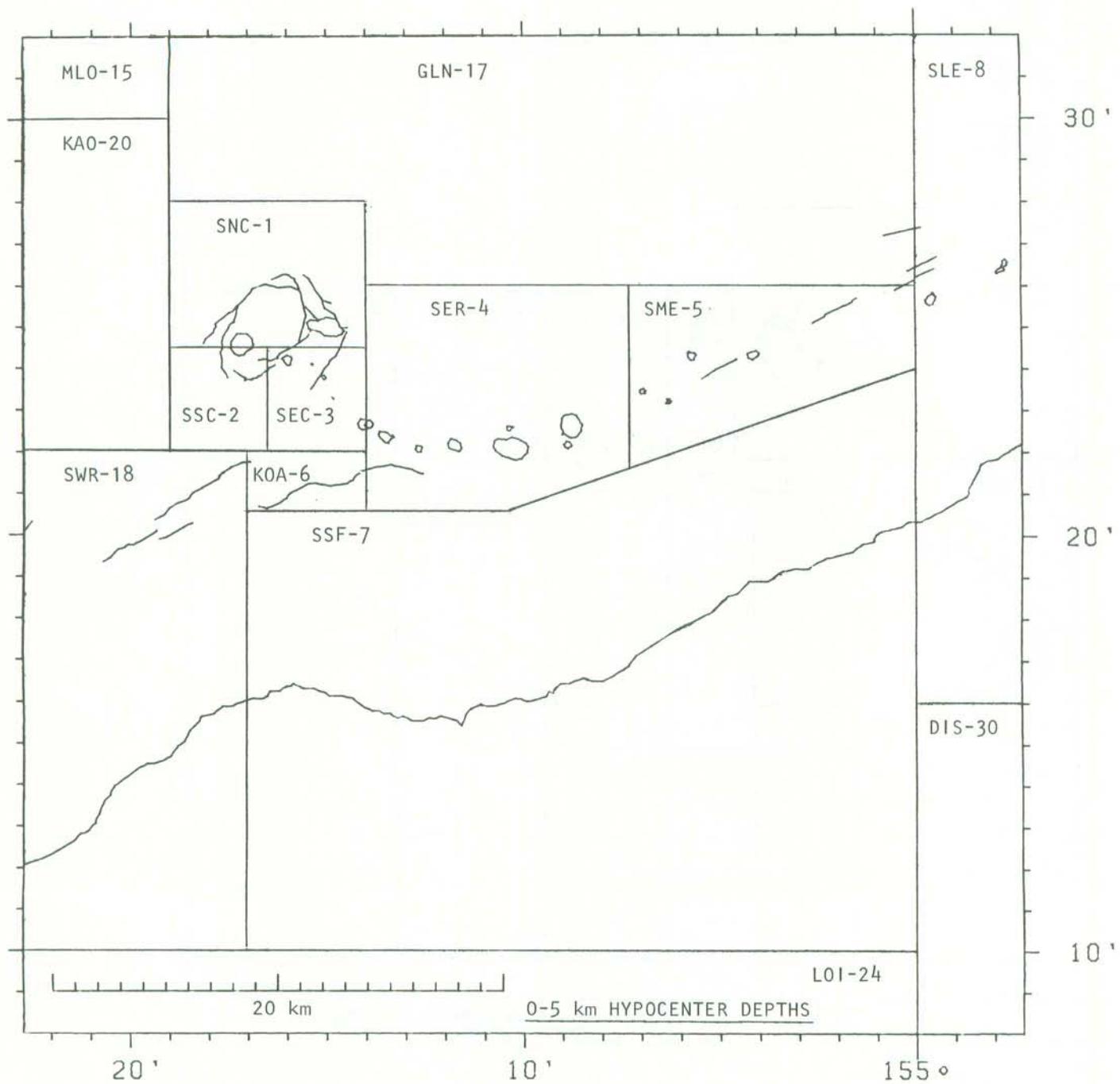


Figure 6. Earthquake classification, intermediate 5-13 km  
Kilauea and east flank Mauna Loa.

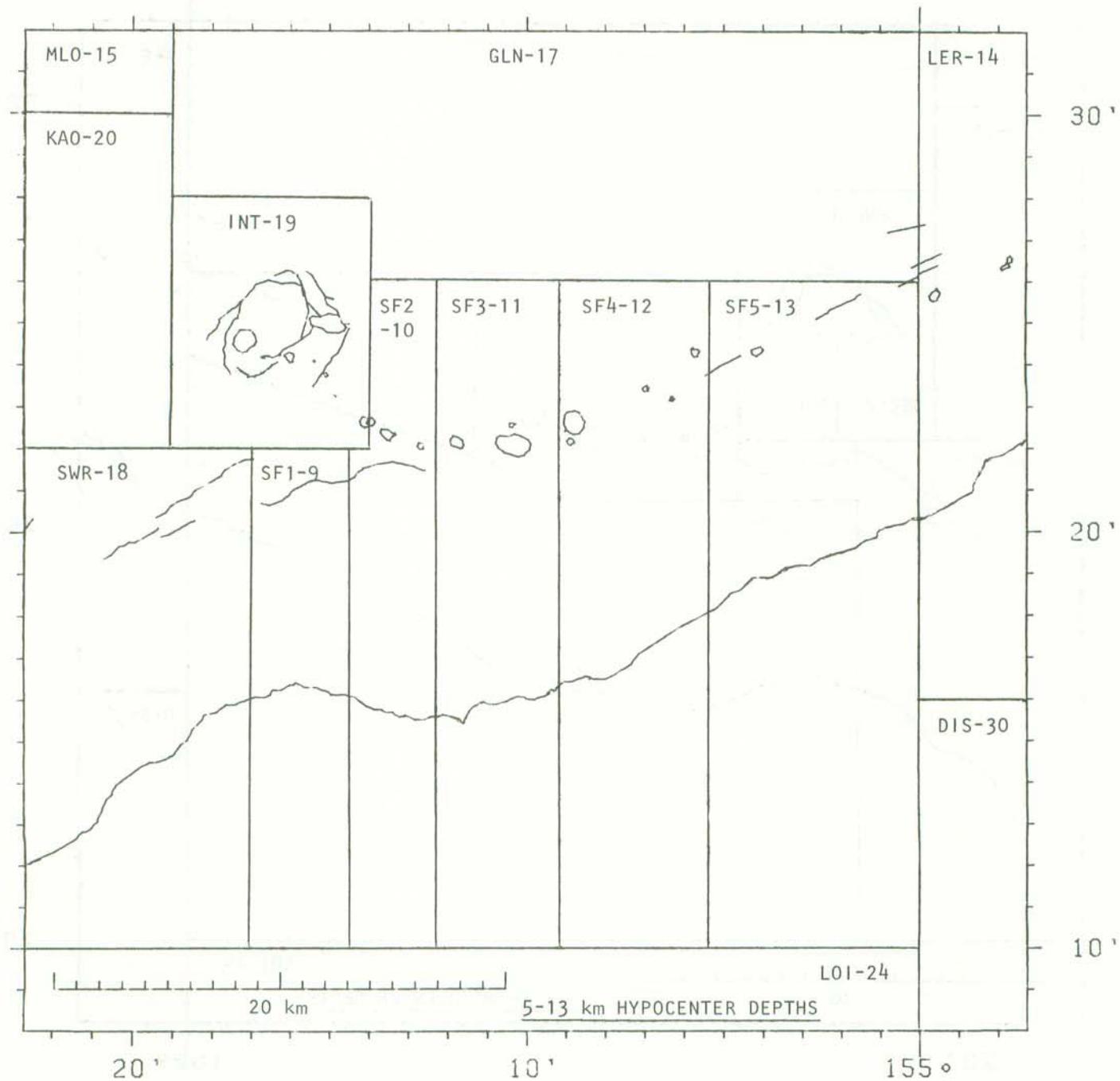


Figure 7. Earthquake classification, crustal 0-13 km deep island of Hawaii.

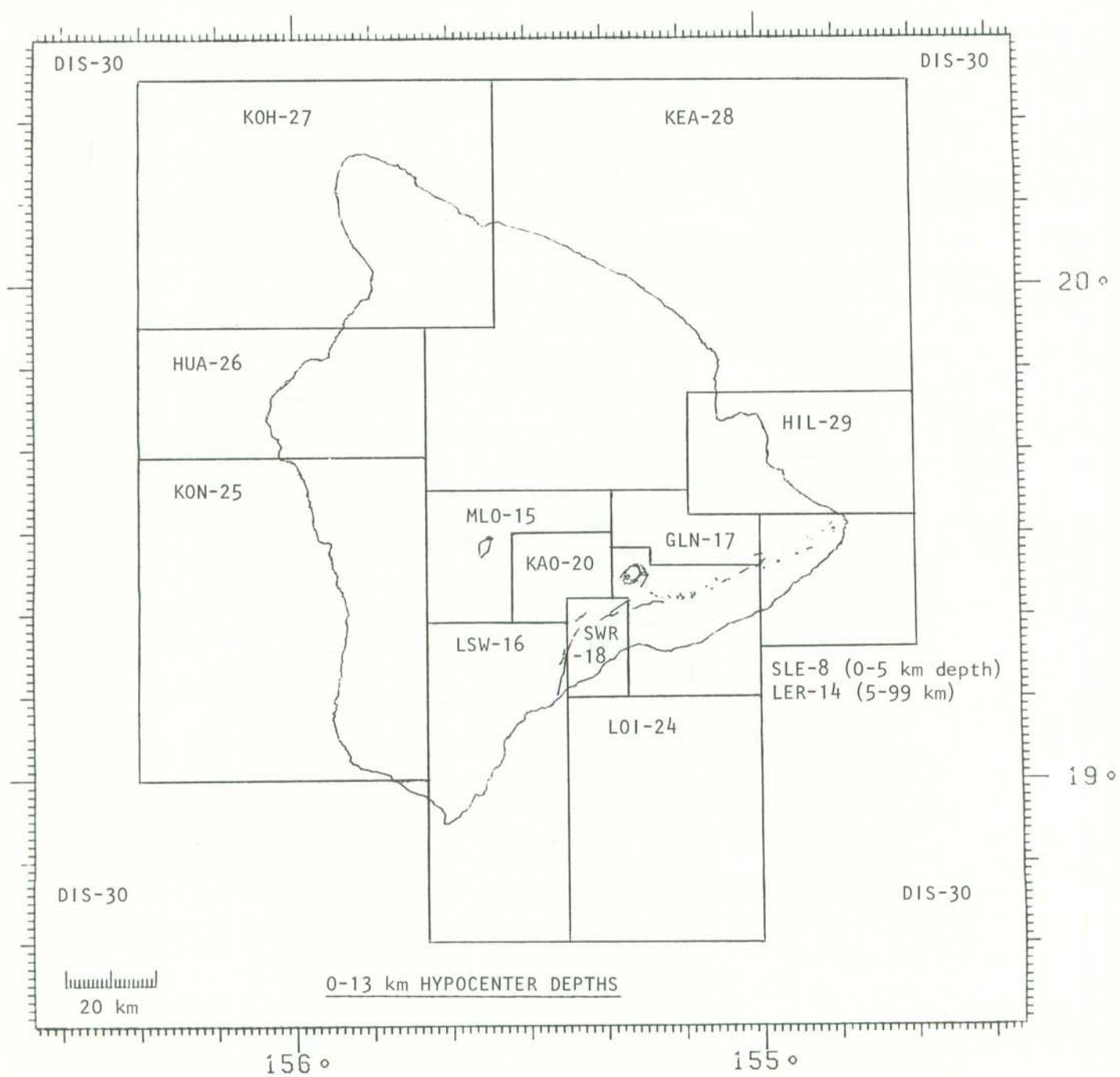


Figure 8. Earthquake classification, mantle greater than 13 km deep island of Hawaii.

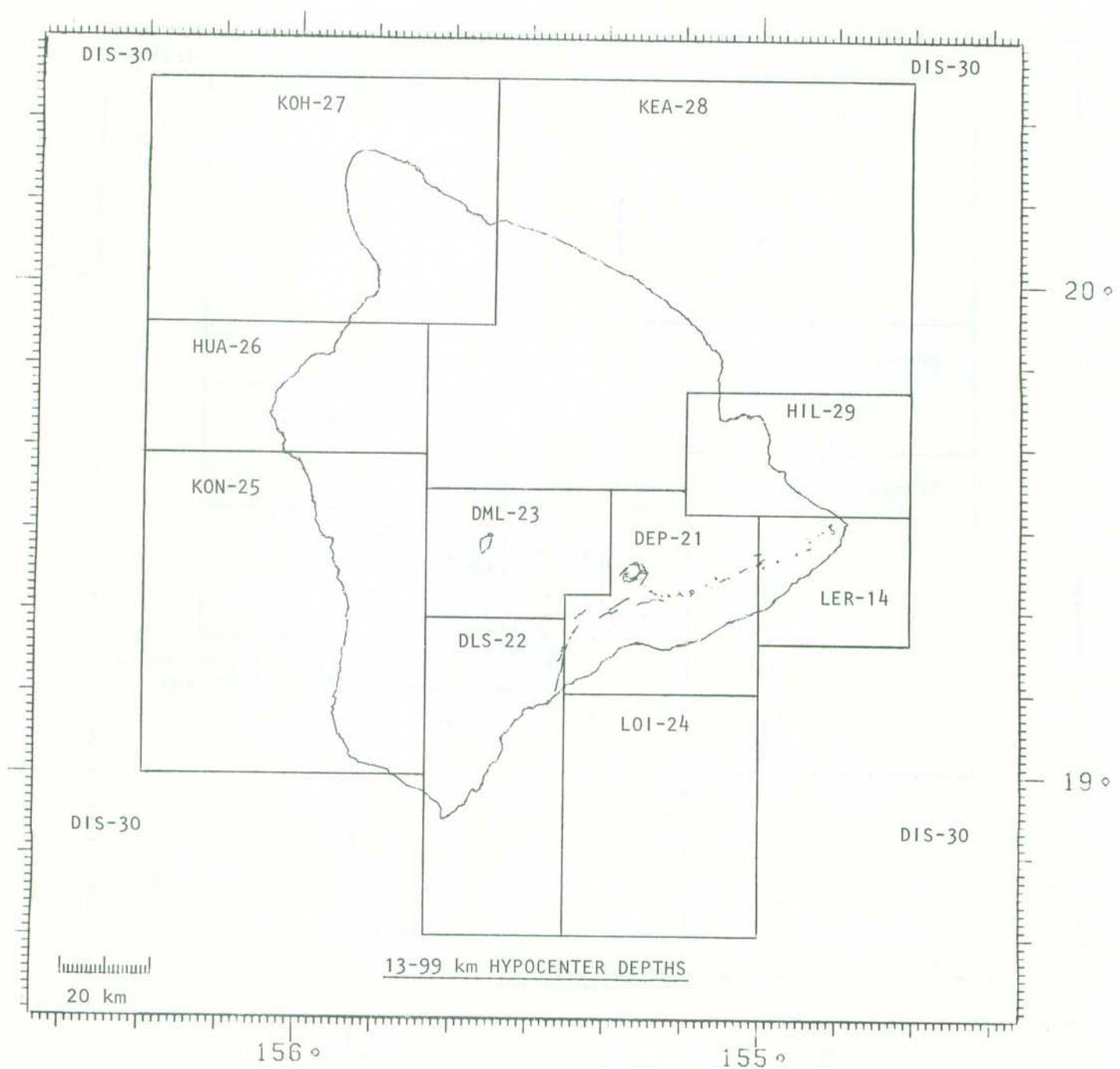


Figure 9

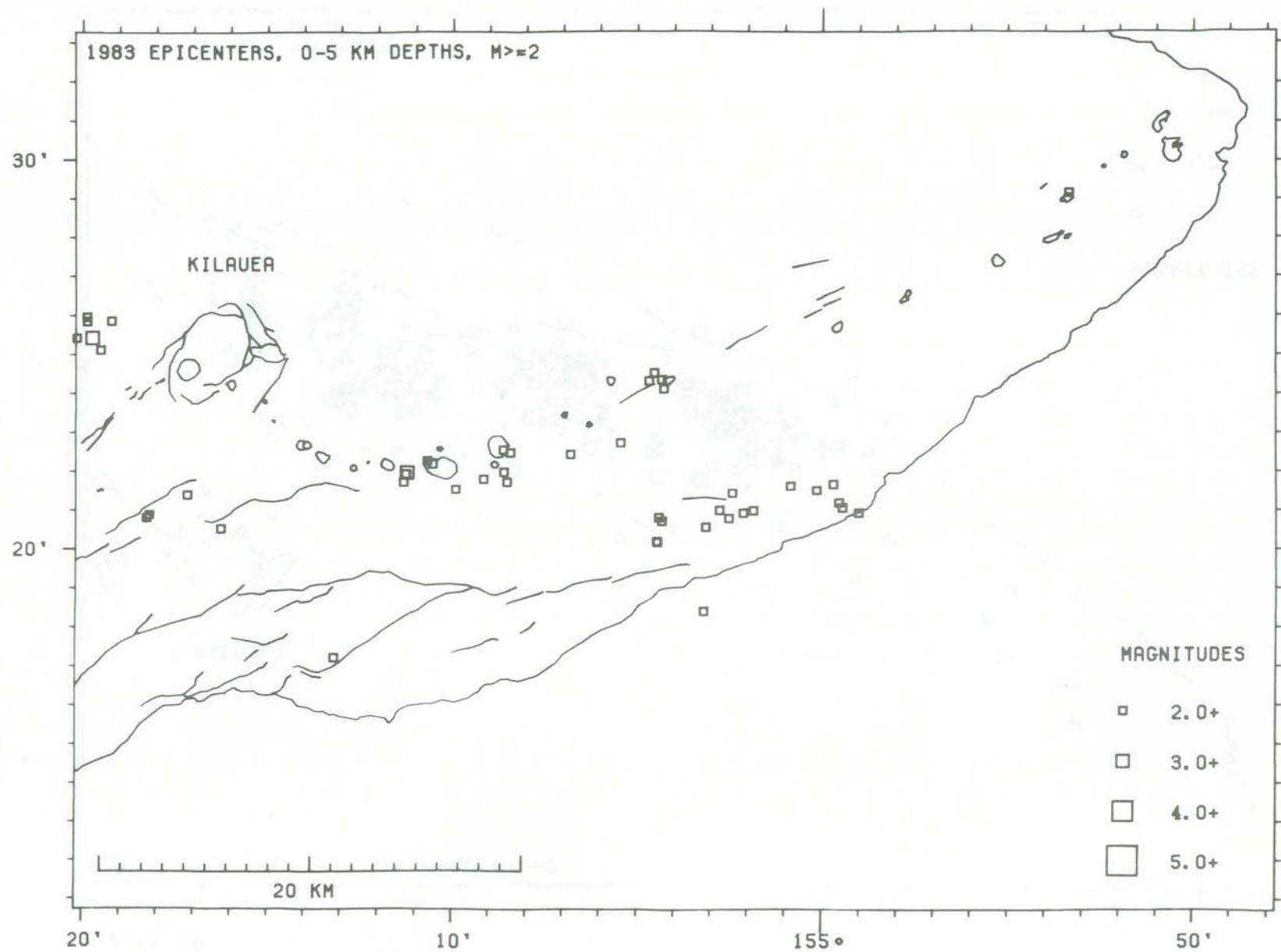


Figure 10

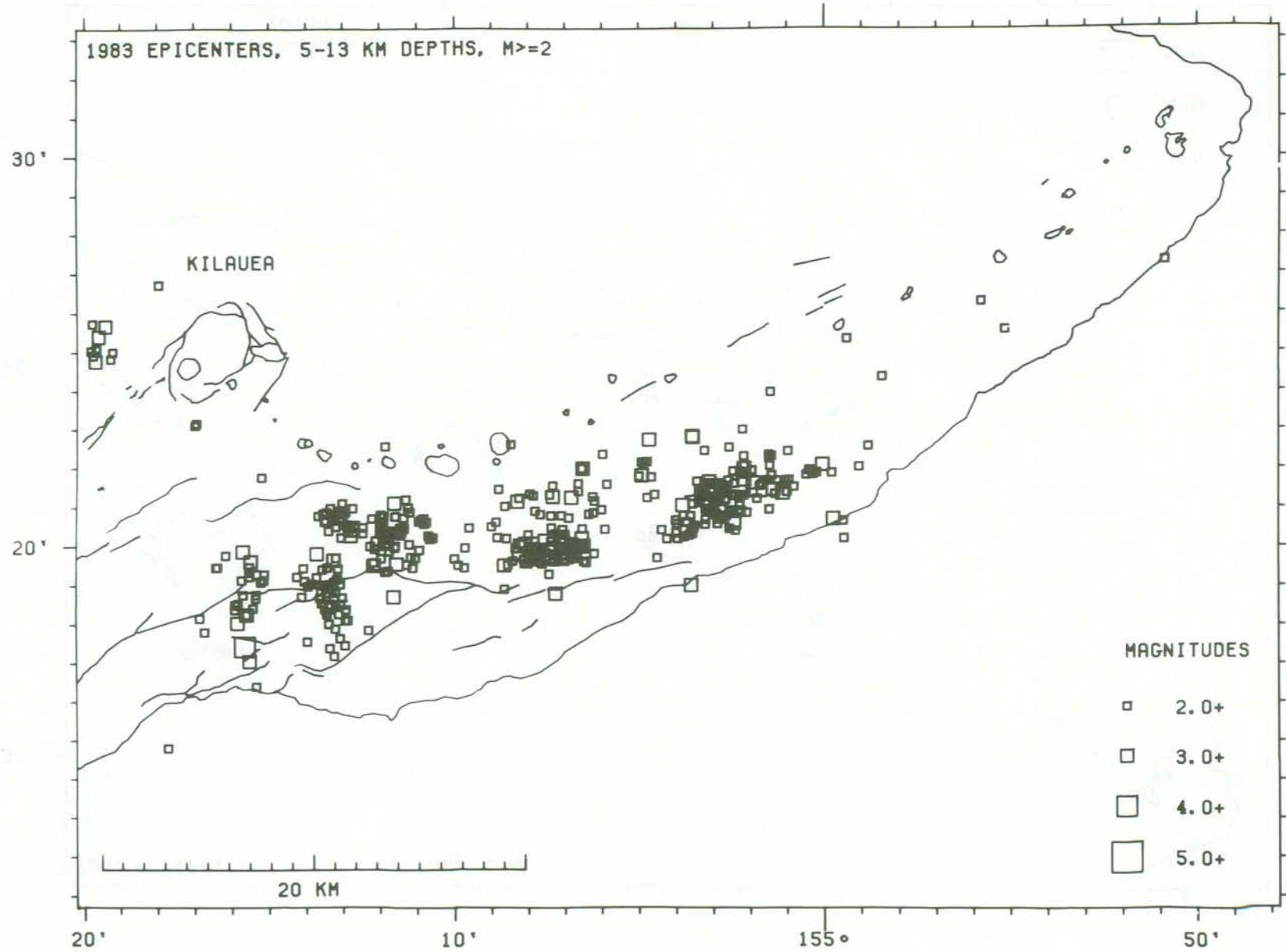


Figure 11

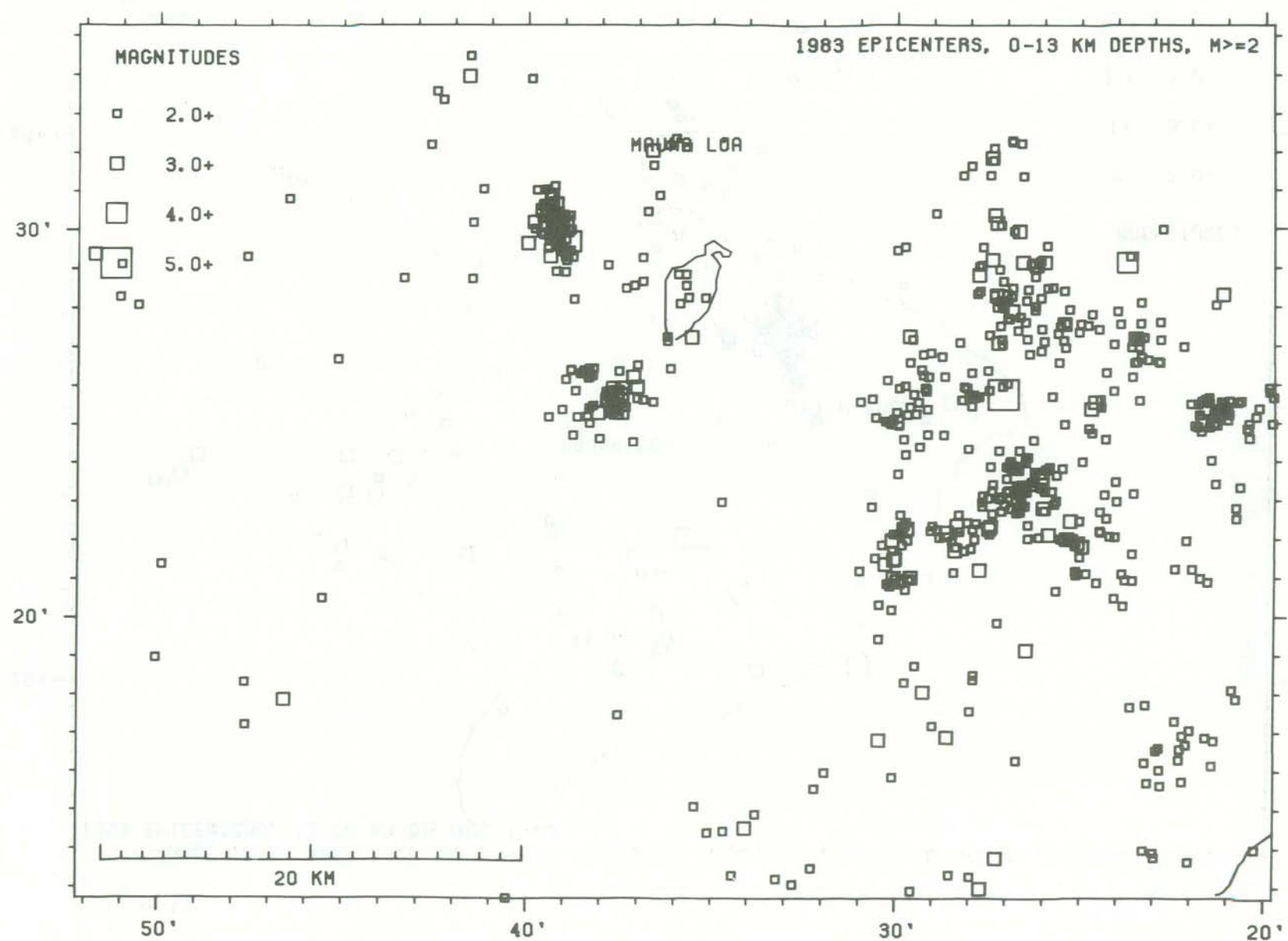


Figure 12

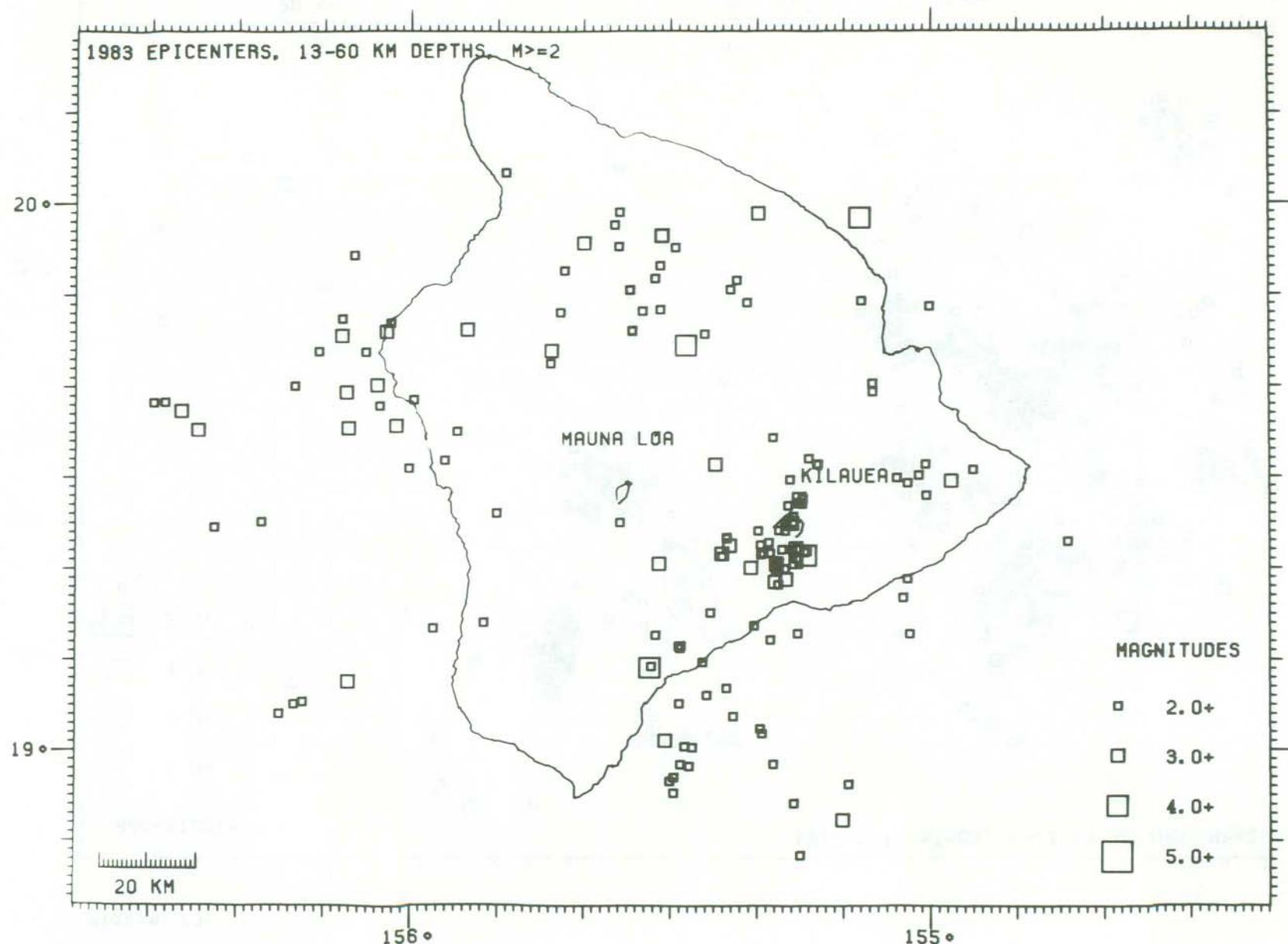


Figure 13

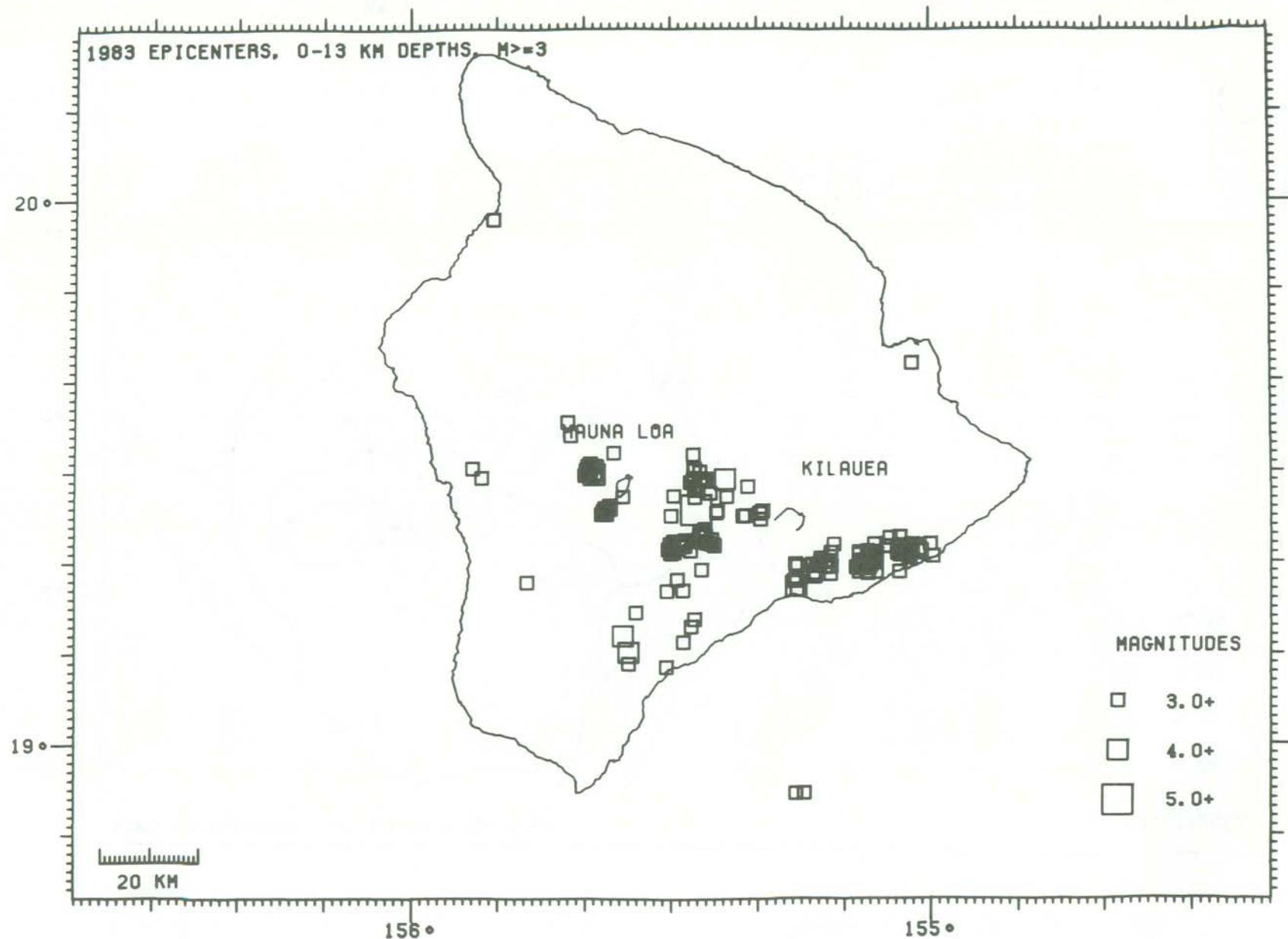


Figure 14

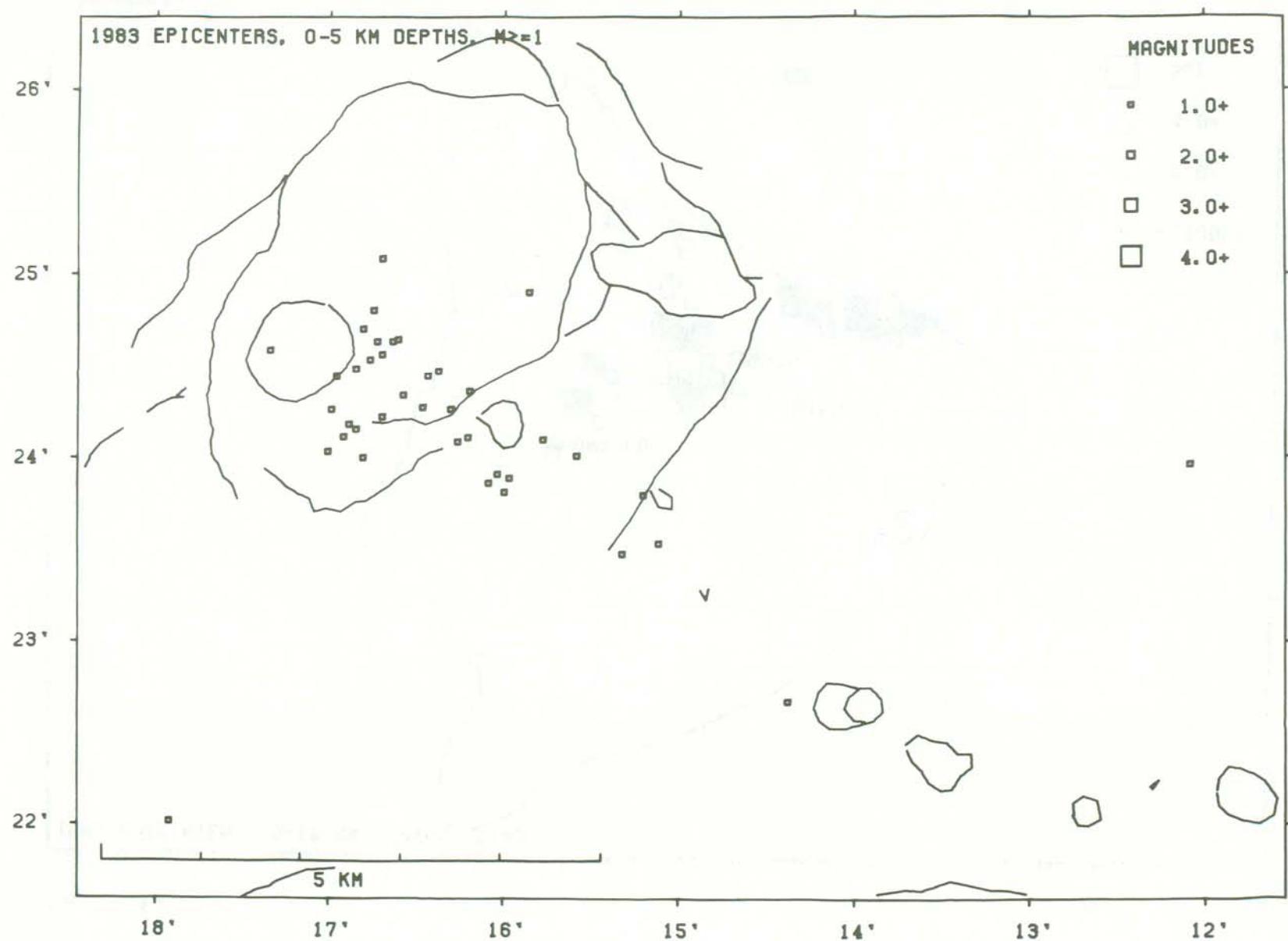


Table 5 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

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.

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

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 2 for location of mnemonic code. Additional one letter codes have the following meanings:

F - felt

L - long period character

T - associated with harmonic tremor

B - quarry or other blast

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

Table 5 lists all events located during 1983. Table 6 lists only events of magnitude 3.0 or larger.

Table 5. HVO EARTHQUAKE SUMMARY LIST

PAGE 1

YEAR	MON	DA	HHRN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO				
					MON	SEC	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	JAN	1	452	14.66	19	20.97	155	11.26	8.56	1.9	2.0	35	4	.69	.09	3	.4	.5	25	SF3	
		1	542	43.65	19	21.93	155	11.28	3.08	2.3	2.4	36	4	.58	.08	3	.5	.5	24	SER	
		1	551	16.12	19	21.72	155	11.34	3.27	2.0	2.1	30	3	.61	.08	3	.4	.5	22	SFR	
		1	553	52.17	19	20.03	155	13.43	8.78	1.3	1.3	0	.67	.07	5	.7	1.4	10	SF2		
		1	1015	15.87	19	21.56	155	11.27	2.93	.8	1.2	14	2	.81	.08	3	.4	.5	8	SER	
		1	116	49.30	19	21.41	155	9.88	2.71	.8	1.1	14	0	.63	.12	1	.5	.4	7	SER	
		1	1144	8.76	19	7.94	155	19.42	4.45	1.6	1.1	4	0	.320	.00	28	19.5	52.9	4	LOI	
		1	143	5.14	19	23.69	155	10.79	.09	1.2	1.0	18	1	.18	.09	3	.5	.9	9	SER	
		1	143	5.55	19	22.04	155	11.24	2.65	1.5	1.2	14	1	.106	.09	2	.6	.5	9	SER	
		1	1455	40.58	19	30.68	155	23.69	6.69	1.6	1.3	24	3	.54	.09	2	.4	.8	18	MLD	
		1	1612	54.16	19	21.83	155	11.30	2.56	1.5	1.6	16	1	.112	.10	3	.5	.5	7	SER	
		1	1647	44.66	19	21.32	155	10.99	2.08	1.6	1.0	12	1	.98	.09	2	.4	.6	6	SER	
		1	1910	1.76	19	21.60	155	11.47	2.53	1.5	1.3	16	3	.107	.09	3	.5	.6	10	SER	
		1	2046	18.18	19	19.59	155	8.10	7.13	1.3	1.3	20	1	.90	.09	4	.5	1.3	15	SF4	
		1	2148	41.71	19	21.44	155	8.84	6.19	2.6	3.2	36	4	.63	.12	5	.5	1.2	24	SF4	
		1	2236	35.48	19	21.89	155	10.98	2.53	1.5	1.0	15	2	.102	.11	2	.6	.4	10	SER	
		1	2257	23.90	19	21.50	155	10.84	3.23	1.6	1.2	10	1	.140	.12	2	.6	.4	7	SER	
		1	236	5.55	11	19	20.43	155	9.80	6.55	1.5	1.3	22	2	.75	.09	3	.5	1.1	15	SF3
		2	07	2.59	19	17.09	155	22.03	4.74	2.2	41	2	.125	.14	6	.4	1.4	33	SWR		
		2	023	11.44	19	21.62	155	11.48	2.12	.5	.6	7	1	.129	.08	3	.5	.6	5	SER	
		2	025	38.16	19	22.00	155	11.37	2.36	1.5	1.0	13	1	.87	.10	3	.5	.5	11	SER	
		2	032	23.91	19	21.69	155	11.18	2.78	.8	.6	13	2	.83	.13	2	.5	.5	8	SER	
		2	034	53.44	19	22.17	155	11.23	2.57	1.5	1.0	14	1	.90	.12	2	.6	.5	8	SER	
		2	038	9.13	19	21.69	155	11.18	2.74	1.4	1.4	23	2	.61	.12	2	.4	.6	20	SER	
		2	18	.71	19	22.19	155	10.56	2.36	2.7	2.7	38	3	.55	.12	1	.4	4	33	SER	
		2	113	40.44	19	22.11	155	10.36	2.70	1.7	1.5	26	5	.92	.09	1	.5	.3	21	SER	
		2	114	53.84	19	22.23	155	9.99	3.60	1.4	1.1	21	4	.95	.10	0	.6	.5	18	SER	
		2	117	29.39	19	22.08	155	10.00	3.38	.9	.6	20	4	.106	.07	0	.7	.4	18	SER	
		2	119	39.49	19	22.02	155	9.63	3.20	.8	.6	17	1	.91	.11	0	.6	.5	15	SER	
		2	129	18.07	19	23.35	155	10.43	2.00	.5	.2	12	2	.112	.12	3	.9	1.2	10	SER	
		2	137	53.27	19	22.17	155	10.20	2.78	.8	.3	14	3	.145	.18	1	1.3	.5	12	SER	
		2	148	44.87	19	21.54	155	9.93	1.87	2.5	3.4	32	4	.61	.13	1	.4	.2	22	SER	
		2	150	28.63	19	22.93	155	10.66	1.39	.7	.9	2	.138	.14	2	.7	.7	8	SER		
		2	159	41.25	19	22.08	155	10.17	3.57	1.4	.8	17	2	.105	.09	1	.7	.4	14	SER	
		2	29	4.08	19	22.27	155	9.54	2.97	1.1	.8	19	2	.95	.10	1	.7	4	13	SER	
		2	214	58.50	19	22.05	155	10.01	3.53	.8	.6	13	3	.165	.08	0	1.3	.4	11	SER	
		2	216	5.10	19	22.18	155	9.85	3.82	1.4	1.3	21	3	.94	.08	0	.5	.5	17	SER	
		2	216	38.39	19	21.92	155	11.32	2.13	.7	.11	3	.132	.09	3	.6	.4	10	SER		
		2	218	49.97	19	22.31	155	9.90	3.97	1.3	1.1	20	2	.96	.06	1	.4	.4	18	SER	
		2	219	45.73	19	22.26	155	10.42	3.37	.9	.8	14	3	.99	.09	1	.6	.4	13	SER	
		2	220	14.87	19	22.11	155	9.61	3.88	1.3	.8	20	2	.93	.06	0	.5	.5	19	SER	
		2	226	18.45	19	22.22	155	9.84	4.22	1.3	1.1	19	2	.94	.10	0	.7	.5	16	SER	
		2	228	5.41	19	22.17	155	9.74	3.78	1.2	1.1	20	2	.93	.06	0	.5	.4	14	SER	
		2	236	30.28	19	22.07	155	10.98	3.25	.7	.6	13	3	.118	.08	2	.8	.4	12	SER	
		2	238	9.22	19	22.16	155	10.16	3.47	1.3	1.3	18	2	.93	.09	1	.6	.4	16	SER	
		2	240	39.51	19	22.61	155	9.94	3.53	.8	.6	17	2	.100	.08	1	.6	.4	16	SER	
		2	244	7.31	19	22.60	155	9.78	3.66	.8	.8	16	2	.100	.06	1	.7	.4	14	SER	
		2	246	15.49	19	22.14	155	9.32	3.54	.8	.6	17	1	.93	.10	1	.5	.5	15	SER	

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YEAR	MON	DA	HHRN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO			
					MON	SEC	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK
1983	JAN	2	247	22.11	19	22.13	155	9.62	3.60	.6	15	2	.94	.08	0	.6	.5	13	SER	
		2	248	1.38	19	22.67	155	10.06	3.23	.8	6	13	2	.101	.10	1	.9	.4	10	SER
		2	252	25.76	19	22.40	155	9.82	3.39	.6	11	2	.97	.10	1	1.2	.5	10	SER	
		2	254	19.26	19	22.61	155	9.82	3.43	.7	8	12	2	.100	.10	1	1.1	.5	10	SER
		2	256	5.25	19	22.46	155	9.58	3.79	1.3	8	15	2	.102	.11	1	1.0	.5	14	SER
		2	257	27.19	19	22.16	155	9.74	3.51	1.3	8	17	2	.93	.11	0	.8	.5	16	SER
		2	258	9.07	19	22.23	155	9.87	3.60	1.4	8	20	2	.94	.10	0	.7	.5	17	SER
		2	259	29.30	19	22.38	155	9.64	3.37	1.3	8	18	2	.97	.09	1	.6	.4	17	SER
		2	31	4.47	19	22.20	155	9.31	5.47	1.4	8	19	1	.95	.09	1	.6	.4	17	SER
		2	33	23.06	19	22.30	155	9.72	3.53	1.2	8	20	2	.96	.07	1	.5	.5	18	SER
		2	339	4.43	19	22.57	155	9.44	3.38	1.6	1.1	14	2	.105	.10	1	.9	.4	13	SER
		2	340	34.57	19	22.28	155	9.42	3.51	1.1	8	18	2	.95	.08	1	.6	.4	16	SER
		2	341	44.45	19	22.07	155	9.40	3.46	1.7	6	16	1	.91	.09	1	.6	.4	19	SER
		2	350	23.42	19	22.61	155	9.40	3.48	1.0	6	17	2	.129	.09	1	.7	.5	10	SER
		2	352	47.11	19	22.33	155	9.99	3.47	1.6	1.1	17	2	.98	.10	1	.7	.5	10	SER
		2	356	4.49	19	22.53	155	9.20	3.39	1.7	1.1	19	1	.99	.10	1	.5	.5	14	SER
		2	357	35.89	19	22.23	155	9.88	3.09	1.6	1.1	17	1	.94	.10	0	.6	.5		

## HVO EARTHQUAKE SUMMARY LIST

PAGE 3

YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO	YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO																		
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	DEG	MIN	DEG	MIN	DEG	MIN	DEG	MIN	KM	DEG	SEC	DIS	KM	DEG	MIN	DEG	MIN	REMK	YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO
1983	JAN	2	522	21.47	19	22.64	155	10.06	3.05	.8	.8	11	1	101	.08	1	.7	*3	8	SER	1983	JAN	2	1117	25.22	19	20.51	155	3.55	8.23	2.7	2.5	42	3	98	.11	2	.5	*4	31	SF5												
			524	20.74	19	22.20	155	9.38	3.49	1.6	.8	16	1	107	.12	1	.8	*6	10	SER			2	1138	54.53	19	22.37	155	10.20	3.33	1.3	1.1	10	0	96	.03	1	.7	*5	10	SER												
			525	56.20	19	22.11	155	9.82	3.24	1.6	.8	17	1	93	.13	0	.7	*5	15	SER			2	1141	43.54	19	20.05	155	10.84	8.74	1.7	1.3	25	2	86	.09	4	.6	*1.1	17	SF3												
			531	17.74	19	22.32	155	9.21	3.22	1.2	.8	18	2	106	.10	1	.8	*4	12	SER			2	1146	46.62	19	21.59	155	11.21	*68	1.5	.8	17	1	108	.13	3	.4	*7	11	SER												
			531	55.00	19	22.51	155	8.47	2.73	1.7	1.1	14	0	108	.11	3	.6	*6	10	SER			2	1147	51.88	19	22.34	155	10.43	2.36	1.6	1.4	14	0	95	.09	1	.6	*4	9	SER												
			537	30.87	19	22.01	155	9.72	3.47	1.0	1.1	13	1	108	.13	0	.8	*5	5	SER			2	1148	46.23	19	22.27	155	8.98	3.26	1.8	1.1	16	0	95	.09	2	.6	*5	14	SER												
			551	6.07	19	22.81	155	8.72	2.42	1.3	1.1	15	1	102	.11	2	.7	*4	12	SER			2	1212	26.18	19	23.30	155	6.50	2.75	1.6	1.1	13	1	99	.09	1	.5	*3	11	SME												
			553	31.40	19	22.47	155	8.44	2.68	2.4	2.2	39	4	58	.11	3	.3	*5	27	SER			2	1235	35.80	19	18.85	155	9.02	7.31	1.0	.6	6	0	277	.06	6	.8	*2.7	5	SF4												
			555	55.83	19	22.56	155	8.37	3.04	1.8	1.1	17	0	98	.09	3	.5	*6	14	SFR			2	1240	28.37	19	16.99	155	5.98	3.43	1.5	1.1	20	0	227	.07	4	.1.4	*9	14	SSF												
			556	49.99	19	22.64	155	8.52	3.48	1.9	1.8	26	1	57	.13	4	.5	*4	18	SER			2	1253	5.98	19	22.92	155	9.46	2.47	1.4	1.1	9	3	156	.12	2	.6	*5	8	SER												
			558	59.80	19	22.46	155	8.67	2.82	1.7	.6	17	2	97	.11	2	.6	*5	11	SER			2	1257	3.24	19	21.88	155	10.90	2.94	1.3	.6	16	3	103	.08	2	.5	*4	15	SER												
			559	12.60	19	22.49	155	8.48	2.75	2.0	1.6	23	3	76	.11	3	.4	*4	22	SER			2	1259	26.61	19	19.34	155	4.28	7.19	1.8	1.4	35	3	97	.10	3	.5	*7	30	SF5												
			6	1.75	19	22.77	155	9.33	4.18	1.5	1.1	16	3	102	.11	2	.6	*6	14	SER			2	1320	13.80	19	21.94	155	11.42	2.81	1.0	.8	21	2	85	.10	3	.4	*4	18	SER												
			614	43.84	19	22.51	155	8.66	3.43	1.9	1.6	23	3	97	.11	2	.6	*5	22	SER			2	1321	13.44	19	22.85	155	8.64	3.60	1.3	.9	19	3	102	.11	3	.6	*5	17	SER												
			619	10.36	19	22.18	155	9.28	4.05	1.7	1.3	23	3	94	.08	1	.5	*5	21	SER			2	1330	58.75	19	22.47	155	8.92	3.20	1.6	1.3	21	4	98	.07	2	.5	*4	19	SFI												
			622	16.35	19	22.15	155	9.56	2.69	1.5	1.4	21	4	124	.10	1	.6	*4	18	SER			2	1338	38.72	19	23.37	155	7.28	4.21	1.4	1.1	19	2	103	.10	2	.5	*7	17	SER												
			627	25.73	19	21.72	155	8.53	2.50	2.0	2.5	22	3	88	.13	2	.4	*4	19	SER			2	1339	39.69	19	22.19	155	10.28	3.25	1.4	1.1	23	4	93	.06	1	.5	*4	21	SER												
			628	52.42	19	22.15	155	8.57	3.26	1.6	1.9	23	3	93	.14	2	.5	*5	22	SER			2	1343	4.46	19	23.26	155	9.77	2.81	1.8	.6	15	3	147	.17	2	.8	*7	14	SER												
			648	34.37	19	21.98	155	8.30	.50	1.7	1.4	10	2	161	.08	3	.7	*5	10	SER			2	1352	27.47	19	22.31	155	9.40	3.97	1.6	.6	22	3	95	.11	1	.6	*5	19	SER												
			651	33.84	19	21.77	155	9.22	2.99	1.8	1.1	21	3	117	.13	1	.6	*4	18	SER			2	1356	.38	19	18.88	155	15.53	8.76	1.9	1.3	21	4	120	.08	4	.5	*8	19	SFI												
			656	32.99	19	21.84	155	8.58	5.21	1.9	2.0	26	4	70	.11	2	.5	*9	20	SF4			2	14	1	32.68	19	21.96	155	10.62	3.38	1.3	.6	15	2	103	.11	1	.7	*5	10	SER											
			7	2	4.85	19	22.52	155	8.95	2.34	1.5	1.1	21	3	98	.11	2	.5	*3	19	SER			2	14	9	47.92	19	22.41	155	10.67	3.67	1.8	1.6	23	3	95	.10	2	.5	*4	21	SER										
			74	49.42	19	21.80	155	9.17	3.36	1.9	2.2	27	4	68	.08	1	.4	*4	22	SER			2	1424	42.75	19	22.72	155	8.98	3.41	1.2	.8	15	2	116	.08	2	.9	*5	13	SER												
			76	2.69	19	22.78	155	8.82	2.76	1.8	1.4	14	2	117	.14	2	.9	*5	13	SER			2	1448	59.02	19	22.24	155	8.97	3.73	1.4	.8	18	3	95	.13	2	.7	*6	16	SER												
			710	12.07	19	22.23	155	9.04	3.94	1.2	.9	17	2	94	.14	1	.7	*6	13	SER			2	1451	59.01	19	22.48	155	8.33	2.66	1.3	1.3	14	2	138	.16	3	1.1	*6	13	SER												
			723	52.64	19	22.50	155	8.90	3.40	1.8	1.3	22	3	75	.14	2	.6	*5	20	SER			2	1454	46.73	19	22.77	155	7.92	4.23	1.5	1.3	17	3	128	.09	3	.6	*7	16	SER												
			726	15.28	19	22.18	155	9.22	3.56	1.5	1.6	25	4	71	.09	1	.4	*4	24	SER			2	1458	9.37	19	22.00	155	9.07	3.75	1.8	1.5	18	3	92	.11	1	.4	*4	17	SER												
			728	36.70	19	22.44	155	8.69	2.55	1.9	1.7	23	3	75	.09	2	.4	*3	20	SER			2	154	23.09	19	22.02	155	10.85	4.08	1.4	1.1	14	2	102	.12	2	.7	*6	13	SER												
			733	48.80	19	21.98	155	8.62	1.73	1.8	2.3	19	3	86	.14	2	.5	*4	17	SER			2	1513	53.28	19	22.28	155	10.85	3.68	1.1	1.1	15	2	93	.09	2	.6	*6	13	SER												
			734	39.25	19	24.45	155	10.73	.46	1.5	2.0	20	3	133	.17	5	.4	*9	19	SME			2	1524	33.03	19	23.06	155	7.51	3.76	1.4	1.1	21	3	139	.08	2	.5	*6	21	SER												
			741	37.37	19	21.40	155	6.74	2.15	1.7	1.3	18	4	84	.11	3	.4	*7	15	SSF			2	1525	15.27	19	22.73	155	7.69	4.72	1.6	1.3	22	3	98	.10	3	.6	*9	20	SER												
			810	3.91	19	22.12	155	10.42	3.31	1.4	.8	19	3	92	.09	1	.5	*4	18	SER			2	1532	40.01	19	23.96	155	12.09	.00	1.1	1.4	14	3	122	.13	3	.5	*8	13	SER												
			816	38.12	19	21.85	155	9.20	1.92	1.7	1.7	23	3	90	.07	1	.5	*3	21	SER			2	1540	58.92	19	22.94	155	9.11	3.50	1.2	.6	16	3	104	.09	2	.6	*5	15	SER												
			828	52.68</td																																																	

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRRN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO				
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	JAN	2	18	3	29.65	19	23.46	155	6.99	2.34	1.4	.8	10	0	103	.09	2	.6	.3	6	SME
		2	18	5	5.13	19	22.81	155	7.77	3.59	1.6	1.1	18	0	90	.09	3	.6	.7	15	SER
		2	18	8	46.22	19	22.05	155	10.64	2.86	1.8	1.3	19	1	90	.12	1	.7	.5	10	SER
		2	18	9	48.06	19	22.37	155	7.92	4.70	1.1	.6	14	1	157	.11	3	1.2	1.6	7	SER
		2	1811	19.60	19	22.20	155	10.74	2.45	1.6	1.0	14	1	92	.11	2	.6	.5	6	SER	
		2	1826	43.77	19	22.59	155	9.79	2.93	1.2	.6	7	0	132	.09	1	1.0	.5	7	SER	
		2	1837	32.14	19	22.75	155	8.76	3.03	1.3	.8	17	1	101	.10	2	.6	.5	11	SER	
		2	1842	30.58	19	22.82	155	7.46	3.07	2.1	1.3	19	0	78	.10	2	.5	.6	14	SER	
		2	1855	31.89	19	22.96	155	10.22	2.49	.9	.6	9	0	104	.23	2	1.0	.8	5	SER	
		2	1859	39.28	19	22.42	155	8.58	2.93	2.0	1.8	25	3	91	.11	2	.5	.5	18	SER	
		2	19	2	15.18	19	22.59	155	8.83	3.02	1.9	1.6	24	2	94	.07	2	.4	.4	19	SER
		2	19	5	33.52	19	22.63	155	8.90	2.69	1.8	1.4	20	1	94	.09	2	.5	.7	14	SER
		2	1928	13.50	19	22.68	155	10.76	2.68	.8	.6	14	2	122	.09	2	.8	.4	13	SER	
		2	1939	52.51	19	18.79	155	7.29	9.52	3.3	3.0	49	9	130	.10	3	.5	.3	42	SF4	
		2	1944	14.90	19	18.14	155	6.96	7.49	2.0	1.3	23	1	167	.11	2	1.0	1.2	22	SF4	
		2	1945	1.66	19	22.27	155	10.71	2.28	2.3	2.2	30	4	77	.10	2	.4	.3	25	SER	
		2	1946	.47	19	23.20	155	7.43	3.99	1.3	.9	13	2	103	.10	2	.6	.5	12	SER	
		2	1953	29.00	19	23.08	155	8.06	3.95	1.6	1.5	23	2	93	.09	3	.5	.8	22	SER	
		2	1959	41.21	19	24.06	155	11.75	3.50	1.3	.6	13	3	125	.24	4	.9	1.5	11	SER	
		2	20	1	39.47	19	22.59	155	8.51	5.26	2.4	2.5	29	3	62	.10	4	.4	1.3	26	SF4
		2	20	3	34.57	19	21.70	155	10.98	2.88	1.5	1.3	17	2	117	.11	2	.7	.6	16	SER
		2	20	6	34.99	19	22.87	155	8.12	2.62	1.2	1.1	11	1	123	.11	3	.7	.6	11	SER
		2	2010	12.64	19	18.40	155	15.04	8.12	1.9	1.3	22	3	131	.07	4	.6	.8	20	SF1	
		2	2011	14.53	19	21.82	155	10.68	2.97	.9	.6	13	0	115	.15	2	.8	.6	13	SER	
		2	2012	5.01	19	23.27	155	7.46	3.91	1.4	.6	20	3	103	.09	2	.5	.6	19	SER	
		2	2033	46.21	19	22.65	155	8.75	3.29	1.9	1.6	25	4	93	.08	2	.4	.4	23	SER	
		2	2038	2.62	19	22.54	155	8.70	3.93	1.8	1.5	23	4	76	.07	2	.4	.5	21	SER	
		2	2041	52.84	19	22.73	155	8.93	1.14	2.1	.6	11	2	117	.08	2	.8	.6	10	SER	
		2	2042	20.32	19	22.46	155	8.53	2.39	1.4	1.1	15	2	138	.15	2	1.0	.5	15	SER	
		2	2043	16.95	19	22.78	155	8.85	2.98	1.8	1.4	19	3	101	.07	2	.5	.3	17	SER	
		2	2044	45.10	19	22.39	155	9.48	3.88	1.2	.8	14	2	129	.07	1	.8	.5	13	SER	
		2	2053	22.72	19	23.10	155	9.05	3.32	1.7	.8	17	3	106	.08	2	.7	.6	16	SER	
		2	2054	56.05	19	21.37	155	6.65	7.56	2.0	1.1	24	3	88	.09	3	.5	.8	22	SF4	
		2	2056	22.46	19	22.55	155	8.63	3.12	1.7	1.3	22	3	98	.10	2	.5	.4	20	SER	
		2	2057	25.31	19	22.60	155	8.57	3.19	1.5	.8	13	3	131	.10	2	.9	.5	11	SER	
		2	2058	17.60	19	22.68	155	8.60	3.41	1.4	1.1	13	0	100	.06	3	.5	.4	5	SER	
		2	21	1	35.39	19	22.63	155	8.63	3.26	2.0	1.1	18	0	93	.05	2	.4	.5	14	SER
		2	21	4	30.45	19	22.91	155	8.73	2.90	1.5	1.1	19	1	103	.06	3	.5	.5	14	SER
		2	21	9	11.47	19	17.60	155	12.62	4.77	1.5	.6	18	0	142	.08	2	.6	1.1	9	SSF
		2	21	9	46.06	19	22.47	155	8.41	3.32	1.3	.8	15	0	106	.09	3	.7	.6	9	SER
		2	2113	7.36	19	24.77	155	8.97	.03	1.0	.8	8	0	132	.37	6	1.7	8.1	5	SER	
		2	2118	48.02	19	23.04	155	7.41	3.41	1.6	1.3	21	0	80	.10	2	.5	.6	18	SER	
		2	2120	1.31	19	22.61	155	8.83	3.57	1.3	.6	12	2	104	.12	2	.9	.6	8	SER	
		2	2140	21.69	19	22.82	155	7.66	2.75	1.2	.8	12	2	101	.08	2	.7	.5	8	SER	
		2	2148	10.78	19	22.66	155	8.76	3.08	1.3	1.1	16	0	99	.10	2	.5	.4	10	SER	
		2	2150	58.44	19	22.99	155	7.28	3.45	1.4	1.1	17	0	99	.09	2	.6	.6	11	SER	
		2	22	9	42.81	19	23.10	155	7.48	3.30	1.4	1.3	14	1	102	.07	2	.5	.6	11	SER
		2	2226	5.47	19	22.72	155	7.81	3.59	1.6	1.3	20	1	90	.06	3	.5	.6	14	SER	

