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CATALOG OF EARTHQUAKES IN SOUTHERN ALASKA
JANUARY-MARCH 1980

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Menlo Park, California

1980

CATALOG OF EARTHQUAKES IN SOUTHERN ALASKA
JANUARY-MARCH 1980

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INTRODUCTION

The National Center for Earthquake Research of the U.S. Geological Survey (USGS) began a program of telemetered seismic recording in south-central Alaska in 1971. The principal objectives of this program have been to use data recorded by this network to precisely locate earthquakes in the active seismic zones of southern Alaska, delineate seismically active faults, assess seismic risk, document potential premonitory earthquake phenomena, investigate current tectonic deformation, and study the structure and physical properties of the crust and upper mantle. A task fundamental to all of these goals is the routine cataloging of earthquake parameters for earthquakes located within and adjacent to the seismograph network.

The initial network of 10 stations, 7 around Cook Inlet and 3 near Valdez, was installed in 1971. Each summer since then additions or modifications to the network have been made. By the Fall of 1973, 26 stations extended from western Cook Inlet to eastern Prince William Sound, and 4 stations were located between Cordova and Yakutat. A year later 20 additional stations were installed. Thirteen of these were placed along the eastern Gulf of Alaska with support from the National Oceanic and Atmospheric Administration (NOAA) under the Outer Continental Shelf Environmental Program to investigate the seismicity of the outer continental shelf, a region of interest for oil exploration. During the subsequent years the region covered by the network has remained relatively fixed while effort has been made to improve the instrumentation and installation of the stations in order to make them more reliable.

The locations of the stations of the USGS seismograph network are plotted in Figure 1 and listed in Table 1 along with the additional stations from which readings were obtained. Each USGS station has a single, vertical-component seismometer. The stations GLB, PNL, RDT, SKN, and VLZ also have north-south- and east-west-oriented horizontal seismometers.

This earthquake catalog presents origin times, focal coordinates and magnitudes for 1376 shocks occurring in the first quarter of 1980. Readings from a total of 66 stations were used to locate the shocks, including 11 stations operated by the NOAA Alaska Tsunami Warning Center (formerly Palmer Observatory), 5 stations operated by the Geophysical Institute of the University of Alaska (U. of A.), and 5 stations operated in southwest Yukon Territory by the Department of Energy, Mines and Resources, Canada.

Earthquakes in south-central Alaska as small as magnitude 3.0 have been routinely located by the National Earthquake Information Service of the USGS and its predecessor since the great Alaska earthquake of 1964 and are published in the reports "Preliminary Determination of Epicenters" (PDE). In contrast, the shocks included in this catalog are as small as magnitude 1.0 and most are smaller than magnitude 3.0. Data for the larger historic earthquakes that occurred in south-central Alaska through 1975 have been tabulated by Meyers (1976).

INSTRUMENTATION

The instrumentation in the USGS seismograph network is illustrated in the block diagram in Figure 2. Data from each seismometer are telemetered to the NOAA Alaska Tsunami Warning Center in Palmer. The standard equipment at each field station includes a vertical seismometer with a natural frequency of

Figure 1. Map showing the locations of all USGS seismograph stations in southern Alaska and other stations used in the preparation of this catalog. The symbols are as follows: solid circles, vertical component USGS seismograph; circles with dots, three-component USGS seismographs; open circles, USGS stations not reporting during this quarter; diamonds, NOAA stations; triangles, Univ. of Alaska stations; squares, Dept. Energy, Mines and Resources, Canada. Quaternary volcanoes (after King, 1969) are indicated by stars.

Table 1. Station Data

STA CODE	STATION NAME	LATITUDE N	LONGITUDE W	ELEV M	P MOD	D KM	DLY1 SEC	DLY2 SEC	DLY3 SEC	TDLY SEC	MAG AT 1 HZ	INST
ALC	ALCAN	62 37.35	141 05.50	502	3	0.01	0.00	0.00	0.00	0.00		USGS
AUJ	AUGUSTINE IS	59 20.85	153 20.62	282	1	0.01	0.00	0.00	0.00	0.00		UOFA
AUM	AUGUSTINE MOUND	59 22.26	153 21.17	106	1	0.01	0.00	0.00	0.00	0.00		UOFA
BAL	BALDY	61 2.17	142 20.67	1300	3	0.01	0.00	0.00	-0.19	0.00	000000	USGS
BCP	BANCAS POINT	59 57.20	139 30.10	396	3	0.01	0.00	0.00	-0.00	-0.30	444000	USGS
BGM	BIG MOUNTAIN	59 23.56	155 13.76	625	1	0.01	0.00	0.00	0.00	0.00	444000	USGS
BMR	BREMNER	60 57.50	144 34.98	1265	2	0.01	0.00	0.00	1.92	-0.30	222000	USGS
CFI	COLLEGE FIORD	61 10.96	147 45.99	3	2	0.01	0.00	0.00	0.00	0.00	444000	USGS
CHX	CHAIX HILLS	60 3.75	141 7.10	1067	3	0.01	0.00	0.00	-0.05	-0.30	222000	USGS
CTG	CHITNA GLACIER	60 57.90	141 20.00	1554	3	0.01	0.00	0.00	-0.53	0.00	222000	USGS
CVA	CORDOVA	60 32.79	145 44.96	90	2	0.01	0.00	0.00	0.00	-0.30	222000	USGS
CYT	CAPE YAKATAGA	60 4.47	142 24.60	323	3	0.01	0.00	0.00	0.57	-0.30	5520	USGS
DDM	DONNELLY DOME	63 47.23	145 51.70	920	1	0.01	0.00	0.00	0.00	0.00		UOFA
DLV	DEZADEASH LAKE	60 22.20	137 3.90	738	3	0.01	0.00	0.00	2.37	0.00		EMRC
FBA	FAIRBANKS	64 54.00	147 47.60	320	2	0.01	0.00	0.00	0.00	0.00		NOAA
FID	FIDALGO	50 43.73	145 35.79	400	2	0.01	0.00	0.00	0.00	-0.30	222000	USGS
GLB	GILAHNA BUTTE	61 26.51	143 48.63	845	3	0.01	0.00	0.00	1.60	0.00	444000	USGS
GLC	GLACIER IS	60 53.44	147 4.30	3	2	0.01	0.00	0.00	0.00	-0.30	444000	USGS
GVO	GUYOT HILLS	60 0.70	141 28.29	103	3	0.01	0.00	0.00	-0.06	-0.30	222000	USGS
HDA	HARDING LAKE	64 24.35	146 57.23	450	1	0.01	0.00	0.00	0.00	0.00		UOFA
HIN	HINCHINBROOK IS	60 23.81	146 30.10	511	2	0.01	0.00	0.00	0.00	-0.30	222000	USGS
HMT	MT. HAMILTON	60 20.19	144 16.64	620	3	0.01	0.00	0.00	2.00	-0.30	120000	USGS
HON	HARLEQUIN LAKE	59 27.10	130 52.62	372	3	0.01	0.00	0.00	-0.55	-0.30	444000	USGS
ILM	ILIAMNA	60 10.92	152 48.97	550	1	0.01	0.44	0.00	0.00	0.00	444000	USGS
IMA	INDIAN MOUNTAIN	66 4.11	153 40.72	1300	1	0.01	0.00	0.00	0.00	0.00		NOAA
KDC	KODIAK	57 44.07	152 29.50	13	1	0.01	0.00	0.00	0.00	0.00		NOAA
KEY	KLUANE LAKE	61 3.00	138 30.10	785	3	0.01	0.00	0.00	1.71	0.00		EMRC
KLU	KLUTINA	61 29.67	145 55.21	1021	2	0.01	0.00	0.00	0.00	0.00	177600	USGS
KMP	KIMBALL PASS	61 30.70	145 1.00	1143	2	0.01	0.00	0.00	0.00	-0.30	000000	USGS
KNK	KNIK	61 24.75	148 27.34	595	2	0.01	0.00	0.00	0.00	0.00	444000	USGS
KRY	KOIBERN RIVER	61 50.20	140 24.50	686	3	0.01	0.00	0.00	3.00	0.00		EMRC
KYK	KAYAK IS	59 62.10	144 31.39	375	2	0.01	0.00	0.00	1.97	-0.30	111000	USGS
MCN	MCNEIL RIVER	59 6.06	154 11.99	273	1	0.01	0.00	0.00	0.00	0.00		UOFA
MLS	MALASPINA	59 46.00	140 9.00	1	3	0.01	0.00	0.00	0.00	-0.30	111000	USGS
MSP	MOOSE PASS	60 29.35	149 21.64	160	1	0.01	0.00	0.00	0.00	0.00	444000	USGS
MTG	MONTGUE IS	59 54.71	147 29.82	31	2	0.01	0.00	0.00	0.00	-0.30	111000	USGS
NKA	NIKISHKA	60 44.50	151 14.20	100	1	4.00	1.36	0.00	0.00	0.00	900000	USGS
NNL	NINILCHIK	60 2.63	151 17.70	366	1	4.00	0.67	0.00	0.00	0.00	300000	USGS
POB	PEDRO BAY	59 47.27	154 11.55	305	1	0.01	0.00	0.00	0.00	0.00	177600	USGS
PIN	PINNACLE	60 5.00	140 10.40	975	3	0.01	0.00	0.00	-0.01	-0.30	444000	USGS
PMR	PALMER OBSERVATORY	61 35.53	149 7.86	100	1	0.01	0.00	0.00	0.00	0.00		NOAA
PMS	ARCTIC VALLEY	61 14.60	149 33.63	716	1	0.01	0.00	0.00	0.00	0.00		NOAA
PNL	PENINSULA	59 40.06	139 23.82	505	3	0.01	0.00	0.00	-1.10	-0.30	444000	USGS
PRG	PORTAGE	60 51.87	149 1.21	55	1	0.01	0.00	0.00	0.00	0.00	222000	USGS
PWA	HOUSTON	61 39.06	140 52.72	137	1	0.01	0.70	0.00	0.00	0.00		NOAA
PWL	PORT WELLS	60 51.56	148 20.00	549	2	0.01	0.00	0.00	0.00	0.00	000000	USGS
RDT	REDOUBT	60 34.43	152 24.37	930	1	0.01	0.36	0.00	0.00	0.00	444000	USGS
RJU	RIJO	59 62.65	141 13.00	15	3	0.01	0.00	0.00	1.00	-0.30	2760	USGS
SAW	SAWMILL	61 40.49	148 19.90	740	2	0.01	0.00	0.00	0.00	0.00	444000	USGS
SCM	SHEEP MOUNTAIN	61 50.00	147 19.66	1020	2	0.01	0.00	0.00	0.00	0.00		UOFA
SGA	SHERMAN GLACIER	60 32.04	145 12.42	424	2	0.01	0.00	0.00	2.17	-0.30	444000	USGS
SIT	SITKA	57 3.42	135 19.47	19	3	0.01	0.00	0.00	0.00	-0.30		NOAA
SIY	SILVER CITY	61 1.90	138 24.30	785	3	0.01	0.00	0.00	1.71	0.00		EMRC
SKL	SKILAK	60 30.06	150 12.96	690	1	0.01	0.10	0.00	0.00	0.00	444000	USGS
SKN	SKWENTNA	61 50.02	151 31.70	564	1	0.01	0.00	0.00	0.00	0.00	000000	USGS
SLV	SELDOVIA	59 20.20	151 34.03	91	1	0.01	0.00	0.00	0.00	0.00	444000	USGS
SPU	SPURR	61 10.90	152 3.26	000	1	0.01	0.39	0.00	0.00	0.00	000000	USGS
SSN	SUSTINA	61 27.83	150 44.60	1297	1	0.01	0.67	0.00	0.00	0.00	444000	USGS
SSP	SUNSHINE POINT	60 12.30	142 49.00	305	3	0.01	0.00	0.00	0.79	-0.30	222000	USGS
SUK	SUCKLING HILLS	60 3.32	143 47.31	299	3	0.01	0.00	0.00	2.14	-0.30	444000	USGS
SVW	SPARREVONN	61 6.49	155 37.30	762	1	0.01	0.00	0.00	0.00	0.00		NOAA
SWD	SEWARD	60 6.22	149 26.96	91	1	0.01	0.00	0.00	0.00	0.00	222000	USGS
TOA	TOLSONA	62 6.29	146 10.34	000	2	0.01	0.00	0.00	0.00	0.00		NOAA
TSI	TSINA	61 13.57	145 20.24	1113	2	0.01	0.00	0.00	0.00	-0.30	120000	USGS
TTA	TATALINA	62 55.00	156 1.32	914	1	0.01	0.00	0.00	0.00	0.00		NOAA
VLZ	VALDEZ	61 7.00	148 19.92	10	2	0.01	0.00	0.10	0.00	-0.30	000000	USGS
VZW	VALDEZ WEST	61 3.54	145 33.24	796	2	0.01	0.00	0.00	0.00	-0.30	444000	USGS
WAX	WAXELL RIDGE	60 26.90	142 51.10	975	3	0.01	0.00	0.00	0.61	-0.30	222000	USGS
WHC	WHITEHORSE	60 44.20	135 5.90	732	3	0.01	0.00	0.00	2.55	0.00		EMRC
WRC	WHITE RIVER GLCR	60 2.27	142 1.90	550	3	0.01	0.00	0.00	0.66	-0.30	222000	USGS
YAH	YAHYSE	60 21.51	141 44.70	2135	3	0.01	0.00	0.00	0.17	-0.30	000000	USGS
YKU	YAKUTAT	59 32.72	139 43.73	15	3	0.01	0.00	0.00	0.35	-0.30		NOAA

This table lists geographic coordinates and other pertinent information for stations used in the preparation of this catalog. P-MOD is the number of the P-wave velocity model assigned to the station (see text), where the numbers 1, 2, and 3 correspond to the western, central, and eastern models. D is the thickness of the low-velocity surficial sedimentary layer in kilometers assigned in the calculation of travel-times to a given station. DLY1-3 are the station P-phase travel-time delays in seconds. TDLY is the telephone line delay in seconds. The magnification (MAG) of the vertical seismograph component is given at 1 Hz. The institutions (INST) operating the stations other than the USGS are the NOAA Alaska Tsunami Warning Center, the Geophysical Institute of the University of Alaska (UOFA) and the Department of Energy, Mines and Resources, Canada (EMRC).

Figure 2. Block diagram of telemetered seismograph system in the USGS Alaska seismic network.

1.0 Hz (Mark Products, Model L-4), a package consisting of a pre-amplifier and a voltage-controlled oscillator (VCO model NCER 202, or AlVCO) and "air-cell" storage batteries (McGraw-Edison, Model ST-2-1000). The recently developed AlVCO units (Rogers and others, 1980) have been installed at nearly all of the USGS stations in southern Alaska. These crystal-referenced units have an automatic gain-ranging capability and provide daily information on the gain setting, geophone response, battery voltage, station identification and temperature. Data are telemetered via a combination of leased telephone circuits and VHF (162-174 MHz) radio links. The radio equipment consists of low-power transmitters (100 mW) and receivers adapted from HT-200 Motorola handie-talkie transceivers. Yagi antennae with 9 db directional gain (Scala, Model CAS-150) are used. At some sites where AC power is available, base-station radio receivers (G.E. Model R46AP66B) with greater sensitivity and reliability are used. The central recording facility incorporates a bank of discriminators (NCER J101 or Develco Model 5203), four 16 mm-film multichannel oscillographs (Teledyne Geotech Develocorder, Model 4000D), a 14-channel analog tape recorder (Bell and Howell Model VR3700B), and a time-code generator (Datum, Model 9100).

The principle of operation is as follows: The seismometer translates movement of the ground into an electrical voltage that is fed into the amplifier/VCO unit where the amplified voltage causes the frequency of an audio-band oscillator to fluctuate about its center frequency. The frequency-modulated (FM) tone from the amplifier/VCO unit is carried directly by voice-grade telephone circuit to the recording site or alternately is fed through a VHF radio link onto a telephone circuit. At the recording site the FM seismic signal is demodulated by a discriminator. The demodulated signal, which is simply an amplified form of the initial signal from the seismometer, is recorded photographically on a multichannel oscillograph, together with time marks from a crystal-controlled chronometer. Twenty-four hours of data for 18 stations can be recorded on a single 43 m-long roll of 16 mm film.

Signals from more than one seismograph can be transmitted on a single telephone circuit by employing VCO units with different center frequencies. In the standard configuration there is a 340 Hz separation between center frequencies and a fixed bandwidth of 250 Hz. Up to eight seismic channels with center frequencies ranging from 680 to 3060 Hz may be placed on a single voice-grade telephone circuit.

Figure 3 illustrates the response characteristics of the entire seismic system from seismometer to film viewer. The response level at each station is adjusted in steps of 6 decibels so that the ambient seismic noise produces a small deflection of the trace on the film. As a result, the actual response for an individual station may differ from that of the typical station by a factor of 2, 4, 8, etc. The magnification of the typical station is about 6×10^4 at 1 Hz and 10^6 at 10 Hz. The gain of a station that has an AlVCO unit is automatically reduced by a factor of 10 when the fluctuations of the FM signal exceed a preset threshold.

The installation of a typical radio-linked station is shown in Figure 4. Degradation or interruption of data transmission due to inclement weather conditions is a major problem during the winter months. A record of station operation is presented in Figure 5.

DATA PROCESSING

The 16 mm films (four per day) are mailed weekly to Menlo Park where the

Figure 3. System response curves for typical USGS Alaska seismographs that incorporate the A1VCO unit (solid curve) and the older VCO model NCER 202 unit (dotted curve).

Figure 4. Installation of a typical seismograph station (VZW). VCO/amplifier unit, radio transmitter, and batteries are housed in a 30-inch diameter culvert partially set in the ground at the base of the antenna. Seismometer is buried in the ground about 30 meters from the culvert. Photograph was taken prior to installation of new antenna masts (seen lying on the ground). A repeater site is seen in the background. View is southwest toward Glacier Island (at left center of picture).

USGS stations

non-USGS stations

[illegible]

Figure 5. Record of station operation during the first quarter of 1980. This figure indicates the days on which arrival times were obtained for locating earthquakes. The totals at the bottom indicate the number of events for which arrival times were obtained at each station.

seismic data are processed by the following multi-step routine:

1. Scanning. The scan film, which has 18 stations distributed throughout the network is scanned to identify and note times of all seismic events whether of local, regional, or teleseismic origin.

2. Timing. For the "well-recorded" local earthquakes identified in the scanning process, the following data are read from each station: P- and S-wave arrival times, direction of first motion, duration of signal in excess of a given threshold amplitude, and period and amplitude of maximum recorded signal. The criterion for choosing earthquakes to be timed is the duration of the signal, which is related to the magnitude. The network is divided into three regions--western, central and eastern--bounded approximately by 156° to 150° W, 150° to 145° W and 145° to 138° W, respectively. In the western and central regions, only events with signal durations longer than 80 s and 20 s, respectively, are timed. In the eastern region, all earthquakes which are recorded by at least three stations and for which at least four clear arrivals can be read are timed. This criterion was established to facilitate processing the large number of earthquakes which are recorded by the network.

Timing is done by projecting the seismic traces onto a table and digitizing the onsets of the P- and S-phases. The output from the digitizer, in the form of x-y data pairs on punched computer cards, is converted into phase data by computer using the program DIGIT3 (written by P. Ward and W. Ellsworth for use within the U.S. Geological Survey).

3. Initial computer processing. The phase data from the films is batch processed by computer using the program HYPOELLIPSE (Lahr, 1980) to obtain origin times, hypocenters, magnitudes and, if desired, first-motion plots for fault-plane solutions.

4. Analysis of initial computer results. Each hypocentral solution is checked for large travel-time residuals and for a poor spatial distribution of stations. Arrival times that produce large residuals are re-read. For shocks with a poor distribution of stations, readings from additional stations outside the USGS network are sought.

5. Final computer processing. The poor hypocentral solutions are rerun with corrections and the new solutions are checked for large residuals that might be due to remaining errors. Corrections are made as required before the final computer run is made.

The earthquake locations are based on P and S arrivals. S arrivals are important for determining depths of events in the Benioff zone beneath Cook Inlet. Unfortunately for some large events, S cannot be read at any station because the traces on the film overlap each other or are too faint to follow.

The HYPOELLIPSE computer program determines hypocenters by minimizing differences between observed and computed travel-times through an iterative least-squares scheme. In many respects the program is similar to HYP071 (Lee and Lahr, 1972), which has been used in the preparation of catalogs of central California earthquakes since January 1969. An important feature available in HYPOELLIPSE is the calculation of confidence ellipsoids for each hypocenter. The ellipsoids provide valuable insight into the effect of network geometry on possible hypocentral errors.

VELOCITY MODELS

Our experience with locating earthquakes in southern Alaska suggests that significant lateral variations are present in the velocity structure across the network. Such variations might be expected by considering the complicated geology and tectonics of the region (eg., Plafker, 1967). Very little information in the form of direct measurement is available for the velocity structure in southern Alaska. In previous catalogs, only two P-wave velocity models consisting of horizontal layers of constant velocity were used to locate the earthquakes (eg. Stephens, and others, 1979). These velocity models were derived by minimizing the travel-time residuals for selected sets of earthquakes in the Cook Inlet region (Model A of Matumoto and Page, 1969) and near Valdez. The models proved adequate for locating earthquakes as far east as Kayak Island, but earthquakes located farther to the east often had large travel-time residuals at nearby stations. An improved velocity model for the region east of Kayak Island was developed by minimizing the travel-time residuals for a selected set of aftershocks from the 1979 St. Elias earthquake that occurred north of Icy Bay (Stephens, and others, 1980). A significant difference between this model and the earlier ones is that it consists of a single layer of linearly increasing velocity over a half-space of constant velocity.

In the preparation of this catalog, the method of assigning velocity models to calculate theoretical travel-times to various stations is different from that used in some earlier catalogs. Previously, the velocity model used was determined by the region in which the earthquake occurred and would then be the same for all stations for that event. In the revised procedure, each station always uses the same velocity model, and the model used is determined by the region in which the station is located. Thus, a station in the eastern region will use the eastern velocity model to calculate travel times from events that occur in the western, central and eastern parts of the network.

West of 148° 45' W the velocity model used is specified as follows:

<u>Layer</u>	<u>Depth (km)</u>	<u>P velocity (km/s)</u>
1	0 - D	2.75
2	D - 4	5.3
3	4 - 10	5.6
4	10 - 15	6.2
5	15 - 20	6.9
6	20 - 25	7.4
7	25 - 33	7.7
8	33 - 47	7.9
9	47 - 65	8.1
10	below 65	8.3

The thickness, D, of the first layer is allowed to vary between stations to account for the presence of thick sections of low-velocity sediments beneath the stations NKA and>NNL, which are located in the Cook Inlet basin. For these stations D is 4 km. For all other stations D is 0.01 km. It is recognized that a model comprised of uniform horizontal layers may be a poor representation of the actual velocity structure, particularly in the vicinity of a subduction zone (Mitronovas and Isacks, 1971; Jacob, 1972), although such

a model does have the advantage of simplifying the computation of travel-times. In order to determine any bias that might result from this approximation, a set of events in the Benioff zone below Cook Inlet was relocated using a ray-tracing program of E. R. Engdahl that incorporates a more realistic, three-dimensional velocity model (Lahr, 1975). Hypocenter shifts, apparently due to the oversimplified flat-layer model, ranged from near zero at a depth of 60 km to as great as 25 km at the 160 km depth. The offsets were oriented in such a way that the dip of the Benioff zone would appear to be too great for locations based on a flat-layered model.

For earthquakes that occur between $148^{\circ} 45' W$ and $144^{\circ} 30' W$, the velocity model used to locate the events is specified by:

<u>Layer</u>	<u>Depth (km)</u>	<u>P velocity (km/s)</u>
1	0.0	2.75
2	0.01	6.4
3	below 39	8.0

East of $144^{\circ} 30'$ the P-wave velocity of the layer increases linearly from 5.0 km/s at the surface to 7.8 km/s at 32 km depth, while the half-space has a velocity of 8.2 km/s.

P-phase travel-time delays are applied to stations in the network that have consistent and large residuals for the locations of large groups of earthquakes. Each station has three delays (DLY1, DLY2 and DLY3 of Table 1) assigned to it that correspond to the western, central, and eastern parts of the network. The particular delay that is used to locate an earthquake is determined by the region in which the earthquake occurs. For example, a station near Icy Bay that is used to locate an earthquake beneath Cook Inlet will be assigned a delay DLY1, but the same station will use DLY3 to locate an earthquake that occurs beneath Icy Bay. Additional delays are applied at several stations to correct for a satellite link in the relay of the signal. S-phase delays are determined by multiplying the P-delay by 1.78, the P to S velocity ratio.

The initial trial depths for earthquakes which occur in the western, central and eastern parts of the network are 75, 30 and 15 km, respectively, and reflect a progressive decrease in the range of depths of earthquakes from west to east.

MAGNITUDE

Magnitudes are determined from either the signal duration or the maximum trace amplitude. Eaton and others (1970) approximate the Richter local magnitude, whose definition is tied to maximum trace amplitudes recorded on standard horizontal Wood-Anderson torsion seismographs, by an amplitude magnitude based on maximum trace amplitudes recorded on high-gain, high-frequency vertical seismographs such as those operated in the Alaskan network. The amplitude magnitude XMAG used in this catalog is based on the work of Eaton and his co-workers and is given by the expression (Lee and Lahr, 1972)

$$\text{XMAG} = \log_{10} A - B_1 + B_2 \log_{10} D^2 \quad (1)$$

where A is the equivalent maximum trace amplitude in millimeters on a standard Wood-Anderson seismograph, D is the hypocentral distance in kilometers, and B_1 and B_2 are constants. Differences in the frequency response of the two seismograph systems are accounted for in A. It is assumed, however, that there is no systematic difference between the maximum horizontal ground motion and the maximum vertical motion. The terms $-B_1 + B_2 \log_{10} D^2$ approximate Richter's $-\log_{10} A_0$ function (Richter, 1958, p. 342), which expresses the trace amplitude for an earthquake of magnitude zero as a function of epicentral distance.

For small, shallow earthquakes in central California, Lee and others (1972) express the duration magnitude FMAG at a given station by the relation

$$\text{FMAG} = -0.87 + 2.00 \log_{10} T + 0.0035 \text{ DEL} \quad (2)$$

where T is the signal duration in seconds from the P-wave onset to the point where the peak-to-peak trace amplitude on the Geotech Model 6585 film viewer falls below 1 cm and DEL is the epicentral distance in kilometers.

Comparison of XMAG and FMAG estimates from equations (1) and (2) for 77 Alaskan shocks in the depth range 0 to 150 km and in the magnitude range 1.5 to 3.5 reveals a systematic linear decrease of FMAG relative to XMAG with increasing focal depth. To remove this discrepancy, a linear dependence on depth is added to the expression for FMAG as follows:

$$\text{FMAG} = -1.15 + 2.00 \log_{10} T + 0.007 Z + 0.0035 \text{ DEL} \quad (3)$$

where Z is the focal depth in kilometers.

The magnitude preferentially assigned to each earthquake in this catalog is the FMAG estimate. The XMAG value is used only where no FMAG can be determined.

Figure 6. Map of earthquake epicenters for the period January - March 1980. Earthquakes are plotted with a symbol that represents the quality of the location (see Appendix), with A and B representing better quality. Quaternary volcanoes are indicated by stars.

Figure 7. Map showing the epicenters of earthquakes from Figure 6 that have magnitudes of 3.5 and larger. The corresponding projections of the one-standard-deviation error ellipsoids onto the surface are also plotted.

ANALYSIS OF QUALITY

Two types of errors enter into the determination of hypocenters: systematic errors limiting the accuracy of hypocenters and random errors limiting the precision. Systematic errors arise from an incorrect velocity model, misidentification of phases, or systematic timing errors and can be evaluated through controlled experiments such as locating the coordinates of a known explosion. Random errors result from random timing errors and are estimated for each earthquake through the use of standard statistical techniques.

For each earthquake, HYPOELLIPSE calculates the lengths and orientations of the principal axes of the joint confidence ellipsoid. The one-standard-deviation confidence ellipsoid describes the region of space within which one is 68 percent confident that the hypocenter lies, assuming that the only source of error is random reading error. The ellipsoid is a function of the station geometry for each individual event, the velocity model assumed and the standard deviation of the random reading error. The standard deviation determined from repeated readings of the same phases by four seismologists is as small as 0.01 to 0.02 s for the most impulsive arrivals and as large as 0.10 to 0.20 s for emergent arrivals. The confidence ellipsoids are computed for a standard deviation of 0.16 s and therefore likely overestimate the 68% confidence regions. The standard deviation of the residuals for an individual solution is not used to calculate the confidence ellipsoid because it contains information not only about random reading errors but also about the incompatibility of the velocity model to the data. Thus, the confidence ellipsoid is a measure of the precision of the hypocentral solution. In a few extreme cases the value calculated for one of the ellipsoid axes becomes very large corresponding to a spatial direction with very great uncertainty. In these cases an upperbound length of 25 km is tabulated.

To fully evaluate the quality of a hypocenter one must consider both the confidence ellipsoid and the root mean square (RMS) residual for the solution. The RMS residual reflects both systematic and random errors, but the random errors are typically much smaller. Hence the RMS residual is primarily a measure of the incompatibility of the velocity model, misinterpretation of phases and systematic timing errors. Interpretation of the RMS residual may depend upon the location of the earthquake. In areas where the velocity model is incompatible with the real earth, RMS residuals could be large and betray the incompatibility; alternatively, the RMS residuals could be small and not reflect the error in a bad hypocenter. Where the velocity model is compatible, however, a large RMS residual would indicate probable misreadings of phases.

Other parameters provided by HYPOELLIPSE that are useful in evaluating the quality of a hypocentral solution are: GAP, the largest azimuthal separation between stations measured from the epicenter; D3, the epicentral distance of the third closest station; NP, the number of P arrivals used in the solution; and NS, the number of S arrivals used in the solution. If GAP exceeds 180° , the earthquake lies outside the network of available stations and the solution is generally less reliable than for events occurring inside the network.

DISCUSSION OF CATALOG

Origin times, focal coordinates, magnitudes and related parameters for 1376 earthquakes from January-March 1980 are listed in the Appendix. Epicenters for these shocks are plotted in Figure 6. In Figure 7, only the earthquakes with magnitudes greater than 3.5 are plotted. Vertical sections showing the depth distribution of all of the shocks are presented in Figures 8 and 9.

We estimate that this catalog is reasonably complete for shocks larger than magnitude 3.5 in the western, 2.5 in the central, and 2.0 in the eastern regions of the area covered by the network. The minimum magnitude of the listed earthquakes ranges from 0.2 for shallow shocks to 2.3 for the deeper shocks.

The precision of the hypocenters or the relative accuracy of the locations of neighboring events is represented by the confidence ellipsoids. The precision of epicenters, expressed in terms of the maximum axes of the projected one-standard-deviation confidence ellipsoids (ERH), averages 4.3, 2.2, and 2.3 km, respectively, in the eastern, central, and western parts of the network. Similarly, the precision of focal depth (ERZ) averages about 5.5, 3.4, and 5.4 km, respectively. The variation in the precision of hypocenter determination across the network is strongly influenced by differences in the station coverage in the different regions.

The absolute accuracy of the earthquake locations is difficult to evaluate in the absence of known explosions. Hypocenter biases equal to and larger than the dimensions of the confidence ellipsoids are not unlikely from the oversimplified velocity model assumed in the preparation of this catalog.

The dominant feature in the distribution of epicenters is the large number of aftershocks from the 1979 St. Elias earthquake in southeastern Alaska. All of the aftershocks were located at depths less than 30 km, which is consistent with the depths found for aftershocks in the early part of the sequence (Stephens and others, 1980). It is interesting to note that the aftershocks plotted here appear to form spatial clusters similar to those observed in the early part of the sequence. All of the aftershocks have magnitudes below 3.5, as determined by comparing Figures 6 and 7. However, the coda magnitudes for the aftershocks reported here are probably systematically low relative to other magnitude scales, as discussed by Stephens and others (1980).

The seismicity throughout the remainder of the network does not vary significantly from that described for previous quarters (Stephens and others, 1979; Fogleman, and others, 1978; Lahr, and others, 1974). A well-defined Benioff zone dips to the northwest beneath the Cook Inlet region (Figure 9, sections G-J). The depth to the top of this zone varies from about 50 km beneath the western Kenai peninsula to about 115 beneath the active volcanoes west of Cook Inlet. The dip of the Benioff zone appears to increase from northeast to southwest, but the depth to the seismic zone beneath the active volcanoes--Augustine, Iliamna, Redoubt and Spurr--is nearly constant at about 115 km.

All of the seismic activity in the southern part of the network east of

1460 W occurs at depths less than about 35 km. The number of larger magnitude earthquakes which occur in the east is considerably smaller than that in the western part of the network (Figure 7). Most of the seismic activity in the eastern part of the network appears to be concentrated beneath Icy Bay and northeast of Kayak Island.

The contents of the Appendix may be obtained in forms amenable to computer input (punched cards or magnetic tape) by contacting the authors.

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Figure 8. Reference map showing the location of the sections in Figure 9. Direction of view for sections A - E is N 60° E, for section F is N 40° E, and for sections G - J is N 20° E.

Figure 9. Vertical sections of hypocenters for the areas indicated in Figure 8. Quaternary volcanoes are plotted as triangles at zero depth. All distances are in kilometers. No vertical exaggeration.

Figure 9 (continued).

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APPENDIX

Catalog of Earthquakes

Earthquakes from southern Alaska are listed in chronological order. The following data are given for each event:

- (1) Origin time in Universal Time (UT): date, hour (HR), minute (MN), and second (SEC). To convert to Alaska Standard Time (AST) subtract ten hours.
- (2) Epicenter in degrees and minutes of north latitude (LAT N) and west longitude (LONG W).
- (3) DEPTH, depth of focus in kilometers.
- (4) MAG, duration magnitude (FMAG) of the earthquake, if available, otherwise amplitude magnitude (XMAG, indicated by "a").
- (5) NP, number of P arrivals used in locating earthquake.
- (6) NS, number of S arrivals used in locating earthquake.
- (7) GAP, largest azimuthal separation in degrees between stations.
- (8) D3, epicentral distance in kilometers to the third closest station to the epicenter.
- (9) RMS, root-mean-square error in seconds of the traveltime residuals:

$$RMS = \sqrt{\sum_i (R_{P_i}^2 + R_{S_i}^2) / (NP + NS)}$$

where R_{P_i} and R_{S_i} are the observed minus the computed arrival times of P- and S-waves respectively at the i-th station.