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRRN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO			
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK
1983	JAN	2	2230	13.99	19	22.88	155	8.48	2.71	1.6	1.1	15	2	102	.12	3	.5	.6	8	SER
		2	2239	13.99	19	22.88	155	8.48	2.71	1.3	1.1	15	2	102	.12	3	.5	.6	8	SER
		2	2243	34.40	19	23.71	155	10.38	.10	.5	.5	0	118	.05	3	.8	.2	2	13	KAO
		2	2257	29.42	19	26.30	155	27.97	8.08	2.6	2.3	45	4	37	.13	5	.3	.7	31	KAO
		2	2259	51.41	19	26.41	155	27.38	8.74	1.7	1.1	19	2	61	.13	4	.5	1.2	13	KAO
		2	2316	44.02	19	23.24	155	7.68	3.42	1.9	1.9	22	2	92	.09	3	.4	.6	19	SER
		2	2327	16.02	19	23.47	155	6.95	2.78	1.4	1.3	15	4	103	.10	2	.5	.3	14	SME
		2	2333	3.51	19	23.56	155	6.89	3.13	1.2	1.1	15	4	103	.10	2	.5	.4	13	SME
		2	2337	16.91	19	19.13	155	13.72	7.71	2.2	1.6	28	5	84	.11	4	.5	.9	24	SF2
		2	2345	15.41	19	22.71	155	8.71	3.21	1.2	1.6	14	3	102	.13	2	.8	.5	13	SER
		2	2352	22.72	19	19.53	155	8.28	6.85	1.4	.9	19	2	86	.09	4	.6	1.3	17	SF4
		2	2353	41.75	19	24.44	155	16.44	3.16	1.0	1.0	12	2	131	.07	1	.6	.3	10	SEC
		2	2354	10.25	19	22.76	155	8.33	2.81	1.3	.8	15	2	102	.10	3	.7	.5	11	SER
		2	2359	39.52	19	22.48	155	8.59	4.67	1.5	1.1	15	1	106	.10	2	.8	1.2	10	SER
		2	2360	39.20	19	22.87	155	9.01	7.10	1.8	1.3	16	1	103	.12	5	.8	1.6	10	SF4
		2	2377	33.07	19															

## HVO EARTHQUAKE SUMMARY LIST

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	ORIGIN TIME	LAT N	LONG W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO				
YEAR	MON	DA	HRMN	SEC	DEG	MIN	KM	MAG	MAG	NR	NS	DIS	KM	KM	FM	REMK
1983	JAN	3 12 5 57.64	19 20.80	155 3.93	7.92	2.2	1.5	19	0	.95	.08	2	.8	1.4	17	SF5
	3 12 8 54.74	19 21.64	155 3.71	5.29	1.9	1.5	28	2	100	.10	3	.5	1.4	20	SF5	
	3 12 2 37.62	19 20.76	155 3.65	8.04	2.7	2.6	38	1	90	.10	2	.6	.6	32	SF5	
	3 12 24 25.03	19 20.89	155 3.56	6.73	1.9	1.1	8	0	101	.01	2	1.2	2.3	8	SF5	
	3 12 44 1.71	19 20.67	155 3.25	5.31	2.5	2.7	35	3	99	.13	2	.5	.9	18	SF5	
	3 13 0 1.98	19 20.56	155 3.50	6.20	1.6	.9	28	3	93	.12	2	.6	.7	18	SF5	
	3 13 9 43.44	19 21.69	155 4.19	4.42	1.8	.9	19	4	90	.09	4	.4	1.5	15	SSF	
	3 13 35 54.88	19 20.83	155 3.36	8.11	2.1	1.5	26	3	96	.11	2	.6	.9	23	SF5	
	3 14 18 32.86	19 16.82	155 11.67	2.03	1.1	.6	15	2	197	.11	3	1.0	.6	14	SSF	
	3 15 5 27.43	19 20.31	155 6.99	8.66	2.0	1.8	25	2	103	.10	5	.6	1.2	23	SF4	
	3 15 42 6.63	19 21.53	155 1.84	6.32	1.3	.7	16	2	162	.12	4	.8	1.2	14	SF5	
	3 16 6 1.98	19 20.89	155 6.66	6.75	1.3	.6	17	4	95	.08	6	.6	1.2	15	SF4	
	3 16 15 53.16	19 24.31	155 4.69	3.19	2.0	2.2	21	1	78	.08	1	.4	.5	21	SME	
	3 16 23 22.75	19 21.48	155 2.55	6.77	1.6	1.2	21	2	133	.12	3	.7	1.1	19	SF5	
	3 16 39 25.73	19 20.14	155 2.51	6.17	1.7	1.8	19	4	187	.11	1	.7	.7	16	SF5	
	3 16 55 13.69	19 27.86	155 51.45	7.22	1.3	20	3	109	.10	7	.6	1.0	17	KDN		
	3 17 30 28.82	19 24.22	155 6.55	3.74	1.6	1.1	17	2	109	.11	2	.5	.7	16	SME	
	3 17 47 37.04	19 22.33	155 6.01	9.15	2.8	3.0	41	4	72	.09	1	.4	.5	35	SF4	
	3 18 2 20.93	19 21.29	155 2.58	7.53	2.0	1.9	37	4	134	.13	3	.5	.6	32	SF5	
	3 18 4 3.06	19 20.79	155 7.71	8.58	2.1	2.3	36	6	84	.10	4	.4	.5	32	SF4	
	3 18 17 46.77	19 23.52	155 5.85	3.79	1.3	.9	14	2	97	.08	1	.5	.4	14	SME	
	3 18 32 38.88	19 26.81	155 29.79	7.87	2.2	1.7	36	3	56	.13	9	.4	1.1	25	KAO	
	3 18 34 38.91	19 23.68	155 4.93	3.76	1.4	1.1	23	1	77	.11	2	.5	.5	15	SME	
	3 18 52 43.04	19 24.27	155 4.72	3.60	1.3	.9	15	0	95	.10	1	.5	.5	10	SME	
	3 20 0 54.76	19 23.69	155 6.05	3.37	1.3	1.1	14	1	100	.12	1	.7	.4	13	SME	
	3 20 46 3.58	19 21.17	155 18.37	1.88	.7	1.4	13	1	74	.10	3	.3	.7	7	SWR	
	3 20 56 52.41	19 19.59	155 13.81	7.15	.9	.6	13	0	79	.07	5	.6	1.8	9	SF2	
	3 21 0 2.27	19 23.23	155 6.92	3.12	1.8	1.1	17	1	101	.09	1	.5	.4	11	SME	
	3 21 12 52.73	19 19.96	155 4.66	3.67	1.3	.9	17	2	140	.07	3	.5	1.1	9	SSF	
	3 21 28 47.57	19 24.04	155 4.81	3.07	1.3	1.1	14	2	94	.08	1	.5	.3	12	SME	
	3 21 32 35.00	19 23.85	155 5.10	3.75	1.3	1.1	16	1	95	.07	2	.5	.6	12	SME	
	3 21 37 51.94	19 24.70	155 5.37	4.51	1.4	1.1	13	0	139	.09	4	.8	1.8	12	SME	
	3 21 48 2.17	19 20.62	155 6.64	8.61	1.3	.7	18	1	100	.08	4	.6	1.3	14	SF4	
	3 21 58 31.26	19 20.18	155 3.99	5.08	2.0	2.2	23	1	130	.11	2	.5	1.0	19	SF5	
	3 22 34 13.27	19 16.38	155 11.96	2.01	1.1	.6	18	0	193	.10	3	.9	.6	13	SF5	
	3 22 41 7.48	19 21.88	155 2.31	5.07	1.9	2.2	26	0	168	.13	6	.8	1.3	16	SF5	
	3 22 49 35.75	19 19.67	155 6.89	6.83	1.5	.9	19	2	118	.11	5	.6	1.5	14	SF4	
	3 23 34 56.90	19 23.91	155 5.14	3.04	1.7	1.1	15	1	95	.09	2	.6	.4	12	SME	
	4 035 2.21	19 27.31	155 55.96	10.34	1.7	1.0	29	3	134	.11	1	.5	.7	20	LER	
	4 041 54.64	19 19.38	155 6.21	5.71	1.2	.6	19	0	140	.11	5	.8	2.2	11	SF4	
	4 046 31.81	19 19.06	155 10.30	5.62	1.8	1.3	23	3	109	.09	5	.5	1.7	14	SF3	
	4 128 15.44	19 20.06	155 7.73	8.74	1.3	.7	21	1	94	.08	5	.6	1.1	13	SF4	
	4 144 6.89	19 20.91	155 2.12	3.92	2.0	2.3	26	1	161	.10	2	.6	.9	17	SSF	
	4 213 24.58	19 23.06	155 6.79	3.56	1.7	2.0	21	2	80	.10	1	.4	.3	21	SME	
	4 216 16.98	19 19.19	154 59.87	7.97	1.0	1.3	13	3	218	.12	6	1.3	1.1	11	LER	
	4 245 31.23	19 28.14	154 56.60	10.02	1.2	.9	14	2	97	.10	3	.8	1.0	12	LER	
	4 253 23.38	19 28.03	154 53.57	6.78	1.3	.8	17	2	123	.13	3	.7	1.0	15	LER	
	4 259 55.30	19 23.10	155 7.45	3.54	1.5	1.3	21	3	101	.06	2	.4	.5	19	SER	

## HVO EARTHQUAKE SUMMARY LIST

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	ORIGIN TIME	LAT N	LONG W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO						
YEAR	MON	DA	HRMN	SEC	DEG	MIN	KM	MAG	MAG	NR	NS	DIS	KM	KM	FM	REMK		
1983	JAN	4 328	.66	19 19.55	155	8.53	6.11	1.8	1.4	28	3	80	.10	4	.4	1.0	21	SF4
	4 418	18.71	19 13.07	155	28.64	8.44	1.1	1.3	18	2	116	.12	5	.5	.9	16	LSW	
	4 443	6.93	19 19.42	155	13.54	7.45	1.6	1.6	36	4	67	.10	4	.4	.7	31	SF2	
	4 610	21.38	19 23.71	155	6.13	3.71	1.3	1.1	14	2	100	.08	1	.5	.4	13	SME	
	4 718	37.74	19 23.85	155	5.18	6.56	1.1	.7	14	1	95	.11	2	.6	1.0	14	SF5	
	4 87	31.91	19 16.39	155	23.59	6.80	1.6	1.6	26	5	106	.12	4	.4	1.1	23	SWR	
	4 810	54.49	19 16.53	155	23.53	6.44	1.5	1.5	19	3	106	.10	4	.5	1.3	18	SWR	
	4 815	50.98	19 23.20	155	6.58	3.40	1.0	.9	13	2	117	.09	1	.7	.4	13	SME	
	4 846	46.57	19 20.57	155	2.98	4.87	1.5	1.1	23	2	118	.20	1	.8	1.2	22	SF2	
	4 849	28.97	19 23.38	155	7.17	3.21	1.0	.6	12	3	113	.07	2	.7	.5	12	SME	
	4 91	4.20	19 23.17	155	6.74	3.52	1.0	.6	15	3	137	.11	1	.8	.5	13	SME	
	4 1057	50.34	19 20.73	155	3.10	9.46	1.4	.4	10	0	126	.05	2	1.2	20	9	SFS	
	4 11 1	23.72	19 18.73	155	15.43	8.96	1.9	1.8	35	6	110	.08	4	.4	.5	31	SF1	
	4 11 8	45.89	19 23.70	155	5.11	4.05	1.2	.9	16	2	93	.10	2	.6	.6	15	SME	
	4 1137	50.85	19 20.77	155	2.52	3.68	2.0	2.1	31	6	147	.11	2	.5	.6	26	SSF	
	4 1156	19.51	19 20.39	155	3.12	4.16	1.4	.9	14	3	108	.06	1	.6	.4	14	SSF	
	4 1218	32.20	19 23.29	155	6.27	3.83	1.0	1.2	21	2	135	.09	1	.8	.5	12	SME	
	4 1234	3.11	19 21.51	155	3.43	6.75	1.2	.2	11	1	165	.09	3	.5	.9	15	SF5	
	4 13 1	41.62	19 22.96	155	7.56	3.66	1.0	.6	10	1	137	.07	2	1.1	.7	10	SER	
	4 1318	27.95	19 19.26	155	13.86	9.19	1.1	.6	16	2	85	.09	4	.7	1.4	14	SF2	
	4 1339	39.60	19 23.42	155	6.08	3.91	1.2	1.1	33	2	97	.08	1	.5	.6	13	SME	
	4 1349	50.15	19 21.44	155	13.15	14.52	1.3	.7	13	1	106	.09	2	1.1	1.4	12	DEP	
	4 1350	16.93	19 21.51	155	13.81	12.63	1.1	.7	13	2	94	.06	2	.9	.9	14	SF2	
	4 1352	18.34	19 21.91	155	1.41	5.49	1.3	.9	22	1	185	.13	5	.8	1.6	15	SF5	
	4 1419	56.83	19 23.00	15														

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	LON	W	DEPTH	AMP	DIIR	GAP				RMS	MIN	ERH	ERZ	NO		
														KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	FM	REMK
1983	JAN	4 19	8	50.04	19	19.39	155	5.68	6.96	1.4	.7	21	1	149	.08	5	.6	1.3	9	SF4				
		4 1946	12.02	19	18.90		155	9.32	6.50	1.1	.3	18	2	105	.08	4	.5	1.4	10	SF3				
		4 1948	47.23	19	23.52		155	6.09	3.63	1.0	.6	15	2	99	.07	1	.5	3	13	SME				
		4 2112	45.31	19	16.18		155	11.63	5.55	1.2	.9	17	0	134	.08	4	.6	1.8	10	SF3				
		4 2134	47.61	19	23.80		155	4.95	3.77	1.1		15	1	93	.10	2	.5	5	10	SME				
		4 2215	27.27	19	23.45		155	5.91	3.82	1.1	.6	13	1	97	.05	1	.5	4	12	SME				
		4 2218	31.36	19	23.50		155	6.63	2.20	1.6	1.3	14	1	101	.12	1	.6	4	12	SME				
		4 2258	19.78	19	21.65		155	6.60	5.65	1.7	1.5	19	4	119	.15	3	.8	1.3	10	SF4				
		4 2312	51.15	19	23.06		155	7.28	3.57	1.5	1.3	20	2	72	.10	2	.5	6	19	SER				
		4 2326	57.07	19	22.96		155	7.10	3.79	1.1	.9	14	1	98	.09	2	.7	6	14	SME				
		5 011	.91	19	23.82		155	6.65	3.72	1.0	.3	15	2	106	.06	2	.5	5	14	SME				
		5 023	6.11	19	23.01		155	5.98	4.27	1.0		13	2	119	.10	1	.9	6	11	SME				
		5 043	12.29	19	22.99		155	6.63	3.91	1.1	.3	13	3	123	.10	1	.7	5	13	SME				
		5 1 0	21.81	19	20.28		155	2.93	7.88	1.6	1.2	24	1	125	.11	1	.6	9	23	SFS				
		5 148	7.23	19	23.23		155	7.06	3.48	.9	.6	16	4	101	.08	1	.5	4	13	SME				
		5 227	15.68	19	20.14		155	13.18	7.93	.9	.3	13	2	66	.06	5	.6	1.4	11	SF2				
		5 246	33.41	19	22.89		155	6.64	3.24	1.6	.9	17	4	96	.13	1	.6	5	16	SME				
		5 322	34.34	19	23.22		155	7.60	3.43	1.1	.9	15	2	104	.12	2	.5	6	15	SER				
		5 329	33.43	19	23.17		155	7.48	3.70	1.1	.9	19	3	102	.08	2	.4	5	18	SER				
		5 341	3.31	19	23.02		155	7.84	3.68	1.2	.6	18	2	102	.07	3	.6	5	17	SER				
		5 353	38.25	19	22.92		155	7.56	3.47	1.1	.6	16	3	100	.08	2	.6	4	15	SER				
		5 42	4.2	11.54	19	22.99		155	6.85	3.45	1.4	1.1	15	2	97	.10	1	.6	5	15	SME			
		5 413	56.63	19	23.79		155	7.96	3.73	.9	.3	13	2	112	.16	3	.9	1	4	13	SER			
		5 418	35.22	19	23.41		155	6.88	3.12	1.1	.6	11	3	112	.09	1	.7	5	11	SME				
		5 435	58.90	19	22.98		155	7.52	3.45	1.2	.6	15	3	123	.11	2	.8	5	15	SER				
		5 443	44.58	19	25.58		155	24.88	7.46	1.6	.9	26	3	70	.13	1	.5	9	24	KAO				
		5 451	37.23	19	19.70		155	11.54	8.95	1.3	.3	16	1	91	.05	5	.6	1.4	15	SF3				
		5 454	13.03	19	18.77		155	13.54	9.91	3.4	3.7	43	2	80	.13	3	.5	4	41	SF2	F			
		5 5 6	35.62	19	19.04		155	13.56	8.08	1.8	1.5	34	1	70	.11	4	.5	8	30	SF2				
		5 510	32.98	19	23.14		155	7.77	3.55	.8	.3	10	1	143	.08	3	1.1	.7	10	SER				
		5 512	40.93	19	23.15		155	6.91	3.20	1.6	1.3	15	3	119	.06	1	.7	4	15	SME				
		5 515	43.37	19	23.19		155	7.54	3.67	1.2	1.1	12	2	137	.08	2	.6	6	12	SER				
		5 516	8.60	19	18.96		155	13.59	8.22	1.7	1.3	21	1	83	.10	4	.6	1	20	SF2				
		5 524	39.77	19	23.18		155	8.01	3.74	1.0	.9	13	2	114	.10	3	.8	8	12	SER				
		5 541	41.63	19	22.98		155	7.40	3.65	1.0	.9	10	1	123	.12	2	.8	5	10	SER				
		5 545	26.94	19	23.47		155	7.51	3.85	1.5	1.3	19	3	106	.10	2	.5	7	19	SER				
		5 556	12.86	19	23.22		155	7.68	3.40	1.2	.9	16	4	115	.10	3	.7	5	15	SER				
		5 557	.96	19	22.94		155	7.17	3.68	1.1	.9	13	2	99	.10	2	.7	5	13	SME				
		5 6 6	2.49	19	23.38		155	7.05	3.30	1.2	.9	16	3	103	.08	2	.6	4	16	SME				
		5 613	55.92	19	22.74		155	7.84	3.52	1.2	.9	17	2	130	.06	3	.7	5	17	SME				
		5 616	59.27	19	23.00		155	7.34	3.52	1.1	.9	14	2	99	.13	2	.8	6	14	SER				
		5 620	12.99	19	23.02		155	7.03	3.26	1.1	.9	15	1	99	.11	1	.5	5	14	SME				
		5 641	9.77	19	22.83		155	7.74	3.28	1.6	1.6	22	1	94	.08	3	.5	7	19	SER				
		5 642	10.59	19	22.85		155	7.54	3.26	1.6	1.3	16	2	99	.09	2	.6	6	13	SER				
		5 647	21.23	19	23.40		155	5.12	2.99	2.0	1.8	22	2	78	.07	2	.4	3	14	SME				
		5 655	10.31	19	23.37		155	7.85	4.01	1.7	1.1	12	1	106	.13	3	.6	9	7	SER				
		5 7 4	57.85	19	23.03		155	7.36	3.49	1.3	1.1	12	1	100	.12	2	.6	5	6	SER				
		5 711	19.64	19	22.80		155	7.59	3.12	1.9	1.9	20	3	88	.09	2	.4	4	11	SER				

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YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	LON	W	DEPTH	AMP	DIIR	GAP				RMS	MIN	ERH	ERZ	NO			
														KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK
1983	JAN	5	729	33.75	19	20.80	155	2.97	5.56	2.5	2.3	31	1	119	.13	2	.5	9	26	SFS					
		5	759	24.41	19	22.66	155	7.92	3.50	1.3	1.3	16	1	98	.08	3	.6	5	14	SER					
		5	818	32.17	19	22.58	155	7.36	3.39	1.3	1.1	7	0	180	.06	2	2.9	1.0	7	SER					
		5	821	27.13	19	21.37	155	6.31	.31				5	0	220	.02	3	2.3	3.3	5	SSF				
		5	828	59.70	19	23.14	155	7.58	2.64	1.0	1.4	9	0	152	.03	2	1.7	7	9	SER					
		5	843	23.99	19	23.38	155	8.17	5.12	1.2	1.1	31	2	97	.20	3	1.1	2.1	6	SF4					
		5	845	5.39	19	22.22	155	23.99	8.94	1.4	1.4	25	3	39	.11	4	.4	9	15	KAO					
		5	851	23.07																					

HYD EARTHQUAKE SUMMARY LIST

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HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DAY	HRNN	SEC	DIA	ORIGIN TIME	LATN	DEG MIN	DEG LON N	DEG MIN	DEG MIN	Km	HHR	MAG	MAG NR	NS	DEG SEC	DIS KM	DIS MI	DIS CIR	DIS LF	DIS FR	DIS RMK	
1983	JAN	5	1742	58.66	19	23.36	155	16°58'	154	1.2	+2	16	4	126	10	1	3	6	8	SSC	5	27	SFR	
		5	1743	55.66	19	10.97	155	13°57'	8.0	2.0	-2	3	1	96	10	0	92	12	4	5	29	SFC		
		5	1950	52.00	19	24.03	155	17°01'	+1	1.1	1.0	16	4	75	15	1	4	2	9	SNC	5	19	SNC	
		5	1953	14.24	19	24.55	155	16°47'	2.37	.9	16	3	222	.08	1	4	2	9						
		5	1955	25.91	19	20.75	155	2°22'	4.9	2.1	-2	2	9	15	1	56	10	1	1	14	SSR			
		5	1949	54.09	19	20.79	155	18.29	3.6	1.2	6	15	2	101	12	2	*3	4	9	SNC				
		5	2033	10.6	19	22.70	155	8.83	1.6	1.2	6	15	2	101	12	2	*3	4	9	SNC				
		5	2032	49.42	19	25.06	155	16.53	1.8	1.2	6	15	2	101	12	2	*3	4	9	SNC				
		5	2045	27.23	19	20.87	155	18.21	1.71	2.1	2.9	21	4	60	.13	2	5	22	SWR					
		5	2047	44.9	19	20.86	155	18°21'	1.89	1.0	1.2	12	0	75	.08	2	4	7	11	SSR				
		5	2114	58.73	19	23.81	155	16°76'	2.57	1.0	1.2	15	4	70	.08	2	*4	2	9	SFC				
		5	2044	52.6	19	24.66	155	16.81	2.07	1.1	1.3	203	5	05	1	5	1	1	18	SF3				
		5	2259	15.7	19	24.64	155	16.81	2.07	1.3	1.8	17	3	138	.10	1	*4	3	9	SNC				
		5	2375	4.49	19	24.36	155	16°83'	*98	.9	.8	14	2	114	.10	1	*3	7	SSC					
		5	2317	16.82	19	24.18	155	16°99'	2.14	1.1	1.0	17	3	85	.12	1	*4	7	20	SSC				
		5	2333	2.87	19	23.32	155	16.86	2.05	1.0	1.1	101	1	07	1	7	4	8	SNC					
		6	0	0.3	19.43	19	19.59	155	10°17'	8.05	.7	1	21	2	95	.05	5	5	1	18	SF3			
		6	050	39.56	19	20.95	155	17.94	1.8	1.0	1.1	1	1	61	.1	3	*3	6	5	SWR				
		6	141	18.72	19	22.96	155	8.81	3.57	1.4	1.3	104	1	11	2	6	7	8	SER					
		6	158	32.06	19	22.53	155	8.96	3.69	1.3	3	13	0	93	.08	2	*5	6	6	SER				
		6	311	6.54	19	20.33	155	14.1	1.05	1.5	3	15	0	136	.15	1	2.2	4	5	SINT				
		6	329	48.53	19	23.17	155	26.89	2.85	1.5	1.3	100	1	0	1	6	*6	5	19	KAO				
		6	447	18.76	19	20.82	155	28.02	6.09	1.7	1.1	30	1	116	.14	2	*6	1.0	18	SFF5				
		6	518	40.66	19	20.82	155	3.02																
		6	523	36.52	19	22.82	155	8.66	4.39	1.4	1.3	13	0	101	.10	3	*5	7	5	SSR				
		6	529	1.66	19	30.05	155	28.10	4.39	1.7	1.7	0	121	.08	8	1.4	5	5	7	MLO				
		6	636	30.65	19	23.88	155	4.37	2.09	1.3	1.1	1	90	.08	1	*5	3	6	SME					
		6	721	27.15	19	23.24	155	7.04	3.02	1.4	1.0	1	9	0	101	.09	1	*5	7	6	SER			
		6	835	19.38	19	22.99	155	8.81	2.80	.6	.6	9	0	108	.06	3	*6	5	18	SER				
		6	931	34.69	19	22.75	155	8.71	2.68	1.2	.6	11	1	102	.08	2	*8	4	7	SER				
		6	951	53.23	19	21.03	155	3.52	3.65	1.4	.6	9	0	106	.08	2	*7	1.0	5	SSF				
		6	1039	4.44	19	23.32	155	6.99	3.03	1.4	.6	10	0	102	.09	1	*7	5	5	SME				
		6	1048	59.94	19	23.08	155	8.37	2.91	1.3	.3	10	0	105	.11	1	*5	7	6	SER				
		6	1055	53.60	19	19.05	155	13.69	7.37	1.3	.6	18	1	85	.09	4	*6	1.3	16	SFF2				
		6	1124	13.02	19	22.54	154	58.88	8.61	2.3	1.9	32	1	183	.14	5	*7	24	LER					
		6	1127	27.96	19	18.53	154	13.60	8.68	2.4	2.2	32	4	177	.11	3	*7	23	SSF					
		6	1132	27.20	19	22.05	155	1.21	*0.1	1.5	.6	10	1	181	.17	5	*7	7	5	SFF				
		6	1143	30.61	19	22.05	155	9.41	3.17	1.3	.9	2	133	.09	1	*7	0	5	SER					
		6	137	19.13	19	23.53	155	5.70	4.14	.4	.3	11	1	96	.08	1	*5	5	7	SME				
		6	1317	26.52	19	22.49	155	8.65	3.14	1.5	1.3	21	3	97	.08	2	*4	4	15	SER				
		6	1356	29.00	19	22.43	155	8.63	3.00	1.3	.6	1	102	.03	2	*5	5	5	SER					
		6	1358	53.99	19	23.42	155	8.49	3.16	1.5	.5	13	1	102	.14	1	*5	23	SSF					
		6	1764	17.10	19	22.34	155	6.97	3.10	1.5	.5	13	1	102	.10	1	*5	6	11	SME				
		6	1819	47.24	19	21.93	155	*44	9.08	2.4	1.9	33	1	173	.12	6	*9	.6	27	SFS				
		6	2055	35.11	19	21.10	155	54.59	6.33	2.8	2.3	28	0	100	.13	4	1.0	1.3	23	LER				
		6	2244	27.6	19	21.18	155	54.59	6.33	2.8	2.3	28	0	100	.13	4	1.0	1.3	23	LER				
		6	2254	49.66	19	22.01	155	3.11	1.92	1.4	1.1	7	2	122	.11	4	1.7	1.4	4	SSF				

YEAR	MON	DAY	HHRN	LME	LAT <sup>N</sup>	LUN <sup>0</sup>	DEG MIN	DEG MIN	DEPTH KM	AMP				NIR	NS	GAP	RES	MIN	ERR	ERZ NO	KM	KM	RMK
										km	mag	nir	sec	deg	sec	deg	sec	deg	sec	deg	sec	deg	sec
1983	JAN	6	2555	1:33	19	24:01	155	15.59	3:81	1.	2	16	1	11	13	2	*6	*5	11	SEC			
		7	07	39	11:44	19	26:42	155	4:43	3:39	1.	7	9	10	1	16	*08	0	*6	*5	SHE		
		7	013	11:49	19	26:46	155	4:36	3:07	1.	6	6	11	1	10	0	166	*02	0	*6	*4	T SNE	
		7	035	11:54	19	26:46	155	4:38	3:07	1.	6	6	11	1	10	0	166	+07	0	*6	*5	SHE	
		7	052	33:27	19	24:68	155	3:93	2:94	1.	5	3	11	0	91	+10	1	*6	*4	T SNE			
		7	11	40:09	19	24:24	155	4:26	3:21	1.	7	1	8	17	1	83	*09	1	*5	*3	13 SNE		
		7	119	50:35	19	26:53	155	6:64	1:79	1.	4	14	13	1	31	*10	1	*4	*2	9 SNC			
		7	121	35:01	19	26:53	155	6:61	1:96	1.	3	14	13	2	11	0	1	*4	*2	9 SNC			
		7	145	22:02	19	24:34	155	4:27	3:27	1.	5	9	16	1	0	95	*08	0	*5	*4	T SNE		
		7	158	55:74	19	24:47	155	4:57	3:12	1.	5	11	12	1	78	+12	1	*5	*4	T SNE			
		7	218	3:63	19	24:25	155	4:40	2:99	1.	5	6	13	0	91	+11	1	*5	*4	9 SNE			
		7	219	15:07	19	19:53	155	7:35	6:59	1.	4	13	15	1	111	+12	4	*6	1:2	7 SNE			
		7	220	40:06	19	24:67	155	17:13	4:81	1.	9	15	13	3	61	+06	0	*5	*4	10 SNE			
		7	224	43:51	19	24:05	155	4:42	3:47	1.	4	9	21	2	83	+12	4	*5	*4	9 SNC			
		7	227	47:11	19	24:02	155	4:70	3:80	1.	4	9	13	2	93	+12	3	*6	1:4	8 SNE			
		7	236	38:07	19	21:23	155	4:44	7:65	1.	6	9	14	2	89	+11	4	*6	1:2	7 SNE			
		7	243	14:08	19	24:01	155	4:24	2:97	1.	0	24	24	1	80	+09	1	*5	*4	15 SNE			
		7	34	36:03	19	23:95	155	5:23	4:98	1.	3	61	11	0	97	+10	1	*7	1:7	15 SNE			
		7	37	36:49	19	21:81	155	2:20	6:80	1.	1	0	16	1	0	187	+07	7	*9	1:8	12 SNE		
		7	310	38:66	19	21:47	155	1:63	1:54	1.	9	18	1	183	+04	4	*7	1:9	4 SNC				
		7	315	30:74	19	23:89	155	5:22	3:79	1.	7	8	10	0	96	+04	2	*5	*6	9 SNE			
		7	316	4:63	19	21:49	154	5:99	1:15	1.	5	6	12	1	226	+07	2	*3	1:1	2 LER			
		7	319	49:65	19	24:52	155	3:93	3:08	1.	5	12	1	91	+07	1	*5	*4	9 SNE				
		7	320	52:71	19	24:33	155	4:46	3:29	1.	4	3	13	0	93	+09	1	*6	1:7	12 SNE			
		7	331	9:27	19	24:60	155	3:51	3:35	1.	6	9	12	1	93	+07	1	*6	1:7	7 SNE			
		7	333	36:41	19	24:57	155	3:40	4:12	1.	4	9	11	1	92	+06	2	*5	*9	7 SNE			
		7	338	1:34	19	26:68	155	18:00	2:14	2.	1	17	10	1	62	+15	2	*5	*6	17 INT			
		7	349	16:57	19	24:85	155	3:54	4:76	1.	4	9	12	0	88	+05	1	*6	*9	11 SNE			
		7	352	14:63	19	24:59	155	3:54	2:09	1.	4	6	10	2	92	+09	1	*5	*3	9 SNE			
		7	40	30:27	19	24:70	155	3:77	2:53	1.	4	8	17	4	133	+11	1	*6	1:2	12 SNC			
		7	4	50	59:68	19	24:59	155	3:72	4:97	1.	4	9	13	2	92	+09	1	*6	1:4	12 SNC		
		7	43	3:35	19	24:46	155	3:38	6:29	1.	6	9	12	2	93	+10	2	*6	*9	11 SNC			
		7	44	50:44	19	24:47	155	3:35	3:19	1.	4	6	10	2	95	+05	2	*4	*5	9 SNE			
		7	45	53:14	19	24:47	155	16:38	2:12	1.	5	18	17	4	133	+11	1	*4	*2	5 SNC			
		7	46	30:27	19	24:80	155	16:75	2:12	1.	5	18	4	142	+08	0	*4	*2	16 SNC				
		7	47	4:20	19	24:30	155	3:43	5:29	1.	8	9	15	2	94	+10	2	*6	*9	14 SFS			
		7	48	56:10	19	24:60	155	3:41	7:98	1.	6	9	10	1	92	+07	2	*6	1:2	8 SFS			
		7	49	34:55	19	24:55	155	3:42	6:18	1.	4	7	17	2	80	+08	1	*7	1:0	22 SFS			
		7	45	16:38	19	24:11	155	3:65	4:04	1.	6	12	2	93	+12	1	*5	*6	11 SNE				
		7	46	59:71	19	23:43	155	2:11	4:01	1.	5	1	9	2	131	+12	0	*4	*9	8 SNE			
		7	47	21:54	19	24:57	155	3:70	7:22	1.	8	9	12	2	93	+08	1	*7	9	11 SFS			
		7	49	12:06	19	24:98	155	4:35	6:66	1.	8	9	12	2	97	+12	1	*6	*9	17 SFS			
		7	49	7:95	19	24:57	155	3:46	6:82	1.	6	7	17	1	90	+07	1	*5	*9	15 SFS			
		7	427	5:48	19	24:55	155	5:06	5:20	1.	6	13	2	101	+11	1	*6	*9	12 SFS				
		7	435	55:07	19	24:35	155	2:98	8:00	1.	4	9	1	100	+10	2	*8	1:2	9 SFS				
		7	446	17:45	19	24:34	155	1:58	3:10	1.	4	3	12	0	101	+10	1	*3	*7	12 SFS			

## 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	NO									
														DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK		
1983	JAN	7	453	33.87	19	23.89	155	15.97	3.08	1.9	1.4	20	4	106	.12	1	.4	.3	18	SEC											
		7	459	6.92	19	24.69	155	16.70	2.22	.9	.8	9	2	143	.07	1	.4	.3	9	SNC											
		7	54	6.39	19	24.74	155	4.03	3.81	1.4	.6	7	1	105	.08	1	.7	.7	4	SME											
		7	55	43.07	19	24.00	155	16.81	2.76	1.3	.8	13	2	83	.07	0	.4	.3	9	SSC											
		7	59	20.93	19	25.39	155	3.94	3.58	1.7	.3	8	0	96	.11	2	.7	.8	4	SME											
		7	511	52.81	19	25.57	155	3.07	.43	1.5	.3	7	0	132	.07	3	.5	1.0	3	SME											
		7	512	41.20	19	24.35	155	5.58	4.67	1.3	.3	7	0	103	.25	2	1.3	2.3	6	SME											
		7	522	17.24	19	24.25	155	5.97	8.08	1.6	.4	6	0	105	.10	2	.9	2.2	5	SF4											
		7	524	14.05	19	24.79	155	3.41	3.48	1.5	.3	7	0	98	.04	2	.6	.6	5	SME											
		7	524	58.96	19	24.73	155	3.67	3.43	1.4	.3	8	1	101	.07	1	.5	.4	5	SME											
		7	527	14.89	19	24.74	155	3.06	2.79	1.4	.3	9	0	94	.10	2	.6	.5	5	SME											
		7	530	16.72	19	24.74	155	3.24	2.18	1.4	.3	8	1	92	.09	2	.5	.5	4	SME											
		7	533	13.80	19	24.66	155	4.00	4.76	1.5	.5	0	103	.06	9	1.3	42	1	3	SME	*										
		7	541	.49	19	25.14	155	9.60	4.38	1.9	.9	11	0	139	.13	9	1.1	38	.6	SER	*										
		7	543	9.21	19	24.70	155	3.09	5.58	1.7	.5	0	94	.14	8	3.2	23	7	3	SFS	*										
		7	548	40.70	19	24.61	155	3.84	3.61	1.5	.7	1	100	.07	1	.6	.6	4	SME												
		7	549	10.54	19	24.84	155	3.24	3.25	1.5	.3	9	1	97	.05	2	.5	.5	6	SME											
		7	62	19.93	19	24.74	155	3.43	2.66	1.8	.7	0	98	.07	2	.6	.6	4	SME												
		7	62	41.69	19	20.71	155	3.92	4.36	1.5	.7	0	99	.08	2	.9	1.5	3	SSF												
		7	617	30.30	19	24.48	155	3.77	3.35	1.4	.5	0	164	.00	1	.9	.6	3	SME												
		7	621	53.50	19	24.58	155	4.10	3.00	1.5	.6	0	106	.08	0	.5	.4	3	SME												
		7	631	33.97	19	24.79	155	3.10	3.55	1.6	.9	0	93	.09	2	.6	.8	2	SME												
		7	634	57.67	19	24.10	155	4.29	2.79	2.3	2.3	30	2	84	.12	1	.4	.4	23	SME											
		7	635	54.67	19	24.28	155	4.32	3.28	1.5	.9	12	0	92	.06	1	.6	.6	10	SME											
		7	642	41.03	19	24.78	155	16.53	1.85	1.1	.5	19	5	143	.12	1	.4	.3	15	SNC											
		7	653	34.37	19	24.46	155	4.36	3.18	1.6	.13	2	93	.07	0	.5	.4	11	SME												
		7	77	7.73	19	24.66	155	3.89	3.39	1.5	.15	3	102	.08	1	.6	.4	14	SME												
		7	720	14.18	19	24.44	155	16.96	2.53	1.5	1.2	18	5	88	.11	1	.4	.2	15	SSC											
		7	742	24.57	19	24.28	155	4.31	3.02	1.2	12	3	91	.04	1	.5	.3	10	SME												
		7	750	46.16	19	24.46	155	4.39	3.35	1.6	.3	16	3	93	.07	0	.5	.3	13	SNC											
		7	756	3.18	19	24.64	155	4.81	3.60	1.8	1.3	16	0	99	.10	1	.5	.4	14	SME											
		7	827	44.99	19	24.51	155	4.53	4.18	1.4	.9	15	3	95	.10	1	.4	.5	14	SME											
		7	829	8.21	19	23.53	155	4.01	2.42	1.8	.6	13	3	92	.10	2	.4	.4	11	SME											
		7	834	51.92	19	24.63	155	16.73	2.84	1.5	1.7	13	4	131	.05	1	.4	.3	11	SNC											
		7	846	11.90	19	24.05	155	3.74	8.08	1.6	.14	3	92	.13	1	.7	1.0	11	SFS												
		7	849	47.97	19	24.48	155	3.51	2.43	1.5	.3	14	3	91	.11	1	.5	.4	13	SME											
		7	850	41.27	19	24.47	155	4.51	3.28	1.7	.3	14	3	94	.06	0	.5	.4	13	SME											
		7	94	30.39	19	24.53	155	16.77	3.18	1.4	1.2	18	5	116	.10	1	.4	.2	15	SSC											
		7	911	18.13	19	24.74	155	3.52	5.42	1.4	.11	2	93	.03	1	.5	.9	10	SF5												
		7	920	5.81	19	21.33	155	4.02	9.69	1.4	.14	1	81	.09	3	.7	.7	14	11	SFS											
		7	923	49.25	19	24.52	155	4.53	3.43	1.5	.13	3	96	.08	1	.5	.3	11	SME												
		7	925	23.99	19	24.33	155	4.35	3.24	2.4	2.0	28	3	82	.08	0	.4	.3	26	SME											
		7	926	46.93	19	24.32	155	4.20	3.13	1.4	.14	3	83	.08	0	.6	.4	13	SME												
		7	927	3.24	19	24.70	155	3.16	4.36	1.6	.3	11	1	93	.10	2	.6	.7	10	SME											
		7	10	9	2.26	19	24.45	155	4.32	3.29	2.0	1.3	18	3	93	.06	0	.5	.3	17	SME										
		7	1010	28.33	19	24.37	155	4.61	3.68	1.4	.6	15	3	95	.06	1	.5	.4	14	SME											
		7	1014	40.68	19	20.48	155	3.45	13.00	1.6	.1	8	1	96	.11	1	1.3	3.0	7	SFS											
		7	1017	37.41	19	25.39	155	3.12	.61	1.5	.10	3	110	.06	3	.4	.4	9	SME												

YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	LON	W	DEPTH	AMP	DUR	GAP				RMS	MIN	ERH	ERZ	NO
														DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS
1983	JAN	7	1020	54.07	19	19.08	155	12.07	7.25	1.6	1.1	21										

## HVO EARTHQUAKE SUMMARY LIST

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	ORIGIN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO				
YEAR	MON	DA	HRMN	SEC	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	DIS	KM	KM	FM	REMK		
1983	JAN	8	928	38.46	19	20.11	155	54.15	6.18	16	3	239	.09	12	.8	3.6	15 LER		
		8	940	24.86	19	20.80	155	2.21	7.86	1.4	13	1	161	.11	2	.7	1.0 12 SF5		
		8	947	44.19	19	22.14	155	1.03	3.87	1.7	.6	20	2	168	.16	.7	2.1 12 SSF		
		8	1033	16.63	19	20.68	155	2.07	4.23	1.4	.3	17	2	179	.24	2	1.5 8 SSF		
		8	1037	39.48	19	19.16	155	8.73	5.34	1.3	10	1	102	.09	4	.7	1.8 7 SF4		
		8	1138	8.43	19	18.83	155	13.20	5.82	1.0	17	1	82	.07	3	.5	1.4 15 SF2		
		8	1245	54.82	19	20.75	155	3.06	7.63	1.6	.9	19	1	113	.08	2	.5	.9 9 SF5	
		8	1424	35.33	19	18.91	155	13.48	8.82	1.6	1.1	19	0	81	.07	4	.6	1.1 16 SF2	
		8	1450	15.20	19	22.22	155	15.59	33.58	3.1	3.0	48	2	56	.10	1	.6	1.0 45 DEP	
		8	1728	30.54	19	21.90	155	1.98	1.25	1.5	.3	14	3	152	.11	4	.4	.8 8 SSF	
		8	1755	55.50	19	19.71	155	2.73	5.58	2.0	.7	18	3	191	.08	1	.5	.8 8 SF5	
		8	1828	.88	19	19.83	155	8.46	3.12	.9	12	0	136	.12	5	.6	1.3 10 SSF		
		8	1853	4.83	19	22.32	155	2.96	1.73	1.6	.3	17	2	114	.16	4	.5	1.4 7 SSF	
		8	20	8	53.73	19	21.08	155	17.48	1.94	1.7	1.7	18	1	67	.12	2	.3	.6 14 SWR
		8	2148	7.53	19	19.15	155	9.88	7.07	1.5	.3	18	1	104	.06	5	.6	1.1 17 SF3	
		8	2321	28.01	19	19.92	155	12.21	8.64	1.5	.6	17	2	81	.06	5	.6	1.1 14 SF3	
		8	2344	44.61	19	19.24	155	11.29	3.41	1.0	16	4	103	.10	6	.4	.4 9 SF5		
		8	2349	48.06	19	20.21	155	.81	3.13	1.5	10	0	204	.11	4	1.6	.9 4 SSF		
		9	017	17.21	19	21.96	155	18.12	3.11	.6	12	2	77	.08	3	.4	.8 9 SWR		
		9	242	24.51	19	20.26	155	12.63	7.12	.8	12	1	75	.05	4	.6	1.5 9 SF2		
40		9	440	12.28	19	21.70	155	6.30	7.54	.7	15	0	104	.07	6	.6	1.7 9 SF4		
		9	5	3	31.47	19	11.59	155	34.56	4.62	2.6	1.6	34	1	125	.16	10	.6	2.2 23 LSW
		9	551	46.74	19	20.05	155	10.08	8.43	1.3	12	0	138	.03	4	1.2	2.5 10 SF3		
		9	556	39.51	19	22.48	155	8.63	2.76	1.4	.8	18	0	92	.15	2	.7	.6 13 SER	
		9	653	.18	19	20.36	155	6.80	6.39	1.1	17	1	104	.08	6	.6	1.6 15 SF4		
		9	659	40.54	19	21.80	155	1.79	4.89	2.0	1.1	26	5	150	.13	4	.5	1.4 14 SSF	
		9	7	1	4.73	19	21.56	155	1.62	5.51	2.0	1.5	24	3	159	.14	4	.7	1.4 16 SF5
		9	742	10.92	19	23.43	155	1.44	6.45	1.6	.9	15	0	195	.08	5	.7	1.4 15 SF5	
		9	754	20.67	19	24.50	155	.93	4.60	1.2	1.1	14	0	176	.10	4	.8	1.7 10 SME	
		9	101	5.97	19	22.23	155	17.38	25.64	1.5	37	1	37	.12	2	.7	1.0 27 DEP		
		9	1120	29.08	19	22.32	154	59.66	8.40	1.7	1.4	28	0	181	.12	5	.9	1.1 20 LER	
		9	1210	19.08	19	23.23	155	7.17	3.57	.3	5	0	120	.02	2	.6	.7 3 SME		
		9	1233	25.38	19	20.13	155	4.32	5.28	1.8	1.5	14	0	133	.07	2	.6	1.6 9 SF5	
		9	1236	28.45	19	22.14	155	1.96	7.17	1.4	.9	12	3	150	.10	4	.6	.8 5 SF5	
		9	13	5	42.64	19	19.63	155	8.59	6.14	1.3	.6	12	0	79	.10	4	.6	1.7 8 SF4
		9	1331	31.40	19	21.09	155	1.32	.91	.6	5	0	185	.06	4	2.1	2.9 5 SSF		
		9	1447	33.84	19	21.16	155	3.01	8.47	2.3	2.3	20	1	123	.08	2	.6	.9 16 SF5	
		9	1622	48.49	19	18.78	155	13.17	6.15	1.3	.5	23	1	83	.09	3	.5	1.2 14 SF2	
		9	1758	7.56	19	24.73	155	17.03	2.44	.9	.2	6	0	146	.01	0	1.1	.5 5 SNC	
		9	1913	27.20	19	20.96	155	4.19	5.18	1.5	.8	21	1	94	.14	3	.6	1.4 13 SF5	
		9	1918	43.83	19	21.46	155	16.85	25.62	1.9	1.1	34	0	63	.09	2	.7	1.0 29 DEP	
		9	207	45.08	19	22.74	155	2.65	5.99	1.4	17	1	129	.14	4	.7	1.4 11 SF5		
		9	2044	25.15	19	18.77	155	15.50	7.74	1.0	14	0	124	.07	4	.6	1.5 13 SF1		
		10	216	17.20	19	18.73	155	15.34	5.39	.8	20	1	109	.13	4	.5	1.8 18 SF1		
		10	237	24.16	19	22.49	155	1.69	3.79	1.6	19	3	142	.15	5	.6	1.6 11 SSF		
		10	422	51.33	19	20.87	155	3.29	5.13	1.5	25	3	101	.16	2	.5	1.0 16 SF5		
		10	453	19.71	19	20.36	155	3.37	8.31	1.6	18	0	99	.09	1	.6	1.0 9 SF5		
		10	529	43.50	19	22.28	155	1.71	.95	1.4	14	2	163	.12	5	.5	.8 6 SSF		

## HVO EARTHQUAKE SUMMARY LIST

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	ORIGIN	TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO			
YEAR	MON	DA	HRMN	SEC	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	DIS	KM	KM	FM	REMK	
1983	JAN	10	721	5.93	19	22.50	155	2.60	7.98	2.2	3.0	17	1	160	.10	5	1.0 12 SF5	
		10	730	15.32	19	21.62	155	1.37	.04	.8	10	0	172	.08	4	.8 1.3 5 SSF		
		10	754	2.53	19	21.42	155	30.37	9.66	1.5	.22	1	48	.09	5	.4 1.0 16 KAO		
		10	946	19.69	19	21.20	155	2.75	4.65	1.5	.20	3	137	.20	2	1.0 1.6 7 SSF		
		10	1233	16.82	19	18.61	155	13.30	8.08	1.5	1.1	16	1	83	.08	3	.7 1.4 13 SF2	
		10	1550	37.76	19	26.66	155	45.15	5.14	2.6	2.7	32	3	73	.12	7	.5 2.6 22 KON	
		10	2123	30.59	19	19.30	155	8.81	7.21	1.5	.9	19	0	86	.08	4	.6 1.4 17 SF4	
		10	2251	1.49	19	13.17	155	30.22	9.16	1.4	.24	0	70	.13	4	.5 1.0 15 LSW		
		11	051	57.18	19	19.90	155	13.01	7.92	1.5	1.1	19	1	71	.07	5	.6 1.1 15 SF2	
		11	136	.92	19	20.17	155	12.93	8.35	1.6	1.3	21	2	70	.08	5	.6 1.0 17 SF2	
		11	329	54.92	19	19.84	155	6.96	4.60	1.0	.3	13	0	139	.09	5	.7 3.2 9 SSF	
		11	342	17.29	19	10.29	155	10.40	6.58	1.0	.3	10	0	119	.03	5	.9 3.0 9 SF3	
		11	810	.61	19	32.84	155	37.63	6.74	1.7	1.2	28	2	120	.19	7	.7 1.7 22 MLO	
		11	917	59.50	19	18.75	155	14.18	7.22	1.6	1.3	20	1	102	.10	3	.6 1.1 17 SF2	
		11	1355	52.22	19	18.37	155	12.77	7.20	1.6	.9	18	1	105	.08	3	.6 1.3 12 SF2	
		11	1417	49.99	19	40.51	155	3.70	11.15	2.8	2.3	26	0	204	.15	28	1.0 1.1 19 HIL L	
		11	1449	55.56	19	20.23	155	3.96	4.15	1.4	1.1	16	0	126	.08	2	.6 1.9 10 SSF	
		11	1523	49.83	19	21.24	155	.56	2.16	1.7	.6	24	2	185	.16	5	.8 1.4 15 SSF	
		11	1722	28.48	19	21.12	155	2.61	3.39	1.6	1.6	1.1	17	1	136	.08	5	.7 1.3 17 SSF
		11	1737	51.52	19	19.84	155	13.55	7.35	1.1	.3	17	1	71	.06	5	.5 1.2 12 SF2	
		11	18	23	19	23.49	155	6.20	6.82	1.5	.3	20	2	103	.10	4	.5 1.0 12 SF4	
		11	1932	13.03														

## 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 NO								
					DEG	MIN	KM	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK		
1983	JAN	13	1141	44.46	19	20.13	155	9.40	7.02	1.4	1.1	22	3	79	.09	4	.6	1.0	17 SF3		
		13	1443	.57	19	19.68	155	10.95	9.06	1.4	.3	18	1	93	.08	5	.7	1.3	12 SF3		
		13	1655	21.66	19	20.22	155	13.11	7.49	.9	.1	13	1	66	.05	4	.5	1.5	12 SF2		
		13	1948	25.31	19	17.64	155	20.85	7.79	1.4	1.3	28	2	129	.12	4	.5	1.2	17 SWR		
		13	22 8	14.39	19	20.76	155	7.95	9.39	1.5	1.4	22	1	81	.05	4	.6	1.1	19 SF4		
		13	2226	43.38	19	20.88	155	3.02	8.54	1.8	.9	18	1	116	.08	2	.7	1.0	11 SF5		
		14	038	25.90	19	9.50	155	24.56	43.00	2.0	1.2	37	2	221	.08	9	1.1	1.3	30 LOI		
		14	135	59.76	19	20.43	155	9.60	7.28	1.1	.1	17	3	102	.06	3	.6	1.0	8 SF3		
		14	2 5	31.96	19	25.91	155	25.15	6.91	1.1	.6	15	1	74	.09	1	.5	1.2	12 KAO		
		14	310	34.90	19	21.36	155	17.19	1.53	2.5	3.2	31	2	50	.13	2	.5	4	19 SWR		
		14	522	57.68	19	18.87	155	13.73	7.02	1.3	.6	18	2	88	.10	3	.6	1.2	13 SF2		
		14	548	11.06	19	21.93	155	1.14	4.46	1.9	1.1	24	1	162	.14	5	.6	2.6	18 SSF		
		14	6	9	1.30	19	20.17	155	3.93	4.81	1.5	.9	16	2	130	.06	2	.5	1.1	12 SSF	
		14	6	9	28.92	19	21.66	155	3.47	1.80	1.3	.3	13	2	100	.12	3	.4	.9	8 SSF	
		14	617	59.61	19	20.55	155	9.18	11.43	1.5	.7	25	3	69	.06	3	.6	1.0	18 SF3		
		14	646	22.34	19	19.06	155	9.69	3.40	1.0	.3	18	1	105	.08	4	.4	1.3	14 SSF		
		14	7	9	52.21	19	19.02	155	8.94	8.03	1.9	1.8	35	1	96	.09	4	.5	.7	25 SF4	
		14	747	59.72	19	20.07	155	6.46	6.63	1.1	.4	17	0	116	.07	5	.5	1.3	9 SF4		
		14	759	44.07	19	20.81	155	7.97	8.11	1.6	1.1	21	2	79	.06	4	.6	1.1	15 SF4		
		14	1032	35.63	19	22.13	155	15.44	33.37	2.3	2.1	38	0	57	.08	1	.8	1.2	34 DEP		
4			14	15 0	46.94	19	19.56	155	6.76	6.77	1.6	1.5	21	0	124	.09	5	.6	1.6	18 SF4	
			14	1522	39.67	19	20.96	155	2.28	2.73	1.0	.6	6	1	173	.04	2	.8	2.3	6 SSF	
			14	1910	46.74	19	19.85	155	11.77	6.35	1.8	2.3	26	1	86	.09	5	.5	1.0	21 SF3	
			14	2028	27.08	19	20.02	155	8.22	8.62	2.1	2.5	37	2	83	.07	5	.4	.6	26 SF4	
			14	2313	20.78	19	22.99	155	2.17	3.32	1.3	1.1	16	2	193	.09	5	.7	1.1	9 SSF	
			15	029	35.81	19	37.28	156	26.60	13.70	3.2	3.0	44	3	238	.13	64	1.8	3.5	32 DIS	
			15	036	3.78	19	3.96	155	20.96	31.14	2.0	1.5	32	0	209	.07	16	1.0	1.9	28 LOI	
			15	111	32.51	19	20.13	155	8.14	6.55	1.1	.6	14	1	84	.11	5	.7	1.2	6 SF4	
			15	210	53.70	19	24.85	155	51.37	8.05	1.7	1.3	19	2	136	.12	10	.7	1.5	8 KON	
			15	3	8	2.52	19	20.64	155	9.02	11.03	1.0	.4	18	2	68	.10	3	.7	1.2	12 SF4
			15	420	42.04	19	20.56	155	7.40	7.87	1.5	1.3	25	4	92	.10	5	.6	1.0	18 SF4	
			15	549	29.03	19	20.23	155	13.25	7.44	1.0	.9	18	2	65	.05	4	.5	1.1	14 SF2	
			15	840	7.43	19	18.19	155	13.27	5.75	1.4	1.1	20	2	90	.11	2	.6	1.6	16 SF2	
			15	855	6.48	19	17.93	155	12.91	6.50	1.4	1.2	21	4	115	.09	2	.5	1.1	14 SF2	
			15	9 5	5.82	19	20.80	155	13.17	8.30	1.1	.6	16	3	76	.07	3	.6	1.0	9 SF2	
			15	917	18.77	19	18.93	155	8.85	5.80	1.4	1.0	17	1	96	.06	3	.5	1.6	11 SF4	
			15	1122	37.66	19	21.72	155	1.89	6.91	1.8	1.5	24	4	157	.13	4	.6	.9	12 SF5	
			15	1236	26.95	19	21.97	155	2.02	5.31	1.5	1.1	20	2	143	.13	4	.6	1.5	8 SF5	
			15	2256	58.27	19	18.60	155	14.02	6.36	1.4	1.3	21	0	101	.13	3	.6	1.3	18 SF2	
			15	2346	54.67	19	20.62	155	59.53	7.63	2.3	2.5	38	3	199	.18	6	.9	.7	23 LER	
			16	2 8	5.04	19	20.58	155	3.74	8.07	2.7	3.2	42	4	101	.11	2	.6	.4	35 SF5	
			16	357	54.17	19	19.40	155	15.35	7.05	.9	.6	17	1	104	.06	4	.5	1.1	12 SF1	
			16	4 9	42.00	19	19.99	155	3.34	8.00	1.4	.7	11	0	186	.08	1	1.0	1.4	6 SF5	
			16	425	32.02	19	27.46	155	26.48	14.23	1.9	.2	26	1	63	.11	5	.4	.6	19 DML	
			16	436	53.06	19	19.80	155	13.28	7.21	1.6	1.1	20	2	69	.09	5	.6	1.1	17 SF2	
			16	514	43.81	19	21.49	155	.15	.01	1.9	2.3	27	2	186	.28	6	1.2	.8	13 SSF *	
			16	558	5.45	19	21.52	155	3.00	5.62	1.3	.9	16	2	129	.15	3	.9	1.7	9 SF5	
			16	627	3.76	19	19.19	155	8.96	5.94	1.3	.6	16	0	92	.05	4	.6	1.6	12 SF4	