- (10) ERH, largest horizontal deviation in kilometers from the hypocenter within the one-standard-deviation confidence ellipsoid. This quantity is a measure of the epicentral precision for an event. Values of ERH that exceed 25 km are tabulated as 25 km.

Projection of ellipsoid
onto horizontal plane:

- (11) ERZ, largest vertical deviation in kilometers from the hypocenter within the one-standard-deviation confidence ellipsoid. This quantity is a measure of the depth precision for an event. Values of ERZ that exceed 25 km are tabulated as 25 km.

Projection of ellipsoid
onto vertical plane:

- (12) Q, quality of the hypocenter. This index is a measure of the precision of the hypocenter (see section Analysis of Quality) and is calculated from ERH and ERZ as follows:

Q	$\frac{ERH}{2.5}$	$\frac{ERZ}{2.5}$
A	≤ 2.5	≤ 2.5
B	≤ 5.0	≤ 5.0
C	≤ 10.0	≤ 10.0
D	> 10.0	> 10.0

- (13) AZ1, DIP1, and SE1 are the azimuth in degrees (clockwise from north), dip in degrees, and standard error in kilometers of the most nearly horizontal of the three principal axes of the one-standard-deviation error ellipsoid. Values of SE1 that exceed 25 km are tabulated as 25 km.
- (14) AZ2, DIP2, and SE2 are defined as above, but correspond to the principal axis of intermediate dip.
- (15) AZ3, DIP3, and SE3 are defined as above, but correspond to the most nearly vertical principal axis.

Magnitudes and felt reports listed below an event were obtained from the Preliminary Determination of Epicenters of the USGS National Earthquake Information Service (NEIS), or the Department of Energy, Mines and Resources, Canada (EMRC). The body-wave (mb) and surface-wave (Ms) magnitudes are those determined by the NEIS.

A letter code after the depth indicates as follows:

- C - Solution was constrained based on EMRC source.
- D - Depth was constrained by a geophysicist.
- P - Solution was constrained based on PDE source.
- W - Station weighting modified (for events outside of network).

SOUTHERN ALASKA EARTHQUAKES, JAN - MAR 1980

1980	ORIGIN	TIME	LAT N	LONG W	DEPTH	MAG	NP	NS	OAP	D3	RMS	ERH	ERZ	G	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3	
JAN	HR	MM	SEC	DEG MIN	DEG MIN	KM			DEG	KM	SEC	KM	KM		DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM	
1	0	22	56.1	60 16.4	140 59.3	10.3	1.7	15	6	57	0.17	0.8	1	9	A	314	3	0.6	45	18	0.6	215	72	2.0
						2.3 ML	EMRC																	
1	5	37	52.1	60 11.7	141 45.4	5.2	0.7	4	2	128	38	0.09	3.0	6.0	C	288	15	0.8	23	20	1.4	163	65	6.6
1	5	38	55.3	60 22.1	141 10.4	11.3	1.0	8	3	126	59	0.30	1.6	3.6	B	314	3	0.8	45	21	0.9	216	69	3.8
1	7	53	31.1	60 11.5	152 14.7	85.7	3.9	22	0	75	83	0.40	2.0	3.7	B	326	3	2.0	56	6	1.3	209	83	3.7
			4.2 MB																					
1	8	54	56.4	60 9.8	141 11.3	1.1	1.3	9	2	103	32	0.22	1.5	2.4	A	289	2	0.7	20	27	1.0	195	63	2.6
1	11	39	4.3	61 32.6	146 25.1	18.9	2.2	21	6	81	58	0.67	0.7	1.3	A	298	4	0.5	207	13	0.7	45	76	1.4
1	11	40	32.8	60 23.3	140 8.4	2.9	1.0	5	1	209	78	0.41	4.9	7.9	C	310	9	1.2	45	28	2.3	204	60	9.1
1	12	11	53.3	59 51.1	139 16.5	15.0	0.5	3	2	214	50	0.26	15.0	20.1	D	148	6	0.8	53	36	1.8	244	53	25.0
1	12	14	57.4	59 47.6	139 18.2	15.0	0.2	3	1	194	45	0.10	17.6	18.1	D	134	16	1.8	31	40	3.3	241	46	25.0
1	12	18	57.5	59 57.7	141 27.9	5.1	1.4	12	6	159	22	0.36	1.0	1.3	A	314	3	0.5	223	21	0.9	52	69	1.3
1	12	39	20.8	60 16.9	140 39.0	25.4	0.9	3	1	181	125	0.02	14.4	20.5	D	57	16	2.0	317	30	1.6	171	55	25.0
1	13	13	50.5	61 56.6	147 12.7	30.2	3.1	23	2	161	61	0.78	1.5	1.1	A	91	2	0.8	1	15	1.5	188	75	1.1
1	13	46	31.5	60 12.2	140 5.5	18.5	1.0	4	1	280	71	0.34	15.5	4.7	D	207	16	16.0	110	26	1.5	326	59	2.1
1	14	5	28.3	60 12.5	140 59.4	15.0	0.8	3	3	211	43	0.28	13.8	21.1	D	88	10	1.1	352	31	3.4	194	57	25.0
1	14	10	15.4	60 6.9	139 45.1	9.8	0.9	5	2	241	45	0.35	4.0	2.9	B	111	10	0.8	203	10	4.0	337	76	3.0
1	14	33	19.8	60 13.6	140 38.5	0.1	0.9	5	2	149	91	0.18	2.1	3.8	B	292	4	1.0	23	21	1.6	192	69	4.0
1	17	3	50.4	60 41.9	143 9.3	26.7	1.7	6	1	91	80	0.55	1.4	3.1	B	190	1	1.3	100	4	1.4	294	86	3.1
1	17	6	51.1	60 14.8	140 59.8	10.2	0.9	5	3	152	44	0.12	2.2	3.4	B	303	8	1.1	38	31	0.9	200	58	3.9
1	17	22	22.5	60 12.5	141 4.2	9.8	0.8	5	4	143	47	0.16	3.6	4.5	B	278	4	1.1	10	38	1.3	183	52	5.6
1	20	14	23.5	60 17.0	140 44.9	14.3	0.7	5	2	150	82	0.20	3.0	3.7	B	299	13	0.9	38	33	1.7	191	54	4.5
1	23	18	6.4	60 21.6	140 41.6	2.2	1.7	18	7	54	62	0.39	0.7	2.0	A	260	3	0.7	350	7	0.6	147	82	2.0
						2.6 ML	EMRC																	
2	0	27	3.3	60 16.0	141 16.9	6.4	1.4	7	5	124	49	0.20	1.4	2.5	A	73	5	1.0	341	24	0.9	174	65	2.7
2	0	39	27.2	60 14.8	140 46.4	10.1	1.4	6	3	151	64	0.15	1.5	2.7	B	295	3	0.8	26	27	0.7	199	63	3.0
2	3	36	50.4	60 13.6	146 58.3	12.4	2.3	28	7	124	76	0.72	1.1	1.4	A	162	7	1.1	254	16	0.6	49	72	1.4
2	4	0	50.7	60 45.2	149 46.3	41.5	1.5	8	7	85	56	0.32	1.3	2.8	B	315	4	1.3	46	5	0.9	187	84	2.9
2	6	14	47.8	59 56.0	152 50.2	87.8	3.4	20	3	85	87	0.70	2.2	2.1	A	56	11	1.3	317	39	2.4	159	49	1.8
2	6	32	29.0	61 1.8	149 34.6	47.3	1.6	9	7	90	67	0.12	1.5	2.8	B	254	1	1.0	344	8	1.5	157	82	2.8
2	7	58	33.4	60 0.3	140 34.9	15.5	2.1	11	4	135	52	0.39	2.3	2.1	A	293	0	0.6	203	39	2.7	23	51	1.5
2	8	20	40.1	61 13.9	146 51.8	14.6	2.0	22	10	60	58	0.48	0.8	1.4	A	177	6	0.8	268	10	0.5	56	78	1.4
2	9	17	7.5	60 21.0	140 40.9	1.3	1.9	21	7	55	61	0.40	0.9	2.0	A	81	1	0.9	350	7	0.7	179	83	2.0
						2.8 ML	EMRC																	
2	10	55	38.8	60 22.1	141 17.8	13.6	0.8	4	3	165	66	0.19	2.9	6.9	C	80	3	2.2	349	22	0.7	177	68	7.4
2	11	43	11.4	60 16.0	141 23.3	16.0	0.8	3	2	178	100	0.17	18.5	17.0	D	329	25	0.8	80	37	2.7	214	43	25.0
2	18	35	53.3	60 17.0	141 16.1	15.0	0.9	4	3	145	60	0.46	3.4	6.0	C	290	11	1.0	26	26	1.3	179	61	6.8
2	19	13	52.4	59 59.9	141 31.9	5.8	0.7	5	2	172	28	0.28	1.7	2.1	A	268	6	0.8	174	34	1.3	7	55	2.4
2	22	22	13.7	60 21.2	140 42.4	17.3	1.5	10	5	161	61	0.26	1.4	2.7	B	353	12	0.7	87	17	1.1	230	69	2.9
2	23	17	36.8	61 42.2	150 8.9	44.4	2.3	17	10	145	60	0.34	1.4	2.8	B	98	5	0.7	189	13	1.2	347	76	2.9
3	0	16	38.0	60 17.1	141 3.0	29.7	1.3a	3	2	229	110	0.04	16.7	18.9	D	91	18	6.0	348	36	1.6	203	49	25.0
3	1	10	2.8	59 12.3	142 50.8	11.7	2.3	18	1	220	109	0.50	4.3	10.9	D	104	2	1.6	195	11	3.8	4	79	11.1
3	2	24	14.4	59 23.5	142 33.2	2.8	1.9a	4	1	283	181	0.05	14.0	18.9	D	144	13	3.3	242	32	6.4	35	55	22.8
3	6	45	31.9	60 11.4	140 57.0	7.5	0.8	5	3	163	62	0.22	3.7	4.6	B	90	17	0.9	348	33	1.5	203	52	5.7
3	7	24	33.0	59 34.4	139 11.2	12.4	1.9	10	2	158	31	0.30	4.8	2.1	B	45	16	5.0	307	26	1.1	163	59	1.7
3	11	37	19.3	60 21.3	140 19.4	1.7	1.8a	5	2	180	92	0.09	7.9	16.8	D	115	4	1.4	23	24	2.3	214	66	18.4
3	13	7	14.0	62 20.4	148 8.3	37.5	2.0	15	11	207	98	0.73	1.2	0.8	A	183	8	1.3	274	12	0.9	60	76	0.8
3	14	4	47.0	60 17.9	140 44.7	14.0	0.9	5	3	153	81	0.09	2.2	3.4	B	325	14	1.0	61	21	1.7	204	64	3.7
3	14	9	20.3	60 26.2	142 29.0	15.0	1.2a	5	3	150	67	0.32	6.7	17.1	D	13	12	1.0	106	17	1.6	249	69	18.3

SOUTHERN ALASKA EARTHQUAKES, JAN - MAR 1980

	ORIGIN TIME			LAT N		LONG W		DEPTH	MAO	NP	NS	GAP	D3	RMS	ERH	ERZ	Q	AZI	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3	
1980	HR	MM	SEC	DEG	MIN	DEG	MIN	KM				DEG	KM	SEC	KM	KM		DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM	
JAN	3	14	23	23.4	60	2.2	141	20.0	0.4	0.2	4	2	187	39	0.16	1.6	5.3	C	285	0	0.6	195	9	1.4	15	81	5.3
	3	16	12	37.3	60	17.4	140	59.9	5.7	1.1	8	5	131	46	0.15	1.2	3.2	B	99	7	0.9	7	15	0.7	213	73	3.3
	3	17	44	20.8	60	13.1	140	57.5	10.3	1.6	11	5	123	41	0.09	1.2	2.1	A	300	0	0.6	30	26	0.8	210	64	2.3
	3	21	45	37.1	60	2.0	141	19.0	7.8	0.9	4	2	243	59	0.05	24.9	2.8	D	22	5	25.0	292	6	1.2	152	82	1.8
	3	22	22	51.8	60	9.5	141	12.5	1.9	1.4	10	6	102	31	0.43	1.0	1.6	A	284	0	0.5	14	26	0.7	194	64	1.8
	3	22	39	54.7	60	14.5	141	4.7	9.8	1.6	14	5	119	41	0.27	1.2	1.8	A	99	6	0.6	6	25	0.9	202	64	2.0
	4	0	33	2.2	60	19.0	141	14.3	19.0	1.1	7	4	118	60	0.23	1.4	3.4	B	59	1	1.1	328	17	1.0	152	73	3.5
	4	2	31	54.0	60	16.6	140	46.3	15.0	0.6*	3	3	171	121	0.35	11.1	18.7	D	41	21	1.2	302	21	1.5	172	59	21.7
	4	3	47	38.7	61	38.9	147	20.8	26.8	3.5	30	0	74	57	0.64	1.2	1.3	A	90	5	0.6	183	36	0.9	353	54	1.5
		3.7	MB										FELT AT ANCHORAGE														
	4	3	58	10.3	61	38.4	147	20.4	28.0	3.0	19	4	95	77	0.66	1.4	1.4	A	97	1	0.8	187	40	1.2	6	50	1.6
					3.0	ML	PMR																				
	4	7	12	1.6	59	59.4	140	46.0	8.1	1.6	11	6	129	31	0.26	1.3	1.8	A	86	6	0.6	354	18	1.2	194	71	1.9
	4	7	17	29.3	60	1.5	140	45.6	0.3	2.0	16	4	121	31	0.38	1.3	1.8	A	277	0	0.6	7	29	0.9	187	61	2.0
	4	8	8	16.4	59	55.5	140	46.5	0.2	0.9	5	2	192	46	0.12	2.8	3.3	B	289	1	0.7	198	31	2.4	21	59	3.6
	4	8	53	37.1	59	57.0	140	46.6	3.6	1.2	5	3	191	64	0.20	3.0	3.3	B	109	7	1.0	204	37	2.5	10	52	3.8
	4	9	0	32.1	59	55.4	140	46.3	0.9	0.9	5	3	192	46	0.21	2.8	3.6	B	110	2	0.8	201	29	2.4	16	61	3.9
	4	9	1	18.3	59	53.8	140	49.1	0.9	1.2	6	3	200	46	0.47	2.4	2.6	B	110	5	0.5	202	17	2.3	4	72	2.7
	4	9	15	23.3	60	11.0	141	3.7	10.1	1.4	11	8	112	35	0.23	1.1	1.8	A	300	0	0.6	30	28	0.7	210	62	2.0
	4	9	47	8.1	60	14.8	140	17.0	10.2	0.7	5	2	184	51	0.15	2.5	3.0	B	281	7	0.9	16	36	1.6	182	53	3.6
	4	10	25	53.3	60	4.1	140	12.5	10.3	1.4	8	7	143	51	0.49	2.3	1.4	A	290	2	0.5	21	24	2.4	196	66	1.1
	4	13	45	48.2	60	6.1	140	55.6	10.6	1.2	9	4	128	31	0.20	1.8	1.7	A	99	10	0.7	198	41	2.1	358	47	1.4
	4	14	12	28.0	60	15.8	140	38.4	11.5	0.8	4	2	178	96	0.05	3.1	3.8	B	293	9	1.3	29	36	1.8	191	53	4.6
	4	14	17	40.4	60	16.6	140	42.6	13.1	0.5	4	2	175	100	0.02	3.4	4.0	B	298	10	1.3	36	37	1.9	195	51	4.9
	4	15	46	12.4	60	4.2	140	56.8	10.4	0.8	4	1	147	98	0.13	2.8	1.8	B	93	10	0.9	186	16	2.9	332	71	1.8
	4	16	16	40.2	60	20.9	140	14.2	3.1	0.7	4	1	199	126	0.29	5.2	5.0	C	317	4	1.1	223	44	6.8	51	46	2.2
	4	16	17	35.5	60	15.5	141	5.9	8.6	0.9	7	5	149	50	0.21	1.9	2.8	B	323	20	0.9	63	25	0.8	199	57	3.3
	4	16	26	24.9	63	4.9	150	8.8	104.4	3.2	14	4	179	170	0.44	3.1	8.0	C	313	1	3.0	44	17	1.9	220	73	8.3
	4	17	0	31.6	60	9.9	141	39.8	4.6	0.7	5	1	122	32	0.16	1.9	2.3	A	280	11	1.0	16	32	1.5	173	56	2.6
	4	17	53	32.6	60	20.0	140	42.8	12.9	0.7	4	1	184	104	0.06	3.3	4.7	B	306	13	1.3	44	29	1.8	195	58	5.4
	4	19	37	34.9	60	17.7	140	24.8	17.0	1.6	10	5	165	58	0.46	1.7	1.7	A	299	8	0.7	36	42	1.4	200	47	2.0
	4	20	38	18.2	60	17.0	141	8.0	7.8	1.6	18	6	121	46	0.36	0.9	1.5	A	94	4	0.6	3	15	0.8	199	74	1.5
	5	0	10	46.9	60	15.5	141	15.9	4.0	0.7	5	4	142	49	0.22	1.5	3.5	B	303	7	0.7	36	18	1.0	193	71	3.7
	5	0	29	12.9	60	16.4	141	41.9	2.3	0.3	4	3	149	40	0.17	2.9	9.8	C	49	9	1.5	317	12	0.8	175	75	10.1
	5	1	0	38.1	59	33.8	138	56.3	13.2	0.8	4	2	206	56	0.04	23.5	9.2	D	220	20	25.0	322	29	1.3	101	54	3.8
	5	1	42	17.0	60	10.3	141	1.5	15.4	0.5	3	3	197	44	0.11	17.0	18.4	D	73	25	1.1	326	32	1.8	193	47	25.0
	5	2	47	47.5	60	5.4	140	44.8	1.9	1.1	8	5	138	64	0.56	2.7	3.0	B	99	10	0.6	1	38	1.8	201	50	3.7
	5	3	35	9.4	60	20.7	141	11.6	8.7	1.2	10	6	123	58	0.40	0.8	2.1	A	292	3	0.7	23	15	0.6	191	75	2.2
	5	3	47	48.0	60	10.9	141	24.1	6.8	1.3	12	8	96	35	0.35	1.0	1.4	A	291	6	0.6	24	30	0.7	191	59	1.5
	5	4	8	36.2	60	9.1	140	59.2	5.3	1.1	9	3	110	41	0.24	2.2	2.4	A	94	11	0.6	355	39	1.4	197	49	3.0
	5	5	32	37.5	62	19.1	148	2.5	40.3	2.8	25	5	104	99	0.55	2.0	9.4	C	98	2	0.9	8	3	1.9	222	86	9.4
	5	7	23	45.3	60	12.8	141	4.2	10.9	0.9	7	5	147	57	0.24	3.4	3.4	B	83	29	0.8	334	30	1.4	208	46	4.7
	5	12	18	9.6	60	34.7	141	31.3	25.0	1.2	9	8	110	62	0.43	1.0	2.4	A	212	5	1.0	121	10	0.8	328	79	2.5
	5	12	37	5.2	60	17.2	141	10.8	7.3	0.7	7	5	150	55	0.11	1.8	3.3	B	314	12	0.6	30	24	0.6	200	63	3.7
	5	12	54	56.3	60	9.4	140	59.6	13.3	1.0	8	4	136	42	0.32	2.4	1.9	A	309	26	1.0	198	36	2.9	66	43	0.8
	5	13	6	35.0	60	8.3	141	20.3	16.5	0.6	4	1	153	60	0.08	14.7	6.0	D	206	22	15.8	310	32	1.4	88	50	1.2
	5	15	36	22.4	62	12.1	149	37.1	42.6	2.5	20	4	93	80	0.45	2.4	5.5	C	80	4	0.9	349	5	2.3	208	84	5.6

1980	ORIGIN TIME			LAT N	LONG W	DEPTH	MAQ	NP	NS	GAP	D3	RMS	ERH	ERZ	Q	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3
JAN	HR	MM	SEC	DEG MIN	DEG MIN	KM				DEG	KM	SEC	KM	KM		DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM
	5	15	37	11.9	62 8.9	147 17.6	30.0	2.1	16	4	207	102	0.79	2.2	1.1 A	256	6	0.6	347	12	2.2	140	77	1.0
	5	18	9	31.2	59 55.4	140 47.2	1.9	1.0	4	1	200	83	0.33	2.8	3 8 B	110	5	1.1	202	27	2.4	10	63	4.1
	5	18	23	47.8	59 56.1	140 47.1	0.9	0.9	5	3	191	45	0.26	2.5	3.7 B	111	4	0.7	202	22	2.2	11	68	3.9
	5	18	24	16.5	59 57.3	140 47.9	7.8	2.2	17	4	133	34	0.46	1.6	1.6 A	97	5	0.6	2	44	1.7	192	46	1.5
							2.6 ML	EMRC																
	5	18	47	43.2	59 55.8	140 47.3	1.8	0.9	5	1	192	45	0.08	3.1	3.8 B	108	5	0.9	201	32	2.5	10	58	4.2
	5	18	48	43.3	60 15.8	141 11.7	8.4	1.2	9	4	146	53	0.17	2.1	2.6 B	97	8	0.8	1	35	1.2	198	54	3.1
	5	19	41	25.8	60 24.7	143 18.6	24.3	1.6	8	5	83	82	0.33	2.0	3.2 B	75	15	0.9	337	26	0.8	192	59	3.7
	5	19	41	37.9	60 16.9	141 10.9	5.7	0.7	5	2	245	55	0.06	3.9	4.4 B	72	22	1.2	329	30	2.9	193	51	5.3
	5	20	10	43.3	59 55.5	140 47.2	0.0	0.7	4	1	199	83	0.01	2.8	4.0 B	109	4	1.0	201	24	2.4	10	66	4.3
	5	20	42	59.9	60 15.4	140 42.5	12.2	1.8	17	8	83	44	0.33	1.3	2.1 A	97	1	0.6	7	25	1.0	189	65	2.2
							2.3 ML	EMRC																
	5	20	48	29.6	60 15.9	140 41.0	12.6	1.7	14	7	145	46	0.38	1.1	1.4 A	104	5	0.5	13	14	1.0	213	75	1.4
	5	23	3	30.8	59 13.6	150 53.3	40.2	3.0	19	2	160	141	0.39	2.0	12.9 D	53	1	1.5	143	2	1.9	296	88	12.9
							3.1 ML	PHR																
	6	0	47	59.7	59 57.5	141 16.0	0.7	0.7	6	2	224	58	0.30	2.0	2.7 B	115	11	0.8	210	25	1.7	3	62	3.0
	6	1	0	16.8	60 18.3	140 39.6	5.9	0.5	3	2	185	123	0.02	6.6	13.4 D	306	18	1.3	42	18	1.9	174	64	14.8
	6	1	59	17.5	60 12.2	140 48.7	12.8	0.9	6	2	153	71	0.03	2.8	2.6 B	101	7	1.1	197	42	3.5	3	47	1.7
	6	3	34	38.3	59 57.1	140 45.6	1.7	1.1	5	1	186	45	0.10	6.1	12.4 D	105	6	0.9	198	24	2.5	2	65	13.6
	6	4	13	52.6	60 14.0	140 48.3	11.3	1.8	18	4	82	38	0.19	1.3	2.0 A	98	2	0.7	7	27	0.9	192	63	2.2
							2.4 ML	EMRC																
	6	4	50	14.3	60 15.9	140 56.6	9.4	1.6	13	4	131	42	0.13	1.0	2.0 A	332	12	0.7	66	15	0.8	205	70	2.1
	6	4	54	58.3	60 16.3	140 56.4	8.5	1.1	8	5	159	43	0.09	2.6	3.2 B	96	7	0.9	1	36	1.4	195	53	3.8
	6	5	5	56.0	62 30.1	148 38.3	56.7	3.0	16	3	120	105	0.52	3.2	8.8 C	89	1	1.3	359	7	3.0	187	83	8.8
	6	5	24	35.8	61 44.0	149 44.1	41.4	2.4	19	3	151	55	0.32	1.6	2.5 B	181	5	1.6	90	7	1.0	306	81	2.5
	6	11	10	15.8	60 27.4	141 21.0	3.4	1.0	4	3	163	57	0.27	2.8	7.9 C	354	8	0.6	85	8	2.5	220	79	8.0
	6	11	21	17.2	60 30.1	145 4.7	22.3	1.3	13	4	137	58	0.47	1.2	1.4 A	84	21	0.8	185	25	1.1	319	56	1.5
	6	13	21	32.7	62 7.3	148 5.7	39.4	2.3	17	5	186	80	0.34	2.5	5.0 C	170	2	2.3	80	5	1.0	282	85	5.0
	6	13	34	1.5	60 23.3	141 18.6	6.1	0.7	6	4	129	56	0.39	1.4	3.3 B	72	4	1.4	341	10	0.7	183	79	3.4
	6	13	34	50.9	60 21.9	141 14.8	11.7	0.7	3	2	207	96	0.10	5.9	14.8 D	90	4	2.4	358	21	1.0	190	69	15.9
	6	15	58	16.8	62 51.1	150 33.4	93.3	3.0	14	3	119	139	0.39	4.3	8.3 C	344	13	3.7	77	14	2.4	213	71	8.8
	6	16	50	19.8	61 31.6	149 54.5	46.5	1.9	13	4	66	42	0.22	1.5	3.0 B	275	0	1.1	185	8	1.5	5	82	3.0
	6	19	15	37.5	61 2.2	146 16.2	12.4	1.7	15	7	70	55	0.47	0.9	1.5 A	104	6	0.6	195	7	0.9	334	81	1.6
	6	20	7	6.5	60 20.0	141 13.4	17.0	0.8	5	1	154	56	0.10	3.9	5.3 C	85	17	1.5	345	31	1.3	200	54	6.4
	6	20	8	34.6	60 10.2	140 56.7	9.6	0.8	5	3	147	77	0.17	4.6	5.6 C	322	18	1.2	64	34	0.8	209	50	7.2
	6	21	22	48.3	60 13.3	140 41.8	7.9	0.7	4	2	185	95	0.11	13.3	4.5 D	41	12	13.6	307	16	1.3	166	70	3.7
	6	21	27	36.7	60 21.7	140 54.7	9.3	0.8	5	2	175	47	0.04	2.8	4.7 B	297	1	1.2	28	28	1.5	205	62	5.3
	6	21	45	37.0	60 21.9	141 11.1	9.8	0.9	7	2	158	59	0.20	2.3	4.2 B	103	7	1.0	10	25	1.3	208	64	4.6
	6	23	53	36.3	60 18.3	140 22.0	8.9	1.1	4	1	192	126	0.19	22.1	12.0 D	324	22	1.3	221	28	25.0	86	53	2.7
	7	0	23	45.5	60 17.9	146 33.6	11.0	1.6	17	9	192	79	0.51	1.5	1.6 A	254	25	0.6	151	26	1.3	21	53	1.9
	7	2	29	9.8	60 34.5	142 46.6	21.6	1.4	10	5	87	59	0.39	1.4	3.2 B	349	1	0.9	80	16	1.1	256	74	3.3
	7	3	2	25.3	60 15.0	140 59.5	9.2	1.5	11	4	127	44	0.07	1.7	2.4 A	94	10	0.8	358	29	1.1	201	59	2.7
	7	4	12	49.6	60 16.5	140 48.7	14.1	0.7	4	2	175	119	0.27	7.2	9.7 C	320	5	1.6	53	36	1.3	223	54	12.0
	7	4	26	59.4	60 16.2	140 55.6	6.6	1.5	12	6	132	66	0.23	1.0	1.8 A	119	7	0.6	27	19	0.8	228	70	1.9
	7	6	4	36.5	59 57.2	141 18.6	5.8	1.4	11	4	123	23	0.32	1.1	1.2 A	301	13	0.7	35	16	1.1	174	69	1.3
	7	6	12	51.6	59 57.5	141 15.4	3.6	0.6	6	3	111	24	0.23	1.0	1.8 A	6	10	0.6	273	15	0.9	128	72	1.9
	7	6	51	18.4	60 34.0	142 16.3	12.4	1.8	17	3	64	59	0.76	1.0	2.5 B	170	3	0.7	80	11	0.8	275	79	2.5
	7	7	49	1.6	59 59.6	140 12.8	12.2	0.4	3	1	219	58	0.	15.2	19.9 D	125	17	1.1	226	32	2.4	11	53	25.0
	7	9	43	30.0	61 34.6	146 33.8	20.6	1.9	19	4	76	51	0.77	0.9	1.7 A	289	1	0.5	198	13	0.9	23	77	1.7

SOUTHERN ALASKA EARTHQUAKES, JAN - MAR 1980

	ORIGIN TIME			LAT N		LONG W		DEPTH	MAG	NP	NS	QAP	D3	RMS	ERH	ERZ	Q	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3		
1980	HR	MIN	SEC	DEG	MIN	DEG	MIN	KM				DEG	KM	SEC	KM	KM		DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM		
JAN	7	11	27	5.9	60	4.6	139	23.7	16.4	0.4	4	2	245	48	0.41	7	9	3.9	C	120	20	1.4	225	36	9.6	7	47	2.3
	7	12	30	18.9	60	13.3	141	4.9	0.6	0.9	7	3	144	48	0.25	1.1	3.1	B	281	0	0.8	11	14	0.9	191	76	3.1	
	7	13	1	8.3	60	20.8	141	13.8	4.4	1.0	8	2	155	56	0.18	2.1	4.0	B	104	6	1.0	11	24	1.1	207	65	4.3	
	7	13	59	2.9	60	16.2	140	48.4	14.2	0.6	5	2	163	74	0.15	3.1	3.2	B	294	11	0.9	35	42	1.7	192	46	4.1	
	7	14	28	51.7	60	18.1	141	8.9	7.7	1.2	9	3	153	54	0.12	1.9	3.0	B	72	14	0.8	335	25	1.0	188	61	3.5	
	7	16	20	7.0	60	15.8	140	43.4	12.3	1.0	6	4	166	44	0.15	2.6	3.0	B	93	5	0.8	359	38	1.6	189	52	3.6	
	7	17	40	50.0	60	16.1	140	58.0	12.2	1.0	5	2	157	44	0.07	4.3	6.1	C	282	5	1.0	15	34	1.5	185	56	7.4	
	7	20	23	22.6	60	14.9	141	11.5	5.2	0.6	6	2	144	52	0.33	2.1	3.6	B	73	16	0.8	336	22	1.2	196	62	4.0	
	7	21	20	16.5	60	4.7	139	22.5	24.9	0.6	4	3	246	49	0.11	6.2	3.6	C	121	7	1.1	213	16	6.4	8	72	3.3	
	7	21	56	51.7	60	16.2	140	28.4	0.2	1.0	5	1	177	59	0.09	4.5	6.9	C	300	9	1.1	35	30	2.0	195	58	7.9	
	7	22	55	53.2	60	41.0	141	1.8	17.8	0.8a	2	3	327	81	0.15	17.6	18.0	D	140	4	2.1	234	44	2.8	46	46	25.0	
	8	1	46	6.5	62	7.9	142	23.8	20.0	2.1	6	3	270	142	1.18	9.3	4.6	C	14	11	9.4	109	25	2.3	262	62	4.7	
	8	4	0	7.1	60	4.4	140	20.7	20.3	1.1	3	1	292	70	0.	16.3	9.6	D	9	30	18.8	259	31	4.0	133	44	1.8	
	8	4	48	40.6	60	13.1	140	59.3	9.4	0.7	4	2	148	43	0.02	8.5	11.2	D	277	0	1.2	6	37	1.4	187	53	13.9	
	8	5	26	42.4	60	0.5	140	12.5	14.5	0.5	3	1	215	59	0.	17.5	18.0	D	123	19	1.2	229	38	2.5	12	46	25.0	
	8	6	29	50.8	60	16.5	141	48.3	0.3	0.6	5	2	136	45	0.22	1.0	3.8	B	268	2	0.8	358	8	0.8	164	82	3.8	
	8	7	32	15.9	60	11.9	141	1.1	15.0	0.8	4	1	143	44	0.26	11.8	13.2	D	287	6	1.3	23	41	1.3	190	48	17.6	
	8	10	47	54.0	59	35.0	139	21.1	17.3	2.5	16	3	140	31	0.79	1.6	1.1	A	180	19	1.6	287	40	0.8	71	44	1.2	
	8	13	21	45.5	61	49.3	147	28.5	31.4	3.2	26	2	165	69	0.71	1.6	1.1	A	2	9	1.6	95	16	0.8	244	71	1.1	
	8	13	45	15.2	60	14.8	140	57.2	12.2	0.9	4	4	141	83	0.10	8.0	8.7	C	109	12	1.0	9	40	1.5	212	48	11.7	
	8	14	30	16.7	61	26.8	146	42.2	18.3	1.8	16	3	121	54	0.59	1.0	1.8	A	106	1	0.6	196	3	1.0	358	87	1.8	
	8	17	18	21.2	60	1.9	140	35.1	12.5	1.8	10	2	121	51	0.28	2.0	2.5	A	104	6	0.8	10	33	1.6	203	56	2.8	
	8	17	55	58.8	60	12.3	141	15.7	10.3	1.2	8	2	110	47	0.12	1.8	2.1	A	310	3	1.0	43	40	1.0	216	50	2.6	
	8	18	2	55.0	60	22.1	141	17.9	15.1	1.4	8	3	118	55	0.20	1.4	2.4	A	350	12	0.8	84	17	1.1	227	69	2.6	
	8	18	52	28.0	60	0.9	140	14.0	20.3	1.1	4	3	185	61	0.32	5.9	3.3	C	108	7	0.9	15	23	6.3	214	66	2.4	
	8	19	17	57.6	59	56.4	153	24.3	145.8	4.2	21	1	140	90	0.35	2.8	6.1	C	124	5	2.7	32	13	2.3	234	76	6.3	
	8	19	29	12.0	60	42.3	147	36.0	27.7	1.7	18	10	117	69	0.39	0.8	1.9	A	282	4	0.5	192	5	0.8	51	84	1.9	
	8	20	11	33.7	60	15.5	140	56.6	3.4	0.6	5	3	169	108	0.22	1.8	4.2	B	329	10	1.1	62	18	0.8	211	69	4.5	
	8	21	32	43.2	58	37.4	137	6.7	11.7	2.2	3	1	356	206	1.02	25.0	18.6	D	43	1	25.0	312	43	5.2	134	47	25.0	
	9	1	35	18.3	62	44.1	148	42.2	67.6	3.2	19	1	238	129	0.46	6.5	10.0	D	260	2	2.0	350	14	6.2	162	76	10.2	
	9	5	7	8.1	60	48.0	139	31.7	0.5	1.8	10	5	129	100	0.63	1.4	6.2	C	100	3	1.1	10	3	1.4	235	86	6.2	
	9	5	13	10.7	60	12.4	140	58.5	11.1	1.5	10	4	124	39	0.18	1.5	2.5	B	345	19	0.7	82	20	0.9	215	62	2.8	
	9	5	39	5.9	60	14.4	141	34.6	3.7	1.4	10	3	97	34	0.26	1.2	2.3	A	310	10	0.8	43	18	1.0	192	69	2.4	
	9	7	22	44.2	59	56.2	140	51.7	5.7	1.6	12	2	136	41	0.27	1.7	1.9	A	109	8	0.6	14	30	1.6	212	59	2.0	
	9	9	14	41.0	60	12.9	141	28.4	5.6	1.6	11	5	101	37	0.34	1.4	1.9	A	286	13	0.7	23	30	1.0	175	57	2.1	
	9	9	23	32.6	62	58.6	149	33.7	40.9	2.4	10	3	160	136	0.49	2.5	24.9	D	153	1	2.3	63	4	1.7	257	86	25.0	
	9	13	12	3.4	60	11.6	141	10.8	7.1	1.6	12	4	113	35	0.30	1.6	1.7	A	96	10	0.6	358	41	1.0	197	47	2.1	
	9	14	38	10.9	61	30.9	150	9.6	41.5	2.1	15	7	99	55	0.30	1.1	2.8	B	257	0	0.8	167	5	1.1	347	85	2.8	
	9	15	19	27.5	60	14.9	141	18.9	6.6	0.8	5	2	153	46	0.09	2.4	4.4	B	321	16	0.8	57	19	1.6	194	65	4.8	
	9	15	48	30.9	62	47.6	149	40.6	49.9	2.4	10	3	155	132	0.41	5.9	25.0	D	268	0	2.2	358	3	5.8	178	87	25.0	
	9	15	58	9.8	60	57.2	147	38.3	1.9	2.1	20	3	62	68	0.86	0.9	1.2	A	159	12	0.9	255	24	0.5	45	63	1.3	
	9	16	44	28.9	59	13.4	138	13.0	0.0	1.5	3	2	349	114	0.21	24.7	7.8	D	209	9	25.0	117	12	8.9	335	75	6.7	
	9	17	54	24.6	60	16.0	141	1.4	1.4	0.7	5	1	166	61	0.47	2.1	5.3	C	357	13	0.9	90	14	1.3	226	71	5.6	
	9	21	30	41.5	60	47.3	147	40.7	28.0	2.0	13	4	128	74	0.28	1.4	2.3	A	260	0	0.7	170	16	1.2	350	74	2.4	
10	5	54	23.1	58	36.5	155	12.5	144.6	4.2	7	2	234	186	0.24	6.8	10.5	D	325	0	2.8	55	21	5.9	235	69	11.0		

SOUTHERN ALASKA EARTHQUAKES, JAN - MAR 1980

1980	ORIGIN TIME			LAT N		LONG W		DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ	Q	A21	DIP1	SE1	A22	DIP2	SE2	A23	DIP3	SE3
JAN	HR	MM	SEC	DEG	MIN	DEG	MIN	KM				DEG	KM	SEC	KM	KM		DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM
10	7	44	21.3	60	14.6	141	5.6	7.2	1.1	4	2	150	87	0.13	10.3	15.6	D	88	18	2.6	349	27	1.2	208	57	18.6
10	14	39	7.6	60	11.9	141	2.5	12.0	2.1	16	3	62	37	0.14	1.3	1.6	A	303	17	0.8	43	29	1.0	187	55	1.8
								2.8 ML	EMRC																	
10	15	53	31.6	60	12.4	141	3.6	9.3	1.3	5	2	201	57	0.16	3.0	4.2	B	267	8	2.3	3	33	1.2	165	56	5.0
10	17	18	41.1	61	51.4	147	29.0	31.0	3.1	24	3	154	72	0.76	1.6	1.2	A	86	5	0.8	354	22	1.7	188	67	1.1
10	18	58	26.4	63	20.4	147	41.6	23.4	2.8	8	3	147	174	0.77	5.0	9.3	C	166	15	1.3	72	17	3.9	295	67	10.1
10	21	0	55.3	63	7.9	150	39.9	106.7	3.3	11	3	196	189	0.41	4.7	8.4	C	135	8	4.4	42	20	2.3	246	68	9.0
10	22	26	38.7	60	13.0	148	46.3	23.3	2.4	14	6	174	73	0.50	1.8	2.2	A	78	5	0.9	171	32	1.4	340	58	2.4
10	23	21	25.5	61	37.0	149	54.1	40.2	2.2	16	4	82	45	0.35	1.4	2.3	A	83	3	0.8	173	8	1.4	333	81	2.3
11	0	9	35.2	61	20.0	148	37.5	29.3	2.6	26	5	59	49	0.49	0.9	1.0	A	69	2	0.6	159	23	0.9	334	67	1.1
11	0	34	54.3	60	24.0	148	35.9	0.1	2.0	20	5	145	57	0.64	1.0	1.8	A	343	3	1.0	252	16	0.7	83	74	1.8
11	1	38	12.3	61	19.9	151	24.4	64.8	2.8	21	6	72	73	0.62	1.5	2.9	B	59	9	0.9	152	15	1.2	299	72	3.0
11	4	39	56.7	63	7.2	150	45.8	121.9	3.7	20	6	131	190	0.49	5.9	8.8	C	81	12	2.8	345	24	4.5	195	63	9.7
								3.0 ML	PMR																	
11	4	43	15.8	60	17.0	141	3.8	4.8	1.0	7	3	137	60	0.15	1.2	3.2	B	101	6	1.0	9	16	0.7	211	73	3.3
11	5	3	9.8	60	15.5	140	55.8	14.5	1.7	9	6	131	46	0.26	0.9	1.6	A	98	15	0.5	4	16	0.7	229	68	1.7
11	8	58	41.2	62	30.1	151	0.2	79.6	3.4	21	5	110	141	0.46	4.2	3.9	B	82	14	1.8	179	28	4.2	328	58	4.0
								2.7 ML	PMR																	
11	9	24	32.4	60	14.2	140	50.4	13.4	1.9	20	6	65	46	0.33	0.9	1.6	A	278	4	0.6	9	20	0.8	177	70	1.7
								2.5 ML	EMRC																	
11	12	37	25.6	60	5.0	140	44.2	1.5	0.7	4	2	161	88	0.24	4.8	5.0	C	105	5	0.8	10	43	2.4	200	47	6.5
11	13	4	59.3	61	58.0	148	48.8	10.5	1.6	15	4	173	65	0.80	1.2	1.7	A	188	5	1.1	281	30	0.8	89	59	1.9
11	13	25	27.8	60	35.2	144	53.8	22.9	1.6	13	6	117	47	0.47	1.4	1.6	A	190	19	0.8	88	32	0.7	306	52	2.0
11	14	2	59.5	61	31.1	146	27.9	16.2	1.6	19	12	77	58	0.70	0.8	1.4	A	283	1	0.5	193	7	0.8	21	83	1.4
11	14	8	21.5	60	12.9	141	4.6	1.9	1.3	7	4	133	57	0.38	1.5	2.6	B	84	9	1.1	350	24	0.8	193	64	2.9
11	14	50	38.0	61	26.6	146	41.8	17.4	1.8	20	15	62	55	0.74	1.0	1.3	A	282	7	0.4	191	7	1.0	57	80	1.3
11	19	24	16.5	60	58.4	147	1.3	14.3	2.1	20	6	91	72	0.38	0.9	1.2	A	300	10	0.5	32	11	0.9	169	75	1.2
11	19	57	43.0	60	17.8	140	42.6	3.8	0.8	3	2	181	121	0.05	2.1	6.1	C	315	6	1.6	46	15	1.1	204	74	6.4
11	20	41	10.1	60	16.2	140	57.7	6.6	1.3	7	4	142	65	0.24	1.6	3.1	B	101	7	1.3	8	21	1.0	208	68	3.3
11	22	44	45.7	60	16.7	141	7.8	8.8	1.4	9	4	133	45	0.29	1.0	2.0	A	83	3	0.9	352	20	0.7	181	70	2.1
11	23	27	11.0	60	9.1	140	58.9	13.5	1.7	12	5	118	34	0.20	1.1	1.7	A	110	10	0.6	15	26	0.6	219	62	2.0
12	1	42	37.2	60	17.5	141	14.2	6.6	0.7	4	4	202	52	0.13	2.2	5.1	C	74	12	1.3	341	17	0.8	198	69	5.4
12	1	46	21.8	60	32.9	141	40.0	10.8	0.9	4	4	185	62	0.12	3.2	12.2	D	66	1	3.2	336	3	1.1	174	87	12.2
12	3	41	2.1	61	60.0	149	8.8	39.1	2.3	8	6	243	75	0.51	2.1	3.4	B	87	10	1.0	179	13	2.0	320	74	3.5
12	4	12	42.6	61	58.1	148	43.8	41.9	2.0	10	5	235	92	0.44	2.5	2.0	B	227	11	1.4	132	27	2.7	337	61	1.9
12	5	51	23.8	62	56.2	150	53.6	121.0	4.1	25	5	125	176	0.58	3.7	6.1	C	338	10	3.5	71	15	2.3	216	72	6.3
12	8	9	41.4	62	5.2	150	42.5	56.7	3.4	26	4	96	100	0.47	2.9	3.1	B	92	19	0.9	195	34	2.1	338	50	3.8
								3.2 ML	PMR																	
12	8	32	1.4	61	35.0	149	57.5	47.5	1.5	9	8	151	82	0.16	1.2	2.2	A	173	4	1.2	264	16	0.9	69	73	2.3
12	10	2	32.5	61	46.6	149	54.3	46.8	2.0	12	8	163	62	0.31	1.6	2.6	B	97	2	0.8	187	14	1.5	359	76	2.7
12	10	26	38.3	61	32.2	146	23.5	17.1	2.2	29	10	82	54	0.74	0.7	1.3	A	297	1	0.5	207	3	0.7	45	87	1.3
12	11	59	13.3	60	10.3	141	1.9	13.0	0.7	4	3	158	107	0.18	6.0	4.7	C	112	11	1.0	210	38	7.6	9	50	0.7
12	17	7	41.0	62	17.9	148	14.1	39.8	3.1	27	4	106	92	0.58	2.1	10.0	D	97	3	0.8	7	3	2.0	232	86	10.1
12	18	50	28.6	63	15.1	150	22.3	97.6	3.6	19	6	192	192	0.66	4.2	9.8	C	131	9	3.8	39	11	1.9	259	76	10.1
12	21	50	20.8	60	12.6	140	52.2	13.5	3.2	24	7	68	67	0.50	1.1	2.7	B	286	4	0.6	17	17	0.7	183	73	2.9
								4.0 ML	PMR																	
								4.1 ML	EMRC																	
12	21	51	34.7	60	12.7	140	52.2	13.8	1.6	9	3	130	64	0.42	1.2	2.0	A	247	6	1.1	340	25	0.8	144	64	2.1
12	21	52	34.6	60	15.1	140	50.3	7.9	2.4	15	2	135	71	0.48	1.2	2.1	A	290	8	0.8	23	18	1.0	177	70	2.2
12	21	54	4.7	60	15.3	140	49.1	8.3	1.7	11	4	137	48	0.30	1.6	1.8	A	283	8	0.7	19	38	1.1	183	51	2.1
13	0	55	59.1	60	16.7	141	40.9	2.8	1.3	6	2	114	39	0.24	2.5	7.7	C	38	10	1.4	305	13	0.9	164	73	8.1
13	3	56	35.3	60	1.4	141	15.8	5.8	1.4	6	3	98	18	0.10	1.3	1.6	A	305	5	0.9	214	11	1.3	59	78	1.6

SOUTHERN ALASKA EARTHQUAKES, JAN - MAR 1980

1980	ORIGIN TIME	LAT N	LONG W	DEPTH	MAQ	NP	NS	GAP	D3	RMS	ERH	ERZ	AZI	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3
JAN	HR MN SEC	DEG MIN	DEG MIN	KM				DEG	KM	SEC	KM	KM	DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM
13	4 48	61 19.5	146 48.4	22.3	2.0	23	10	78	51	0.61	1.0	1.4	11	3	0.9	280	9	0.5	119	80	1.4
13	16 10	49.5	60 15.8	140 50.9	11.1	0.8	5	3	173	105	0.40	2.8	4.7	16	1.3	71	24	0.8	213	61	5.4
13	21 26	34.7	61 54.7	150 16.8	44.1	2.6	18	7	168	84	0.44	2.5	3.9	3	2.5	75	4	1.1	292	85	3.9
14	2 11	21.3	61 3.0	149 11.8	19.5	0.8	6	4	95	91	0.14	1.4	2.6	171	5	0.8	264	23	0.9	69	2.8
14	2 54	28.2	61 29.7	149 27.1	43.7	3.4	30	3	110	29	0.36	1.2	2.2	79	5	0.8	170	13	1.1	328	7.6
14	4 48	61 60 13.2	141 20.7	16.2	0.7	3	3	175	106	0.31	20.5	14.4	D	96	29	2.5	209	35	25.0	337	41
14	5 45	23.0	61 34.5	146 26.4	20.2	1.7	18	10	89	58	0.80	0.7	1.7	A	165	3	0.7	255	6	0.6	48
14	9 29	54.4	60 20.5	141 9.2	0.1	2.7	25	6	53	52	0.46	1.0	2.1	A	330	3	0.7	61	15	0.8	229
14	10 1	56.5	60 12.9	140 50.3	14.2	1.8	19	7	68	43	0.38	1.4	2.1	A	114	1	0.8	24	28	0.9	206
14	12 47	29.5	61 27.0	150 10.1	47.5	1.8	12	9	118	90	0.34	1.2	3.5	B	265	3	0.7	175	5	1.2	26
14	13 27	21.4	60 15.4	140 58.6	8.6	1.4	9	4	128	64	0.29	1.6	2.7	B	109	10	0.9	14	25	1.0	219
14	13 46	12.9	59 60.0	139 1.7	19.2	0.7	3	2	271	62	0.22	9.8	23.5	D	40	12	6.5	134	16	2.2	275
14	14 47	52.5	60 25.6	147 42.5	14.4	2.7	32	3	81	62	0.53	0.9	1.5	A	174	7	0.9	266	22	0.6	67
14	17 49	18.1	60 15.4	141 8.7	10.0	0.6	5	3	147	52	0.36	3.0	5.0	C	74	13	1.2	337	26	0.9	188
14	20 4	39.6	60 14.2	140 17.0	13.4	1.6	11	6	166	50	0.25	1.5	2.0	A	298	9	0.8	33	29	1.1	192
14	20 6	3.7	60 10.3	140 19.5	14.2	1.0	5	2	228	46	0.21	12.8	1.8	D	191	1	12.8	101	14	1.3	285
14	20 38	31.8	61 39.7	150 40.4	15.4	1.6	10	4	143	75	0.64	1.9	4.5	B	113	3	0.7	204	20	1.0	15
14	23 3	36.9	60 10.4	141 4.6	3.2	0.7	6	3	110	46	0.21	2.6	3.6	B	93	9	0.8	357	33	1.3	196
15	1 2	43.5	61 20.6	150 41.2	53.8	1.8	8	5	118	84	0.35	1.3	4.6	B	5	3	1.3	95	6	0.9	248
15	1 26	36.0	60 54.4	149 22.7	29.5	1.1	6	4	119	57	0.17	2.5	5.5	C	229	7	0.9	321	20	1.4	121
15	3 9	31.4	60 1.9	139 15.3	17.5	0.5	3	2	274	68	0.24	13.1	21.5	D	18	10	5.8	114	29	1.5	271
15	6 12	45.9	60 58.7	150 9.4	48.8	1.6	9	7	116	63	0.20	1.0	2.3	A	251	3	0.7	342	9	0.9	143
15	6 44	54.5	63 0.2	150 28.2	110.9	3.5	21	7	123	172	0.46	3.6	7.2	C	147	4	3.3	55	22	2.0	247
15	8 48	59.2	60 14.2	141 41.8	9.9	0.9	6	3	123	38	0.17	2.1	3.2	B	296	16	0.8	34	26	1.2	178
15	8 57	32.4	60 16.6	140 32.5	14.4	1.1	8	2	155	61	0.16	2.0	2.6	B	320	11	0.8	56	29	1.6	211
15	9 50	48.2	60 12.9	141 34.4	5.2	1.3	9	4	96	32	0.22	1.2	2.0	A	306	16	0.8	42	19	0.9	179
15	11 46	52.8	61 30.3	147 49.5	22.1	1.6	22	6	74	43	0.63	1.0	1.6	A	265	5	0.6	174	10	0.9	21
15	12 40	13.8	60 9.7	141 5.0	5.8	1.1	9	3	115	33	0.14	1.8	2.4	A	94	22	0.7	352	27	1.0	218
15	13 0	47.0	60 15.4	141 3.6	12.0	0.9	8	3	124	59	0.21	2.9	3.6	B	314	12	1.0	52	35	0.8	208
15	14 28	18.5	61 54.9	148 26.3	34.5	2.6	25	4	167	56	0.61	1.6	1.0	A	158	10	1.6	258	42	1.2	57
15	14 50	39.9	61 37.0	146 22.5	29.6	2.0	22	5	87	55	0.54	0.9	1.2	A	98	3	0.6	189	9	0.9	350
15	15 25	48.0	60 12.8	140 50.9	14.1	0.9	6	5	155	73	0.04	6.0	6.4	C	98	22	1.0	352	35	1.7	214
15	18 19	59.1	59 55.3	153 25.2	130.5	3.9	17	3	92	92	0.25	2.4	2.4	A	34	14	1.3	292	41	2.1	139
15	19 27	44.1	59 46.9	148 44.5	39.0	2.2	12	6	234	86	0.53	3.8	3.3	B	345	22	1.7	95	41	0.9	234
15	19 56	43.6	61 31.1	146 24.3	21.5	1.7	18	8	80	52	0.65	0.7	1.6	A	5	0	0.7	275	7	0.6	95
15	20 23	33.3	62 6.4	149 25.8	41.2	2.6	19	3	187	66	0.35	2.5	5.7	C	87	7	1.2	356	10	2.3	212
15	21 13	11.7	61 37.4	146 23.4	28.6	2.6	26	2	86	55	0.63	0.9	1.2	A	286	2	0.7	195	18	0.9	22
15	21 34	42.7	60 13.6	141 45.1	15.0	0.5	4	2	137	40	0.52	2.8	4.5	B	52	13	1.6	316	27	1.1	165
15	22 50	28.2	60 3.6	149 8.6	9.8	1.8	13	5	210	78	0.66	2.3	1.6	A	282	28	0.8	175	29	2.6	48
15	23 23	39.4	60 7.5	141 8.3	11.4	1.9	16	6	68	28	0.28	1.4	1.3	A	105	25	0.7	217	39	1.7	351

2.5 ML ENRC

SOUTHERN ALASKA EARTHQUAKES, JAN - MAR 1980

1980	ORIGIN TIME			LAT N		LONG W		DEPTH	MAG	NP	NS	CAP	D3	RMS	ERH	ER1	Q	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3
JAN	HR	MIN	SEC	DEG	MIN	DEG	MIN	KM				DEG	KM	SEC	KM	KM		DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM
	16	0	42	8.0	60	21.0	141	20.3	10.8	0.8	8	4	115	52	0.10	1.8	2.9 B	357	14	0.8	92	19	1.4	233	66	3.2
	16	2	44	6.6	61	27.5	140	43.9	1.0	1.7	4	2	279	157	0.54	5.2	5.8 C	273	11	2.5	175	32	4.6	19	56	6.3
	16	3	56	59.9	60	15.5	140	47.2	8.2	1.4	8	3	131	65	0.17	1.7	3.0 B	117	3	0.8	25	25	1.0	213	65	3.2
	16	6	45	55.2	61	22.7	149	47.2	37.8	1.7	13	5	110	71	0.31	1.6	1.2 A	335	3	1.6	66	18	0.9	236	72	1.2
	16	8	36	29.9	60	15.8	141	11.7	10.5	1.4	10	5	117	53	0.21	1.4	2.1 A	115	8	0.8	21	27	1.0	220	62	2.3
	16	12	14	37.5	60	2.3	139	6.7	16.5	0.6	3	1	277	67	0.13	10.6	23.1 D	26	10	7.8	120	20	1.9	271	67	25.0
	16	15	15	20.4	61	25.6	146	26.8	20.5	3.0	30	0	121	41	0.52	0.9	1.4 A	15	3	0.9	285	6	0.6	132	83	1.4
	16	17	0	56.0	60	13.1	140	51.4	0.4	0.6	6	2	155	74	0.22	5.3	9.7 C	93	13	1.2	357	24	1.6	209	62	10.9
	16	20	44	43.6	60	10.4	140	12.2	12.0	1.3	7	4	177	45	0.30	2.4	1.7 A	288	4	0.9	196	25	2.6	26	65	1.4
	17	3	39	20.5	60	10.5	141	10.3	15.0	0.6	3	2	201	115	0.19	20.0	15.1 D	293	0	1.6	203	37	25.0	23	53	1.2
	17	5	19	3.2	60	3.7	147	38.9	27.8	2.1	22	5	119	94	0.41	1.4	1.3 A	262	3	0.8	170	42	1.5	355	48	1.1
	17	5	21	54.1	60	16.4	141	14.8	11.4	1.2	8	2	115	51	0.18	1.7	2.6 B	357	20	0.9	96	21	1.2	228	60	2.9
	17	5	25	15.7	61	34.0	146	26.7	30.4	1.9	20	5	81	55	0.48	0.9	1.1 A	275	5	0.7	184	18	0.9	20	71	1.1
	17	6	16	34.2	59	13.6	136	13.1	0.6	3.0	8	3	147	179	1.35	7.6	6.9 C	312	7	3.2	49	42	10.0	214	47	2.2
	17	6	20	28.8	60	24.8	140	25.0	15.0	1.1	4	1	196	101	0.23	5.7	10.6 D	302	4	1.4	34	26	2.5	204	64	11.7
	17	7	48	56.4	60	1.5	141	16.5	4.0	0.9	7	2	157	42	0.13	2.3	2.0 A	107	7	0.9	12	38	2.8	206	51	1.4
	17	8	57	7.7	60	4.2	141	45.3	6.9	0.4	5	3	148	35	0.13	1.9	1.6 A	344	7	2.0	255	8	0.8	117	79	1.6
	17	9	24	35.1	60	55.6	146	56.3	25.2	1.7	19	6	92	40	0.45	1.0	2.3 A	184	2	0.9	274	8	0.6	80	82	2.3
	17	9	51	37.4	60	54.2	146	57.7	21.9	3.0	34	2	42	28	0.64	0.8	1.2 A	184	2	0.8	274	8	0.6	80	82	1.2
	17	15	53	18.1	60	15.4	140	53.2	13.4	1.7	12	3	133	39	0.09	1.0	2.0 A	83	9	0.9	351	15	0.8	203	72	2.1
	17	17	46	40.8	57	26.3	150	53.2	12.0	4.2	5	2	304	325	0.26	25.0	25.0 D	302	21	25.0	45	30	25.0	183	52	25.0
				3.6 MB																						
	17	18	10	12.4	60	0.1	141	9.6	11.4	0.6	3	3	235	51	0.13	9.0	2.9 C	15	10	9.1	108	14	1.1	251	73	2.6
	17	18	42	5.5	60	13.7	140	48.7	11.8	1.4	9	3	134	38	0.30	1.6	2.5 A	109	6	0.8	15	28	1.0	210	61	2.7
	17	19	35	34.5	61	41.5	149	47.4	40.0	2.0	20	8	147	51	0.37	1.0	2.3 A	184	3	1.0	93	5	0.6	305	84	2.4
	17	21	8	8.0	60	4.3	140	11.9	23.5	1.0	5	2	162	34	0.25	3.4	2.8 B	229	9	3.0	326	39	4.1	128	50	1.3
	17	21	36	56.7	60	2.1	140	36.0	6.3	1.3	8	4	136	39	0.44	1.8	2.1 A	106	3	0.7	197	22	1.7	9	68	2.2
	18	1	41	58.7	60	5.7	140	35.5	13.7	0.8	5	2	186	44	0.04	3.5	2.6 B	97	12	0.7	0	31	3.9	206	56	2.0
	18	2	49	34.5	59	57.0	141	37.6	8.1	1.4	10	4	183	25	0.29	1.4	1.3 A	101	5	0.7	10	14	1.5	210	75	1.3
	18	3	35	37.0	61	17.4	149	56.2	38.7	2.3	18	7	52	55	0.36	1.1	1.4 A	166	13	1.0	69	27	0.6	279	60	1.5
	18	8	19	43.1	60	8.3	141	7.2	0.8	0.9	4	1	183	48	0.08	2.4	3.9 B	98	8	0.9	5	24	1.8	205	65	4.2
	18	12	47	0.9	60	13.2	141	1.6	4.4	0.9	6	2	146	45	0.09	1.7	3.2 B	313	8	1.0	46	24	0.8	206	65	3.5
	18	16	19	12.9	59	59.5	139	21.2	15.0	0.5	3	2	261	66	0.07	15.0	20.1 D	13	14	5.1	112	33	1.1	263	53	25.0
	18	16	37	12.1	60	12.6	140	59.1	15.0	0.6	3	1	146	118	0.17	15.9	19.3 D	284	9	1.6	21	38	1.0	183	51	25.0
	18	17	46	14.9	60	32.5	141	33.7	19.0	1.3	6	3	107	70	0.56	1.5	4.5 B	252	1	1.5	162	2	1.1	9	88	4.5
	18	17	46	25.9	60	11.9	140	58.5	4.9	1.3	6	3	194	88	0.22	5.0	2.0 C	40	9	5.1	308	11	0.8	168	76	1.9
	19	1	16	46.6	60	33.6	141	23.5	10.0	0.9	5	2	184	81	0.51	2.4	6.2 C	156	6	0.9	247	14	1.8	43	75	6.4
	19	6	22	8.7	59	56.4	140	48.9	5.8	1.1	6	3	186	43	0.44	2.7	2.7 B	115	9	0.6	214	44	1.8	16	45	3.3
	19	8	44	57.6	60	7.5	141	15.7	7.5	1.5	8	3	151	56	0.08	3.7	1.8 B	206	22	3.9	105	25	0.6	332	56	1.2
	19	9	8	44.7	61	33.1	146	29.0	28.0	2.3	19	7	78	55	0.67	0.9	1.4 A	294	3	0.6	203	17	0.9	34	73	1.4
	19	9	42	43.5	60	14.8	140	55.1	12.4	0.9	6	4	130	40	0.27	2.4	3.4 B	87	9	0.6	351	32	1.1	191	56	4.1
	19	10	7	8.4	60	33.8	148	23.7	15.1	2.4	17	5	168	54	0.39	1.4	2.1 A	135	15	1.2	231	19	0.7	9	65	2.3
	19	12	3	3.2	61	49.3	149	12.5	6.8	1.3	9	5	174	61	0.39	1.6	2.1 A	3	19	1.0	262	29	0.8	122	54	2.5
	19	12	40	12.6	59	10.6	138	16.9	0.	1.2	4	1	352	116	0.39	25.0	5.7 D	40	1	25.0	309	36	7.5	131	54	4.5
	20	3	51	12.9	60	16.4	140	7.2	8.1	0.9	5	2	256	60	0.35	4.5	3.7 B	110	5	1.0	204	38	5.4	14	52	2.2
	20	7	42	11.1	59	56.9	139	47.5	10.0	1.1	5	1	158	38	0.67	4.3	2.7 B	309	3	1.0	40	28	4.8	213	62	1.7

SOUTHERN ALASKA EARTHQUAKES, JAN - MAR 1980

	ORIGIN TIME			LAT N		LONG W		DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ	Q	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3	
1980	HR	MIN	SEC	DEG	MIN	DEG	MIN	KM				DEG	KM	SEC	KM	KM		DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM	
JAN	20	9	43	31.4	59 54.2	140 42.6		14.5	1.3	4	3	253	50	0.08	3.5		2.8	C	98	6	1.2	6	16	5.7	208	73	2.5
	20	11	31	14.2	60 37.2	148 23.1		21.3	2.7	24	7	78	55	0.56	0.9		1.4	A	261	3	0.7	171	5	0.9	22	84	1.5
	20	11	41	49.6	60 15.3	140 40.4		12.4	1.5	6	5	152	46	0.21	2.1		2.6	B	88	8	0.7	352	32	1.7	190	57	3.0
	20	13	52	9.7	60 13.0	141 1.2		12.6	1.6	10	4	119	44	0.10	1.5		2.0	A	95	15	0.6	356	31	1.0	207	55	2.3
	20	14	7	44.2	63 59.3	149 8.6		30.0	2.8	6	2	213	258	0.20	16.6		20.4	D	197	24	1.5	94	27	10.1	322	52	25.0
	20	15	53	37.1	61 50.0	150 9.2		13.3	1.7	11	4	159	73	0.65	2.0		1.7	A	281	12	0.7	17	25	2.0	168	62	1.6
	20	16	37	13.8	60 17.5	141 6.2		4.9	0.6	5	3	154	52	0.19	1.6		4.0	B	305	5	0.9	37	18	0.8	200	71	4.2
	21	1	55	33.1	60 14.6	141 16.5		10.4	0.5	4	3	140	59	0.12	7.5		11.0	D	100	11	0.9	3	32	0.9	207	56	13.3
	21	1	55	24.8	60 55.8	147 27.1		20.0	2.2	20	6	129	52	0.46	1.1		1.9	A	178	10	1.1	270	11	0.5	47	75	2.0
	21	3	20	46.7	60 54.9	147 27.7		29.0	1.8	15	7	132	52	0.32	1.3		2.0	A	179	1	1.3	269	4	0.6	75	86	2.0
	21	4	23	0.3	60 16.8	140 45.3		12.9	1.1	8	3	143	42	0.15	1.5		2.8	B	321	9	1.0	54	21	0.9	209	67	3.1
	21	6	46	15.5	60 0.2	140 42.9		12.0	2.4	21	5	114	32	0.40	1.3		1.5	A	291	4	0.5	23	26	1.2	193	64	1.5
	21	7	33	39.6	60 7.8	139 28.8		13.3	0.9	4	1	251	52	0.18	11.8		8.4	D	121	13	1.5	220	35	14.2	14	52	2.8
	21	9	16	56.6	60 14.0	141 1.6		11.4	1.0	8	6	121	45	0.25	2.1		2.8	B	329	23	1.0	71	26	0.7	203	54	3.4
	21	10	37	46.8	59 3.8	137 42.5		17.1	3.1	12	2	152	147	0.90	4.8		5.8	C	288	0	2.8	18	9	4.8	198	81	5.8
	21	17	26	10.7	60 16.7	141 5.3		8.5	0.8	6	4	153	50	0.18	1.8		3.3	B	325	13	1.0	60	23	0.8	208	63	3.6
	21	18	34	40.1	60 13.8	141 1.2		9.0	0.9	6	4	148	45	0.23	2.0		2.9	B	330	22	1.0	71	23	0.7	202	57	3.4
	21	18	57	14.8	58 26.1	137 47.0		11.4	3.0	7	1	177	199	0.68	11.1		22.3	D	324	2	2.4	55	24	5.4	230	66	24.3
	22	1	42	1.6	62 59.7	149 55.2		81.7	3.6	24	6	118	156	0.61	2.9		10.5	D	341	1	2.9	71	6	2.0	242	84	10.5
	22	2	28	32.6	60 13.9	140 55.7		1.5	1.0	7	4	127	40	0.29	2.0		3.3	B	88	6	0.7	355	25	1.4	191	64	3.6
	22	2	56	12.6	60 56.4	149 26.3		39.6	1.9	20	6	65	50	0.27	1.1		2.5	B	74	4	0.7	344	4	1.1	209	84	2.5
	22	4	56	26.6	60 9.1	140 53.8		14.1	1.9	11	4	114	36	0.35	1.6		1.7	A	99	11	0.7	0	38	1.0	202	50	2.1
	22	5	38	7.3	60 15.4	140 51.0		12.3	1.7	9	4	135	37	0.12	1.3		2.2	A	103	7	0.6	10	24	0.9	208	65	2.3
	22	7	45	41.4	60 7.0	141 5.7		9.9	1.9	17	5	66	28	0.23	1.0		1.2	A	294	11	0.6	31	35	0.8	189	53	1.4
	22	7	46	26.7	60 7.6	141 5.7		2.8 ML	EMRC																		
								8.6	2.2	12	4	73	29	0.20	1.2		1.5	A	108	4	0.7	16	32	0.8	204	58	1.8
								2.8 ML	EMRC																		
	22	8	17	57.8	60 7.9	141 5.1		7.5	1.6	9	4	103	46	0.14	1.9		1.8	A	108	7	0.9	204	43	2.3	11	46	1.1
	22	8	58	46.0	59 54.5	141 5.8		0.7	1.3	6	3	209	51	0.48	3.4		3.9	B	128	7	0.7	224	39	2.0	30	50	4.8
	22	9	27	56.5	60 15.9	141 6.4		5.1	1.3	9	4	121	51	0.22	1.3		2.6	B	109	2	0.9	18	21	1.0	204	69	2.8
	22	11	0	46.1	60 20.5	152 14.6		86.1	3.4	24	3	83	71	0.53	2.0		2.7	B	64	12	1.2	158	20	1.8	305	66	2.8
	22	11	44	55.8	60 33.5	141 36.5		26.7	1.2	5	4	152	62	0.22	6.4		8.4	C	333	4	0.7	66	36	2.3	238	54	10.3
	22	16	9	0.4	60 13.5	140 58.4		3.8	0.9	5	2	149	108	0.03	1.8		3.4	B	306	12	1.3	40	21	0.9	188	66	3.7
	22	16	41	10.7	59 56.1	145 51.2		36.2	2.0	21	9	196	98	0.42	1.6		1.0	A	133	15	1.6	38	19	1.3	259	65	0.9
	22	18	54	59.3	60 7.7	141 4.8		8.1	1.2	5	3	129	94	0.05	3.4		2.8	B	110	2	1.5	202	38	4.2	17	52	1.3
	22	18	56	17.0	61 25.3	149 56.7		58.5	2.4	14	12	61	47	0.36	0.8		2.1	A	267	5	0.6	177	5	0.8	42	83	2.1
	22	19	22	55.9	59 14.3	139 55.1		32.1	1.3	3	1	281	97	0.12	12.1		25.0	D	298	0	2.5	28	0	12.1	0	90	25.0
	22	20	44	0.9	61 1.4	149 56.0		54.6	1.6	6	6	120	67	0.12	1.9		4.5	B	250	1	1.5	340	2	1.9	133	88	4.5
	22	23	1	51.8	61 30.8	150 15.1		43.6	2.0	18	9	105	60	0.42	1.1		2.4	A	263	0	0.6	173	7	1.0	353	83	2.4
	23	0	33	51.3	59 54.9	138 45.2		15.5	0.9	4	1	264	52	0.03	6.4		9.7	C	320	6	1.5	54	29	4.0	219	60	11.0
	23	1	49	28.5	60 14.8	141 4.1		15.0	0.9	3	3	227	48	0.20	11.9		22.1	D	82	14	1.0	346	24	1.8	200	62	25.0
	23	3	40	16.9	60 21.9	140 18.9		10.9	1.0	6	1	197	59	0.33	4.4		5.9	C	299	8	1.1	35	34	2.0	198	55	7.1
	23	4	7	46.8	60 14.5	140 44.1		9.9	1.0	5	3	166	42	0.34	2.2		3.5	B	81	9	0.9	346	27	1.3	188	61	4.0
	23	4	57	51.5	60 7.3	140 26.7		12.9	1.3	4	1	334	77	0.31	12.1		3.9	D	282	3	3.3	13	16	12.6	182	74	1.8
	23	11	39	31.0	60 13.2	140 49.8		14.9	0.9	4	4	156	101	0.15	3.0		3.1	B	286	8	0.9	24	43	1.6	188	46	4.0
	23	12	18	32.0	60 1.5	141 9.8		15.1	0.8	3	2	227	51	0.16	9.2		3.1	C	201	7	9.2	109	16	1.0	314	72	3.0
	23	12	19	41.0	60 13.7	141 0.		11.5	1.7	10	6	122	44	0.12	1.2		2.0	A	320	9	0.7	54	23	0.8	210	65	2.2