## 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 NO						
					DEG	MIN	KM	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK
1983	JAN	16	655	58.74	19	19.48	155	9.02	6.22	1.6	1.5	31	3	86	.11	4	.5	1.2	22 SF4
		16	733	53.65	19	21.23	155	7.36	9.24	3.9	3.9	48	4	82	.11	4	.4	1.3	44 SF4 F
		16	747	8.77	19	20.74	155	7.41	8.22	2.3	2.3	42	3	88	.08	5	.4	1.6	29 SF4
		16	812	8.57	19	22.59	155	23.91	6.15	1.5	1.1	21	3	50	.10	5	.5	1.2	18 KAO
		16	813	59.88	19	19.24	155	11.77	9.30	1.7	1.5	26	5	99	.08	5	.5	1.8	23 SF3
		16	1158	23.10	19	19.76	155	4.45	5.05	1.3	1.1	19	5	152	.08	3	.5	.9	15 SF5
		16	1243	12.73	19	19.64	155	5.97	6.81	1.3	1.3	20	3	136	.11	5	.5	1.1	14 SF4
		16	1356	7.22	19	21.87	155	30.36	10.04	1.0	1.5	30	1	45	.09	5	.5	1.0	29 KAO
		16	1422	33.73	19	20.30	155	3.77	6.85	1.3	1.2	22	3	119	.12	2	.5	.7	17 SF5
		16	1711	1.29	19	30.63	155	39.16	8.18	2.0	1.6	26	5	103	.13	6	.5	1.9	24 MLO
		16	1826	39.85	19	19.42	155	14.09	8.52	2.1	2.1	38	1	77	.09	5	.4	1.6	34 SF2
		16	1950	19.45	19	19.81	155	12.54	7.96	.9	15	2	164	.05	5	.7	1.4	10 SF2	
		16	20	5.31	19	17.89	155	13.88	6.26	.9	15	1	117	.07	2	.6	1.4	13 SF2	
		17	131	11.90	19	20.05	155	10.48	6.90	1.6	.9	20	3	86	.11	4	.6	1.3	11 SF3
		17	1758	57.55	19	24.91	155	25.52	7.11	1.2	.9	28	4	50	.12	1	.4	.8	17 KAO
		17	18	5.50	11	19.26	155	38.24	4.05	2.6	2.2	23	1	195	.12	4	.8	1.5	16 MLO
		17	13	0	53.31	19	13.64	155	27.82										

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	LON	W	DEPTH	AMP	DUR	GAP RMS				ERH	ERZ	NO	
														DEG	MIN	DEG	MIN	KM	KM	FM	REMK
1983	JAN	19	1	3	48.99	19	22.22		155	.85	6.64	1.9	1.3	24	2	161	.13	6	.7	1.1	18 SF5
			233	16.33	19	19.97		155	10.50	7.92	1.6	.9	23	4	87	.10	4	.6	.9	19 SF3	
			234	2.14	19	19.79		155	10.30	6.78	1.6	1.1	22	3	91	.08	4	.5	1.1	16 SF3	
			242	25.66	19	21.17		154	59.56	.04	2.5	1.1	38	1	194	.24	6	.9	.8	21 SLE *	
			424	55.22	19	23.40		155	25.66	6.78	1.4	.9	22	2	47	.09	4	.4	.9	17 KAO	
			437	31.30	19	24.74		155	16.78	15.86	2.3	2.3	49	5	37	.15	1	.4	.4	41 DEP	
			642	29.78	19	16.71		155	22.13	7.14	1.9	2.5	47	3	130	.14	6	.5	.7	32 SWR	
			820	50.46	19	21.04		154	59.46	.02	2.4	2.8	32	2	196	.18	6	.9	.6	11 SLE *	
			1033	11.32	19	19.90		155	6.10	8.87	1.8	1.5	22	1	87	.07	5	.6	1.2	19 SF4	
			111	39.15	19	20.27		155	7.04	8.51	2.1	2.1	37	1	102	.14	5	.5	.7	25 SF4	
			1143	1.06	19	21.28		155	2.43	6.94	2.4	2.5	39	4	141	.12	3	.5	.6	27 SF5	
			1415	52.18	19	21.13		155	3.20	4.69	1.3	.1	17	0	115	.15	2	.8	1.6	10 SSF	
			1449	32.77	19	15.38		155	20.29	5.80	1.0	.6	11	1	241	.04	10	1.7	7.2	9 SWR	
			1514	7.69	19	19.33		155	10.06	6.26	1.4	1.1	29	1	101	.10	5	.5	1.1	26 SF3	
			174	34.41	19	17.56		155	12.90	5.04	1.3	.3	20	3	134	.08	1	.6	.9	9 SF2	
			1717	41.00	19	18.42		155	13.47	8.71	1.1	.1	18	2	86	.08	3	.6	1.1	13 SF2	
			1718	26.46	19	19.05		155	13.78	8.48	1.5	1.1	22	2	86	.06	4	.5	.9	16 SF2	
			1727	14.14	19	18.68		155	13.60	8.14	1.0	.1	16	2	87	.06	3	.6	1.2	12 SF2	
			1815	31.13	19	19.49		155	9.94	6.06	2.2	2.3	41	3	96	.10	5	.4	.6	30 SF3	
			1859	11.47	19	21.62		155	4.90	11.11	1.4	.7	26	4	83	.08	4	.5	.7	14 SF5	
			193	38.42	19	21.76		155	5.04	12.84	1.3	.1	18	0	118	.08	3	1.0	1.7	13 SF5	
			2024	20.86	19	17.72		155	12.89	7.21	1.9	1.9	35	2	125	.12	2	.5	.9	28 SF2	
			2237	48.09	19	17.55		155	12.79	5.37	1.5	.6	16	0	139	.09	2	.7	1.5	10 SF2	
			2332	31.45	19	21.77		155	2.40	6.44	1.6	.1	18	1	147	.12	4	.7	1.3	10 SF5	
			200	12.04	19	18.10		155	12.99	6.52	2.0	1.9	38	2	105	.14	2	.5	1.0	31 SF2	
			2125	49.27	19	20.74		155	12.44	9.36	1.2	.1	15	1	78	.07	4	.8	1.2	8 SF2	
			435	41.61	19	26.98		155	13.80	32.95	1.5	.3	22	0	127	.07	4	1.1	2.7	14 DEP	
			1140	30.88	19	21.13		155	24.89	9.00	2.0	2.3	25	3	53	.11	3	.4	.8	25 SWR	
			1244	29.53	19	21.15		155	24.97	9.37	1.7	1.5	20	3	53	.10	3	.5	1.0	18 SWR	
			1329	49.94	19	19.95		155	7.92	7.56	2.5	2.6	32	2	117	.13	5	.6	.8	30 SF4	
			1341	15.59	19	19.18		155	8.35	6.33	1.3	25	4	87	.09	3	.5	.9	20 SF4		
			1358	24.69	19	18.51		155	27.91	.03	1.9	2.2	13	0	112	.12	7	.6	3.2	13 LSW *	
			1629	.32	19	19.79		155	13.73	8.43	2.8	3.2	38	2	119	.11	5	.4	.6	36 SF2	
			1727	42.93	19	21.09		155	12.46	10.92	1.0	1.7	1	1	88	.11	3	.7	1.1	15 SF2	
			1750	40.35	19	20.99		155	2.63	5.40	1.1	24	2	145	.14	2	.7	1.3	23 SF5		
			2038	32.81	19	20.94		155	12.95	8.90	1.6	1.2	23	0	60	.09	3	.6	1.0	22 SF2	
			2121	38.91	19	19.78		155	7.59	6.80	1.8	1.8	32	2	101	.09	5	.6	.9	32 SF4	
			2104	4.01	19	21.51		155	7.36	7.02	2.5	3.1	40	2	78	.12	3	.4	.8	38 SF4	
			2122	36.12	19	25.65		155	37.83	1.22	2.8	3.2	31	0	98	.11	4	.5	1.3	31 MLO	
			2142	35.06	19	17.88		155	20.77	7.37	2.3	2.6	37	2	125	.10	4	.4	.8	30 SWR	
			520	24.01	19	17.33		155	32.71	.09	1.2	22	2	108	.13	6	.5	.9	20 LSW *		
			548	49.58	19	46.56		155	59.97	7.07	1.6	1.9	1	245	.13	20	2.2	1.0	1.1	18 HUA	
			646	36.61	19	22.49		155	.43	3.94	1.6	.9	22	2	172	.21	6	1.1	3.2	22 SSF	
			647	33.35	19	20.55		155	3.15	4.42	2.0	2.5	28	1	104	.11	1	.6	1.1	26 SSF	
			859	42.36	19	20.91		154	59.03	.01	2.3	3.1	31	2	200	.22	7	1.0	.8	19 SLE *	
			921	50.14	19	16.46		155	21.29	6.93	1.8	2.0	41	4	137	.13	5	.5	.7	25 SWR	
			956	10.87	19	19.86		155	6.98	7.53	1.2	1.0	19	1	112	.11	5	.6	1.4	10 SF4	
			1232	4.69	19	19.89		155	5.19	5.35	1.4	1.1	17	3	137	.07	4	.5	1.9	8 SF5	

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## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	LON	W	DEPTH	AMP	DUR	GAP RMS				ERH	ERZ	NO	
														DEG	MIN	DEG	MIN	KM	KM	FM	REMK
1983	JAN	21	1844	54.88	19	19.47		155	7.99	6.15	1.1	.6	19	3	95	.08	4	.5	1.4	8 SF4	
			1958	56.99	19	19.57		155	15.24	7.58	1.0	.9	18	1	92	.06	4	.5	1.1	13 SF1	
			2123	38.24	19	19.86		155	10.19	7.48	1.3	.6	19	3	89	.07	4	.5	1.0	11 SF3	
			229	9	16.24	19	22.96		155	2.23	6.95	2.4	2.5	34	2	127	.18	5	.5	.8	17 SF5 F
			2213	49.54	19	21.86		154	59.17	3.86	1.9	1.5	22	1	189	.18	6	1.0	3.2	16 SLE	
			059	22.03	19	25.17		154	55.83	4.84	1.7	1.2	18	0	170	.13	5	.9	2.3	9 SLE	
			1044	1.52	19	21.15		155	3.24	6.88	1.3	1.2	17	2	164	.18	2	.9	1.1	11 SF5	
			1225	7.66	19	20.99		155	12.81	26.74	1.6	1.4	28	0	121	.08	3	1.0	1.5	26 DEP	
			2017	41.36	19	23.04		154	59.42	4.99	1.9	1.2	24	2	177	.19	4	1.0	2.0	16 SLE	
			2246	23.56	19	16.73		155	24.05	4.73	1.3	1.3	16	2	91	.13	4	.5	2.5	10 SWR	
			246	33.13	19	23.32		155	25.09	9.86	1.7	1.8	32	1	37	.11	4	.4	.7	23 KAO	
			442	11.03	19	16.48		155	22.63	2.34	1.0	1.4	14	1	126	.08	5	.4	1.1</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	NO							
														DEG	MIN	DEG	MIN	KM	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	JAN	25	554	44.30	19	21.82	155	1.82	6.73	1.6	1.3	24	1	150	.13	4	.6	1.2	13	SF5									
		25	942	32.83	19	19.67	155	6.64	7.90	1.7	1.1	18	1	124	.07	5	.6	1.4	13	SF4									
		25	952	21.37	19	21.51	155	6.81	7.83	1.3	1.1	11	1	157	.04	3	.6	1.2	9	SF4									
		25	1054	37.73	19	20.84	155	11.22	7.53	2.1	1.9	37	3	72	.15	3	.5	.9	27	SF3									
		25	1151	26.57	19	20.00	155	6.57	7.51	2.5	2.4	37	5	116	.11	5	.4	.7	29	SF4									
		25	15	0	45.49	19	20.69	155	13.28	8.57	2.1	2.3	28	1	60	.08	4	.4	.5	23	SF2								
		25	15	3	9.91	19	20.10	155	13.23	6.59	1.1	20	2	67	.12	5	.6	1.1	16	SF2									
		25	1517	32.47	19	21.89	155	2.49	8.76	2.1	2.1	30	1	131	.08	4	.5	.7	26	SF5									
		25	1526	27.11	19	21.82	155	2.32	6.94	1.3	.3	17	1	149	.08	4	.5	1.2	12	SF5									
		25	18	7	17.64	19	19.68	155	6.86	5.92	1.2	.9	23	2	119	.10	5	.6	1.3	23	SF4								
		25	23	6	25.35	19	23.95	155	27.72	8.75	1.8	1.3	31	2	57	.12	3	.4	.8	20	KAO								
		26	913	53.29	19	21.08	155	3.50	3.83	.6	16	1	107	.27	2	1.1	1.8	9	SSF										
		26	1052	37.04	19	19.10	155	12.33	6.48	1.8	1	96	.08	4	.6	1.4	13	SF2											
		26	1338	34.35	19	8.54	155	30.54	11.47	3.1	3.1	36	0	155	.15	5	.7	.6	28	LSW F									
		26	1450	46.85	19	22.35	155	1.28	3.99	.6	16	1	161	.09	5	.6	2.0	10	SSF										
		26	1557	58.06	19	22.47	155	25.31	10.49	3.2	3.2	48	4	32	.14	4	.4	.5	42	KAO									
		26	1739	26.78	19	16.82	155	21.38	5.37	1.9	2.2	32	5	132	.10	5	.3	1.4	26	SWR									
		26	1929	32.55	19	19.51	155	4.21	7.59	1.1	1.9	8	168	.08	2	.5	.8	17	SF5										
		26	2027	28.90	19	8.86	155	30.52	10.30	1.2	23	1	147	.13	5	.7	1.0	22	LSW										
		26	2043	29.08	19	19.82	155	6.76	7.46	.9	16	3	117	.06	5	.5	1.1	14	SF4										
		26	2226	20.10	19	11.03	155	42.21	3.00	2.5	1.5	22	3	181	.27	12	1.5	3.0	19	LSW									
		26	2347	33.77	19	19.19	155	12.05	6.08	.3	14	3	97	.08	5	.4	1.4	13	SF3										
		27	2	4	14.73	19	22.19	155	24.50	6.75	2.4	2.5	32	4	41	.13	4	.5	.8	26	KAO								
		27	626	39.75	19	20.25	155	3.68	5.53	1.9	2.1	34	5	120	.10	1	.4	.7	31	SF5									
		27	636	25.48	19	21.15	155	2.09	8.49	1.6	.9	19	4	156	.06	3	.5	.7	16	SF5									
		27	1039	9.74	19	24.08	155	26.62	8.67	1.8	1.1	29	4	49	.12	3	.4	.8	27	KAO									
		27	1130	18.81	19	26.53	155	37.16	3.12	2.3	1.5	14	3	182	.10	2	.7	.5	15	MLO									
		27	1130	53.25	19	26.40	155	38.84	2.36	2.6	2.5	18	4	209	.11	5	.6	.8	16	MLO									
		27	13	8	35.42	19	23.54	155	15.12	1.51	1.4	2.4	11	1	96	.07	3	.3	.5	9	SEC								
		27	1553	16.70	19	23.80	155	15.21	1.74	1.2	2.2	6	0	99	.06	2	.4	.7	6	SEC									
		27	1649	55.19	19	22.08	155	2.11	7.84	1.3	20	5	138	.12	4	.5	.7	14	SF5										
		27	1911	30.14	19	11.46	155	11.90	47.19	1.8	36	0	195	.09	11	1.1	2.0	31	DEP										
		27	1927	34.79	19	19.02	155	11.35	5.91	1.5	26	2	109	.10	5	.5	1.2	16	SF3										
		27	2341	45.69	19	22.02	155	25.59	9.87	1.9	2.3	32	3	43	.12	4	.4	.8	27	KAO									
		27	2347	53.62	19	17.93	155	13.14	6.56	1.5	18	1	103	.07	2	.5	1.2	15	SF2										
		28	033	16.05	19	23.48	155	26.36	10.95	2.3	2.6	38	3	46	.11	3	.4	.6	34	KAO									
		28	322	56.42	19	20.15	155	11.78	9.09	2.3	2.8	36	0	81	.12	5	.5	.7	32	SF3									
		28	1032	9.11	19	22.13	155	4.80	7.46	2.0	2.1	30	2	74	.14	3	.5	.8	26	SF5									
		28	1526	11.06	19	19.83	155	10.58	7.41	.6	11	0	91	.03	4	.7	1.8	10	SF3										
		28	16	4	23.08	19	19.82	155	12.68	9.55	1.1	19	1	77	.07	5	.7	1.1	17	SF2									
		28	2024	44.18	19	19.99	155	13.04	7.94	.3	12	1	70	.06	5	.6	1.6	11	SF2										
		29	334	54.47	19	19.17	155	11.73	4.27	.6	14	2	101	.06	5	.4	1.9	13	SSF										
		29	515	53.28	19	19.07	155	11.25	8.19	.3	15	1	108	.06	5	.6	1.3	14	SF3										
		29	517	37.59	19	19.16	155	10.17	6.87	.6	16	1	108	.05	5	.5	1.3	15	SF3										
		29	849	22.89	19	19.44	155	10.96	8.32	.9	17	3	105	.07	5	.5	1.0	16	SF2										
		29	1134	16.57	19	19.35	155	10.56	8.62	1.4	1.7	18	1	101	.06	5	.6	1.2	17	SF3									
		29	1241	5.91	19	19.01	155	9.27	6.52	.3	17	1	101	.07	4	.5	1.5	15	SF3										
		29	1246	17.43	19	19.09	155	13.98	7.96	.3	17	2	90	.06	4	.5	1.2	16	SF2										

## 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	NO
														DEG	MIN	DEG	MIN	KM	MAG	NR	NS	DEG
1983	JAN	29	14	0	20.34	19	21.99	155	6.19	7.86	.6	15	2	89								

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO					
			DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK		
1983	FEB	2	1	1	58.85	19	19.12	155	13.86	7.58	1.6	1.5	32	1	.75	.11	4	.5	.9 24 SF2	
		2	221	48.91	19	18.99	155	11.47	3.94	.3	.19	1	108	.14	5	.6	2.3	17 SSF		
		2	238	10.20	19	27.12	155	36.23	2.12	2.6	.28	0	.97	.20	0	.6	.4	17 MLO		
		2	520	23.18	19	26.38	155	38.48	2.77	2.2	.17	0	.202	.12	4	.9	1.0	15 MLO		
		2	6	7	42.17	19	19.85	155	11.75	7.11	.6	.20	2	.86	.09	5	.6	1.1	16 SF3	
		2	18	9	16.72	19	19.38	155	11.23	6.98	.3	.15	1	101	.06	6	.5	1.2	14 SF3	
		2	1946	22.66	19	19.98	155	6.53	9.88	3.3	3.4	.44	2	117	.11	5	.6	.4	41 SF4	
		2	2352	35.76	19	21.47	155	3.31	8.13	1.6	1.4	.24	4	105	.08	3	.4	.6	16 SF5	
		3	041	7.76	19	22.42	155	28.37	3.92	1.9	1.6	.18	1	.49	.12	1	.4	.6	16 KAO	
		3	636	47.00	19	20.73	155	9.97	8.17	.3	.18	1	.72	.08	2	.5	1.0	15 SF3		
		3	644	31.43	19	15.77	155	22.23	8.49	2.2	2.4	.35	3	149	.15	4	.5	.9	23 SWR	
		3	822	36.43	19	15.91	155	22.26	7.91	1.3	.23	5	145	.12	4	.5	1.0	20 SWR		
		3	1817	9.12	19	20.06	155	12.95	8.73	1.2	1.6	1	.70	.06	5	.6	1.2	15 SF2		
		3	1859	37.53	19	19.82	155	11.71	7.59	1.4	1.1	.17	1	.87	.09	5	.5	1.2	15 SF3	
		3	2138	7.68	19	.36	155	27.55	39.38	2.6	1.8	.31	1	.212	.09	17	1.1	2.1	29 DLS	
		3	2140	21.14	19	.65	155	27.39	40.70	1.6	.26	1	224	.06	16	1.1	2.2	23 DLS		
		3	2157	24.88	19	22.84	155	30.69	8.35	2.4	2.7	.38	2	.43	.12	5	.4	.7	34 KAO	
		3	2215	23.97	19	23.00	155	30.69	8.00	2.0	1.1	.24	1	.76	.13	5	.5	1.1	15 KAO	
		3	2330	28.21	19	19.10	155	13.64	4.28	1.5	1.1	.27	1	.70	.15	4	.4	1.5	13 SSF	
		4	6	6	23.73	19	24.53	155	37.15	.01	.22	1.8	10	0	.85	.19	5	.7	3.1	7 MLO *
		4	622	18.71	19	52.60	155	42.28	17.30	2.7	2.2	.40	2	137	.10	28	.6	1.3	0 37 KEA	
		4	729	15.95	19	29.65	155	27.20	10.60	1.9	1.3	.24	1	.77	.11	4	.5	.8	17 KAO	
		4	1347	50.52	19	18.87	155	20.52	7.79	1.6	1.8	.35	5	101	.13	4	.4	.6	21 SWR	
		4	1350	17.60	19	18.36	155	15.48	8.12	.9	.15	0	139	.05	4	.6	1.3	12 SF1		
		4	1624	.45	19	19.31	155	15.54	8.51	2.0	2.1	.38	2	100	.11	4	.4	.6	27 SF1	
		4	1717	19.52	19	21.60	155	3.64	6.51	.4	.20	2	.95	.14	3	.6	1.2	11 SF5		
		4	1840	41.38	19	20.38	155	13.04	8.60	1.4	1.1	.20	2	.65	.06	4	.5	.9	15 SF2	
		4	2245	11.60	19	18.18	155	15.63	6.87	1.5	.8	.17	1	147	.09	4	.6	1.3	15 SF1	
		5	2	5	3.26	19	14.54	155	32.56	6.87	1.0	1.3	.29	0	113	.19	4	.7	1.3	20 LSW
		5	1046	59.65	19	25.69	155	37.67	2.66	2.3	2.4	.25	2	.95	.13	4	.4	.9	20 MLO	
		5	18	9	33.42	19	19.99	155	3.93	7.39	1.6	.27	3	142	.10	2	.6	.9	21 SF5	
		5	2332	44.32	19	19.27	155	10.26	5.32	1.4	.9	.30	2	103	.12	5	.6	1.6	23 SF3	
		6	033	51.50	19	25.13	155	25.39	8.11	1.4	.8	.26	2	.50	.10	1	.4	.9	17 KAO	
		6	358	12.50	19	37.35	155	22.26	12.51	.9	.24	1	.72	.11	12	.5	1.1	16 KEA		
		6	510	22.21	19	20.43	155	3.56	8.71	2.1	2.0	.34	3	104	.09	1	.5	.6	26 SF5	
		6	1821	12.56	19	16.81	155	30.47	8.41	3.1	3.1	.43	3	.49	.18	3	.4	.8	32 LSW F	
		6	1833	25.49	19	22.22	155	1.51	8.02	2.4	2.5	.36	3	150	.13	5	.7	.4	23 SF5	
		6	1931	39.59	19	14.28	155	36.07	7.06	2.3	1.5	.28	1	.83	.19	2	.6	.9	21 LSW	
		6	2255	46.28	19	19.20	155	15.53	8.39	1.9	2.4	.37	3	102	.10	4	.4	.7	30 SF1	
		6	2330	23.20	19	20.08	155	10.21	8.95	1.1	1.1	1	.84	.05	4	.5	.9	17 SF3		
		7	132	22.33	19	26.11	155	28.22	8.98	1.3	.27	2	.62	.11	6	.4	1.0	24 KAO		
		7	2	8	34.21	20	10.74	155	31.95	45.09	1.7	.27	4	238	.06	26	1.4	1.0	25 KEA	
		7	353	55.66	19	28.40	155	37.23	1.54	2.2	1.6	.16	1	101	.12	3	.4	.5	14 MLO	
		7	441	7.31	19	45.94	155	27.76	24.76	1.4	1.8	5	112	.09	2	.7	1.2	15 KEA		
		7	754	57.36	19	19.50	155	8.57	7.53	2.8	3.1	.36	1	.79	.11	4	.5	.7	27 SF4	
		7	1048	40.26	19	18.55	155	15.09	7.74	1.3	.20	3	127	.07	4	.5	.9	.18 SF1		
		7	16	2	45.49	19	21.47	155	14.44	28.01	4.1	4.2	.44	0	.59	.10	3	.6	.9	44 DEP F
		7	1810	7.78	19	21.91	155	14.30	26.75	2.3	1.9	.42	6	.57	.09	3	.6	.7	36 DEP	

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO					
			DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK		
1983	FEB	7	1611	18.81	19	20.84	155	2.55	7.87	2.3	2.3	33	2	144	.12	2	.6	.4	31 SF5	
		7	1636	56.72	19	21.86	155	14.34	27.24	2.1	1.7	38	5	57	.09	3	.6	.8	35 DEP	
		7	1749	50.70	19	20.05	155	12.91	8.08	1.1	1.1	15	1	71	.05	5	.5	1.3	14 SF2	
		7	18	8	31.31	19	20.75	155	2.68	7.59	2.1	2.1	32	3	139	.15	2	.6	.6	26 SF5
		7	1923	14.59	19	21.80	155	14.58	27.76	2.6	2.7	44	4	58	.11	3	.6	.8	40 DEP	
		7	2153	43.53	19	19.41	155	7.70	7.14	.6	.17	1	104	.10	4	.6	1.3	13 SF4		
		8	358	41.12	19	23.69	155	24.73	12.01	1.7	1.2	32	2	44	.10	3	.4	.6	23 KAO	
		8	458	15.49	19	12.11	155	27.44	7.16	2.1	1.5	27	0	115	.17	5	.5	1.2	22 LSW	
		8	1246	5.20	19	25.65	155	37.04	2.15	2.3	2.1	16	2	120	.25	3	.9	1.4	12 MLO	
		8	1254	49.31	19	25.27	155	37.81	1.14	2.2	2.2	23	0	279	.07	17	3.0	2.4	29 DLS	
		9	553	18.20	19	18.67	155	13.60	5.67	1.4	1.3	24	3	87	.11	3	.5	1.3	18 SF2	
		9	9	3	11.36	19	19.51	155	11.44	7.43	1.1	21	2	95	.05	6	.5	1.0	15 SF3	
		9	1336	13.67	19	20.16	155	7.46	6.93	1.1	1.8	2	97	.07	5	.5	1.9	13 SF4		
		9	1728	5.27	19	22.72	155	24.51	10.53	2.7	2.7	40	3	41	.14	5	.4	.5	32 KAO	
		9	2137	42.18	19	.45	155	28.48	40.88	2.6	2.0	33	0	279	.07	17	3.0	2.4	29 DLS	
		10	2332	54.25	19	21.94	155	18.10	25.61	2.1	1.5	37	1	29	.11	4	.7	1.0	34 DEP	
		10	021	28.63	19	19.92	155	6.93	7.58	2.0	1.5	27	1	111	.09	5	.4	.8	20 SF4	
		10	039	25.31	19	20.39	155	6.24	7.83	2.0	1.3	22	1	111	.09	5	.5	1.2	16 SF2	

## HVO EARTHQUAKE SUMMARY LIST

PAGE 25

YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	LON	W	DEPTH	AMP	DUR	GAP				RMS	MIN	ERH	ERZ	NO				
														KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	FEB	12	2328	16.98	19	19.37	155	7.09	3.79	1.9	1.3	23	3	121	.11	4	.4	1.3	11	SSF						
			333	19.04	19	19.98	155	11.78	7.90	1.5	1.3	23	2	83	.07	5	.5	1.0	19	SF3						
			647	34.22	19	19.69	155	6.81	7.42	1.9	1.9	31	2	120	.11	5	.5	1.0	16	SF4						
			854	9.08	19	54.09	155	19.10	10.66	2.3	1.5	23	1	243	.08	3	1.5	.5	17	KEA						
			1649	45.33	19	17.81	155	20.81	6.99	1.0	1.1	20	0	126	.08	4	.5	1.4	14	SWR						
			0	3	52.76	19	18.59	155	14.88	7.66	1.2	1.1	28	2	105	.09	4	.5	.8	14	SF1					
			713	6.30	19	24.15	155	.86	5.96	1.1	20	2	170	.12	4	.8	1.2	10	SF5							
			111	11	11	11.30	19	23.76	154	58.86	6.02	1.4	22	3	163	.14	3	.8	1.0	14	LER					
			1825	52.69	19	24.43	155	27.19	10.01	1.8	1.3	27	2	60	.11	4	.5	.9	14	KAO						
			2311	54.02	19	20.17	155	6.56	8.86	3.4	3.4	43	4	112	.09	5	.4	.5	36	SF4						
			043	19.69	19	21.22	155	2.46	7.84	1.3	1.2	20	2	141	.10	3	.6	1.0	10	SF5						
			047	4.85	19	19.36	155	11.24	5.03	1.4	1.4	24	2	101	.08	6	.4	1.8	13	SF3						
			225	5.66	19	23.16	155	24.39	10.99	2.5	2.7	41	3	41	.12	4	.5	.4	33	KAO						
			337	55.67	19	21.30	155	2.35	6.93	1.3	1.1	17	1	150	.10	3	.6	1.1	10	SF5						
			954	31.17	19	19.60	155	8.45	7.53	2.4	2.4	38	3	82	.10	4	.5	.8	23	SF4						
			1259	40.20	19	20.60	155	12.99	7.37	1.2	1.3	27	2	64	.11	4	.5	.8	20	SF2						
			19	20.42	19	19.65	155	7.53	8.70	2.8	2.9	38	3	105	.08	4	.4	.5	32	SF4						
			19	9	9.07	19	19.58	155	7.30	8.18	2.2	2.6	36	3	111	.08	4	.5	.7	26	SF4					
			7	0	57.23	19	19.80	155	7.65	7.37	1.3	1.5	29	3	99	.10	5	.5	.9	17	SF4					
			1117	46.32	19	19.39	155	8.67	7.81	1.3	1.1	20	1	82	.08	4	.6	1.5	16	SF4						
			1339	8.08	19	22.22	155	5.11	7.94	1.2	1.1	18	2	71	.10	2	.5	.7	12	SF5						
			1540	27.70	19	19.85	155	6.67	7.23	1.2	21	2	115	.09	5	.6	1.5	17	SF4							
			1858	3.87	19	19.81	155	7.72	7.87	1.4	1.1	23	2	98	.10	5	.6	1.2	16	SF4						
			1947	35.33	19	31.17	155	41.10	7.47	2.2	1.4	29	3	105	.13	8	.6	1.3	20	MLO						
			2033	6.53	19	23.88	155	27.78	10.17	1.7	1.4	32	1	45	.08	3	.4	.7	26	KAO						
			2034	51.90	19	19.94	155	9.82	7.90	1.4	20	2	85	.08	4	.6	1.1	13	SF3							
			043	48.59	19	19.33	155	11.77	7.21	1.4	1.1	20	1	97	.07	5	.6	1.3	14	SF3						
			116	56.03	19	20.90	155	6.02	6.67	2.0	2.2	36	2	100	.11	4	.5	.8	20	SF4						
			211	22.49	19	19.40	155	10.33	7.74	1.3	1.1	22	2	100	.06	5	.6	1.0	19	SF3						
			222	32.06	19	19.71	155	11.11	32.78	1.6	1.2	33	0	92	.09	5	.8	1.4	26	DEP						
			226	3.75	19	18.25	155	13.11	8.94	2.1	2.1	44	5	96	.11	2	.5	.4	33	SF2						
			11	3	55.82	19	17.31	155	20.89	4.28	.8	1.1	20	3	133	.09	4	.5	1.5	13	SWR					
			1721	23.52	19	19.98	155	7.13	7.53	1.3	1.3	21	0	107	.08	5	.7	1.5	18	SF4						
			1956	28.39	19	25.18	155	39.43	3.68	2.2	2.5	21	2	209	.08	7	.8	2.5	16	MLO						
			2337	48.47	19	18.47	155	15.12	5.18	1.6	1.6	28	3	112	.15	4	.6	1.8	17	SF1						
			818	58.54	19	22.26	155	4.99	7.08	1.3	19	0	76	.13	3	.6	1.1	15	SF5							
			1911	1.12	19	18.82	155	13.14	5.07	1.0	1.1	20	3	84	.07	3	.4	1.4	16	SF2						
			2211	51.09	19	21.65	155	1.06	7.97	2.4	2.3	35	3	168	.10	5	.6	.5	23	SF5						
			2217	51.24	19	19.84	155	16.78	6.75	1.5	1.1	28	3	92	.11	1	.4	.7	19	SF1						
			2241	3.17	19	21.30	155	7.98	9.20	2.1	2.4	40	4	73	.09	4	.4	.5	32	SF4						
			0	2	53.01	19	14.65	155	32.88	6.84	2.2	1.3	25	0	111	.15	5	.6	1.3	16	LSW					
			121	53.75	19	26.02	155	28.49	7.71	1.6	1.1	31	2	62	.12	6	.4	1.1	23	KAO						
			658	43.34	19	20.68	155	13.02	8.58	2.0	1.9	41	5	63	.12	4	.4	.6	28	SF2						
			7	1	41.80	19	14.97	155	22.71	7.19	1.1	1.1	21	1	191	.09	3	.7	1.2	12	SWR					
			1237	28.39	19	25.34	155	37.66	2.03	2.5	2.1	22	1	94	.12	4	.4	1.2	14	MLO						
			1334	34.74	19	19.63	155	7.27	7.91	1.3	1.1	22	2	112	.07	4	.6	1.2	15	SF4						
			1436	37.15	19	24.41	155	24.23	12.67	1.6	1.6	31	2	39	.10	2	.4	.6	24	KAO						
			18	5	12.07	19	19.93	155	7.32	8.62	3.4	3.8	47	4	104	.09	5	.5	.4	35	SF4 F					

## 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	NO				
														KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	FEB	19	1935	33.05	19	20.07	155	8.67	6.40	1.6	1.6	37	1	75	.13	4	.5	1.0	25	SF4						
			324	18.74	20	12.25	156	41.22	36.17	2.7	3.2	35	1	255	.12	77	2.0	2.3	19	DIS						
			5	1	46.90	19	27.05	155	24.12	7.06	2.8	2.8	46	2	31	.14	4	.4	.8	30	KAO					
			554	9.12	19	20.37	155	8.75	8.42	1.1	1.1	21	2	72	.06	4	.6	1.1	12	SF4						
			1549	40.75</td																						

## 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	NO	HRMN SEC DEG MIN				
																		KM	MAG	MAG	NR	NS
1983	MAR	1	437	36.84	19	25.37	155	39.07	2.81	2.7	2.0	21	2	202	.10	6	.8	1.6	13	MLO	*	
		1	633	42.87	19	19.81	155	11.09	8.45	1.5	1.1	29	3	90	.09	5	.5	.8	19	SF3		
		1	1054	3.60	19	19.76	155	13.08	7.47	1.2	1.1	27	2	72	.10	5	.5	1.0	14	SF2		
		1	1416	55.84	19	40.18	155	3.34	.25	2.9	2.7	32	1	203	.18	18	1.0	1.9	12	HIL		
		1	1552	16.74	19	29.26	155	36.90	3.22	2.5	2.3	19	0	205	.11	2	.9	.5	13	MLO		

1	1647	17.81	19	29.75	155	16.25	37.24	1.4	2.7	34	0	56	.12	9	.7	1.9	19	DEP	
1	1654	34.21	19	20.03	155	11.78	7.69	1.7	1.6	31	3	82	.09	5	.5	.7	23	SF3	
1	1719	43.46	19	26.33	155	38.51	3.30	2.5	2.2	18	1	202	.08	4	.8	1.1	14	MLO	
1	1752	26.22	19	19.43	155	16.38	8.24	1.9	2.2	41	2	98	.13	2	.5	.6	27	SF1	
1	2012	59.76	19	31.46	155	.72	50.95	2.3	1.9	30	0	196	.09	6	2.2	4.2	24	DEP	

2	220	11.01	19	28.24	155	35.66	.26	2.6	2.5	16	2	97	.09	1	.2	.2	8	MLO	
2	229	51.18	19	19.99	155	8.40	4.96	1.1	1.1	22	2	81	.12	5	.6	1.6	12	SSF	
2	338	48.66	19	25.49	155	37.71	1.53	3.1	3.1	33	2	95	.11	4	.4	.9	28	MLO	
2	434	7.86	19	22.27	155	.25	7.28	2.1	1.4	19	1	179	.09	6	.7	1.0	9	SF5	
2	444	14.82	19	26.16	155	38.97	4.18	2.6	2.1	22	2	209	.10	5	.9	2.0	17	MLO	

2	1359	31.39	19	43.78	156	5.23	25.88	2.9	2.2	24	2	240	.11	26	1.6	2.1	22	HUA	
2	1728	50.78	19	26.20	155	38.55	2.82	2.8	2.9	25	1	187	.10	4	.7	1.0	13	MLO	
2	2130	15.57	19	19.92	155	10.87	6.26	1.9	1.5	30	4	88	.09	4	.4	.9	16	SF3	
3	035	9.83	19	21.28	155	1.54	4.41	1.4	1.1	30	3	168	.22	4	.7	1.6	18	SSF	
3	74	52.03	19	22.77	155	17.47	25.68	2.0	1.4	37	0	32	.09	1	.6	1.0	30	DEP	

3	947	52.03	19	22.45	155	29.76	8.64	2.3	2.2	40	2	33	.11	4	.3	.8	34	KAO	
3	1227	24.76	19	21.62	155	2.72	8.02	2.0	1.6	29	1	127	.13	3	.6	.7	22	SF5	
3	1242	56.70	19	19.74	155	7.90	6.48	1.3	1.2	28	3	95	.10	4	.5	1.1	14	SF4	
3	140	5.00	19	18.39	155	13.36	7.81	1.7	1.7	36	5	83	.08	3	.4	.6	23	SF2	
3	1654	52.70	19	26.45	155	27.64	8.63	1.7	1.3	33	3	54	.11	5	.4	.9	23	KAO	

3	1713	59.29	19	20.47	155	6.76	7.12	1.3	1.4	30	2	102	.10	5	.5	.8	19	SF4		
4	321	45.65	19	20.63	155	13.05	7.98	1.6	1.2	33	2	63	.11	4	.5	.7	20	SF2		
4	6	8	16.73	19	19.11	155	15.73	8.44	2.1	2.5	40	3	106	.11	3	.4	.6	27	SF1	
4	912	33.95	19	24.52	155	25.80	9.05	1.5	1.1	30	4	40	.11	2	.4	.7	20	KAO		
4	1313	53.22	19	19.90	155	4.63	4.72	1.4	1.5	24	2	143	.10	3	.5	.6	11	SF1		

4	1315	1.46	19	19.69	155	4.52	5.25	2.1	2.3	25	1	154	.12	3	.5	.9	12	SF5	
4	1616	3.41	19	20.80	155	30.65	6.38	2.0	1.5	29	1	52	.16	6	.5	1.6	17	KAO	
4	1615	13.95	19	20.77	155	30.45	10.03	2.0	1.4	30	1	52	.09	6	.4	.6	17	KAO	
4	1640	3.95	19	18.81	155	13.20	5.98	2.6	2.3	41	2	82	.12	5	.4	.8	23	SF2	
4	1648	26.64	19	19.60	155	8.08	7.36	1.4	1.5	34	3	91	.10	4	.4	.8	17	SF4	

4	1650	25.12	19	16.48	155	15.11	6.66	1.8	1.5	28	3	174	.09	3	.6	.9	18	SF1		
4	17	8	41.93	19	21.27	155	2.46	7.91	2.5	2.5	42	6	140	.11	3	.5	.9	23	35 DLS	
4	2220	10.30	19	24.01	155	24.99	8.35	2.6	2.7	42	4	37	.13	2	.4	.7	32	KAO		
4	2327	23.85	19	21.62	155	3.12	8.40	3.4	3.6	46	1	112	.12	3	.5	.4	42	SF5 F		
4	2335	42.70	19	21.04	155	2.74	8.08	1.8	1.5	31	3	131	.11	2	.6	.8	15	SF5		

5	011	1.21	19	32.20	155	42.66	7.79	2.4	1.8	33	2	82	.12	6	.5	1.3	25	ML0	
5	217	55.79	18	55.32	155	29.72	37.30	2.5	2.7	39	0	243	.07	19	1.7	2.2	35	DLS	
5	223	59.31	19	19.92	155	8.36	9.19	2.5	2.6	43	3	81	.11	5	.4	.4	36	SF4	
5	440	52.98	19	22.22	155	2.15	6.38	1.6	1.1	28	2	135	.18	5	.6	1.0	17	SF5	
5	751	14.17	19	21.32	155	2.55	6.24	1.6	1.3	27	2	135	.12	3	.6	1.0	17	SF5	

5	1610	2.45	19	45.51	156	8.05	40.37	3.5	3.4	45	3	249	.12	32	1.2	1.6	40	HUA	



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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 NO							
												DEG	MIN	DEG	MIN	KM	FM	REMK	
1983	MAR	15	652	29.50	19	35.24	155	24.69	34.92	3.1	.3.1	37	0	237	.10	53	2.0	2.3 33 DIS	
		15	1217	19.84	19	21.00	155	13.04	7.73	1.6	1.5	37	3	67	.13	3	.5	*.7 29 SF2	
		15	1336	.07	19	19.18	155	13.19	6.19	1.6	1.3	29	2	77	.11	4	.4	1.1 18 SF2	
		15	1356	13.64	19	18.65	155	13.26	6.34	1.7	1.3	27	2	83	.11	3	.5	1.0 21 SF2	
		15	15	6	25.21	19	16.57	155	22.95	4.83	1.9	2.2	39	2	118	.15	5	*.4 1.5 32 SWR	
		15	16	4	27.85	19	19.45	155	15.53	8.12	2.0	2.1	36	2	97	.11	4	*.4 *6 29 SF1	
		15	1934	36.03	19	21.50	155	1.86	8.10	1.6	1.2	24	1	191	.11	5	1.2	*.6 14 SF5	
		16	219	44.72	19	20.21	155	7.14	6.47	1.4	1.1	26	2	102	.11	5	.5	1.2 10 SF4	
		16	320	35.49	19	20.36	155	3.82	7.33	1.9	1.5	31	2	110	.11	1	.7	*.5 16 SF5	
		16	934	28.13	19	9.02	155	35.07	4.66	2.4	1.5	26	0	120	.14	12	.5	*.8 21 LSW	
		16	1218	33.20	19	21.17	155	2.69	8.39	2.1	1.7	31	3	139	.11	2	.8	*.5 23 SF5	
		16	1333	28.02	19	21.52	155	1.86	6.49	1.4	1.5	30	2	154	.18	4	.7	*.8 18 SF5	
		16	1610	7.13	18	27.17	154	16.71	39.46	4.3	5.0	42	0	318	*.1127	13.6	2.9	42 DIS	
		16	2124	15.49	19	21.08	155	7.99	8.20	1.9	1.1	24	2	76	.08	4	.5	*.8 18 SF4	
		16	2314	25.24	19	17.85	155	13.05	6.69	1.6	1.3	27	2	111	.10	2	.5	*.9 16 SF2	
		16	2352	11.50	19	25.02	155	38.32	.02	2.4	2.1	25	1	103	.21	5	.6	1.4 13 MLO *	
		17	059	39.46	19	17.72	155	13.17	7.53	1.9	1.7	32	3	108	.11	1	.6	*.8 21 SF2	
		17	1835	42.74	19	20.10	155	11.82	10.20	3.1	3.2	41	1	81	.08	5	.4	*.3 34 SF3	
		18	331	57.81	19	20.20	155	12.52	7.12	1.8	1.6	33	3	73	.10	5	.4	*.7 22 SF2	
		18	651	23.76	19	19.11	155	15.45	7.14	1.3	1.2	26	1	103	.10	4	.5	*.1 21 SF1	
		18	1020	49.21	19	18.89	155	15.08	8.16	1.9	1.5	31	1	93	.11	4	.5	*.7 23 SF1 F	
		18	1845	30.05	19	23.29	155	26.56	10.03	3.5	3.8	48	3	31	.13	2	.4	*.5 43 KAO F	
		18	20	9	41.93	19	20.59	155	13.48	7.55	1.6	1.6	30	1	59	.11	4	.5	*.8 22 SF2
		19	1	9	11.26	19	20.26	155	13.22	8.01	1.5	1.5	35	4	65	.11	4	.5	*.7 22 SF2
		19	2	0	59.08	19	18.20	155	15.10	5.47	1.3	1.1	25	2	120	.10	4	.5	*.1 35 SF1
		19	655	20.27	19	21.47	155	24.75	8.56	2.0	1.8	33	4	45	.11	3	.4	*.6 23 SWR	
		19	720	37.49	19	16.19	155	21.43	7.50	1.9	2.4	40	5	140	.12	6	.4	*.8 28 SWR	
		19	745	46.06	19	16.07	155	21.08	7.03	1.7	2.1	37	4	143	.11	6	.4	*.7 25 SWR	
		19	1543	15.67	19	22.01	154	59.09	8.76	2.2	2.2	34	3	196	.15	6	1.1	*.5 20 LER	
		19	2038	11.31	19	24.21	155	17.56	16.38	2.4	2.3	44	4	37	.10	2	.4	*.4 35 DEP	
		20	3	8	21.55	19	11.99	155	37.98	8.95	2.5	2.3	39	3	99	.19	6	.6	*.8 30 LSW
		20	553	26.55	19	20.51	155	3.57	4.12	1.4	1.1	20	2	99	.22	2	1.0	*.5 13 SSF	
		20	6	5	21.83	19	14.10	155	39.63	8.63	2.1	1.7	29	1	234	.15	5	1.3	*.8 17 LSW
		20	713	12.21	19	20.99	155	8.65	7.66	1.9	2.1	37	2	68	.12	3	.4	*.7 30 SF4	
		20	838	26.70	19	19.71	155	6.96	8.95	2.8	3.2	36	2	116	.10	5	.6	*.4 33 SF4	
		20	935	39.26	19	24.18	155	19.97	15.52	2.8	2.6	44	2	36	.11	1	.5	*.3 37 DML	
		20	1317	58.01	19	17.97	155	14.99	7.19	1.2	1.4	28	0	114	.12	3	.6	*.1 0 23 SF1	
		20	1652	45.13	19	33.23	155	43.37	7.38	1.9	1.2	20	1	116	.14	7	.6	*.6 14 KON	
		20	1718	39.21	19	21.43	155	2.99	6.88	4.8	5.0	45	1	169	.11	6	.7	*.6 43 SF5 F	
		20	1744	12.12	19	20.46	155	4.15	2.50	1.2	1.3	15	3	115	.08	2	.4	*.5 8 SF5 F	
		20	1753	23.48	19	20.60	155	3.33	5.55	1.4	1.5	26	2	99	.12	1	.6	*.9 17 SF5	
		20	1759	43.07	19	19.09	155	13.09	4.99	1.3	1.1	30	3	81	.12	4	.4	*.4 22 SSF	
		20	1845	2.15	19	20.97	155	1.85	3.05	2.1	2.5	32	2	168	.12	3	.5	*.7 24 SSF	
		20	2047	56.17	19	20.34	155	2.60	6.94	1.3	1.3	23	2	174	.13	1	.8	*.8 11 SF5	
		20	2140	36.16	19	20.31	155	2.80	5.27	1.5	1.5	20	2	142	.14	1	.6	*.1 10 SF5	
		20	23	2	21.41	19	21.91	155	25.12	11.27	3.9	4.0	49	4	38	.12	5	.3	*.4 44 KAO F
		20	23	7	.47	19	21.42	155	25.63	9.62	1.6	1.1	32	4	49	.10	4	.4	*.7 26 KAO
		20	2356	50.98	19	20.83	155	13.27	7.37	1.4	1.5	37	3	59	.14	3	.5	*.8 29 SF2	

## 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 NO							
												DEG	MIN	DEG	MIN	KM	FM	REMK	
1983	MAR	20	2357	14.84	19	20.84	155	13.46	8.11	2.3	2.5	39	3	57	.13	3	.4	*.6 32 SF2	
		21	037	28.88	19	22.01	155	25.42	11.32	3.4	3.6	46	3	39	.13	4	.4	*.4 41 KAO	
		21	128	41.37	19	21.86	155	25.12	8.73	1.4	1.1	20	3	54	.10	4	.5	*.9 19 KAO	
		21	130	.70	19	21.87	155	25.42	10.20	1.4	1.1	25	3	46	.11	4	.5	*.8 17 KAO	
		21	243	39.60	19	20.18	155	4.21	3.25	1.1	1.5	21	2	130	.10	2	.4	*.7 12 SSF	
		21	3	7	33.80	19	21.81	155	2.06	2.40	1.0	1.5	20	2	152	.12	4	.4	*.9 13 SSF
		21	4	0	7.36	19	20.49	155	2.82	7.13	1.3	1.1	24	2	142	.10	1	.7	*.0 11 SSFS
		21	839	6.79	19	20.33	155	2.37	5.23	1.5	1.4	26	1	177	.17	1	.8	*.0 17 SSFS	
		21	1312	.94	19	21.06	155	2.35	5.13	1.9	1.7	27	3	148	.12	2	.5	*.9 13 SSFS	
		21	1454	57.76	19	19.21	155	12.11	3.87	1.6	1.3	23	4	96	.12	5	.4	*.4 16 SSFS	
		21	2136	23.05	19	21.22	155	27.76	11.16	3.3	3.3	47	4	42	.13	2	.4	*.5 36 KAO	
		21	2146	41.06	19	20.87	155	2.08	5.30	1.7	1.7	26	1	164	.11	2	.6	*.8 14 SSFS	
		22	135	56.94	19	21.57	155	6.45	2.5	2.3	39	5	157	.12	4	.4	*.6 22 SSFS		
		22	251	42.84	19	8.07	155	8.51	2.4	2.2	32	1	128	.15	13	.5	*.0 22 LSW		
		22	851	22.20	19	20.56	155	4.42	5.76	2.0	1.9	19	1	113	.06	3	.5	*.9 12 SSFS	
		22	944	50.64	19	22.59	155	24.49											

## 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	NO	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	MAR	26	2135	3.68	19	19.78	155	13.63	7.63	1.6	1.3	37	4	.65	.11	5	.4	.7	28	SF2										
		26	2146	42.89	19	19.56	155	13.57	7.39	1.3	1.0	30	2	.65	.08	5	.4	.8	18	SF2										
		27	033	57.73	19	23.69	155	29.57	9.82	1.9	1.2	24	1	.74	.09	4	.5	.9	16	KAO										
		27	055	49.83	19	19.41	155	11.65	6.88	1.3	1.1	24	2	.96	.08	5	.5	.9	20	SF3										
		27	056	21.69	19	19.50	155	11.71	5.72	1.3	1.5	26	2	.93	.12	6	.5	1.5	19	SF3										

HVO EARTHQUAKE SUMMARY LIST																											PAGE 32				
YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK		
1983	APR	5	1815	.24	19	11.51	155	40.79	4.67	2.2	1.7	33	1	117	.23	9	1.0	2.7	21	LSW											
		6	1113	47.13	19	25.86	155	38.71	3.43	2.5	2.7	25	1	201	.09	5	.7	1.5	16	MLO											
		6	1514	25.05	19	20.75	155	1.92	5.21	1.9	1.2	16	1	174	.12	2	.8	1.5	10	SFS											
		6	1758	10.38	19	19.31	155	13.62	7.58	1.9	1.9	39	3	68	.12	4	.4	.7	29	SF2											
		6	1822	39.47	19	38.95	155	9.53	14.75	1.5	1.3	22	0	180	.07	19	.8	.6	15	KEA											
		6	1912	25.07	19	23.91	155	16.04	2.48	1.6	2.0	19	3	106	.13	1	.4	.3	13	SEC											
		6	23	4	24.97	19	24.87	155	25.57	7.64	1.5	1.1	29	4	69	.11	1	.3	.8	19	KAO										
		7	311	9.96	19	20.93	155	3.22	7.15	2.1	2.0	33	2	105	.10	2	.6	.7	20	SFS											
		7	333	22.17	19	17.35	155	21.21	8.87	1.4	1.1	27	3	130	.08	5	.4	.8	20	SWR											
		7	550	54.94	19	23.55	155	3.30	6.14	1.3	1.1	31	2	104	.15	5	.5	1.3	20	SFS											
		7	1017	12.51	19	20.61	155	3.61	5.60	1.6	1.2	26	2	95	.14	2	.6	1.0	20	SFS											
		7	11	0	33.48	19	16.88	155	28.62	8.93	3.3	3.7	50	5	54	.15	4	.4	.6	44	LSW F										
		7	1236	52.48	19	18.23	155	29.56	6.39	1.5	3.2	1	43	.18	6	.4	1.5	22	LSW F												
		7	1950	33.12	19	28.30	155	36.06	1.73	1.3	1.1	10	1	81	.10	2	.4	.3	6	MLO											
		7	21	1	5.48	19	7.86	155	31.58	39.25	2.2	1.6	27	2	161	.11	14	.9	1.9	21	DLS										
		8	1	7	42.02	19	21.34	155	2.79	7.75	2.4	2.5	31	3	126	.11	3	.5	.6	19	SF5										
		8	624	24.09	19	20.16	155	10.77	7.09	1.5	1.5	34	2	84	.11	4	.5	.9	21	SF3											
		8	1335	2.27	19	19.33	155	10.21	6.16	1.8	1.3	31	2	102	.11	5	.5	1.0	19	SF3											
		8	1514	34.97	19	21.09	155	7.98	8.45	1.1	1.1	24	2	76	.09	4	.5	.8	19	SF4											
		8	18	5	53.84	19	15.13	155	29.54	10.29	1.3	1.2	30	2	66	.14	1	.5	.7	18	LSW										
		9	1629	21.29	19	22.11	155	1.34	5.39	1.5	1.1	22	3	169	.13	5	.7	1.5	18	SF5											
		9	2045	42.77	19	21.35	155	1.93	7.86	2.2	2.3	36	6	155	.10	3	.5	.5	21	SF5											
		9	2110	59.95	19	20.44	155	12.43	7.80	1.3	1.1	28	3	70	.09	4	.5	.7	17	SF2											
		9	2314	3.65	19	13.49	155	29.69	6.77	1.8	1.7	34	3	75	.22	3	.5	1.1	17	LSW											
		10	031	9.01	19	21.37	155	15.81	26.20	1.8	1.5	38	2	66	.09	2	.6	1.0	34	DEP											
		10	113	29.23	19	26.43	155	38.21	3.29	2.6	2.8	21	2	196	.11	4	.7	.9	13	MLO											
		10	944	19.67	19	21.06	155	4.23	2.71	2.1	1.8	10	1	96	.06	3	.4	.6	6	SSF											
		10	1034	20.74	19	22.32	155	25.36	10.67	1.7	1.8	34	3	41	.11	4	.4	.6	24	KAO											
		10	1324	30.10	19	35.25	155	41.51	7.77	1.4	1.2	21	1	101	.15	12	.6	2.5	11	KEA											
		10	1359	6.63	19	21.66	155	1.56	7.53	2.5	2.3	36	3	158	.10	4	.5	.6	23	SFS											
		10	1547	8.16	19	20.15	155	7.99	6.63	1.3	1.0	26	3	87	.09	5	.5	1.1	14	SF4											
		11	145	25.71	19	22.44	155	28.09	6.63	2.6	2.6	42	4	43	.13	1	.3	.7	32	KAO											
		11	716	56.53	19	20.47	155	11.44	8.13	1.6	1.2	32	3	77	.09	4	.5	.7	22	SFS											
		11	734	7.87	19	53.29	155	57.39	43.11	1.8	1.9	31	3	220	.11	26	1.4	1.9	22	HUA											
		11	1053	48.73	19	18.12	155	20.88	6.94	2.0	2.3	34	4	120	.12	4	.4	.8	21	SWR											
		11	1214	39.75	19	19.45	155	15.52	5.98	1.0	1.3	29	2	97	.11	4	.4	.4	1.0	20	SF1										
		11	1548	4.87	19	26.43	155	38.33	2.84	2.5	2.7	19	3	200	.09	4	.6	.7	14	MLO											
		11	1712	39.44	19	20.91	155	3.17	6.97	2.6	2.7	38	4	107	.11	2	.5	.6	26	SFS											
		12	049	26.90	19	29.63	155	40.00	7.08	3.6	3.8	40	4	140	.12	7	.5	.7	32	MLO F											
		12	514	15.44	19	21.75	155	24.92	9.11	1.5	1.1	26	2	44	.11	4	.4	.7	21	SWR											
		12	7	1	48.12	19	19.48	155	6.91	7.71	1.7	1.5	31	5	123	.10	4	.5	.9	20	SF4										
		12	7	4	50.84	19	20.09	155	6.82	8.63	2.7	2.7	41	2	110	.10	5	.4	.5	30	SF4										
		12	7	8	10.79	19	19.88	155	7.18	7.83	2.1	2.1	36	1	108	.10	5	.5	.7	27	SF4										
		12	835	22.93	19	21.21	155	27.79	9.18	1.9	1.3	15	0	125	.07	2	.6	1.5	9	KAO											
		12	912	57.81	19	21.45	155	1.61	6.72	2.1	1.8	28	3	162	.10	4	.5	.6	19</												