1980	ORIGIN TIME			LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ Q	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3				
	HR	MIN	SEC																					DEG	MIN	DEG	MIN
JAN	23	12	26	27.0	60	34.8	149	1.0	19.0	9	113	49	0.68	1.2	1.4	A	145	5	1.2	236	8	0.7	23	81	1.4		
	23	13	39	15.9	60	27.5	147	35.7	27.6	1.9	20	163	62	0.40	1.4	1.5	A	268	1	0.6	358	1	1.4	133	89	1.5	
	23	15	53	26.3	60	13.7	140	17.0	12.3	1.4	9	2	165	50	0.14	2.3	2.2	A	283	4	0.8	189	43	2.8	17	47	1.4
	23	16	6	14.0	60	24.8	147	43.2	13.7	1.7	20	13	166	71	0.50	1.3	1.7	A	169	19	1.1	268	25	0.5	46	58	1.9
	23	18	31	12.9	60	7.5	140	54.1	8.5	1.0	6	4	133	36	0.18	2.2	2.1	A	90	19	0.6	343	40	1.3	199	44	2.8
	23	18	50	8.8	60	12.2	141	7.3	2.1	0.8	4	2	145	114	0.13	2.6	4.8	B	331	18	1.2	67	18	1.6	199	64	5.3
	23	22	18	26.0	60	15.9	141	12.3	10.4	1.4	9	4	115	52	0.21	1.4	2.3	A	85	1	0.8	354	25	1.0	177	65	2.5
	23	22	29	52.3	60	9.6	141	1.1	10.5	1.6	12	10	110	43	0.37	1.4	1.3	A	99	8	0.5	195	37	1.6	359	52	1.1
	23	23	2	55.3	60	17.5	140	45.2	11.1	1.4	8	6	144	43	0.22	2.1	2.8	B	311	17	0.8	51	30	1.0	195	55	3.3
	24	1	21	52.3	61	44.7	149	40.6	41.4	2.2	21	7	153	56	0.33	1.4	2.4	A	179	3	1.4	89	7	0.9	292	82	2.5
	24	4	31	35.2	59	57.5	140	35.3	10.6	0.8	7	2	160	32	0.38	1.9	2.1	A	115	5	0.8	209	33	1.8	17	56	2.3
	24	6	13	59.9	60	51.7	148	0.1	30.3	1.2	11	6	137	51	0.28	1.2	1.1	A	73	2	0.6	342	16	1.2	170	74	1.1
	24	8	9	57.0	60	10.1	141	13.0	1.2	0.9	5	2	131	48	0.26	3.2	5.9	C	284	1	0.9	14	27	1.4	192	63	6.6
	24	8	41	14.8	60	14.5	140	47.8	13.4	0.8	6	2	160	72	0.17	3.7	4.9	B	93	16	0.9	353	31	1.7	206	54	5.9
	24	10	57	42.2	61	29.3	146	36.8	17.1	1.9	22	8	69	54	0.54	0.8	1.7	A	8	0	0.8	278	4	0.6	98	86	1.7
	24	12	14	33.5	61	30.1	143	59.1	37.9	1.8	14	3	180	79	0.53	4.1	1.9	B	17	20	4.4	122	36	1.6	264	47	0.9
	24	12	39	52.1	61	33.7	146	25.1	32.7	1.9	19	5	82	56	0.49	1.0	1.2	A	111	4	0.7	203	26	0.9	13	64	1.3
	24	15	0	34.6	60	43.3	143	28.4	15.0	1.7	6	2	109	97	0.73	2.5	7.4	C	194	1	1.6	104	17	1.0	287	73	7.8
	24	16	8	17.3	60	30.2	142	59.1	11.6	1.1	7	3	106	74	0.71	1.7	3.0	B	135	9	0.9	43	23	1.1	237	66	3.3
	24	16	9	35.9	60	30.3	142	59.1	6.3	1.1	3	2	225	74	0.36	16.1	19.5	D	8	11	0.8	107	37	4.2	264	51	25.0
	24	21	59	9.9	57	25.5	152	45.8	53.8M	4.0	13	2	293	262	0.39	12.4	6.4	D	187	22	13.3	82	32	5.5	305	49	3.5
	25	6	34	25.2	60	17.9	140	54.3	1.9	0.8	4	1	166	114	0.04	1.5	4.3	B	296	7	1.3	27	10	1.0	171	78	4.4
	25	9	3	41.8	60	17.7	140	21.8	14.0	1.1	7	4	169	56	0.14	2.2	2.8	B	296	4	0.9	28	34	1.5	200	56	3.2
	25	17	5	50.9	60	15.7	140	48.3	11.9	0.7	6	2	162	74	0.07	3.0	3.2	B	292	3	1.2	25	42	1.7	199	48	4.0
	25	18	50	49.7	60	8.0	141	2.7	6.4	1.1	6	2	140	81	0.15	3.8	3.4	B	95	20	1.1	204	41	4.9	346	48	1.1
	25	23	8	28.2	61	32.8	148	0.0	26.8	1.7	23	10	79	42	0.31	1.0	1.4	A	91	3	0.7	181	3	1.0	316	86	1.4
	26	0	17	40.1	60	13.1	139	39.7	13.6	1.9	6	1	211	57	0.24	4.5	4.4	B	126	1	1.4	217	44	5.9	35	46	2.2
	26	2	42	26.7	60	11.3	141	12.4	0.8	1.1	7	3	134	54	0.25	1.7	2.8	B	97	3	0.7	5	24	1.3	194	66	3.0
	26	4	31	20.2	60	14.5	141	0.2	15.0	0.7	3	2	151	115	0.15	11.2	15.6	D	287	6	1.0	21	35	1.3	189	54	19.2
	26	7	8	31.1	60	17.4	140	56.8	4.8	0.9	7	3	160	66	0.06	1.7	3.0	B	98	11	0.8	4	21	1.2	214	66	3.2
	26	8	30	16.7	60	15.8	140	57.4	8.9	1.5	10	5	130	65	0.17	1.2	2.3	A	315	5	0.6	46	19	0.9	211	70	2.4
	26	8	35	34.3	60	26.8	140	18.6	6.4	1.7	8	3	188	66	0.29	2.8	4.8	B	324	10	0.7	58	24	1.9	213	64	5.3
	26	8	37	40.1	60	14.7	141	25.8	15.0	0.8	4	2	134	67	0.30	4.3	7.6	C	312	19	0.9	49	21	1.6	183	61	8.6
	26	9	50	38.8	60	18.1	140	51.3	12.0	0.9	6	2	144	72	0.15	2.1	3.1	B	312	18	1.0	50	24	1.4	189	59	3.5
	26	11	8	11.4	60	6.1	140	53.0	7.7	0.7	5	3	129	96	0.21	2.5	2.0	B	94	12	0.9	190	26	2.7	341	61	1.8
	26	14	16	13.7	60	10.6	139	20.1	4.6	1.7	4	3	262	57	0.52	2.5	5.6	C	126	12	1.4	33	12	2.2	260	73	5.8
	26	20	5	0.9	62	22.5	147	51.8	36.0	2.5	20	5	212	93	0.51	3.2	1.4	B	159	3	3.2	251	44	1.7	66	46	1.0
	27	2	20	50.2	62	51.7	149	18.4	43.2	2.9	18	3	149	151	0.47	2.8	10.7	D	347	1	2.8	77	4	1.5	243	86	10.8
	27	4	40	44.5	59	59.1	140	44.3	1.6	0.6	4	2	166	41	0.16	1.6	3.8	B	87	4	0.8	178	13	1.4	340	76	3.9
	27	7	58	33.9	61	48.8	149	36.0	36.9	1.5	12	6	159	63	0.23	2.0	1.3	A	192	1	2.0	282	11	0.9	97	79	1.3
	27	8	1	36.2	61	23.3	150	9.2	47.7	1.6	8	5	170	85	0.12	2.4	4.0	B	263	4	1.3	172	13	2.3	10	76	4.1
	27	8	6	35.2	61	42.1	150	8.7	50.6	1.6	9	7	150	60	0.27	2.1	2.6	B	284	3	1.3	16	25	2.0	188	65	2.8
	27	10	34	21.5	60	20.9	140	37.8	6.2	0.8	4	2	173	79	0.03	3.4	8.5	C	38	7	1.2	306	19	1.4	147	70	9.1
	27	10	56	23.4	61	26.9	146	31.2	18.2	1.8	23	8	67	43	0.64	0.8	1.4	A	4	5	0.8	273	11	0.6	118	78	1.0
	27	11	4	44.6	60	2.6	141	14.4	14.4	0.8	3	2	247	126	0.01	7.4	1.2	C	192	4	7.4	101	11	1.3	302	78	1.0
	27	11	4	44.6	60	2.6	141	14.4	14.4	0.8	3	2	247	126	0.01	7.4	1.2	C	192	4	7.4	101	11	1.3	302	78	1.0

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	ORIGIN TIME			LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ	Q	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3			
1980	HR	MM	SEC	DEG	MIN	DEG	MIN	KM	DEG	KM	SEC	KM	KM	KM	KM	DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM			
JAN	27	11	8	59.0	60 12.6	139 35.3	13.1	0.8	3	3	330	94	0.18	20.8	14.2	D	153	31	4.0	267	34	25.0	32	40	1.8		
	27	13	3	6.2	61 31.6	149 58.2	47.7	1.8	13	6	78	45	0.25	1.6	2.4	A	243	15	1.1	148	19	1.3	9	65	2.6		
	27	13	8	18.8	60 21.4	141 13.3	13.9	1.4	9	2	122	61	0.24	1.6	3.1	B	322	1	0.9	52	17	1.3	229	73	3.3		
	27	13	8	53.5	60 31.2	146 49.6	22.3	1.6	19	9	102	27	0.45	1.1	1.3	A	270	10	0.6	179	10	1.0	45	76	1.4		
	27	14	14	4.8	60 24.2	141 8.8	11.6	1.3	6	2	140	63	0.24	2.7	4.4	B	324	6	1.0	57	25	2.0	221	64	4.7		
	27	14	51	1.1	61 52.7	149 39.4	5.8	1.8	13	4	166	70	0.47	1.5	1.8	A	2	2	1.5	271	28	0.9	96	62	1.9		
	27	18	34	47.3	60 15.1	140 49.1	11.5	1.1	7	2	136	74	0.32	2.1	3.0	B	67	20	0.9	328	23	1.3	194	59	3.5		
	27	19	5	36.5	59 22.8	138 44.7	23.4	1.3	5	2	337	81	0.12	13.1	3.0	D	60	9	13.2	152	14	6.0	298	73	1.8		
	27	19	52	46.4	60 16.3	140 59.9	12.6	1.5	7	2	128	63	0.09	1.8	3.8	B	55	8	1.3	322	21	1.0	165	67	4.1		
	27	20	51	2.1	60 17.5	140 45.8	11.9	1.5	7	3	144	73	0.17	2.8	3.8	B	293	10	1.1	29	31	1.7	187	57	4.4		
	27	21	9	56.9	60 9.8	140 57.9	9.7	1.0	6	1	138	78	0.25	2.5	2.3	B	95	5	0.9	188	40	3.1	359	50	1.5		
	27	22	28	56.3	60 31.0	140 52.5	0.6	0.9	6	2	159	58	0.15	2.0	8.9	C	314	5	1.0	44	6	1.7	184	82	9.0		
	28	1	17	1.8	60 2.8	140 44.4	8.4	0.8	3	2	164	45	0.18	3.1	3.3	B	103	16	1.0	205	37	2.2	354	49	4.0		
	28	2	25	28.5	60 15.4	140 46.9	13.4	1.2	7	3	139	72	0.11	2.1	2.6	B	314	7	1.0	49	33	1.5	214	56	2.9		
	28	2	34	6.8	59 38.7	140 29.1	2.8	0.9	6	3	143	37	0.36	1.5	3.1	B	296	3	0.9	206	8	1.5	46	81	3.1		
	28	4	29	17.6	60 18.1	140 43.5	0.9	0.9	3	1	272	102	0.11	10.8	5.7	D	81	7	1.4	173	17	11.2	329	72	4.9		
	28	7	8	59.6	60 14.8	140 56.6	13.3	1.4	6	2	129	80	0.10	3.0	3.3	B	316	22	1.3	61	33	1.6	199	49	4.2		
	28	7	11	11.9	60 15.4	140 45.9	10.4	1.1	7	2	140	71	0.12	1.8	3.1	B	315	18	1.0	52	19	1.2	185	63	3.4		
	28	11	30	13.0	60 17.9	140 43.7	14.1	1.0	7	5	146	78	0.21	2.0	3.9	B	325	3	0.9	56	22	1.3	228	68	4.1		
	28	11	47	33.2	60 17.1	140 55.0	3.1	0.7	4	2	160	109	0.11	2.4	6.5	C	108	7	1.7	15	16	1.0	221	72	6.8		
	28	13	55	40.9	60 16.9	140 57.0	7.9	1.2	8	4	132	73	0.19	2.0	3.7	B	325	5	1.0	57	23	1.3	223	66	4.0		
	28	14	59	28.1	62 5.8	147 47.5	36.7	2.0	16	5	129	84	0.40	4.0	1.4	B	334	13	4.1	76	41	0.7	230	46	1.3		
	28	18	12	36.2	60 11.7	141 9.9	6.0	1.2	7	2	114	86	0.07	3.7	4.0	B	313	16	1.2	56	38	1.4	205	48	5.2		
	28	21	23	32.4	61 44.7	149 26.9	0.9	1.0	9	4	160	56	0.62	1.1	1.8	A	167	12	1.1	261	17	0.8	44	69	1.9		
	28	23	19	37.7	60 17.0	141 1.6	8.4	1.1	5	2	156	86	0.12	2.0	3.9	B	99	5	1.3	7	24	0.9	200	65	4.3		
	29	0	13	50.5	60 14.9	140 56.5	8.3	0.7	5	5	155	80	0.19	2.9	3.7	B	288	4	0.9	21	35	1.5	192	55	4.5		
	29	11	14	51.9	62 37.1	149 3.2	39.0	2.8	27	6	133	116	0.53	3.4	15.8	D	355	1	3.4	85	4	1.4	251	86	15.9		
	29	14	33	4.0	60 6.3	141 8.6	4.5	0.9	5	2	164	86	0.10	3.6	2.7	B	95	20	1.6	200	35	4.3	341	48	1.2		
	30	3	18	45.7	60 32.3	137 3.6	5.1	2.1	5	3	193	157	0.29	6.6	5.6	C	247	23	1.2	359	41	1.8	136	40	8.5		
	30	4	55	35.2	60 27.5	151 3.3	2.3 ML	EMRC	54.3	3.1	19	2	155	75	0.54	1.9	3.5	B	84	7	1.0	353	10	1.8	209	78	3.6
	30	5	15	41.6	61 28.4	146 35.5	13.9	1.7	18	9	131	46	0.58	1.0	1.3	A	287	7	0.6	195	11	1.0	49	77	1.4		
	30	11	42	14.9	60 17.4	141 16.5	13.8	1.4	5	1	115	75	0.08	1.8	4.1	B	80	9	1.5	347	15	0.9	200	72	4.3		
	30	13	18	5.7	60 14.7	141 20.7	3.3	1.3	7	3	108	80	0.21	1.2	3.4	B	269	2	1.0	0	14	0.9	171	76	3.5		
	30	15	14	44.4	61 23.8	145 56.0	39.7	2.0	21	5	72	37	0.63	1.1	2.4	A	181	4	1.1	271	6	0.8	57	83	2.4		
	30	17	35	46.2	60 42.8	146 45.8	14.3	2.0	23	7	137	52	0.44	1.2	1.5	A	270	13	0.6	172	30	1.0	21	57	1.7		
	30	19	18	35.1	60 15.6	141 17.1	5.4	2.0	16	6	63	48	0.26	0.8	2.0	A	296	8	0.6	27	8	0.7	162	79	2.0		
	30	19	19	54.8	60 16.5	140 19.8	16.4	2.0	10	5	82	57	0.37	1.7	3.4	B	322	10	0.7	56	20	1.1	207	67	3.7		
	30	19	56	20.1	61 1.9	147 37.6	28.0	1.7	12	4	104	43	0.34	1.0	1.8	A	128	2	0.7	219	4	1.0	12	85	1.8		
	30	22	54	9.1	61 53.7	149 30.5	41.5	1.9	8	4	184	72	0.22	2.1	4.9	B	103	5	1.0	11	16	1.5	210	73	5.1		
	31	2	27	18.6	60 13.3	141 2.3	8.2	1.0	5	1	128	84	0.05	8.7	9.2	C	95	27	2.0	347	31	1.3	218	47	12.6		
	31	2	42	46.8	61 34.1	142 9.7	25.1	2.4	5	3	239	89	0.74	4.4	5.2	C	297	16	1.0	33	20	4.2	171	64	5.5		
	31	5	52	16.5	61 37.1	142 2.2	22.9	1.8	5	2	247	96	0.78	10.0	15.5	D	312	21	2.0	50	21	6.4	181	60	17.7		
	31	7	57	41.4	60 18.2	141 17.9	3.2	1.1	5	3	114	74	0.18	3.0	11.4	D	254	1	1.9	344	14	1.0	160	76	11.8		
	31	10	16	12.7	61 29.4	149 55.8	42.6	1.6	5	4	182	79	0.17	2.8	2.3	B	284	3	1.3	193	31	3.1	19	59	2.0		
	31	13	57	53.8	61 7.3	149 30.8	44.3	1.8	15	4	39	56	0.27	1.2	2.6	B	80	1	0.8	350	2	1.2	197	68	2.6		

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	ORIGIN TIME			LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ	D	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3	
1980	HR	MIN	SEC	DEG MIN	DEG MIN	KM				DEG	KM	SEC	KM			DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM	
JAN	31	14	32	56.6	62 37.1	149 36.0	13.0	2.5	14	6	145	117	0.49	4.2	3.4	B	267	31	1.0	154	33	4.7	29	41	3.4
	31	14	34	59.3	60 9.6	145 8.4	34.5	1.8	16	3	179	76	0.40	2.4	1.3	A	203	2	2.4	293	9	0.8	101	81	1.3
	31	17	36	58.4	61 37.9	149 26.2	38.5	1.3	9	6	176	44	0.55	1.6	1.3	A	293	15	0.9	31	29	1.7	179	57	1.2
	31	19	32	24.3	61 44.6	149 43.5	16.8	1.2	5	4	193	56	0.24	1.6	3.0	B	10	1	1.6	280	2	1.1	127	88	3.0
	31	19	58	24.1	61 38.3	143 33.8	6.2	1.6	5	4	233	94	0.50	3.3	6.8	C	10	12	2.8	103	17	0.9	246	69	7.3
FEB	1	21	27	34.5	60 14.9	140 42.2	17.3	1.8	6	4	142	87	0.06	4.5	5.5	C	117	9	1.3	20	37	1.6	218	52	6.9
	1	5	18	54.2	60 12.7	141 11.3	4.6	1.7	14	6	114	51	0.34	0.8	2.0	A	75	7	0.6	343	11	0.6	197	77	2.1
	1	5	54	53.0	60 15.2	141 1.1	7.1	0.9	3	2	166	114	0.16	3.9	6.5	C	103	12	1.9	6	27	0.9	215	60	7.4
	1	6	34	19.4	60 15.0	140 57.5	10.9	1.5	7	3	129	81	0.20	1.7	2.9	B	82	15	1.3	346	19	1.1	208	65	3.1
	1	7	37	59.3	60 36.7	149 5.7	20.0	1.0	7	5	143	50	0.47	1.7	4.4	B	221	8	0.8	313	15	1.1	104	73	4.6
	1	8	32	27.4	61 25.7	147 22.8	18.4	1.7	19	3	135	61	0.53	1.2	1.6	A	283	11	0.6	16	14	1.2	156	72	1.7
	1	9	20	49.7	61 30.4	130 17.6	47.0	1.7	11	4	123	84	0.20	1.6	4.9	B	101	1	0.9	191	4	1.5	357	86	4.9
	1	10	6	38.5	60 24.9	141 13.5	5.4	1.6	7	3	126	62	0.15	1.8	3.8	B	352	4	0.7	83	15	1.5	247	74	4.0
	1	12	12	15.5	62 25.8	148 58.1	29.9	2.2	13	2	215	108	0.53	2.1	1.9	A	302	25	1.8	55	39	1.3	189	40	2.4
	1	12	41	15.0	61 2.8	146 15.6	19.0	1.9	21	4	54	40	0.54	0.9	1.2	A	269	0	0.7	359	1	0.9	179	89	1.2
	1	13	21	32.5	60 13.1	141 13.6	10.6	1.7	9	4	112	78	0.18	1.4	2.3	A	300	5	0.9	32	23	1.1	198	66	2.5
	1	13	23	21.8	60 37.4	141 38.5	7.2	1.3	5	2	165	69	0.13	1.6	5.8	C	83	2	1.6	174	9	0.6	341	81	5.9
	1	15	5	1.0	60 8.7	141 9.6	10.5	1.7	6	3	161	92	0.18	6.7	3.3	C	225	24	7.3	116	35	1.6	341	45	1.2
	1	18	2	51.0	60 6.1	147 7.4	8.0	2.7	28	2	202	91	0.42	2.7	2.5	B	253	29	0.8	141	34	1.5	13	42	3.5
	1	19	49	8.0	59 43.5	153 0.8	93.8	3.8	20	1	111	100	0.24	2.6	4.5	B	128	12	2.4	35	14	1.8	257	71	4.7
	1	20	32	30.8	60 17.2	140 23.5	17.0	2.0	6	1	166	89	0.17	3.2	4.9	B	304	2	1.1	35	29	2.1	210	61	5.4
	2	2	13	26.5	61 44.5	149 46.1	40.2	1.8	15	3	158	57	0.38	1.7	2.4	A	96	5	1.0	186	6	1.7	326	82	2.4
	2	4	29	31.7	60 9.4	141 26.5	8.3	2.7	20	3	89	55	0.50	1.4	2.4	A	293	0	0.7	23	26	0.9	203	64	2.7
					3.5 ML PMR		3.4 ML EMRC																		
	2	4	39	4.2	60 33.4	150 14.8	40.1	1.4	9	4	110	58	0.48	3.3	3.6	B	271	0	1.1	0	42	2.1	181	48	4.4
	2	5	8	17.5	57 20.0	155 25.0	75.0P	4.5	10	1	283	257	1.26	21.4	24.3	D	312	6	3.9	45	22	20.7	208	67	25.0
					4.3 MB																				
	2	5	39	32.9	61 17.2	146 43.5	13.8	1.6	20	3	118	48	0.37	1.1	1.4	A	274	11	0.6	8	20	1.0	157	67	1.4
	2	8	34	33.7	60 56.8	150 50.3	49.2	1.7	8	4	120	71	0.33	2.1	4.9	B	97	6	1.1	7	7	2.1	228	81	4.9
	2	8	52	58.5	61 37.7	149 46.7	51.5	1.3	10	4	188	74	0.32	2.4	2.3	A	143	21	2.4	242	22	1.2	14	59	2.5
	2	12	17	34.6	60 50.6	150 14.2	39.3	1.1	6	5	113	62	0.22	1.6	4.1	B	86	3	1.6	355	12	1.3	190	78	4.2
	2	13	36	30.6	60 15.1	140 58.5	8.6	1.3	7	2	128	82	0.04	3.3	4.3	B	294	1	1.1	25	36	1.5	203	54	5.3
	2	13	45	49.7	62 49.1	148 10.7	5.9	2.2	16	3	246	130	0.55	4.8	3.3	B	160	30	5.3	274	35	1.6	41	40	2.6
	2	14	31	13.3	59 55.0	138 53.6	29.3	1.0	3	2	263	52	0.07	12.5	23.2	D	139	6	2.2	46	22	8.6	243	67	25.0
	2	16	16	3.8	60 22.0	141 16.6	14.3	1.7	9	2	119	67	0.23	1.2	3.0	B	347	5	0.7	77	8	1.1	225	81	3.1
	2	16	59	46.7	60 35.4	151 13.1	52.6	1.4	8	5	124	80	0.39	2.5	7.0	C	187	2	2.5	97	3	1.1	311	86	7.0
	2	17	25	7.5	60 18.8	140 44.2	15.0	1.0	3	2	171	119	0.17	12.7	21.6	D	95	4	5.2	3	30	1.7	192	60	25.0
	2	19	3	16.2	61 51.1	150 9.7	44.2	2.1	18	8	161	73	0.37	1.9	3.0	B	105	8	0.8	197	13	1.8	344	75	3.1
	2	20	46	53.9	61 25.6	146 30.1	9.4	1.7	20	7	79	41	0.54	0.9	1.3	A	257	4	0.6	348	11	0.8	147	78	1.3
	2	21	1	58.0	62 18.8	149 57.2	13.4	2.2	18	6	211	91	0.82	3.3	2.5	B	14	18	3.4	275	24	1.0	137	59	2.7
	2	21	29	10.6	61 28.3	148 39.3	30.2	2.1	22	4	87	41	0.45	1.0	1.1	A	85	1	0.8	176	13	1.0	351	77	1.1
	3	1	25	8.8	59 52.8	141 52.7	0.9	0.5	4	2	234	131	0.48	4.6	4.0	B	119	13	1.3	19	38	5.5	224	49	2.7
	3	4	36	5.5	61 17.9	150 12.4	41.5	2.0	16	8	67	66	0.43	1.1	2.8	B	247	4	0.9	156	8	1.0	3	81	2.8
	3	6	33	39.3	60 15.1	141 7.4	13.1	1.3	8	5	120	80	0.34	2.1	2.7	B	304	9	1.1	40	33	1.4	201	55	3.2
	3	6	43	5.4	60 8.4	140 58.2	8.3	2.1	21	3	74	60	0.32	1.4	2.0	A	292	0	0.8	22	32	0.9	202	58	2.3
					2.6 ML EMRC																				
	3	10	48	4.1	61 28.4	149 49.1	37.6	1.6	12	6	79	39	0.34	1.5	1.4	A	117	24	1.0	8	35	1.6	233	45	1.4
	3	14	4	55.4	60 13.0	141 2.2	10.0	1.7	10	2	122	83	0.24	1.3	2.4	A	341	15	0.8	76	17	1.0	212	67	2.6

SOUTHERN ALASKA EARTHQUAKES, JAN - MAR 1980

1980	ORIGIN TIME			LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERN	ERZ	G	A21	DIP1	SE1	A22	DIP2	SE2	A23	DIP3	SE3	
FEB	HR	MIN	SEC	DEG MIN	DEG MIN	KM				DEG	KM	SEC	KM	KM		DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM	
	3	16	7	43.0	60 12.4	141 1.6	8.1	1.2	7	2	121	82	0.12	3.6	4.4	B	97	17	1.3	355	34	1.4	209	51	5.5
	3	18	5	27.4	63 49.1	148 54.5	92.4	3.7	13	3	171	236	0.50	8.6	20.1	D	287	3	8.5	196	11	1.8	32	79	20.5
	3	20	40	14.4	64 36.8	149 18.4	35.7	3.8	7	1	225	317	0.06	25.0	22.4	D	219	27	5.3	326	30	25.0	95	48	25.0
				3.0 ML PMR					FELT (III) AT NENANA																
	3	21	0	30.4	59 56.2	139 20.8	14.1	1.6	5	1	207	60	0.32	5.1	2.3	C	316	5	1.2	225	12	5.2	68	77	2.0
	3	22	57	7.8	60 37.5	141 41.9	26.0	1.1	3	2	170	70	0.11	7.2	24.2	D	153	5	1.4	244	14	3.5	44	75	25.0
	3	23	26	29.6	60 11.3	141 24.2	5.1	1.5	9	2	113	79	0.30	1.2	2.6	B	83	3	0.7	352	16	1.0	183	74	2.7
	3	23	27	11.4	60 48.5	149 35.2	40.4	1.4	9	5	76	47	0.30	1.6	3.0	B	41	15	0.8	306	18	1.2	168	66	3.3
	4	1	52	56.0	60 19.4	140 21.4	15.9	2.2	16	6	66	63	0.37	1.6	3.3	B	314	7	0.8	47	19	1.1	205	70	3.5
				2.8 ML EMRC																					
	4	4	27	29.6	60 4.1	140 41.4	8.4	1.7	8	3	131	60	0.35	4.2	3.2	B	114	4	0.9	207	34	4.9	18	56	1.9
	4	6	4	13.4	60 1.6	140 43.9	10.9	1.4	8	3	148	62	0.53	3.1	2.1	B	108	9	0.7	202	22	3.3	357	66	1.8
	4	12	41	0.6	62 3.6	149 47.5	40.1	1.8	8	7	203	82	0.13	3.4	4.7	B	92	9	1.2	357	32	1.8	196	57	5.6
	4	13	2	5.1	60 16.2	141 2.0	9.1	1.6	8	3	126	79	0.40	1.6	2.8	B	330	9	1.0	64	21	1.2	218	67	3.0
	4	14	22	45.6	60 15.8	140 13.0	13.3	2.1	14	5	101	81	0.39	1.7	3.1	B	299	4	0.8	31	23	1.2	200	67	3.3
				2.5 ML EMRC																					
	4	15	56	49.3	61 38.6	150 30.6	45.3	2.7	21	5	132	67	0.48	1.5	3.2	B	105	9	0.8	197	15	1.1	345	72	3.3
	4	18	39	18.4	63 16.3	149 26.9	94.2	3.6	23	2	121	182	0.48	3.6	20.6	D	21	0	2.3	111	3	3.5	291	87	20.6
	4	23	7	55.9	60 58.8	149 39.4	34.1	1.5	12	7	90	57	0.35	1.6	2.2	A	237	3	0.9	329	29	1.3	142	61	2.4
	5	0	47	21.4	60 10.5	141 13.2	15.0	0.9	4	3	172	88	0.23	19.1	16.3	D	75	30	2.4	321	35	1.1	194	40	25.0
	5	7	34	24.8	60 2.0	140 44.7	15.0	1.5	7	2	147	63	0.38	4.6	3.1	B	108	21	0.7	211	31	5.2	349	51	1.9
	5	8	24	0.3	62 15.9	149 12.6	46.3	3.4	28	1	119	77	0.42	2.6	3.9	B	356	2	2.6	265	3	1.3	119	86	3.9
	5	10	4	50.9	62 5.7	147 56.2	40.0	3.8	29	0	95	81	0.59	2.3	4.1	B	81	4	0.9	172	6	2.3	318	83	4.1
	5	10	13	19.9	62 10.3	147 55.6	39.2	2.5	21	6	98	89	0.68	2.2	7.8	C	165	2	2.1	75	5	1.0	277	85	7.8
	5	10	30	40.6	62 3.0	147 52.5	32.7	2.5	18	6	182	86	0.50	2.4	1.5	A	344	17	2.4	81	24	0.8	222	60	1.4
	5	10	40	42.8	60 15.7	141 9.5	6.7	0.8	3	2	296	118	0.06	4.6	4.1	B	26	26	1.2	138	36	4.8	270	42	4.3
	5	10	45	18.6	62 3.0	147 55.1	37.3	2.6	20	5	182	80	0.63	2.4	1.3	A	345	4	2.4	79	44	0.9	251	46	1.6
	5	13	24	43.5	60 24.0	141 18.8	6.6	1.3	7	4	121	63	0.34	1.8	4.3	B	318	4	1.1	49	14	1.4	212	75	4.4
	5	14	52	45.9	60 14.9	140 48.1	9.4	1.7	8	3	139	72	0.11	1.5	2.4	A	299	8	0.9	32	21	1.3	189	67	2.6
	5	15	46	2.2	62 21.4	149 30.1	39.2	2.3	17	4	211	87	0.40	3.5	11.5	D	91	5	1.0	0	7	3.2	216	81	11.6
	5	18	7	27.9	60 15.6	140 12.9	10.2	2.2	18	6	57	55	0.43	1.5	2.3	A	316	16	0.8	53	23	1.0	194	61	2.6
				2.7 ML EMRC																					
	5	18	9	57.3	60 11.8	140 21.5	15.1	1.1	5	2	318	49	0.27	9.2	2.4	C	316	9	9.3	224	11	4.5	84	76	1.8
	5	18	16	4.9	60 16.5	140 48.0	7.0	0.8	5	2	168	103	0.40	2.6	3.5	B	292	6	0.9	26	33	1.5	193	56	4.1
	5	19	24	36.3	60 4.8	141 4.6	3.8	1.5	7	4	109	82	0.24	1.9	1.5	A	341	34	1.1	223	35	2.3	101	37	0.8
	5	19	51	23.8	60 14.7	141 5.0	15.0	0.8	3	2	165	81	0.10	12.1	22.1	D	316	10	6.7	51	26	1.7	207	62	25.0
	6	4	7	15.8	60 17.0	141 16.5	10.6	1.5	8	3	114	76	0.16	1.5	3.0	B	343	9	0.7	75	17	1.2	226	71	3.1
	6	4	39	15.8	61 39.1	149 44.2	40.8	1.2	8	4	168	46	0.24	2.1	2.4	A	60	8	1.3	325	34	1.7	162	55	2.7
	6	4	51	31.3	60 12.3	141 21.6	15.0	1.0	3	1	190	107	0.12	15.4	20.1	D	225	18	7.4	326	31	0.9	109	53	25.0
	6	6	0	24.6	60 17.5	141 16.3	8.5	1.1	4	3	163	102	0.04	4.6	4.9	B	340	16	1.0	83	37	3.2	231	48	6.1
	6	10	20	17.1	61 32.4	150 13.1	45.4	1.8	14	9	110	58	0.31	1.0	2.9	B	100	3	0.7	190	4	1.0	333	85	2.9
	6	13	44	56.0	60 3.9	151 55.5	56.8	3.1	21	1	93	63	0.43	2.2	3.5	B	91	9	1.2	359	13	2.1	215	74	3.6
	6	14	7	21.7	60 16.9	141 17.2	10.8	1.5	7	3	114	76	0.14	1.6	3.0	B	345	11	0.7	78	17	1.3	223	70	3.1
	6	15	0	21.5	60 27.5	147 37.7	16.5	2.1	22	6	162	81	0.47	1.5	2.1	A	263	15	0.7	167	22	1.3	25	63	2.3
	6	17	20	43.6	60 17.0	141 3.5	10.0	0.8	3	2	199	109	0.04	20.5	15.5	D	351	26	1.3	102	36	25.0	234	43	7.0
	6	17	39	36.3	59 51.8	151 51.4	53.5	3.2	20	1	123	85	0.38	2.0	3.8	B	153	2	2.0	63	3	1.2	277	86	3.8
	6	20	11	18.0	60 30.0	141 23.6	15.0	1.2	3	3	159	79	0.13	6.7	24.2	D	350	3	0.8	259	14	2.6	92	76	25.0
	6	22	20	54.5	60 14.5	140 51.2	12.5	1.7	10	3	133	66	0.10	1.6	2.5	A	313	2	0.9	44	27	1.1	219	63	2.7
	7	2	14	0.9	61 37.3	147 4.2	25.9	2.0	23	7	126	63	0.64	1.0	1.6	A	116	5	0.6	208	24	0.8	15	65	1.7

1980	ORIGIN TIME		LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ	Q	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3				
	HR	MIN																									
FEB	7	4	13	2.0	59	45.0	139	24.9	16.6	0.4	3	2	166	45	0.11	22.1	12.1	D	148	6	1.1	242	28	25.0	47	61	3.0
	7	7	51	5.8	60	14.1	140	36.0	17.3	1.0	5	3	158	92	0.11	3.3	6.0	C	335	8	1.2	69	26	1.0	229	63	6.8
	7	7	51	57.3	60	13.2	140	37.3	17.1	1.4	6	5	143	92	0.12	2.8	3.9	B	124	8	1.0	29	32	1.6	226	57	4.5
	7	8	58	21.8	61	21.8	146	13.8	3.8	2.0	17	4	152	70	0.48	1.7	1.6	A	109	12	1.0	7	44	1.1	211	43	2.1
	7	9	4	5.1	60	13.4	140	17.6	18.8	1.5	7	4	164	80	0.25	2.7	4.1	B	300	6	0.8	33	28	1.7	199	61	4.6
	7	11	50	33.4	61	19.5	147	14.7	17.7	1.6	17	9	80	54	0.45	0.9	1.5	A	289	7	0.5	198	14	0.9	45	74	1.6
	7	12	48	40.5	61	35.3	146	28.9	20.1	1.9	19	6	155	52	0.63	1.2	1.7	A	288	0	0.7	18	2	1.2	198	88	1.7
	7	13	23	9.2	59	35.3	138	51.9	4.7	1.5	4	1	229	59	0.17	9.3	10.6	D	334	16	1.1	76	36	4.3	224	50	13.5
	7	14	7	20.4	60	6.4	141	23.6	15.6	1.1	5	3	150	80	0.15	9.7	9.7	C	287	30	1.2	36	30	1.7	162	45	13.6
	7	14	11	22.6	60	6.0	140	41.0	9.2	2.3	17	6	90	48	0.30	1.2	2.3	A	86	8	0.6	353	20	0.9	197	68	2.5

SOUTHERN ALASKA EARTHQUAKES, JAN - MAR 1980

1980	ORIGIN TIME	LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ	Q	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3
FEB	HR MN SEC	DEG MIN	DEG MIN	KM				DEG	KM	SEC	KM	KM		DEG DEG	DEG	KM	DEG DEG	DEG	KM	DEG DEG	DEG	KM
9	2 58	7.0																				
	3.8 MB																					
9	9 10	4.3	60 1.9	140 40.8	4.1	0.9	5	3	159	83	0.07	2.6	2.4 B	279	3	0.9	11	33	2.8	184	57	2.2
9	11 14	11.0	60 50.0	149 53.3	40.4	1.7	14	5	93	48	0.21	1.2	3.3 B	83	3	0.8	352	9	1.1	191	80	3.4
9	12 27	39.5	60 11.9	141 4.6	8.2	1.3	9	5	113	56	0.28	2.2	2.5 B	284	2	0.9	16	39	1.2	192	51	3.1
9	19 47	41.6	60 2.7	147 51.6	20.0	2.2	20	10	204	97	0.42	2.2	1.9 A	255	16	0.9	358	37	2.4	146	48	1.7
9	21 13	44.5	61 45.2	149 42.3	39.0	2.1	17	10	153	37	0.41	1.7	2.5 A	8	1	1.7	98	8	1.0	271	82	2.5
9	22 26	13.6	59 21.5	138 8.8	2.6	1.7	3	1	336	107	0.06	21.2	14.3 D	281	7	12.0	187	33	25.0	22	56	5.0
9	23 31	32.3	60 2.2	147 52.0	18.5	2.3	23	8	205	97	0.40	2.1	2.2 A	250	17	0.8	148	36	1.7	1	49	2.5
10	0 58	50.2	61 1.8	146 33.5	8.4	1.5	11	3	111	34	0.36	1.3	1.7 A	241	5	0.8	331	8	1.3	119	81	1.7
10	2 19	6.7	60 21.4	140 26.7	5.2	0.9	4	3	189	128	0.16	22.7	6.8 D	313	6	1.2	43	6	22.8	178	82	6.5
10	2 32	29.2	61 16.1	152 10.1	139.6	4.0	24	4	94	78	0.57	2.7	5.0 B	53	11	1.7	145	15	2.3	288	71	5.2
	3.3 MB																					
10	4 25	14.2	61 23.0	146 46.8	22.4	2.0	22	9	105	48	0.50	0.9	1.8 A	8	0	0.9	278	5	0.6	98	85	1.8
10	5 55	55.0	61 16.6	147 37.7	22.6	1.7	23	10	72	32	0.51	1.1	1.5 A	185	4	1.1	275	10	0.6	73	79	1.5
10	6 7	54.4	61 22.5	150 23.1	55.2	1.8	11	8	170	92	0.21	2.1	4.3 B	173	2	2.0	83	4	0.9	290	86	4.3
10	7 1	35.0	60 16.1	140 57.4	3.9	1.4	6	3	130	82	0.22	4.5	7.5 C	343	12	1.0	79	27	1.6	231	60	8.6
10	13 54	5.5	59 50.5	148 27.4	11.6	2.3	24	8	216	114	0.68	3.0	2.6 B	259	25	0.9	8	35	3.3	142	45	2.6
10	13 58	22.3	60 21.4	140 48.9	4.9	1.5	8	3	147	76	0.39	1.4	3.8 B	316	2	0.9	47	11	1.2	216	79	3.9
10	14 27	25.6	60 17.4	140 55.5	6.1	1.1	5	3	146	110	0.17	5.7	8.8 C	351	22	1.4	90	23	1.6	222	57	10.4
10	14 51	12.2	60 18.0	140 56.4	16.9	1.0	4	2	172	112	0.15	13.3	13.6 D	340	25	1.5	88	34	1.7	222	46	19.0
10	16 8	39.3	59 27.1	151 35.9	52.3	3.1	17	2	136	133	0.42	2.2	11.0 D	61	5	1.1	152	5	1.9	287	83	11.1
	3.4 MB																					
10	17 29	27.3	60 9.6	141 0.6	0.6	1.6	10	4	118	80	0.39	1.7	3.4 B	120	1	0.9	30	23	1.0	212	67	3.6
10	22 56	38.5	61 47.7	149 25.8	37.7	1.6	19	11	158	58	0.34	1.6	1.0 A	186	4	1.6	93	35	0.9	282	55	1.0
11	3 27	47.3	61 34.1	149 44.8	42.8	1.6	8	7	123	37	0.28	1.4	1.4 A	282	8	1.0	184	44	1.2	20	45	1.6
11	5 31	37.4	60 16.2	141 5.2	10.0	1.5	9	4	123	77	0.16	1.3	2.5 B	308	5	0.9	40	18	1.0	203	71	2.7
11	7 49	8.1	60 7.1	137 0.9	15.0	1.7	6	3	178	127	0.67	10.4	13.4 D	110	10	2.3	207	36	1.2	7	52	16.9
	2.4 ML																					
	EMRC																					
11	12 3	53.4	60 16.8	140 50.8	4.5	0.7	4	2	149	117	0.07	2.6	5.9 C	117	6	2.0	24	21	1.0	222	68	6.3
11	12 5	45.5	61 34.7	149 50.8	57.1	1.9	15	7	84	40	0.32	1.2	2.0 A	250	7	0.7	159	12	1.2	10	76	2.0
11	16 3	57.9	60 31.2	145 7.3	25.5	1.8	16	5	200	84	0.39	2.0	1.5 A	321	27	2.2	70	32	0.8	200	46	1.4
11	16 11	40.8	60 31.9	145 7.4	24.8	1.8	17	7	189	84	0.39	2.2	1.4 A	328	19	2.2	71	33	0.8	213	51	1.4
11	19 16	45.3	60 32.8	141 40.8	7.8	1.1	5	4	128	65	0.14	2.0	11.4 D	176	2	1.0	266	7	1.4	70	83	11.5
11	19 21	7.9	60 16.8	141 33.8	2.6	1.1	4	3	125	77	0.29	1.0	5.7 C	64	1	0.8	334	7	0.7	162	83	5.7
11	21 2	34.5	60 15.6	140 59.6	6.6	1.0	5	2	127	63	0.17	2.8	6.5 C	275	6	1.2	7	21	0.9	170	68	7.0
11	22 35	28.5	61 27.6	149 18.2	40.3	1.5	8	6	182	46	0.20	1.5	1.9 A	42	8	0.8	136	26	1.3	296	63	2.1
11	23 14	18.1	60 15.7	140 55.1	1.8	0.7	4	2	158	108	0.06	2.1	6.1 C	116	5	1.5	24	16	1.0	223	73	6.4
11	23 36	46.5	62 40.9	148 37.9	28.5	2.3	11	5	267	132	0.52	2.6	1.8 B	134	18	2.3	233	26	2.8	13	58	1.4
12	2 3	49.7	60 5.0	140 45.2	13.5	1.8	6	1	184	89	0.16	4.7	4.4 B	312	12	1.4	215	27	4.7	64	60	4.4
12	3 11	55.0	61 18.6	150 7.9	43.3	2.2	18	4	64	62	0.42	1.2	3.0 B	244	0	0.7	154	4	1.1	334	86	3.0
12	4 31	6.5	63 40.1	150 41.7	87.6	4.4	14	1	153	229	0.57	5.3	25.0 D	115	1	5.3	205	2	2.6	358	88	25.0
12	9 13	24.6	60 17.1	141 34.7	0.2	1.7	8	6	99	70	0.39	0.8	2.7 B	296	1	0.8	26	9	0.6	200	81	2.8
12	9 40	2.6	61 0.0	146 29.1	9.3	1.8	19	5	59	31	0.65	0.9	1.1 A	243	9	0.6	152	10	0.9	14	77	1.1
12	10 31	15.3	60 12.9	141 0.7	10.8	1.4	8	4	123	82	0.20	1.5	2.2 A	104	9	0.7	10	26	1.1	212	62	2.4
12	13 14	28.2	61 49.1	149 16.6	4.4	1.3	13	8	173	50	0.74	0.9	1.1 A	5	4	0.9	273	19	0.5	106	70	1.2
12	21 57	23.1	60 14.2	141 16.6	10.4	1.6	9	3	107	59	0.28	1.1	2.0 A	93	7	0.6	1	15	1.0	207	73	2.1
12	23 14	56.0	61 18.3	146 18.5	11.3	2.3	22	4	61	30	0.59	0.8	1.3 A	248	2	0.7	338	9	0.8	146	81	1.3
13	0 19	15.5	61 18.3	146 18.2	9.2	1.9	20	6	61	31	0.63	0.8	1.3 A	242	1	0.7	332	6	0.8	143	84	1.3

1980	ORIGIN TIME			LAT N DEG MIN	LONG W DEG MIN	DEPTH KM	MAG	NP	NS	GAP DEG	D3 KM	RMS SEC	ERH KM	ERZ Q KM	AZ1 DEG	DIP1 DEG	SE1 KM	AZ2 DEG	DIP2 DEG	SE2 KM	AZ3 DEG	DIP3 DEG	SE3 KM		
	HR	MM	SEC																						
FEB 13	0	28	25.8	60 54.2	147 31.9	18.7	2.2	25	7	118	44	0.40	1.1	1.5	A	172	13	1.0	266	15	0.5	43	70	1.6	
13	1	47	5.8	60 13.9	140 48.4	15.0	1.1	8	5	135	72	0.18	2.3	2.4	A	287	3	1.0	20	42	1.3	194	48	3.1	
13	4	6	22.1	60 12.6	141 11.0	8.4	1.5	10	5	109	53	0.24	1.9	2.1	A	106	4	0.7	12	39	1.2	201	51	2.6	
13	5	22	32.2	60 13.4	141 11.1	7.8	2.1	5	2	111	53	0.04	5.4	10.1	D	303	17	1.1	40	21	1.5	177	62	11.4	
13	6	26	43.5	61 31.3	150 11.9	49.3	1.7	12	6	126	87	0.25	1.5	3.3	B	265	8	0.9	173	10	1.3	33	77	3.4	
13	7	0	41.3	60 15.8	140 58.5	7.7	1.2	7	5	129	81	0.23	2.3	3.0	B	311	7	1.1	46	33	1.4	211	56	3.5	
13	7	5	33.1	61 26.8	150 4.3	47.4	1.6	12	9	119	86	0.25	1.0	3.6	B	172	2	0.9	262	3	0.7	48	86	3.6	
13	13	7	11.4	61 44.0	146 31.5	20.6	1.9	21	10	109	45	0.75	1.3	1.7	A	284	5	0.6	15	11	1.3	170	78	1.7	
13	14	41	37.2	61 56.4	149 43.3	16.9	1.6	10	7	172	74	0.76	1.4	2.2	A	283	17	0.9	187	19	1.2	52	64	2.4	
13	16	2	29.8	59 55.3	140 7.8	11.4	1.1	6	2	132	28	0.65	1.7	1.9	A	140	12	1.0	44	27	1.6	252	60	2.0	
13	16	9	47.5	60 11.1	141 17.4	11.7	2.3	21	6	74	44	0.28	1.2	1.7	A	285	7	0.6	19	29	0.9	183	60	1.9	
13	16	22	2.1	60 18.6	140 57.7	7.7	0.7	4	3	137	76	0.14	2.4	7.2	C	101	1	0.9	11	17	1.0	194	73	7.6	
13	16	48	14.1	60 11.3	141 36.8	3.9	1.3	11	5	115	46	0.25	1.5	2.7	B	96	3	0.7	4	20	1.2	194	70	2.8	
13	19	16	40.8	63 29.3	149 9.2	95.6	3.4	16	3	167	208	0.32	5.5	25.0	D	103	2	5.4	194	3	2.2	340	86	25.0	
13	20	0	15.3	62 53.2	150 32.8	96.5	3.3	11	7	276	190	0.36	7.4	8.1	C	75	22	2.2	330	33	4.8	192	49	10.1	
13	21	2	43.9	60 17.0	140 47.7	14.8	0.9	6	4	141	82	0.04	3.7	4.4	B	328	13	1.2	68	36	1.5	221	51	5.5	
13	21	33	13.8	61 28.5	143 20.6	16.4	1.0	3	3	215	90	0.90	16.8	13.9	D	110	18	1.1	214	38	20.3	0	47	8.5	
13	22	1	1.6	62 15.1	148 23.3	35.6	2.3	11	5	198	117	0.50	2.3	1.6	A	180	22	2.3	281	27	2.1	56	54	1.1	
14	4	52	14.9	61 40.2	150 2.6	45.4	1.9	13	6	147	54	0.33	1.6	2.0	A	269	5	0.7	178	15	1.6	17	74	2.0	
14	5	35	37.4	61 11.5	150 24.0	55.8	1.9	13	7	91	81	0.33	1.0	3.0	B	352	1	1.0	82	2	0.7	235	88	3.0	
14	11	15	28.0	61 46.5	149 31.5	35.5	1.7	17	9	156	59	0.43	1.6	1.2	A	95	9	0.9	9	3	1.0	1.6	226	76	1.1
14	19	48	4.9	60 13.1	141 23.2	1.1	0.6	5	2	132	64	0.12	2.3	4.4	B	294	4	1.0	26	22	1.5	194	68	4.8	
14	20	19	34.3	59 8.6	139 32.8	35.5	0.9	5	4	271	90	0.29	7.3	22.0	D	177	9	5.4	269	13	1.5	53	74	22.8	
14	22	2	54.4	60 18.7	152 18.1	85.7	3.5	25	2	64	63	0.47	1.7	3.2	B	147	3	1.7	57	8	1.2	257	81	3.2	
15	3	38	30.1	60 16.0	140 46.0	12.4	0.9	8	4	141	72	0.08	2.1	2.8	B	292	4	1.0	25	32	1.5	196	58	3.2	
15	5	42	3.6	60 2.6	140 41.1	9.5	1.5	7	3	139	43	0.31	2.1	2.0	A	109	5	0.9	15	38	2.1	205	52	2.0	
15	7	0	43.6	60 17.4	140 49.6	11.0	1.4	7	2	140	69	0.11	2.4	3.2	B	318	17	1.0	57	27	1.7	200	57	3.7	
15	7	17	45.7	60 23.9	140 53.3	22.3	0.9	6	2	147	68	0.18	2.7	6.5	C	258	3	1.7	350	21	1.0	160	69	7.0	
15	13	33	55.4	60 21.5	140 50.3	14.1	1.6	13	5	55	75	0.29	1.3	3.0	B	329	8	0.8	61	13	1.1	208	75	3.1	
15	13	47	52.1	60 17.1	140 48.4	12.1	1.2	5	2	165	75	0.01	4.4	6.6	C	105	5	1.4	12	32	1.7	203	58	7.7	
15	13	52	7.4	60 17.3	140 47.5	12.7	1.2	8	4	142	74	0.16	1.6	3.0	B	318	7	0.8	51	23	1.1	212	66	3.2	
15	14	11	20.9	60 58.9	146 59.9	23.6	2.1	23	9	59	36	0.59	1.0	1.1	A	263	19	0.5	2	24	1.0	139	59	1.1	
15	15	31	52.2	57 46.1	153 5.5	72.0	4.0	19	1	232	220	0.48	9.3	11.8	D	72	14	4.2	332	34	2.2	181	52	14.8	
15	16	15	26.8	58 4.8	151 28.5	42.2	3.6	12	3	211	219	0.41	3.9	10.4	D	119	2	3.9	28	17	1.6	216	73	10.8	
15	17	5	33.3	60 4.1	147 23.2	26.8	2.6	25	3	203	102	0.45	2.1	1.7	A	246	7	0.9	339	25	2.2	141	64	1.5	
15	19	26	38.0	60 17.9	140 45.6	10.8	0.8	6	3	145	73	0.07	3.1	4.1	B	304	12	1.2	42	32	1.7	196	55	4.8	
15	20	7	57.8	60 8.2	140 48.0	5.6	1.5	9	4	116	55	0.55	1.8	1.9	A	104	7	0.7	9	38	1.5	203	51	2.1	
15	20	26	2.8	60 11.0	139 44.1	15.9	0.6	4	2	258	60	0.04	4.6	3.9	B	111	9	0.9	208	39	5.8	10	50	1.8	
15	20	27	20.4	60 2.7	139 51.5	18.1	0.9	5	3	181	49	0.41	6.2	2.0	C	37	0	6.2	127	2	1.2	307	88	2.0	
15	22	25	26.5	60 12.5	140 47.5	11.0	1.2	6	2	133	72	0.09	4.2	5.3	C	101	11	1.4	3	35	1.6	206	53	6.6	
15	22	31	24.8	61 27.8	147 18.2	18.2	2.0	25	10	53	60	0.48	0.8	1.4	A	177	5	0.8	269	14	0.6	68	75	1.4	
16	2	26	53.8	60 6.5	139 22.2	1.5	1.1	5	0	251	49	0.06	5.4	10.3	D	122	5	1.3	30	21	3.9	225	68	10.9	
UNUSUALLY LOW FREQUENCIES - GLACIAL RELATED EVENT?																									
16	3	21	31.8	60 24.9	143 15.1	23.7	1.3	5	3	157	118	0.23	8.3	15.8	D	244	5	1.5	336	27	0.8	144	63	17.9	
16	3	53	59.6	61 49.3	150 4.4	41.2	1.7	9	6	168	79	0.34	2.7	2.4	B	103	6	1.1	197	30	2.8	3	59	2.3	
16	4	32	3.1	60 6.5	141 18.8	0.2	0.9	6	3	144	59	0.32	2.5	2.7	B	100	3	0.8	7	41	1.8	193	49	3.2	

1980	ORIGIN	TIME	LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3		
HR	MIN	SEC	DEG	MIN	DEG	MIN	DEG	MIN	DEG	MIN	SEC	MIN	MIN	DEG	DEG	MIN	DEG	DEG	MIN	DEG	DEG	MIN		
FEB 16	5	9	36.8	61 21.6	143 21.8	10.8	0.5	3	193	90	0.86	15.8	22.7	D	117	15	0.7	213	23	12.9	357	62	25.0	
16	5	50	41.5	62 4.7	148 40.8	32.8	2.2	21	9	208	75	0.58	2.4	1.2	A	190	6	2.4	98	22	0.8	294	67	1.2
16	5	58	52.4	59 59.6	140 41.2	7.2	0.6	7	2	158	39	0.31	2.0	2.2	A	112	7	0.8	206	29	1.9	10	60	2.3
16	9	44	2.9	60 9.7	141 5.3	2.8	0.9	5	1	134	54	0.42	2.8	4.2	B	91	4	0.7	358	32	1.3	187	58	4.9
16	13	9	18.5	60 40.4	143 8.9	5.0	1.5	8	1	110	78	0.36	2.7	6.1	C	53	14	1.5	147	17	1.0	285	68	6.5
16	13	59	16.7	60 11.3	140 49.6	19.3	0.9	4	2	270	111	0.10	9.0	4.5	C	133	23	9.7	238	32	4.3	14	49	1.1
16	18	54	24.3	60 15.6	140 42.4	16.7	0.9	6	3	143	86	0.15	2.5	3.8	B	129	8	1.1	34	30	1.2	232	59	4.4
16	19	45	18.7	60 18.1	141 14.5	9.1	0.8	5	3	117	74	0.34	3.5	9.7	C	257	8	1.6	349	17	0.9	143	71	10.2
16	22	36	10.2	60 14.1	140 14.1	17.1	0.9	5	3	185	79	0.31	3.6	2.9	B	298	0	1.0	207	31	3.9	28	59	2.5
17	1	34	3.7	60 2.3	141 31.8	7.7	1.6	11	6	133	28	0.29	1.9	1.8	A	286	2	0.7	195	43	2.2	18	47	1.4
17	5	38	18.4	60 10.9	141 25.7	5.2	0.9	6	3	117	78	0.26	2.3	3.3	B	291	8	1.0	26	28	1.6	187	61	3.7
17	6	40	49.7	60 15.6	140 56.8	12.2	1.7	11	7	130	71	0.13	1.5	2.4	A	309	3	0.9	40	23	1.2	212	67	2.5
17	10	43	49.0	60 13.0	141 5.3	12.8	1.0	5	5	138	113	0.24	10.4	7.6	D	109	32	1.7	226	36	12.8	350	38	1.3
17	11	36	24.0	60 9.5	140 18.9	16.2	1.2	7	2	153	75	0.19	3.5	3.3	B	292	3	1.0	199	41	4.2	25	49	2.5
17	14	13	48.0	62 0.3	149 29.1	42.1	2.0	13	5	178	85	0.25	2.3	6.9	C	92	5	1.2	1	13	1.7	203	76	7.1
17	14	53	17.0	61 34.7	146 12.4	27.3	1.7	19	11	95	59	0.69	1.0	1.5	A	357	3	1.0	266	10	0.8	103	80	1.5
17	18	46	54.1	60 16.1	140 58.4	10.1	0.6	6	5	168	72	0.09	3.7	4.9	B	303	7	1.1	38	35	1.4	203	54	5.9
17	18	47	51.5	59 50.8	141 36.0	9.9	0.7	3	2	263	75	0.03	7.8	3.3	C	97	2	1.4	6	5	7.8	209	85	3.3
17	20	19	55.9	60 9.8	140 21.2	17.1	1.9	10	2	151	46	0.29	2.3	3.2	B	302	9	0.8	37	29	1.6	196	59	3.5
17	22	16	37.3	60 13.1	141 5.3	12.3	1.7	13	5	119	73	0.23	1.5	2.2	A	303	4	0.8	35	29	1.1	206	61	2.4
18	3	41	4.3	60 16.4	140 51.7	10.4	1.6	10	5	136	70	0.26	2.1	3.0	B	122	1	0.9	32	31	1.3	214	59	3.4
18	4	28	41.6	61 39.3	149 48.5	42.3	1.7	11	11	146	77	0.31	1.6	3.0	B	275	4	1.1	185	5	1.5	44	84	3.0
18	11	7	12.3	61 50.4	150 1.6	39.0	2.2	17	12	161	71	0.40	2.0	2.2	A	97	5	1.1	5	20	1.9	200	69	2.3
18	11	30	18.2	62 38.7	148 5.6	40.4	3.3	25	4	233	116	0.48	4.2	11.8	D	87	1	1.4	177	2	4.2	330	88	11.8
18	12	56	52.2	61 29.6	146 34.1	16.2	2.2	25	12	71	48	0.60	0.8	1.4	A	298	1	0.6	207	8	0.8	35	82	1.4
18	14	56	6.2	60 8.6	141 46.0	20.8	1.5	7	4	120	59	0.99	3.1	3.0	B	79	23	1.1	331	37	1.2	194	44	4.2
18	18	41	10.1	61 32.5	149 53.3	51.1	1.9	14	11	68	41	0.47	1.4	2.5	B	274	3	1.0	184	16	1.2	14	74	2.6
18	19	17	46.9	60 15.9	140 58.5	12.8	1.4	7	2	141	80	0.15	1.7	2.7	B	343	16	1.1	79	21	1.3	218	63	3.0
18	19	49	2.0	61 32.8	149 49.2	45.5	1.9	13	11	131	74	0.21	1.4	2.6	B	266	6	1.0	175	6	1.4	41	81	2.6
18	21	8	52.5	60 7.1	140 40.6	3.6	1.6	11	5	129	49	0.46	2.0	2.8	B	110	6	0.7	16	30	1.3	210	59	3.2
18	22	14	40.4	62 13.1	149 36.9	41.3	2.9	28	6	93	81	0.43	2.5	5.2	C	88	5	1.0	357	5	2.4	223	83	5.3
18	22	36	7.8	60 7.7	140 40.4	1.2	1.5	9	4	130	61	0.36	1.8	3.1	B	295	3	0.8	26	22	1.4	198	68	3.3
18	23	45	36.9	61 29.2	149 56.0	40.3	1.6	15	12	66	44	0.33	1.3	2.8	B	193	1	1.3	103	2	0.9	310	88	2.8
19	1	40	2.7	60 16.4	140 49.2	8.0	0.8	3	3	138	82	0.10	4.2	10.0	D	101	10	3.0	8	18	1.1	219	69	10.7
19	3	5	34.0	60 12.4	141 1.7	11.9	1.8	17	4	121	59	0.20	1.4	2.0	A	309	11	0.8	45	26	1.0	198	61	2.3
19	14	32	45.5	60 10.6	141 26.2	7.0	1.6	14	7	100	37	0.30	1.2	2.2	A	303	10	0.7	37	20	0.9	188	67	2.3
19	15	37	52.7	60 4.0	147 22.5	25.3	2.3	25	8	204	103	0.49	2.2	1.8	A	254	6	0.9	347	21	2.3	149	68	1.7
19	16	12	32.3	60 15.4	140 56.4	11.1	1.7	16	4	130	65	0.17	1.2	2.4	A	299	4	0.8	31	19	1.0	198	70	2.5
19	16	16	31.2	60 19.1	141 57.0	15.0	1.2	6	3	97	54	0.42	3.2	9.0	C	65	11	1.5	332	14	1.1	192	72	9.5
19	16	25	35.8	60 19.3	141 18.5	8.4	1.3	9	2	115	72	0.23	1.3	3.2	B	339	8	0.9	70	9	1.2	208	78	3.2
19	16	52	7.9	60 12.2	141 3.6	10.0	0.9	6	2	147	84	0.25	3.7	3.6	B	95	23	1.3	346	37	1.3	209	44	5.1
19	17	7	22.5	60 15.9	140 57.6	10.9	1.1	8	5	130	81	0.16	2.6	3.5	B	307	7	1.2	42	34	1.3	207	55	4.2
19	18	24	44.5	60 15.3	140 56.1	8.2	1.8	15	5	130	66	0.26	1.3	2.8	B	321	8	0.8	53	17	0.9	207	71	3.0
19	20	18	29.4	60 5.8	140 58.7	5.3	1.9	17	9	82	59	0.35	1.6	1.9	A	98	9	0.7	1	35	1.0	200	53	2.3
20	0	14	55.5	60 7.1	140 39.8	2.4	1.5	5	2	131	87	0.22	3.2	5.8	C	96	10	1.0	1	24	1.8	207	64	6.4