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LON	W	DEPTH	AMP	DUR	GAP				RMS	MIN	ERM	ERZ	NO
												DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS
1983	APR	12	1838	59.92	19	18.74	155	15.06	6.83	1.7	1.5	33	1	95	.11	4	.5	.7	22	SF1
13	233	56.15	19	18.77	155	29.50	9.10	2.3	2.5	35	2	52	.12	7	.4	.8	28	LSW		
13	326	5.78	19	23.50	155	24.08	8.27	2.3	2.6	39	3	33	.12	4	.4	.6	33	KAO		
13	638	31.59	19	20.67	155	2.75	4.33	1.5	1.1	19	1	144	.20	1	1.1	1.4	11	SSF		
13	1114	57.34	19	21.42	155	3.43	6.26	1.4	1.1	25	2	108	.13	3	.5	1.0	15	SF5		
13	1230	7.39	19	19.58	155	7.87	8.69	1.3	1.1	30	2	98	.08	4	.5	.7	19	SF4		
13	143	20.18	19	26.43	154	54.94	5.82	1.6	1.4	26	1	156	.10	2	.6	.8	18	LER		
14	350	58.69	19	20.52	155	11.83	8.61	1.7	1.8	32	2	74	.09	4	.4	.5	24	SF3		
14	517	25.90	19	25.83	155	29.86	8.30	1.6	1.1	25	2	64	.10	7	.4	1.1	18	KAO F		
14	1058	24.31	19	20.22	155	6.19	8.19	1.8	1.7	29	1	116	.08	5	.5	.9	22	SF4		
14	1142	22.99	19	19.68	155	11.96	6.65	2.4	2.5	42	1	88	.13	6	.5	.7	34	SF3		
14	129	43.57	19	20.37	155	13.10	7.53	1.6	1.5	26	2	65	.10	4	.5	.9	19	SF2		
14	1749	34.95	19	18.52	155	15.83	8.36	2.1	2.2	40	3	119	.12	4	.5	.5	26	SF1		
15	056	28.00	19	18.35	155	13.32	6.81	1.3	1.5	37	4	85	.10	2	.4	.8	29	SF2		
15	446	36.24	19	17.88	155	13.06	6.58	1.2	1.4	26	4	109	.08	2	.5	1.0	23	SF2		
15	614	50.51	19	19.21	155	11.18	6.60	1.3	1.0	28	2	104	.11	6	.6	1.2	23	SF3		
15	1337	2.28	19	20.00	155	7.33	7.77	2.0	1.8	36	2	102	.09	5	.4	.6	27	SF4		
15	143	34.85	19	17.90	155	12.36	7.61	1.2	1.7	28	3	183	.12	3	.7	.9	17	SF2		
15	1451	14.46	19	20.09	155	11.85	9.23	1.1	2.9	38	2	81	.09	5	.4	.6	32	SF3 F		
15	2035	41.12	19	29.47	155	23.77	8.26	1.9	1.6	40	2	47	.13	1	.4	.7	31	KAO		
15	2339	25.36	19	21.85	155	25.11	9.31	1.7	1.4	39	5	43	.12	4	.4	.5	30	KAO		
16	428	28.69	19	32.17	155	35.94	14.79	1.4	1.0	21	3	90	.10	5	.7	.6	13	DML		
16	640	51.85	19	19.76	155	7.03	8.74	2.2	2.3	35	1	113	.07	5	.5	.5	28	SF4		
16	850	10.38	19	18.89	155	13.37	8.28	1.6	1.5	36	3	77	.12	3	.5	.6	23	SF2		
16	2327	56.38	19	25.49	155	25.83	10.48	1.6	1.5	34	3	40	.10	1	.4	.6	24	KAO		
16	2343	49.90	19	18.90	155	2.78	41.59	2.5	2.4	38	0	203	.09	2	1.3	2.0	30	DEP		
17	230	16.36	19	23.08	155	2.50	7.55	1.5	1.1	25	1	128	.15	6	.7	1.2	14	SF5		
17	6	9	35.25	19	10.24	155	22.11	37.08	2.0	1.6	38	2	176	.10	8	.8	1.4	27	DEP	
17	1236	59.72	19	21.01	155	8.10	7.87	1.4	1.7	32	2	75	.09	4	.4	.8	22	SF4		
18	425	29.25	19	20.06	155	8.33	7.49	1.6	2.1	41	4	81	.12	5	.4	.6	25	SF4		
18	844	41.75	19	19.58	155	9.07	5.80	1.3	2.0	0	85	.11	5	.6	1.4	18	SF4			
18	1525	9.76	19	20.84	155	2.11	5.89	2.0	2.1	26	2	164	.11	2	.6	1.4	15	SF5		
18	206	6.59	24	19	20.40	155	12.94	7.10	1.5	1.3	31	2	67	.10	4	.5	.7	21	SF2	
19	140	37.74	19	20.11	155	3.89	6.48	1.8	1.7	26	0	133	.11	2	.7	.9	23	SF5		
19	1013	13.87	19	22.82	155	26.55	6.64	1.6	1.5	28	1	43	.11	2	.4	.6	22	KAO		
19	1046	23.40	19	4.10	155	8.89	20.39	1.7	1.4	24	0	268	.08	25	2.4	3.3	18	LOI		
19	1520	16.01	19	18.86	155	15.59	7.17	1.0	1.1	30	3	109	.11	4	.5	.8	18	SF1		
19	1633	50.77	19	26.11	155	28.23	8.36	1.8	1.1	33	3	62	.09	6	.3	.9	25	KAO		
20	050	59.60	19	22.12	155	25.47	8.55	1.7	1.1	30	2	43	.12	4	.4	.9	25	KAO		
20	731	19.91	19	26.51	155	30.26	9.61	2.0	1.4	29	2	68	.11	9	.4	1.1	18	KAO		
20	1235	29.76	19	15.33	155	22.00	8.48	1.9	1.5	25	2	184	.09	4	.6	1.0	19	SWR		
20	1641	26.57	19	6.56	155	28.69	30.33	1.8	1.5	30	0	240	.08	6	1.9	2.2	25	DLS		
20	2240	55.01	19	20.86	155	18.11	34.63	2.3	2.0	41	1	52	.10	2	.6	1.2	35	DEP		
20	2244	33.75	19	19.79	155	10.00	6.64	1.4	1.1	24	2	89	.11	4	.5	1.2	16	SF3		
21	629	52.40	19	21.03	155	2.29	6.60	2.4	2.3	33	3	152	.09	2	.5	.7	20	SFS		
21	123	6.32	19	20.42	155	6.85	8.84	1.9	1.5	25	0	102	.15	5	.6	1.9	18	SSF		
21	1519	44.94	19	20.21	155	13.00	6.69	1.6	1.5	31	3	68	.10	4	.5	.8	23	SF2		
21	2214	50.26	19	20.23	155	9.13	8.19	1.3	1.2	24	2	75	.08	4	.6	1.0	19	SF3		

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LON	W	DEPTH	AMP	DUR	GAP				RMS	MIN	ERM	ERZ	NO				
												DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM
1983	APR	21	2255	32.53	19	19.64	155	8.90	5.98	1.7	27	2	81	.10	5	.6	1.3	17	SF4					
					22	631	28.98	19	27.07	155	14.84	31.91	2.6	3.3	39	0	84	.09	5	.7	1.3	39	DEP	
					22	922	33.23	19	20.14	155	8.22	7.50	1.5	1.7	38	3	82	.09	5	.4	.6	26	SF4	
					22	10	8	11.72	19	21.94	155	25.17	9.16	2.2	2.4	46	5	41	.13	4	.8	.5	35	KAO
					22	1514	13.65	19	20.47	155	12.85	7.35	1.3	1.1	26	3	67	.10	4	.5	.9	19	SF2	
					22	2020	8.22	19	20.35	155	12.66	7.13	1.6	1.8	34	3	69	.10	4	.4	.6	26	SF2	
					22	2043	41.88	19	19.99	155	8.23	9.21	3.0	3.3	43	2	84	.09	5	.4	.3	36	SF4	
					22	2137	49.57	19	21.56	155	25.06	9.27	2.4	2.7	46	5	44	.14	4	.4	.5	34	KAO	
					23	619	34.99	19	20.94	155	2.94	5.52	1.4	1.1	24	1	120	.11	2	.5	.9	16	SF5	
					23	715	31.71	19	20.35	155	8.42	7.49	2.0	1.9	36	0	77	.13	4	.5	.8	27	SF4	
					23	814	50.44	19	24.24	155	26.30	9.37	1.7	1.3	32	3	49	.11	3	.4	.8	26	KAO	
					23	1257	36.69	19	12.74	155	31.77	42.98	2.5	5	32	0	79	.12	5	.5	.8			

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	ORIGIN TIME	LAT N	LON W	DEPTH	AMP	DIR	GAP RMS			MIN	ERM	ERZ	NO	
											DEG	MIN	DEG	MIN	KM	KM	FM	REMK
1983	APR	29	1835	35.95	19	13.29	155	27.98	7.23	2.5	2.4	43	3	101	.19	5	.5	.9 30 LSW F
		29	2323	56.78	19	21.52	155	6.91	6.66	1.4	.9	34	3	81	.11	3	.5	.9 23 SF4
		30	356	59.64	19	21.92	155	5.06	6.63	1.1	.8	21	0	77	.14	3	.6	1.1 14 SF5
		30	18 4	47.60	19	20.60	155	8.89	7.88	2.0	2.0	40	1	135	.12	3	.5	.6 32 SF4
		30	1824	41.11	19	23.70	155	28.63	9.39	1.7	1.5	36	2	47	.10	3	.4	.7 28 KAO
		30	1919	6.00	19	20.32	155	7.13	7.81	1.6	1.7	33	3	100	.11	5	.4	.6 23 SF4
MAY	1	737	44.87	19	19.36	155	15.27	7.30	1.4	.6	.32	2	96	.10	4	.4	.7 23 SF1	
		1	1852	23.24	19	20.90	155	1.99	6.20	2.1	1.8	23	1	166	.09	2	.5	.8 15 SF5
		1	2242	59.14	19	17.15	155	20.83	6.91	1.7	1.6	38	4	138	.12	4	.5	.8 26 SWR
		1	2253	14.45	19	19.82	155	10.69	7.95	1.6	1.3	31	4	91	.08	4	.5	.7 23 SF3
	2	026	10.56	19	17.86	155	21.64	8.35	1.7	1.3	36	5	117	.11	5	.4	.6 22 SWR	
	2	1018	25.84	19	24.13	155	16.74	14.91	1.4	1.6	1.2	38	4	87	.09	1	.5	.3 26 DEP
	2	1335	7.18	19	17.56	155	23.43	5.52	1.8	1.6	26	4	97	.12	5	.4	1.6 18 SWR	
	2	14	8.46	10	19	20.02	155	12.73	6.10	1.3	1.3	29	4	73	.11	5	.4	.8 20 SF2
	2	1719	37.92	19	55.66	155	40.02	22.95	3.0	3.1	48	4	124	.10	25	.6	2.5 42 KOH	
	2	22	2	47.36	19	21.06	155	1.58	5.67	2.1	1.1	22	3	180	.13	3	.7	1.2 14 SFS
	3	318	6.29	19	19.83	155	17.89	35.32	2.2	1.9	46	2	78	.10	1	.6	1.1 38 DEP	
	3	329	13.56	19	31.04	155	41.22	8.99	2.6	1.6	28	2	78	.10	10	.4	.9 19 MLO	
	3	1017	48.01	19	28.91	155	39.25	4.33	2.4	1.6	26	4	92	.11	6	.4	1.3 16 MLO	
	3	1029	12.61	19	29.80	155	39.65	6.02	2.3	1.6	24	3	148	.12	7	.7	1.5 11 MLO	
	3	1752	19.27	19	20.73	155	12.91	6.64	1.6	1.3	31	3	63	.12	4	.5	.7 22 SF2	
ON	3	1837	18.64	19	20.54	155	3.91	5.13	1.9	1.3	25	3	107	.12	2	.5	1.0 13 SF5	
ON	3	2023	18.29	19	29.90	155	39.66	4.56	2.6	2.7	40	6	51	.15	7	.5	2.4 27 MLO	
ON	4	749	4.30	19	22.29	155	1.43	8.24	2.3	2.6	38	2	150	.13	5	.6	.5 26 SF5	
ON	4	824	30.70	19	19.10	155	14.04	7.28	2.5	2.5	35	1	91	.10	4	.4	.7 26 SF2	
	4	1648	32.97	19	20.30	155	13.22	7.69	1.8	1.5	35	5	64	.11	4	.4	.6 24 SF2	
	5	630	.51	19	28.84	155	39.69	4.12	2.6	1.2	11	0	120	.08	7	.7	3.3 8 MLO	
	5	635	1.00	19	29.43	155	39.05	6.50	2.6	1.6	13	0	94	.13	5	.8	1.6 9 MLO	
	5	84	4.47	20	19	29.21	155	39.51	5.98	1.5	1.9	26	5	94	.14	6	.6	1.2 18 MLO
	5	944	34.02	18	25.32	156	6.65	37.3A	2.5	3.2	26	0	323	.24106	39.9	4.7	5 DIS L*	
	5	1628	50.17	19	16.65	155	13.29	5.91	1.2	1.1	28	3	162	.10	1	.6	.8 17 SF2	
	5	1638	30.75	19	16.21	155	13.24	6.93	1.4	1.5	30	3	191	.11	2	.7	.9 17 SF2	
	5	1717	8	4.86	19	16.95	155	13.22	5.97	1.2	1.1	27	2	171	.11	0	.5	.8 19 SF2
	5	1716	1.17	19	16.80	155	13.43	5.49	1.1	1.1	26	2	174	.11	0	.6	.9 18 SF2	
	5	1826	26.69	19	19.73	155	9.46	8.05	1.5	1.2	29	5	86	.07	4	.5	.8 21 SF3	
	5	2128	55.92	19	20.19	155	10.59	8.25	2.1	2.1	42	3	83	.10	4	.4	.5 32 SF3	
	5	2245	26.50	19	24.20	155	29.78	12.05	2.8	2.8	47	5	32	.11	5	.4	.4 36 KAO	
	5	2332	24.34	19	6.93	155	23.64	42.26	2.0	4.4	1	187	.09	9	.8	1.6 36 LOI		
	5	2337	33.02	19	25.62	155	38.69	2.69	1.3	1.2	11	1	198	.06	5	1.0	1.5 8 MLO	
	6	116	52.18	19	11.68	155	19.97	46.27	1.9	1.6	34	0	173	.09	9	.9	1.8 26 DEP	
	6	244	7.34	19	18.03	155	52.50	12.29	1.8	1.4	16	1	237	.15	4	1.8	.5 12 KON	
	6	1631	54.47	19	18.15	155	13.21	7.32	1.7	1.5	31	3	94	.10	2	.5	.8 23 SF2	
	6	1922	19.90	19	21.17	155	11.31	8.37	2.1	1.9	41	4	67	.12	3	.4	.6 31 SF3	
	6	20	4	12.26	19	22.51	155	30.17	8.61	2.1	1.5	37	2	42	.10	4	.4	.8 29 KAO
	6	20	9	58.39	19	20.71	155	2.85	7.48	2.1	1.5	34	3	136	.12	1	.6	.6 18 SF5
	6	2015	27.46	19	18.45	155	14.89	6.87	1.3	1.1	28	2	109	.12	4	.5	1.0 21 SF1	
	6	2122	47.49	19	18.58	155	15.13	6.57	.9	1.1	23	2	110	.08	4	.4	1.0 16 SF1	
	7	847	10.39	19	18.08	155	29.28	9.02	3.0	3.3	45	3	45	.13	6	.4	.6 41 LSW	

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## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	ORIGIN TIME	LAT N	LON W	DEPTH	AMP	DIR	GAP RMS			MIN	ERM	ERZ	NO		
											DEG	MIN	DEG	MIN	KM	MAG	RMS	NR	
1983	MAY	8	633	5.61	19	18.86	155	11.52	3.87	1.7	1.4	26	3	112	.11	5	.4	1.6 15 SSF	
		8	954	29.09	19	20.54	155	12.59	7.44	1.5	2.0	36	4	68	.11	4	.5	.6 24 SF2	
		8	1617	56.38	19	24.23	155	24.97	8.43	1.9	1.8	38	4	46	.11	2	.3	.7 31 KAO	
		9	018	48.33	19	9.98	155	36.09	8.46	2.6	2.6	35	2	106	.20	9	.6	1.0 24 LSW	
		9	337	45.85	19	19.92	155	6.76	7.56	2.2	2.4	37	2	114	.10	5	.4	.7 27 SF4	
		9	616	52.33	19	39.15	155	55.25	31.30	3.0	3.3	30	3	207	.09	37	1.0	1.2 21 DIS F	
		9	741	19.06	19	28.12	155	28.64	8.58	2.0	1.5	26	2	87	.12	7	.5	1.1 20 KAO	
		9	1118	55.95	19	21.64	155	1.00	2.15	1.2	2.5	2	169	.14	5	.6	1.1 14 SSF		
		10	251	44.22	19	20.27	155	13.77	6.26	1.2	2.0	20	0	70	.12	5	.6	1.0 19 SF2	
		10	1118	1.13	19	20.87	155	2.99	7.16	2.4	2.6	28	0	125	.11	2	.6	.5 25 SF5	
		10	1457	12.03	19	41.81	155	2.17	1.3	3.1	2	109	.20	1	1.4	1.6 22 HIL *			
		10	1457	58.99	19	19.21	155	14.24	7.36	2.4	2.6	44	4	72	.12	4	.5	.6 32 SF2	
		10	1513	58.13	19	20.15	155	10.00	7.17	2.8	3.1	44	3	82	.10	4	.5	1.0 18 SF3	
		10	17	0	45.80	19	20.95	155	12.74	8.79	2.4	2.7	45	4	62	.12	3	.5	.5 33 SF2
		11	817	7.06	19	19.74	155	7.37	7.12	1.3	1.1	24	2	107	.08	5	.5	1.1 18 SF4	
		11	1122	54.35	19	26.31	154	53.96	7.10	2.0	1.2	29	3	166	.11	3	.5	.7 23 LER	
		11	14	8	54.86	19	20												

## 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	NO		
														DEG	MIN	DEG	SEC	DIS	KM	KM	FM
1983	MAY	15	1343	30.94	19	20.77	155	11.98	8.31	2.8	3.0	.46	3	.70	.14	4	.4	.6	42	SF3	
		15	1714	14.15	19	17.63	155	13.07	7.89	1.8	2.2	.37	4	119	.11	1	.6	.7	25	SF2	
		15	21	4	24.43	19	21.76	155	5.01	8.17	2.5	2.7	.44	4	80	.09	3	.4	.5	29	SF5
		16	218	49.06	19	19.74	155	8.95	6.66	1.1	1.2	.29	4	80	.12	5	.5	1.0	22	SF4	
		16	258	1.63	19	18.44	155	13.11	4.12	1.3	1.1	.31	3	42	.13	3	.5	1.0	18	SSF	
		16	743	17.75	19	19.40	155	11.49	8.76	1.6	1.5	.32	2	98	.12	6	.5	.8	25	SF3	
		16	1051	31.37	19	18.78	155	30.51	3.97	2.0	1.3	.32	2	65	.15	7	.4	2.7	23	LSW	
		16	1548	56.82	19	23.43	155	25.96	9.34	2.1	1.8	.41	4	39	.13	3	.4	.6	33	KAO	
		16	1920	59.27	19	6.56	155	23.52	44.01	2.3	1.6	.38	1	189	.08	9	.9	2.0	28	LOI	
		17	134	56.89	19	17.68	155	53.03	42.50	1.9	1.5	.29	1	279	.07	24	1.9	1.9	24	KON	
		17	411	53.83	19	19.39	155	9.94	6.23	1.2	1.1	.26	2	98	.09	5	.5	1.2	15	SF3	
		17	427	10.08	19	24.06	155	26.05	7.70	1.6	1.1	.31	4	47	.10	3	.4	.8	26	KAO	
		17	730	49.21	19	21.60	155	30.17	6.69	2.0	1.3	.31	2	48	.10	5	.4	.8	20	KAO	
		17	731	46.25	19	18.50	155	15.16	5.77	.8	1.1	.26	4	112	.10	4	.4	1.1	19	SF1	
		17	751	36.00	19	21.52	155	30.06	9.30	2.9	3.1	.41	3	45	.13	5	.4	.6	34	KAO	
		17	1614	2.15	19	20.96	155	30.06	8.23	1.7	1.3	.29	1	47	.13	5	.5	1.2	22	KAO	
		17	1623	29.57	19	20.82	155	30.20	9.38	2.2	2.2	.31	1	49	.07	6	.4	.9	28	KAO	
		17	1643	26.16	19	22.06	155	25.14	9.38	1.0	1.2	.28	4	53	.11	4	.4	.7	23	KAO	
		17	2012	6.97	19	29.29	155	39.40	6.26	2.9	3.2	.34	2	211	.12	6	.9	1.1	25	ML0	
		17	2154	25.43	19	20.12	155	12.63	7.34	1.4	1.5	.23	1	73	.08	5	.5	.9	18	SF2	
		18	346	54.66	19	10.24	155	32.49	31.46	2.0	1.7	.34	3	113	.09	8	.7	1.5	30	DLS	
		18	526	16.29	19	29.99	155	39.98	5.87	2.1	1.6	.19	3	237	.10	7	1.1	1.7	16	ML0	
		18	549	13.34	19	43.88	155	43.77	40.88	3.2	3.2	.43	3	237	.08	25	1.1	1.5	37	HUA	
		18	1321	19.20	19	20.11	155	12.21	6.89	1.3	1.1	.31	3	78	.10	5	.5	.9	21	SF3	
		18	1650	30.19	19	36.31	155	41.86	1.62	2.4	2.1	.27	1	88	.13	13	.5	3.1	14	KEA	
		18	2031	24.72	19	25.10	155	25.27	8.21	2.1	1.5	.36	4	49	.11	0	.4	.7	25	KAO	
		18	2057	53.60	19	22.96	155	24.49	9.30	2.0	1.8	.36	3	38	.11	4	.4	.6	30	KAO	
		18	21	6	19.13	18	57.83	155	16.91	11.72	2.8	2.5	.35	2	234	.17	29	1.8	.7	11	LOI
		19	429	9.37	19	20.04	155	5.65	7.81	2.4	2.4	.40	2	115	.11	6	.5	.5	31	SF4	
		19	715	25.46	19	20.64	155	10.90	8.36	2.7	2.4	.41	4	75	.09	3	.3	.5	32	SF3	
		19	717	55.05	19	20.42	155	11.00	7.30	1.2	1.1	.28	1	79	.08	4	.5	.9	17	SF3	
		19	1049	9.06	19	20.80	155	13.00	7.74	2.3	2.5	.43	3	62	.13	3	.4	.5	37	SF2	
		19	1052	20.63	19	19.73	155	14.45	8.14	2.1	1.8	.41	2	121	.11	5	.5	.6	36	SF2	
		19	1146	37.28	19	33.96	155	41.62	1.64	3.3	3.1	.38	4	82	.14	10	.5	1.1	27	ML0	
		19	1155	36.24	19	20.45	155	13.14	7.73	1.8	1.6	.31	1	64	.11	4	.5	.7	24	SF2	
		19	1534	22.36	19	19.60	155	26.50	7.71	1.4	1.2	.29	2	61	.15	6	.4	1.1	23	KAO	
		19	17	6	57.41	19	35.67	155	41.74	1.14	2.4	.25	2	141	.10	12	.7	1.0	17	KEA	
		19	2313	12.18	19	19.71	155	7.40	7.09	2.0	1.8	.36	2	108	.09	4	.5	.7	27	SF4	
		20	259	49.34	19	35.54	155	41.85	7.88	1.9	1.7	.17	0	104	.12	12	.6	2.9	14	KEA	
		20	535	17.85	19	19.80	155	8.85	6.17	1.5	1.5	.33	1	77	.10	5	.5	1.1	22	SF4	
		20	6	7	52.21	19	18.92	155	15.47	8.52	1.6	2.3	.36	1	130	.12	4	.5	.7	23	SF1
		20	7	6	18.76	19	17.33	155	22.43	6.90	1.8	2.3	.34	2	116	.13	6	.4	.8	16	SWR
		20	11	2	29.61	19	20.98	155	2.93	6.39	2.0	1.8	.35	4	122	.14	2	.5	.7	20	SF5
		20	1213	19.16	19	19.99	155	7.35	7.49	1.4	1.3	.33	4	102	.09	5	.5	.8	21	SF4	
		20	1342	11.42	19	19.62	155	15.57	7.62	1.2	1.3	.31	2	95	.10	3	.4	.7	18	SF1	
		20	1355	54.25	19	19.07	155	13.24	7.99	2.0	2.1	.41	2	78	.12	4	.4	.6	32	SF2	
		20	20	1	46.40	19	11.60	155	37.58	7.99	2.9	2.9	.45	4	98	.22	6	.6	.9	34	LSW
		21	243	4.76	19	35.45	155	41.94	.01	3.1	3.1	.36	3	89	.13	11	.4	.6	23	KEA	

## 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	NO				
														DEG	MIN	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	MAY	21	3	0	45.21	19	35.47		155	41.73		2.22	2.3	1.9	27	1	102	.11	12	.5	1.9	14	KEA
		21	337	51.73	19	35.35		155	41.88		.77	2.8	2.9	.36	2	88	.12	11	.4	.8	27	KEA	
		21	5	59.75	19	34.48		155	41.58		.83	2.5	2.6	.35	3	83	.13	10	.4	.7	22	ML0	
		21	1057	53.85	19	21.52		155	25.84		8.99	1.4	1.1	.29	4	57	.11	4	.4	.7	24	KAO	
		21	1923	27.71	19	19.96		155	15.5		7.07	1.4	1.1	.29	2	100	.08	5	.5	1.0	17	SF4	
		21	2149	58.06	19	22.04		155	25.28		9.69	1.6	1.3	.45	5	43	.14	4	.4	.5	38	KAO	
		22	949	49.69	19	29.85		155	39.28		6.09	1.9	1.6	.26	5	75	.12	6	.4	1.1	18	ML0	
		22	1217	4.62	19	26.23		155	28.82		5.39	2.0	1.1	.33	2	59	.11	7	.4	.2	24	KAO	
		22	20	4	23.39	19	24.46		155	27.18		9.00	1.5	1.1	.31	3	44	.12	4	.4	.8	23	KAO
		23	040	48.35	19	28.62		155	39.09		5.73	1.2	1.3	.21	4	69	.10	6	.4	1.0	13	ML0	
		23	115	13.29	19	17.55		155	21.86		8.												

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DIR	GAP	RMS	MIN	ERH	ERZ	NO				
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	MAY	29	434	23.30	19	19.45	155	9.81	6.47	1.4	1.1	31	2	.96	.11	5	.5	.9	26	SF3	
		29	14.9	32.74	19	11.35	155	28.94	34.00	2.4	1.7	36	0	.77	.08	4	.7	1.7	31	DLS	
		29	1432	7.88	19	20.79	155	12.71	8.92	1.5	1.4	35	3	.64	.09	3	.5	.6	22	SF2	
		29	1710	39.46	19	31.47	155	42.67	6.01	1.1	1.2	27	4	.78	.13	6	.5	1.7	20	MLD	
		30	310	9.30	19	19.66	154	47.52	47.78	1.9	1.6	36	0	277	.12	16	4.3	4.4	31	LER	
		30	1045	32.94	19	19.48	155	10.38	6.55	1.7	1.5	36	4	.98	.12	5	.5	.8	30	SF3	
		30	1232	31.78	19	22.00	155	2.95	7.81	1.8	1.3	30	5	.116	.13	4	.5	.6	20	SF5	
		30	2030	55.46	19	22.05	155	2.17	8.72	2.8	3.1	46	5	137	.09	4	.5	.4	36	SF5	
		30	2145	58.49	19	25.35	155	28.61	7.99	2.0	1.5	34	3	.50	.11	6	.4	.9	27	KAO	
		30	2329	38.08	19	21.81	155	1.81	2.61	1.4	1.3	23	2	158	.12	4	.5	1.0	16	SSF	
		31	211	44.32	19	19.53	155	8.03	8.35	2.0	2.1	37	2	.93	.08	4	.4	.5	25	SF4	
		31	359	3.40	19	20.56	155	31.37	23.74	3.4	3.6	51	5	.34	.09	7	.5	.9	46	DNL F	
		31	1053	30.37	19	20.67	155	10.58	8.02	1.5	1.1	30	3	.74	.08	3	.4	.6	25	SF3	
		31	1154	30.06	19	20.88	155	2.37	7.33	2.1	1.5	31	3	152	.12	2	.6	.6	17	SF5	
		31	12	4	15.65	19	20.90	155	10.49	6.93	1.6	1.6	33	3	.71	.11	2	.5	.8	27	SF3
		31	2040	5.58	19	26.89	155	29.50	7.66	1.9	1.7	38	3	.55	.13	8	.4	1.1	27	KAO	
JUN	1	1	9	31.85	19	20.76	155	2.90	6.67	1.5	1.1	26	1	125	.13	2	.6	1.0	14	SF5	
	1	430	53.74	19	24.41	155	27.99	9.81	1.4	1.2	22	2	.63	.08	4	.4	.8	17	KAO		
	1	915	46.51	19	15.02	155	34.60	7.10	1.9	1.2	31	2	105	.18	4	.6	1.2	23	LSW		
	1	942	21.61	19	20.33	155	6.06	7.65	1.3	1.3	18	1	.115	.11	5	.6	1.2	12	SF4		
		1	13	6	16.47	19	22.06	155	25.49	8.85	1.4	1.3	22	3	106	.08	4	.5	.8	19	KAO
		1	1329	6.25	19	20.23	155	11.82	7.57	1.4	1.1	28	2	.78	.09	5	.5	.8	21	SF3	
		1	151	12.94	19	19.91	155	4.97	4.44	1.3	1.3	19	1	139	.12	4	.6	1.7	13	SSF	
		1	1543	47.12	19	18.57	155	14.87	6.02	1.1	1.1	23	1	105	.09	4	.5	1.1	22	SF1	
		1	1740	46.68	19	20.89	155	13.02	8.24	2.1	2.2	40	4	.61	.11	3	.4	.5	35	SF2	
		1	1853	32.45	19	11.53	155	29.06	33.33	2.2	2.0	42	2	.77	.07	4	.7	1.2	40	DLS	
		1	2049	11.92	19	19.58	155	11.72	5.14	1.1	1.3	28	1	.91	.13	6	.5	1.7	19	SF3	
	2	141	43.99	19	18.53	155	13.91	5.83	1.2	1.1	30	1	.94	.11	3	.5	1.1	26	SF2		
	2	239	40.88	19	26.52	155	29.21	8.02	1.8	1.3	33	2	.59	.12	8	.4	1.1	25	KAO		
	2	759	14.42	19	21.69	155	25.36	9.44	1.7	1.3	33	3	.54	.12	4	.4	.7	25	KAO		
		2	1028	54.42	19	21.44	155	2.63	6.56	1.4	1.2	28	1	131	.13	5	.6	1.0	19	SFS	
		2	1151	13.80	19	22.35	155	30.11	8.70	2.0	1.1	33	2	.46	.12	4	.4	.9	21	KAO	
		2	1632	48.07	19	21.64	155	24.97	9.00	1.7	1.1	31	3	.41	.11	4	.4	.7	22	SWR	
		3	8	2	10.23	19	57.04	155	29.67	37.06	2.0	2.0	29	1	244	.07	18	2.4	2.4	27	DLS
		3	1139	22.20	19	20.63	155	13.47	8.57	2.0	2.2	40	2	.59	.10	4	.4	.5	32	SF2	
		3	1746	1.08	19	19.65	155	4.97	4.92	1.1	1.1	16	1	149	.23	4	1.2	3.6	12	SSF	
		3	1947	38.39	19	21.39	155	3.65	2.54	1	1.1	11	1	104	.07	3	.4	.7	10	SSF	
		3	2247	38.34	19	19.84	155	15.70	8.56	3.3	3.5	44	2	.87	.12	3	.4	.6	41	SF1 F	
		3	23	8	19.46	19	19.93	155	11.30	7.96	1.3	1.1	27	1	.87	.10	5	.5	.9	19	SF3
		4	746	7.89	19	13.77	155	20.41	31.45	2.4	2.4	20	1	178	.07	8	1.1	1.5	19	DEP	
		4	1133	10.38	19	20.43	155	13.04	7.35	1.2	1.1	31	2	.65	.10	4	.5	.7	20	SF2	
		4	2355	52.17	19	29.61	154	57.74	43.94	3.4	3.7	36	0	102	.11	6	1.6	2.8	33	LER	
		5	8	0	10.90	19	14.23	155	51.60	16.84	2.9	2.9	31	1	204	.17	29	2.5	60.0	30	KON *
		5	1217	50.44	20	1.70	155	44.96	12.44	2.8	2.8	35	2	148	.13	12	.9	.9	29	KOH	
		5	1631	49.91	19	19.69	155	8.01	6.27	1.7	1.4	40	4	.91	.11	4	.4	.7	27	SF4	
		5	1731	21.36	19	27.46	155	26.57	8.79	1.8	1.3	32	2	.63	.10	5	.4	.8	22	KAO	
		5	1854	31.04	19	9.17	155	32.44	33.11	4.1	4.4	49	3	130	.08	8	.6	1.2	46	DLS F	
		5	19	7	26.70	19	27.20	155	25.02	8.31	1.7	1.2	26	2	.52	.10	4	.4	.9	15	KAO

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## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DIR	GAP	RMS	MIN	ERH	ERZ	NO				
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	JUN	5	2042	43.11	19	9.30	155	32.27	33.35	2.5	1.6	36	2	128	.07	8	.7	1.4	33	DLS	
		5	2318	34.88	19	23.69	155	1.27	8.39	1.9	1.3	31	2	144	.14	5	.7	.6	23	SFS	
		6	343	1.49	19	11.45	155	29.03	33.43	2.1	1.4	33	1	.81	.07	4	.7	1.5	30	DLS	
		6	350	22.37	19	20.64	155	13.25	8.28	2.0	2.0	39	3	.61	.10	4	.4	.6	27	SF2	
		6	629	9.17	19	19.93	155	6.50	8.15	2.2	2.3	38	3	119	.10	5	.5	.6	28	SF4	
		6	940	54.76	19	25.57	155	36.61	2.54	2.5	2.4	16	2	100	.12	3	.6	.9	12	MLD	
		6	208	9.89	19	26.22	155	38.32	2.82	2.3	2.7	19	1	197	.11	4	.7	1.0	15	MLD	
		7	221	19.90	19	57.57	155	13.65	39.31	2.0	1.7	35	0	241	.09	33	2.1	.5	.9	25	SF4
		7	346	37.79	19	25.61	155	37.84	2.71	3.0	3.2	34	3	.97	.12	4	.4	.8	26	MLD	
		7	430	13.31	19	19.72	155	12.29	4.98	1.5	1.4	35	4	83	.13	5	.4	1.3	23	SSF	
		7	838	45.16	19	19.81	155	3.83	6.14	1.3	1.1	16	3	156	.07	2	.6	1.1	12	SF5	
		7	857	.13	19	20.70	155	7.03	7.02	2.0	1.7	34	0	.94	.11	4	.5	.9	25	SF4	
		7	116	22.26	19	22.83	155	18.70	29.33	2.2	2.2	27	1	.35	.09	5	.6	1.5	14	DEP	
		7	121	1	40.84	19	30.38	155	52.62	10.79	2.8	3.3	33	2	125	.13	4	.7	4.2	27	KON F
		7	1426	42.05	19																

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	TIME	LAT	N	LON	W	DEPTH	AMP	DIIIR	GAP				RMS	MIN	ERM	ERZ	NO	YEAR	MON	DA	HRMN	SEC	TIME	LAT	N	LON	W	DEPTH	AMP	DIIIR	GAP				RMS	MIN	ERM	ERZ	NO
													DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	KM	FM	REMK												
1983	JUN	12	2012	55.79	19	20.75	155	13.67	9.01	2.1	2.0	41	3	61	.12	4	.4	.5	28	SF2	1983	JUN	19	1711	16.71	19	13.41	155	31.39	5.54	2.2	1.1	27	2	71	.23	4	.7	1.6	17	LSW		
		12	2127	47.49	19	26.39	155	38.83	.28	2.3	2.2	14	1	209	.11	5	.8	.6	8	MLD			20	1829	15.62	19	4.17	155	14.66	27.15	2.4	1.5	33	1	220	.08	24	1.2	1.9	29	LOI		
		13	219	59.05	19	20.83	155	12.47	7.67	1.8	1.3	31	2	181	.12	4	.8	.7	22	SF2			20	355	41.65	19	17.91	155	22.07	7.26	1.2	1.1	29	2	112	.13	6	.4	1.0	15	SWR		
		13	235	46.16	19	20.88	155	30.27	9.41	1.9	2.2	30	1	50	.11	6	.4	1.0	24	KAO			20	1055	21.74	19	56.79	155	21.32	10.01	2.7	2.5	32	2	193	.12	21	.8	.6	24	KEA		
		13	922	8.57	19	20.87	155	6.07	7.88	1.6	1.1	19	0	100	.08	4	.5	1.0	12	SF4			20	1446	15.52	19	23.90	155	15.68	14.35	1.5	1.2	27	2	105	.07	2	.4	.5	25	DEP		
		13	1245	27.19	19	26.67	155	24.34	3.70				19	2	113	.10	3	.4	.9	14	KAO			20	16	0	42.49	19	11.32	155	28.89	33.56	2.1	1.7	32	2	83	.07	4	.7	1.5	27	DLS
		13	152	3.92	19	19.92	155	12.13	9.69	2.0	2.5	43	4	81	.13	5	.4	.5	36	SF3			21	1825	39.77	19	23.03	155	1.51	8.11	2.0	1.5	34	2	148	.15	6	.7	.6	20	SFS		
		13	1532	8.28	19	24.87	155	23.42	8.98	1.4	1.0	23	4	46	.11	3	.4	.9	16	KAO			20	1920	35.36	19	21.02	155	2.39	6.81	1.7	1.5	27	2	155	.14	2	.5	.7	18	SFS		
		14	722	8.06	19	21.64	155	1.63	6.87	1.6	9	28	2	157	.13	4	.6	.8	13	SFS			21	5	5	36.80	19	20.66	155	13.15	7.54	2.0	1.9	43	5	62	.12	4	.4	.5	34	SF2	
		14	730	.95	19	24.31	155	14.12	30.79	2.1	1.8	42	3	60	.09	1	.6	1.0	36	DEP			21	652	38.72	19	24.52	155	29.87	8.86	1.6	1.3	33	1	52	.11	5	.4	.9	20	KAO		
		14	1540	12.88	19	12.92	155	29.57	8.06	2.3	2.1	37	2	125	.19	4	.6	.9	23	LSW			21	754	47.69	19	28.48	155	37.35	1.01	2.4	2.4	28	2	101	.17	3	.4	.5	17	MLO		
		14	1732	26.48	18	58.22	155	27.92	39.37	2.7	1.8	34	0	227	.07	21	1.8	2.3	33	DLS			21	858	42.95	19	29.13	154	53.37	.04	2.2	1.8	23	0	95	.18	5	.5	.3	13	SLE		
		14	1830	6.44	19	19.37	155	11.63	7.10	1.2	1.1	27	2	97	.09	5	.5	.9	18	SF3			21	16	1	19.46	19	16.59	155	22.03	5.53	1.3	1.1	27	2	134	.12	5	.5	.1	19	SWR	
		14	1956	27.37	19	19.95	155	3.87	7.30	1.4	1.3	25	1	145	.10	2	.8	.5	10	SFS			21	1755	15.74	19	14.53	155	34.07	8.92	3.8	3.8	46	2	75	.14	5	.5	.6	43	LSW		
		14	2228	30.80	19	19.74	155	11.80	6.11	1.6	1.5	32	2	68	.10	5	.4	.9	23	SF3			21	2237	22.92	19	19.73	155	11.35	6.95	1.2	1.2	38	2	91	.10	5	.5	.1	17	SF3		
		14	2353	23.77	19	21.21	155	4.68	8.30	1.9	1.5	35	4	91	.12	4	.4	.4	20	SFS			22	1251	13.49	19	29.38	155	51.77	10.77	3.3	3.0	34	2	97	.13	6	.6	.4	27	KON		
		15	630	46.29	19	18.45	155	13.46	7.80	1.9	1.7	35	3	84	.10	3	.5	.7	21	SF2			22	1252	51.19	19	29.10	155	51.04	6.84	2.6	1.5	22	2	148	.14	7	1	0	1	15	KON	
		15	633	54.28	19	18.61	155	13.65	7.25	1.5	1.5	33	2	74	.12	3	.5	.9	19	SF2			22	1531	32.32	19	28.27	155	51.08	7.57	2.8	2.8	28	2	122	.13	7	.7	.5	18	KON		
		15	1132	53.08	19	19.25	155	12.29	4.47	1.1	1.1	23	3	93	.10	5	.4	1.9	14	SSF			22	1642	20.89	19	21.05	155	2.17	6.14	1.5	1.1	28	4	163	.12	3	.5	.7	16	SFS		
		15	1137	26.70	19	18.30	155	13.43	10.03	2.6	2.8	45	4	82	.12	2	.5	.5	37	SF2			23	958	53.49	19	10.72	155	39.80	2.79	2.4	2.0	22	1	199	.22	9	1.3	4.2	17	LSW		
		15	1150	55.20	19	18.58	155	13.43	7.25	1.2	1.1	22	1	78	.10	3	.5	1.2	16	SF2			23	1910	14.93	19	6.86	155	23.52	43.13	2.0	1.8	32	0	187	.08	9	1.0	2	43	32	LOI	
		15	1218	21.66	19	20.41	155	13.09	6.51	1.5	1.5	26	2	64	.10	4	.5	.8	16	SF2			23	2221	22.64	19	19.91	155	8.68	5.11	2.1	1.8	39	2	76	.13	5	.5	1.3	28	SF4		
		15	13	55.59	19	21.95	155	6.55	8.05	2.4	2.3	41	4	77	.09	2	.4	.6	32	SF4			23	2235	32.20	19	20.16	155	7.41	6.72	1.9	1.5	23	0	98	.12	5	.6	.2	20	SF4		
		15	1448	40.39	19	19.83	155	13.52	5.44	1.0	1.1	25	2	72	.14	5	.5	1.4	17	SF2			24	013	56.17	19	25.30	155	30.98	9.78	2.0	1.5	26	2	71	.10	8	.4	1.1	22	KAO		
		15	19	3	55.23	19	25.40	155	25.52	4.04	1.6	1.1	15	1	128	.10	1	.5	.8	9	KAO			24	234	6.53	19	20.70	155	12.88	7.31	1.6	1.5	34	4	64	.12	4	.5	.6	24	SF2	
		16	0	1	8.73	19	20.74	155	13.22	7.52	1.2	1.1	30	2	60	.10	4	.5	.7	19	SF2			24	3	5	4.85	19	17.04	155	26.82	8.82	1.4	1.5	27	3	53	.12	7	.4	.7	19	LSW
		16	519	34.59	19	18.89	155	12.97	7.28	1.9	1.9	42	2	67	.11	4	.5	.7	29	SF2			24	538	58.19	19	18.41	155	13.06	6.10	1.2	1.1	25	2	94	.10	3	.5	.1	20	SFS		
		16	10	1	26.13	19	19.26	155	7.45	7.48	2.1	2.1	35	3	114	.09	4	.5	.7	30	SF4			24	832	41.53	19	21.65	155	2.61	6.40	2.0	2.1	29	2	130	.16	3	.6	1.0	23	SFS	
		16	1338	33.21	19	20.18	155	11.57	6.61	1.5	1.5	30	2	81	.12	5	.5	1.0	23	SF3			24	1353	18.12	19	2.34	155	22.30	32.94	2.0	1.5	37	1	213	.08	17	1.0	1.7	31	LOI		
		16	23	9	3.44	19	55.15	155	29.55	23.49	2.5	2.0	36	4	153	.11	14	.5	1.7	39	KEA			24	1457	30.99	19	19.86	155	11.84	4.81	.9	.9	31	1	85	.09	5	.5	.2	0.4	14	SF4
		17	152	55.27	19	18.99	155	3.62	7.22	2.8	3.3	39	3	194	.09	9	.7	.6	29	SF5			24	1557	35.48	19	20.18	155	11.85	6.29	3.0	2.8	39	2	79	.12	5	.4	.7	35	SF3		
		17	156	4																																							

## 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	NO			
														KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK
1983	JUN	28	511	56.26	19	21.57	155	1.72	5.39	1.9	1.7	32	2	156	.14	4	.6	.9	25	SF5					
		28	2033	51.18	19	20.07	155	7.99	8.14	2.0	1.8	37	3	88	.11	5	.4	.5	22	SF4					
		29	159	27.63	19	19.23	155	13.41	6.01	1.2	1.3	28	2	73	.12	4	.5	1.2	16	SF2					
		29	359	3.64	19	32.12	155	35.71	6.49	2.2		19	1	112	.13	5	.6	1.5	16	MLD					
		29	359	13.21	19	30.45	155	36.76	9.54	2.8	2.5	37	4	115	.13	3	.6	.5	30	MLD					
		29	4	3	52.81	19	32.04	155	36.64	10.62	3.1		42	2	84	.14	5	.5	.5	37	MLD				
		29	4	5	8.81	19	30.87	155	36.45	9.08	2.3		27	1	122	.10	3	.6	.5	26	MLD				
		29	4	5	50.72	19	31.01	155	36.10	8.99	2.1	1.7	33	2	134	.10	3	.6	.4	25	MLD				
		29	1053	24.64	19	17.61	155	25.44	37.61	2.0	1.6	27	0	65	.09	6	.7	2.0	22	DLS					
		29	1544	46.70	19	20.55	155	10.83	7.79	2.1	2.0	42	3	77	.12	3	.4	.6	34	SF3					
		29	2047	45.40	19	20.15	155	10.67	7.76	2.4	2.7	43	3	84	.12	4	.4	.7	32	SF3					
		29	21	4	47.94	19	46.82	155	20.19	24.46	2.0	1.5	33	0	106	.11	12	.8	2.4	28	KEA				
		30	010	56.80	19	1.14	155	30.67	38.31	3.4	3.8	51	5	202	.09	16	.8	1.2	46	DLS					
		30	132	28.09	19	25.51	155	37.59	.56	2.5	2.5	25	0	93	.13	4	.4	1.1	17	MLD					
		30	134	50.88	19	20.51	155	12.86	7.64	2.1	2.3	43	3	66	.13	4	.5	.6	33	SF2					
		30	136	9.80	19	20.69	155	6.91	8.64	2.7	3.0	44	3	96	.10	4	.4	.4	32	SF4					
		30	215	12.37	19	43.66	156	1.47	7.57	2.7	2.9	34	1	227	.12	20	.13	.7	20	HUA					
		30	1250	4.01	19	28.10	155	35.89	2.03	2.4	2.6	28	1	84	.15	2	.5	.3	22	MLD					
		30	1822	4.04	19	17.53	155	30.49	8.55	1.2	1.2	29	2	77	.14	5	.4	1.0	19	LSW					
		30	1948	23.46	19	32.20	155	42.04	3.35	1.2	1.4	32	5	83	.13	7	.5	2.2	24	MLO					
		30	2011	18.61	19	23.09	155	26.71	10.24	3.4	3.3	51	5	32	.13	2	.3	.4	46	KAO F					
		30	2158	21.48	19	22.99	155	26.96	10.01	1.7	1.5	33	1	42	.10	2	.4	.7	25	KAO					
		30	2213	20.04	19	16.68	155	21.87	5.53	1.8	1.5	34	1	130	.14	6	.5	1.5	26	SWR					
	JUL	1	4	0	57.66	19	17.70	155	13.12	6.65	1.2	1.1	27	3	112	.09	1	.5	.8	20	SF2				
		1	11	0	16.56	19	18.83	155	16.70	32.61	3.1	3.1	46	1	108	.10	3	.6	1.0	44	DEP				
		1	1329	51.21	19	19.44	155	11.50	7.75	1.8	1.2	28	1	97	.09	6	.5	1.0	22	SF3					
		1	1759	41.33	19	20.17	155	3.90	5.18	2.0	1.4	27	3	129	.12	2	.5	.9	19	SF5					
		1	20	6	55.34	19	21.17	155	2.60	7.14	2.1	1.7	34	3	143	.14	2	.7	.7	25	SF5				
		1	2238	53.50	19	25.44	155	36.96	.01	1.2	1.2	3	1	108	.18	4	.8	1.5	8	MLD	*				
		1	2332	47.94	19	25.78	155	26.62	6.88	2.1	2.1	35	2	56	.11	3	.3	.9	29	KAO					
		2	217	42.55	19	19.87	155	3.03	5.02	2.2	1.4	29	3	183	.12	0	.6	.8	18	SF5					
		2	8	8	53.37	19	19.88	155	10.95	9.36	2.6	2.4	34	1	89	.09	4	.4	.4	29	SF3				
		2	856	59.62	19	22.90	155	27.08	10.42	2.5	2.5	43	3	42	.12	1	.4	.6	30	KAO					
		2	959	.54	19	25.76	155	37.46	.21	3.1	3.2	39	2	92	.11	6	.4	.6	33	MLD					
		2	18	9	49.93	19	20.58	155	10.77	8.50	2.4	2.5	38	2	76	.10	3	.4	.5	30	SF3				
		2	2016	30.96	19	29.56	155	38.39	7.13	1.4	1.2	18	2	73	.14	4	.5	1.5	12	MLD					
		2	2047	7.76	19	29.54	155	38.33	6.73	1.5	1.2	21	3	95	.14	4	.6	1.1	13	MLD					
		2	2252	18.48	19	19.43	155	9.94	7.63	1.4	1.2	32	3	98	.09	5	.5	.8	27	SF3					
		2	2325	33.93	19	23.78	155	37.47	2.19	1.0	1.1	9	2	114	.10	6	.6	1.8	6	MLO					
		2	2337	23.05	19	29.34	155	38.59	6.88	1.5	1.2	18	3	94	.15	5	.6	1.1	12	MLD					
		3	129	3.06	19	27.05	155	50.68	6.18	2.2	1.5	29	5	111	.11	4	.5	1.1	24	KON					
		3	437	25.30	19	19.02	155	13.85	7.69	1.9	2.3	40	3	75	.13	4	.5	.6	32	SF2					
		3	1119	7.22	19	19.26	155	15.12	8.90	2.2	2.1	38	3	96	.10	4	.4	.5	32	SF1					
		3	22	7	51.75	19	25.44	155	37.35	1.66	2.5	2.6	29	1	75	.20	8	.6	2.2	21	MLD				
		4	932	38.67	19	20.30	155	13.39	6.67	1.8	1.3	33	3	63	.13	4	.5	.9	28	SF2					
		4	1414	4.43	19	24.24	154	58.83	7.02	2.1	1.8	35	2	166	.13	2	.7	.7	24	LER					
		4	1837	51.04	19	21.13	155	15.44	26.63	2.3	1.9	45	4	69	.10	3	.6	.8	39	DEP					
		4	2032	31.79	19	19.36	155	13.22	6.84	2.0	1.5	39	3	75	.10	4	.4	.7	29	SF2					

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## 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	NO			
														KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK
1983	JUL	4	2037	53.50	19	11.76	155	37.49	8.24	1.9	1.9	26	2	96	.21	6	.6	1.3	20	LSW					
		5	0	6	31.90	19	17.54	155	14.77	6.19	1.2	1.3	32	1	126	.11	2	.5	.8	21	SF1				
		5	432	19.61	19	21.20	155	25.17	9.56	2.1	2.2	32	4	52	.14	4	.4	.8	28	KAO					
		5	1751	4.10	19	20.11	155	3.12	7.16	1.4	1.1	27	1	100	.11	1	.7	.7	18	SF5					
		5	1937	10.44	19	25.62	155	24.49	10.																

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YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DIIIR	GAP	RMS	MIN	ERH	ERZ	NO				
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	JUL	15	19	5	16.57	19	32.35	155	35.78	6.08	2.3	1.2	28	5	113	.13	6	.5	1.2	19	MLD
		16	040	29.09	19	21.42	155	1.39	7.04	3.1	3.2	43	1	167	.13	4	.6	.4	34	SFS	
		16	053	34.85	19	19.56	155	12.55	5.04	1.9	1.1	28	1	83	.12	5	.5	1.9	21	SF2	
		16	544	36.13	19	19.11	155	15.14	7.69	2.0	2.3	42	1	90	.12	4	.5	.7	39	SF1	
		16	1258	12.09	19	19.56	155	13.95	6.10	1.6	1.1	29	2	73	.10	5	.5	1.0	23	SF2	
		16	2322	32.90	19	21.07	155	13.02	7.80	2.7	2.7	45	3	158	.14	3	.5	.6	40	SF2	
		17	1	25.95	19	19.68	155	10.49	7.33	1.9	1.6	37	1	93	.10	5	.4	.6	27	SF3	
		17	241	28.63	19	21.35	155	2.06	6.08	2.0	1.3	29	1	176	.17	7	1.2	1.7	23	SFS	
		17	635	59.48	19	16.57	155	24.00	3.89	1.3	1.3	25	2	94	.11	4	.4	1.6	17	SWR	
		17	817	4.47	19	24.12	155	.66	7.75	1.8	1.2	29	2	171	.19	4	.8	.7	23	SFS	
		17	1041	25.18	19	32.36	155	36.00	7.19	2.5	1.9	34	3	90	.11	6	.5	1.0	25	MLD	
		17	1538	45.69	19	16.77	155	33.91	6.75	1.6	1.4	33	1	83	.16	7	.5	1.7	24	LSW	
		17	1657	29.49	19	20.57	155	6.93	8.50	2.1	1.8	36	1	98	.11	5	.5	.6	27	SF4	
		17	17	50.87	19	20.23	155	13.14	6.14	1.6	1.1	31	3	66	.12	4	.5	1.2	25	SF2	
		17	2217	37.53	19	19.91	155	6.60	7.88	2.3	2.6	33	0	153	.09	5	.6	.6	27	SF4	
		17	2253	46.24	19	21.21	155	1.77	6.61	2.0	1.7	36	2	179	.11	8	.7	.7	29	SFS	
		17	2257	44.65	19	21.57	155	14.24	25.99	1.8	1.3	37	2	57	.10	3	.b	.8	33	DEP	
		18	452	27.31	19	25.18	155	25.08	8.93	1.2	2.0	20	0	61	.11	7	.5	1.5	19	KAO	
		18	7	22.44	19	22.22	155	2.15	7.61	2.0	1.5	24	0	144	.15	5	.7	.8	22	SFS	
		18	738	55.82	19	20.20	155	4.18	5.52	1.3	1.8	18	0	129	.10	2	.7	1.4	17	SFS	
		18	1532	15.82	19	19.59	155	6.50	8.12	2.4	2.4	39	2	159	.10	5	.6	.4	29	SF4	
		18	1624	37.25	19	20.42	155	7.04	7.09	1.9	1.6	32	0	137	.13	5	.5	1.1	26	SF4	
		18	2035	33.96	20	12.33	157	40.18	28.70	3.1	3.6	22	1	330	.18198	4.5	.6	4.6	13	DIS	
		19	7	5	2.57	19	21.20	155	2.37	4.19	2.1	1.5	33	2	175	.16	7	.9	4.0	24	SFF
		19	1138	8.86	19	19.19	155	12.08	8.37	1.3	2.3	23	0	97	.10	5	.6	.7	18	SF3	
		19	1442	55.27	19	20.33	155	12.08	7.83	1.4	1.3	30	2	75	.11	5	.5	.5	7	SF3	
		19	1742	34.63	19	24.89	155	24.81	9.53	2.7	2.9	51	5	35	.15	1	.4	.5	39	KAO	
		19	1920	43.25	19	19.18	155	16.26	6.84	1.5	1.1	34	2	109	.09	3	.4	.7	26	SF1	
		19	1934	50.90	19	20.58	155	23.22	26.44	2.5	2.1	41	4	151	.10	7	.7	.7	14	35	KEA
		19	2035	10.43	19	21.28	155	6.12	7.47	1.1	1.1	32	0	90	.12	3	.4	.7	20	SF4	
		19	2324	30.80	19	20.25	155	12.53	7.80	1.3	1.3	32	3	73	.10	5	.5	.8	21	SF2	
		20	955	39.48	19	28.76	155	43.37	8.15	2.4	1.6	35	4	66	.13	6	.5	1.0	25	KDN	
		20	18	6	11.80	19	20.09	155	7.57	7.01	1.9	1.7	33	4	130	.09	5	.5	.7	19	SF4
		20	1858	27.99	19	19.84	155	12.36	6.71	1.3	1.1	28	3	81	.11	5	.5	1.0	20	SF2	
		20	20	8	50.87	19	20.82	155	6.25	7.83	2.3	2.3	34	3	140	.11	4	.5	.7	28	SF2
		21	655	18.47	19	18.89	155	11.60	5.08	1.3	1.1	31	4	111	.10	5	.4	1.4	17	SF3	
		21	1238	15.04	19	14.53	155	30.03	1.14	1.4	1.9	18	0	117	.16	1	.b	.3	13	LSW	
		21	1455	55.64	19	18.59	155	14.48	6.70	1.9	1.9	43	3	87	.11	3	.4	.8	31	SF2	
		21	2047	7.08	19	29.33	155	39.07	7.59	1.2	1.0	18	2	95	.12	5	.5	.9	13	MLD	
		22	211	35.12	19	20.80	155	15.54	8.63	2.1	2.3	40	3	59	.11	3	.4	.6	28	SF2	
		22	629	36.74	19	19.01	155	13.79	7.38	1.4	1.2	30	0	75	.10	4	.5	.9	23	SF2	
		22	2127	27.06	19	20.11	155	10.12	7.11	2.0	1.6	35	2	83	.12	4	.5	.8	26	SF3	
		22	2326	56.59	19	19.37	155	11.74	6.87	1.6	1.5	28	2	96	.11	5	.5	1.0	22	SF3	
		23	259	20.12	19	20.67	155	2.80	7.21	2.3	2.2	39	2	178	.11	7	.7	.6	32	SF5	
		23	6	8	45.22	19	22.75	155	30.18	7.79	1.9	1.3	32	2	74	.10	5	.4	.8	25	KAO
		24	0	5	12.89	19	21.78	155	25.03	9.49	1.6	1.3	29	3	44	.12	4	.4	.8	20	KAO
		24	524	45.17	19	14.42	155	35.09	7.80	2.4	2.1	37	2	88	.21	4	.6	1.1	27	LSW	
		25	146	40.32	19	25.33	155	25.24	4.31	1.6	1.6	32	2	40	.11	0	.4	.8	24	KAO	

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DIIIR	GAP	RMS	MIN	ERH	ERZ	NO				
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	JUL	25	415	24.40	19	23.20	155	28.08	9.83	1.9	1.2	28	1	3h	.12	2	.4	.8	15	KAO	
		25	610	51.44	19	21.87	155	2.10	6.30	1.3	1.4	29	1	170	.14	6	.8	1.0	19	SFS	
		25	937	33.37	19	21.85	155	24.97	9.41	1.7	1.3	30	2	83	.11	4	.4	.7	25	SWR	
		25	16	4	59.03	19	21.53	155	2.79	6.41	1.7	1.2	35	2	169	.20	6	.9	1.0	25	SFS
		25	2117	48.73	19	24.75	155	24.72	9.74	2.4	2.5	47	5	36	.13	1	.4	.5	39	KAO	
		26	2	8	47.16	19	33.59	155	42.50	2.52	2.9	2.2	27	1	90	.11	8	.5	2.6	20	MLD
		26	533	28.65	19	19.83	155	7.35	7.50	2.1	1.5	33	1	137	.09	5	.6	1.7	24	SF4	
		26	741	46.66	19	45.76	155	26.18	27.38	2.4	2.0	1.7	39	2	75	.11	3	.6	1.4	33	KEA
		26	941	26.62	18	56.51	155	33.55	38.49	2.1	1.7	35	2	248	.11	12	2.3	1.6	31	DLS	
		26	1021	29.73	19	25.57	155	24.64	9.26	1.4	1.4	25	2	36	.12	1	.4	.5	46	F	
		28	458	42.05	19	21.32	155	24.16	8.09	1.7	1.1	29	4	80	.12	3	.5	.8	19	SWR	
		29	219	32.50	19	20.75	155	7.12	7.44	2.4	2.5	38	4	133	.11	4	.5	.7	29	SF4	
		29	4	5	18.10	19	15.96	155	31.94	6.44	2.3	1.1	43	4	55	.22	4	.5	1.1	29	LSW
		29	1625	33.04	19	20.55	155	13.24	7.68	1.1	1.1	29	2	62	.13	4	.6	.8	21	KF2	
		29</																			