SOUTHERN ALASKA EARTHQUAKES, JAN - MAR 1980

	ORIGIN TIME			LAT N		LONG W		DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ	Q	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3
1980	HR	MIN	SEC	DEG	MIN	DEG	MIN	KM				DEG	KM	SEC	KM	KM	DEC	DEG	KM	DEG	DEG	KM	DEG	DEG	KM	
FEB	20	1	7	24.5	60 18.1	140 46.3		4.7	1.2	6	2	168	74	0.10	2.0	5.1	C	320	9	1.3	53	17	1.0	203	71	5.4
	20	2	3	28.5	60 8.0	141 5.8		8.2	1.3	4	1	138	108	0.12	16.1	10.5	D	114	18	1.7	216	33	19.2	0	51	1.3
	20	3	11	28.2	61 45.5	149 40.5		7.8	1.4	7	3	161	58	0.67	1.1	1.2	A	69	8	0.8	163	28	1.1	324	61	1.2
	20	5	57	20.9	60 29.5	148 32.4		22.4	2.9	25	2	142	66	0.46	1.3	1.9	A	161	7	1.3	252	9	0.6	34	79	1.9
	20	6	22	5.9	60 0.6	140 43.0		12.2	1.3	6	1	154	61	0.35	5.8	3.5	C	112	17	0.7	212	28	6.4	355	56	2.1
	20	7	50	7.3	60 19.1	141 17.7		11.1	1.4	7	2	115	72	0.36	1.7	2.8	B	335	14	0.8	69	15	1.5	204	69	3.0
	20	8	51	30.6	61 24.2	150 43.9		63.8	1.8	6	4	109	77	0.14	1.6	3.1	B	269	0	0.9	179	4	1.5	359	86	3.1
	20	10	39	23.0	60 15.3	140 56.0		2.1	0.7	5	2	156	108	0.17	2.2	5.8	C	120	6	1.5	28	18	0.9	228	71	6.1
	20	10	54	36.6	60 19.8	141 22.9		15.1	1.5	7	3	122	71	0.19	1.4	2.8	B	63	8	1.3	331	13	0.8	184	75	2.9
	20	11	18	28.9	60 40.7	149 47.9		43.1	1.3	8	4	77	64	0.34	1.1	1.8	A	293	8	1.1	25	17	0.9	179	71	1.9
	20	11	39	45.1	60 21.4	141 10.1		11.7	0.9	5	2	144	96	0.28	5.4	6.4	C	333	13	1.2	73	36	2.6	226	51	8.1
	20	15	9	46.5	60 12.6	141 12.5		1.3	0.9	5	2	155	90	0.37	1.6	3.4	B	280	7	0.9	13	18	1.2	170	71	3.5
	20	16	0	56.7	59 49.8	141 36.5		0.2	0.8	4	2	232	111	0.12	3.0	4.0	B	84	2	0.9	354	6	3.0	192	84	4.0
	20	16	26	7.4	60 7.7	140 56.3		0.8	1.3	8	2	118	62	0.22	3.0	5.1	C	104	9	0.9	10	27	1.3	211	61	5.8
	20	18	7	13.3	59 57.5	141 16.8		6.7	2.0	13	5	119	43	0.50	1.0	1.0	A	311	17	0.5	55	38	0.7	202	47	1.2
2.5 ML EMRC																										
	20	18	21	30.4	57 7.1	156 38.4		90.00	5.0	6	2	293	317	0.36	22.7	25.0	D	313	3	5.9	223	5	22.7	74	84	25.0
4.4 MB																										
	20	19	42	16.8	60 1.2	152 42.9		96.7	3.5	15	1	157	115	0.38	2.9	4.2	B	164	7	2.8	73	8	1.7	295	79	4.3
	21	1	18	26.7	63 11.3	149 32.8		39.3	2.7	14	3	119	172	0.38	8.5	17.4	D	84	2	3.0	353	7	8.3	190	83	17.5
	21	2	12	27.2	60 5.1	145 19.2		23.8	2.4	10	6	265	129	0.66	3.6	2.5	B	221	31	2.0	332	31	4.0	97	43	1.6
	21	2	39	5.9	60 52.9	140 54.4		15.0	1.2	3	1	214	125	0.08	13.1	21.4	D	50	8	6.1	145	30	1.5	307	59	25.0
	21	7	18	36.5	59 47.6	138 53.5		18.5	0.6	3	3	246	45	0.16	8.8	23.5	D	115	8	1.6	22	18	2.6	228	70	25.0
	21	11	23	6.1	60 15.7	140 44.3		5.1	1.2	4	4	154	100	0.05	5.4	8.1	C	120	2	1.5	29	33	1.7	213	57	9.6
	21	14	49	0.7	60 19.3	141 20.6		12.7	1.8	7	1	113	72	0.15	1.7	3.3	B	352	9	0.8	84	15	1.4	232	72	3.4
	21	16	42	21.4	60 4.3	139 46.8		17.8	1.8	4	2	196	50	0.22	3.0	1.8	B	203	15	3.1	305	33	0.9	94	53	1.9
	21	18	7	33.3	60 12.1	139 33.0		15.0	1.3	3	1	326	92	0.17	20.1	15.2	D	10	17	5.3	267	37	25.0	120	48	1.8
	21	18	23	2.4	63 11.9	149 38.8		46.6	2.6	8	4	170	173	0.98	7.9	23.9	D	348	4	4.9	257	17	2.5	91	73	25.0
	21	18	25	51.7	60 17.9	140 53.8		2.9	0.7	5	5	136	80	0.15	2.2	4.8	B	104	12	1.8	10	16	0.9	229	70	5.1
	21	19	29	57.1	61 46.5	149 24.9		28.9	1.5	7	4	206	57	0.26	2.4	3.4	B	68	4	1.1	160	29	1.8	331	61	3.7
	21	23	1	24.6	62 56.1	149 3.6		43.5	2.5	8	3	146	166	0.53	2.7	25.0	D	24	2	2.3	114	2	2.4	249	87	25.0
	22	0	26	56.2	60 25.8	140 8.4		10.4	0.8	5	3	208	95	0.12	3.3	6.1	C	305	3	1.2	37	21	2.5	207	69	6.5
	22	0	35	57.9	61 44.7	149 39.4		39.6	1.3	5	2	200	74	0.16	2.8	5.5	C	313	13	2.0	48	19	1.5	191	67	5.9
	22	1	20	32.6	61 16.2	148 45.5		30.4	2.9	27	2	50	43	0.48	0.9	1.0	A	81	5	0.6	173	22	0.8	339	67	1.1
	22	3	45	55.7	61 18.4	146 18.8		10.1	2.1	25	6	47	31	0.58	0.8	1.2	A	260	0	0.6	350	3	0.8	170	87	1.2
	22	4	22	52.5	60 31.5	141 24.1		20.6	1.6	9	4	119	64	0.24	1.6	3.1	B	152	10	0.9	60	13	1.5	279	74	3.2
	22	6	42	57.2	61 43.3	149 40.3		4.1	1.3	11	5	156	54	0.71	1.3	1.9	A	359	12	1.2	265	17	0.6	122	69	2.0
	22	6	53	3.6	61 42.0	149 39.5		6.6	1.3	12	4	153	51	0.85	1.3	1.3	A	270	20	0.7	162	40	0.9	20	43	1.6
	22	8	5	20.7	60 4.6	139 26.8		7.0	1.2	4	2	287	52	0.05	3.5	3.9	B	14	22	3.3	114	24	1.4	246	57	4.3
UNUSUALLY LOW FREQUENCIES - GLACIAL RELATED EVENT?																										
	22	9	27	33.7	60 29.9	140 60.0		5.8	1.0a	5	1	180	97	0.02	7.2	12.4	D	328	2	1.3	59	29	2.3	234	61	14.2
	22	10	1	47.8	61 39.2	149 44.1		45.7	1.4	6	5	208	73	0.35	1.9	1.9	A	267	5	1.2	177	6	1.9	37	82	1.9
	22	10	53	19.8	62 26.2	149 47.0		42.6	2.0	12	6	220	103	0.52	3.0	15.8	D	98	5	1.4	8	5	2.6	233	83	15.9
	22	12	27	37.9	59 57.2	152 37.3		78.8	3.2	17	0	128	75	0.31	2.2	3.8	B	150	3	2.2	60	7	1.3	263	82	3.8
	22	12	47	29.7	61 53.2	149 15.9		10.9	2.1	26	7	166	50	0.58	1.3	1.7	A	170	2	1.3	261	22	0.7	75	68	1.8
	22	13	1	28.7	60 16.1	140 46.8		6.6	1.5	8	6	140	73	0.20	1.4	2.2	A	109	5	0.8	13	25	1.1	206	64	2.4
	22	14	6	12.8	62 12.9	148 47.4		33.7	1.9	13	10	235	85	0.56	1.7	1.1	A	156	12	1.7	250	20	1.5	37	66	1.0
	22	14	13	40.7	60 35.7	149 6.5		19.8	1.0	12	6	129	51	0.47	1.4	1.7	A	239	16	0.6	335	22	1.3	116	62	1.9

SOUTHERN ALASKA EARTHQUAKES, JAN - MAR 1980

	ORIGIN TIME			LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ER2	Q	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3	
1980	HR	MIN	SEC	DEG MIN	DEG MIN	KM				DEG	KM	SEC	KM	KM		DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM	
FEB	22	14	43	36.7	60 17.7	140 45.7	0.4	0.7	4	2	168	103	0.46	2.3	6.2	C	76	8	1.1	344	15	1.5	193	73	6.5
	22	16	54	44.0	62 30.5	147 49.7	41.3	2.8	26	4	117	97	0.56	2.3	10.3	D	91	1	1.2	1	1	2.3	226	89	10.4
	22	19	51	38.8	60 16.6	140 47.3	16.5	1.8	13	7	62	67	0.18	1.6	2.7	B	319	1	0.8	49	25	1.1	227	65	2.9
2.6 ML EMRC																									
	22	22	55	49.9	60 57.0	149 56.9	40.9	1.6	13	6	69	51	0.38	1.1	2.4	A	81	4	0.7	351	11	1.0	191	78	2.4
	23	0	34	9.0	60 15.3	141 11.2	11.7	0.9	7	3	117	80	0.18	2.9	3.4	B	319	19	0.9	62	34	1.1	205	50	4.3
	23	0	54	50.9	61 39.4	149 45.5	45.4	1.5	6	7	208	74	0.27	2.0	1.9	A	268	6	1.1	174	31	2.1	8	58	1.8
	23	3	21	11.4	60 1.8	142 21.0	4.6	1.8	14	6	164	69	0.59	1.9	1.1	A	17	6	1.9	109	16	0.7	267	73	1.1
	23	3	43	19.2	62 17.9	149 34.6	43.0	2.8	25	6	126	85	0.36	2.7	6.7	C	87	5	1.2	357	6	2.6	217	82	6.8
	23	5	20	29.6	61 39.6	149 44.3	44.8	1.5	6	4	172	74	0.26	1.8	2.2	A	16	3	1.8	285	16	1.0	116	74	2.2
	23	6	46	20.6	62 23.3	149 33.8	38.7	2.0	16	4	131	92	0.49	3.4	3.0	B	339	26	2.1	91	39	1.2	225	40	4.3
	23	7	7	5.4	60 22.8	140 19.4	8.2	1.1	6	3	181	85	0.05	3.5	5.9	C	303	0	0.9	33	26	2.3	213	64	6.4
	23	8	18	49.2	60 26.1	143 18.9	25.3	2.1	12	6	83	84	0.89	1.5	2.4	A	316	7	0.8	49	24	1.1	211	65	2.6
	23	9	39	22.3	60 17.9	140 55.3	3.6	1.2	6	2	173	110	0.20	3.2	6.4	C	312	3	1.2	43	25	1.4	216	65	7.0
	23	11	5	7.7	60 12.1	141 13.2	9.8	1.7	13	6	132	49	0.17	1.1	1.9	A	338	15	0.6	72	16	0.9	207	68	2.0
	23	12	5	28.3	59 53.8	139 58.8	14.5	0.2	5	2	117	41	0.37	1.6	1.8	A	263	0	1.3	173	32	1.5	353	58	1.9
	23	13	48	39.6	60 12.2	140 20.4	18.7	1.6	8	5	158	50	0.20	2.2	3.1	B	309	6	0.7	43	33	1.0	210	56	3.7
	23	14	25	49.2	60 11.8	146 19.3	2.9	1.6	17	9	200	97	0.20	2.4	1.9	A	239	31	0.9	354	36	2.8	120	39	1.5
	23	16	4	34.7	60 16.6	141 32.4	3.3	1.3	6	3	170	95	0.33	2.8	2.3	B	330	0	0.8	240	30	3.1	60	60	2.0
	23	17	19	57.4	60 15.9	141 20.6	9.8	0.8	5	3	177	101	0.11	3.1	3.3	B	341	16	0.7	82	33	2.7	229	52	3.7
	23	17	47	46.3	60 16.3	140 45.5	11.9	1.5	7	3	142	83	0.23	2.2	2.8	B	315	3	0.9	47	34	1.5	221	56	3.2
	23	18	4	33.4	62 24.7	148 53.9	31.8	2.4	20	7	120	99	0.44	2.4	1.9	A	79	29	1.2	187	29	2.7	313	47	1.7
	23	22	23	21.4	60 27.8	139 30.4	2.2	0.9	4	2	230	118	0.12	7.2	9.0	C	335	11	1.8	72	34	4.2	230	54	10.8
	23	22	31	48.5	60 7.5	140 55.8	0.6	1.0	5	3	134	100	0.31	3.4	5.4	C	325	8	1.1	60	30	1.2	222	59	6.3
	23	22	36	10.5	60 9.3	140 52.2	4.4	1.0	6	4	124	94	0.41	3.2	4.4	B	104	15	1.0	5	30	1.4	217	56	5.3
	23	22	54	31.7	61 47.3	150 35.5	57.2	3.1	25	2	147	80	0.32	1.9	3.8	B	75	2	0.9	165	16	1.7	338	74	4.0
3.1 ML PMR																									
	24	0	13	5.8	60 6.4	140 56.1	3.7	1.0	5	2	133	99	0.34	4.7	5.8	C	103	23	1.1	359	29	1.2	225	51	7.4
	24	4	42	29.8	60 7.6	140 57.6	3.1	0.9	4	2	157	101	0.20	5.4	7.3	C	352	24	0.9	94	26	1.2	225	53	9.0
	24	4	42	43.3	60 6.2	140 59.0	4.4	1.4	4	2	154	101	0.33	6.9	7.3	C	327	12	1.3	68	41	1.1	224	46	10.0
	24	9	27	55.6	61 58.4	148 55.3	2.9	1.4	18	8	190	62	0.87	1.5	1.7	A	179	11	1.5	277	33	0.6	73	55	2.0
	24	12	40	17.2	59 59.3	140 6.7	23.5	0.8	4	1	273	54	0.28	6.9	3.4	C	225	20	2.7	323	23	7.4	98	59	1.8
	24	14	33	0.5	61 46.7	151 5.1	75.0	3.1	24	2	128	84	0.55	2.3	4.4	B	67	3	1.1	158	20	1.7	329	70	4.7
	24	14	52	14.0	59 50.0	136 42.0	15.0	2.5	5	0	318	165	1.12	25.0	25.0	D	353	0	9.6	263	0	25.0	0	90	25.0
	24	20	59	6.6	61 22.3	146 43.7	16.8	1.7	24	6	80	45	0.44	1.0	1.4	A	2	11	1.0	270	13	0.6	131	73	1.5
	24	23	27	19.7	61 41.0	149 26.0	36.0	1.5	11	8	150	60	0.33	1.2	1.0	A	0	9	1.2	94	21	0.8	248	67	1.0
	25	2	43	18.3	60 1.7	141 8.8	6.5	2.0	7	3	154	85	0.11	2.7	1.6	B	109	19	1.0	11	21	2.9	237	61	1.3
	25	6	7	47.8	60 17.1	141 13.3	9.5	1.3	8	3	117	76	0.07	2.2	3.4	B	319	6	1.0	52	28	1.4	218	61	3.8
	25	7	12	59.2	60 17.4	140 53.3	4.9	1.0	4	3	173	115	0.10	2.3	5.1	C	125	5	1.5	33	22	1.0	227	67	5.5
	25	7	42	48.5	61 48.0	149 18.9	38.3	1.8	9	9	158	63	0.17	3.2	1.7	B	295	10	0.8	203	11	3.3	66	75	1.6
	25	11	1	27.1	62 14.5	149 37.1	44.9	2.4	20	16	201	104	0.54	2.1	3.6	B	98	3	0.8	7	6	2.1	214	83	3.6
	25	11	6	54.7	60 10.6	141 38.3	2.1	1.3	8	4	117	45	0.37	1.4	3.2	B	284	0	0.6	14	17	1.0	194	73	3.4
	25	14	42	12.9	60 1.1	140 37.8	2.0	1.1	5	5	158	79	0.41	3.3	3.3	B	109	11	0.5	8	44	3.0	210	44	3.6
	25	14	57	12.2	61 5.3	149 47.8	18.3	1.0	8	7	156	63	0.34	1.6	2.4	A	300	18	1.2	203	22	0.7	64	61	2.7
	25	15	33	48.3	59 56.8	140 45.8	11.9	1.4	6	5	185	83	0.30	4.4	2.6	B	207	1	4.4	116	15	0.9	301	75	2.7
	25	18	1	20.2	60 11.1	141 1.3	14.7	1.1	6	6	146	81	0.28	3.2	2.8	B	305	12	1.0	204	41	4.2	48	46	0.8
	25	18	6	4.0	61 1.4	149 53.5	43.9	1.4	12	10	81	59	0.38	1.0	2.0	A	77	2	0.8	347	9	1.0	179	81	2.0

1980	ORIGIN TIME		LAT N	LONG W	DEPTH KM	MAG	NP	NS	GAP DEG	D3 KM	RMS SEC	ERH KM	ERZ G KM	AZ1 DEG	DIP1 DEG	SE1 KM	AZ2 DEG	DIP2 DEG	SE2 KM	AZ3 DEG	DIP3 KM	SE3 KM
	HR	MIN																				
FEB	25	19	29	44.2	60	12.9	150	33.5	54.1	2.6	25	2	101	70	0.54	2.2	4.7	8	1.7	190	73	4.1
	25	20	21	18.2	60	13.8	140	58.8	7.4	1.2	6	2	152	81	0.17	3.5	5.2	3	1.1	207	57	4.1
	25	20	55	24.5	60	15.3	140	56.4	7.6	1.4	8	6	130	80	0.17	1.3	2.2	27	0.8	182	63	2.5
	25	22	36	25.6	61	43.6	149	47.8	41.4	1.7	12	10	200	55	0.48	1.5	1.3	3	1.1	221	44	1.4
	25	22	47	44.0	60	12.0	141	2.0	15.9	0.9	4	4	161	109	0.15	3.7	3.2	40	4.8	353	44	1.1
	25	23	54	12.8	60	16.4	141	24.0	8.9	0.9	5	4	152	99	0.17	2.0	4.6	5	1.7	223	75	4.7
	26	0	43	48.4	61	34.4	146	34.1	18.2	1.7	20	10	149	51	0.54	0.9	1.6	2	0.6	298	88	1.6
	26	1	9	44.9	60	16.6	140	56.9	1.1	1.2	7	1	158	81	0.50	2.9	6.1	23	1.4	208	67	6.6
	26	1	56	16.8	61	38.7	146	33.0	16.7	1.9	20	7	100	58	0.59	1.0	1.8	0	1.0	135	83	1.8
	26	3	56	1.3	60	29.2	143	17.1	10.2	1.8a	3	3	179	148	0.08	11.3	22.4	20	1.6	239	63	25.0
	26	4	33	52.9	60	5.8	140	59.7	6.0	2.1	19	7	80	58	0.26	1.4	1.7	34	0.9	201	54	2.0
	26	8	35	43.0	60	16.1	141	1.6	12.2	1.4	9	6	127	79	0.21	1.5	2.3	25	1.1	206	64	2.5
	26	9	17	13.4	60	18.4	141	21.9	6.6	1.1	8	4	122	73	0.28	1.8	3.6	19	1.4	202	69	3.8
	26	10	24	59.0	59	55.3	140	51.0	3.3	1.2	8	5	166	68	0.24	2.8	2.8	43	2.1	15	46	3.3
	26	10	31	52.9	59	58.4	141	5.4	13.4	0.9	3	1	220	137	0.10	24.8	4.0	44	1.4	301	45	2.2
	26	11	2	57.2	61	48.0	149	40.8	40.8	1.5	10	10	168	62	0.27	2.1	3.0	13	2.0	215	76	3.1
	26	11	8	50.2	60	0.0	141	47.4	7.3	1.1	8	2	182	62	0.12	2.9	1.9	17	2.9	343	71	1.8
	26	11	48	14.1	60	3.5	140	20.8	22.2	0.6	4	1	305	69	0.11	11.2	3.2	45	2.9	233	45	3.4
	26	15	41	54.2	60	34.0	141	37.5	6.4	1.5a	6	5	102	63	0.17	1.6	8.0	5	1.4	67	84	8.0
	26	17	39	55.1	60	57.5	151	2.8	9.1	0.9a	5	4	132	86	0.46	1.9	2.8	25	0.9	204	58	3.2
	26	18	4	43.4	61	21.4	141	52.6	19.9	1.5	8	2	226	147	0.90	4.8	3.5	31	5.4	61	54	2.6
	26	18	27	17.8	60	15.0	140	45.4	9.9	0.8	5	2	163	100	0.05	8.2	11.5	27	1.7	217	55	14.1
	27	3	36	1.4	60	13.3	141	2.3	13.7	0.8	5	5	128	84	0.17	6.2	5.4	35	1.3	225	41	8.1
	27	4	59	4.0	60	2.2	139	29.0	13.6	1.6a	5	2	124	74	0.77	3.3	3.5	40	2.3	215	49	4.3
	27	6	20	6.8	61	20.5	149	23.9	39.0	1.7	20	13	85	31	0.39	0.9	1.0	37	0.7	261	52	1.1
	27	6	20	32.0	60	14.5	141	6.0	10.1	1.9	18	6	70	57	0.22	1.1	1.9	21	0.9	180	67	2.0
	27	6	45	12.2	60	2.6	140	56.6	1.8	1.1	6	2	138	75	0.13	3.7	4.1	37	2.0	207	48	5.2
	27	9	12	11.5	60	25.3	147	41.7	15.3	1.7	23	12	167	69	0.43	1.2	2.0	18	0.6	38	68	2.2
	27	11	36	51.5	60	8.7	141	5.4	5.1	1.2	9	6	113	84	0.18	2.2	2.5	41	1.1	197	49	3.2
	27	13	17	21.8	60	5.6	140	56.4	1.8	1.2	6	4	138	75	0.16	4.3	4.7	36	1.8	209	48	6.1
	27	13	20	32.3	61	55.0	150	43.9	57.4	2.8	23	6	153	92	0.58	2.8	4.4	25	2.1	339	64	4.8
	27	13	24	23.8	62	0.0	149	59.5	39.0	2.5	22	8	178	81	0.41	2.1	4.0	6	0.9	233	82	4.1
	27	13	27	2.4	60	13.4	140	37.0	2.8	0.7	5	1	165	92	0.22	3.3	5.3	27	1.9	203	62	6.0
	27	15	18	41.2	60	7.6	140	55.8	2.1	1.5	8	6	118	75	0.35	2.1	3.2	30	1.2	202	59	3.7
	27	16	2	32.6	60	16.1	140	57.1	12.3	1.7	10	6	131	80	0.18	1.2	2.2	15	1.0	187	74	2.3
	27	16	26	31.4	63	9.4	150	17.5	101.2	3.7	24	2	127	181	0.55	3.4	13.9	4	2.7	253	86	14.0
	27	16	56	39.6	60	7.8	140	55.3	0.1	1.4	9	6	119	74	0.45	1.9	3.3	26	1.1	199	64	3.7
	27	18	19	18.4	60	47.2	148	32.9	29.3	1.4	19	9	113	55	0.44	1.1	1.4	33	1.1	348	68	1.5
	27	18	39	32.4	60	1.2	141	39.7	11.4	2.7	20	3	149	31	0.40	1.7	1.5	39	1.9	11	51	1.2
	27	18	47	54.4	59	59.7	141	39.8	9.4	1.9	19	9	155	31	0.45	1.8	1.4	32	2.0	29	57	1.2
	27	19	54	56.7	60	15.6	140	54.9	12.3	1.7	10	6	132	79	0.18	0.9	2.1	10	0.7	192	76	2.1
	27	21	8	2.7	62	2.3	145	15.7	26.8	1.8	10	6	225	70	0.61	1.7	1.6	40	2.1	1	41	1.2
	27	22	11	22.6	62	47.2	143	48.4	8.9	2.6	14	4	137	150	0.41	7.7	4.0	25	4.0	95	56	2.2
	27	22	23	52.0	60	14.6	140	51.7	9.2	0.9	6	5	133	84	0.23	3.2	4.4	31	1.1	213	55	5.3
	27	22	25	10.1	60	13.9	140	51.6	11.6	1.6	8	5	132	75	0.11	1.4	2.5	18	1.2	202	69	2.7

SOUTHERN ALASKA EARTHQUAKES, JAN - MAR 1980

1980	ORIGIN	TIME	LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ	Q	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3
FEB	HR	MIN	SEC	DEC MIN	DEC MIN	KM			DEG	KM	SEC	KM	KM		DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM
27	22	59	41.0	61 28.3	150 7.2	43.4	1.2	11	10	121	89	0.35	1.2	3.2 B	260	1	0.7	190	9	1.1	16	81	3.3
27	23	54	1.4	61 15.3	146 15.2	22.1	1.8	14	5	95	32	0.62	1.3	1.9 A	250	7	0.8	342	20	1.1	142	69	2.0
28	1	0	47.1	61 23.7	149 47.6	40.1	1.6	13	6	67	42	0.34	1.1	2.1 A	251	7	0.9	160	14	1.0	7	74	2.1
28	4	23	58.0	58 28.9	136 44.7	15.0	2.3	3	2	356	233	0.43	25.0	20.9 D	42	1	25.0	312	40	13.0	133	50	25.0
28	5	41	33.3	61 15.1	147 19.9	22.5	1.4	17	7	111	47	0.50	0.9	1.6 A	288	7	0.5	197	8	0.9	39	79	1.6
28	5	44	9.0	60 4.3	140 46.7	9.1	1.0	5	2	144	89	0.16	3.8	3.3 B	100	26	0.7	347	39	2.2	214	40	4.7
28	7	20	19.4	60 16.7	141 4.4	3.6	0.8	6	4	135	88	0.08	3.7	6.1 C	359	18	0.9	97	23	1.7	235	60	7.0
28	7	50	54.5	59 58.7	140 48.2	14.7	1.1	5	2	180	86	0.15	11.7	4.1 D	216	16	12.2	119	22	1.1	339	62	2.5
28	7	55	59.0	61 39.6	150 41.9	42.6	1.9	8	1	218	76	0.14	4.6	7.1 C	81	3	1.3	171	12	4.5	337	78	7.2
28	9	59	26.9	60 16.9	142 20.9	9.9	1.2a	3	2	252	200	0.36	6.3	10.0 D	135	8	6.2	42	19	1.2	247	69	10.7
28	10	22	13.1	60 16.8	142 25.3	15.0	1.2a	5	3	138	84	0.73	3.0	4.9 B	103	6	1.4	10	30	1.1	203	59	5.7
28	12	44	1.9	60 13.2	141 1.5	6.8	1.2	7	2	123	83	0.18	2.8	3.9 B	323	13	1.2	61	30	1.3	212	57	4.6
28	16	1	42.4	60 15.8	140 56.3	13.6	1.1	8	4	131	80	0.18	2.9	3.5 B	307	8	1.2	43	37	1.4	207	52	4.4
28	16	51	48.4	60 18.5	141 19.9	6.1	0.8	4	3	157	73	0.03	7.0	24.0 D	64	2	2.3	333	16	1.2	161	74	25.0
28	19	11	18.1	61 7.1	150 16.9	49.8	1.8	11	6	84	74	0.44	1.1	4.3 B	289	0	0.7	19	2	1.1	199	88	4.3
28	20	47	59.2	60 7.3	141 3.8	14.7	0.9	3	3	153	124	0.03	23.0	9.8 D	132	1	1.8	222	23	25.0	40	67	1.4
28	20	54	39.2	61 49.3	149 7.9	33.4	1.6a	9	3	174	44	0.31	2.2	2.3 A	278	9	1.0	14	35	2.1	176	54	2.5
28	22	33	43.5	60 10.7	141 4.1	13.4	1.1	7	1	144	84	0.19	3.4	2.7 B	293	1	1.2	203	37	4.2	24	53	1.3
28	23	38	19.4	60 6.8	139 33.2	13.7	0.4	3	1	318	83	0.14	20.5	14.4 D	163	14	5.1	263	35	25.0	55	52	1.5
29	2	23	5.1	64 17.4	148 5.0	35.3	4.0	10	0	158	277	0.18	20.1	20.5 D	82	22	18.4	186	31	2.6	323	50	25.0
3.5 ML PMR																							
29	3	59	8.0	60 33.2	149 35.6	20.3	1.4	11	6	92	47	0.67	1.3	3.5 B	240	8	0.7	332	13	1.0	119	75	3.6
29	8	17	20.8	61 44.5	139 28.4	0.5C	2.1	8	3	257	199	1.25	11.5	7.6 D	47	31	13.2	292	35	1.4	167	40	5.3
2.1 ML ENRC																							
29	14	34	20.1	60 19.1	140 45.8	15.0	1.1	5	2	146	77	0.64	4.9	7.9 C	75	16	2.0	337	25	1.7	194	60	9.1
29	18	45	56.6	62 20.5	149 18.5	41.7	2.1	12	4	208	113	0.33	4.3	11.9 D	106	2	1.4	16	14	3.2	204	76	12.3
MAR	1	2	38	59 55.0	140 12.9	17.5	1.1	6	3	126	53	0.48	2.2	1.9 A	298	1	0.8	207	35	2.3	29	55	1.7
1	2	49	2.8	60 16.9	141 3.3	7.1	0.9	8	4	126	76	0.24	3.0	4.6 B	311	4	1.1	44	31	1.3	214	59	5.3
1	3	17	42.4	61 35.2	149 30.5	40.9	1.8	10	5	170	63	0.34	1.7	2.6 B	290	1	0.8	21	24	1.4	198	66	2.8
1	3	29	23.6	61 31.1	149 46.3	45.4	1.4	7	6	137	71	0.17	1.9	2.9 B	287	1	0.8	196	14	1.9	21	76	2.9
1	3	58	4.1	61 45.4	149 23.9	43.3	1.8	10	7	162	58	0.25	1.7	2.7 B	91	1	1.1	1	22	1.4	183	68	2.9
1	7	4	50.5	60 16.9	141 0.1	7.9	1.0	5	2	141	78	0.08	2.6	4.6 B	99	10	1.6	4	25	0.9	209	63	5.2
1	8	31	51.8	61 48.4	150 1.3	40.1	1.8	13	6	166	67	0.29	1.6	2.7 B	99	4	0.8	189	5	1.6	330	84	2.7
1	9	49	49.7	60 7.3	141 15.6	7.6	1.0	6	3	132	93	0.14	2.9	2.0 B	292	17	1.0	193	28	3.2	50	57	1.5
1	10	11	31.9	61 41.3	149 44.5	41.8	1.6	10	7	167	50	0.29	2.3	2.2 A	106	1	1.1	15	39	2.5	197	51	2.0
1	10	26	1.3	60 1.3	141 4.1	5.1	1.5	6	2	153	80	0.10	2.9	1.8 B	13	23	3.0	117	29	0.9	251	51	1.7
1	10	30	48.9	60 25.3	147 41.0	20.4	1.7	16	8	167	69	0.35	2.0	2.8 B	235	10	0.7	161	22	1.8	8	66	3.0
1	13	51	58.9	60 31.7	141 37.0	15.5	2.8	19	6	53	59	0.38	0.9	2.3 A	343	0	0.8	73	7	0.9	283	83	2.3
3.3 ML ENRC																							
1	14	9	9.1	61 26.1	148 23.9	35.2	1.3	8	5	82	43	0.27	1.2	1.5 A	95	1	1.0	185	9	1.2	359	81	1.5
1	18	33	35.9	60 8.4	141 2.4	11.6	1.1	7	3	115	81	0.22	2.8	2.3 B	97	21	1.0	204	38	3.3	345	45	1.3
1	20	47	22.5	60 8.7	140 58.2	10.3	0.9	5	2	143	103	0.38	10.2	8.4 D	322	17	1.5	217	39	13.2	70	46	1.2
1	20	47	45.4	60 7.6	141 4.2	12.8	1.5	8	2	138	65	0.26	3.1	1.9 B	106	7	0.9	200	27	3.4	3	62	1.3
1	21	42	21.4	60 18.3	141 17.0	9.8	1.8	11	3	115	68	0.16	1.0	2.6 B	68	7	0.9	337	8	0.7	199	79	2.6
2	0	19	1.2	63 18.8	150 22.5	112.1	3.4	18	4	280	198	0.37	13.2	16.4 D	290	10	3.5	24	35	7.8	186	53	19.6
2	0	28	24.7	59 37.8	151 20.6	20.2	3.6	23	1	134	117	0.72	2.0	6.9 C	68	3	1.1	158	4	2.0	301	85	6.9
4.4 MB 4.3 ML PMR FELT (IV) AT HOMER																							
2	0	52	36.5	61 28.4	149 59.0	47.0	1.5	8	6	129	82	0.24	1.3	1.9 A	287	8	0.6	195	14	1.3	46	74	2.0
2	1	35	11.8	60 8.9	141 1.8	11.9	1.5	12	7	116	57	0.21	1.0	1.7 A	304	9	0.6	38	22	0.7	193	66	1.8