## HVO EARTHQUAKE SUMMARY LIST

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	ORIGIN TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO	YEAR	MON	DA	HRMN	SEC	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK
1983	AUG	3	1	5	38.66	19	22.12	155	4.93	8.20	2.1	P.0	27	1	77	.10	3	.4	.6	20	SF5												
		3	1239	11.79	19	19.25	155	16.01	6.84	1.5	1.6	33	3	105	.11	3	.4	.7	25	SF1													
		3	14	42.94	19	28.20	155	36.75	4.59	2.4	1.7	31	5	79	.15	5	.5	1.6	21	ML0													
		4	032	49.82	19	19.95	155	8.46	6.41	1.4	1.1	26	1	79	.11	5	.5	1.0	23	SF4													
		4	2	12.50	19	20.73	155	11.85	8.04	1.8	1.9	43	5	71	.12	4	.4	.5	36	SF3													
		4	433	31.28	19	25.63	155	37.70	1.90	2.7	2.8	34	2	95	.12	4	.4	.8	27	ML0													
		4	628	10.89	19	19.72	155	8.54	5.11	1.6	1.1	24	1	70	.12	5	.5	1.6	20	SF4													
		4	1059	59.94	19	28.83	155	35.73	2.33	2.2	1.9	17	2	136	.09	1	.6	.2	12	ML0													
		4	1747	20.37	19	25.52	154	55.16	6.35	2.3	2.4	32	1	170	.15	4	.9	.6	21	LER													
		5	836	59.68	19	19.84	155	8.23	8.57	1.6	2.2	39	4	85	.10	5	.5	.5	28	SF4													
		5	1810	50.58	19	9.85	155	36.37	4.61	2.8	2.2	36	3	106	.19	10	.5	2.8	18	LSW													
		5	2343	23.45	19	20.28	155	12.80	8.48	1.5	1.0	28	2	64	.06	4	.4	.7	18	SF2													
		6	252	21.55	19	22.19	155	1.47	7.41	1.8	1.2	36	4	160	.15	5	.7	.5	23	SF5													
		6	1158	30.96	19	29.29	155	24.62	9.86	2.0	1.6	35	3	59	.12	3	.4	.7	25	KAO													
		6	127	41.27	19	25.74	155	36.96	2.37	1.2	1.5	14	3	105	.13	3	.5	.7	8	ML0													
		6	1933	21.13	19	19.91	155	6.62	8.14	2.4	2.4	39	3	116	.11	5	.6	.6	30	SF4													
		6	1941	50.54	19	31.89	155	56.13	13.46	2.7	1.8	24	2	257	.12	20	1.8	.6	15	KON													
		6	2042	47.02	19	20.23	155	3.56	6.11	2.0	1.5	28	1	119	.13	1	.6	.8	15	SF5													
		7	1041	26.27	19	27.29	154	50.86	8.37	2.9	3.0	40	4	232	.15	1	1.2	.4	32	LER													
		7	233	7	8.42	19	23.00	155	24.06	10.64	2.3	2.5	42	3	31	.10	5	.4	.5	34	KAO												
		8	444	6.21	19	16.66	155	23.80	3.38	1.8	1.9	30	3	99	.14	4	.4	1.2	14	SWR													
		8	1139	51.38	19	20.06	155	12.05	8.75	3.1	3.2	44	4	79	.09	5	.4	.5	32	SF3													
		8	1454	16.63	19	18.85	155	15.64	5.52	1.0	1.1	24	1	110	.10	5	.5	1.5	14	SF1													
		8	1657	2.12	19	22.08	155	4.69	6.54	1.2	1.1	27	1	81	.16	3	.6	1.0	19	SF5													
		8	2338	52.59	19	21.91	155	17.13	32.22	1.7	1.4	38	2	56	.11	2	.7	1.1	28	DEP													
		9	032	16.53	19	20.93	155	1.49	7.88	2.6	2.6	41	6	178	.18	3	.8	.5	29	SF5													
		9	858	42.37	19	20.51	155	45.56	9.89	2.8	2.1	51	2	224	.13	10	1.1	.7	21	KON													
		9	915	52.81	19	20.50	155	11.05	7.86	1.6	1.6	36	4	99	.11	4	.5	.7	28	SF3													
		9	1046	46.55	19	20.04	155	12.80	5.54	1.6	1.1	24	1	72	.12	5	.5	1.5	17	SF2													
		9	1132	8.23	19	20.16	155	9.57	7.58	1.8	1.5	31	2	79	.10	4	.5	.8	20	SF3													
		9	1533	21.26	19	17.72	155	20.64	5.07	1.1	1.1	24	2	125	.09	4	.4	1.3	20	SWR													
		9	2134	31.41	19	20.14	155	11.61	7.52	1.8	1.5	39	4	82	.11	5	.4	.6	29	SF3													
		10	036	24.54	19	21.22	155	6.68	7.79	2.0	1.5	39	3	88	.13	3	.4	.7	28	SF4													
		10	250	9.88	19	19.64	155	7.65	8.48	2.3	2.4	40	6	102	.10	4	.5	.5	31	SF4													
		10	1247	50.28	19	19.90	155	11.81	6.91	1.3	1.1	28	2	85	.10	5	.6	1.1	21	SF3													
		10	2132	18.01	20	54.22	154	51.17	2.35	2.5	2.6	20	0	332	.12	135	49.0	29.0	12	DIS *													
		10	232	2.5	18.01	19	35.11	155	54.69	27.30	2.8	2.9	47	6	188	.10	11	.7	1.2	33	KON F												
		11	52	36.22	19	19.49	155	11.39	6.35	1.2	1.1	31	2	96	.10	5	.5	1.1	20	SF3													
		11	510	55.30	19	20.19	155	4.11	5.18	1.3	1.1	18	2	129	.10	2	.6	1.1	10	SF5													
		11	613	18.96	19	20.52	155	11.91	7.93	2.5	2.8	48	4	73	.13	4	.5	.6	39	SF3													
		11	1318	28.32	19	20.27	155	13.49	6.63	1.1	.8	27	1	66	.12	4	.6	1.1	24	SF2													
		12	214	47.93	19	19.87	155	7.02	7.71	2.2	2.3	34	2	111	.10	5	.5	.7	29	SF4													
		12	552	27.75	19	19.41	155	13.91	6.32	1.2	.8	35	2	65	.12	4	.4	.9	29	SF2													
		12	622	24.63	20	19.32	155	6.61	15.05	2.5	1.5	0	294	.13	54	8.3	99.0	8	KEA *														
		12	1546	56.80	19	22.09	155	5.88	9.68	1.3	1.2	23	1	76	.11	2	.5	.8	16	SF4													
		13	021	33.47	19	25.93	155	37.69	1.56	2.0	3.2	33	2	94	.14	3	.5	.8	25	ML0													
		13	134	27.17	19	20.42	155	12.00	8.18	2.2	2.4	48	6	75	.13	5	.5	.5	34	SF3													
		13	648	50.03	19	14.88	155	33.79	6.67	2.7	2.7	41	2	71	.19	6	.5	1.3	33	LSW													

## HVO EARTHQUAKE SUMMARY LIST

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	ORIGIN TIME	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO	YEAR	MON	DA	HRMN	SEC	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK
1983	AUG	13	1429	54.73	19	20.00	155	13.43	6.56	1.8	1.5	31	1	64	.13	5	.5	.8	25	SF2													
		13	1714	18.67	19	19.81	155	6.95	9.34	3.6	3.7	51	5	114	.10	5	.5	.4	43	SF4 F													
		13	2041	58.86	19	23.95	155	13.49	31.04	2.1	1.8	42	1	67	.10	2	.6	1.0	38	DEP													
		14	225	58.89	19	20.38	155	12.79	7.72	1.2	1.1	27	1	68	.09	4	.5	.9	19	SF2													
		14	4	56.69	19	19.28	155	13.57	7.60	1.6	1.5	32	1	68	.11	4	.5	.7	23	SF2													
		14	511	20.04	19	21.37	155	49.93	12.42	2.9	2.5	37	0	126	.13	11	.6	.3	24	KON													
		14	615	37.18	19	20.75	155	6.98	7.74	1.9	1.7	31	1	94	.09	4	.4	.7	23	SF4													
		14	7	3	55.02	19	19.87	155	7.86	8.34	1.7	1.3	31	1	94	.09	5	.5	.6	18	SF4												
		14	1013	36.45	19	19.98	155	11.67	6.67	1.4	1.1	30	1	85	.10	5	.5	.9	23	SF3													
		15	2030	1.49	19	21.85	155	7.22	6.17	1.9	1.9	34	3	74	.13	5	.5	1.3	23	KAO													
		15	2251	.57	19	19.83	155	13.78	5.20	1.3	1.1	33	3	69	.13	5	.5	.5	27	SF2													
		15	23	8	2.86	19	25.91	155	28.10	10.45	2.6	2.5	46	4	40	.13	6	.3	1.5	36	KAO												
		15	2332	14.17	19	18.60	155	13.12	4.40	1.4	1.0	31	1	88	.10	3	.4	.4	22	SSF													
		15	2334	40.73	19	18.31	155	13.01	6.28	1.1	1.1	29	2	98	.09	3	.5	.5	1.0	21	SF1												
		15	2335	21.47	19	19.01	155	13.07	9.70	3.0	2.7	46	4	128	.14	7	.5	.5	35	SF2 F													
		16</td																															

## 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 NO									
												KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM
1983	AUG	19	355	44.00	19	57.51	155	38.75	9.63	2.5	2.3	20	3	139	.06	23	.6	.6	14	KOH	
		19	511	51.76	19	18.84	155	28.20	6.63	1.2	1.2	28	3	55	.19	5	.5	1.1	19	LSW	
		19	2036	56.01	19	19.60	155	11.40	7.10	1.5	1.3	34	3	94	.11	5	.5	.9	26	SF3	
		19	2246	17.03	19	20.40	155	5.93	7.97	2.4	2.4	41	2	114	.10	5	.5	.5	33	SF4	
		19	2252	50.86	19	25.95	155	37.04	2.70	3.1	3.5	46	4	63	.14	3	.4	.7	35	ML0	

20 740 30.00 19 19.74 155 9.60 7.69 1.7 1.3 18 1 88 .05 4 .5 .9 17 SF3

20 1856 27.27 19 19.82 155 12.56 6.76 1.3 1.1 33 3 79 .11 5 .5 .9 22 SF2

20 2213 10.10 19 24.63 155 29.40 7.76 1.8 1.1 31 1 64 .12 5 .4 .9 21 KAO

20 2217 40.06 19 24.64 155 29.19 8.31 1.8 1.5 36 3 63 .11 5 .4 .8 23 KAO

21 1744 8.96 19 21.44 155 2.31 8.19 2.1 1.8 36 3 142 .13 3 .7 .4 27 SF5

21 2147 29.50 19 20.23 155 12.00 29.77 1.6 1.4 38 1 78 .09 5 .7 1.2 31 DEP

21 2353 39.77 19 19.77 155 7.22 7.93 2.5 2.7 40 2 110 .10 5 .5 .5 31 SF4

22 353 38.08 19 21.21 155 6.84 8.06 2.9 3.1 45 2 87 .12 3 .4 .6 37 SF4

22 620 7.72 19 25.82 155 30.34 10.67 1.4 1.2 16 1 67 .10 8 .6 1.5 10 KAO

22 1241 19.81 19 25.75 155 37.73 2.18 1.5 1.8 22 1 95 .12 4 .5 1.1 19 ML0

22 1258 15.46 19 20.23 155 12.77 7.69 1.5 1.1 31 2 70 .07 4 .5 .7 20 SF2

22 1639 35.92 19 20.31 155 3.42 5.94 1.6 1.3 28 1 178 .14 7 .6 1.2 17 SF5

22 1657 7.56 19 40.64 155 4.52 1.01 .9 1.2 1.3 23 0 202 .13 29 1.3 16.4 .5 HTL

22 1857 45.30 19 23.16 155 2.85 8.17 1.4 1.2 28 1 152 .14 4 .7 .6 17 SF5

22 23 9 25.31 19 21.59 155 .75 7.49 2.0 1.5 31 0 193 .14 7 1.0 .8 26 SF5

22 2348 41.79 19 24.85 155 28.80 7.56 1.6 1.3 28 0 46 .09 5 .4 1.1 21 KAO

23 141 58.73 19 23.17 155 26.40 7.18 1.4 1.1 21 0 49 .12 2 .5 1.0 15 KAO

23 150 26.06 19 19.72 155 4.50 5.47 1.2 1.2 16 0 153 .06 3 .6 1.2 11 SF2

23 348 35.10 19 20.25 155 12.79 9.89 3.7 4.1 44 1 70 .10 4 .4 .3 40 SF2 F

23 840 18.84 19 20.61 155 7.94 6.96 1.4 1.5 28 2 83 .09 4 .5 .9 24 SF4

23 1617 44.47 19 24.22 155 26.33 8.65 1.7 1.3 31 1 56 .11 3 .4 1.0 23 KAO

23 1713 47.24 19 19.79 155 10.50 6.86 1.5 1.3 29 1 91 .10 4 .5 .9 21 SF3

24 952 30.01 19 20.33 155 7.96 8.34 1.9 1.7 30 0 86 .06 5 .4 .7 23 SF4

24 1433 49.85 19 20.26 155 12.69 8.31 1.6 1.1 25 1 71 .11 4 .6 .8 16 SF2

24 15 7 42.87 19 24.43 155 25.12 8.23 1.8 1.7 39 2 34 .12 2 .4 .9 29 KAO

24 1531 29.01 19 20.00 155 11.83 7.36 1.8 2.2 40 1 83 .14 5 .5 .8 31 SF3

24 1634 16.77 19 20.43 155 12.98 7.18 1.6 1.5 31 1 66 .12 4 .5 .8 27 SF2

24 2238 51.03 19 21.83 155 24.99 10.03 2.8 3.2 44 4 39 .13 4 .4 .5 33 SWR

25 2 5 52.58 19 23.91 154 57.89 5.98 1.7 1.4 25 0 175 .14 3 .9 .9 13 LER

25 842 39.83 19 21.77 155 18.62 31.30 2.5 1.7 41 1 36 .11 4 .7 1.1 37 DEP

25 1755 38.86 19 20.38 155 8.94 6.34 1.2 1.2 28 0 99 .12 4 .5 1.2 25 SF4

25 1810 10.84 19 19.69 155 7.68 8.36 2.5 2.2 41 3 130 .10 4 .5 .5 33 SF4

25 1833 1.11 19 19.98 155 8.10 6.35 1.8 1.5 30 0 112 .11 5 .6 1.1 24 SF4

25 1835 21.61 19 19.52 155 7.46 7.68 1.9 1.8 33 1 137 .08 4 .5 .6 28 SF4

26 042 2.08 19 19.45 155 8.88 5.50 1.4 1.5 18 0 123 .08 4 .8 2.1 17 SF4

26 351 12.53 19 25.28 155 36.21 2.12 2.2 1.4 14 2 178 .11 5 .7 1.2 11 ML0

26 531 18.74 19 15.95 155 19.63 39.87 1.9 1.7 38 0 150 .10 4 .9 1.5 34 DEP

26 623 52.10 19 25.29 155 37.45 1.35 3.4 3.1 36 2 74 .14 4 .4 1.0 30 ML0

26 722 58.90 19 25.34 155 29.26 6.88 2.0 1.4 30 1 62 .11 5 .4 1.5 24 KAO

26 1813 42.53 19 23.19 155 2.28 8.08 2.0 1.7 32 1 163 .15 4 .8 .5 22 SF5

26 2357 10.43 19 21.95 155 25.72 11.28 1.5 1.3 32 1 44 .10 3 .4 .8 24 KAO

27 111 38.89 19 19.58 155 11.89 6.78 1.4 1.1 31 1 91 .10 5 .5 .9 20 SF3

27 4 7 34.42 19 20.11 155 8.69 7.80 1.5 1.7 36 0 73 .10 4 .5 .7 26 SF4

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YEAR	MON	DA	HRMN	SEC	LAT	N	LON	W	DEPTH	AMP	DUR	GAP RMS MIN ERH ERZ NO									
												KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM
1983	AUG	27	1759	59.74	19	19.90	155	7.89	5.43	1.4	1.1	22	0	124	.13	5	.6	1.6	16	SF4	
		27	1846	12.94	19	21.07	155	7.72	5.56	1.3	1.1	22	1	120	.19	4	.9	1.7	18	SF4	
		27	1955	33.28	19	45.38	155	6.12	41.81	2.1	1.7	39	2	187	.12	10	.8	2.0	35	HIL	
		27	2331	32.70	19	22.66	155	25.04	9.53	1.8	1.7	36	2	40	.10	5	.4	1.7	30	KAO	
		27	2352	44.18	19	20.22	155	11.30	6.08	1.7	1.6	36	1	81	.13	4	.5	.9	30	SF3	

YEAR	MON	DA	HRMN	SEC	LAT	N	LON	W	DEPTH	AMP	DUR	GAP RMS MIN ERH ERZ NO									
												KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM
1983	AUG	28	020	23.12	19	20.40	155	10.64	6.52	1.4	1.3	20	2	83	.11	3	.6	1.2	15	SF3	
		28	341	40.43	19	20.49	155	10.65	8.29	1.2	1.1	20	1	82	.03	3	.6	1.3	14	SF3	
		28	342	52.77	19	20.50	155	10.58	9.01	1.6	1.3	20	2	83	.04	3	.6	1.9	17	SF3	
		28	734	.63	19	18.62	155	18.01	32.55	3.1	3.1	43	1	112	.10	2	.7	1.1	41	DEP	
		28	828	51.50	19	20.03	155	11.80	7.24	1.4	1.3	29	0	82	.11	5	.5	1.0	22	SF3	

YEAR	MON	DA	HRMN	SEC	LAT	N	LON	W	DEPTH	AMP	DUR	GAP RMS MIN ERH ERZ NO									
												KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM
1983	SEP	1	110	34.79	19	19.57	155	12.16	5.41	1.6	1.5	40	2	87	.12	5	.4	1.0	31	SF3	
		1	250	3.55	19	59.01	155	35.94	42.09	2.3	1.8	43	2	166	.09	25	.8	2.1	40	KOH	
		1	917	21.65	18	50.78	155	17.30	12.64	1.9	1.7	22	0	267	.12	39	.3	2.0	18	L01	
		1	1758	3.18	19	26.67	155	50.49	8.55	1.6	1.5	24	1	113	.15	9	.6	1.9	18	KON	
		1	2033	53.19	19	20.76	155	18.44	32.24	2.1	1.8	45	1	56	.10	2	.7	1.0	39	DEP	

YEAR	MON	DA	HRMN	SEC	LAT	N	LON	W	DEPTH	AMP	DUR	GAP RMS MIN ERH ERZ NO									
KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK										

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YEAR	MON	DA	HRMN	SEC	ORIGIN TIME	LAT N	LON W	DEPTH	AMP DIR				GAP	RMS	MIN	ERH	ERZ	NO			
									DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM
1983	SEP	3	4	1	8.75	19	28.82	155	35.94	2.59	2.6	2.6	31	0	78	.09	1	.4	.3	20	MLO
		3	1223	11.68	19	30.28	155	39.63	8.42	2.8	2.6	34	1	84	.12	7	.5	.7	25	MLO	
		3	1416	50.58	19	16.95	155	21.01	2.56	1.0	1.3	24	3	139	.09	5	.4	1.3	17	SWR	
		3	17	4	47.00	19	29.73	155	36.98	7.02	2.7	2.7	35	4	78	.14	5	.6	.9	29	MLO
		3	1841	21.74	19	30.35	155	39.44	6.99	1.6	1.1	26	2	77	.13	6	.5	1.1	18	MLO	
		3	1843	43.33	19	30.35	155	39.21	7.98	1.3	1.1	21	3	100	.12	6	.6	1.0	19	MLO	
		3	1921	47.06	19	30.86	155	39.40	7.15	2.8	2.8	42	2	52	.15	7	.4	.8	30	MLO	
		3	1933	41.51	19	30.48	155	39.54	6.69	1.6	1.2	27	3	77	.13	7	.5	.9	22	MLO	
		3	1955	17.58	19	30.02	155	39.24	5.90	2.4	1.9	33	3	78	.14	6	.5	.9	25	MLO	
		3	2123	7.30	19	30.28	155	39.58	8.11	2.7	2.8	35	3	76	.12	7	.4	.7	23	MLO	
		4	336	51.21	19	21.32	155	2.80	5.91	1.9	1.5	33	2	126	.18	3	.6	1.0	25	SFS	
		4	339	35.95	19	21.43	155	2.68	5.62	1.5	1.1	24	1	137	.14	3	.7	1.2	21	SFS	
		4	1214	5.10	19	19.93	155	6.81	5.75	1.3	1.1	25	0	113	.11	5	.6	1.5	19	SF4	
		4	1235	9.55	19	19.34	155	11.66	6.30	1.2	1.1	25	1	98	.09	5	.5	1.2	22	SF3	
		4	13	2	28.75	19	30.44	155	39.29	8.30	2.7	2.7	32	5	77	.14	6	.4	.8	20	MLO
		4	14	7	35.13	19	26.44	155	36.15	3.22	2.6	2.4	26	1	59	.11	2	.4	.5	16	MLO
		4	1617	38.33	19	18.82	155	26.88	8.28	1.3	1.1	22	0	64	.14	7	.5	1.4	16	LW	
		5	047	30.88	19	22.84	155	27.06	7.63	1.4	1.1	32	2	40	.12	1	.4	.9	23	KAO	
		5	058	20.53	19	30.55	155	38.70	9.51	1.5	1.2	22	3	102	.15	5	.6	.9	15	MLO	
		5	650	10.34	19	22.88	155	24.08	9.50	1.6	1.4	39	4	38	.13	5	.4	.7	33	KAO	
		5	748	58.99	19	30.33	155	39.38	7.59	2.3	1.6	30	2	77	.13	6	.5	.9	21	MLO	
		5	1256	43.77	19	21.67	155	24.73	9.21	1.7	1.1	30	2	44	.11	4	.4	.6	24	SWR	
		5	13	0	4.38	19	20.26	155	7.32	7.16	1.3	1.3	32	2	98	.10	5	.5	.8	27	SF4
		5	1624	22.39	19	20.55	155	3.99	5.23	2.4	2.5	38	5	108	.13	2	.5	1.0	30	SFS	
		5	1642	26.37	19	24.51	155	24.91	9.72	1.9	1.5	39	3	36	.11	1	.4	.6	31	KAO	
		5	2227	44.70	19	20.39	155	12.75	10.44	3.5	3.7	45	2	69	.10	4	.5	.4	43	SF2	
		5	2358	41.71	19	19.46	155	11.58	6.52	1.1	1.1	33	1	96	.11	6	.5	1.0	24	SF3	
		6	356	41.02	19	30.38	155	39.24	7.67	3.3	3.4	42	1	96	.12	6	.5	.6	37	MLO	
		6	544	18.62	19	20.51	155	12.54	6.88	1.6	1.5	30	1	69	.13	4	.5	.9	24	SF2	
		6	1055	23.03	19	41.12	155	4.01	5.40	2.4	2.5	22	0	189	.16	31	1.1	3.0	9	HIL	
		6	16	0	18.51	19	21.50	155	1.10	6.70	1.9	1.1	31	3	179	.19	4	.8	.9	21	SFS
		7	5	9	10.02	19	20.45	155	17.88	39.29	3.5	4.5	50	5	68	.11	1	.6	1.0	45	DEP
		7	529	25.43	19	20.37	155	12.86	7.09	2.0	1.9	24	2	67	.11	4	.5	1.1	22	SF2	
		7	1039	29.15	19	19.43	155	13.43	7.78	1.9	2.1	40	0	70	.11	4	.5	.7	31	SF2	
		7	1244	.79	19	19.65	155	11.56	7.95	1.4	1.1	26	1	92	.10	5	.6	1.1	22	SF3	
		7	1711	17.38	19	23.87	155	23.80	10.61	1.8	1.5	36	3	33	.10	4	.4	.6	26	KAO	
		7	2025	26.11	19	23.59	155	25.28	7.68	1.9	1.6	37	1	37	.11	3	.4	1.0	27	KAO	
		7	2141	34.36	19	19.29	155	8.80	5.66	1.3	1.1	26	2	86	.10	4	.5	1.4	17	SF4	
		8	027	9.42	19	30.37	155	39.04	8.36	2.3	2.2	25	4	77	.14	6	.5	.8	19	MLO	
		8	1737	9.36	19	20.89	155	39.88	6.71	1.1	1.7	16	4	100	.08	7	.5	1.1	12	MLO	

HVO EARTHQUAKE SUMMARY LIS

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YEAR	MON	DA	HRMN	SEC	ORIGIN TIME	LAT N	LON W	DEPTH	AMP	DIR	GAP				RMS	MIN	ERH	ERZ	NO
											KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM
1983	SEP	9	134	14.06	19 19.27	155	9.58	5.44	1.4	1.2	28	2	98	.11	5	.5	1.4	24	SF3
		9	226	50.26	19 30.70	155	39.06	10.05	1.1	0.9	10	2	277	.10	6	.2	1.0	7	MLO
		9	630	55.35	19 19.89	155	7.32	9.02	5.4	5.2	46	1	105	.10	5	.5	4.4	5 SF4	
		9	637	44.00	19 21.56	155	6.66	7.37	2.6	2.6	36	4	82	.12	3	.4	.6	27	SF4
		9	644	59.02	19 19.86	155	9.28	5.21	1.9	1.1	24	3	8P	.11	4	.5	1.4	19	SF3
		9	726	20.73	19 18.00	155	6.87	3.77	1.4	1.0	15	1	176	.09	2	1.2	.8	12	SSF
		9	739	9.55	19 20.99	155	10.76	8.70	1.1	1.1	20	2	70	.09	3	.5	.7	12	SF3
		9	757	37.76	19 19.95	155	7.81	6.34	2.1	1.7	31	3	94	.11	5	.5	1.1	20	SF4
		9	847	40.63	19 19.98	155	8.41	6.52	1.6	1.1	21	3	80	.11	5	.5	1.1	15	SF4
		9	9 3	1.68	19 21.14	155	7.01	7.37	1.4	1.7	55	3	87	.12	4	.4	.7	27	SF4
1984	JUL	9	914	29.63	19 19.77	155	6.03	3.96	2.0	1.6	34	1	131	.17	5	.6	2.1	20	SSF
		9	925	49.02	19 19.42	155	13.69	6.83	2.0	1.8	43	5	64	.11	4	.4	.7	35	SF2
		9	1027	33.74	19 20.29	155	3.58	8.19	2.8	3.0	44	4	114	.10	1	.6	.5	35	SF5
		9	1116	12.50	19 20.64	155	4.03	7.69	2.6	2.9	49	5	105	.12	2	.5	.4	36	SF5
		9	1143	27.31	19 20.52	155	11.45	7.28	1.7	1.2	34	2	76	.11	4	.5	.7	25	SF3
		9	1348	27.69	19 20.06	155	7.65	7.78	2.0	1.9	35	2	95	.10	5	.5	.6	27	SF4
		9	14 9	17.02	19 19.91	155	8.68	7.77	1.3	1.1	27	2	76	.10	5	.6	1.0	18	SF4
		9	15 1	44.11	19 27.10	155	28.30	9.30	2.7	2.6	45	4	46	.11	7	.3	.6	37	KAO
		9	1744	4.92	19 30.48	155	39.62	6.46	3.1	3.0	39	3	102	.13	7	.5	1.0	24	ML0
		9	19 4	56.78	19 20.08	155	7.35	7.91	1.7	1.5	30	1	100	.08	5	.5	.7	23	SF4
1985	AUG	9	2028	12.23	19 10.03	155	37.86	8.52	2.6	2.2	33	3	115	.13	9	.4	.8	21	LSW
		9	23 2	43.70	19 21.36	155	6.45	5.62	1.3	1.3	26	1	87	.16	3	.6	1.4	17	SF4
		10	229	19.53	19 20.69	155	12.94	7.79	1.1	1.1	30	2	63	.11	4	.5	.8	24	SF2
		10	549	44.90	19 23.02	155	2.44	6.55	1.2	1.1	24	1	130	.10	4	.5	.8	14	SF5
		10	7 2	28.31	19 20.40	155	12.85	6.28	1.6	1.5	36	2	67	.14	4	.5	.8	29	SF2
		10	810	49.07	19 17.93	155	13.28	6.71	1.4	1.3	30	3	95	.09	2	.5	.8	19	SF2
		10	840	25.93	19 20.83	155	3.32	6.48	1.6	1.1	29	2	98	.11	2	.5	.9	15	SF5
		10	13 9	1.75	19 19.86	155	12.20	7.24	1.3	1.1	21	1	81	.10	5	.6	1.1	16	SF3
		10	1614	24.57	19 27.69	155	26.63	10.77	1.8	1.2	35	2	49	.11	5	.4	.7	24	KAO
		10	1927	41.33	19 19.71	155	3.34	4.96	2.0	1.7	28	2	181	.13	1	.6	.8	18	SSF
1986	SEP	10	2056	24.52	19 20.48	155	12.86	7.83	1.6	1.6	35	2	66	.11	4	.5	.6	23	SF2
		10	2117	42.72	19 20.50	155	12.82	7.88	1.6	1.5	31	2	66	.11	4	.5	.6	22	SF2
		10	2146	13.23	19 30.58	155	39.50	7.96	2.3	1.9	33	2	97	.11	7	.5	.8	24	ML0
		10	2235	14.70	19 20.05	155	13.06	6.33	1.1	1.1	29	1	69	.14	5	.5	1.2	26	SF2
		11	14 1	39.02	19 19.76	155	11.30	5.15	1.7	1.5	33	1	40	.11	6	.4	1.3	26	SF3
		11	1513	14.77	19 31.12	155	39.28	6.55	2.9	2.8	38	6	80	.17	7	.4	.9	21	ML0
		11	1931	21.62	19 20.57	155	12.79	7.40	1.6	1.1	26	1	66	.11	4	.5	.9	19	SF2
		11	2020	2.96	19 30.66	155	43.21	.71	1.1	1.1	14	1	74	.18	5	.7	1.8	12	KON
		11	2145	51.48	19 25.61	155	37.26	2.65	2.2	1.5	13	3	89	.15	4	.8	.9	11	ML0
		11	2214	23.25	19 19.97	155	12.16	6.98	1.6	1.4	34	2	80	.11	5	.5	.7	25	SF3
1987	OCT	11	23 2	28.57	19 30.17	155	39.23	8.70	1.3	1.0	19	3	100	.16	6	.7	1.1	12	ML0
		11	23 3	19.07	19 30.06	155	39.12	9.22	1.5	1.1	17	3	99	.15	6	.6	1.2	11	ML0
		11	23 6	40.80	19 30.10	155	39.01	8.31	1.5	1.2	17	3	99	.13	6	.6	1.1	14	ML0
		12	019	54.37	19 19.45	155	6.60	7.67	1.9	1.9	34	1	130	.09	5	.5	.6	22	SF4
		12	020	53.06	19 22.06	155	23.96	7.53	1.3	1.1	19	1	39	.10	4	.5	1.2	16	KAO
		12	332	15.30	19 19.37	155	13.05	4.99	1.2	1.3	30	1	78	.12	4	.5	1.7	25	SSF
		12	351	59.17	19 30.23	155	38.81	9.67	1.2	1.0	12	3	128	.08	5	.7	1.2	12	ML0
		12	5 1	10.50	19 29.84	155	39.58	4.12	2.8	1.0	30	6	78	.12	4	.4	1.0	21	ML0

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YEAR	MON	DA	HRMN	SEC	ORIGIN TIME	LAT N	LON W	DEPTH	AMP	DIR			GAP	RMS	MIN	ERH	ERZ	NO	
										DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS
1983	SEP	12	551	55.91	19 30.48	155	39.50	7.24	2.3	1.6	22	4	102	.13	7	.5	1.1	16	MLO
		12	639	18.11	19 20.82	155	24.40	10.79	1.3	1.1	29	2	57	.14	2	.5	.9	20	SWR
		12	727	51.11	19 20.16	155	9.24	6.97	1.2	1.3	23	2	76	.11	4	.6	1.1	18	SF3
		12	8 8	.34	19 30.01	155	39.81	5.46	2.6	1.6	26	5	78	.12	7	.4	1.4	16	MLO
		12	9 0	18.85	19 30.39	155	39.36	6.04	2.3	1.3	28	4	77	.17	6	.5	1.3	17	MLO
		12	1513	.94	19 19.88	155	6.58	7.77	1.4	1.3	30	2	119	.11	5	.6	.8	26	SF4
		12	1552	52.84	19 19.66	155	7.85	7.83	2.0	1.8	37	2	97	.10	4	.4	.7	22	SF4
		12	16 4	59.42	19 20.86	155	7.83	8.25	2.1	2.4	39	4	61	.10	4	.4	.6	30	SF4
		12	1612	58.71	19 21.19	155	8.27	8.10	2.1	2.4	35	4	71	.11	3	.4	.7	23	SF4
		12	1859	37.16	19 30.18	155	39.83	7.75	3.3	3.4	43	4	90	.11	7	.4	.6	30	MLO
		12	2130	50.18	19 23.64	155	27.99	5.73	1.5	1.4	20	1	54	.11	2	.5	1.2	18	KAO
		13	152	42.69	19 30.11	155	39.41	7.96	2.2	2.2	2	22	.99	13	6	.5	1.0	16	MLO
		13	153	38.43	19 30.19	155	39.18	7.55	2.5	1.9	36	4	76	.15	6	.4	.8	23	MLO
		13	3 3	49.03	19 29.81	155	39.63	5.42	1.3	1.0	21	4	97	.15	7	.5	1.3	16	MLO
		13	340	45.21	19 55.30	155	36.04	13.14	2.5	2.4	29	2	136	.14	22	.6	.8	20	KOH
		13	548	57.63	19 30.28	155	38.79	7.52	2.1	1.6	30	4	94	.18	5	.6	1.0	23	MLO
		13	725	8.99	19 29.20	155	38.29	3.37	2.2	1.4	11	0	213	.08	4	1.0	1.6	6	MLO
		13	739	31.74	19 30.26	155	39.15	7.46	2.3	1.6	27	4	96	.12	6	.5	.8	19	MLO
		13	754	23.62	19 17.21	155	47.65	8.66	2.5	1.5	30	0	97	.18	8	.7	1.0	20	KON
		13	924	7.63	19 18.46	155	29.12	12.15	2.0	1.2	34	0	42	.11	7	.4	.7	30	LSW
		13	1215	42.22	19 19.85	155	9.99	6.60	1.5	1.3	27	3	116	.11	4	.6	1.1	18	SF3
		13	1537	20.03	19 29.71	155	39.44	6.04	2.5	3	34	4	97	.12	6	.4	.9	23	MLO
		13	1636	59.96	19 30.42	155	39.27	8.38	2.3	2.2	29	1	96	.13	6	.6	.9	21	MLO
		13	1748	39.72	19 20.34	155	4.01	6.19	2.3	2.6	41	4	120	.11	2	.4	.6	27	SFS
		13	19 3	56.26	19 20.35	155	12.28	7.64	1.9	1.9	43	3	73	.13	4	.4	.6	34	SFS
		13	1939	57.53	19 21.25	155	3.14	8.89	4.0	4.0	50	1	110	.11	3	.6	.4	48	SFS F
		13	1943	43.11	19 21.09	155	3.21	6.24	2.2	2.4	43	2	107	.13	2	.5	.7	33	SFS
		13	2222	8.86	19 29.88	155	39.11	6.53	2.6	2.1	32	4	96	.14	6	.5	.9	17	MLO
		13	23 3	22.82	19 20.87	155	13.13	7.27	1.9	2.3	43	2	60	.15	3	.5	.6	38	SF2
		13	2333	31.72	19 29.51	155	39.46	6.54	2.6	2.9	33	3	97	.13	6	.5	.8	24	MLO
		14	049	25.86	19 30.34	155	38.86	6.79	2.5	2.5	38	3	94	.13	5	.5	.8	26	MLO
		14	2 6	57.18	19 29.45	155	38.96	7.21	2.3	2.3	35	2	94	.12	5	.4	.7	26	MLO
		14	216	51.74	19 29.60	155	39.25	5.83	1.9	1.6	31	4	96	.13	6	.5	.9	25	MLO
		14	227	18.70	19 29.85	155	39.49	6.14	1.9	1.6	31	4	97	.12	6	.4	.8	24	MLO
		14	254	59.83	19 30.56	155	39.58	5.02	2.7	3.0	43	4	97	.17	7	.5	1.5	32	MLO F
		14	515	59.32	19 17.96	155	13.29	6.21	1.4	1.1	34	2	95	.10	2	.5	.9	28	SF2
		14	523	2.39	19 21.13	155	1.35	6.60	1.8	1.7	34	4	176	.14	6	.6	.5	21	SFS
		14	557	18.28	19 46.17	155	34.48	16.86	2.3	2.3	41	5	89	.09	12	.5	1.4	40	KEA
		14	6 6	17.44	19 16.90	155	26.72	8.94	1.3	1.3	29	1	54	.13	7	.4	.8	21	LSW
		14	643	43.50	19 30.26	155	39.32	8.05	3.5	3.6	46	3	96	.13	6	.4	.5	37	MLO F
		14	656	22.89	19 29.64	155	39.06	6.24	2.2	1.7	34	3	95	.12	5	.5	.8	26	MLO
		14	710	36.58	19 29.93	155	39.23	5.54	2.4	1.7	34	3	98	.13	6	.5	.9	23	MLO
		14	720	23.56	19 29.91	155	39.19	5.40	1.9	1.4	34	2	98	.14	6	.5	.8	26	MLO
		14	854	23.82	19 30.11	155	39.28	5.99	2.2	1.6	30	1	76	.13	6	.4	1.1	27	MLO
		14	855	58.36	19 30.65	155	39.24	7.70	3.0	3.5	42	2	51	.12	6	.4	.6	32	MLO
		14	921	18.93	19 30.23	155	39.17	6.57	2.3	1.6	27	3	80	.13	6	.5	1.0	23	MLO
		14	955	24.11	19 30.12	155	39.11	5.31	2.3	2.1	38	5	76	.13	6	.4	1.3	32	MLO
		14	10 7	55.96	19 30.26	155	39.28	6.12	2.4	2.5	34	3	80	.13	6	.5	1.1	30	MLO

HVO EARTHQUAKE SUMMARY | TST

PAGE FAN

YEAR	MON	DA	HRMN	TIME	LAT	N	LON	W	DEPTH	AMP	DIIIR				GAP	RMS	MIN	ERH	ERZ	NO
											KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM
1983	SEP	14	1016	41.32	19	29.64	155	39.13	6.57	2.5	2.6	3.9	5	74	.15	6	.5	.8	30	MLD
		14	1045	.48	19	30.19	155	39.27	6.44	2.3	1.4	2.5	2	80	.14	6	.5	1.1	22	MLD
		14	1048	32.26	19	18.17	155	13.28	8.09	1.5	1.5	31	3	90	.07	2	.5	.7	29	SF2
		14	1129	14.75	19	19.88	155	7.72	8.26	2.1	2.3	3.9	2	97	.09	5	.4	.7	35	SF4
		14	1258	17.08	19	31.02	155	39.51	7.03	2.1	2.3	3.0	6	129	.13	7	.5	1.1	29	MLD
		14	13 0	15.20	19	21.43	155	3.03	8.41	3.6	3.7	49	4	115	.10	3	.5	.4	43	SF5 F
		14	1312	48.23	19	20.55	155	2.90	8.00	2.3	2.3	42	5	126	.12	1	.5	.4	37	SF5
		14	1337	17.09	19	30.46	155	39.48	7.78	3.7	4.1	44	3	51	.13	7	.4	.6	41	MLD
		14	1346	50.34	19	29.97	155	39.01	6.97	1.9	2.0	24	6	95	.14	6	.5	.8	23	MLD
		14	1415	39.25	19	29.46	155	39.17	6.15	2.0	1.6	31	6	96	.14	6	.6	.8	30	MLD
		14	1444	3.66	19	29.88	155	39.29	6.45	2.3	2.0	39	6	75	.14	6	.4	.7	36	MLD
		14	15 8	57.41	19	30.15	155	39.09	6.62	1.9	1.6	29	4	95	.13	6	.4	.8	20	MLD
		14	1554	12.11	19	29.82	155	38.96	6.41	2.1	1.6	31	1	94	.14	5	.5	.9	21	MLD
		14	17 2	48.76	19	29.72	155	39.25	4.94	2.1	1.5	23	2	96	.14	6	.5	1.6	18	MLD
		14	1727	44.33	19	30.03	155	39.40	5.12	2.3	2.1	38	4	75	.14	6	.4	1.2	29	MLD
		14	2014	35.17	19	24.69	155	34.02	4.91	1.0	1.1	10	1	83	.14	2	.7	1.2	6	MLD
		14	2239	31.17	19	20.30	155	12.00	8.63	2.4	3.0	43	2	76	.13	5	.4	.5	35	SF3
		14	2356	35.59	19	29.93	155	39.30	6.17	2.3	1.7	35	3	96	.14	6	.4	.8	25	MLD
		15	124	15.89	19	19.46	155	6.84	3.84	1.4	1.3	22	0	125	.13	4	.6	1.8	17	SSF
		15	221	39.95	19	11.85	155	27.80	7.12	1.9	1.8	34	0	109	.14	4	.5	.9	28	LSW
		15	338	30.46	19	30.31	155	38.97	6.13	2.3	1.4	26	4	94	.19	6	.5	1.4	21	MLD
		15	342	.71	19	22.54	155	1.87	5.16	2.0	1.5	35	4	137	.20	5	.6	1.6	22	SF5
		15	6 9	52.95	19	30.12	155	38.61	8.74	1.5	1.2	21	1	99	.14	5	.6	1.1	16	MLD
		15	7 4	28.19	19	30.52	155	37.88	8.76	1.4	1.4	14	1	158	.11	4	.8	1.0	12	MLD
		15	923	43.38	19	26.38	155	27.55	7.53	2.2	1.8	40	4	41	.12	5	.3	.8	33	KAO
		15	1659	22.88	19	18.70	155	8.49	6.63	1.7	1.3	38	3	92	.10	3	.5	.9	26	SFA
		15	1819	20.17	19	11.92	155	28.38	8.16	2.2	1.4	30	1	113	.14	5	.5	.9	23	LSW
		15	1838	20.80	19	23.95	155	29.85	9.03	1.6	1.1	23	0	59	.08	5	.4	1.2	19	KAO
		15	1858	28.27	19	30.46	155	39.33	8.51	2.3	1.4	23	4	77	.14	6	.5	1.1	20	MLD
		15	22 3	39.51	19	18.94	155	13.74	6.60	1.5	1.1	34	3	74	.12	4	.4	.7	25	SF2
		15	2222	20.56	19	29.61	155	39.17	5.93	2.3	1.9	36	5	74	.15	6	.4	.8	29	MLD
		15	2315	36.69	19	29.98	155	38.83	6.51	2.3	1.7	33	3	75	.17	5	.5	1.1	25	MLD
		15	2319	21.74	19	29.92	155	38.97	6.93	1.4	1.2	19	1	75	.12	5	.5	1.0	14	MLD
		15	2322	39.52	19	29.33	155	38.94	6.02	2.4	1.4	32	3	92	.13	5	.5	.9	25	MLD
		15	2323	9.34	19	19.15	155	13.27	7.80	1.9	1.5	31	1	76	.11	4	.5	.6	23	SF2
		16	138	4.88	19	29.78	155	38.98	6.62	2.2	1.5	34	3	78	.14	5	.4	.9	24	MLD
		16	459	52.63	19	20.53	155	11.59	7.09	2.0	1.9	40	1	75	.12	4	*.4	.7	32	SF3
		16	7 0	56.46	19	29.80	155	39.33	6.43	2.5	2.6	29	2	78	.13	6	.5	1.0	22	MLD
		16	922	12.22	19	30.19	155	39.19	7.68	4.0	4.1	46	2	50	.12	6	.4	.6	43	MLD F
		16	937	21.05	19	29.50	155	39.01	6.63	2.1	1.6	30	1	95	.11	5	.5	.8	25	MLD
		16	958	.49	19	29.41	155	39.03	7.98	2.7	2.5	35	2	76	.11	5	.4	.6	26	MLD
		16	959	42.56	19	19.45	155	11.09	6.59	1.4	1.3	31	1	98	.10	5	.5	1.0	23	SF3
		16	1024	3.88	19	29.78	155	39.14	6.03	2.5	2.2	33	3	78	.14	6	.5	.9	25	MLD
		16	1026	33.02	19	18.25	155	13.44	8.08	2.3	2.4	43	2	82	.11	2	.4	.5	33	SF2
		16	13 0	9.47	19	20.63	155	9.72	7.22	1.2	1.1	30	2	72	.10	3	.5	.8	17	SF3
		16	1323	18.68	19	17.47	155	13.91	6.33	1.8	1.5	27	1	117	.09	1	.6	.8	16	SF2
		16	15 9	53.21	19	30.08	155	39.06	8.23	4.2	4.2	45	1	50	.13	6	.4	.5	44	MLD F
		16	1512	22.82	19	29.34	155	39.42	6.08	2.3	2.3	31	3	93	.13	5	.5	.8	23	MLD

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERM	ERZ	NO				
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	SEP	16	16	9	50.18	19	22.57	155	24.33	10.02	2.6	2.6	48	3	27	.14	5	.3	.5	42	KAO
		16	1658	9.04	19	20.59	155	8.26	7.00	1.9	1.6	31	3	77	.09	4	.4	.9	21	SF4	
		17	322	3.55	19	20.28	155	12.69	7.69	1.6	1.5	33	1	70	.11	4	.4	.7	24	SF2	
		17	6	3	39.57	19	29.46	155	38.99	6.01	2.1	1.6	30	3	95	.15	5	.5	.9	24	MLO
		17	11	7	35.04	19	20.40	155	11.13	7.36	1.3	1.5	27	2	79	.11	4	.6	.9	22	SF3
		17	1828	9.01	19	30.02	155	38.68	8.77	2.3	1.4	22	1	76	.14	5	.5	1.0	16	MLO	
		17	2053	17.99	19	19.22	155	8.88	6.35	1.4	1.3	29	1	89	.13	4	.6	1.2	21	SF4	
		17	2131	5.10	19	29.19	155	38.96	6.46	2.4	2.1	31	4	91	.13	5	.5	.7	22	MLO	
		17	2242	27.90	19	29.29	155	38.99	5.72	2.3	1.9	32	3	92	.14	5	.5	1.0	24	MLO	
		17	2328	29.07	19	22.05	155	.07	6.38	3.5	4.0	46	3	175	.12	6	.6	.5	41	SF3	
		18	247	41.46	19	22.01	154	59.51	4.40	1.8	1.7	27	0	183	.16	6	.9	2.3	19	SLE	
		18	429	31.69	19	29.38	155	38.82	5.78	2.3	1.6	28	5	94	.11	5	.5	.8	25	MLO	
		18	436	39.96	19	26.51	155	27.38	8.58	2.2	1.7	45	4	42	.12	5	.4	.7	36	KAO	
		18	6	5	32.92	19	21.93	155	4.94	7.22	1.9	1.7	38	2	76	.14	3	.5	.6	26	SF5
		18	1122	6.31	19	29.79	155	39.12	6.29	1.6	1.2	33	3	74	.15	6	.4	.9	22	MLO	
		18	153	18.51	19	21.81	155	28.40	5.93	2.4	2.3	39	3	43	.12	2	.4	1.0	31	KAO	
		18	1429	5.62	19	23.06	155	17.00	12.82	2.4	2.5	50	3	38	.12	1	.4	.3	42	INT	
		18	1840	52.63	19	11.61	155	29.09	32.89	2.5	1.9	39	0	77	.08	4	.7	1.5	35	DLS	
		19	2	4	9.27	19	30.65	155	39.18	8.10	1.6	1.2	19	2	95	.13	6	.5	1.1	13	MLO
		19	231	25.32	19	19.36	155	11.98	6.88	1.7	1.4	40	3	95	.11	5	.4	.7	24	SF3	
9		19	4	8	30.66	19	21.84	154	59.82	5.05	2.0	2.1	33	1	182	.12	6	.7	.8	23	LER
9		19	2272	57.67	19	21.93	154	59.68	3.53	1.7	1.6	22	0	182	.15	6	.9	2.3	17	SLE	
9		19	1029	19.00	19	19.94	155	8.86	7.99	1.6	1.3	31	2	76	.09	4	.5	.8	23	SF4	
9		19	1523	43.53	19	21.51	155	1.62	5.19	1.7	1.1	25	1	168	.14	4	.6	1.1	19	SF5	
9		19	1542	51.43	19	22.00	155	4.60	6.97	2.0	1.9	38	3	77	.11	3	.5	.7	29	SF5	
		19	2228	22.67	19	58.31	155	22.97	11.88	1.6	1.6	15	3	188	.10	7	.8	.5	10	KEA	
		19	23	8	21.61	19	19.32	155	11.86	9.25	2.7	2.7	45	2	96	.12	5	.5	.4	37	SF3
		20	330	54.65	19	26.96	155	25.44	11.77	2.8	2.9	46	2	42	.12	3	.3	.4	41	KAO	
		20	427	45.54	19	25.75	155	37.81	1.65	2.5	2.6	32	5	97	.16	4	.5	.8	28	MLO	
		20	1138	1.58	19	56.35	155	9.48	43.56	2.7	2.7	40	1	267	.10	39	1.8	2.1	35	LOI	
		20	1843	40.21	19	25.19	155	38.65	1.47	2.4	2.7	32	6	185	.11	6	.4	.6	27	MLO	
		21	0	0	4.38	19	28.98	155	38.97	7.33	2.1	1.4	33	7	89	.20	5	.6	.9	30	MLO
		21	547	.49	19	26.58	155	25.61	10.97	2.2	2.4	46	4	43	.12	3	.3	.5	39	KAO	
		21	834	49.35	19	19.18	155	26.48	11.24	3.1	3.5	51	5	55	.13	6	.3	.5	46	KAO	
		21	922	36.66	19	30.04	155	38.89	8.43	1.6	1.4	26	4	98	.12	5	.6	.7	23	SF2	
		21	1345	50.33	19	41.57	155	2.85	3.78	2.4	2.8	25	0	188	.15	21	1.0	20	25	HIL R*	
		21	1738	46.34	19	29.27	155	39.21	8.93	1.7	1.4	25	5	93	.14	6	.5	.8	23	MLO	
		21	2118	48.57	19	29.05	155	39.35	7.10	2.1	1.6	34	5	91	.11	6	.5	.7	32	MLO	
		21	2222	47.85	19	19.63	155	12.51	7.61	1.4	1.6	38	3	83	.09	5	.4	.7	31	SF2	
		22	328	8.55	19	19.24	155	13.04	7.54	1.3	1.1	29	3	80	.08	4	.4	.8	23	SF2	
		22	747	57.54	19	20.99	155	52.42	8.22	2.3	1.5	20	2	214	.18	9	1.1	.8	15	KON	
		22	114	4	57.89	19	20.68	155	12.22	7.61	2.3	2.0	47	6	69	.13	4	.4	.6	36	SF3
		22	1126	56.04	19	21.65	155	1.28	6.80	2.1	2.2	37	3	165	.21	4	.9	.6	24	SF5	

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERM	ERZ	NO				
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	SEP	22	1736	59.43	19	20.83	155	11.15	7.64	2.1	1.7	38	4	71	.11	3	.4	.6	28	SF3	
		22	2129	45.80	19	28.23	155	35.20	.57	2.4	2.6	12	0	56	.15	0	.4	.2	9	MLO	
		22	2250	55.69	19	25.30	155	37.60	.10	2.9	3.1	34	1	75	.14	4	.5	.7	22	MLO	
		22	23	7	29.61	19	21.18	155	1.83	7.37	2.2	1.8	35	3	162	.11	3	.6	.5	27	SF5
		23	221	49.68	19	20.67	155	10.66	7.68	1.5	1.1	24	2	75	.08	3	.5	.7	16	SF3	
		23	658	5.73	19	29.84	155	39.07	6.78	1.5	1.2	21	2	97	.16	6	.6	.1	2	16	MLO
		23	721	5.17	19	43.82	156	10.70	39.42	3.0	2.1	37	2	255	.10	38	1.4	6	1.1	26	HUA
		23	9	1	6.16	19	21.29	155	3.24	7.47	2.2	2.5	42	1	107	.13	3	.6	.5	34	SF5 F
		23	2340	9.51	19	27.23	155	35.57	9.48	2.6	3.4	18	1	48	.13	1	.5	.9	8	MLO L	
		24	016	25.07	19	1.88	155	19.49	36.56	2.8	2.4	51	5	216	.11	20	1.1	1.5	43	LOI	
		24	230	21.89	19	24.47	155	27.22	10.74	1.7	1.2	31	0	35	.12	4	.5	.8	24	KAO	
		24	337	49.93	19	29.76	155	39.21	5.48	1.4	1.6	33	5	74	.14	6	.5	1.0	25	MLO	
		24	6	1	56.97	19	29.26	155	39.14	6.46	1.6	1.4	24	4	93	.11	6	.5	.9	20	MLO
		24	8	7	54.88	19	20.44	155	11.10	7.63	1.7	1.5	37	1	78	.11	4	.4	.7	29	SF3
		24	1519	16.54	19	27.99	155	.66	43.83	2.5	2.5	46	3	105	.09	6	.9	1.3	40	DEP	
		24	1448	19.23	19	22.76	155	1.82	5.53	1.4	1.1	31	1	146	.12	6	.6	1.1	23	SF5	
		24	1724	4.81	19	21.91	155	25.48	9.15	1.7	1.1	34	2	44	.10	4	.4	.7	27	KAO	
		25	1	5	17.31	19	25.84	155	37.87	1.50	2.0	1.8	18	3	177	.11	4	.6	.7	15	MLO
		25	1112	58.04	19	22.42	155	3.31	8.01	2.0	1.7	31	2	114	.12	4	.5	.5	17	SF5	
		26	2	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	NO	REMK		
														KM	MAG	MAG	NR	NS	DEG	SEC		
1983	OCT	2	1137	50.95	19	19.81	155	9.92	7.15	1.8	1.3	26	2	.88	.10	4	.6	1.1	19	SF3		
		2	2341	3.83	19	38.59	155	59.71	37.80	2.0	40	2	265	.09	17	1.9	1.9	34	KON			
		3	1521	2.77	19	30.01	155	39.29	7.23	2.3	1.9	26	4	.96	.13	6	.5	.9	20	MLD		
		3	1549	12.98	19	20.24	155	11.57	8.52	1.6	1.1	28	2	.80	.09	5	.5	.8	17	SF3		
		3	1855	29.09	19	20.18	155	10.50	8.14	1.8	1.9	36	0	.83	.11	4	.4	.7	31	SF3		
		3	2020	23.62	19	19.44	155	11.39	6.62	1.4	1.1	26	0	.98	.11	6	.5	1.2	19	SF3		
		3	2145	38.51	19	20.71	155	4.56	6.27	2.0	1.8	32	2	107	.13	3	.5	.8	26	SF5		
		4	812	33.23	19	19.73	155	7.91	5.22	1.	26	0	95	.11	4	.6	1.6	26	SF4			
		4	10	7	23.79	19	22.11	155	25.97	9.47	1.8	1.3	32	2	.44	.12	3	.4	.8	23	KAO	
		4	1315	28.49	19	19.30	155	11.77	5.27	1.7	1.3	31	3	.98	.12	5	.5	1.6	20	SF3		
		4	1428	16.53	19	19.44	155	8.50	5.16	1.7	1.1	27	2	.82	.10	4	.5	1.5	23	SF4		
		4	1611	50.82	19	22.53	155	25.15	7.78	1.3	1.1	26	1	.41	.13	4	.4	.9	21	KAO		
		4	1646	25.41	19	20.01	155	11.42	5.70	1.8	1.5	26	2	.84	.14	5	.5	1.3	19	SF3		
		4	1945	53.52	19	22.13	155	25.90	10.71	3.1	3.4	48	2	.40	.15	3	.4	.5	43	KAO		
		4	21	2	52.18	19	15.08	155	37.69	7.29	2.3	1.2	34	2	.86	.21	1	.6	1.0	22	LSW	
		5	147	17.29	19	13.36	155	36.87	9.06	2.3	1.4	20	0	.89	.16	3	.7	1.0	16	LSW		
		5	126	6	7.78	19	21.74	155	4.68	8.43	2.4	2.9	40	1	.79	.14	4	.5	.5	26	SF5	
		5	1713	10.17	19	19.68	155	13.19	7.98	1.9	2.2	40	1	.71	.13	5	.5	.6	35	SF2		
		5	1738	34.81	19	20.50	155	9.49	6.78	1.6	1.1	27	2	.73	.11	3	.6	1.1	24	SF3		
		5	1842	15.42	19	18.65	155	15.35	8.79	2.6	2.7	49	3	101	.14	4	.5	.5	44	SF1		
		5	1853	30.47	19	30.52	155	39.47	6.58	3.2	3.4	41	3	.77	.14	7	.4	.9	29	ML0		
		5	2325	28.76	19	30.17	155	39.19	8.72	1.9	1.6	26	4	.80	.12	6	.5	.9	16	ML0		
		6	153	15.56	19	25.69	155	27.85	7.96	2.8	2.6	48	4	.45	.11	5	.3	.6	41	KAO		
		6	254	20.38	19	17.58	155	29.69	6.72	1.4	1.1	30	1	.60	.21	5	.5	.5	17	24	LSW	
		6	339	50.82	19	20.37	155	13.39	8.00	2.5	2.8	45	2	.62	.13	4	.4	.5	39	SF2		
		6	215	5	59.62	19	30.34	155	39.84	5.68	2.3	1.6	27	4	.77	.15	7	.4	1.3	23	ML0	
		7	134	21.95	19	19.72	155	7.59	8.85	2.9	3.2	48	6	102	.09	4	.4	.4	39	SF4		
		7	552	1.59	19	21.20	155	3.12	6.22	1.8	1.2	32	3	123	.19	2	.7	1.1	16	SF5		
		7	1135	20.20	19	30.45	155	39.56	7.89	1.5	1.6	23	3	128	.13	7	.5	1.1	17	ML0		
		7	1721	36.29	19	44.52	155	28.38	15.84	3.9	4.2	53	6	118	.10	5	.4	.7	45	KEA F		
		7	2039	41.97	19	10.26	155	30.50	7.21	1.6	1.8	31	0	113	.16	5	.7	1.1	22	LSW		
		7	2152	58.72	19	34.37	155	54.04	23.66	1.8	1.9	39	2	196	.11	10	1.2	1.3	35	KON		
		8	429	35.55	19	20.79	155	6.37	6.49	2.4	2.7	36	2	.99	.12	4	.5	.8	31	SF4		
		8	612	5.97	19	32.06	155	14.13	24.92	2.4	2.3	48	4	105	.10	14	.6	1.0	41	DEP		
		8	1621	34.90	19	19.52	155	11.55	8.56	3.4	3.5	44	0	.95	.09	6	.4	.3	41	SF1		
		8	2117	49.77	19	57.65	155	36.54	48.48	2.5	1.9	34	3	148	.10	26	.7	1.6	24	KOH		
		9	156	44.38	19	21.87	155	2.03	4.83	1.7	1.3	34	5	143	.17	4	.6	1.5	21	SSF		
		9	556	27.27	19	20.42	155	6.53	7.72	1.6	1.5	31	1	106	.10	5	.5	.8	25	SF4		
		9	1157	22.10	19	19.71	155	11.12	7.21	1.7	1.5	32	2	.92	.10	5	.5	.8	22	SF3		
		9	1314	44.24	19	21.52	154	59.79	4.43	1.8	1.3	33	4	189	.13	6	.7	1.4	21	SLE		
		9	1445	39.19	19	29.98	155	39.06	6.24	2.6	2.4	19	2	.99	.16	6	.6	1.3	13	ML0		
		10	2056	47.21	19	19.46	155	11.57	6.75	1.7	1.2	26	2	.96	.08	6	.5	1.0	22	SF3		
		11	157	14.25	19	22.03	155	28.38	10.36	1.9	1.9	26	0	.43	.11	2	.4	1.1	26	KAO		
		11	417	41.59	19	21.05	155	10.86	7.75	2.3	1.3	38	1	.69	.12	3	.4	.7	37	SF3		
		11	729	38.88	19	22.39	155	28.05	9.06	1.9	1.9	33	0	.38	.13	9	.4	1.1	33	KAO		
		11	835	20.05	19	19.52	155	10.48	5.35	1.7	.8	30	0	.97	.12	5	.5	1.3	30	SF3		
		11	16	7	40.54	19	26.82	155	28.50	9.72	2.0	1.2	38	3	.45	.11	7	.4	.9	28	KAO	
		11	1816	14.63	19	19.22	155	15.31	6.18	1.3	1.1	35	3	.99	.10	4	.4	.9	24	SF1		

## 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	NO			
														KM	MAG	MAG	NR	NS	DEG	SEC		
1983	OCT	11	19	1	39.54	20	9.96		155	52.98	25.94	1.9	31	1	288	.12	12	2.8	1.6	22	KOH	
		11	2232	2.40	19	28.34		155	27.81	8.06	2.3	2.3	43	3	56	.13	7	.4	.7	36	KAO	
		12	142	34.92	19	19.57		155	12.17	7.26	2.6	2.6	47	3	87	.13	5	.4	.6	42	SF3	
		12	232	42.29	19	17.57		155	14.52	8.11	1.5	1.1	16	3	160	.09	2	.6	1.1	13	SF1	
		12	1327	28.74	19	20.23		155	12.01	7.62	1.8	1.5	37	3	78	.10	5	.5	.7	26	SF3	
		12	22	2	7.74	19	26.28		155	24.42	7.62	1.8	1.5	36	3	53	.12	2	.4	.8	26	KAO
		12	22	3	54.11	19	26.27		155	23.50	3.66	1.2	1.4	33	4	110	.15	4	.4	1.3	27	SWR
		13	1850	.49	19	20.68		155	10.84	7.95	2.1	2.1	43	4	75	.11	3	.4	.6	37	SF3	
		13	19	6	25.05	19	30.27		155	1.50	39.72	2.4	2.0	44	3	152	.10	4	.1	1.5	40	DEP
		13	2249	44.33	19	28.91		155	38.98	5.48	2.4	2.1	45	7	71	.16	5	.5	.9			

## HVO EARTHQUAKE SUMMARY LIST

PAGE 59

YEAR	MON	DA	HRRN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO			
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK
1983	OCT	20	2149	59.92	19	38.21	155	29.81	32.65	2.4	1.7	23	1	319	.16	63	2.4	3.6	14	DIS
		20	2254	22.04	19	30.42	155	40.74	2.71	1.2	1.6	21	3	76	.22	9	.7	2.7	15	MLO
	21	310	57.23	19	19.36	155	11.98	6.83	1.6	1.3	32	3	94	.11	5	.5	.9	18	SF3	
	21	1354	1.09	19	16.72	155	22.47	3.71	1.4	1.1	36	3	125	.14	5	.4	1.5	22	SWR	
	21	1712	39.44	19	20.83	155	9.79	8.20	1.8	1.1	32	3	70	.09	2	.4	.7	24	SF3	

## HVO EARTHQUAKE SUMMARY LIST

PAGE 60

YEAR	MON	DA	HRRN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO			
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK
1983	OCT	26	1321	12.82	19	20.45	155	9.63	7.79	2.1	2.1	35	3	75	.09	3	.4	.6	26	SF3
		26	1949	52.12	19	21.73	155	25.42	10.60	1.8	1.1	19	1	77	.12	4	.6	1.2	16	KAO
	26	21	9	47.90	19	22.45	155	2.42	6.07	1.5	1.1	28	1	135	.14	5	.6	.9	20	SF5
	26	2241	40.42	19	20.70	155	17.67	34.15	2.2	2.3	48	3	43	.11	1	.6	1.1	42	DEP	
	27	18	3	35.35	19	19.65	155	7.80	9.25	3.4	3.5	49	5	98	.10	4	.5	.4	42	SF4

27	1853	13.76	19	19.65	155	7.76	9.09	3.2	3.3	46	3	99	.10	4	.5	.4	42	SF4	F
27	2022	10.15	19	20.22	155	30.13	7.72	2.7	2.4	44	3	44	.12	6	.4	.9	36	KAO	
27	2332	17.38	19	19.99	155	12.26	7.72	2.2	2.0	45	3	79	.13	5	.5	.6	38	SF3	
28	417	19.93	19	25.06	155	35.88	40.23	2.5	2.1	19	1	61	.12	4	1.2	2.0	5	DML	L
28	1356	36.60	19	20.18	155	4.00	6.59	1.9	1.7	38	4	129	.12	2	.5	.6	23	SF5	

28	1554	42.40	19	18.73	155	13.73	7.24	1.7	1.5	39	3	67	.11	3	.4	.7	25	SF2	
29	0	1	35.26	19	18.53	155	12.96	6.48	1.5	1.1	33	3	95	.12	3	.5	1.0	23	SF2
29	421	28.84	19	19.09	155	14.77	6.29	1.4	1.1	30	3	94	.12	4	.4	.9	19	SF1	
29	447	59.50	19	17.57	155	22.96	6.66	.8	1.0	16	3	114	.08	5	.4	.9	11	SWR	
29	459	30.23	19	26.27	155	35.69	1.47	2.1	1.8	25	3	120	.21	2	.5	.8	20	MLO	

29	5	5	1.04	19	25.87	155	37.72	2.29	2.6	2.5	26	3	95	.14	4	.6	1.0	20	MLO
29	627	29.19	19	20.61	155	13.50	8.21	1.9	2.2	39	3	59	.12	4	.4	.5	30	SF2	
29	17	3	56.03	19	20.41	155	11.49	7.79	1.7	1.3	37	5	77	.11	4	.4	.6	29	SF3
29	1926	9.09	19	20.87	155	2.84	8.82	3.2	3.4	51	4	127	.13	2	.6	.4	42	SF5	
30	1	9	48.94	19	11.50	155	30.53	3.34	1.3	1.3	25	1	88	.16	6	.5	2.3	18	LSW

30	5	4	11.35	19	20.33	155	11.63	6.75	1.6	1.3	35	3	78	.11	4	.5	.9	27	SF3
30	935	15.02	19	20.97	155	13.98	8.62	1.9	1.3	39	3	64	.12	3	.4	.6	26	SF2	
30	1549	14.52	19	27.07	155	27.25	9.73	3.9	4.0	51	4	52	.13	5	.4	.5	46	KAO	
30	1732	5.95	19	19.57	155	7.71	6.54	1.6	1.3	30	3	101	.09	4	.5	1.0	24	SF4	
30	1853	58.79	19	26.98	155	27.28	7.48	1.9	1.4	36	5	53	.13	5	.4	1.0	28	KAO	

30	1946	50.55	19	21.24	155	3.33	6.77	2.0	41	4	103	.16	3	.5	.7	25	SF5	
30	2027	43.34	19	19.57	155	12.21	4.03	1.5	1.1	28	2	87	.14	5	.5	1.8	20	SSF
30	2226	30.80	19	25.00	155	26.71	9.99	1.7	1.4	35	2	35	.12	3	.4	.7	22	KAO
31	832	38.27	19	27.08	155	27.32	6.68	1.8	1.3	23	2	61	.13	5	.5	1.3	16	KAO
31	1636	43.47	19	24.19	155	16.82	14.77	1.6	1.2	37	2	76	.10	1	.5	.3	31	DEP

NOV	1	1020	11.19	19	21.06	155	7.21	7.25	1.5	1.3	37	4	86	.11	4	.5	.7	25	SF4
1	1547	12.94	19	17.36	155	20.91	4.29	1.1	1.1	24	5	146	.13	4	.4	1.5	17	SFR	
1	1755	47.51	19	19.25	155	15.33	7.56	1.6	1.3	35	4	99	.10	4	.4	.7	27	SF1	
1	21	4	15.87	19	24.54	155	26.05	9.18	1.1	1.1	37	2	35	.15	2	.4	.8	29	KAO
2	255	47.80	19	20.54	155	11.99	7.51	2.6	2.7	46	4	73	.12	4	.4	.5	40	SF3	

2	2248	56.83	19	24.95	155	24.90	10.23	1.6	1.1	37	4	39	.12	1	.4	.6	26	KAO
3	250	51.69	19	12.22	155	18.54	54.56	2.6	2.6	28	2	233	.10	13	1.5	1.1	7	DEP
3	433	38.86	19	20.35	155	30.37	7.69	2.0	1.5	38	1	53	.13	6	.4	1.0	31	KAO
3	2237	55.10	19	27.03	155	27.14	7.15	2.4	1.8	33	1	56	.11	5	.4	1.1	31	KAO
4	538	44.84	19	25.95	155	25.51	7.39	1.9	1.0	37	4	39	.11	1	.3	.9	30	KAO

4	1011	44.47	19	18.77	155	14.86	6.12	1.3	28	3	101	.11	4	.5	1.0	24	SF1




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## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	ORIGIN TIME		LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO	
					DEG	MIN	DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	FM
1983	NOV	5	1222	41.61	19	40.35	155	6.83	14.39	2.6	2.6	43	5	.97	.11	6	.4	.5	32	HIL
		5	1411	32.74	19	19.24	155	9.09	6.40	1.9	1.8	36	3	.92	.13	4	.5	.9	24	SFA
		5	1445	41.36	19	20.91	155	24.59	9.68	2.2	2.4	48	8	.56	.13	3	.4	.5	39	SWR
		5	1526	33.70	19	24.28	155	24.64	9.40	1.6	1.1	38	3	.35	.11	2	.4	.6	26	KAO
		5	1745	3.58	19	19.06	155	13.09	5.59	1.5	1.1	32	2	.81	.13	4	.5	1.1	23	SF2

6	825	54.46	19	19.20	155	13.71	8.54	2.3	2.7	44	2	127	.12	6	.4	.4	34	SF2
6	143	22.95	19	49.36	155	8.07	41.10	2.3	1.7	29	1	210	.11	12	1.2	2.0	23	KEA
6	2335	28.15	19	20.44	155	11.92	8.59	2.5	2.6	46	5	75	.13	5	.4	.5	37	SF3
7	722	34.08	19	25.69	155	25.80	3.65	2.6	2.4	44	4	36	.13	1	.3	.7	32	KAO
7	828	25.15	19	29.19	155	38.36	2.13	2.5	2.5	23	0	181	.10	5	.7	1.4	19	MLO

7	1233	30.33	19	21.25	155	3.21	6.11	1.3	3.0	44	3	108	.13	5	.5	1.0	20	SFS
7	1323	56.99	19	22.85	155	16.55	6.26	1.8	1.9	6	0	128	.09	1	2.4	3.1	3	INT L
7	1437	52.61	19	20.26	155	12.51	8.23	1.6	1.5	33	2	72	.09	5	.4	.6	20	SF2
7	1456	34.15	19	21.16	155	3.69	6.47	1.4	1.1	27	1	88	.12	3	.5	1.0	20	SFS
7	153	30.65	19	22.67	155	14.38	4.24	1.6	1.2	5	0	139	.09	2	1.6	2.6	1	SEC L

7	183	17.03	19	23.81	155	16.00	3.07	1.4	1.7	17	3	101	.10	1	.4	.3	11	SEC
8	855	54.88	19	20.63	155	12.11	7.93	2.2	1.3	31	1	71	.11	4	.5	.8	22	SF3
8	97	.29	19	19.27	155	15.33	8.54	2.0	2.1	38	2	90	.11	4	.4	.6	27	SF1
8	1834	50.17	19	20.39	155	12.84	8.08	2.0	2.2	40	2	67	.12	4	.5	.6	31	SF2
9	217	24.89	19	21.37	155	7.16	4.20	1.1	1.1	11	0	93	.13	5	.7	2.5	10	SSF

9	419	49.34	19	16.90	155	21.60	7.42	2.2	2.7	42	5	131	.12	6	.4	.6	32	SWR
9	447	34.50	19	22.31	155	17.38	31.18	2.1	1.8	47	5	37	.11	2	.6	.9	38	DEP
9	454	20.40	19	19.07	155	16.02	6.85	1.6	1.1	25	0	108	.09	3	.4	.9	25	SF1
9	1013	55.07	19	20.01	155	12.78	5.81	1.5	1.2	31	1	73	.14	5	.5	1.0	24	SF2
9	1333	4.19	18	58.50	155	18.20	27.82	2.2	1.9	41	2	231	.10	27	1.3	2.3	36	LOI

10	66	45.76	19	20.99	155	13.16	7.31	2.1	1.1	30	2	64	.12	3	.5	.8	21	SF2
10	174	25.49	19	19.85	155	12.92	6.72	1.5	1.1	27	2	74	.13	5	.6	1.1	24	SF2
11	755	43.73	19	25.94	155	37.43	2.54	3.3	3.1	31	1	92	.12	3	.4	.8	30	MLO
11	914	3.75	19	23.66	155	24.33	10.17	1.5	1.3	31	2	38	.10	3	.4	.7	25	KAO
11	1045	6.25	19	21.17	155	2.64	6.44	1.9	1.8	34	3	134	.13	2	.5	.7	29	SF5

11	1459	33.13	19	19.66	155	15.19	6.95	1.9	1.9	38	3	90	.11	4	.4	.6	32	SF1
11	1711	24.53	19	20.70	155	11.36	9.14	2.7	2.7	45	4	73	.12	4	.4	.5	37	SF3
11	2030	25.79	19	18.28	155	13.90	6.85	1.3	1.1	21	1	149	.12	7	.7	1.6	18	SF2
11	225	38.32	19	24.90	155	16.05	15.51	3.6	4.0	52	3	36	.11	2	.4	.2	47	DEP
11	229	13.87	19	24.96	155	15.86	15.05	2.1	1.9	49	8	36	.10	2	.5	.2	38	DEP

11	2229	33.21	19	24.99	155	15.96	15.10	1.5	1.2	36	2	112	.10	2	.6	.4	32	DEP
11	2356	17.72	19	21.99	155	1.71	5.53	1.6	1.5	39	5	149	.20	4	.6	1.0	20	SF5
12	61	50.76	19	21.94	155	4.09	4.40	1.1	1.1	23	2	97	.21	4	.8	2.1	19	SSF
12	657	26.14	19	17.04	155	21.32	5.51	1.7	1.8	32	3	130	.13	5	.5	1.2	22	SWR
12	1252	14.51	19	20.48	155	12.88	8.55	2.2	2.5	45	5	66	.13	4	.4	.5	37	SF2

12	1425	51.26	19	18.70	155	12.71	6.38	1.3	1.1	28	2	98	.09	3	.5	1.1	20	SF2
12	1627	56.55	19	19.80	155	11.54	7.43	1.9	1.5	29	1	89	.09	5	.5	.9	24	SF3
12	1716	19.50	19	19.87	155	12.88	7.05	1.4	1.1	29	2	73	.10	5	.5	.9	21	SF2
12	1832	53.69	19	16.19	155	22.52	5.90	1.0	1.3	24	1	134	.08	4	.5	1.6	17	SWR
12	1936	26.44	19	22.41	155	27.72	6.46	1.8	1.1	23	1	81	.10	0	.4	.8	18	KAO

12	205	17.61	19	19.52	155	10.83	7.36	1.7	1.6	38	6	98	.11	5	.4	.8	28	SF3
12	2112	37.65	19	22.02	155	.65	3.59	1.5	1.1	24	0	176	.17	6	.8	2.3	15	SSF
13	047	12.46																

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LDN	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	NOV	16	11	6	6.59	19	23.18	155	29.28	11.73	1.7	1.4	24	1	.91	.11	8	.6	1.0	24	KAO									
		16	11	8	38.61	19	25.32	155	27.69	9.21	1.8	1.1	20	0	.91	.11	4	.5	1.5	19	KAO									
		16	11	13	20.84	19	26.15	155	21.81	11.63	1.5	1.6	25	2	.39	.10	3	.5	.7	19	KAO									
		16	11	19	57.45	19	28.08	155	26.14	9.82	1.7	1.4	29	2	.47	.13	6	.6	1.1	27	KAO									
		16	11	20	20.26	19	22.69	155	25.04	13.47	1.4	17	2	.94	.14	5	.8	1.4	15	DML										
		16	11	22	4.31	19	27.15	155	27.16	1.91	2.8	3.0	21	1	.85	.12	5	.4	1.4	21	KAO									
		16	11	24	50.00	19	23.12	155	26.90	11.09	2.1	1.7	27	2	.41	.11	5	.5	1.1	26	KAO									
		16	11	28	6.54	19	24.61	155	21.45	10.43	1.7	1.1	25	3	.61	.11	4	.5	.7	24	KAO									
		16	11	29	6.70	19	25.77	155	27.73	16.92	2.0	1.0	20	0	.120	.14	5	1.0	1.6	20	DML									
		16	11	31	7.53	19	22.78	155	25.94	11.06	1.5	25	2	.41	.11	5	.6	1.3	25	KAO										
		16	11	33	22.72	19	20.86	155	23.10	11.22	1.8	1.3	12	0	.72	.12	1	.8	1.3	9	SWR									
		16	11	35	48.02	19	25.39	155	20.19	2.75	1.9	2.2	23	1	.58	.16	3	.4	.8	23	KAO									
		16	11	39	37.14	19	25.94	155	27.19	9.76	1.8	1.5	31	1	.62	.13	4	.5	1.0	26	KAO									
		16	11	41	28.33	19	19.45	155	29.77	8.51	1.8	1.5	26	2	.52	.10	8	.4	1.6	20	KAO									
		16	11	42	22.68	19	25.41	155	29.88	9.62	1.8	1.2	29	2	.74	.11	5	.4	.8	25	KAO									
		16	11	44	19.90	19	20.54	155	24.41	12.98	1.5	2.1	10	0	.161	.18	10	1.5	1.7	7	SWR									
		16	11	52	57.95	19	27.91	155	26.27	7.21	2.1	2.1	33	0	.47	.13	5	.4	1.1	28	KAO									
		16	11	55	8.79	19	25.64	155	30.68	11.27	2.8	2.4	34	0	.38	.10	9	.4	.6	32	KAO									
		16	12	0	15.60	19	27.52	155	24.83	9.76	2.4	2.1	26	2	.80	.14	4	.5	1.0	25	KAO									
		16	12	1	51.86	19	25.45	155	27.98	11.54	2.2	2.5	28	0	.42	.08	9	.4	.9	26	KAO									
69		16	12	3	20.84	19	22.02	155	25.68	12.47	1.5	26	1	.44	.11	5	.5	.8	24	KAO										
		16	12	15	33.71	19	23.58	155	30.97	12.01	1.7	2.4	0	.53	.08	11	.5	1.0	23	KAO										
		16	12	24	11.17	19	14.66	155	22.69	3.43	1.2	1.1	16	1	.177	.08	2	.9	.9	16	SWR									
		16	12	24	59.00	19	27.27	155	24.00	11.36	1.7	1.6	24	2	.47	.12	4	.5	.8	22	KAO									
		16	12	30	34.45	19	20.86	155	24.43	8.93	2.6	2.3	14	1	.150	.06	2	1.0	1.2	13	SFS									
		16	12	31	35.08	19	19.92	155	25.65	10.20	1.9	1.8	27	2	.58	.14	4	.5	.9	27	KAO									
		16	12	41	44.24	19	28.95	155	27.22	11.29	2.2	2.1	33	1	.47	.11	6	.4	.6	31	KAO									
		16	12	44	45.23	19	28.47	155	25.92	9.72	2.6	2.1	36	2	.45	.12	6	.4	.8	32	KAO									
		16	12	56	11.78	19	24.53	155	21.85	11.44	1.8	1.2	21	3	.60	.10	4	.5	.7	19	KAO									
		16	13	4	49.31	19	31.62	155	27.98	7.04	2.6	2.3	30	2	.72	.13	1	.4	.9	27	MLD									
		16	13	31	35.08	19	19.92	155	25.65	10.20	1.9	1.8	27	2	.58	.14	4	.5	.9	27	KAO									
		16	13	41	44.24	19	28.95	155	22.86	3.53	2.1	2.0	25	2	.49	.18	4	.5	1.0	24	KAO									
		16	13	44	45.23	19	28.47	155	25.92	9.72	2.6	2.1	36	2	.45	.12	6	.4	.8	32	KAO									
		16	13	56	11.78	19	24.53	155	21.85	11.44	1.8	1.2	21	3	.60	.10	4	.5	.7	19	KAO									
		16	13	57	15.94	19	28.05	155	26.34	10.25	1.8	1.2	25	2	.111	.09	6	.5	1.1	23	KAO									
		16	13	58	3.69	19	19.50	155	26.98	11.38	1.8	1.2	30	3	.51	.12	6	.4	.5	21	KAO									
		16	13	59	48.61	19	24.21	155	25.59	10.42	1.8	1.1	28	2	.65	.12	2	.4	.7	20	KAO									
		16	13	60	47.55	19	29.14	155	23.77	11.75	4.2	4.5	4	44	.11	6	.3	.4	.43	43	KAO	F								
		16	13	64	35.70	19	22.84	155	26.68	10.39	1.9	1.1	27	1	.40	.12	2	.5	.9	26	KAO									
		16	13	66	17.10	19	24.05	155	21.49	11.25	2.8	2.3	41	4	.49	.12	3	.5	.4	38	KAO									
		16	13	67	3.69	19	19.50	155	26.98	11.38	1.8	1.2	30	3	.51	.12	6	.4	.5	21	KAO									
		16	13	68	15.43	19	24.53	155	24.53	1.27	2.0	2.2	33	1	.40	.15	4	.3	1.0	26	KAO									
		16	13	69	48.61	19	24.21	155	25.59	10.42	1.8	1.1	28	2	.65	.12	2	.4	.7	20	KAO									
		16	13	70	4.64	19	22.37	155	22.09	10.21	1.9	1.8	31	5	.50	.10	5	.4	.5	16	KAO									
		16	13	74	21.92	19	23.33	155	26.11	10.13	1.9	1.1	33	1	.38	.14	3	.4	.6	30	KAO									
		16	13	75	3.52	19	28.00	155	22.17	1.79	1.8	1.3	17	1	.119	.12	3	.4	.7	14	KAO									
		16	14	6	13.19	19	27.42	155	24.53	1.27	2.0	2.2	33	1	.40	.15	4	.3	1.0	26	KAO									
		16	14	7	2.74	19	13.50	155	23.38	6.55	1.7	2.1	21	0	.156	.09	2	.6	.8	15	SWR									
		16	14	8	38.15	19	13.22	155	33.22	7.41	2.0	2.2	30	3	.91	.21	6	.6	1.4	23	LSW									

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LDN	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	NOV	16	1410	6.94	19	26.77	155	26.41	3.04	2.6	2.0	34	3	.51	.15	4	.4	.9	31	KAO										
		16	1413	3.18	19	20.74	155	21.94	8.37	1.5	.9	16	2	.68	.															

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HR	MM	SEC	ORIGIN TIME	LAT	N	LON	W	DEPTH	AMP	DIR	GAP RMS MIN ERH ERZ NO						
														KM	KM	KM	FM	REMK		
1983	NOV	16	1815	19	18.85	19 17.27	155	13.57	4.64	1.8	1.3	28	0	.86	.11	0	.5	.9	24 SSF	
		16	1816	17	03	19 17.38	155	13.36	5.36	1.8	2.3	27	0	106	.10	1	.5	1.0	23 SF2	
		16	1819	14	50	19 27.58	155	25.77	9.36	2.1	1.2	32	3	47	.12	4	.4	.8	23 KAO	
		16	1822	42	32	19 21.35	155	22.19	10.44	1.5	.9	29	2	60	.12	3	.5	.7	19 SWR	
		16	1823	24	51	19 22.85	155	24.74	8.76	2.1	1.8	40	4	36	.13	5	.4	.6	28 KAO	
		16	1834	54	74	19 28.30	155	28.49	8.79	1.5	.9	28	2	52	.09	7	.4	.8	17 KAO	
		16	1839	18	23	19 25.05	155	19.68	4.62	1.9	.9	15	1	92	.10	3	.6	1.3	12 KAO	
		16	1840	47	18	19 26.02	155	28.10	10.27	1.9	1.7	37	2	68	.11	5	.4	.7	26 KAO	
		16	1842	17	24	19 12.36	155	22.10	1.67	1.3	1.1	14	1	183	.10	5	.7	1.1	8 SWR	
		16	1848	1	92	19 24.28	155	29.57	8.91	1.8	1.1	12	1	108	.25	5	1.6	1.8	11 KAO	
		16	1858	10	63	19 17.02	155	13.11	4.82	1.8	1.6	23	0	156	.09	1	.6	.9	17 SSF	
		16	19	17	38	19 27.48	155	24.07	7.95	1.8	1.1	38	4	38	.11	5	.3	.6	28 KAO	
		16	1913	11	44	19 27.73	155	25.50	7.88	1.9	1.5	39	3	37	.12	5	.4	.6	29 KAO	
		16	1917	28	21	19 23.28	155	27.51	9.80	1.9	1.1	36	1	38	.11	1	.4	.7	29 KAO	
		16	1918	11	60	19 21.48	155	22.10	9.70	1.8	1.3	34	3	59	.13	3	.4	.6	27 SWR	
		16	1922	19	20	19 20.10	155	7.86	6.88	2.3	2.3	25	4	90	.10	5	.4	.9	15 SF4	
		16	1924	13	93	19 17.96	155	13.16	6.71	1.4	1.3	30	3	100	.08	2	.5	.8	20 SF2	
		16	1934	42	14	19 19.78	155	33.03	29.16	2.0	1.6	12	0	247	.21	10	7.0	7.8	11 DML	
		16	1941	4	16	19 21.84	155	21.63	9.81	1.5	.6	22	2	54	.08	4	.5	1.0	21 SWR	
		16	1942	42	42	19 26.91	155	23.31	10.20	1.8	.3	35	5	69	.12	4	.4	.7	32 KAO	
		16	1946	30	06	19 22.91	155	26.01	10.72	1.7	1.5	34	4	40	.11	3	.4	.7	32 KAO	
		16	1950	28	16	19 29.99	155	22.79	7.91	2.3	2.2	38	3	48	.15	1	.4	.8	34 KAO	
		16	1952	40	88	19 26.09	155	21.08	5.72	2.1	1.6	31	5	47	.11	3	.4	.9	25 KAO	
		16	1956	10	73	19 25.25	155	19.67	8.16	1.5	1.3	28	5	46	.12	3	.4	.8	23 KAO	
		16	20	1	22	19 26.56	155	23.97	9.88	1.8	1.2	26	3	42	.14	3	.4	.8	17 KAO	
		16	20	7	17	05	19 28.14	155	25.10	9.36	1.6	.7	24	3	69	.11	4	.5	.9	16 KAO
		16	2018	27	06	19 28.06	155	21.35	.85	2.0	2.8	34	1	43	.24	1	.5	.6	22 KAO	
		16	2026	54	90	19 22.30	155	24.11	11.73	1.8	1.1	26	3	43	.10	4	.4	.6	20 KAO	
		16	2030	37	28	19 28.42	155	26.19	9.53	2.0	1.5	44	4	43	.13	6	.4	.7	30 KAO	
		16	2042	3	42	19 23.46	155	27.24	10.72	1.8	.9	33	1	37	.10	2	.4	.6	21 KAO	
		16	2047	34	62	19 21.20	155	31.02	8.64	2.3	2.2	34	1	51	.11	6	.4	.7	22 KAO	
		16	2059	35	28	19 23.94	155	30.10	7.70	1.9	1.5	33	1	44	.11	5	.4	.9	22 KAO	
		16	21	2	32	07	19 21.48	155	21.80	9.28	1.8	1.5	25	1	40	.10	3	.5	.7	16 SWR
		16	2111	51	30	19 27.49	155	25.58	7.07	2.1	2.1	37	4	44	.12	4	.5	1.0	25 KAO	
		16	2116	26	28	19 23.17	155	29.52	10.13	1.6	.9	33	2	47	.07	4	.4	.7	21 KAO	
		16	2117	23	43	19 30.07	155	27.18	3.43	3.0	2.9	41	2	58	.14	4	.3	1.0	36 MLO	
		16	2121	23	51	19 12.09	155	22.49	7.59	2.1	2.6	35	0	185	.14	11	.7	.9	25 SWR	
		16	2124	48	94	19 18.93	155	29.97	7.82	1.5	.9	32	2	57	.11	7	.4	.8	21 LSW	
		16	2125	4	35	19 25.24	155	29.73	8.45	2.5	1.8	37	2	37	.11	6	.4	.9	35 KAO	
		16	2126	52	79	19 26.83	155	24.01	11.97	1.8	1.2	25	5	40	.11	4	.5	.7	22 KAO	
		16	2129	44	28	19 27.83	155	27.12	7.30	1.4	.9	20	3	68	.11	6	.4	1.3	18 KAO	
		16	2134	30	90	19 25.00	155	25.53	10.16	1.7	.9	28	2	38	.11	1	.5	.9	26 KAO	
		16	2136	34	45	19 25.59	155	28.46	9.15	2.2	1.5	35	1	39	.09	6	.3	.8	34 KAO	
		16	2144	1	74	19 29.53	155	29.79	2.24	2.8	2.9	36	2	65	.14	6	.3	1.7	30 KAO	
		16	2155	45	58	19 28.53	155	26.36	2.11	1.4	1.1	17	3	84	.11	6	.4	1.2	15 KAO	
		16	2158	7	77	19 14.05	155	21.27	6.04	1.0	1.1	14	1	210	.09	5	1.0	1.8	14 SWR	
		16	22	2	43	81	19 18.64	155	15.47	6.70	1.7	1.1	38	4	112	.12	4	.4	.8	34 SF1
		16	22	4	67	19 25.01	155	19.30	4.05	2.0	1.9	37	3	72	.12	3	.3	.8	34 KAO	

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HR	MM	SEC	ORIGIN TIME	LAT	N	LON	W	DEPTH	AMP	DIR	GAP RMS MIN ERH ERZ NO					
														KM	KM	KM	FM	REMK	
1983	NOV	16	22	5	16.01	19 25.51	155	20.08	8.43	1.8	.9	27	4	.52	.09	3	.4	.8	25 KAO
		16	22	5	44.28	19 8.35	155	35.02	8.17	1.2	28	1	127	.14	13	.6	1.9	27 LSW	
		16	22	7	7.73	19 22.98	155	34.74	9.24	2.1	2.2	32	5	.53	.08	5	.3	.8	29 MLO
		16	2212	46	.03	19 18.01	155	15.85	9.76	3.1	3.3	43	1	140	.12	5	.5	.5	42 SF1
		16	2221	50	.51	19 22.83	155	28.40	1.97	1.8	1.7	27	0	.53	.10	2	.4	.4	27 KAO
		16	2223	25	.27	19 26.57	155	22.86	6.82	1.9	1.7	34	4	.40	.12	4	.3	.8	30 KAO
		16	2233	58	.85	19 15.39	155	26.30	3.71	.8	20	3	101	.12	4	.4	.6	1.2	17 LSW
		16	2234	6	.64	19 21.14	155	23.91	10.35	2.6	2.5	49	8	.44	.13	2	.3	.4	44 SWR
		16	2239	5	.02	19 28.98	155	25.20	2.85	1.9	1.5	28	4	.58	.13	4	.3	.8	26 KAO
		16	2239	32	.98	19 28.03	155	25.68	7.95	2.2	1.5	38	5	.45	.12	5	.3	.7	36 KAO
		16	2245	25	.01	19 28.57	155	25.47	6.00	1.6	1.1	23	2	.82	.12	4	.3	.5	20 KAO
		16	2246	41	.47	19 25.21	155	19.39	4.99	1.4	1.1	18	2	122	.08	3	.4	.9	17 KAO
		16	2248	40	.04	19 31.37	155	27.47	4.02	2.2	2.6	21	2	.92	.15	1	.4	.6	18 MLO
		16	2251	.67	19 24.40	155	21.43	11.33	1.5	1.5	22	3</td							

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DIR	GAP	RMS	MIN	ERH	ERZ	NO			
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	DIS	KM	KM	FM	REMK	
1983	NOV	17	335	7.67	19	31.94	155	27.37	4.42	1.9	1.5	25	2	.88	.12	1	.5	*.6	22 KAO	
			339	15.72	19	26.73	155	25.75	2.68	1.1	23	2	.46	.13	7	.4	2.4	21 KAO		
			343	3.16	19	23.64	155	27.12	10.08	1.9	1.9	30	1	.45	.11	2	.4	*.7	22 KAO	
			349	27.76	19	21.65	155	19.36	31.20	2.6	2.7	45	1	.43	.12	4	.6	1.0	43 DEP	
			353	10.08	19	22.14	155	27.81	8.51	1.8	1.9	32	2	.43	.13	1	.5	*.8	22 KAO	
			4	5	23.87	19	21.86	155	21.85	10.88	1.8	1.1	23	1	.59	.04	4	.5	*.5	16 SWR
			4	40.75	19	14.54	155	17.58	8.62	1.7	1.5	33	1	.71	.11	9	.7	*.8	19 SWR	
			416	20.31	19	27.27	155	25.89	8.41	1.7	1.1	31	1	.47	.12	4	.4	*.7	21 KAO	
			417	8.64	19	21.57	155	19.63	31.97	2.7	3.1	47	3	.45	.12	4	.6	1.0	44 DEP	
			426	41.00	19	26.83	155	29.72	8.67	1.5	1.7	22	3	.63	.11	9	.5	*.4	14 KAO	
			431	22.24	19	30.16	155	27.52	5.33	1.5	1.5	19	2	.80	.08	3	.4	*.4	14 MLO	
			437	22.19	19	26.12	155	30.27	8.45	2.5	1.5	36	2	.41	.11	8	.3	*.9	29 KAO	
			439	2.18	19	25.07	155	19.16	3.87	1.1	1.1	18	2	.123	.11	3	.5	*.8	14 KAO	
			439	38.73	19	27.23	155	24.43	9.23	1.3	1.2	29	2	.59	.11	4	.5	*.8	21 KAO	
			441	53.42	19	27.89	155	25.32	8.29	2.2	1.6	35	2	.43	.12	5	.4	*.7	29 KAO	
			443	25.00	19	20.88	155	2.56	7.21	2.9	2.5	43	4	.143	.12	2	.5	*.4	32 SFS	
			445	51.66	19	20.80	155	4.43	4.72	1.9	2.5	23	1	.103	.19	3	.7	*.2	20 SSF	
			455	8.33	19	27.83	155	26.67	5.58	1.5	1.9	28	2	.49	.14	5	.4	*.1	21 KAO	
			458	42.36	19	22.39	155	26.74	10.34	1.5	1.9	34	1	.42	.12	2	.4	*.6	20 KAO	
			5	6	16.50	19	11.31	155	21.08	5.77	2.1	2.1	39	0	.173	.18	.7	1.0	*.8	28 SWR
			5	1	39.22	19	27.38	155	23.33	9.31	1.2	1.9	26	3	.53	.11	5	.4	*.8	24 KAO
			5	2	42.73	19	13.66	155	20.48	.01	1.8	1.8	12	2	.177	.08	6	.9	*.4	11 SWR
			5	4	18.36	19	31.99	155	26.33	2.08	1.5	1.5	16	1	.149	.14	2	.8	*.7	15 MLO
			5	6	21.18	19	29.84	155	27.10	8.24	1.2	1.7	13	3	.103	.08	4	.4	*.1	11 KAO
			5	6	38.96	19	26.93	155	26.17	9.32	1.5	1.9	28	3	.55	.12	4	.4	*.0	25 KAO
			521	44.88	19	32.92	155	25.55	.01	1.3	1.4	12	1	.183	.13	4	.6	*.1	10 MLO *	
			523	42.08	19	27.20	155	23.34	11.84	1.0	1.0	12	2	.75	.10	5	.6	*.1	17 KAO	
			527	35.87	19	29.31	155	23.96	9.68	1.5	1.5	25	3	.45	.11	2	.5	*.7	22 KAO	
			558	53.62	19	22.80	155	26.92	10.99	2.4	1.8	42	3	.40	.11	1	.4	*.5	38 KAO	
			559	47.80	19	13.17	155	20.45	1.53	1.1	1.1	18	1	.184	.09	7	.7	*.2	15 SWR	
			521	44.88	19	32.92	155	25.55	.01	1.3	1.4	12	1	.183	.13	4	.6	*.1	10 MLO *	
			523	42.08	19	27.20	155	23.34	11.84	1.0	1.0	12	2	.75	.10	5	.6	*.1	17 KAO	
			527	35.87	19	29.31	155	23.96	9.68	1.5	1.5	25	3	.45	.11	2	.5	*.7	22 KAO	
			558	53.62	19	22.80	155	26.92	10.99	2.4	1.8	42	3	.40	.11	1	.4	*.5	38 KAO	
			559	47.80	19	13.17	155	20.45	1.53	1.1	1.1	18	1	.184	.09	7	.7	*.2	15 SWR	
			6	4	44.64	19	26.81	155	28.07	8.53	1.6	1.7	26	2	.100	.10	8	.5	*.1	24 KAO
			6	9	9.96	19	25.85	155	25.15	8.35	1.4	1.6	14	2	.63	.08	8	.5	*.9	6 KAO
			611	56.39	19	25.56	155	21.36	9.54	1.6	1.9	31	3	.33	.13	4	.4	*.8	29 KAO	
			614	8.69	19	20.20	155	20.43	30.50	2.1	1.4	36	3	.69	.12	5	.8	*.4	33 DEP	
			621	43.43	19	27.50	155	29.47	10.47	2.1	1.6	23	0	.49	.12	8	.6	*.1	22 KAO	
			624	13.78	19	27.59	155	26.01	8.05	1.8	1.9	31	2	.76	.13	5	.4	*.9	28 KAO	
			629	4.20	19	20.87	155	29.99	5.74	1.6	1.6	31	1	.53	.10	5	.4	*.1	20 KAO	
			640	58.78	19	22.47	155	26.47	10.99	1.8	1.9	31	3	.38	.10	2	.4	*.7	29 KAO	
			650	8.45	19	23.97	155	27.21	10.32	1.9	1.9	31	3	.61	.11	3	.4	*.9	28 KAO	
			654	42.00	19	25.62	155	21.00	9.24	1.5	1.3	24	3	.51	.10	4	.5	*.1	19 KAO	
			659	23.69	19	24.99	155	21.62	13.54	1.3	1.7	17	2	.74	.05	4	.6	*.7	14 DML	
			712	26.80	19	24.86	155	28.05	8.98	1.8	1.8	30	1	.62	.11	4	.4	*.9	27 KAO	
			722	25.88	19	24.95	155	29.67	8.55	1.8	1.9	27	1	.40	.13	6	.4	*.1	20 KAO	
			728	40.79	19	23.36	155	26.02	9.69	1.8	1.5	36	3	.31	.11	3	.4	*.6	27 KAO	
			730	41.15	19	22.95	155	26.64	11.21	2.7	2.7	45	4	.40	.13	2	.3	*.4	37 KAO	
			735	14.27	19	24.96	155	29.92	8.83	2.1	1.5	40	3	.36	.11	6	.3	*.8	30 KAO	
			741	8.65	19	21.07	155	28.56	8.76	1.6	1.9	25	2	.41	.11	3	.4	*.7	16 KAO	

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DIR	GAP	RMS	MIN	ERH	ERZ	NO		
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	DIS	KM	KM	FM	REMK
1983	NOV	17	745	27.69	19	26.31	155	21.97	9.18	1.4	.9	25	2	.53	.14	3	.5	*.9	18 KAO
			746	15.93	19	32.04	155	27.42	3.03	1.7	1.5	21	2	.67	.17	0	.4	*.5	13 MLO
			750	31.70	19	27.19	155	26.17	3.49	1.7	.9	18	0	116	.10	16	1.0	*.9	12 KAO
			754	22.15	19	28.46	155	25.38	4.50	1.7	.9	31	2	.46	.14	4	.4	*.1	21 KAO
			754	46.54	19	25.17	155	19.81	4.79	1.4	1.1	19	2	.98	.11	3	.4	*.1	14 KAO
			755	9.77	19	24.91	155	20.31	8.04	2.3	2.5	42	3	155	.15	11	.5	*.8	18 KAO
			829	6.24	19	25.52	155	27.75	7.94	1.6	1.3	31	3	.55	.15	5	.5	*.9	20 KAO
			833	2.19	19	22.53	155	25.88	9.71	2.1	1.7	42	4	.42	.13	3	.4	*.5	35 KAO
			833	42.35	19	15.14	155	20.04	8.56	1.6	2.0	15	0	160	.11	6	.8	*.9	15 SWR
			840	4.54	19	26.70	155	27.40	5.12	1.6	.9	35	3	.53	.12	5	.4	*.1	26 KAO
			849	47.51	19	13.91	155	23.01	8.06	2.3	2.5	42	3	155	.15	11	.5	*.7	29 SWR
			925	27.43	19	22.70	155	20.59	8.93	1.4	1.3	38	4	.44	.12	2	.3	*.6	24 KAO
			927	53.06	19	28.09	155	26.60	7.46	1.7	1.1	25	3	.75	.12	5	.5	*.1	19 KAO
			933	15.26	19	26.97	155	23.68	11.95	1.8	1.4	36	5</td						

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMM	TIME	LAT	N	LONG	W	DEPTH	AMP	DIUR	GAP	RMS	MIN	ERH	ERZ	NO	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK
					DEG	MIN	DEG	MIN	KM																				
1983	NOV	17	1353	57.65	19	28.05	155	26.35	7.39	1.9	2.0	.43	3	.47	.13	6	.4	.9	35	KAO									
					17	14	4	7.27	19	23.98	155	26.34	10.28	2.1	1.7	.39	3	.32	.11	3	.4	.6	31	KAO					
					17	142	29.20	19	23.62	155	26.91	9.26	1.8	1.5	.38	3	.37	.12	2	.4	.7	28	KAO						
					17	1423	33.76	19	28.48	155	28.03	4.56	1.9	1.5	.39	4	.56	.14	7	.4	3.3	28	KAO						
					17	1425	7.15	19	21.79	155	22.88	7.73	1.6	1.1	.11	0	143	.15	3	1.2	2.3	7	SWR						
					17	1457	20.66	19	23.08	155	26.38	8.81	1.6	.9	.35	2	.54	.13	2	.4	.7	29	KAO						
					17	15	4	13.46	19	26.88	155	29.09	8.55	1.6	1.2	.34	3	.58	.11	8	.4	.9	20	KAO					
					17	1526	49.75	19	26.80	155	22.71	8.89	1.4	1.1	.33	4	.62	.10	4	.4	.6	23	KAO						
					17	1548	40.59	19	23.20	155	26.58	11.44	1.8	1.4	.34	1	.31	.11	2	.5	.8	30	KAO						
					17	16	9	47.42	19	32.26	155	26.88	3.31	2.2	2.6	.26	2	.78	.15	1	.6	.5	23	MLO					
					17	1625	23.33	19	18.50	155	13.00	8.44	2.5	2.4	.44	5	.94	.13	3	.4	.6	39	SF2						
					17	1632	36.15	19	27.87	155	28.06	7.56	1.7	1.3	.36	4	.52	.11	7	.4	1.0	30	KAO						
					17	1633	6.18	19	23.29	155	27.56	10.90	2.1	1.7	.37	1	.34	.12	1	.4	.7	35	KAO						
					17	1635	32.39	19	20.80	155	23.08	9.18	1.6	1.5	.25	4	.65	.10	1	.5	.6	20	SWR						
					17	1643	57.41	19	22.74	155	20.43	9.57	1.3	.6	.21	2	.58	.10	2	.6	1.0	20	KAO						
					17	1646	23.25	19	21.82	155	23.05	10.21	1.6	1.1	.34	3	.55	.09	3	.4	.7	24	SWR						
					17	1649	17.26	19	25.65	155	28.00	5.13	1.7	1.5	.41	2	.57	.14	5	.4	1.6	31	KAO						
					17	1650	51.50	19	23.80	155	26.84	9.60	2.0	2.0	.44	4	.33	.12	3	.3	.5	32	KAO						
					17	17	4	12.96	19	24.92	155	28.25	8.75	1.7	.9	.26	1	.58	.13	5	.5	1.1	23	KAO					
					17	1724	38.83	19	15.43	155	22.76	7.62	1.2	1.2	.17	1	1.38	.12	3	.7	1.4	12	SWR						
					17	1727	58.28	19	21.30	155	21.94	10.91	1.6	1.1	.34	5	.60	.11	3	.4	.6	25	SWR						
					17	1755	49.79	19	13.99	155	20.27	7.97	1.9	2.1	.41	2	1.61	.16	7	.5	.9	34	SWR						
					17	1757	9.69	19	21.14	155	24.06	12.62	2.0	1.8	.41	5	.52	.13	3	.4	.3	29	SWR						
					17	1758	49.60	19	23.08	155	30.17	10.41	1.5	1.2	.32	2	.49	.09	5	.5	.9	25	KAO						
					17	18	1	5.34	19	28.25	155	27.19	5.05	1.5	1.1	.35	5	.49	.13	7	.3	1.7	26	KAO					
					17	18	6	59.25	19	24.56	155	20.18	6.94	1.4	1.1	.30	3	.52	.11	2	.4	.7	23	KAO					
					17	18	9	40.66	19	26.42	155	27.64	5.07	2.0	1.8	.41	2	.54	.12	5	.5	1.5	35	KAO					
					17	1820	25.58	19	25.16	155	19.53	3.43	1.2	1.2	.20	3	1.18	.10	3	.4	.7	16	KAO						
					17	1827	4.71	19	25.24	155	29.33	9.86	2.0	1.5	.38	2	.38	.11	6	.4	.8	31	KAO						
					17	1844	24.88	19	17.55	155	13.97	6.67	2.2	2.4	.37	4	1.03	.11	1	.5	.8	32	SF2						
					17	1848	2.42	19	24.86	155	20.73	9.47	1.6	1.1	.37	5	.45	.10	3	.4	.5	22	KAO						
					17	1853	9.50	19	25.87	155	27.98	6.58	1.6	1.1	.34	2	.40	.13	5	.5	1.5	35	KAO						
					17	1914	47.44	19	27.21	155	23.71	7.91	1.8	4.6	4	4	.46	.12	4	.5	.6	35	KAO						
					17	1931	29.22	19	25.83	155	25.80	8.57	1.7	1.3	.34	3	.41	.13	2	.4	.9	27	KAO						
					17	1932	48.63	19	24.62	155	21.83	9.44	1.6	1.5	.40	5	.37	.12	4	.4	.6	34	KAO						
					17	1938	50.96	19	25.23	155	29.13	8.78	1.6	.29	1	1	.38	.08	6	.4	.8	24	KAO						
					17	1939	40.90	19	27.45	155	25.54	9.76	1.6	.7	.32	4	.45	.11	4	.4	.9	27	KAO						
					17	1950	38.48	19	13.10	155	22.39	3.34	1.3	1.1	.20	0	1.66	.15	4	.7	1.1	16	SWR						
					17	1951	42.84	19	22.70	155	26.67	10.09	1.9	2.2	.47	5	.36	.14	2	.4	.6	40	KAO						
					17	1956	31.18	19	13.18	155	22.67	3.45	1.3	1.3	.24	1	1.63	.09	5	.5	.7	22	SWR						
					17	1959	.88	19	21.31	155	23.38	11.18	1.5	1.1	.30	5	.48	.10	2	.4	.7	25	SWR						
					17	2012	24.70	19	15.53	155	21.00	7.47	1.2	1.7	.29	0	1.47	.13	6	.6	1.1	27	SWR						
					17	2017	4.63	19	21.64	155	23.63	9.69	2.2	2.3	.41	4	.40	.15	3	.4	.7	35	SWR						
					17	2018	35.72	19	27.73	155	24.49	2.16	1.5	1.9	.27	5	.64	.12	4	.5	.7	24	KAO						
					17	2039	57.81	19	24.82	155	19.15	4.88	1.0	1.1	.18	0	1.00	.10	2	.4	1.0	18	KAO						
					17	2040	38.63	19	28.79	155	22.79	3.15	1.3	1.5	.21	2	1.42	.14	2	.7	.6	19	KAO						
					17	2044	15.20	19	19.26	155	13.17	8.06	1.3	.9	.18	2	.77	.07	4	.5	1.1	14	SF2						
					17	21	7	1.53	19	24.31	155	24.14	8.80	1.5	.6	.28	3	.52	.13	3	.5	.9	20	KAO					

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMM	TIME	LAT	N	LONG	W	DEPTH	AMP	DIUR	GAP	RMS	MIN	ERH	ERZ	NO	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK			
1983	NOV	17	2110	.09	19	20.97	155	23.82	9.74	2.0	2.3	46	4	.36	.14	2	.4	.5	35	SWR												
			17	2116	4.72	19	28.20	155	23.67	.50	1.4	1.4	18	2	.90	.14	3	.3	.7	13	KAO											
			17	2119	19.35	19	27.76	155	26.74	6.48	1.6	1.1	31	2	.49	.15	5	.5	.4	1.3	23	KAO										
			17	2125																												

## 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	NO				
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	NOV	18	439	1.64	19	26.74	155	23.75	10.43	1.5	1.2	26	4	.65	.13	4	.4	.7	17	KAO	
			442	24.89	19	25.15	155	20.51	8.58	1.8	1.3	38	6	.80	.13	3	.4	.6	24	KAO	
			450	47.76	19	24.72	155	20.19	8.12	1.0	20	1	46	.10	6	.4	1.0	19	KAO		
			456	12.45	19	23.10	155	20.48	7.72	1.1	25	1	64	.11	2	.5	.9	20	KAO		
			526	17.44	19	27.02	155	25.96	2.09	1.5	.8	19	2	.48	.15	4	.4	.9	12	KAO	
			529	6.64	19	22.20	155	24.08	12.55	2.1	1.8	49	6	.34	.11	4	.3	.3	36	KAO	
			535	31.22	19	24.65	155	30.29	10.76	1.5	1.4	34	1	.46	.07	6	.4	.8	23	KAO	
			539	27.74	19	27.53	155	24.30	8.41	1.1	.7	28	3	.66	.09	4	.4	.8	17	KAO	
			549	57.53	19	28.42	155	27.20	3.22	1.5	1.1	30	4	.60	.11	7	.3	1.4	22	KAO	
			610	43.65	19	25.06	155	28.91	12.78	.8	.28	1	62	.20	5	.7	1.0	21	KAO		
			613	38.23	19	23.16	155	26.26	9.72	1.4	1.3	37	3	.45	.11	3	.4	.6	31	KAO	
			619	39.99	19	50.56	155	34.74	15.40	2.6	1.9	33	2	.111	.11	10	.6	.9	24	KEA	
			651	4.78	19	24.95	155	21.92	11.04	2.5	3.3	49	6	.36	.11	5	.5	.4	38	KAO	
			7	14.22	19	25.10	155	21.05	8.61	1.4	.6	28	5	.85	.12	4	.5	.7	22	KAO	
			7	45.14	19	28.15	155	25.21	7.63	1.9	1.3	38	3	.43	.13	5	.4	.8	27	KAO	
			7	524.88	19	23.24	155	25.82	9.81	2.1	2.0	40	2	.30	.12	3	.4	.7	34	KAO	
			7	6.45	19	27.60	155	25.04	8.29	1.5	.4	26	3	.45	.11	4	.4	1.0	22	KAO	
			734	16.32	19	22.57	155	27.87	10.17	1.5	1.1	40	3	.38	.13	0	.4	.7	33	KAO	
			742	30.87	19	50.56	155	34.70	16.01	2.9	3.0	42	3	.111	.09	14	.6	1.3	28	KEA	
			818	46.99	19	24.97	155	19.35	4.42	1.3	.23	2	5	.120	.13	2	.5	.8	18	KAO	
			832	48.87	19	24.74	155	20.16	7.69	1.5	1.1	33	5	.44	.13	2	.4	.7	27	KAO	
			850	35.49	19	26.02	155	29.73	8.45	1.8	1.3	36	3	.41	.10	8	.4	.9	26	KAO	
			9	0.56	19	25.87	155	19.72	6.59	1.1	1.1	24	5	.102	.11	4	.4	.8	12	KAO	
			931	20.16	19	9.88	155	20.43	4.69	2.1	2.5	37	0	.214	.18	10	1.0	1.8	22	LOI	
			951	33.50	19	23.23	155	27.02	9.87	2.2	2.4	44	5	.32	.12	2	.4	.5	38	KAO	
			954	38.15	19	25.93	155	19.91	3.83	2.2	2.6	32	1	.47	.13	4	.4	1.3	23	KAO	
			958	6.04	19	22.03	155	26.45	11.11	2.4	2.1	44	4	.42	.14	2	.4	.6	36	KAO	
			958	32.20	19	22.06	155	26.15	9.29	2.5	2.5	37	3	.41	.13	3	.4	.7	29	KAO	
			1023	.17	19	13.97	155	23.29	6.05	2.1	2.7	40	0	.153	.16	1	.5	1.0	28	SWR	
			1036	45.79	19	13.78	155	22.98	6.21	2.0	2.5	35	0	.156	.14	2	.6	.9	24	SWR	
			1052	7.23	19	18.05	155	23.77	8.18	1.7	1.9	33	2	.89	.14	4	.5	.9	21	SWR	
			1059	46.07	19	29.20	155	24.84	1.42	1.7	2.0	23	4	.88	.15	3	.3	.8	20	KAO	
			11	5.41	19	24.86	155	20.51	7.41	2.1	2.1	38	3	.45	.12	3	.4	.7	31	KAO	
			1127	6.72	19	28.44	155	24.94	.02	1.8	2.1	32	3	.43	.14	4	.3	.5	22	KAO	
			12	7	45.93	19	11.65	155	27.57	9.40	1.8	1.6	23	0	.209	.11	8	.9	1.1	18	LSW
			1220	23.89	19	25.93	155	21.71	10.62	1.8	1.4	43	6	.32	.12	4	.4	.5	30	KAO	
			1232	8.65	19	19.69	155	26.99	10.12	1.6	1.3	31	2	.50	.13	7	.4	.7	23	KAO	
			1245	11.48	19	28.53	155	28.60	5.52	2.1	1.3	30	2	.74	.16	7	.5	.2	24	KAO	
			1326	.72	19	27.43	155	27.45	7.43	1.5	1.3	31	2	.52	.18	6	.4	1.1	23	KAO	
			1359	42.20	19	31.78	155	36.90	10.27	1.7	1.4	21	3	.111	.18	3	.7	.9	16	MLD	
			1432	33.67	19	26.82	155	23.41	10.45	1.8	1.6	38	5	.48	.10	4	.4	.6	28	KAO	
			1443	27.99	19	20.04	155	24.53	10.94	.8	.29	2	4	.65	.09	2	.4	.8	20	SWR	
			1512	2	16.60	19	28.72	155	25.52	6.46	1.5	1.0	33	3	.49	.14	4	.4	1.0	24	KAO
			1515	47.02	19	28.76	155	26.26	4.80	2.1	2.1	41	5	.44	.16	6	.4	.2	30	KAO	
			1529	35.20	19	29.07	155	25.36	5.17	1.7	1.3	32	2	.59	.13	4	.4	1.2	25	KAO	
			1533	26.13	19	22.91	155	25.84	9.47	1.5	1.0	35	4	.40	.12	5	.4	.7	27	KAO	
			1541	52.19	19	30.55	155	28.80	4.82	1.3	.9	28	3	.71	.12	3	.4	1.3	22	MLD	
			16	7	45.98	19	26.11	155	28.97	8.33	1.6	.9	36	5	.42	.11	7	.4	.9	27	KAO

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## 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	NO				
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	NOV	18	1624	21.56	19	29.92	155	26.68	1.93	2.9	3.2	41	2	.49	.14	4	.3	1.2	29	KAO	
			1630	6.44	19	28.16	155	26.49	10.02	2.8	2.5	44	2	.55	.12	6	.4	.7	38	KAO	
			1635	43.01	19	27.15	155	27.39	7.49	1.9	1.3	38	4	.52	.12	5	.4	1.0	31	KAO	
			1643	2.57	19	26.87	155	25.99	8.56	2.2	1.5	45	3	.40	.13	5	.4	.7	34	KAO	
			1711	7.46	19	23.01	155	25.70	9.46	2.1	2.2	46	4	.39	.11	4	.5	.5	39	KAO	
			1720	7.67	19	27.62	155	26.21	7.78	2.0	1.4	44	4	.48	.14	5	.4	.7	33	KAO	
			180	0	29.53	19	22.29	155	27.33	9.60	2.0	1.3	36	2	.40	.12	1	.4	.7	26	KAO
			181	1	39.87	19	24.75	155	20.27	8.17	1.9	1.4	38	4	.45	.12	2	.4	.7	31	KAO
			1813	34.44	19	31.37	155	28.20	2.88	1.8	2.2	32	2	.55	.15	2	.4	.6	18	MLD	
			1817	33.14	19	27.75	155	29.90	8.59	1.6	1.9	31	3	.50	.15	9	.5	1.2	24	KAO	
			1842	14.41	19	12.83	155	20.56	.00	1.6	1.2	30	3	.188	.09	7	.7	.5	22	SWR	
			1919	24.51	19	26.73	155	28.74	8.58	2.3	1.3	43	4	.44	.15	7	.4	1.0	34	KAO	
			1938	15.25	19	27.96	155	26.78	5.53	1.7	1.1	39	5	.49	.13	6	.5	1.1	30	KAO	
			1949	9.67	19	23.45	155	26.32	10.34	1.5	.8	31	1	.38	.11	3	.4	.9	25	KAO	
			1958	10.17	19	20.02	155	28.73	10.15	1.5	1.5	22	2	.104	.12	5	.6	1.1	20	KAO	
			2024	15.37	19	27.56	155	28.01	9.35	1.6	1.2	24	3	.78	.10	7	.5	1.1</			

## 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	NO	
												DEG	MIN	SEC	DIS	KM	KM	FM	REMK	
1983	NOV	19	118	59.05	19	25.08	155	21.53	11.01	1.3	.7	29	5	.41	.09	4	.4	.8	24 KAO	
		19	135	7.19	19	26.84	155	26.73	8.32	1.7	.7	30	4	.51	.10	4	.4	.8	25 KAO	
		19	137	6.82	19	32.07	155	37.41	10.36	.8	.28	4	161	.17	4	1.0	.7	26 MLO		
		19	137	51.72	19	17.40	155	15.65	10.49	4.1	.0.1	49	3	146	.13	5	.5	.5	47 SF1 F	
		19	148	5.74	19	29.94	155	20.11	8.30	1.7	1.1	36	5	.45	.12	2	.4	.8	31 KAO	
		19	148	56.25	19	22.79	155	25.77	10.19	1.7	1.0	35	3	.31	.12	3	.4	.8	31 KAO	
		19	158	50.02	19	22.64	155	26.50	10.48	1.6	1.3	33	3	.43	.11	2	.4	.7	27 KAO	
		19	21	29.50	19	23.12	155	27.02	11.18	1.8	1.1	33	1	.33	.11	2	.4	.8	29 KAO	
		19	211	23.17	19	28.14	155	27.31	4.85	1.9	1.2	44	5	.49	.14	7	.3	2.1	31 KAO	
		19	213	44.63	19	20.62	155	3.08	5.37	2.0	1.3	30	4	110	.12	1	.5	1.0	20 SF5	
		19	215	35.51	19	23.65	155	26.31	9.99	1.6	1.0	29	1	.32	.09	3	.4	.7	23 KAO	
		19	227	34.55	19	27.57	155	23.94	8.50	2.4	2.5	49	5	.33	.15	4	.4	.6	42 KAO	
		19	234	35.24	19	25.10	155	30.11	8.05	2.4	2.0	43	4	.36	.10	7	.3	.8	33 KAO	
		19	329	36.86	19	18.34	155	15.92	8.42	2.4	2.1	40	2	135	.10	4	.5	.6	37 SF1	
		19	332	21.61	19	29.15	155	23.70	9.77	1.4	1.2	36	4	.68	.12	1	.4	.6	26 KAO	
		19	354	9.39	19	18.05	155	15.86	6.16	1.8	1.5	35	0	132	.12	5	.5	.9	30 SF1	
		19	420	13.60	19	23.42	155	26.02	10.89	1.6	1.2	33	2	.37	.09	3	.4	.5	26 KAO	
		19	430	1.08	19	22.59	155	21.60	10.59	1.3	3.4	3	.49	.10	4	.4	.6	25 KAO		
		19	51	3.29	19	25.29	155	19.97	8.05	1.0	.9	21	3	130	.09	3	.5	1.1	16 KAO	
		19	514	19.61	19	29.02	155	20.00	6.73	.9	.20	3	124	.08	3	.5	1.2	15 KAO		
		19	538	50.58	19	18.46	155	15.91	8.68	2.2	2.0	44	3	134	.11	4	.5	.5	34 SF1	
		19	613	22.04	19	23.30	155	25.85	9.85	1.6	1.8	38	4	.38	.12	3	.4	.6	32 KAO	
		19	622	.21	19	28.49	155	25.79	7.09	2.9	2.9	50	6	.63	.15	5	.4	.8	41 KAO	
		19	632	37.13	19	28.13	155	26.00	9.27	3.0	3.1	51	5	.43	.14	5	.4	.6	44 KAO	
		19	636	20.08	19	22.77	155	30.03	9.39	2.1	1.5	37	0	.40	.09	4	.4	.7	33 KAO	
		19	657	52.91	19	27.09	155	26.56	5.35	1.9	1.1	33	4	.50	.14	4	.4	1.3	24 KAO	
		19	7	4	16.03	19	23.05	155	25.57	9.20	1.8	1.3	34	3	.64	.11	4	.4	.7	29 KAO
		19	722	49.20	19	25.15	155	20.04	6.96	.6	.20	2	107	.10	3	.5	1.0	16 KAO		
		19	728	23.07	19	25.95	155	28.18	6.32	2.8	2.4	40	3	.46	.11	5	.3	1.0	32 KAO	
		19	742	25.81	19	26.61	155	22.90	8.94	2.7	4.9	4	48	.13	5	.4	.6	40 KAO		
		19	837	17.22	19	25.51	155	20.74	10.75	1.4	.9	29	3	.50	.09	4	.5	.9	25 KAO	
		19	845	6.10	19	32.23	155	26.87	3.22	2.0	2.5	25	3	124	.12	1	.5	.6	22 MLO	
		19	9	8	10.69	19	32.08	155	27.37	4.13	2.1	2.5	32	4	.67	.13	1	.4	.5	25 MLO
		19	917	9.57	19	25.70	155	21.31	10.54	1.7	.9	29	2	.47	.10	5	.4	.8	26 KAO	
		19	918	34.62	19	25.07	155	30.02	10.28	3.2	3.2	49	5	.35	.12	6	.3	.5	42 KAO	
		19	922	4.92	19	26.30	155	29.61	9.84	1.8	1.4	28	2	.67	.08	6	.5	1.1	26 KAO	
		19	930	44.55	19	15.01	155	17.72	3.81	1.5	1.5	25	0	166	.10	6	.5	1.7	23 SWR	
		19	935	24.97	19	27.25	155	29.67	10.66	3.0	3.2	50	5	.34	.12	9	.3	.5	43 KAO	
		19	947	7.52	19	27.36	155	25.07	9.61	2.2	2.2	44	5	.40	.12	6	.4	.6	38 KAO	
		19	951	21.25	19	22.61	155	20.76	11.01	1.8	1.2	30	3	.45	.09	3	.4	.8	27 KAO	
		19	1121	12.34	19	28.05	155	26.91	3.31	1.8	1.4	35	4	.63	.13	6	.4	1.5	30 KAO	
		19	1126	54.32	19	24.59	155	28.92	9.09	1.9	1.5	31	2	.38	.08	5	.4	.8	27 KAO	
		19	1130	32.21	19	25.08	155	21.44	11.98	3.0	3.2	46	5	.34	.10	4	.5	1.4	40 KAO	
		19	1251	50.17	19	26.15	155	17.15	16.11	1.9	1.4	39	4	.87	.10	2	.5	.4	35 DEP	
		19	1343	40.32	19	27.58	155	25.43	9.84	1.9	2.1	42	4	.47	.12	4	.3	.7	38 KAO	
		19	1349	18.38	19	27.77	155	26.60	4.62	1.6	1.3	32	4	.49	.14	5	.4	2.5	28 KAO	
		19	1358	.31	19	27.32	155	25.64	6.25	1.9	2.5	35	3	.44	.11	4	.5	1.0	32 KAO	
		19	141	19.62	19	25.98	155	21.51	10.26	1.8	1.2	31	4	.51	.10	3	.4	.8	26 KAO	