1980	ORIGIN TIME	LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ	G	AZI	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3
		HR	MIN	SEC	KM			DEG	KM	SEC	KM	KM		DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM
MAR	2 1 39	26.8	60 17.2	140 44.8	14.6	1.4	7	6	144	72	0.20	1.8	2.5	319	10	0.7	55	30	1.2	213	58	2.8
	2 3 32	38.8	60 7.3	140 57.3	2.1	0.8	6	1	133	96	0.19	3.0	4.8	343	19	1.1	82	23	1.0	218	59	5.6
	2 8 43	6.6	60 12.8	141 2.7	10.4	1.4	8	6	134	70	0.20	1.7	2.4	A 300	5	0.8	33	32	1.0	202	58	2.8
	2 9 2	33.0	59 15.0	136 5.0	15.0W	2.3	4	2	238	215	1.56	25.0	25.0	D 317	0	3.8	227	5	25.0	47	85	25.0
	2 9 6	5.5	60 1.8	140 39.4	3.4	0.7	7	3	142	58	0.45	3.0	3.4	B 107	7	0.6	12	39	2.1	205	50	4.0
	2 9 52	13.7	59 58.6	140 47.1	12.6	0.9a	4	1	183	85	0.01	18.7	7.0	D 117	18	1.3	214	19	19.8	347	63	2.9
	2 10 28	54.3	60 2.0	139 21.8	15.9	0.7a	3	2	277	70	0.37	15.5	19.7	D 7	8	4.9	103	37	1.2	267	52	25.0
	2 10 54	37.7	60 15.3	140 12.8	14.2	0.8	5	1	189	80	0.22	3.1	4.3	B 287	1	1.1	17	30	2.3	195	60	4.8
	2 13 46	32.4	61 28.6	150 4.0	41.8	1.9	23	8	81	51	0.46	1.0	2.4	A 102	3	0.6	192	8	1.0	352	81	2.4
	2 15 28	36.3	60 28.3	143 10.3	15.5	1.3	8	3	92	61	0.76	1.1	3.1	B 91	4	1.1	1	10	0.8	203	79	3.1
	2 19 27	23.5	60 6.1	139 24.0	0.4	1.4	3	3	299	78	0.17	9.2	15.9	D 183	18	3.1	85	22	2.5	309	61	18.1
	2 19 46	52.4	61 7.6	149 44.6	39.6	1.6	13	8	77	61	0.56	0.9	2.3	A 15	1	0.6	106	2	0.9	259	88	2.3
	2 20 34	28.8	59 39.6	151 23.1	4.0	2.8	25	1	131	115	0.79	1.9	1.4	A 159	28	2.1	51	30	1.0	283	47	1.1
	2 22 19	28.2	60 15.0	140 46.4	12.8	1.6	10	5	139	71	0.14	1.5	2.9	B 323	7	0.7	55	19	1.1	214	70	3.1
	3 1 20	56.8	63 6.3	150 31.3	132.1	3.4	21	11	191	183	0.53	6.2	7.4	C 297	11	2.5	35	36	3.6	193	52	9.1
	3 3 2	42.3	60 34.8	141 36.8	14.6	1.2	12	7	103	65	0.41	1.0	2.7	B 193	5	0.5	283	6	0.9	63	82	2.8
	3 4 46	50.3	61 54.6	148 57.4	1.2	2.0	23	7	97	57	0.79	1.1	1.4	A 4	3	1.1	272	31	0.5	99	59	1.6
	3 5 17	4.1	60 35.3	143 53.0	35.9	1.5	3	3	236	98	0.41	3.3	25.0	D 248	0	3.3	338	1	1.6	158	89	25.0
	3 6 33	25.6	61 43.9	149 47.8	41.7	2.4	23	6	151	56	0.36	1.4	2.4	A 193	2	1.4	103	6	0.7	301	84	2.4
	3 7 13	24.7	60 24.4	141 16.3	0.1	0.7	5	2	159	91	0.16	2.1	3.5	B 334	10	0.6	67	16	1.9	213	71	3.7
	3 7 22	49.3	61 4.3	148 47.5	33.7	1.1	13	7	72	42	0.29	0.9	1.0	A 88	11	0.7	353	28	0.9	197	60	1.0
	3 7 41	17.8	63 4.0	150 16.1	96.4	3.2	24	6	124	172	0.49	3.2	8.1	C 326	0	3.2	56	16	2.0	236	74	8.4
	3 8 8	56.2	60 44.5	143 10.3	18.8	1.4	6	4	130	85	0.77	2.3	4.1	B 122	10	1.1	216	19	1.9	6	68	4.3
	3 8 13	7.2	60 36.5	143 12.0	27.2	1.2	4	1	160	99	0.19	11.2	22.4	D 238	15	2.4	334	21	1.4	115	64	25.0
	3 8 40	7.5	60 16.6	141 5.6	8.9	1.1	8	3	124	78	0.20	1.6	2.7	B 338	15	0.9	73	17	1.3	209	67	2.9
	3 9 24	17.8	60 13.7	140 59.7	6.7	0.7	6	2	152	82	0.14	2.3	3.5	B 80	13	0.9	343	28	1.2	192	59	4.1
	3 9 46	44.0	60 11.3	151 14.5	49.6	3.1	26	2	95	67	0.61	1.4	2.9	B 74	6	0.9	343	9	1.3	197	79	3.0
	3 10 8	46.1	60 5.7	141 34.3	12.0	1.5	11	4	114	31	0.27	1.4	1.7	A 97	12	0.6	0	32	1.0	205	55	2.0
	3 10 18	19.8	60 6.0	141 34.2	11.3	1.3	13	6	112	31	0.31	1.2	1.5	A 89	14	0.5	350	32	0.8	199	54	1.8
	3 10 38	18.9	60 5.9	141 35.3	13.4	0.8	6	3	143	70	0.34	2.1	2.1	A 270	0	0.6	180	44	2.8	0	46	1.1
	3 10 41	17.5	59 56.8	141 32.5	20.8	0.4	3	2	229	129	0.01	6.5	2.6	C 266	12	1.0	173	12	6.7	40	73	2.3
	3 10 50	44.4	59 57.8	141 33.4	19.9	0.7	4	2	222	112	0.04	6.9	2.8	C 267	10	1.0	174	15	7.1	29	72	2.2
	3 10 56	33.9	60 6.7	141 35.2	13.1	0.9	7	3	136	70	0.34	2.0	1.9	A 273	0	0.6	183	43	2.5	3	47	1.0
	3 12 54	40.6	61 50.1	149 4.6	37.1	1.7	13	6	209	47	0.56	1.7	0.8	A 165	1	1.7	75	20	1.0	258	70	0.8
	3 13 8	34.5	61 39.8	149 50.0	40.3	1.9	22	8	144	49	0.51	1.1	2.0	A 100	3	0.7	190	7	1.1	347	82	2.0
	3 15 27	11.6	59 31.7	152 45.0	72.0	3.1	18	3	105	118	0.40	2.2	3.2	B 38	13	1.2	134	21	1.9	279	65	3.5
	3 17 25	26.6	60 17.6	140 41.6	2.5	0.8	5	3	158	100	0.37	1.2	2.3	A 340	4	1.0	71	21	0.8	240	69	2.5
	3 17 36	22.2	61 32.8	146 30.5	22.5	1.7	20	8	77	54	0.66	0.8	1.3	A 283	4	0.5	192	5	0.8	51	84	1.3
	3 19 38	28.3	61 38.6	146 23.3	32.0	1.8	20	10	87	54	0.79	0.8	1.0	A 188	17	0.8	284	18	0.6	58	65	1.1
	3 20 2	10.0	60 14.7	141 8.7	9.0	0.7	5	2	160	110	0.21	3.6	4.3	B 85	24	1.4	341	29	1.1	208	51	5.5
	3 21 11	33.4	61 10.5	150 6.5	41.7	1.2	9	6	113	74	0.43	1.2	2.4	A 303	8	0.8	211	14	1.0	62	74	2.5
	3 22 47	51.5	60 37.1	141 42.2	27.0	1.0	3	2	171	70	0.09	6.6	28.2	D 174	10	1.2	266	11	1.7	43	75	25.0
	4 0 21	32.3	59 57.3	140 7.3	15.5	1.6	9	2	121	52	0.41	2.1	2.2	A 287	16	0.9	40	36	1.8	188	49	2.6
	4 0 25	59.9	59 56.3	140 7.1	16.9	0.6	6	2	131	50	0.45	1.8	1.9	A 289	6	0.9	21	31	1.8	184	68	1.9
	4 0 30	39.7	60 39.1	150 10.8	40.8	1.1	7	4	87	74	0.16	2.3	2.5	A 283	11	0.9	22	41	1.2	181	47	3.2

SOUTHERN ALASKA EARTHQUAKES. JAN - MAR 1980

	ORIGIN TIME			LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ G	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3		
1980	HR	MIN	SEC	DEC MIN	DEC MIN	KM				DEG	KM	SEC	KM		DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM		
MAR	4	1	16	38 3	60 10.6	139 55.7	28.3	0.6	4	2	245	67	0.19	7.9	2.1	C	28	4	8.0	119	12	1.3	280	77	2.0
	4	2	54	52.3	63 7.5	150 28.5	121.8	3.7	24	8	128	184	0.43	3.6	12.1	D	137	2	3.6	47	7	3.1	243	83	12.2
	4	8	17	45.3	60 16.3	141 15.2	0.4	0.9	6	3	115	77	0.27	1.5	4.6	B	241	4	1.1	332	15	0.8	136	74	4.8
	4	9	4	48.3	62 39.7	148 28.6	28.6	2.2	11	6	250	139	0.62	3.1	2.0	B	315	3	2.2	224	17	3.2	53	73	1.9
	4	12	38	2.4	61 33.3	149 57.8	54.7	1.7	14	9	95	44	0.39	1.0	2.8	B	285	2	0.7	194	6	1.0	33	84	2.8
	4	14	22	59.8	61 46.7	149 44.2	41.7	1.7	12	6	197	60	0.25	2.0	2.5	A	110	1	1.0	200	11	2.0	15	79	2.5
	4	14	45	1.5	58 23.7	150 20.0	101.8	4.0	16	1	207	197	0.51	7.1	17.3	D	304	2	7.1	35	10	1.9	203	80	17.6
	4	15	4	21.0	60 11.2	141 10.6	0.9	0.5	5	1	141	90	0.05	3.6	6.3	C	320	13	1.1	56	24	1.6	204	62	7.1
	4	16	7	15.7	60 14.6	141 6.8	1.1	1.5	13	4	120	56	0.43	0.9	2.3	A	315	10	0.6	47	11	0.7	184	75	2.3
	4	17	32	12.2	60 7.7	148 14.9	16.8	1.7	16	5	214	82	0.45	1.9	2.7	B	245	18	0.8	148	18	1.7	17	64	3.0
	4	20	50	51.2	60 15.6	140 55.5	8.8	1.6	13	5	131	70	0.18	1.3	2.5	A	300	5	0.8	31	16	1.1	193	73	2.6
	4	20	54	33.9	60 15.6	140 56.0	8.2	1.6	14	4	143	66	0.13	1.3	2.4	A	327	8	0.8	60	19	1.0	215	69	2.5
	4	21	14	52.6	60 15.3	140 59.3	8.7	0.9	7	3	140	81	0.10	2.3	3.7	B	344	20	1.0	82	21	1.3	214	60	4.2
	5	2	47	53.2	60 19.0	140 27.3	16.5	1.9	12	10	165	64	0.33	1.0	2.1	A	311	1	0.6	41	10	1.0	215	80	2.1
	5	6	54	21.6	60 18.4	142 3.3	6.9	0.6	10	2	117	44	0.76	2.2	3.7	B	349	12	0.7	85	25	1.2	236	62	4.2
	5	8	51	24.6	59 12.5	152 30.7	85.0	2.3	6	3	138	156	0.77	4.5	11.2	D	214	4	2.3	122	17	2.9	317	72	11.7
	5	8	51	31.8	60 35.7	147 22.4	31.6	1.9	19	9	151	68	0.66	1.4	1.0	A	85	4	0.6	177	23	1.4	346	67	0.9
	5	11	23	31.4	61 55.8	150 12.3	52.7	3.2	25	4	179	70	0.40	2.1	3.5	B	262	0	1.0	172	17	2.0	352	73	3.6
	5	12	51	41.1	61 24.0	149 8.1	28.9	0.9	10	6	99	36	0.45	1.1	1.7	A	113	9	1.0	207	23	0.8	3	65	1.9
	5	15	56	9.9	62 18.8	148 44.3	34.3	2.2	19	16	219	91	0.50	2.5	1.5	B	199	18	2.7	302	34	1.5	86	50	1.1
	5	16	39	25.5	61 55.7	147 5.8	40.5	2.2	19	11	196	79	0.73	2.2	3.2	B	100	4	0.9	191	21	2.0	0	69	3.3
	5	16	45	53.0	60 23.3	141 16.3	11.7	1.4	10	7	121	64	0.33	1.1	3.0	B	329	0	0.8	59	8	1.0	239	82	3.0
	5	17	11	18.8	60 23.3	141 17.1	13.3	1.5	11	7	120	64	0.36	1.1	3.0	B	341	3	0.8	72	6	1.0	225	83	3.0
	5	19	59	58.4	60 11.6	141 4.2	11.2	3.1	19	5	118	56	0.19	1.4	2.0	A	305	8	0.7	39	29	0.9	201	60	2.2
				3.4 MB			3.9 ML EMRC																		
	5	22	35	22.8	60 31.0	149 31.9	38.5	2.5	14	9	150	116	0.41	2.2	1.8	A	83	28	0.8	195	35	2.5	324	42	1.5
	6	0	18	16.9	60 39.3	146 56.3	13.5	1.8	24	8	67	34	0.44	1.0	1.2	A	176	1	1.0	266	16	0.6	83	74	1.2
	6	0	54	15.9	61 18.9	150 15.9	49.5	1.4	11	8	104	89	0.24	1.3	4.5	B	275	1	1.0	5	2	1.3	158	88	4.5
	6	2	17	2.0	60 11.3	141 10.3	3.8	1.7	16	6	113	51	0.42	1.6	2.4	A	304	8	0.7	38	27	1.1	199	62	2.7
	6	2	40	56.8	60 11.3	141 9.4	3.8	1.9	16	7	114	52	0.48	1.5	2.4	A	299	8	0.7	33	25	1.0	193	64	2.6
	6	3	14	36.5	60 12.6	140 59.7	10.8	1.7	13	6	123	68	0.19	2.0	2.5	A	295	0	0.8	25	36	1.2	205	54	3.0
	6	3	18	57.2	61 1.2	147 0.9	10.3	1.4	18	3	87	39	0.33	1.1	1.5	A	356	3	1.1	266	10	0.7	103	80	1.5
	6	3	25	15.5	60 18.0	140 21.6	8.0	1.2	8	5	169	89	0.54	2.0	3.5	B	293	0	0.9	23	19	1.7	203	71	3.7
	6	4	31	22.3	60 12.0	141 1.9	8.5	1.1	6	4	134	87	0.16	3.2	3.7	B	83	24	1.2	338	29	1.3	206	51	4.7
	6	10	40	6.6	62 3.6	149 22.1	34.9	1.7	15	7	183	61	0.36	3.2	1.5	B	191	2	3.2	100	16	1.2	268	74	1.6
	6	11	5	4.4	60 14.7	141 10.3	12.2	1.0	7	6	129	81	0.19	2.4	2.8	B	312	15	1.1	53	34	1.3	202	52	3.5
	6	11	22	54.3	60 9.6	141 15.9	5.5	1.0	6	4	120	87	0.37	2.7	3.1	B	302	18	1.0	45	34	1.5	189	50	3.8
	6	11	32	8.1	60 28.0	148 16.3	12.8	1.5	16	2	182	60	0.48	1.8	3.1	B	147	9	1.6	240	22	0.8	36	66	3.3
	6	12	7	52.4	62 9.2	146 33.2	0.5	2.1	18	2	199	101	0.60	2.4	2.1	A	272	11	0.9	175	33	2.7	18	55	1.8
	6	13	4	24.1	61 51.9	147 13.7	14.9	2.6	26	3	151	81	0.64	1.3	1.5	A	272	17	0.7	9	22	1.2	147	62	1.6
	6	13	41	58.2	60 25.4	140 23.4	4.9	1.3	7	3	199	101	0.30	3.4	7.3	C	114	1	1.2	24	21	2.1	207	69	7.8
	6	14	31	42.4	60 12.5	141 0.3	9.8	1.9	20	6	63	60	0.35	1.3	2.2	A	303	5	0.8	35	26	0.8	203	63	2.5
	6	16	53	37.7	60 36.6	141 45.9	16.1	1.1	5	4	119	65	0.15	2.4	20.0	D	253	3	2.0	163	4	1.1	20	85	20.1
	6	17	0	8.5	59 46.6	153 11.4	106.5	3.2	20	2	90	99	0.34	2.4	4.1	B	320	2	2.4	50	9	1.5	218	81	4.1
				4.1 MB																					
	6	20	17	31.6	60 14.5	140 48.1	11.0	1.0	5	3	149	86	0.18	2.7	4.6	B	114	4	1.4	22	28	1.2	211	62	5.2
	6	21	5	22.4	60 15.1	140 58.5	12.6	2.1	20	9	79	63	0.27	1.3	2.3	A	298	3	0.8	29	23	0.9	201	67	2.5
							2.6 ML EMRC																		

1980	ORIGIN TIME		LAT N	LONG W	DEPTH KM	MAG	NP	NS	GAP DEG	D3 KM	RMS SEC	ERH KM	ERZ G	A21 DEG	DIP1 DEG	SE1 KM	A22 DEG	DIP2 DEG	SE2 KM	A23 DEG	DIP3 DEG	SE3 KM		
	HR	MIN																						
MAR	6	21	11	13.6	60	15.0	140	58.2	13.0	2.2	20	7	60	64	0.22	1.1	2.1	A	292	3	0.8	194	69	2.3
	6	21	47	44.0	60	27.0	141	23.5	19.3	1.4	4	3	157	58	0.15	5.9	24.4	D	253	8	2.7	344	10	1.3
	6	21	49	40.3	60	26.4	141	23.8	23.5	1.7a	3	3	162	84	0.35	10.7	23.3	D	334	12	1.3	240	18	6.5
	6	21	51	7.8	60	26.6	141	22.9	15.8	1.4a	3	3	160	84	0.07	9.2	23.9	D	336	10	1.3	243	14	6.3
	7	2	28	17.5	60	4.1	140	15.8	20.0	1.0	6	4	157	48	0.15	2.8	2.8	B	295	3	1.0	202	44	3.3
	7	2	55	60.0	61	51.7	149	33.8	35.8	1.8	19	12	164	65	0.44	1.9	1.2	A	2	2	1.9	93	24	0.9
	7	3	43	38.3	61	36.9	150	0.6	50.1	1.3a	12	9	123	86	0.27	1.8	2.5	A	272	9	1.0	177	26	1.5
	7	7	1	45.1	60	12.9	140	57.2	4.9	0.8	7	2	126	79	0.14	3.1	5.1	C	322	10	1.3	58	28	1.1
	7	9	0	1.2	60	36.3	141	47.0	16.2	1.1	4	3	135	65	0.18	2.8	25.0	D	251	0	2.8	161	3	1.2
	7	11	59	14.2	60	16.1	140	56.2	11.3	1.2	8	4	132	81	0.10	1.8	3.1	B	343	17	1.0	79	20	1.2
	7	13	0	22.8	60	12.1	141	5.4	13.3	0.8	8	3	118	86	0.28	3.1	2.8	B	326	32	1.1	79	32	1.2
	7	13	22	33.5	61	56.4	149	25.3	5.8	1.5	17	6	172	59	0.75	1.5	2.0	A	17	13	1.4	280	28	0.6
	7	14	41	48.1	60	12.7	141	4.0	9.3	1.5	9	6	120	85	0.29	2.1	2.7	B	300	4	1.0	33	35	1.2
	7	16	34	10.4	60	14.8	140	50.2	9.3	1.0	8	4	135	74	0.22	2.3	3.5	B	115	2	1.1	24	30	1.3
	7	19	18	11.7	60	16.7	140	49.7	16.6	0.9	6	3	150	81	0.35	2.8	4.0	B	312	0	1.3	42	33	1.4
	7	19	43	35.9	59	42.5	138	59.2	15.0	0.4	3	1	221	46	0.20	12.8	21.6	D	317	3	1.4	49	30	2.5
	7	21	16	9.9	60	13.7	141	18.7	9.5	1.3	9	6	109	82	0.28	1.7	2.5	B	302	7	0.9	36	27	1.3
	7	21	41	57.9	62	12.5	148	50.1	35.4	2.6	27	12	110	83	0.49	2.1	1.3	A	178	10	2.1	82	30	0.9
	7	21	44	44.8	59	57.0	140	5.3	15.1	1.5	8	6	120	50	0.39	1.9	2.1	A	293	14	0.9	33	34	1.7
	7	21	45	26.7	59	54.4	140	2.2	11.2	0.8	4	2	235	45	0.23	5.2	4.9	C	202	24	1.6	93	37	1.2
	7	21	46	24.6	59	55.5	140	0.2	9.6	0.4a	6	3	127	44	0.61	1.5	1.9	A	276	16	0.9	11	16	1.4
	7	21	46	29.0	59	57.8	140	5.1	13.3	1.5	9	2	124	51	0.49	2.3	2.2	A	302	10	0.8	202	43	2.8
	8	0	33	31.8	60	18.9	140	37.1	2.6	1.1	7	3	163	82	0.24	3.3	7.1	C	118	1	1.1	27	23	1.5
	8	0	34	55.4	60	16.6	140	41.6	15.2	1.5a	6	2	146	84	0.04	5.0	7.0	C	108	12	1.4	10	32	1.8
	8	0	44	46.2	60	16.8	140	47.3	11.9	1.7	8	3	141	74	0.13	1.9	3.6	B	319	4	0.9	51	23	1.3
	8	3	51	32.8	60	13.7	140	58.3	15.9	0.9	6	2	126	80	0.19	5.0	5.2	C	251	10	3.2	350	42	1.4
	8	4	8	2.9	60	28.6	140	26.3	0.1	1.4a	5	1	202	107	0.19	3.0	7.5	C	298	2	1.3	29	17	2.1
	8	5	28	54.4	60	59.4	146	55.8	15.2	1.7	17	6	84	34	0.40	1.1	1.4	A	350	0	1.1	260	8	0.6
	8	6	32	43.7	61	32.3	149	51.2	37.6	1.8	11	7	87	39	0.43	1.5	1.3	A	126	18	0.7	23	34	1.7
	8	6	55	12.6	61	8.3	150	30.0	20.0	1.4	7	5	91	84	0.38	1.4	4.0	B	354	6	1.3	263	8	0.9
	8	7	42	9.3	60	13.4	140	59.6	11.4	1.4	9	1	124	69	0.05	1.8	2.6	B	313	5	1.0	45	29	1.2
	8	8	15	49.6	61	22.0	150	18.6	43.3	1.8	12	4	108	89	0.24	1.3	5.4	C	2	0	1.3	92	4	0.7
	8	7	23	8.0	63	31.7	149	13.6	17.4	2.9	13	3	170	209	0.52	7.3	16.9	D	105	12	5.0	199	17	1.1
	8	11	31	42.0	61	46.9	149	44.1	41.4	1.8	11	5	165	61	0.18	1.9	3.0	B	112	6	0.8	21	6	1.8
	8	14	29	48.3	61	24.4	149	27.7	13.8	1.5	12	4	80	35	0.37	1.1	1.5	A	278	19	0.8	180	22	0.7
	8	15	8	14.4	61	49.2	149	29.5	33.4	1.5	9	5	172	61	0.20	2.2	2.7	B	5	10	2.2	273	11	1.1
	8	16	28	14.3	61	19.0	146	7.3	18.2	2.2	25	2	64	37	0.69	0.9	1.2	A	72	2	0.7	162	4	0.9
	8	17	1	16.0	60	15.6	141	2.2	8.2	1.2	5	2	138	100	0.04	2.6	3.6	B	83	18	2.0	344	24	1.2
	8	17	58	35.2	60	1.6	148	23.0	13.5	2.4	19	3	226	93	0.70	3.0	2.6	B	247	24	0.9	352	29	3.2
	8	18	46	25.0	59	38.1	148	36.8	38.9	2.4	11	2	269	132	0.39	5.8	5.2	C	187	10	3.0	286	42	7.6
	8	18	56	6.4	61	44.9	149	43.6	51.0	1.6	9	5	160	57	0.25	1.7	2.7	B	293	1	0.9	24	16	1.6
	8	22	21	48.8	61	52.6	149	22.9	5.9	1.9	13	3	166	56	0.75	1.8	1.9	A	8	19	1.7	270	23	0.9
	8	23	39	16.9	60	4.1	140	46.5	7.6	1.3	6	2	134	65	0.23	4.7	4.7	B	110	10	0.9	10	43	2.0
	8	23	45	56.4	61	12.4	149	48.7	41.8	1.8	15	5	87	57	0.31	1.1	2.3	A	239	5	0.9	148	8	1.1
	9	1	5	12.5	59	59.5	141	36.3	8.0	1.6	8	4	171	72	0.47	2.0	1.8	A	96	13	0.7	196	38	2.2

SOUTHERN ALASKA EARTHQUAKES, JAN - MAR 1980

1980	ORIGIN	TIME	LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3					
HR	MIN	SEC	DEG	MIN	DEG	MIN	MM	DEG	MM	SEC	MM	MM	MM	DEG	DEG	MM	DEG	DEG	MM	DEG	DEG	MM					
MAR	9	5	0	59.0	63	1.5	148	12.4	41.9	3.3	19	3	130	146	0.65	2.2	15.9	D	4	0	1.4	274	0	2.2	0	90	15.9
	9	7	23	13.2	61	0.1	147	0.3	19.5	1.8	21	7	58	38	0.45	1.1	1.3	A	2	5	1.1	271	12	0.6	114	77	1.4
	9	7	45	22.4	61	25.8	146	38.0	17.6	1.7	20	6	62	41	0.58	0.9	1.3	A	263	9	0.5	355	10	0.9	132	76	1.3
	9	11	49	17.4	60	21.2	141	13.9	18.3	1.5	5	3	174	68	0.12	4.9	9.2	C	253	15	2.0	349	22	1.3	131	63	10.3
	9	11	53	54.0	60	12.8	141	5.1	6.8	1.4	8	4	119	85	0.32	3.2	3.8	B	109	5	0.8	15	39	1.1	205	51	4.8
	9	11	59	40.7	60	12.6	140	58.9	0.0	1.4	7	3	124	80	0.44	3.7	7.1	C	118	2	1.2	26	26	1.3	212	64	7.9
	9	12	39	6.8	60	14.5	141	37.0	13.0	1.3	5	2	115	67	0.13	7.1	16.6	D	46	14	1.6	312	18	1.2	172	67	18.0
	9	13	47	57.3	62	1.3	145	30.9	26.2	2.3	16	3	198	63	0.67	1.7	1.1	A	200	11	1.7	294	20	0.9	83	67	1.1
	9	17	17	16.0	63	5.7	149	26.8	40.7	2.5	7	3	262	168	0.61	9.5	24.9	D	355	1	9.5	85	4	2.8	251	86	25.0
	9	18	56	35.3	60	1.5	141	37.5	8.2	1.4	8	2	161	70	0.15	2.7	2.1	B	99	5	0.9	190	16	2.8	352	73	2.0
	9	22	12	27.1	61	12.2	149	46.2	41.0	1.7	12	5	85	55	0.26	1.2	2.6	B	249	0	1.0	339	1	1.2	159	89	2.6
	9	23	8	10.3	60	0.3	141	43.4	10.9	1.9	16	4	156	34	0.36	1.8	1.5	A	105	1	0.6	196	32	2.0	13	58	1.2
	9	23	13	6.3	59	58.0	141	43.6	13.9	1.0	4	3	221	67	0.12	5.7	1.8	C	186	5	5.8	94	18	0.9	291	71	1.8
	10	3	44	18.6	61	21.4	150	19.6	46.2	1.3a	11	8	78	89	0.29	1.3	4.9	B	125	5	0.8	216	5	1.2	351	83	4.9
	10	6	7	54.3	60	15.3	140	48.0	11.2	1.1	8	3	138	73	0.26	3.0	4.8	B	100	13	1.0	3	27	1.3	213	60	5.6
	10	7	31	2.4	60	11.2	141	25.5	4.4	1.5	9	2	115	78	0.18	2.0	2.8	B	108	1	0.8	17	31	1.5	200	59	3.1
	10	7	37	59.7	60	3.3	140	8.6	20.8	0.8	4	2	291	60	0.26	9.3	3.0	C	157	1	9.3	247	43	3.6	66	47	2.4
	10	9	7	2.2	62	39.8	148	40.8	32.1	2.2	10	4	233	129	0.33	2.5	2.2	B	90	25	2.2	200	37	2.8	334	43	1.4
	10	9	34	40.2	59	58.2	140	4.4	14.4	1.0	6	1	141	51	0.47	2.1	2.4	A	293	8	1.0	28	30	1.9	190	59	2.6
	10	11	49	58.7	61	12.6	150	51.7	53.8	1.9	10	4	70	72	0.31	1.3	6.3	C	235	2	1.2	144	6	1.0	343	84	6.4
	10	13	7	31.4	60	17.3	141	19.2	10.2	1.4	9	3	112	75	0.17	1.2	2.8	B	344	10	0.7	76	11	1.1	213	75	2.9
	10	15	12	28.8	61	4.2	149	44.1	19.2	0.9	7	3	183	67	0.18	2.7	5.4	C	299	4	1.9	207	24	1.1	38	66	5.9
	10	18	48	57.2	60	0.5	140	8.2	18.2	0.8	4	2	281	56	0.27	8.4	3.7	C	326	17	8.7	62	19	2.2	197	64	2.8
	10	18	51	3.9	59	58.6	140	5.7	15.8	1.6	7	2	142	52	0.32	2.1	2.0	A	295	8	0.9	199	38	2.3	35	51	1.9
	10	19	24	50.8	62	17.8	149	34.7	46.9	2.3	8	4	224	108	0.18	3.5	5.7	C	98	4	1.1	7	17	3.2	201	73	5.9
	10	20	30	32.7	60	52.3	151	1.9	28.6	3.2	22	1	83	65	0.56	1.1	1.8	A	342	6	1.1	74	17	0.8	233	72	1.9
	11	0	50	21.2	61	28.1	150	40.1	59.0	2.2	20	8	103	73	0.58	1.1	3.3	B	206	6	1.0	115	7	0.8	336	81	3.4
	11	3	17	16.0	60	29.8	145	10.8	23.1	2.4	29	5	137	82	0.53	1.3	1.5	A	213	14	1.2	117	24	0.6	331	62	1.7
	11	5	48	52.6	60	15.2	140	48.0	9.8	0.8	7	3	161	73	0.13	2.7	4.2	B	326	18	1.1	65	25	0.9	204	58	4.9
	11	7	19	43.7	59	59.8	141	40.2	8.1	1.4	13	6	155	32	0.27	1.9	1.2	A	102	9	0.6	195	14	1.9	340	73	1.2
	11	7	27	1.1	60	9.8	140	16.7	17.1	0.8	7	3	172	48	0.44	2.4	2.4	A	106	1	0.7	14	44	1.7	197	46	2.9
	11	13	9	38.6	60	15.6	140	56.8	9.5	1.6	13	7	130	65	0.17	1.0	1.9	A	307	11	0.6	40	15	0.9	182	71	2.0
	11	16	27	54.8	60	16.0	140	48.7	12.8	0.7	5	3	162	103	0.08	4.6	6.8	C	334	18	1.5	73	27	1.2	214	57	8.1
	11	18	5	12.7	60	8.8	139	34.9	15.0	0.2	3	2	325	87	0.30	21.3	13.4	D	175	5	10.0	268	32	25.0	77	58	2.5
	11	18	33	56.5	63	4.9	150	33.2	120.7	3.2	14	6	191	183	0.50	3.8	8.6	C	299	10	2.9	31	10	3.3	165	76	8.8
	11	20	35	36.1	62	10.9	148	23.9	40.0	2.3	23	8	192	76	0.58	2.2	5.2	C	349	4	2.1	80	7	1.0	230	82	5.2
	11	21	51	43.1	60	12.4	141	0.3	17.6	0.6	6	4	122	86	0.13	6.9	5.8	C	126	5	1.5	219	40	8.9	30	50	0.9
	12	1	25	24.2	60	17.9	140	39.7	11.7	1.1a	6	2	150	83	0.19	1.6	4.1	B	330	5	1.0	62	18	0.9	225	71	4.3
	12	2	47	56.4	60	15.1	141	18.6	8.2	0.9	7	4	142	84	0.13	2.1	3.1	B	301	8	0.8	36	30	1.3	198	59	3.5
	12	2	49	16.6	61	34.7	149	47.5	56.1	1.7	9	8	136	73	0.32	1.4	2.1	A	289	4	0.7	20	6	1.4	166	83	2.1
	12	7	28	53.6	60	6.6	140	42.5	6.0	1.6	9	5	126	62	0.55	2.5	2.9	B	108	4	0.7	15	39	1.5	203	51	3.5
	12	8	48	46.1	60	23.6	143	17.2	23.1	1.3a	6	4	94	88	0.37	1.8	3.3	B	71	3	1.4	340	25	1.0	167	65	3.6
	12	9	49	15.2	60	6.8	141	19.7	13.9	1.7	19	10	90	40	0.25	1.2	1.3	A	285	1	0.6	16	37	0.9	194	53	1.5
	12	10	23	43.0	61	49.7	149	31.2	36.9	3.3	24	2	161	63	0.34	1.7	1.2	A	353	2	1.7	84	24	0.8	259	66	1.3
	12	10	27	13.1	61	52.8	149	31.6	35.8	1.8	19	9	166	63	0.51	1.4	1.2	A	186	14	1.4	93	15	0.8	318	69	1.2