## 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	NO	
												DEG	MIN	SEC	KM	MAG	NR	NS	DEG	SEC
1983	NOV	19	14	7	58.92	19	26.82	155	29.09	10.85	2.2	2.4	39	2	.45	.08	8	.3	.7	35 KAO
		19	1413	57.06	19	23.59	155	26.59	11.18	1.5	2.9	1	.37	.11	3	.4	.9	28 KAO		
		19	1459	23.59	19	25.60	155	21.05	10.13	1.7	1.2	34	4	.47	.13	4	.5	.8	30 KAO	
		19	1510	33.17	19	22.00	155	26.54	9.37	1.9	1.7	37	4	.42	.11	2	.4	.7	33 KAO	
		19	1533	42.40	19	27.17	155	29.58	10.23	2.3	1.9	43	4	.46	.12	7	.4	.6	35 KAO	
		19	1534	22.39	19	23.84	155	25.53	10.38	2.2	2.3	41	4	.32	.11	3	.4	.6	34 KAO	
		19	1540	16.62	19	20.47	155	24.31	11.34	1.6	.9	29	3	.63	.12	2	.5	.9	23 SWR	
		19	1616	28.28	19	27.56	155	24.44	8.49	1.4	.9	33	4	.59	.12	4	.4	.8	23 KAO	
		19	1629	16.23	19	27.58	155	23.39	1.61	2.2	2.4	43	5	.42	.14	4	.3	.7	34 KAO	
		19	1657	18.33	19	24.66	155	26.80	11.83	1.6	.9	22	2	.75	.16	3	.9	1.3	19 KAO	
		19	17	9	23.10	19	25.82	155	21.31	8.90	1.7	1.2	30	3	.51	.11	5	.4	.7	24 KAO
		19	1817	.09	19	27.29	155	25.71	9.06	1.7	1.2	32	2	.45	.14	4	.4	.9	28 KAO	
		19	1827	24.16	19	23.27	155	26.60	10.04	2.1	2.0	40	3	.39	.11	2	.3	.5	36 KAO	
		19	1851	31.82	19</															

## 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	NO	ORIGIN	TIME	HRMN	SEC	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK							
																		YEAR	MON	DA	HRMN	SEC	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK						
1983	NOV	20	9 1	51.30	19	24.83	155	21.58	10.08	1.9	1.5	45	5	.46	.13	4	.3	.5	34	KAO	1983	NOV	21	018	12.45	19	25.34	155	19.93	7.54	1.1	.6	24	2	114	.10	3	.5	1.1	19	KAO	
		20	933	56.15	19	12.60	155	22.92	2.45	1.5	1.9	27	2	.174	.10	4	.5	.8	19	SWR			21	121	17.70	19	23.20	155	23.59	9.77	1.9	2.7	17	2	65	.13	5	.5	1.1	14	KAO	
		20	934	46.94	19	22.19	155	30.07	7.66	1.8	1.9	36	3	.45	.12	4	.4	.9	30	KAO			21	255	26.50	19	27.75	155	25.20	8.73	1.6	1.1	37	4	42	.13	5	.4	.6	24	KAO	
		20	10	8	28.41	19	22.65	155	28.32	9.18	2.6	3.1	49	5	.36	.12	1	.3	.5	43	KAO			21	334	.09	19	25.23	155	21.53	9.41	2.2	1.5	42	4	34	.13	4	.4	.5	34	KAO
		20	1019	29.73	19	22.96	155	26.58	10.16	1.6	1.3	34	4	.51	.10	2	.4	.6	24	KAO			21	348	53.79	19	21.46	155	22.11	11.62	1.6	1.6	32	3	59	.10	3	.4	.6	22	SWR	
		20	1030	48.08	19	25.66	155	20.00	8.78	1.7	1.1	30	4	.118	.10	4	.4	.7	21	KAO			21	411	33.94	19	24.78	155	28.47	8.34	2.0	1.5	34	1	36	.10	5	.4	.8	30	KAO	
		20	1132	36.89	19	28.28	155	26.74	8.35	1.7	1.5	36	3	.61	.13	6	.4	1.0	27	KAO			21	440	48.15	19	26.08	155	26.45	8.84	1.8	1.5	36	3	48	.12	6	.4	.9	29	KAO	
		20	1133	54.43	19	21.96	155	1.83	7.22	2.1	1.8	35	5	.147	.14	4	.5	.6	25	SFS			21	450	30.80	19	20.31	155	11.43	8.02	2.5	2.6	45	3	80	.13	4	.4	.6	35	SFS	
		20	1159	47.63	19	17.81	155	20.86	7.95	1.6	1.9	36	4	.123	.11	4	.4	.7	24	SWR			21	5 5	20.56	19	27.40	155	25.85	5.58	1.6	1.3	34	3	47	.12	4	.3	1.1	22	KAO	
		20	1217	42.28	19	25.39	155	19.88	7.78	1.8	1.3	33	5	.60	.10	3	.3	.7	26	KAO			21	534	10.24	19	26.12	155	26.99	9.16	1.7	1.2	31	3	44	.10	7	.4	.9	23	KAO	
		20	1233	12.50	19	21.18	155	22.34	9.53	1.5	1.3	18	2	.91	.10	2	.8	1.0	12	SWR			21	629	21.31	19	15.08	155	22.63	7.15	1.3	1.5	29	1	163	.10	3	.5	1.0	21	SWR	
		20	130	24.17	19	24.65	155	25.12	7.79	1.7	1.3	40	5	.34	.12	1	.3	.8	31	KAO			21	653	23.50	19	25.31	155	21.25	8.89	1.6	1.6	37	6	40	.13	4	.4	.7	28	KAO	
		20	1325	42.85	19	24.14	155	27.29	9.52	2.0	1.8	39	1	.29	.11	3	.4	.7	30	KAO			21	653	34.22	19	20.70	155	4.34	4.27	2.4	2.5	40	6	106	.22	3	.6	1.8	31	SSF	
		20	1338	45.69	19	16.78	155	15.33	5.03	1.6	1.6	30	1	.169	.10	3	.6	1.1	21	SF1			21	7	7	22.24	19	22.87	155	27.68	9.87	2.2	2.2	37	4	48	.12	1	.4	.7	30	KAO
		20	1342	22.64	19	18.51	155	13.91	5.47	1.2	.9	25	2	.83	.11	3	.5	1.2	21	SF2			21	818	54.04	19	22.73	155	20.74	8.79	1.7	1.7	44	6	44	.13	3	.5	.5	32	KAO	
		20	1412	4.79	19	25.76	155	29.35	9.26	2.1	1.7	41	4	.40	.11	7	.4	.8	31	KAO			21	10	9	29.30	19	21.11	155	28.68	8.84	1.7	30	1	47	.13	5	.5	.4	.9	26	KAO
		20	1432	32.79	19	27.43	155	27.01	5.41	1.8	1.5	35	3	.51	.11	5	.3	1.1	23	KAO			21	13	3	32.01	19	24.04	155	26.42	10.20	1.8	2.1	37	3	36	.11	3	.4	.7	30	KAO
		20	1441	12.98	19	25.15	155	29.90	8.58	2.0	1.3	37	3	.41	.10	6	.3	.9	29	KAO			21	13	4	54.51	19	27.16	155	22.84	9.72	2.8	2.8	37	4	41	.12	4	.4	.6	39	KAO
		20	1544	41.54	19	21.42	155	2.69	7.05	1.9	1.7	33	1	.137	.14	3	.6	.6	26	SFS			21	1328	30.30	19	25.54	155	21.12	10.41	2.7	2.6	46	3	32	.12	4	.3	.5	39	KAO	
		20	1614	34.97	19	24.04	155	25.79	10.61	1.9	1.5	37	2	.32	.10	3	.4	.6	26	KAO			21	1359	10.49	19	21.57	155	2.44	7.02	2.1	2.6	39	3	135	.12	3	.5	.4	.9	29	SFS
		20	1626	23.32	19	25.42	155	21.20	8.71	1.5	.9	29	6	.84	.10	4	.4	.6	23	KAO			21	14	2	8.73	19	27.48	155	26.88	5.18	1.6	1.1	30	5	65	.13	5	.3	1.4	24	KAO
		20	1631	30.65	19	27.22	155	29.40	9.76	1.5	35	3	.47	.11	8	.4	.9	23	KAO			21	1448	45.74	19	22.15	155	29.93	8.83	2.6	3.1	46	2	33	.11	4	.3	.6	42	KAO		
		20	1636	24.92	19	25.18	155	22.32	10.59	2.0	1.4	37	3	.42	.11	5	.4	.5	26	KAO			21	1524	41.84	19	28.01	155	26.37	9.68	1.8	1.5	39	5	48	.12	6	.4	.8	30	KAO	
		20	1723	51.56	19	31.73	155	26.58	24.31	1.8	1.6	38	4	.40	.10	2	.6	.6	28	DML			21	16	4	3.35	19	21.21	155	29.51	6.06	1.8	1.9	32	3	44	.12	4	.4	1.1	28	KAO
		20	1725	35.29	19	27.06	155	27.16	6.05	1.5	1.3	28	3	.51	.11	5	.4	1.3	21	KAO			21	1640	8.12	19	25.81	155	27.28	4.98	1.8	1.1	32	3	45	.11	4	.5	1.4	24	KAO	
		20	1740	50.12	19	25.25	155	19.29	5.59	1.3	.9	22	3	.125	.11	3	.5	1.2	17	KAO			21	1642	3.20	19	25.98	155	29.65	8.81	1.8	1.6	44	4	40	.11	7	.4	.8	36	KAO	
		20	1919	15.48	19	23.95	155	27.62	10.00	1.8	1.5	35	1	.33	.11	3	.4	.6	24	KAO			21	1645	3.85	19	27.87	155	27.11	5.53	1.4	1.1	30	5	66	.12	6	.3	1.0	19	KAO	
		20	1926	20.01	19	22.64	155	30.00	8.72	1.5	1.3	34	2	.47	.11	4	.4	.9	26	KAO			21	1718	30.20	19	24.92	155	19.14	5.56	1.1	1.1	23	4	99	.10	2	.4	1.0	18	KAO	
		20	1948	47.06	19	19.07	155	13.01	5.07	1.7	1.4	39	2	.83	.12	4	.4	1.3	31	SF2			21	1720	57.60	19	24.78	155	14.29	6.87	2.5	2.7	39	3	37	.12	2	.4	.6	34	KAO	
		20	1951	45.26	19	22.92	155	25.74	10.46	2.6	3.0	48	4	.39	.13	3	.3	.5	40	KAO			21	1723	15.61	19	27.35	155	24.87	7.41	1.4	1.3	35	2	50	.14	4	.4	.8	25	KAO	
		20	1956	23.24	19	24.65	155	21.42	10.46	1.7	1.4	39	4	.36	.12	4	.4	.5	29	KAO			21	18	4	55.50	19	23.70	155	26.41	9.74	1.4	.9	27	3	37	.12	3	.5	.9	22	KAO
		20	2033	18.92	19	51.79	155	31.88	15.51	2.1	1.9	30	3	.122	.12	12	.7	.9	16	KEA			21	1835	14.66	19	18.18	155	13.15	4.09	1.3	29	2	96	.09	2	.4	.8	21	SSF		
		20	2036	36.09	19	28.62	155	38.23</																																		

## 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	NO				
					DEG	SEC	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	NOV	22	344	54.72	19	22.45	155	30.03	8.87	1.7	1.1	36	3	45	.11	4	.4	.9	29	KAO	
		22	410	3.08	19	54.37	156	6.59	42.89	2.1	2.1	29	6	254	.11	37	1.2	1.9	23	HUA	
		22	439	15.73	19	18.86	155	13.38	9.30	3.1	3.1	50	6	77	.11	3	.4	.4	40	SF2 F	
		22	512	8.21	19	22.23	155	2.36	7.16	2.1	1.3	37	3	139	.15	4	.6	.7	33	SFS	
		22	520	20.26	19	8.65	155	35.30	8.72	1.6	25	1	123	.14	12	.7	1.1	17	LSW		
		22	550	39.01	19	26.21	155	23.62	7.48	2.4	2.4	41	2	40	.13	3	.4	.9	34	KAO	
		22	553	11.34	19	56.49	155	31.11	34.18	3.2	3.8	52	6	159	.12	19	.7	1.7	45	KEA F	
		22	749	6.88	19	9.72	155	27.75	7.31	2.4	2.8	39	1	141	.13	0	.8	.6	31	LSW	
		22	830	8.80	19	56.54	155	31.07	35.42	3.6	3.9	51	4	159	.10	19	.7	1.5	45	KEA	
		22	1019	32.83	19	23.41	155	26.65	9.83	2.1	2.1	40	2	31	.12	2	.4	.6	31	KAO	
		22	1032	37.57	19	18.99	155	13.31	6.23		1.1	21	1	78	.08	4	.5	1.3	14	SF2	
		22	1039	26.11	19	24.43	155	30.11	9.09	1.9	1.8	40	3	34	.10	6	.3	.8	27	KAO	
		22	1128	36.01	19	25.42	155	29.61	8.54	1.6	1.9	33	3	39	.10	6	.4	1.0	22	KAO	
		22	1237	12.03	19	27.76	155	25.39	4.79		1.3	24	4	48	.16	5	.5	2.7	17	KAO	
		22	1327	25.18	19	13.62	155	22.63	3.35		1.3	23	2	163	.12	3	.6	.7	13	SWR	
		22	16	0	59.42	19	25.49	155	29.60	7.71		1.3	39	4	38	.13	7	.4	1.1	32	KAO
		22	17	9	47.84	19	22.66	155	28.04	9.88		1.7	35	3	40	.11	1	.4	.6	27	KAO
		22	1726	13.05	19	25.10	155	27.82	8.34		1.5	32	2	54	.09	5	.4	.8	26	KAO	
		22	1753	50.21	19	20.84	155	10.98	7.73		1.9	39	3	72	.13	3	.4	.7	33	SF3	
		22	2026	41.30	19	25.19	155	21.11	8.93	1.7	1.4	40	6	38	.12	4	.4	.6	31	KAO	
		22	2032	30.04	19	31.50	155	24.93	23.97	3.6	4.2	51	3	47	.12	4	.5	.9	47	DML F	
		22	21	1	57.68	19	26.67	155	2.62	6.81		1.1	19	2	45	.19	2	.6	.9	13	SF5
		22	2155	4.31	19	28.39	155	27.75	2.64	2.5	2.4	48	6	54	.13	7	.3	1.1	40	KAO	
		22	2233	33.72	19	25.99	155	21.42	10.78	1.8	1.2	27	3	76	.09	3	.5	.6	21	KAO	
		22	2336	58.13	19	24.55	155	21.62	9.39	1.2	.6	27	3	62	.10	4	.5	.6	16	KAO	
		22	2337	51.44	19	26.90	155	28.59	9.36	1.6	1.2	31	3	45	.11	7	.4	1.0	25	KAO	
		23	0	4.17	19	25.29	155	21.13	8.84	1.3	.7	29	3	78	.10	4	.4	.7	23	KAO	
		23	034	48.64	19	25.47	155	29.38	9.09	1.8	1.8	40	4	38	.11	6	.4	.6	28	KAO	
		23	038	45.93	19	27.88	155	26.87	8.57	3.1	3.0	52	6	54	.12	b	.3	.6	42	KAO	
		23	2	4	36.99	19	27.61	155	24.79	9.81	1.6	1.2	35	3	49	.12	4	.4	.7	21	KAO
		23	220	52.10	19	27.80	155	27.28	5.40	1.5	.9	39	6	50	.15	6	.4	1.4	22	KAO	
		23	233	40.58	19	23.55	155	26.08	11.17	3.8	3.7	49	4	27	.12	3	.3	.4	45	KAO F	
		23	250	17.85	19	25.74	155	23.31	9.50	2.1	1.7	40	7	39	.12	6	.3	.7	30	KAO	
		23	3	4	17.03	19	18.85	155	13.16	5.61	1.3	1.1	18	2	83	.10	3	.5	1.4	16	SF2
		23	311	23.22	19	23.14	155	27.17	9.62	1.6	1.3	33	3	39	.12	1	.4	.8	26	KAO	
		23	334	23.76	19	25.25	155	21.36	9.17	2.1	2.1	47	7	33	.14	4	.4	.5	34	KAO	
		23	347	50.09	19	27.78	155	23.83	9.01	1.6	1.2	36	4	38	.11	4	.4	.7	27	KAO	
		23	356	16.98	19	24.84	155	20.13	5.14	1.5	.9	27	4	45	.10	2	.3	.9	19	KAO	
		23	515	23.23	19	25.59	155	21.73	9.78	2.0	2.1	44	5	33	.13	4	.4	.6	35	KAO	
		23	622	41.19	19	24.85	155	20.47	7.63	2.3	2.7	42	5	37	.10	3	.3	.6	30	KAO	
		23	741	37.22	19	25.68	155	21.54	10.43	2.3	2.4	44	6	32	.11	4	.4	.6	34	KAO	
		23	1121	31.21	19	31.76	155	27.38	4.99	2.2	2.3	31	2	50	.13	1	.4	1.0	24	MLD	
		23	1139	36.25	19	23.60	155	26.34	9.90	1.6	1.7	32	2	37	.10	3	.4	.7	27	KAO	
		23	1143	33.09	19	21.44	155	22.11	11.36	1.3	1.3	29	1	59	.09	3	.4	.6	20	SWR	
		23	12	5	14.33	19	22.73	155	30.22	8.09	1.6	1.5	31	2	46	.11	5	.4	.9	28	KAO
		23	1217	8.09	19	13.49	155	26.67	7.78	1.6	2.3	26	1	119	.13	5	.5	.8	17	LSW	
		23	1224	10.84	19	32.20	155	26.62	2.80	2.0	2.3	19	1	125	.11	2	.4	.5	14	MLD	
		23	1325	32.36	19	25.12	155	21.18	9.58	1.7	1.8	36	5	37	.11	5	.4	.6	28	KAO	

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## 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	NO				
					DEG	SEC	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	NOV	23	14	4	59.29	19	25.36	155	19.89	8.80	1.6	1.1	26	4	107	.12	3	.4	.9	19	KAO
		23	14	8	9.26	19	25.25	155	20.99	10.08	2.2	2.2	44	6	33	.12	4	.4	.5	39	KAO
		23	1641	29.54	19	26.26	155	29.29	10.60	2.4	2.5	42	4	60	.11	8	.4	.6	37	KAO	
		23	17	9	59.66	19	19.55	155	15.60	7.51	1.8	1.9	41	2	65	.11	5	.4	.7	35	SF2
		23	18	5	28.61	19	21.16	155	2.69	7.87	2.3	2.3	44	4	131	.13	2	.5	.5	38	SF5
		23	19	5	14.29	19	22.25	155	29.08	10.17	2.5	2.9	44	3	35	.11	3	.5	.6	41	KAO
		23	1910	27.70	19	27.42	155	28.10	8.44	1.8	1.2	31	4	55	.11	7	.4	1.0	20	KAO	
		23	2020	34.47	19	25.31	155	21.11	8.90	1.7	1.3	36	6	41	.11	4	.4	.5	29	KAO	
		23	2024	29.80	19	46.35	155	2.95	37.37	2.2	1.7	38	1	211	.11	7	1	2.2	34	HIL	
		23	2032	45.11	19	27.81	155	27.42	2.82	2.1	1.1	38	5	56	.15	6	.4	1.2	27	KAO	
		23	2038	57.36	19	25.25	155	19.83	4.02	1.5	1.1	21	4	103	.11	3	.4	.8	17	KAO	
		23	21	0	55.19	19	24.61	155	24.36	9.16	2.0	2.0	43	6	38	.13	2	.4	.6	31	KAO
		23	2144	59.98	19	22.61	155	26.56	10.14	1.9	1.3	43	4	36	.12	2	.4	.6	34	KAO	
		23	2159	23.84	19	22.70	155	24.86	13.21	1.8	1.4	38	5	40	.12	5	.5	.6	30	DML	
		23	22	0	50.07	19	18.27	155</td													

## 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	NO				
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	NOV	24	1624	14.74	19	28.54	155	26.24	6.01	2.0	1.2	37	4	.46	.12	6	.3	1.0	26	KAO	
		24	1642	5.48	19	24.94	155	30.08	10.44	1.6	1.3	38	3	.42	.10	6	.4	.7	26	KAO	
		24	1643	39.46	19	23.94	155	25.42	9.80	2.0	1.7	21	3	.59	.09	5	.4	.8	17	KAO	
		24	1725	38.32	19	32.16	155	36.19	9.70	2.7	1.9	39	3	.84	.14	2	.4	.6	30	MLD	
		24	1730	14.14	19	30.49	155	37.02	9.19	1.6	1.2	30	2	.95	.12	5	.7	.7	14	MLD	
		24	1847	43.48	19	31.65	155	36.62	9.47	2.8	1.8	40	5	.87	.15	3	.5	.5	27	MLD	
		24	19	5.27	19	21.64	155	22.18	8.58	1.8	1.3	42	6	.57	.14	3	.4	.6	28	SWR	
		24	1929	31.48	19	25.54	155	21.58	9.56	2.1	1.7	50	7	.33	.13	4	.3	.5	35	KAO	
		24	1949	57.57	19	24.12	155	26.46	9.60	2.0	2.1	44	4	.38	.13	5	.4	.6	33	KAO	
		24	2048	53.66	19	23.99	155	26.44	9.40	1.8	1.3	38	2	.33	.10	5	.4	.6	23	KAO	
		24	2123	27.87	19	26.99	155	22.22	7.31	2.2	1.8	45	5	.48	.14	3	.4	.8	35	KAO	
		24	2150	27.47	19	20.12	155	24.76	11.95	1.8	1.2	41	7	.63	.12	3	.4	.5	29	SWR	
		24	2226	17.41	19	25.03	155	31.14	8.45	1.9	1.2	36	2	.36	.10	8	.4	1.0	31	KAO	
		24	2255	7.58	19	22.15	155	26.53	9.46	2.1	1.8	33	2	.47	.12	2	.4	.6	27	KAO	
		24	2257	28.85	19	21.91	155	21.63	11.78	1.4	.5	31	2	.53	.09	4	.4	.6	23	SWR	
		24	23	9.44	19	25.89	155	29.21	7.96	2.3	1.8	42	2	.40	.12	7	.3	1.0	30	KAO	
		25	035	57.36	19	31.97	155	36.93	8.18	1.7	1.2	32	4	.11	.17	3	.6	1.0	27	MLD	
		25	1	8.25	19	25.52	155	21.83	11.31	2.5	2.3	51	8	.33	.11	4	.3	.4	40	KAO	
		25	143	52.86	19	26.23	155	21.22	11.07	1.6	1.0	31	4	.75	.10	3	.5	.7	26	KAO	
		25	246	29.11	19	29.53	155	27.67	1.18	2.3	2.1	32	2	.57	.14	8	.4	1.0	29	KAO	
		25	259	43.12	19	29.06	155	27.70	5.88	2.6	2.4	44	5	.56	.12	8	.3	1.3	39	KAO	
		25	3	33	58.89	19	25.75	155	27.93	7.62	2.3	1.9	43	4	.39	.13	5	.3	.9	33	KAO
		25	322	52.24	19	29.09	155	27.56	5.00	2.2	1.7	36	4	.54	.11	8	.4	2.2	28	KAO	
		25	457	23.56	19	26.35	155	23.36	10.38	.6	1.3	33	3	.89	.09	5	.6	1.3	11	KAO	
		25	529	3.30	19	28.42	155	25.08	9.26	2.0	1.3	16	2	.64	.14	4	.6	1.2	7	KAO	
		25	627	48.74	19	25.40	155	21.14	10.31	1.5	2.1	17	3	.86	.09	4	.6	1.3	10	KAO	
		25	714	5.70	19	25.68	155	19.80	8.12	2.3	2.2	24	3	.11	.10	4	.5	.8	19	KAO	
		25	729	12.77	19	23.92	155	17.66	21.52	.5	6	0	174	.01	4	.3	.6	9	4	DEP	
		25	755	23.99	19	24.04	155	26.82	10.17	.9	24	0	0	.52	.10	4	.6	1.2	24	KAO	
		25	9	9.55	19	29.34	155	23.44	8.49	1.8	1.4	40	2	.43	.12	1	.3	.6	33	KAO	
		25	935	8.53	19	20.26	155	28.33	7.99	1.6	1.1	30	2	.42	.14	4	.4	.9	19	KAO	
		25	1045	59.10	19	22.26	155	27.52	9.80	2.1	1.8	36	4	.42	.13	0	.4	.7	28	KAO	
		25	1049	19.69	19	25.15	155	20.30	5.49	2.1	1.6	36	3	.45	.12	5	.4	.9	24	KAO	
		25	1314	28.78	19	20.07	155	28.45	9.70	1.8	1.5	34	2	.41	.11	5	.3	.7	25	KAO	
		25	1332	4.91	19	23.30	155	27.32	10.52	1.8	1.4	33	2	.32	.10	2	.4	.7	22	KAO	
		25	1343	51.47	19	27.51	155	25.87	8.67	2.1	1.1	44	6	.47	.11	4	.3	.6	30	KAO	
		25	1344	13.45	19	25.06	155	19.61	3.95	1.8	1.3	25	5	.65	.12	3	.4	.7	19	KAO	
		25	1513	7.86	19	21.52	155	17.76	7.17	2.2	2.0	44	4	.156	.14	4	.6	.4	33	SFS	
		25	1530	44.97	19	20.65	155	28.44	9.52	1.7	1.7	35	1	.40	.11	4	.4	.7	26	KAO	
		25	1730	4.20	19	25.26	155	20.66	7.21	2.0	1.3	30	3	.46	.10	3	.4	.8	21	KAO	
		25	1732	7.82	19	23.25	155	26.73	10.22	1.4	1.1	34	2	.39	.11	2	.4	.8	24	KAO	
		25	18	8.29	19	19.27	155	26.80	5.51	1.9	1.1	42	6	.49	.13	6	.3	1.1	30	KAO	
		25	1817	32.98	19	8.95	155	34.93	11.11	3.7	3.9	50	2	.121	.17	12	.6	.6	41	LSW F	
		25	2130	58.92	19	27.76	155	25.67	9.05	1.9	1.2	35	4	.46	.11	5	.4	.8	28	KAO	
		25	2143	43.87	19	28.12	155	27.49	6.47	1.9	1.1	37	5	.50	.13	7	.4	1.4	28	KAO	
		25	2213	31.64	19	22.83	155	20.63	10.54	1.9	1.4	33	4	.43	.09	2	.4	.8	26	KAO	
		26	1	8.3	19	18.92	155	13.45	10.07	2.1	2.4	42	6	.130	.12	7	.5	.6	34	SF2	
		26	114	18.34	19	28.74	155	26.63	7.60	2.1	1.1	36	5	.48	.13	6	.4	1.0	29	KAO	

## 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	NO				
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	NOV	26	129	12.44	19	21.91	155	1.97	8.42	2.4	1.7	38	3	144	.11	4	.6	.5	33	SFS	
		26	252	19.94	19	27.41	155	26.78	8.60	1.8	1.1	27	4	64	.11	5	.4	1.0	22	KAO	
		26	341	25.73	19	22.25	155	30.26	10.27	1.7	1.3	26	1	47	.06	5	.4	.9	25	KAO	
		26	458	39.05	19	23.62	155	27.53	10.16	1.7	1.2	27	3	64	.08	2	.4	.8	24	KAO	
		26	516	55.05	19	23.27	155	21.16	10.63	2.0	1.1	38	3	42	.10	5	.4	.7	33	KAO	
		26	525	21.37	19	24.00	155	26.83	10.96	1.6	1.2	30	2	49	.10	3	.4	.8	26	KAO	
		26	545	55.07	19	23.39	155	26.29	10.94	1.5	1.2	28	2	49	.11	3	.5	.9	25	KAO	
		26	614	1.55	19	22.70	155	26.76	11.04	2.2	1.8	46	5	41	.12	2	.4	.5	39	KAO	
		26	619	38.99	19	23.17	155	26.69	10.66	1.6	1.2	32	3	48	.11	2	.4	.8	26	KAO	
		26	627	18.75	19	30.91	154	55.19	27.78	1.8	2.3	48	5	79	.10	3	.4	1.2	42	LER	
		26	730	3.27	19	25.35	155	19.89	8.69	1.8	1.4	28	5	89	.10	3	.4	.9	23	KAO	
		26	9	7	72	19	27.00	155	26.56	8.91	1.9	1.1	35	2	51	.10	4	.4	.8	29	KAO
		26	934	55.23	19	21.91	155	30.31	9.84	1.9	1.4	29	2	45	.07	5	.4	.9	23	KAO	
		26	1023	28.20	19	22.03	155	5.54	7.20	1.8	1.5	33	4	77	.13	4	.5	1.0	29	SF4	
		26	1347	21.73	19	26.00	155	29.08	10.04	2.0	1.4	36	3	101	.11	4	.4				

## HVO EARTHQUAKE SUMMARY LIST

PAGE 81

YEAR	MON	DA	HRMN	SEC	LAT N DEG MIN	LONG W DEG MIN	DEPTH KM	AMP MAG	DIR NR	GAP DEG	RMS MAG	MIN NR	ERH SEC	ERZ DIS	KM	KM	FM	REMK
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1983 NOV 27 19 249.10 19 19.91 155 13.29 6.88 1.3 1.1 24 1 68 .11 5 .6 1.0 20 SF2  
 27 1911 17.71 19 22.58 155 21.00 9.50 1.7 1.1 30 6 47 .08 3 .4 .7 22 KAO  
 27 1931 59.18 19 11.22 155 27.81 7.59 2.2 1.8 32 3 111 .13 3 .5 .9 22 LSW  
 27 1933 28.13 19 29.20 155 27.41 7.11 3.7 3.7 49 4 42 .13 5 .4 .7 45 KAO  
 27 2127 54.11 19 30.65 155 26.87 3.75 1.8 1.6 26 3 93 .13 3 .4 .9 21 MLO

27 2129 29.76 19 21.39 155 30.32 9.50 3.3 3.4 49 4 32 .12 5 .5 .5 42 KAO  
 27 22 51.93 19 4.19 155 15.06 34.92 2.9 3.0 45 1 283 .09 46 2.2 1.8 38 KON  
 28 220 49.77 19 25.57 155 21.63 9.73 1.6 1.5 37 3 33 .13 4 .4 .6 28 KAO  
 28 229 43.38 19 25.40 155 21.08 8.61 1.6 1.5 43 5 38 .13 4 .4 .6 29 KAO  
 28 252 45.53 19 25.85 155 19.70 7.66 1.5 1.1 21 2 129 .09 4 .5 1.0 17 KAO

28 314 4.78 19 23.74 155 26.27 10.72 2.4 2.5 45 3 26 .13 5 .4 .6 37 KAO  
 28 411 33.69 19 21.31 155 21.88 10.36 1.4 1.3 28 3 60 .10 3 .5 .7 18 SWR  
 28 526 50.50 19 21.91 155 26.16 8.89 1.6 1.1 34 1 39 .13 1 .4 .7 25 KAO  
 28 712 7.57 19 20.16 155 11.43 8.59 1.7 1.8 38 2 82 .11 4 .4 .5 23 SF3  
 28 722 28.91 19 25.31 155 21.29 8.62 1.7 1.3 42 6 33 .14 4 .4 .6 37 KAO

28 734 21.47 19 25.94 155 20.87 9.76 1.6 .9 25 4 93 .09 3 .5 .9 18 KAO  
 28 748 26.22 19 26.72 155 23.37 11.18 2.1 1.4 40 4 65 .11 4 .4 .5 23 KAO  
 28 8 30.49 19 24.67 155 20.36 7.13 1.5 1.3 33 4 45 .12 2 .4 .8 25 KAO  
 28 8 6.38 19 18.95 155 13.56 5.12 1.3 1.1 28 2 71 .13 4 .5 1.5 20 SF2  
 28 8 7 44.04 19 21.96 155 2.18 7.35 2.9 3.1 42 4 138 .13 4 .5 .5 32 SF5 F

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## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT N DEG MIN	LONG W DEG MIN	DEPTH KM	AMP MAG	DIR NR	GAP DEG	RMS MAG	MIN NR	ERH SEC	ERZ DIS	KM	KM	FM	REMK
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1983 NOV 30 152 6.41 19 27.02 155 26.02 3.93 2.1 1.8 40 3 48 .13 4 .3 1.2 30 KAO  
 30 227 22.63 19 22.09 155 2.76 5.70 1.8 1.3 26 2 122 .18 4 .7 1.7 15 SFS  
 30 515 55.99 19 25.45 155 21.34 8.92 2.0 1.5 42 9 32 .13 4 .3 .6 33 KAO  
 30 555 59.79 19 23.38 155 20.43 10.09 1.9 1.3 28 6 56 .07 1 .4 .8 20 KAO  
 30 647 26.19 19 25.25 155 21.09 8.00 1.6 1.1 35 6 40 .12 4 .4 .7 24 KAO

30 1559 50.84 19 26.98 155 23.64 8.09 2.3 2.1 42 3 47 .12 4 .4 .7 33 KAO  
 30 1618 47.94 19 25.59 155 20.54 10.02 1.7 1.2 35 6 76 .10 4 .4 .6 24 KAO  
 30 1638 44.79 19 20.21 155 12.64 5.95 1.4 1.1 22 1 72 .11 5 .6 1.4 15 SF2  
 30 1720 6.63 19 27.73 155 26.66 8.18 2.4 1.7 35 4 69 .13 5 .4 1.0 24 KAO  
 30 1725 24.71 19 24.95 155 20.94 8.58 1.9 1.7 30 4 43 .10 3 .4 .7 23 KAO

DEC 30 20 6 58.43 19 23.18 155 25.47 10.23 1.8 1.7 45 7 30 .12 4 .4 .6 30 KAO  
 1 013 25.83 19 21.83 155 21.51 11.04 1.8 1.5 38 6 54 .11 4 .3 .4 24 SWR  
 1 113 11.78 19 25.54 155 28.34 5.12 1.9 1.3 26 1 58 .11 6 .4 1.9 22 KAO  
 1 543 21.18 19 25.61 155 23.43 8.70 2.5 2.5 47 4 39 .12 3 .3 .5 41 KAO  
 1 642 52.50 19 25.04 155 21.35 10.60 1.6 1.2 32 4 42 .09 4 .4 .6 26 KAO

1 7 1 .65 19 22.42 155 29.96 8.43 2.1 1.3 36 1 40 .13 4 .4 .9 31 KAO  
 1 716 31.96 19 23.99 155 26.94 10.20 2.2 2.2 43 4 33 .13 3 .4 .6 35 KAO  
 1 733 47.36 19 25.86 155 24.13 7.96 2.2 2.3 41 3 41 .12 2 .5 .8 32 KAO  
 1 10 3 48.69 19 25.51 155 29.40 10.20 1.6 1.2 30 2 39 .10 6 .4 .9 21 KAO  
 1 1149 23.64 19 21.72 155 30.12 9.19 2.7 2.5 41 3 33 .10 5 .4 .8 30 KAO

1 12 5 56.16 19 25.95 155 27.13 5.63 2.2 2.2 41 4 60 .13 4 .4 1.1 32 KAO  
 1 1239 33.78 19 27.50 155 27.19 6.29 2.6 2.4 46 6 57 .11 4 .3 .8 34 KAO  
 1 17 9 40.92 19 22.87 155 1.88 4.46 1.2 2.0 20 1 177 .13 5 .8 2.8 17 SSF  
 1 1829 22.83 19 22.66 155 20.76 9.24 1.7 1.3 42 7 45 .10 3 .3 .5 27 KAO  
 1 2220 10.74 19 24.92 155 21.52 11.06 2.4 2.5 51 6 35 .11 4 .5 .4 40 KAO

1 2226 42.63 19 22.36 155 29.04 10.15 2.5 2.6 47 2 36 .11 3 .3 .5 .5 42 KAO  
 1 2321 28.90 19 27.25 155 15.35 32.24 2.7 2.6 50 3 50 .10 5 .5 .9 46 DEP  
 2 030 19.25 19 26.49 155 29.50 9.12 1.7 1.2 34 2 43 .11 8 .4 .9 24 KAO  
 2 039 25.78 19 15.08 155 35.46 6.88 2.6 2.4 40 3 102 .19 3 .6 1.1 34 LSW  
 2 140 57.06 19 26.42 155 29.98 9.19 2.0 1.4 41 4 42 .10 8 .4 .8 32 KAO

2 256 4.54 19 21.43 155 2.67 7.21 2.1 2.1 35 3 129 .13 3 .5 .6 29 SF5  
 2 442 19.47 19 22.35 155 24.75 13.46 2.0 1.2 36 4 40 .11 5 .5 .5 29 DML  
 2 633 52.23 19 23.34 155 26.61 9.34 1.9 1.2 36 5 38 .12 2 .4 .6 29 KAO  
 2 846 16.99 19 25.13 155 29.44 7.78 1.6 1.1 31 2 37 .12 6 .4 1.1 25 KAO  
 2 10 8 24.64 19 21.08 155 3.26 4.83 1.3 1.3 21 2 112 .12 2 .5 1.2 13 SSF

2 1014 52.33 19 20.23 155 30.17 7.53 2.0 1.5 34 2 52 .13 6 .4 1.0 28 KAO  
 2 1047 17.27 19 27.18 155 23.42 11.41 2.1 2.1 46 7 75 .13 5 .5 .4 35 KAO  
 2 1157 36.23 19 24.96 155 21.39 9.95 2.0 2.2 48 7 35 .12 4 .4 .5 37 KAO  
 2 1411 7.43 19 25.31 155 20.95 9.13 1.7 1.5 40 8 82 .10 4 .4 .5 34 KAO  
 2 1428 16.47 19 41.33 155 3.58 6.72 2.5 2.9 27 0 184 .15 30 1.0 .3 .4 17 HIL R

2 1532 8.19 19 22.54 155 20.79 10.76 2.7 53 7 46 .11 3 .3 .4 41 KAO  
 2 1620 23.91 19 23.83 155 16.88 14.39 1.8 1.4 44 5 43 .10 1 .5 .3 32 DEP  
 2 1632 36.16 19 26.67 155 28.32 9.46 1.9 1.5 37 3 56 .11 6 .4 .8 26 KAO  
 2 1735 13.05 19 26.72 155 28.78 9.47 2.4 2.1 47 5 42 .12 7 .3 .6 31 KAO  
 2 1737 33.13 19 27.13 155 15.26 31.66 2.4 2.4 46 2 50 .10 5 .6 1.0 44 DEP

2 1839 6.13 19 25.42 155 29.60 7.11 2.2 1.5 39 3 38 .13 6 .4 1.1 27 KAO  
 2 1926 7.10 19 28.67 155 23.99 9.97 1.8 1.2 34 2 68 .13 2 .5 .7 27 KAO  
 2 23 7 53.99 19 21.56 155 5.88 8.38 2.5 3.1 42 3 86 .11 4 .4 .5 32 SF4

29 1445 49.86 19 22.99 155 26.64 10.12 2.2 2.0 44 4 39 .13 2 .4 .5 35 KAO  
 29 1543 11.65 19 22.53 155 23.25 13.50 3.1 3.1 51 5 45 .11 4 .4 .3 43 DML  
 29 1654 49.39 19 21.86 155 .23 6.16 2.4 2.5 45 6 177 .20 6 .7 .8 31 SF5  
 29 1836 20.14 19 22.15 155 30.09 8.50 2.0 2.1 38 3 46 .12 4 .4 .8 32 KAO  
 29 1919 2.54 19 25.34 155 21.30 9.79 2.5 2.5 50 7 33 .12 4 .3 .4 38 KAO

29 2131 51.32 19 23.88 155 27.03 10.11 2.0 2.1 42 3 36 .12 3 .4 .6 32 KAO  
 29 2138 15.33 19 23.86 155 26.94 10.11 1.9 2.1 40 3 32 .11 3 .4 .5 36 KAO  
 29 2235 29.30 19 18.80 155 12.90 5.52 1.3 1.1 22 1 90 .12 3 .5 1.4 20 SF2

## 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	NO
												DEG	MIN	DEG	MIN	KM	MAG	NR	NS	DEG
1983	DEC	2	2342	28.76	19	29.16	155	26.10	7.61	2.3	2.1	43	4	42	.15	5	.4	.8	33	KAO
		3	222	29.63	19	26.07	155	29.22	6.67	1.8	1.3	34	2	41	.12	7	.4	1.4	24	KAO
		3	240	5.28	19	24.76	155	20.26	7.66	1.4	1.1	28	4	75	.12	2	.4	.8	23	KAO
		3	9	22.78	19	29.03	155	27.76	4.97	2.3	1.9	38	2	64	.17	6	.4	1.8	34	KAO
		3	321	4.45	19	26.22	155	19.73	7.54	1.6	1.3	26	4	103	.12	3	.5	.9	20	KAO
		3	515	49.36	19	27.88	155	26.82	7.08	1.9	1.3	33	4	49	.12	6	.4	.9	20	KAO
		3	547	38.77	19	21.73	155	26.61	9.91	1.5	1.1	27	1	46	.11	2	.4	.8	19	KAO
		3	819	19.91	19	25.79	155	27.84	6.30	2.0	1.9	32	2	40	.11	5	.4	1.2	24	KAO
		3	1046	16.37	19	18.33	155	29.78	5.83	2.4	2.6	39	2	42	.16	6	.4	1.3	30	LSW
		3	1522	53.69	19	28.64	155	27.11	3.43	2.2	2.0	34	2	55	.16	6	.4	1.9	26	KAO
		3	1618	42.79	19	22.66	155	21.55	8.62	1.8	1.5	36	4	47	.14	4	.4	.7	25	KAO
		3	1737	16.30	19	23.38	155	27.44	9.49	1.9	1.3	32	2	38	.11	2	.4	.7	23	KAO
		3	1946	58.93	19	25.43	155	21.04	9.07	2.0	2.2	40	5	39	.14	4	.4	.6	31	KAO
		3	2024	32.15	19	27.68	155	25.96	7.70	2.1	1.3	36	4	68	.12	5	.4	.8	21	KAO
		3	2227	44.09	19	18.37	155	19.35	5.75	1.3	1.3	22	3	104	.12	1	.5	1.0	19	SWR
		3	2322	46.71	19	25.81	155	19.69	7.41	1.6	1.3	27	4	95	.10	4	.4	.7	20	KAO
		4	223	10.64	19	25.63	155	21.12	9.01	1.5	1.1	22	3	82	.09	4	.4	.9	17	KAO
		4	323	17.55	19	26.98	155	23.43	11.99	2.1	2.2	43	5	41	.12	4	.4	.5	28	KAO
		4	647	29.78	19	25.15	155	22.13	10.23	1.8	1.3	30	5	45	.12	5	.5	.7	23	KAO
		4	739	19.99	19	28.81	155	27.77	6.88	3.2	3.7	45	5	54	.14	6	.4	1.0	37	KAO
		4	756	5.72	19	25.24	155	21.59	9.09	1.9	1.5	26	1	40	.10	4	.5	.9	20	KAO
		4	854	28.95	19	23.68	155	27.10	9.79	1.8	1.3	31	1	37	.12	2	.4	.7	20	KAO
		4	856	25.10	19	20.32	155	4.00	6.94	2.8	3.1	39	4	121	.09	2	.5	.5	30	SFS
		4	939	47.21	19	25.28	155	19.39	5.76	1.8	1.8	22	5	112	.12	3	.5	1.2	16	KAO
		4	1021	8.81	19	21.88	155	30.41	8.51	2.7	2.8	41	1	32	.12	5	.4	.8	37	KAO
		4	1048	27.09	19	26.72	155	24.12	6.98	1.9	1.3	25	3	80	.13	3	.4	1.1	17	KAO
		4	1143	32.74	19	21.09	155	3.12	7.78	3.5	3.9	42	4	122	.11	2	.6	.4	38	SFS
		4	1236	43.03	19	25.19	155	21.42	10.09	2.0	1.7	39	4	34	.12	4	.4	.6	32	KAO
		4	1512	53.06	19	25.37	155	21.47	8.40	1.8	1.8	34	4	34	.13	4	.4	.7	30	KAO
		4	1529	15.64	19	35.46	156	7.21	14.13	3.0	3.5	43	1	246	.15	31	1.9	1.2	41	KON
		4	1735	25.48	19	22.34	155	30.38	9.22	1.8	1.3	28	1	47	.10	5	.4	1.0	23	KAO
		4	1827	34.35	19	25.27	155	21.40	10.55	2.0	2.0	40	4	33	.12	4	.4	.5	31	KAO
		4	1951	41.39	19	27.56	155	25.47	8.19	3.7	3.9	44	2	47	.15	4	.4	.7	41	KAO
		4	2024	52.51	19	25.16	155	30.59	9.32	2.3	1.8	34	3	44	.10	7	.4	.9	25	KAO
		4	2035	27.68	19	23.87	155	27.16	9.66	1.6	1.1	32	2	36	.12	3	.4	.7	20	KAO
		4	2040	37.83	19	28.84	155	25.77	8.86	1.9	1.2	25	3	56	.12	5	.4	.8	21	KAO
		4	2047	17.17	19	25.63	155	21.10	8.86	1.8	1.5	28	4	46	.12	4	.4	.7	19	KAO
		4	2051	8.97	19	23.14	155	27.67	10.74	2.1	2.1	38	2	37	.13	1	.4	.6	29	KAO
		4	2113	16.78	19	22.41	155	23.18	8.34	1.6	1.1	22	3	106	.11	6	.5	1.1	14	KAO
		4	2133	55.67	19	24.62	155	20.38	8.32	1.6	1.3	34	4	45	.12	2	.4	.7	21	KAO
		4	2141	26.55	19	25.56	155	21.50	8.73	1.5	1.1	24	4	72	.10	4	.4	.8	17	KAO
		4	2241	41.43	19	25.05	155	30.22	10.74	2.6	2.5	43	5	34	.10	7	.3	.5	32	KAO
		5	330	37.46	19	22.63	155	21.12	8.59	2.1	1.5	27	5	46	.10	3	.4	.7	22	KAO
		5	517	55.45	19	23.27	155	26.99	5.56	2.5	2.7	41	3	39	.13	2	.5	.8	31	KAO
		5	611	31.90	19	24.62	155	20.45	7.53	2.2	2.2	37	4	37	.11	2	.4	.7	30	KAO
		5	750	35.50	19	24.99	155	25.47	10.79	2.5	2.8	30	1	52	.11	6	.4	.7	17	KAO
		5	1128	49.70	19	24.94	155	29.05	9.21	2.1	1.5	36	3	37	.09	5	.4	.8	28	KAO
		5	1131	21.62	19	20.22	155	3.81	6.85	2.0	2.3	39	2	124	.12	2	.7	.6	31	SFS

YEAR	MON	DA	HRMN	SEC	LAT	N	LON	W	DEPTH	AMP	DUR	GAP				RMS	MIN	ERH	ERZ	NO	
												DEG	MIN	DEG	MIN	KM	MAG	NR	NS	DEG	SEC
1983	DEC	5	1313	48.34	19	31.82	155	27.42	4.18	2.9	3.5	41	4	45	.11	1	.3	.7	32	MLN	
		5	1326	41.31	19	28.64	155	27.90	3.47	2.1	1.5	36	4	58	.14	6	.4	1.8	28	KAO	
		5	1335	20.08	19	26.79	155	25.04	9.25	1.9	1.3	37	4	50	.12	3	.4	.7	27	KAO	
		5	142	23.22	19	19.63	155	13.25	9.11	2.6	3.4	42	3	71	.11	5	.4	.5	34	SF2	
		5	1517	17.50	19	29.42	155	23.51	9.40	2.3	1.5	42	5	43	.12	1	.4	.6	28	KAO	
		5	1817	30.50	19	22.12	155	17.15	31.24	2.4	1.9	44	4	44	.12	2	.7	.9	35	DEP	
		5	1820	29.08	19	20.43	155	13.26	7.40	1.6	1.3	37	3	63	.12	4	.5	.7	26	SF2	
		6	027	11.08	19	27.88	155	26.12	7.20	1.5	1.1	39	5	47	.13	5	.4	.8	30	KAO	
		6	1	9	46.53	19	28.44	155	26.45	10.50	2.1	2.2	43	3	62	.12	6	.4	.6	33	KAO
		6	120	12.89	19	29.06	155	26.22	7.63	3.0	3.1	48	4	57	.12	5	.5	.7	39	KAO	
		6	2	6	20.66	19	19.01	155	15.35	6.45	1.3	1.1	22	1	104	.10	4	.5	1.2	18	SF1
		6	214	2.40	19	20.35	155	30.48	8.19	2.4											

## HVO EARTHQUAKE SUMMARY LIST

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	ORIGIN TIME	LAT N	LON W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO							
YEAR	MON	DA	HRMN	SEC	DEG	MIN	KM	MAG	MAG	NR	NS	DIS	KM	KM	FM	REMK			
1983	DEC	8	235	17.28	19	22.96	155	27.69	10.30	2.6	2.7	.45	5	35	.12	1	.4	.6 38 KAO	
		6	241	57.97	19	23.79	155	25.12	7.80	2.1	1.5	.46	7	36	.14	3	.3	.7 31 KAO	
		8	253	12.32	19	25.51	155	21.76	10.45	1.7	1.5	.44	4	33	.13	4	.4	.5 34 KAO	
		8	257	3.37	19	17.81	155	20.63	7.58	1.4	1.1	.28	3	124	.11	4	.4	.6 22 SWR	
		8	522	2.09	19	23.64	155	26.86	10.59	1.6	1.2	.34	2	37	.11	3	.4	.7 28 KAO	
		8	650	7.29	19	29.07	155	26.37	7.49	2.6	2.6	.44	3	78	.13	6	.4	.9 36 KAO	
		8	749	43.46	19	23.91	155	26.74	10.04	1.8	1.5	.38	2	32	.11	3	.4	.7 29 KAO	
		8	932	34.44	19	25.01	155	30.25	11.65	2.3	1.6	.41	3	36	.09	7	.4	.6 36 KAO	
		8	10	6	41.78	19	28.33	155	26.90	3.61	1.9	1.1	.33	4	76	.13	6	.4	1.6 28 KAO
		8	1121	30.93	19	21.37	155	24.13	13.12	2.2	2.4	.43	5	34	.10	3	.4	.5 37 DEP	
		8	1419	45.82	19	25.07	155	21.69	11.46	2.8	3.2	.54	10	35	.11	4	.3	.3 47 KAO	
		8	15	6	47.77	19	25.50	155	29.44	8.50	1.9	1.3	.33	3	64	.11	6	.4	1.1 27 KAO
		8	1649	21.23	19	25.43	155	29.65	10.30	2.3	2.0	.40	2	58	.10	7	.4	.7 36 KAO	
		8	1712	11.32	19	25.55	155	20.74	10.56	2.2	2.3	.47	7	46	.10	4	.3	.5 41 KAO	
		8	21	5	59.76	19	5.48	156	12.38	32.79	3.0	2.9	.50	4	279	.10	40	1.2	1.2 47 KON
		8	2243	11.95	19	23.50	155	20.44	10.57	1.6	1.1	.31	5	54	.09	1	.4	.6 23 KAO	
		9	041	11.65	19	24.99	155	30.32	12.25	2.0	1.2	.33	2	43	.09	7	.5	.7 26 KAO	
		9	2	7	55.05	19	25.18	155	27.96	8.94	2.0	1.1	.35	4	64	.12	5	.4	1.0 29 KAO
		9	219	42.47	19	24.92	155	21.85	10.80	2.2	2.2	.50	9	35	.11	4	.3	.5 43 KAO	
		9	334	12.90	19	19.45	155	15.36	8.19	1.9	1.7	.38	3	87	.10	4	.4	.7 28 SF1	
08		9	724	20.74	19	21.04	155	29.36	6.32	1.6	1.3	.18	2	80	.08	4	.5	1.2 16 KAO	
		9	725	59.58	19	26.31	155	22.47	10.59	1.6	1.2	.27	3	63	.11	4	.5	.9 22 KAO	
		9	1023	33.30	19	22.29	155	29.45	9.53	1.7	1.3	.22	1	80	.10	5	.5	.9 20 KAO	
		9	1040	50.00	19	23.40	155	26.74	6.47	2.4	2.6	.42	3	32	.14	2	.4	.8 36 KAO	
		9	12	5	50.13	19	23.54	155	26.99	5.71	1.7	1.6	.26	2	47	.12	2	.4	.9 22 KAO
		9	1420	45.47	19	23.00	155	26.01	10.82	1.5	1.5	.29	2	45	.11	3	.5	1.0 26 KAO	
		9	1726	31.91	19	23.66	155	25.68	10.88	2.2	2.4	.45	6	31	.11	3	.4	.5 38 KAO	
		9	1936	58.18	19	27.67	155	29.02	10.48	2.2	1.7	.28	2	82	.11	8	.5	1.1 25 KAO	
		9	2056	4.72	19	24.91	155	21.50	12.41	1.8	1.6	.31	4	57	.10	4	.5	.8 25 KAO	
		9	2114	40.20	19	19.59	155	15.49	8.98	3.0	3.3	.54	8	86	.13	3	.4	.4 45 SF1	
		9	2333	41.83	19	20.97	155	29.61	6.26	2.1	2.4	.34	3	45	.11	5	.3	.9 27 KAO	
		10	020	17.57	19	21.58	155	21.83	11.07	1.7	1.3	.25	4	87	.09	4	.5	.9 20 SWR	
		10	436	14.65	19	21.28	155	6.76	7.16	1.8	1.5	.19	0	87	.11	4	.7	1.1 17 SF4	
		10	1015	48.48	19	20.03	155	11.21	9.27	2.2	2.5	.39	3	85	.12	4	.4	.6 36 SF3	
		10	1215	14.96	19	21.02	155	29.34	5.93	2.0	1.8	.29	1	43	.10	4	.4	1.1 25 KAO	
		10	1230	31.24	19	20.97	155	23.61	10.47	2.2	2.5	.40	4	35	.11	2	.4	.5 29 SWR	
		10	1324	54.09	19	22.10	155	24.24	12.73	2.4	2.4	.53	8	27	.11	4	.3	.3 39 KAO	
		10	1556	1.63	19	22.41	155	.99	6.59	2.1	2.5	.40	1	156	.18	6	.6	.8 27 SF5	
		10	16	6	47.09	19	25.92	155	29.23	9.46	2.0	2.1	.44	5	40	.12	7	.8 35 KAO	
		10	1633	28.30	19	22.65	155	29.91	8.32	2.1	2.3	.40	3	45	.11	4	.8 30 KAO		
		10	2014	18.37	19	25.80	155	29.06	7.95	1.8	1.3	.40	5	40	.12	7	.4	1.0 26 KAO	
		10	2312	52.08	19	19.76	155	7.21	6.22	1.2	1.1	.22	1	110	.09	5	.6	1.5 20 SF4	
		11	147	10.44	19	30.34	155	27.34	3.71	3.1	3.3	.47	4	48	.13	3	1.0	39 MLO	
		11	7	4	23.05	19	22.63	155	28.11	8.24	1.8	1.3	.35	4	40	.12	1	.4	.8 28 KAO
		11	937	32.77	19	19.30	155	13.14	5.56	1.3	1.1	.30	3	77	.12	4	.8	1.3 20 SF2	
		11	939	57.79	19	26.22	155	28.62	9.22	2.0	1.7	.37	5	58	.11	6	.4	.9 28 KAO	
		11	1031	16.47	19	19.88	155	27.27	8.87	2.6	3.0	.48	5	47	.15	5	.4	.6 41 KAO	
		11	1120	29.49	19	25.42	155	24.48	10.22	2.2	2.4	.47	6	38	.12	1	.4	.5 35 KAO	

## HVO EARTHQUAKE SUMMARY LIST

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	ORIGIN TIME	LAT N	LON W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO							
YEAR	MON	DA	HRMN	SEC	DEG	MIN	KM	MAG	MAG	NR	NS	DIS	KM	KM	FM	REMK			
1983	DEC	11	1128	26.64	19	11.82	155	32.75	9.21	2.7	3.0	.45	2	92	.16	8	.5	.8 32 LSW	
		11	1239	40.25	19	28.27	155	26.79	5.45	2.1	1.5	.39	5	52	.13	6	.4	1.0 28 KAO	
		11	1517	43.99	19	28.29	155	27.36	3.00	2.2	2.3	.40	7	54	.11	7	.3	1.0 29 KAO	
		11	1611	46.03	19	15.84	155	29.68	10.76	1.8	1.4	.31	0	59	.12	2	.4	.6 24 LSW	
		11	17	2	34.51	19	21.72	155	28.17	8.78	2.3	2.2	.40	2	40	.13	2	.4	.8 35 KAO
		11	1741	43.17	19	17.76	155	20.90	6.58	1.3	1.3	.29	5	124	.12	4	.4	.1 25 SWR	
		11	19	1	.36	19	21.99	155	29.71	12.28	2.5	2.9	.48	4	34	.09	4	.3	.4 41 KAO
		11	1917	3.84	19	32.60	155	58.01	8.81	2.8	2.4	.39	4	215	.21	8	.4	.5 35 KON	
		11	1952	49.08	19	24.99	155	30.17	11.58	2.2	2.3	.39	1	36	.10	6	.4	.6 37 KAO	
		11	20	6	19.29	19	26.65	155	23.19	12.03	2.1	2.5	.43	6	40	.12	4	.4	.5 39 KAO
		11	2152	53.01	19	20.23	155	12.97	6.98	1.4	1.3	.34	3	68	.15	4	.5	.8 29 SF2	
		12	0	9	18.57	19	22.64	155	28.60	10.29	1.8	2.0	.42	4	36	.12	2	.4	.7 36 KAO
		12	1	1	41.92	19	22.99	155	25.91	10.68	1.8	2.0	.40	5	39	.13	3	.4	.7 32 KAO
		12	150	40.94	19	26.44	155	23.26	13.07	1.8	1.6	.34	5	59	.12	4	.5	.8 29 DML	
		12	411	53.64	19	20.20	155	12.76	8.50	1.5	1.5	.27	3	70	.10	5	.5	.7 23 SF2	
		12	5	5	58.76	19	5.24	156	13.39	38.32	2.4	2.0	.38	7	280	.11	42	1.2	1.6 35 KON
		12	529	8.96	19	27.51	155	24.07	10.35	1.7	1.2	.30	3	72	.10	4	.5	.8 24 KAO	
		12	748	20.71	19	21.02	155	21.58	10.61	2.0	1.8	.35	5	63	.11	3	.4	.7 30 SWR	
		12	939	17.97	19	19.39	155	15.05	6.24	1.9	1.6	.35	0	84	.10	4	.4	.7 33 SF1	
		12	1126																

## 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	NO				
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	DEC	14	1312	18.69	19	21.18	155	7.86	6.47	2.0	1.4	37	3	.77	.13	4	.5	.9	25	SF4	
		14	14	6	53.17	19	22.51	155	30.09	8.29	1.6	1.1	31	1	.46	.12	4	.4	1.1	26	KAO
		14	1454	33.56	19	28.45	155	24.59	9.87	2.4	1.5	39	3	.40	.11	3	.4	.7	24	KAO	
		14	1859	38.91	19	27.56	155	24.68	7.97	2.2	1.2	43	4	.51	.14	4	.4	.7	31	KAO	
		14	2036	18.63	19	18.69	155	13.14	3.88	1.5	.9	31	2	.86	.12	3	.4	1.2	21	SF5	
		14	2037	.21	19	18.14	155	13.14	6.17	1.8	1.6	36	3	.97	.11	2	.5	.8	25	SF2	
		14	2056	23.97	19	21.99	155	30.13	9.98	3.6	3.8	53	5	.32	.10	5	.5	.5	46	KAO	
		14	2222	32.83	19	23.88	155	26.70	9.69	2.4	.47	6	32	.14	3	.4	.5	.37	37	KAO	
		15	059	22.92	19	25.37	155	21.10	9.55	2.4	2.1	49	6	.37	.12	4	.4	.5	37	KAO	
		15	1	9	40.50	19	27.30	155	23.48	8.95	2.0	1.6	42	5	.41	.11	5	.5	.6	31	KAO
		15	528	28.21	19	25.92	155	56.48	3.04	1.9	1.3	33	1	153	.14	4	.6	.7	24	SLE	
		15	6	9	34.12	19	23.30	155	23.57	13.43	2.8	2.7	51	6	.36	.11	5	.5	.3	40	DML
		15	650	30.40	19	24.20	155	26.29	9.45	1.6	1.0	31	1	.42	.12	3	.4	.9	23	KAO	
		15	714	28.90	19	23.10	155	27.34	9.84	1.7	1.1	34	2	.50	.12	1	.4	.7	26	KAO	
		15	727	18.69	19	25.43	155	21.19	9.24	1.8	1.3	41	7	.35	.12	4	.4	.6	33	KAO	
		15	815	20.35	19	26.97	155	23.93	9.58	1.6	.9	29	4	.66	.10	4	.4	.7	21	KAO	
		15	838	20.12	19	26.50	155	29.82	8.21	2.1	1.4	22	0	.62	.08	8	.4	1.4	22	KAO	
		15	842	25.13	19	22.74	155	26.02	10.44	2.2	2.1	25	1	.49	.09	3	.4	1.1	24	KAO	
		15	1122	49.27	19	26.31	155	27.80	9.28	2.3	1.5	39	5	.57	.11	7	.4	.8	31	KAO	
		15	1337	51.33	19	22.15	155	25.92	10.28	1.5	1.3	24	2	.43	.13	3	.5	1.0	17	KAO	
10		15	1447	47.07	19	26.48	155	19.83	6.62	2.2	1.6	37	4	.48	.12	3	.4	.7	28	KAO	
		15	1450	17.61	19	26.66	155	19.89	6.75	1.6	1.1	25	3	.63	.11	2	.5	.9	21	KAO	
		15	15	0	39.95	19	25.71	155	21.38	9.16	1.6	1.1	34	7	.76	.11	4	.4	.6	26	KAO
		15	1729	5.23	19	19.70	155	11.17	6.50	2.1	1.9	39	5	.93	.13	5	.5	.8	25	SF3	
		15	1816	59.28	19	18.21	155	26.02	9.24	1.6	1.2	27	3	.79	.10	6	.4	.8	19	LSW	
		15	20	4	4.80	19	27.63	155	27.17	5.50	2.2	1.2	46	8	.58	.14	6	.4	1.2	32	KAO
		15	2035	50.21	19	23.78	155	27.46	9.60	1.9	1.4	36	3	.32	.10	2	.4	.7	29	KAO	
		15	2151	10.30	19	21.03	155	21.66	10.07	1.9	1.3	37	6	.63	.11	3	.4	.6	26	SWR	
		15	222	8	45.30	19	24.31	155	25.46	8.08	1.5	1.0	31	2	.47	.12	2	.4	.9	25	KAO
		15	2211	10.10	19	26.18	155	29.22	8.84	1.5	.8	32	3	.41	.11	7	.4	.9	20	KAO	
		15	2241	56.32	19	23.40	155	27.19	10.37	1.6	1.2	36	3	.31	.12	2	.4	.7	27	KAO	
		16	1	1	37.55	19	26.48	155	29.76	8.12	1.4	.9	24	2	.43	.09	8	.4	1.2	17	KAO
		16	347	8.26	19	27.90	155	26.08	9.09	2.3	1.2	29	2	.69	.11	5	.4	.8	27	KAO	
		16	422	7.25	19	23.08	155	27.22	11.21	2.6	2.7	42	2	.38	.12	1	.4	.7	40	KAO	
		16	841	23.60	19	23.26	155	27.34	9.19	1.3	3.2	0	3	.37	.11	2	.4	.8	32	KAO	
		16	1041	19.67	19	24.51	155	19.62	6.83	1.9	29	0	.70	.09	2	.4	.9	29	KAO		
		16	1545	25.70	19	21.88	155	21.82	9.60	1.9	25	0	.54	.08	4	.4	.8	24	SWR		
		16	1558	38.91	19	19.54	155	14.76	6.02	1.4	1.1	21	0	.87	.07	5	.4	1.0	21	SF1	
		16	1644	.53	19	25.31	155	21.65	10.33	1.7	1.2	32	0	.52	.07	5	.4	.8	31	KAO	
		16	1716	22.37	19	25.72	155	15.86	19.62	2.1	2.5	43	1	.38	.11	3	.5	.8	41	DEP	
		16	2031	2.52	19	22.78	155	20.76	8.78	2.0	1.5	33	0	.47	.11	3	.4	.6	33	KAO	
		16	2047	3.43	19	19.52	155	15.65	6.34	2.1	1.3	29	0	.90	.10	3	.4	.6	29	SF1	
		16	2235	56.27	19	23.84	155	20.59	9.01	1.4	1.6	26	0	.68	.12	2	.5	.8	26	KAO	
		16	2318	27.70	19	28.38	155	25.54	9.33	2.4	1.4	36	0	.63	.12	5	.4	.7	36	KAO	
		16	2334	31.57	19	15.66	155	22.30	7.01	1.5	1.5	0	175	.08	4	.7	1.7	15	SFS		
		16	2343	58.80	19	24.29	155	26.68	10.04	2.1	2.1	32	0	.44	.10	4	.4	.7	24	KAO	
		17	222	16.69	19	27.13	155	25.49	9.40	2.1	2.3	36	0	.51	.12	4	.4	.8	34	KAO	
		17	255	16.45	19	22.77	155	.34	6.32	2.0	1.3	20	0	170	.13	5	.7	1.7	20	SFS	

## 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	NO			
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK
1983	DEC	17	412	52.90	19	18.09	155	12.93	4.34	1.6	1.4	25	0	108	.09	2	.4	1.1	25	SSF
		17	432	1.92	19	18.49	155	12.81	3.37	1.4	1.4	22	0	100	.11	3	.4	.9	22	SSF
		17	511	54.39	19	20.34	155	13.70	6.78	1.9	1.5	29	0	63	.11	4	.4	.9	29	SF2
		17	528	15.47	19	25.24	155	21.04	10.15	2.5	2.5	40	0	33	.09	4	.4	.6	39	KAO
		17	648	20.79	19	27.84	155	24.40	9.12	1.4	1.2	20	0	76	.10	4	.6	1.3	19	KAO
		17	815	14.62	19	17.68	155	12.79	6.84	1.6	1.4	29	2	132	.08	2	.5	.9	23	SF2
		17	1056	49.73	19	18.47	155	13.44	4.84	1.6	1.5	30	3	.79	.11	3	.4	1.3	25	SSF
		17	1927	28.34	19	24.10	155	26.28	10.16	2.1	1.7	38	2	35	.13	3	.4	.7	36	KAO
		17	2015	13.07	19	25.42	155	21.13	9.25	1.9	1.2	28	1	.79	.10	4	.4	.8	27	KAO
		17	2129	26.00	19	27.93	155	27.02	5.64	2.0	1.2	30	4	70	.12	6	.4	1.0	24	KAO
		17	2154	31.88	19	25.34	155	20.90	8.29	1.6	1.4	23	1	.83	.09	4	.4	.7	22	KAO
		17	2338	24.26	19	24.97	155	21.32	8.64	2.2	1.9	35	1	35	.11	4	.4	.6	34	KAO
		18	028	6.44	19	29.00	155	26.98	9.14	2.1	1.2	27	1	.73	.09	6	.4	.6	26	KAO
		18	425	42.31	19	25.26	155	20.17	7.39	2.0	1.5	24	1	.97	.09	3	.5	.8	23	KAO
		18	427	55.15	19	27.95	155	26.55	8.63	2.4	1.5	32	2	74	.12					

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	NO					
								SEC	DEG MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM
1983	DEC	19	1326	43.54	19	19.68	155	11.05	7.83	1.8	2.2	36	3	93	.10	5	.4	.7	30	SF3	
		19	1442	56.13	19	21.85	155	23.92	9.26	1.4	1.3	26	3	60	.09	3	.4	.7	22	SWR	
		19	1450	59.45	19	28.26	155	26.88	9.29	2.8	2.5	42	5	60	.12	6	.4	.7	36	KAO	
		19	1722	26.85	19	22.22	155	29.96	9.18	2.1	1.8	34	3	43	.08	4	.4	.8	27	KAO	
		20	354	59.40	19	7.69	156	7.13	32.88	3.2	3.6	46	0	269	.11	30	4.9	1.9	45	KON	
	20	420	46.51	19	25.00	155	20.45	10.03	2.5	2.5	47	6	42	.11	3	.3	.5	.40	KAO		
		20	544	38.06	19	24.86	155	21.25	11.43	1.8	1.4	35	5	43	.09	3	.4	.6	29	KAO	
		20	6 6	30.97	19	25.47	155	19.97	7.55	1.5	1.1	26	5	92	.09	3	.4	.8	17	KAO	
		20	652	.36	19	27.22	155	30.00	10.55	2.2	1.7	37	6	62	.12	9	.4	.7	26	KAO	
		20	9 0	3.84	19	19.54	155	8.12	5.20	1.9	2.3	37	7	90	.11	4	.5	1.4	29	SF4	
	20	1456	57.70	19	19.08	155	15.69	7.05	1.7	1.9	37	4	106	.12	4	.4	.8	.25	SF1		
		20	1731	45.82	19	20.40	155	4.40	7.37	1.9	2.1	39	6	119	.13	3	.4	.6	.28	SF5	
		20	1736	21.18	19	22.19	155	29.99	9.30	1.7	1.3	33	2	45	.09	4	.4	.9	.25	KAO	
		20	2023	43.51	19	25.59	155	20.66	10.00	2.0	2.6	50	5	39	.12	4	.4	.5	.44	KAO	
		20	2144	6.04	19	18.99	155	13.62	4.59	1.4	1.1	22	2	70	.10	4	.4	1.6	.19	SSF	
	20	2154	33.94	19	21.35	155	30.43	9.11	1.7	1.3	24	2	92	.10	5	.5	1.0	.17	KAO		
		21	012	4.63	19	21.26	155	23.50	9.50	1.8	1.5	37	5	44	.12	2	.4	.7	26	SWR	
		21	039	25.41	19	22.87	155	26.54	10.11	2.3	2.4	45	5	40	.12	2	.4	.5	.34	KAO	
		21	050	5.35	19	21.33	155	28.41	8.29	1.9	1.5	35	4	46	.12	3	.4	.8	.27	KAO	
		21	234	49.37	19	22.70	155	4.74	8.19	3.0	3.3	48	5	79	.10	4	.4	.5	.31	SF5	
	21	428	7.16	19	21.51	155	2.73	7.62	2.1	2.0	44	4	127	.12	3	.5	.4	.32	SF5		
		21	618	51.58	19	23.90	155	20.84	10.08	1.7	1.1	31	5	62	.08	2	.4	.6	.21	KAO	
		21	623	42.04	19	25.25	155	19.24	5.25	2.1	1.6	26	5	113	.12	3	.4	1.0	.18	KAO	
		21	956	27.36	19	30.79	155	46.49	7.11	2.0	3.0	37	3	110	.14	1	.5	.7	.31	KON	
		21	1332	54.63	19	23.14	155	26.34	9.18	2.1	1.5	34	4	31	.13	3	.4	.7	.24	KAO	
	21	1431	37.34	19	20.05	155	6.88	7.24	2.0	2.5	45	5	110	.12	5	.5	.7	.31	SF4		
		21	15 3	34.19	19	20.93	155	24.89	2.57	2.0	2.9	39	2	69	.14	5	.4	1.1	.27	KAO	
		21	15 6	18.40	19	21.03	155	30.09	2.72	3.2	3.6	44	3	34	.13	5	.3	1.2	.36	KAO	
		21	1518	7.00	19	20.73	155	29.77	6.34	2.7	3.0	39	3	46	.15	5	.4	.9	.33	KAO	
		21	1523	17.87	19	20.90	155	30.17	3.22	2.5	2.7	27	2	53	.10	5	.3	1.4	.16	KAO	
	21	1532	52.25	19	20.94	155	29.98	2.54	3.3	4.6	46	4	47	.12	5	.3	1.0	.38	KAO		
		21	1632	20.04	19	19.22	155	9.30	4.70	1.1	1.1	21	3	96	.07	4	.4	1.7	.14	SSF	
		21	1636	4.86	19	25.07	155	19.69	6.29	2.1	2.0	29	5	64	.11	3	.4	.9	.21	KAO	
		21	1738	52.30	19	23.16	155	29.33	10.56	2.2	1.5	36	5	41	.08	3	.4	.7	.27	KAO	
		21	1930	16.79	19	22.35	155	29.88	6.77	2.0	2.0	38	3	42	.11	4	.4	.8	.31	KAO	
	21	20 1	32.57	19	24.53	155	25.95	10.93	2.0	1.7	37	3	34	.11	2	.4	.6	.26	KAO		
		21	22 3	24.36	19	25.17	155	20.26	7.91	1.9	2.2	31	5	84	.09	3	.4	.7	.22	KAO	
		21	23 5	5.52	19	25.57	155	30.10	9.40	2.2	1.7	35	3	40	.08	7	.4	.8	.27	KAO	
		21	2353	.35	19	22.25	155	29.97	9.50	2.0	1.5	35	4	45	.08	4	.4	.8	.28	KAO	
		22	713	58.27	19	24.32	154	58.36	7.00	1.9	1.5	23	1	168	.16	2	.8	.9	.19	LER	
	22	740	.10	19	24.99	155	20.02	5.79	1.6	1.3	25	5	92	.10	2	.4	1.2	.18	KAO		
		22	929	48.77	19	20.78	155	15.55	35.73	3.3	4.6	52	4	74	.12	3	.6	.9	.48	DEP	
		22	1034	14.50	19	22.65	155	2.88	4.52	2.0	1.9	33	5	116	.22	4	.7	2.3	.24	SSF	
		22	14 4	20.49	19	21.26	155	21.98	10.06	2.1	1.9	37	4	61	.10	3	.4	.7	.28	SWR	
		22	1429	13.44	19	25.30	154	59.41	5.09	2.1	2.0	28	1	134	.13	1	.7	1.1	.20	LER	
	22	17 0	21.90	19	21.64	155	21.85	9.66	1.6	1.1	25	4	56	.09	4	.4	.9	.18	SWR		
		22	1732	58.20	19	24.40	155	29.39	8.95	2.2	2.0	36	3	74	.10	5	.4	.8	.24	KAO	
		22	1833	39.85	19	28.10	155	27.08	9.18	2.0	1.4	29	3	71	.13	6	.5	1.2	.20	KAO	

HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	ORIGIN	TIME	LAT	N	DEG	MIN	LONG W	DEG	MIN	DEPTH	AMP	MHR	MAG	MAG	RMS	GAP	RMS	MIN	ERK	NO	KM	KM	FM	REM
1983	DEC	22	2014	51.45	19	23.70	155	29.98	7.48	2.1	2.1	44	3	32	.12	5	.4	.9	33	KAO								
		22	21	3	1.45	19	16.72	155	22.24	4.00	1.5	1.4	29	4	129	.11	5	.4	1.9	22	SWR							
		22	2141	27.76	19	21.87	155	29.86	9.17	2.7	2.6	47	3	33	.11	4	.3	.6	37	KAO								
		22	2348	39.89	19	24.81	155	21.75	10.60	2.4	2.4	50	6	36	.13	4	.3	.4	37	KAO								
		23	033	31.19	19	19.08	155	15.15	6.81	1.7	1.3	39	2	90	.09	4	.4	.6	28	SF1								
		23	038	54.28	19	25.57	155	21.19	10.68	2.7	2.5	47	5	32	.13	4	.3	.5	42	KAO								
		23	1	3	17.24	19	11.57	155	28.96	32.42	2.3	1.7	36	3	84	.09	4	.7	1.3	32	DLS							
		23	126	12.39	19	25.15	155	21.53	10.19	1.7	1.5	35	4	55	.12	4	.4	.7	30	KAO								
		23	340	28.37	19	17.58	155	20.59	7.90	1.3	1.3	33	6	127	.11	4	.4	.7	20	SWR								
		23	841	48.83	19	18.01	155	13.58	7.77	2.6	3.0	38	0	88	.09	2	.5	.6	38	SF2								
		23	1117	31.02	19	22.20	155	29.83	9.10	2.6	2.9	46	3	34	.11	4	.3	.6	39	KAO								
		23	140	8.82	19	29.08	155	37.83	5.36	2.7	2.9	37	2	72	.17	3	.5	1.2	24	MLO								
		23	1838	6.88	19	20.71	155	21.46	10.43	1.5	1.3	30	3	66	.10	3	.5	.9	21	SWR								
		23	1957	19.02	19	19.48	155	.26	39.78	2.3	1.7	32	1	261	.10	14	2.3	1.9	30	KEA								
		23	2052	.03	19	11.30	155	28.59	6.79	2.9	3.1	51	5	124	.17	4	.6	.8	45	LSW F								
		23	2053	33.09	19	12.98	155	27.69	8.29	3.0	3.3	49	4	107	.16	6	.5	.7	40	LSW F								
		23	2328	41.17	19	22.25	155	28.90	9.55	2.2	2.1	45	3	36	.12	2	.3	.6	40	KAO								
		23	2340	54.85	19	22.80	155	20.80	10.94	2.3	2.0	43	4	44	.11	3	.3	.5	30	KAO								
		24	0	26.01	19	19.47	156	7.98	31.15	2.8	2.7	46	3	250	.12	40	1.3	1.9	38	HUA								
		24	130	20.63	19	26.95	155	23.34	6.59	2.0	1.7	37	2	48	1.4	4	1.0	1.0	24	KAO								
		24	523	8.40	19	25.75	155	19.92	7.50	1.6	1.1	23	3	119	.09	4	.5	1.0	19	KAO								
		24	715	15.81	19	25.69	155	27.77	6.29	2.3	1.8	36	4	46	.12	5	.4	1.1	27	KAO								
		24	836	17.40	19	23.43	155	20.61	11.19	1.9	1.4	31	4	55	.09	2	.4	.8	21	KAO								
		24	1236	24.74	19	26.14	155	27.19	5.72	2.4	2.3	46	5	65	.14	6	.4	1.0	36	KAO								
		24	1238	48.25	19	19.39	155	13.56	7.34	2.6	2.8	46	4	66	.13	4	.4	.7	40	SF2								
		24	1320	45.34	19	25.21	155	21.23	10.58	1.8	1.4	35	6	50	.10	4	.3	.5	28	KAO								
		24	1342	21.52	19	21.01	155	29.67	5.44	2.1	2.0	29	3	52	.11	5	.4	1.1	17	KAO								
		24	1620	55.22	19	26.69	155	23.68	10.89	1.9	1.9	28	3	65	.10	4	.4	.8	17	KAO								
		24	1654	.24	19	18.40	155	13.32	7.14	1.8	1.8	33	3	85	.11	3	.5	.9	21	SF2								
		24	1727	7.84	19	21.78	155	27.99	5.63	2.8	3.0	35	3	40	.13	1	.3	.9	37	KAO								
		24	214	48.45	19	21.28	155	7.43	6.89	2.5	2.6	45	5	81	.13	4	.4	.7	38	SF4								
		24	2238	52.48	19	23.63	155	26.27	10.55	2.0	2.0	35	3	37	.09	3	.4	.6	27	KAO								
		25	142	49.63	19	25.24	155	29.64	8.80	1.7	1.5	31	2	51	.12	6	.4	1.0	24	KAO								
		25	224	40.43	19	24.79	155	21.69	10.94	1.8	2.0	30	4	43	.12	4	.4	.6	21	KAO								
		25	447	8.38	19	23.44	155	20.25	10.40	1.9	2.0	35	5	52	.09	1	.4	.6	22	KAO								
		25	639	40.53	19	16.24	155	53.56	30.04	3.1	3.0	46	4	191	.11	11	.7	2.0	38	HUA								
		25	839	1.17	19	26.57	155	29.65	10.07	2.8	3.0	47	3	35	.12	8	.3	.5	40	KAO								
		25	1257	32.42	19	18.90	155	15.88	6.89	1.4	1.3	32	2	111	.11	4	.4	.8	24	SF1								
		25	1535	20.00	19	28.11	155	23.38	1.88	2.6	2.2	39	4	49	.13	3	.3	.6	24	KAO								
		25	2136	11.38	19	19.11	155	13.61	7.37	1.5	1.5	35	3	69	.10	4	.4	.7	25	SF2								
		26	214	52.11	19	20.98	155	2.77	4.80	1.9	2.1	34	5	130	.17	2	.5	1.3	18	SSF								
		26	258	11.98	19	25.33	155	21.11	8.95	1.7	1.1	31	5	37	.09	4	.4	.7	22	KAO								
		26	77	47.22	19	22.15	155	27.49	9.27	2.5	2.7	35	2	41	.12	1	.4	.9	33	KAO								
		26	101	33.27	19	25.07	155	20.91	8.79	1.6	1.5	34	5	42	.10	3	.4	.7	25	KAO								
		26	1018	14.39	19	25.33	155	21.17	9.38	2.1	2.0	43	5	62	.12	4	.4	.6	32	KAO								
		26	1259	59.07	19	19.94	155	9.74	7.11	2.4	3.2	45	4	44	.13	4	.5	.7	37	SF3								
		27	0	9.58	43	19	19.27	155	11.33	6.25	1.5	1.5	32	3	103	.07	6	.4	.9	26	SF3							
		27	1	2	57.21	19	18.51	155	13.06	7.43	2.3	2.3	48	6	92	.13	3	.4	.6	39	SF2							

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT N	LON W	DEPTH	AMP	DIR	GAP			RMS			MIN			ERH			ERZ				
										KM	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK						
1983	DEC	27	326	44.66	19	23.48	155	27.28	10.47	1.9	1.4	30	1	62	.10	2	.5	.9	24	KAO						
		27	613	49.99	19	25.59	155	20.98	9.87	2.3	2.3	47	5	40	.11	4	.4	.5	40	KAO						
		27	621	17.69	19	25.91	155	29.95	10.37	2.3	2.0	34	3	40	.09	8	.4	.8	25	KAO						
		27	934	4.19	19	26.21	155	28.71	8.85	2.2	2.0	39	1	42	.12	7	.4	1.1	32	KAO						
		27	11	8	.90	19	25.88	155	29.77	8.55	1.9	1.5	32	2	70	.09	7	.4	1.1	25	KAO					
		27	1450	26.55	19	18.69	155	11.63	8.77	3.4	3.7	51	6	116	.10	4	.4	.4	41	SF3						
		27	1646	18.59	19	23.00	155	26.61	10.46	1.9	1.5	38	4	39	.11	2	.4	.6	30	KAO						
		27	18	3	37.31	19	19.66	155	15.00	6.46	1.3	1.1	33	1	88	.10	4	.4	.8	23	SF1					
		27	2057	25.04	19	22.37	155	29.79	9.31	2.2	2.0	44	3	34	.10	4	.5	.9	35	KAO						
		27	21	9	41.21	19	19.58	155	10.92	8.14	1.8	1.9	43	4	96	.09	5	.4	.5	31	SF3					
		27	2252	.75	19	26.21	155	20.24	6.84	1.7	1.5	28	0	47	.09	3	.4	.9	21	KAO						
		27	23	7	13.24	19	17.66	155	16.19	7.87	1.8	2.1	44	3	131	.14	4	.5	.7	28	SF1					
		27	2326	54.81	19	27.41	155	28.41	8.22	2.1	1.5	38	5	48	.11	7	.4	1.1	28	KAO						
		28	156	23.23	19	19.13	155	15.25	6.79	1.6	1.8	38	2	100	.11	4	.4	.7	26	SF1						
		28	336	.94	19	21.76	155	1.63	4.95	1.7	1.7	26	2	188	.28	6	1.5	3.9	11	SSF						
		28	341	4.39	19	22.43	155	27.73	10.04	1.9	1.3	29	2	39	.11	0	.4	.7	22	KAO						
		28	427	10.29	19	24.62	155	38.05	1.02	2.3	2.6	33	0	98	.13	6	.4	1.7	24	MLO						
		28	1026	52.11	19	20.54	155	12.99	7.44	1.8	1.9	44	4	65	.11	4	.4	.7	35	SF2						
		28	1052	42.62	19	23.36	155	26.37	10.60	1.8	1.8	35	4	38	.12	3	.4	.7	29	KAO						
		28	1342	22.67	19	25.01	155	20.00	5.84	1.4	1.8	31	5	58	.11	3	.4	.9	22	KAO						
		28	1627	37.03	19	24.08	155	27.08	10.14	1.6	1.1	32	2	60	.10	3	.4	.7	23	KAO						
		28	1752	26.01	19	23.01	155	20.83	10.22	1.9	1.7	35	3	43	.10	2	.4	.6	26	KAO						
		28	1823	35.26	19	20.92	155	21.38	9.95	1.7	1.3	31	6	63	.11	4	.4	.9	20	SWR						
		28	1829	45.39	19	20.92	155	21.56	11.49	2.1	2.3	45	6	64	.09	3	.4	.4	29	SWR						
		28	21	7	23.60	19	21.96	155	29.66	10.00	1.9	1.8	35	1	42	.08	4	.4	.7	22	KAO					
		28	2337	49.59	19	25.94	155	21.22	8.75	2.0	1.5	33	5	31	.10	3	.4	.8	20	KAO						
		29	0	4	58.92	19	25.46	155	21.43	9.58	1.6	1.1	33	5	42	.11	4	.4	.7	24	KAO					
		29	115	4.49	19	22.33	155	29.89	9.35	2.0	1.5	38	2	42	.09	4	.3	.9	27	KAO						
		29	133	19.34	19	30.00	155	4.03	44.25	2.3	1.9	36	2	63	.12	1	.8	1.8	32	DEP						
		29	247	35.03	19	40.04	156	13.49	30.16	2.9	3.0	49	2	260	.13	38	1.6	2.1	41	HUA						
		29	258	6.93	19	18.45	155	13.42	10.35	3.7	4.0	46	1	81	.09	3	.5	.4	43	SF2	F					
		29	357	17.65	19	21.61	155	30.36	9.16	2.0	1.5	35	4	47	.09	5	.4	.8	24	KAO						
		29	539	29.02	19	22.65	155	27.09	9.20	1.7	1.5	27	2	59	.10	1	.4	.8	22	KAO						
		29	6	4	54.12	19	18.60	155	13.10	5.28	1.8	1.8	40	6	89	.16	3	.5	1.4	29	SF2					
		29	616	57.47	19	18.85	155	13.59	7.38	2.0	2.0	45	4	71	.12	3	.5	.7	30	SF2						
		29	620	57.19	19	19.84	155	12.41	6.19	1.7	1.3	29	2	80	.11	5	.5	1.1	23	SF2						
		29	958	50.78	19	30.13	155	27.29	5.67	3.5	3.8	51	4	47	.14	4	.3	.9	46	MLO						
		29	10	5	2.72	19	23.45	155	25.73	10.85	2.1	1.2	36	5	31	.11	4	.4	.7	29	KAO					
		29	1150	11.82	19	25.40	155	37.64	.91	3.3	3.3	41	1	94	.12	4	.4	.9	32	MLO						
		29	1319	55.50	19	29.55	155	27.39	4.30	2.1	1.2	24	3	78	.10	5	.4	2.0	17	KAO						
		29	21	8	11.25	19	25.40	155	30.82	9.19	2.0	1.2	34	2	44	.11	8	.5	1.1	25	KAO					
		29	2135	26.47	19	11.51	155	28.87	32.69	2.5	1.8	47	5	81	.08	4	.6	1.0	39	DLS						
		30	126	17.51	19	26.14	155	22.42	8.99	1.6	1.1	38	4	40	.11	4	.3	.7	25	KAO						
		30	224	41.44	19	18.39	155	13.45	6.62	1.7	1.5	41	2	80	.11	5	.5	.7	28	SF2						
		30	257	17.36	19	29.70	155	36.06	3.71	2.3	1.1	38	2	74	.18	4	.5	1.0	28	MLO						
		30	257	45.29	19	24.85	155	21.51	9.83	1.9	1.1	31	2	62	.11	4	.4	.7	24	KAO						
		30	3	8	6.81	19	28.55	155	35.73	2.32	2.5	2.1	16	0	73	.11	1	.5	.3	9	MLO					
		30	6	5	39.86	19	25.47	155	21.74	11.30	2.1	1.5	41	5	33	.10	4	.4	.6	30	KAO					

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	LAT N	LON W	DEPTH	AMP	DIR	GAP			RMS			MIN			ERH			ERZ				
										KM	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK						
1983	DEC	30	9	0	19.85	19	23.98	155	20.76	9.60	1.7	1.3	33	5	63	.11	2	.4	.7	17	KAO					
		30	942	46.82	19	25.55	155	21.53	10.05	2.5	2.5	49	7	35	.11	4	.5	.4	.39	KAO						
		30	1132	4.17	19	21.80	155	6.98	6.69	1.7	1.3	31	2	76	.13	3	.5	.1	.0	25	SF4					
		30	1355	25.72	19	26.60	155	23.50	10.42	2.3	2.1	44	4	64	.12	4	.4	.6	.27	KAO						
		30	1419	29.51	19	15.74	155	23.18																		

Table 6. HVO EARTHQUAKE SUMMARY LIST

				PAGE	1																
YEAR	MON	DA	HRMN	SEC	ORIGIN TIME	LAT N	LONG W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO					
						DEG	MIN	DEG	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	KM	FM	REMK	
1983	JAN	1	2148	41.71	19 21.44	155	8.84	6.19	2.6	3.2	36	4	.63	.12	5	.5	1.2	24	SF4		
		2	148	44.87	19 21.54	155	9.93	1.87	2.5	3.4	32	4	.61	.13	1	.4	.2	22	SER		
		2	925	51.33	19 22.43	155	6.81	2.06	2.3	3.1	22	2	.92	.09	1	.4	.3	21	SME		
		2	948	51.32	19 21.97	155	11.25	2.52	2.9	3.1	30	2	.71	.12	3	.4	.8	22	SER		
		2	17	0	10.66	19 20.69	154	59.80	9.18	3.3	3.4	44	2	1.97	.12	6	.8	.5	37	LER	
		2	1939	52.51	19 18.79	155	7.29	9.52	3.3	3.0	49	9	1.30	.10	3	.5	.3	42	SF4		
		3	1155	4.02	19 21.03	155	3.86	7.97	3.8	4.0	44	2	.85	.11	3	.4	.5	38	SF5 F		
		3	1747	37.04	19 22.33	155	6.01	9.15	2.8	4.0	41	4	.72	.09	1	.4	.5	35	SF4		
		5	454	13.03	19 18.77	155	13.54	9.91	3.4	3.7	43	2	.80	.13	3	.5	.4	41	SF4		
		8	1450	15.20	19 22.22	155	15.59	33.58	3.1	3.0	48	2	.56	.10	1	.6	1.0	45	DEP		
		10	721	5.93	19 22.50	155	2.60	7.98	2.2	3.0	17	1	1.60	.10	5	1.0	1.3	12	SF5		
		13	852	35.02	19 17.03	155	15.53	11.12	3.0	3.0	29	0	1.51	.10	6	.7	.5	22	SF1		
		14	310	34.90	19 21.36	155	17.19	1.53	2.5	3.2	31	2	.50	.13	2	.3	.4	19	SWR		
		15	029	35.81	19 37.28	156	26.60	13.70	3.2	3.0	44	3	2.38	.13	64	1.8	3.5	32	DIS		
		16	28	5.04	19 20.58	155	3.74	8.07	2.7	3.2	42	4	1.01	.11	2	.6	.4	35	SFS F		
		16	733	53.65	19 21.23	155	7.36	9.24	3.9	3.9	48	4	.82	.11	4	.4	.3	44	SF4 F		
		17	1728	59.67	19 21.21	155	4.80	8.42	2.8	3.1	39	1	.92	.07	4	.5	.4	32	SF5 F		
		19	242	25.66	19 21.17	154	59.56	.04	2.5	3.1	38	1	1.94	.24	6	.9	.8	21	SLE *		
		20	1629	.32	19 19.79	155	13.73	8.43	2.8	3.2	38	2	1.19	.11	5	.4	.6	36	SF2 F		
		21	046	4.01	19 21.51	155	7.36	7.02	2.5	3.1	40	2	.78	.12	3	.4	.8	38	SF4 F		
		21	122	36.12	19 25.65	155	37.83	1.22	2.8	3.2	31	0	.96	.11	4	.5	1.3	31	MLO		
		21	859	42.36	19 20.91	154	59.03	.01	2.3	3.1	31	2	2.00	.22	7	1.0	.8	19	SLE *		
		23	1013	39.86	19 22.76	155	3.58	12.04	3.3	3.5	46	6	.99	.12	4	.5	.3	39	SF5 F		
		23	1046	46.62	19 22.78	155	3.60	12.02	3.5	3.9	48	5	.99	.09	3	.4	.3	41	SF5 F		
		23	18	0	24.92	19 21.49	155	1.85	9.53	4.0	4.3	47	2	1.55	.11	4	.7	.4	45	SF5 F	
		24	23	8	28.23	19 13.77	155	27.28	9.72	3.3	3.5	45	2	1.40	.15	6	.6	.7	42	LSW F	
		26	1338	34.35	19 8.54	155	30.54	11.47	3.1	3.1	36	0	1.55	.15	5	.7	.6	28	LSW F		
		26	1557	58.06	19 22.47	155	25.31	10.49	3.2	3.2	48	4	.32	.14	4	.4	.5	42	KAO		
FEB	1	1835	2.10	19 20.66	155	2.92	6.21	2.9	3.0	39	3	1.24	.09	1	.4	.6	30	SF5 F			
	2	1946	22.66	19 19.98	155	6.53	9.88	3.3	3.4	44	2	1.17	.11	5	.6	.4	41	SF4 F			
	6	1821	12.56	19 16.81	155	30.47	8.41	3.1	3.1	43	3	.49	.18	3	.4	.8	32	LSW F			
	7	754	57.36	19 15.50	155	8.57	7.53	2.8	3.1	36	1	.79	.11	4	.5	.7	27	SF4 F			
	7	16	2	45.49	19 21.47	155	14.44	28.01	4.1	4.2	44	0	.59	.10	3	.6	.9	44	DEP F		
	10	254	32.48	19 48.04	155	42.75	20.56	2.9	3.0	38	0	2.45	.11	32	1.8	5.0	.35	KEA			
	14	2311	54.02	19 20.17	155	6.56	8.86	3.4	3.4	43	4	1.12	.09	5	.4	.5	36	SF4 F			
	19	18	5	12.07	19 19.93	155	7.32	8.62	3.4	3.8	47	4	1.04	.09	5	.5	.4	35	SF4 F		
	20	324	18.74	20 12.25	156	41.22	36.17	2.7	3.2	35	1	2.55	.12	77	2.0	2.3	19	DIS			
	21	1240	40.02	20 2.59	155	59.26	10.87	2.9	3.0	25	2	2.53	.14	24	1.8	.8	20	KOH			
	24	1849	46.08	19 25.28	155	38.09	1.86	3.7	3.6	34	2	1.00	.13	5	.4	1.0	25	MLO			
	27	513	4.92	19 19.50	155	11.28	9.56	2.6	3.0	43	1	.96	.10	5	.4	.4	36	SF3			
MAR	2	338	48.64	19 25.49	155	37.71	1.53	3.1	3.1	33	2	.95	.11	4	.4	.9	28	MLO			
	4	2327	23.85	19 21.62	155	3.12	8.40	3.0	3.6	46	1	1.12	.12	3	.5	.4	42	SF5 F			
	5	1610	2.45	19 45.51	156	8.05	40.37	3.5	3.4	45	3	2.49	.12	32	1.2	1.6	40	HUA			
	8	641	3.40	19 11.97	155	35.58	11.49	4.5	4.5	39	1	2.07	.14	6	.9	.5	38	LSW F			
	11	429	28.62	19 25.53	155	37.62	1.17	2.7	3.2	31	0	.93	.12	4	.4	1.2	20	MLO			
	12	2243	4.93	19 58.92	155	19.98	13.53	3.0	3.1	45	2	2.04	.11	10	.9	.6	30	KEA F			
	15	652	29.50	19 35.24	156	24.69	34.92	3.1	3.1	37	0	2.37	.10	53	2.0	2.3	33	DIS			
	16	1610	7.13	18 27.17	154	16.71	39.46	4.3	5.0	42	0	3.18	.11	27	13.6	2.9	42	DIS			

				PAGE	2																
YEAR	MON	DA	HRMN	SEC	ORIGIN TIME	LAT N	LONG W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO					
						DEG	MIN	DEG	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	KM	FM	REMK	
1983	MAR	17	1835	42.74	19 20.10	155	11.82	10.20	3.1	3.2	41	1	.81	.08	5	.4	.3	34	SF3		
		18	1845	30.05	19 23.29	155	26.56	10.03	3.5	3.8	48	3	.31	.13	2	.4	.5	43	KAO F		
		20	1718	39.21	19 21.43	155	6.96	8.95	2.8	3.2	36	2	1.16	.10	5	.6	.4	33	SF4 F		
		20	23	2	21.41	19 21.91	155	25.12	11.27	3.9	4.0	49	4	.38	.12	5	.3	.4	44	KAO F	
		21	037	28.88	19 22.01	155	25.42	11.32	3.4	3.6	46	3	.39	.13	4	.4	.4	41	KAO		
		21	2136	23.05	19 21.22	155	27.76	11.16	3.3	3.4	47	4	.42	.13	2	.4	.5	36	KAO		
		24	259	33.25	19 25.60	155	28.25	10.94	3.0	3.2	38	2	.34	.11	6	.3	.4	40	KAO		
		29	354	39.92	19 20.14	155	20.83	31.50	3.2	3.4	48	2	.72	.10	4	.5	.5	45	DEP		
		APR	4	1144	47.60	19 25.82	155	37.59	2.96	2.9	3.2	31	2	.94	.12	4	.4	.9	27	MLO F	
		7	11	0	33.48	19 18.88	155	28.62	8.93	3.3	3.7	50	5	.54	.15	4	.4	.6	44	LSW F	
		12	049	26.90	19 29.63	155	40.00	7.08	3.6	3.8	40	4	1.40	.12	7	.5	.6	32	MLO F		
		15	1451	14.46	19 20.09	155	11.85	9.23	3.1	2.9	38	2	.81	.09	5	.4	.6	32	SF3 F		
		22	2043	41.88	19 19.99	155	8.23	9.21	3.0	3.3	43	2	.84	.09	5	.4	.6	36	SF4 F		
		24	1	9	17.77	19 21.08	155	11.61	8.68	2.9	3.2	48	5	.67	.10	4	.3	.4	36	KAO	
		25	22	2	51.59	19 21.31	155</														

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HHRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO			
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK
1983	JUN	21	1755	15.74	19	14.53	155	34.07	8.92	3.8	3.8	46	2	75	.14	5	.5	.6	43	LSW F
		22	1251	13.49	19	29.36	155	51.77	10.77	3.3	3.0	34	2	97	.13	6	.6	.4	27	KON
		24	1457	35.48	19	20.18	155	11.85	6.29	3.0	2.8	39	2	79	.12	5	.4	.7	35	SF3
		26	1658	48.67	19	21.78	155	4.93	9.18	3.7	3.9	48	3	79	.11	3	.5	.3	44	SF5 F
		29	4	3	52.81	19	32.04	155	36.64	10.62	3.1	42	2	84	.14	5	.5	.5	37	MLO
		30	010	56.80	19	1.14	155	30.67	38.31	3.4	3.8	51	5	202	.09	16	.8	1.2	46	DLS
		30	136	9.80	19	20.69	155	6.91	8.64	2.7	3.0	44	3	96	.10	4	.4	.4	32	SF4
		30	2011	18.61	19	23.09	155	26.71	10.24	3.4	3.3	51	5	32	.13	2	.3	.4	46	KAO F
JUL	1	11	0	16.56	19	18.83	155	16.70	32.61	3.1	3.1	46	1	108	.10	3	.6	1.0	44	DEP
	2	959	.54	19	25.76	155	37.46	.21	3.1	3.2	39	2	92	.11	6	.4	.6	33	MLO	
	7	2	5	17.29	18	23.08	155	36.38	35.76	3.7	3.4	46	5	312	.09	67	1.6	2.5	42	DIS
	7	918	43.99	19	32.23	155	56.62	9.23	3.1	2.5	35	5	209	.20	6	1.1	.6	21	KON	
	9	1130	32.42	18	54.75	155	15.68	11.13	2.9	3.3	36	1	248	.12	35	1.5	.6	15	LOI	
	15	10	8	51.61	19	20.75	155	11.90	8.34	3.0	2.9	48	4	70	.13	4	.4	.6	42	SF3
	16	040	29.09	19	21.42	155	1.39	7.04	3.1	3.2	43	1	167	.13	4	.6	.4	34	SF5	
	18	2035	33.96	20	12.33	157	40.18	28.70	3.1	3.6	22	1	330	.18	198	4.5	4.6	13	DIS	
	26	1021	29.73	19	25.57	155	24.64	9.26	3.6	3.9	48	2	36	.12	1	.4	.5	46	KAO F	
	29	4	5	18.10	19	15.96	155	31.94	6.44	2.8	3.1	43	4	55	.22	4	.5	1.1	29	LSW
	30	2	1	6.76	19	21.95	155	6.54	8.10	3.0	3.0	47	4	77	.11	2	.4	.6	39	SF4
	30	749	56.08	19	25.37	155	24.75	9.84	3.3	3.4	46	3	72	.13	1	.4	.6	41	KAO	
	30	950	43.75	19	21.73	155	15.21	8.92	3.0	2.9	46	3	61	.13	2	.4	.5	39	SF1	
	31	343	55.23	19	21.11	155	8.31	7.55	2.8	2.4	41	3	71	.10	3	.4	.6	33	SF4 F	
	31	539	16.34	19	19.70	155	7.44	8.73	3.8	3.8	44	3	105	.09	4	.5	.4	36	SF4	
	31	1616	57.97	19	18.23	155	15.60	10.80	3.5	4.6	46	3	138	.11	5	.4	.4	42	SF1 F	
AUG	7	1041	26.27	19	27.29	154	50.86	8.37	2.9	3.0	40	4	232	.15	1	1.2	.4	32	LER	
	8	1139	51.38	19	20.06	155	12.05	8.75	3.1	3.2	44	4	79	.09	5	.4	.5	32	SF3	
	13	021	33.47	19	25.93	155	37.69	1.56	2.9	3.2	33	2	94	.14	3	.5	.6	25	MLO	
	13	1714	18.67	19	19.81	155	6.95	9.34	3.6	3.7	51	5	114	.10	5	.5	.4	43	SF4 F	
	15	2355	21.47	19	19.01	155	13.07	9.70	3.0	2.7	46	4	128	.14	7	.5	.5	35	SF2 F	
	16	010	44.63	19	57.73	155	50.38	7.16	3.7	3.8	44	5	189	.11	19	.9	.9	37	KOH F	
	18	543	59.52	19	58.49	155	8.24	31.30	4.0	4.2	46	4	262	.10	23	1.1	1.9	41	KEA F	
	19	2252	50.86	19	25.95	155	37.04	2.70	3.1	3.5	46	4	63	.14	3	.4	.7	35	MLO	
	22	353	38.08	19	21.21	155	6.84	8.06	2.9	3.1	45	2	87	.12	3	.4	.6	37	SF4	
	23	348	35.10	19	20.25	155	12.79	9.89	3.7	4.1	44	1	70	.10	4	.4	.3	40	SF2 F	
	24	2238	51.03	19	21.83	155	24.99	10.03	2.8	3.2	44	4	39	.13	4	.4	.5	33	SWR	
	26	623	52.10	19	25.29	155	37.45	1.35	3.4	3.1	36	2	74	.14	4	.4	1.0	30	MLO	
	28	734	.63	19	18.62	155	18.01	32.55	3.1	3.1	43	1	112	.10	2	.7	1.1	41	DEP	
	31	145	35.76	18	54.78	155	14.68	11.69	3.1	3.0	35	0	248	.11	36	2.0	.8	22	LOI L	
SEP	3	140	33.35	19	39.38	156	7.48	41.46	3.2	3.0	44	1	246	.10	29	1.1	1.8	41	HUA	
	5	2227	44.70	19	20.39	155	12.75	10.44	3.5	3.7	45	2	69	.10	4	.5	.4	43	SF2 F	
	6	356	41.02	19	30.38	155	39.24	7.67	3.3	3.4	42	1	96	.12	6	.5	.6	37	MLO	
	7	5	9	10.02	19	20.45	155	17.86	39.29	3.5	4.3	50	5	68	.11	1	.6	1.0	45	DEP F
	9	630	55.35	19	19.89	155	7.32	9.02	5.4	5.2	46	1	105	.10	5	.5	.4	45	SF4 F	
	9	1027	33.74	19	20.29	155	5.58	8.19	2.8	3.0	44	4	114	.10	1	.6	.5	35	SF5	
	9	1744	4.92	19	30.48	155	39.62	6.46	3.1	3.0	39	3	102	.13	7	.5	.1	0	24	MLO
	12	1859	37.16	19	30.18	155	39.83	7.75	3.3	3.4	43	4	99	.11	7	.4	.6	30	MLO	
	13	1939	57.53	19	21.25	155	3.14	8.89	4.0	4.0	50	1	110	.11	3	.6	.4	48	SF5 F	
	14	254	59.83	19	30.58	155	39.58	5.02	2.7	3.0	43	4	97	.17	7	.5	1.5	32	MLO	

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HHRMN	SEC	LAT	N	LONG	W	DEPTH	AMP	DUR	GAP	RMS	MIN	ERH	ERZ	NO				
					DEG	MIN	DEG	MIN	KM	MAG	MAG	NR	NS	DEG	SEC	DIS	KM	KM	FM	REMK	
1983	SEP	14	643	43.50	19	30.26	155	39.32	8.05	3.5	3.6	46	3	96	.13	6	.4	.5	37	MLO F	
		14	855	58.30	19	30.65	155	39.24	7.70	3.0	3.5	42	2	51	.12	6	.4	.6	32	MLO	
		14	13	0	15.20	19	21.43	155	3.03	8.41	7.4	49	4	115	.10	3	.5	.4	43	SF5 F	
		14	1337	17.09	19	30.46	155	39.48	7.78	3.7	4.1	44	3	51	.13	7	.4	.6	41	MLO	
		14	2239	31.17	19	20.30	155	12.00	8.63	2.4	3.0	43	2	76	.13	5	.4	.5	35	SF3	
		16	922	12.22	19	30.19	155	39.19	7.68	4.0	4.1	46	2	50	.12	6	.4	.6	43	MLO F	
		16	15	9	53.21	19	30.08	155	39.06	8.23	4.2	4.2	45	1	50	.13	6	.4	.5	44	MLO F
		17	2328	29.07	19	22.05	155	.07	6.38	3.5	4.0	46	3	175	.12	6	.6	.5	41	SF5	
		21	834	49.35	19	19.18	155	26.48	11.24	3.1	3.5	51	5	55	.13	6	.3	.5	46	KAO	
	OCT	1	017	25.80	19	30.87	155	39.36	6.87	2.9	3.4	40	3	78	.15	7	.5	.4	28	MLO	
		2	138	27.61	19	19.49	155	12.17	9.99	3.4	3.6	43	1	89	.10	5	.4	.3	42	SF3 F	
		4	1945	53.52	19	22.13	155	25.90	10.71	3.1	3.4	48	2	40	.15	3	.4	.5	43	KAO	
		5	1853	30.47	19	30.52	155	39.47	6.58	3.2	3.4	41	3	77	.14	7	.4	.5	29	MLO	
		7	134	21.95	19	19.72	155	7.59	8.85	2.9	3.2	48	6	102	.09	4	.6	.4	39	SF4	
		7	1721	36.29	19	19.45	155	28.38	15.84	3.9	4.2	53	6	118	.10	5	.4	.7	45	KEA F	
		8	1621	34.90	19	19.															

## HVO EARTHQUAKE SUMMARY LIST

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YEAR	MON	DA	HRMN	SEC	ORIGIN TIME	LAT N	LON W	DEPTH	AMP	DIR	GAP RMS MIN ERH				ERZ NO		
											KM	MAG	MAG	NR	NS		
1983	NOV	17	417	8.64	19 21.57	155	19.63	31.97	2.7	3.1	47	3	45	.12	4	.6	1.0 44 DEP
		17	1212	47.50	19 22.19	155	28.65	8.69	3.7	3.9	48	4	37	.12	8	.3	.7 38 KAO
		17	2330	39.61	19 28.32	155	21.15	1.99	3.7	3.9	39	3	115	.14	2	.4	.3 36 KAO
		18	133	35.41	19 21.04	155	29.63	6.23	3.0	4.1	41	3	45	.12	4	.3	.8 31 KAO
		18	3 1	54.99	19 25.40	155	19.76	3.84	3.2	4.3	43	3	46	.13	3	.5	.9 35 KAO

8	18	651	4.78	19 24.95	155	21.92	11.04	2.5	3.3	49	6	36	.11	5	.3	.4 38 KAO
	18	742	30.87	19 50.56	155	34.70	16.01	2.9	3.0	42	3	111	.09	14	.6	.1 38 KEA
	18	1624	21.56	19 29.92	155	26.68	1.93	2.9	3.2	41	2	49	.14	4	.3	.1 29 KAO
	19	137	51.72	19 17.40	155	15.65	10.49	4.1	4.1	49	3	146	.13	5	.5	.5 47 SF1 F
	19	632	37.13	19 29.13	155	26.00	9.27	3.0	3.1	51	5	43	.14	5	.4	.6 44 KAO
	19	918	34.62	19 25.07	155	30.02	10.28	3.2	3.2	49	5	35	.12	6	.3	.5 42 KAO
	19	935	24.97	19 27.25	155	29.67	10.66	3.0	3.2	50	5	34	.12	9	.3	.5 43 KAO
	19	1130	32.21	19 25.08	155	21.44	11.98	3.0	3.2	46	5	34	.10	4	.3	.4 40 KAO
	20	356	43.30	19 22.38	155	28.37	6.90	3.2	3.5	25	0	63	.14	1	.5	.1 0 16 KAO
	20	6 3	4.40	19 22.82	155	26.04	10.53	2.9	3.2	32	1	75	.11	3	.4	.4 19 KAO
	20	746	7.91	19 28.47	155	26.86	7.31	2.8	3.0	16	0	80	.09	7	.6	.1 2 12 KAO
	20	10 8	28.41	19 22.65	155	28.32	9.18	2.6	3.1	49	5	36	.12	1	.5	.5 43 KAO
	20	1951	45.26	19 22.92	155	25.74	10.46	2.6	3.0	48	4	39	.13	3	.5	.4 40 KAO
	21	1448	45.74	19 22.15	155	29.93	8.83	2.6	3.1	46	2	33	.11	4	.3	.6 42 KAO
	22	439	15.73	19 18.86	155	13.38	9.30	3.1	3.1	50	6	77	.11	3	.4	.4 40 SF2 F

25	22	553	11.34	19 56.49	155	31.11	34.18	3.2	3.8	52	6	159	.12	19	.7	1.7 45 KFA F
	22	830	8.80	19 56.54	155	31.07	35.42	3.6	3.9	51	4	159	.10	19	.7	1.5 45 KFA F
	22	2052	30.04	19 31.50	155	24.93	23.97	3.6	4.2	51	3	47	.17	2	.5	.9 47 DML F
	23	038	45.93	19 27.88	155	26.87	8.57	3.1	3.0	52	8	54	.12	6	.3	.6 42 KAO F
	23	233	40.58	19 23.55	155	26.08	11.17	3.8	3.7	49	4	27	.12	3	.5	.4 45 KAO F
	24	921	13.61	19 27.25	155	23.60	7.70	2.8	3.1	54	6	41	.16	5	.4	.7 44 KAO
	25	1817	32.98	19 8.95	155	34.93	11.11	3.7	3.9	50	2	121	.17	12	.6	.6 41 LSW F
	26	17 8	52.55	19 28.29	155	27.29	9.14	3.0	3.2	50	5	40	.12	7	.3	.7 44 KAO F
	27	927	31.66	19 21.48	155	2.99	8.57	3.9	4.0	52	4	117	.11	3	.5	.4 46 SF5
	27	13 1	12.79	19 21.68	155	24.15	13.74	3.2	3.4	47	6	42	.11	3	.4	.3 41 DEP

27	27	1520	41.98	19 22.34	155	27.46	10.40	3.5	3.5	50	3	39	.13	0	.3	.4 47 KAO	
	27	1539	18.48	19 22.29	155	27.50	9.69	3.1	2.9	50	6	40	.11	0	.3	.4 42 KAO	
	27	1433	28.13	19 29.20	155	27.41	7.11	3.7	3.7	49	4	42	.13	5	.4	.7 45 KAO	
	27	2129	29.76	19 21.39	155	30.32	9.50	3.3	3.4	49	4	32	.12	5	.3	.5 42 KAO	
	27	22 5	51.93	19 4.19	156	15.06	34.92	2.9	3.0	45	1	283	.09	46	.2	.1 0 38 KON	
	28	8 7	44.04	19 21.96	155	2.18	7.35	2.9	3.1	42	4	138	.13	4	.5	.5 32 SF5 F	
	29	1019	54.64	19 22.53	155	23.26	14.12	3.7	4.1	50	4	45	.11	4	.4	.3 46 DML F	
	29	1543	11.65	19 22.53	155	23.25	13.50	3.1	3.1	51	5	45	.11	4	.4	.3 43 DML F	
	DEC	2 23	7	53.99	19 21.56	155	5.88	8.38	2.5	3.1	42	3	86	.11	4	.4	.5 32 SF4
	4	739	19.99	19 28.81	155	27.77	6.88	3.2	3.7	45	5	54	.14	6	.4	.1 0 37 KAO	
	4	856	25.10	19 20.32	155	4.00	6.94	2.8	3.1	39	4	121	.09	2	.5	.5 30 SF5	
	4	1143	32.74	19 21.09	155	3.12	7.78	3.5	3.9	42	4	122	.11	2	.6	.4 38 SF5	
	4	1529	15.64	19 35.46	156	7.21	14.13	3.0	3.5	43	1	246	.15	31	.1	.1 0 41 KON	
	4	1951	41.39	19 27.56	155	25.47	8.19	3.7	3.9	44	2	47	.15	4	.4	.7 41 KAO	
	5	1313	48.34	19 31.82	155	27.42	4.18	2.9	3.5	41	4	45	.11	1	.3	.7 32 MLO	

5 14 2 23.22 19 19.63 155 13.25 9.11 2.6 3.4 42 3 71 .11 5 .4 .5 34 SF2

6 120 12.89 19 29.06 155 26.22 7.63 3.0 3.1 48 4 57 .12 5 .3 .7 39 KAO

6 741 14.98 19 27.65 155 15.20 32.29 3.3 4.1 40 1 41 .12 6 .6 1.4 33 DEP

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1983	DEC	6	1255	45.24	19	8.67	155	34.41	9.93	2.5	3.0	26	2	127	.21	12	.7	1.4 22 LSW	
		7	345	11.37	19	22.29	155	29.73	9.30	2.9	3.2	45	2	33	.10	4	.3	.7 42 KAO	
		8	1419	45.82	19	25.07	155	21.69	11.06	2.8	3.2	54	10	35	.11	4	.3	.7 47 KAO	
		8	21	5	59.76	19	5.48	156	12.38	32.79	3.0	2.9	50	4	279	.10	40	1.2	1.4 47 KDN
		9	2114	40.20	19	19.59	155	15.49	8.98	3.0	3.3	54	8	86	.13	3	.4	.4 45 SF1	
		11	147	10.44	19	30.34	155	27.34	3.71	3.1	3.3	47	4	48	.13	3	.3	1.0 39 MLO	
		11	1031	16.47	19	19.88	155	27.27	8.47	2.6	3.0	48	5	47	.15	5	.4	.6 41 KAO	
		11	1128	26.64	19	11.82	155	32.75	9.21	2.7	3.0	45	2	92	.16	8	.5	.8 32 LSW	
		14	2056	23.97	19	21.99	155	30.13	9.98	3.6	3.8	53	5	32	.10	5	.3	.5 46 KAO F	
		18	14	3	38.22	19	24.72	155	19.71	6.59	2.9	3.4	47	8	37	.10	2	.3	.5 38 KAO
		18	2111	56.18	19	29.12	155	26.59	8.29	3.2	3.1	50	4	62	.13	6	.4	.7 42 KAO	
		18	2341	31.74	19	21.50	155	30.08	9.62	3.3	3.6	51	6	33	.11	5	.3	.5 43 KAO	
		20	354	59.40	19	7.69	156	7.13	32.88	3.2	3.6	46	0						