1980	ORIGIN TIME	LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ER2	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3
HR MN	SEC	DEG MIN	DEG MIN	KM				DEG	KM	SEC	KM	KM	DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM
MAR 12 11 55	11.0	60 14.1	140 43.3	13.7	1.1a	6	2	140	88	0.16	2.1	3.3 B	113	13	1.0	17	26	1.2	227	61	3.8
12 14 48	24.6	60 15.0	140 46.0	6.2	0.6	7	2	139	74	0.39	2.2	4.4 B	84	15	1.0	349	18	1.3	211	66	4.8
12 16 15	14.5	60 14.3	140 45.1	15.2	1.5	9	5	139	70	0.12	1.5	2.3 A	310	4	0.8	42	28	1.0	213	62	2.6
12 17 30	9.3	59 15.4	145 50.6	17.8	2.2	16	7	247	169	0.63	3.6	2.9 B	129	32	1.9	15	32	4.0	252	41	2.5
12 18 56	58.4	60 17.1	141 15.8	13.2	2.1	21	5	60	51	0.27	1.2	2.2 A	313	8	0.8	45	18	1.0	200	70	2.3
				3.1 ML	EMRC																
12 19 21	52.5	61 22.1	146 47.5	19.4	1.5	18	9	81	49	0.46	0.8	1.4 A	1	5	0.8	270	11	0.5	115	78	1.5
12 20 19	46.5	60 10.3	141 13.4	1.5	0.7	6	2	138	92	0.20	2.1	3.4 B	289	4	0.9	21	28	1.4	192	62	3.8
12 21 56	1.6	60 17.9	141 16.1	8.3	0.5	7	2	116	74	0.17	1.4	3.6 B	86	4	1.3	355	14	0.8	192	75	3.7
12 23 4	27.2	60 16.9	141 33.2	0.9	0.9	6	2	136	71	0.26	1.5	3.3 B	282	9	0.8	14	12	1.3	156	75	3.4
13 1 10	50.0	63 7.2	149 41.7	76.8	2.7	10	3	169	201	0.57	4.2	16.1 D	77	6	2.2	346	9	3.1	200	79	16.4
13 1 14	34.1	63 46.7	149 17.6	30.3	3.1	16	1	181	230	0.56	11.1	9.6 D	11	0	1.7	281	40	14.1	101	50	3.9
13 2 15	8.1	63 14.5	150 21.9	118.3	3.3	15	5	131	191	0.37	3.0	7.5 C	292	2	2.5	22	16	2.2	195	74	7.8
13 6 56	1.5	61 34.9	143 49.9	36.0	1.7	4	2	224	93	0.43	4.7	4.7 B	179	7	4.2	88	11	1.1	301	77	4.8
13 7 24	10.2	60 0.3	140 9.3	19.3	0.3	3	1	282	57	0	7.3	4.8 C	242	2	2.0	332	16	7.4	145	74	4.5
13 9 40	43.9	61 0.2	150 28.6	16.2	2.5	23	3	69	56	0.37	0.8	1.7 A	259	7	0.6	350	7	0.8	125	80	1.7
13 9 49	28.8	60 35.8	141 45.3	13.4	1.3	13	3	92	64	0.39	1.1	3.2 B	275	0	1.1	185	5	0.8	5	85	3.2
13 10 9	10.4	60 35.8	141 43.0	9.8	1.2	7	2	95	65	0.25	1.3	5.7 C	107	3	1.3	197	4	0.7	340	85	5.7
13 11 5	43.0	60 14.8	141 21.4	0.2	0.6	4	3	120	80	0.40	1.3	3.4 B	52	8	1.1	320	13	0.9	173	75	3.5
13 12 8	20.8	61 56.2	148 32.8	40.3	2.2	27	8	170	59	0.53	1.7	2.0 A	80	5	0.9	171	11	1.6	326	78	2.1
13 13 56	3.1	60 5.8	147 5.7	4.8	2.2	30	8	179	90	0.59	1.6	1.4 A	256	28	0.5	143	36	1.1	14	41	1.9
13 16 35	46.9	60 26.5	140 56.2	13.6	1.7	12	7	147	76	0.51	1.2	1.8 A	314	0	0.6	224	7	1.2	44	83	1.8
13 17 42	19.3	60 16.3	140 46.8	11.3	0.5	3	2	176	121	0.01	6.0	9.7 C	308	2	1.7	40	31	1.4	215	59	11.3
13 21 39	20.2	60 24.7	144 55.1	19.3	1.5	20	8	150	74	0.67	1.2	1.5 A	208	5	1.2	116	22	0.6	310	67	1.6
13 22 55	20.5	61 21.7	150 25.5	47.4	2.0	17	7	82	74	0.55	1.2	3.7 B	282	1	0.8	172	5	1.1	3	85	3.8
14 2 9	32.4	59 49.9	152 21.7	67.0	3.1	22	4	102	76	0.49	1.8	3.0 B	50	7	1.0	142	14	1.7	294	74	3.1
14 3 43	32.9	60 17.2	140 57.3	3.5	1.0	9	7	132	73	0.37	1.2	2.7 B	338	12	0.7	71	14	0.8	209	71	2.9
14 3 53	35.3	60 2.4	153 3.8	120.6	3.3	20	6	83	76	0.36	1.9	3.0 B	137	1	1.9	47	9	1.4	233	81	3.1
14 4 44	31.7	61 53.3	150 29.0	51.6	2.0	12	11	174	79	0.46	1.5	2.0 A	100	5	0.7	192	21	1.4	357	68	2.1
14 5 10	38.2	62 24.1	151 4.7	83.2	3.4	27	4	107	136	0.49	3.5	3.4 B	81	15	1.6	184	42	3.3	336	44	3.7
14 7 14	13.7	62 47.9	148 37.5	39.0	2.9	27	8	131	137	0.55	2.2	14.5 D	351	1	2.2	81	3	1.3	243	87	14.6
14 7 42	43.7	61 18.0	149 55.8	45.9	1.6	15	11	101	54	0.48	0.8	1.4 A	243	2	0.8	334	7	0.8	137	83	1.4
14 12 14	3.0	60 6.0	141 22.2	5.6	0.8	5	2	142	117	0.24	2.4	1.8 A	275	10	0.6	180	30	2.7	22	58	1.5
14 12 53	18.7	62 58.8	149 43.3	39.8	2.4	19	9	164	149	0.60	2.5	18.6 D	337	0	2.5	67	3	1.8	247	87	18.6
14 12 56	47.2	60 22.5	144 1.0	28.7	1.3a	7	6	125	68	0.39	4.2	4.7 B	111	7	0.8	15	40	1.5	209	49	6.1
14 14 20	18.4	60 13.0	140 58.3	6.5	1.3	9	6	125	68	0.29	1.1	1.8 A	292	5	0.6	24	24	0.9	191	65	2.0
14 14 47	54.2	60 20.5	140 44.5	6.3	0.7	6	6	150	77	0.47	1.1	2.2 A	125	9	0.7	32	19	0.8	239	69	2.3
14 15 44	31.8	61 30.4	149 26.0	44.5	1.5	12	10	124	53	0.18	0.9	1.8 A	276	0	0.7	6	5	0.9	186	85	1.8
14 15 45	17.4	59 36.8	138 14.0	15.0	0.9	3	2	308	87	0.48	12.6	21.8 D	30	20	2.0	292	21	3.4	160	60	25.0
14 16 58	19.9	60 24.1	140 57.5	14.5	1.4	9	8	142	72	0.44	1.1	1.9 A	63	1	1.1	333	9	0.6	159	81	1.9
14 17 8	50.0	60 59.5	147 1.3	20.9	2.0	25	14	58	37	0.58	0.8	1.0 A	178	12	0.8	271	13	0.4	47	72	1.0
14 18 4	45.3	60 16.8	140 46.4	14.8	1.9	18	12	63	67	0.39	1.0	1.8 A	298	1	0.7	28	15	0.9	204	75	1.8
				2.6 ML	EMRC																
14 21 15	9.1	61 28.4	141 38.7	32.2	1.4	3	3	255	115	0.17	5.0	25.0 D	309	1	1.3	39	1	5.0	174	89	25.0
14 21 44	22.7	60 6.4	140 43.9	9.6	1.0	7	5	146	64	0.37	3.4	3.1 B	99	14	0.6	202	42	4.4	355	45	1.3
14 22 6	38.3	61 49.8	149 38.9	34.1	1.4	14	7	161	65	0.45	1.5	1.4 A	105	4	0.8	196	29	1.6	8	61	1.3
15 0 17	13.9	54 2.1	136 34.7	15.0M			7	4	320	650	17.8	19.8 D	280	9	15.9	17	39	7.4	179	50	25.0

APPROXIMATE MAGNITUDE 3-1/2

SOUTHERN ALASKA EARTHQUAKES, JAN - MAR 1980

1980	HR	MIN	SEC	LAT N DEG MIN	LONG W DEG MIN	DEPTH KM	MAG	NP	NS	GAP DEG	D3 KM	RMS SEC	ERH KM	ERZ G KM	AZ1 DEG	DIP1	SE1 KM	AZ2 DEG	DIP2	SE2 KM	AZ3 DEG	DIP3	SE3 KM
MAR 15	0	32	22.4	61 51.7	149 12.1	0.3	1.7	19	11	164	46	0.83	1.4	1.5 A	239	16	0.6	355	20	1.3	133	64	1.6
15	1	48	5.0	60 3.7	139 19.6	9.1	0.7	4	4	216	73	0.19	3.6	4.7 B	116	21	1.4	15	28	1.9	238	54	5.7
15	3	23	6.5	60 10.9	140 58.7	1.5	0.9	7	2	121	79	0.31	3.5	5.8 C	86	19	1.1	348	22	1.4	213	60	6.7
15	4	52	27.3	60 5.9	140 43.2	4.0	0.9	5	3	145	88	0.22	5.8	6.4 C	104	15	1.0	2	38	2.1	211	48	8.4
15	8	18	51.3	61 25.8	146 37.5	21.1	2.6	27	4	62	41	0.51	0.7	1.4 A	11	3	0.7	280	14	0.5	113	76	1.4
15	11	7	41.7	61 49.3	149 28.6	41.2	1.6	13	5	172	60	0.33	1.5	1.6 A	91	15	0.9	348	39	1.3	198	47	1.8
15	11	55	7.6	61 2.7	146 32.9	6.6	2.4	29	5	52	35	0.50	0.9	1.0 A	349	4	0.9	259	6	0.6	113	83	1.0
15	13	55	49.9	60 3.7	139 21.4	15.0	0.5	3	2	286	73	0.17	14.9	20.1 D	9	5	5.6	103	36	1.5	272	54	25.0
15	14	33	13.4	61 49.0	149 28.5	2.2	0.9	12	5	171	60	0.81	1.2	1.6 A	272	11	0.6	7	24	1.0	159	63	1.7
15	14	37	48.0	62 1.2	149 7.9	39.1	1.8	12	5	178	57	0.33	2.6	4.0 B	91	6	1.1	358	23	2.1	195	66	4.3
15	14	48	45.8	62 3.1	147 57.7	34.7	2.0	19	8	179	80	0.60	2.2	1.2 A	336	15	2.2	77	36	0.8	227	50	1.2
15	14	59	40.5	59 45.8	138 1.7	15.0	1.2	3	2	311	92	0.25	12.2	22.3 D	9	12	2.3	273	24	5.2	123	63	25.0
15	17	16	52.3	59 58.0	141 36.4	10.5	1.2	10	3	170	73	0.61	2.9	1.9 B	273	4	0.9	3	9	2.9	159	80	1.9
15	17	44	58.3	60 31.5	141 23.7	19.9	1.4	8	5	119	65	0.25	1.3	3.4 B	86	3	1.2	176	7	0.7	333	82	3.4
15	19	32	27.5	61 29.1	149 51.0	44.6	1.9	15	7	71	40	0.50	1.2	2.2 A	281	0	0.9	191	12	1.1	11	78	2.3
15	19	56	23.2	60 15.6	140 55.8	12.5	1.5	10	4	131	70	0.13	1.4	2.4 A	112	2	0.8	21	21	1.1	207	69	2.6
15	20	29	26.3	60 8.6	141 11.5	0.8	1.2	5	2	150	114	0.12	3.4	4.5 B	305	7	1.0	40	35	1.6	205	54	5.4
15	20	57	2.5	61 2.6	146 32.0	7.2	2.2	28	9	51	34	0.62	0.8	0.9 A	259	12	0.6	166	14	0.8	28	71	1.0
15	21	6	17.5	60 15.4	140 57.3	8.6	1.2	8	3	129	81	0.19	1.5	3.0 B	319	7	0.9	52	20	1.1	211	69	3.2
15	21	8	49.0	61 18.9	147 21.3	16.1	2.2	29	6	58	52	0.52	0.7	1.4 A	286	9	0.5	194	9	0.7	60	77	1.5
15	22	37	41.2	60 16.9	140 44.7	2.0	2.1	22	5	61	66	0.44	1.5	3.3 B	287	2	0.8	17	18	1.1	191	72	3.5
15	23	48	30.6	60 15.4	140 45.2	9.3	1.6	9	3	140	71	0.20	1.6	3.2 B	333	9	0.7	66	19	1.1	219	69	3.4
16	5	37	45.0	60 38.5	143 3.2	32.6	1.3	6	2	124	77	0.24	2.4	4.7 B	208	7	1.1	301	23	1.3	102	66	5.1
16	7	41	22.2	63 21.4	151 3.4	39.0	3.6	21	1	143	220	0.46	5.8	6.3 C	151	22	5.2	48	30	2.7	272	51	7.4
16	8	43	39.9	60 7.2	140 56.5	10.3	1.5	10	6	117	59	0.26	2.2	2.1 A	102	15	0.8	358	42	1.1	207	44	2.8
16	8	55	44.9	60 25.5	141 14.9	7.2	1.5	11	5	125	61	0.29	1.2	3.2 B	266	0	1.2	356	3	0.8	176	87	3.2
16	10	33	55.0	60 15.3	140 44.4	6.7	1.1	6	2	141	85	0.21	4.9	8.3 C	106	12	1.3	10	27	1.5	218	60	9.5
16	11	0	4.9	60 28.3	143 10.6	7.7	1.5a	4	2	172	113	0.21	2.6	3.8 B	336	9	0.8	70	29	2.2	228	63	4.1
16	11	0	8.7	60 28.1	143 9.4	10.0	1.7a	4	2	171	114	0.15	2.7	4.0 B	338	12	1.0	73	22	2.2	221	65	4.3
16	11	42	32.1	60 21.9	141 22.2	12.5	0.9	6	3	114	67	0.19	1.7	3.8 B	75	7	1.6	344	10	0.9	200	78	3.9
16	13	42	10.0	60 16.8	141 13.7	15.4	1.7	12	5	117	70	0.26	1.3	2.2 A	330	15	0.8	64	16	1.1	199	68	2.3
16	14	25	5.8	61 50.9	149 57.3	44.6	1.9	15	6	162	70	0.29	1.9	2.2 A	107	6	0.8	14	24	1.9	210	65	2.2
16	15	5	53.4	59 59.7	140 45.2	7.9	0.9	6	1	162	84	0.13	5.2	2.5 C	204	10	5.3	113	16	0.9	327	71	2.4
16	15	19	5.8	60 16.1	141 0.8	13.3	1.7	12	5	127	62	0.15	1.2	2.4 A	321	9	0.8	54	17	0.9	204	71	2.5
16	17	34	22.6	61 50.7	150 6.2	42.2	2.3	21	4	161	73	0.36	1.6	2.8 B	190	6	1.5	99	7	0.8	320	81	2.9
16	17	40	1.9	60 25.2	140 31.5	5.2	2.0	18	5	115	76	0.42	1.6	2.9 B	286	5	0.8	17	16	1.4	179	73	3.0
16	18	29	2.8	61 54.2	149 32.5	40.9	2.2	20	7	168	64	0.35	1.8	2.7 B	100	5	0.8	9	17	1.7	206	72	2.8
16	22	24	44.8	61 55.3	149 26.6	0.1	1.0	10	6	170	60	0.67	1.1	2.2 A	267	11	0.6	1	17	0.9	146	69	2.3
16	22	57	48.8	61 39.7	149 46.9	46.2	1.6	11	8	147	48	0.55	1.5	1.8 A	109	3	1.0	199	4	1.5	342	85	1.8
16	23	14	1.8	61 8.9	150 27.6	19.7	1.8	17	9	69	64	0.49	0.9	2.2 A	246	0	0.6	336	11	0.9	156	79	2.2
16	23	34	12.5	62 23.7	151 15.1	111.9	3.8	25	3	108	142	0.54	4.2	4.7 B	85	8	1.9	180	30	3.8	342	59	5.1
16	23	49	58.8	61 1.9	147 0.6	12.6	1.8	15	5	116	44	0.46	1.3	2.0 A	264	9	0.6	172	15	1.2	24	72	2.1
17	3	22	59.8	61 12.0	150 19.3	47.6	1.9	19	6	62	71	0.60	1.0	3.5 B	265	1	0.8	355	1	1.0	130	89	3.5
17	4	7	46.9	59 57.1	141 40.8	12.5	0.9	6	2	186	114	0.35	2.7	1.9 B	98	13	0.7	0	29	2.9	209	58	1.5
17	4	15	37.1	60 13.5	141 0.7	6.7	1.1	7	3	124	82	0.11	3.1	4.7 B	113	6	1.2	19	32	1.1	212	57	5.6

1980	ORIGIN TIME		LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ	G	AZ1	DIP1	SE1	A22	DIP2	SE2	A23	DIP3	SE3				
	HR	MM																						SEC	DEG	MIN	DEG
MAR	17	4	58	49.4	61	37.2	149	49.0	42.5	1.9	17	7	118	44	0.23	1.7	1.8	A	104	6	0.9	200	39	1.4	7	50	2.1
	17	7	8	28.2	60	13.3	141	0.5	10.8	2.1	15	4	123	61	0.41	1.2	2.2	A	320	9	0.7	54	21	0.9	208	67	2.4
	17	7	37	35.8	60	1.1	153	9.2	129.5	4.2	19	0	83	74	0.29	2.5	5.0	B	323	3	2.5	54	7	1.6	210	82	5.0
				4.9	MB																						
	17	7	44	17.5	60	11.3	141	1.7	15.0	0.7	4	3	160	119	0.29	12.5	9.5	D	125	9	1.6	223	37	15.6	24	51	0.9
	17	7	55	13.0	61	32.2	149	16.4	36.5	1.2	10	6	118	46	0.25	1.4	1.3	A	243	7	0.9	151	9	1.4	10	78	1.3
	17	7	58	47.9	61	50.3	150	41.5	47.4	2.1	16	4	153	87	0.41	2.4	4.0	B	91	6	1.0	184	25	1.6	348	64	4.4
	17	8	33	1.0	61	33.6	146	34.8	22.7	1.7	19	9	74	50	0.62	0.9	1.6	A	288	3	0.6	197	6	0.9	44	83	1.6
	17	12	32	25.4	60	26.3	143	53.6	33.8	1.7	6	1	225	108	0.39	6.6	4.4	C	69	18	1.4	170	30	7.4	312	54	2.8
	17	12	32	45.3	61	34.4	150	34.0	50.2	2.0	13	8	125	68	0.34	1.7	3.0	B	262	4	0.9	170	19	1.4	3	70	3.2
	17	12	46	30.7	61	37.5	149	48.6	45.5	1.3	9	5	142	76	0.19	1.5	2.3	A	289	9	1.1	21	14	1.5	167	73	2.4
	17	12	49	42.7	61	44.1	149	57.0	43.8	1.8	12	6	156	58	0.26	1.4	1.3	A	292	2	0.7	22	6	1.5	184	84	1.3
	17	12	52	29.9	61	46.6	149	53.2	41.5	1.6	10	8	192	62	0.19	2.5	2.1	B	28	1	2.5	118	3	1.2	280	87	2.1
	17	13	32	23.3	60	27.1	143	54.3	30.1	1.4	6	2	223	107	0.57	5.6	3.4	C	173	26	6.2	69	27	1.2	300	51	2.7
	17	14	1	51.3	60	14.2	140	54.8	14.1	1.1	8	4	130	78	0.14	2.7	3.1	B	312	12	1.1	52	37	0.9	207	50	4.0
	17	14	58	25.5	60	12.0	140	54.9	16.4	1.2	5	3	165	106	0.46	4.1	3.5	B	311	12	1.4	211	40	5.2	54	48	1.2
	17	14	58	45.1	61	19.4	146	60.0	14.2	1.9	27	4	45	44	0.46	0.7	1.3	A	194	2	0.7	284	13	0.5	95	77	1.3
	17	18	16	32.3	60	9.2	141	14.0	8.6	1.4	6	5	121	89	0.39	2.4	2.4	A	295	20	0.9	41	37	1.3	183	46	3.1
	17	21	7	41.1	61	43.2	149	59.8	42.0	1.9	13	7	165	58	0.23	1.9	1.9	A	286	0	1.0	196	45	1.6	16	45	2.1
	17	21	14	42.5	61	8.2	150	54.9	56.0	1.5	8	6	100	79	0.43	1.5	3.2	B	98	5	0.8	188	10	1.4	342	79	3.3
	17	22	51	53.9	61	49.5	149	28.0	39.0	1.4	14	6	173	60	0.34	1.8	2.1	A	94	13	0.9	357	29	1.6	205	58	2.3
	17	23	46	15.6	60	17.9	140	58.0	8.1	1.0	8	4	133	77	0.25	1.5	3.1	B	99	6	1.1	7	21	0.8	204	68	3.3
	18	0	34	3.0	62	2.8	148	19.2	33.1	2.4	9	3	249	137	0.32	6.4	3.8	C	304	24	6.9	54	38	1.3	190	43	3.5
	18	4	23	49.8	60	16.1	140	56.6	6.1	1.0	7	3	143	81	0.32	2.5	4.8	B	103	6	1.2	10	25	0.9	206	64	5.4
	18	6	2	8.6	60	10.6	141	14.0	4.7	1.2	6	2	125	88	0.33	2.1	3.3	B	302	17	1.0	39	22	1.4	177	62	3.7
	18	8	42	18.8	60	6.5	141	16.8	7.5	1.2	6	1	139	93	0.08	2.5	1.8	A	274	3	0.8	182	29	2.7	9	61	1.5
	18	9	37	46.0	62	24.0	150	34.4	60.0	3.5	22	2	104	118	0.47	3.8	5.5	C	84	8	1.5	175	9	3.7	313	78	5.6
	18	9	42	32.6	60	13.7	141	5.3	10.5	1.7	9	3	120	73	0.15	2.0	2.7	B	302	4	1.0	34	34	1.2	206	56	3.1
	18	10	29	7.2	60	17.3	146	40.1	1.8	2.1	23	5	163	71	0.67	2.1	1.9	A	258	23	0.7	147	40	1.2	10	41	2.7
	18	11	15	47.0	60	9.1	141	30.2	1.3	1.1	6	2	140	74	0.18	1.7	3.0	B	87	2	0.7	357	19	1.4	183	71	3.2
	18	11	32	47.2	63	15.0	149	40.4	93.8	3.5	13	2	173	179	0.33	4.3	23.6	D	19	1	2.5	109	3	4.1	271	87	23.6
	18	12	10	28.6	61	6.6	150	0.8	47.9	1.2	8	3	127	72	0.32	1.7	2.1	A	232	13	1.2	138	17	1.7	358	68	2.2
	18	14	49	34.3	61	43.8	150	48.7	67.4	2.4	12	4	140	86	0.34	2.3	3.8	B	261	2	1.0	170	22	1.9	356	68	4.0
	18	16	43	35.8	59	22.6	146	50.6	30.0	3.0	16	2	264	158	0.66	12.7	15.8	D	320	25	3.6	64	27	1.8	194	52	20.1
	18	17	31	43.7	61	47.3	150	20.5	58.2	3.3	22	1	147	68	0.28	2.0	3.5	B	83	1	1.0	174	16	1.8	350	74	3.6
	18	19	10	37.7	60	51.6	150	31.9	48.3	1.8	9	6	97	76	0.36	1.5	2.9	B	301	6	0.8	33	17	1.2	192	72	3.0
	18	21	37	19.0	60	14.1	140	45.5	9.3	1.3	5	1	151	99	0.14	3.8	5.1	C	114	1	1.5	23	35	1.6	205	55	6.1
	19	0	18	25.2	62	38.9	149	31.1	61.4	2.5	10	4	144	119	0.22	5.4	11.0	D	279	0	1.3	9	22	3.3	189	68	11.8
	19	3	21	44.9	61	20.5	141	31.0	1.9	1.7	6	2	251	144	1.08	3.8	2.7	B	139	12	1.1	235	24	4.0	25	63	2.5
	19	6	0	48.5	60	18.9	152	37.8	113.1	3.5	20	4	66	80	0.43	2.0	2.9	B	52	5	1.4	143	11	2.0	298	78	3.0
	19	6	2	37.6	61	10.2	149	58.1	43.4	1.8	11	2	86	65	0.48	1.4	6.1	C	204	1	1.4	294	2	1.1	87	88	6.1
	19	6	48	41.2	60	2.3	147	23.3	46.2	2.1	14	7	177	105	0.41	1.9	5.9	C	77	1	0.9	168	7	1.8	339	83	5.9
	19	9	17	39.9	61	42.0	149	46.3	42.3	1.8	17	7	152	52	0.31	1.6	1.2	A	96	9	0.9	3	16	1.7	214	71	1.2
	19	11	12	51.8	62	2.3	150	15.8	10.0	2.7	20	2	117	78	0.56	2.2	2.2	A	269	26	0.9	159	35	1.8	27	44	2.7
	19	12	37	31.9	63	5.0	149	23.6	44.0	2.7	10	2	159	165	0.53	3.1	11.7	D	50	4	1.9	140	4	3.0	275	84	11.8
	19	12	49	7.5	60	13.2	140	48.0	13.2	1.1	7	2	134	88	0.06	4.1	4.4	B	109	8	1.3	12	42	1.5	208	47	5.8

SOUTHERN ALASKA EARTHQUAKES, JAN - MAR 1980

	ORIGIN TIME			LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ	G	A21	DIP1	BE1	A22	DIP2	SE2	A23	DIP3	BE3
1980	HR	MM	SEC	DEG MIN	DEG MIN	KM				DEG	KM	SEC	KM			DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM
MAR	19	13	28	52.1	62 55.8	150 42.5	84.8	3.4	16	2	123	170	0.49	5.3	9.3 C	281	4	2.2	13	18	4.6	179	71	9.7
	19	13	55	20.4	60 12.2	141 21.3	6.7	1.1	5	2	151	82	0.20	2.4	3.6 B	298	14	1.0	35	25	1.6	182	61	4.1
	19	14	50	38.3	61 22.9	146 37.1	12.0	1.6	20	3	139	49	0.37	1.0	1.4 A	24	0	1.0	294	4	0.6	114	86	1.4
	19	15	50	26.0	63 14.1	149 30.7	97.3	3.4	11	3	168	178	0.37	8.1	22.9 D	93	2	4.2	3	6	7.8	201	84	23.0
	19	16	25	10.0	61 47.8	149 34.9	40.9	3.2	26	2	158	61	0.32	1.6	2.5 B	351	1	1.6	81	8	0.9	254	82	2.5
	19	16	29	28.2	62 15.4	148 10.6	39.0	2.7	23	4	104	89	0.41	2.8	15.9 D	346	0	2.8	76	3	1.2	256	87	15.9
	19	18	58	17.0	60 18.0	140 47.9	13.5	1.2a	6	2	142	80	0.03	4.7	5.9 C	327	6	1.4	62	37	1.6	229	52	7.2
	19	19	16	10.3	61 29.0	146 39.6	27.8	3.3	31	2	67	48	0.62	0.8	1.6 A	206	1	0.8	296	5	0.6	105	85	1.6
3.5 MB																								
	19	22	3	59.5	60 11.9	140 58.4	11.3	2.1	13	4	123	62	0.14	1.4	2.1 A	308	9	0.8	43	26	1.0	201	62	2.3
	20	0	43	44.4	59 56.8	140 5.3	15.7	1.1	6	2	134	50	0.28	2.0	2.0 A	293	4	1.0	26	39	1.8	198	51	2.1
	20	1	46	30.7	62 0.6	147 40.7	30.2	2.0	17	6	173	78	0.73	1.7	1.5 A	254	8	0.7	347	23	1.7	146	66	1.5
	20	2	51	52.3	62 47.2	149 22.4	38.9	2.5	12	3	243	134	0.42	6.6	4.0 C	206	20	6.9	314	39	4.6	95	44	1.8
	20	3	25	46.1	61 53.2	149 31.4	38.3	1.7	10	6	166	63	0.20	2.0	1.6 A	190	23	2.1	90	24	1.0	319	56	1.5
	20	5	42	6.6	60 16.3	140 50.1	11.4	1.3	9	3	137	71	0.18	2.9	4.5 B	330	21	1.1	69	23	0.9	202	58	5.3
	20	5	59	39.9	60 12.2	141 0.2	7.3	1.6	8	3	122	81	0.25	1.7	2.8 B	310	5	1.0	43	26	1.1	210	63	3.0
	20	7	8	44.3	61 52.1	149 22.3	4.0	1.6	12	4	165	55	0.66	1.6	1.8 A	172	20	1.6	271	24	0.8	46	58	2.0
	20	11	53	53.1	60 16.4	141 2.2	5.3	0.9	5	2	166	100	0.13	2.4	5.1 C	83	12	1.5	349	19	0.9	204	67	5.5
	20	12	8	48.7	60 16.6	141 2.7	4.3	0.8	6	1	138	78	0.11	2.3	5.2 C	82	12	1.5	348	17	0.9	205	69	5.6
	20	13	57	17.1	60 9.0	140 52.5	22.4	1.3a	3	1	273	127	0.	9.0	4.2 C	138	22	9.7	239	25	4.5	12	56	1.3
	20	14	16	19.2	61 24.5	147 14.3	19.0	1.8	20	4	88	58	0.41	1.1	1.7 A	200	1	1.1	290	14	0.6	106	76	1.8
	20	21	44	14.1	61 49.2	149 36.5	44.8	2.1	16	6	160	67	0.37	2.0	1.9 A	278	0	1.0	188	39	2.2	8	51	1.8
	20	22	34	16.7	61 18.5	150 37.2	62.5	2.1	13	6	101	85	0.36	1.5	4.0 B	178	4	1.5	87	6	0.8	301	83	4.0
	21	1	11	52.5	60 26.9	143 19.7	21.0	1.6a	3	2	188	150	0.02	8.7	18.2 D	89	17	1.7	353	18	1.1	219	65	20.1
	21	1	26	35.5	61 52.8	149 25.6	37.0	1.8	18	13	166	58	0.53	1.4	1.0 A	184	8	1.4	92	15	0.8	301	73	1.0
	21	1	51	42.8	61 9.8	150 46.1	15.0	2.5	21	2	65	69	0.57	1.0	2.1 A	158	2	1.0	248	11	0.7	58	79	2.2
	21	2	5	23.7	61 8.1	150 45.6	18.9	2.0	21	7	63	70	0.70	0.8	2.1 A	291	8	0.6	200	8	0.7	66	79	2.1
	21	2	49	3.0	59 58.9	141 46.5	13.2	1.0a	4	2	217	64	0.05	4.3	2.2 C	93	8	0.9	184	11	6.4	327	76	1.8
	21	7	55	56.8	61 17.3	150 30.8	62.9	2.4	21	6	75	72	0.43	1.0	3.6 B	197	4	1.0	107	5	0.8	326	84	3.7
	21	9	0	39.2	60 59.1	147 8.3	13.9	1.8	24	14	98	41	0.43	1.0	1.2 A	273	17	0.5	175	23	0.9	36	61	1.3
	21	9	26	25.9	60 27.5	144 49.0	16.1	1.6	13	2	105	68	0.47	1.5	2.4 A	12	17	1.1	109	23	0.7	249	61	2.7
	21	9	28	20.5	60 32.2	145 14.6	10.2	0.8	7	3	173	77	0.32	2.4	1.7 A	182	27	2.5	76	28	0.9	308	49	1.6
	21	10	25	23.2	60 5.3	147 44.5	13.3	2.5	31	4	173	95	0.53	1.5	1.9 A	171	13	1.4	268	27	0.6	58	60	2.2
	21	10	54	41.4	60 28.5	145 0.6	23.2	0.5	7	2	214	85	0.38	2.6	1.7 B	338	6	2.6	243	37	2.4	76	52	0.9
	21	10	56	42.0	61 30.1	146 23.6	20.6	2.2	28	8	79	50	0.66	0.8	1.3 A	208	1	0.8	118	2	0.5	325	88	1.3
	21	11	17	15.9	60 21.2	144 41.3	0.0	0.7	9	3	231	104	0.38	5.1	3.0 C	38	26	2.1	143	29	5.8	273	49	0.8
	21	11	39	43.7	61 30.1	146 25.3	21.9	1.7	20	8	78	50	0.55	0.7	1.7 A	55	1	0.7	325	3	0.7	163	87	1.7
	21	12	33	58.8	61 25.5	150 7.6	16.4	1.1	8	5	121	86	0.50	1.8	4.4 B	297	12	0.7	204	13	1.2	68	72	4.6
	21	13	13	13.9	60 15.8	140 50.6	10.3	1.9	20	7	62	68	0.33	1.1	2.5 A	306	7	0.8	38	16	0.9	193	72	2.6
2.5 ML EMRC																								
	21	14	59	17.1	60 10.4	141 0.2	3.8	1.2	6	2	134	90	0.38	1.8	2.9 B	83	1	1.0	353	27	1.2	175	63	3.2
	21	15	31	43.7	60 13.3	141 16.7	9.7	0.9	5	2	153	86	0.21	2.6	3.3 B	313	20	0.9	55	29	1.6	194	54	3.9
	21	15	46	50.4	60 17.6	140 44.3	15.0	1.3a	3	2	180	121	0.01	12.8	16.1 D	128	4	1.8	35	38	1.7	223	52	20.5
	21	17	54	44.6	59 49.2	141 36.4	9.9	1.5a	3	2	270	141	0.09	6.1	3.6 C	264	2	1.4	355	9	6.2	162	81	3.5
	21	23	19	8.1	62 36.4	148 46.4	39.0	2.5	23	10	127	115	0.60	2.0	20.9 D	0	0	2.0	90	4	1.4	270	86	20.9
	21	23	23	18.9	59 54.8	147 24.9	6.2	2.2	29	8	184	116	0.66	1.7	2.0 A	157	20	1.3	259	30	0.7	38	53	2.4
	21	23	54	23.1	60 19.7	140 41.8	14.2		7	6	88	120	0.39	4.6	7.4 C	81	21	1.5	342	22	1.3	210	59	8.6
2.8 ML EMRC																								

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1980	ORIGIN	TIME	LAT N	LONG W	DEPTH	MAG	MP	NS	GAP	D3	RMS	ERH	ERZ	G	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3
MAR	HR	MM	SEC	DEG MIN	DEG MIN	KM			DEG	KM	SEC	KM	KM		DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM
22	3	7	26.1	60 11.0	141 29.8	0.7	1.0	7	4	134	88	0.54	1.2	2.2 A	272	1	0.7	2	13	1.1	178	77	2.3
22	3	51	34.2	60 12.5	140 53.1	17.6	1.1	3	1	128	88	0.26	13.8	20.9 D	118	9	2.5	23	32	1.0	222	57	25.0
22	5	44	29.3	58 19.9	155 3.5	0.4	4.2	11	1	241	165	0.38	7.0	9.2 C	313	0	2.8	43	26	6.2	223	64	9.7
	4.1	MB		3.4	ML	PMR																	
22	6	58	10.6	60 47.8	149 7.0	35.7	2.3	19	5	96	55	0.44	1.2	1.1 A	93	29	0.7	205	34	1.2	333	42	1.1
22	8	19	57.6	60 15.2	140 20.9	15.0	1.2	3	2	164	96	0.28	3.8	12.9 D	297	2	0.8	27	15	1.7	200	75	13.4
22	9	5	41.5	61 51.3	147 24.6	13.9	2.0	16	6	190	89	0.55	1.7	1.4 A	287	17	0.6	187	30	1.8	43	55	1.3
22	16	36	5.0	60 22.7	140 45.8	6.6	0.9	3	2	153	78	0.12	4.6	10.5 D	3	9	1.0	271	10	4.3	134	76	10.8
22	17	28	31.4	60 45.7	147 40.1	29.6	1.7	13	8	123	47	0.49	0.8	1.1 A	89	2	0.5	180	17	0.8	352	73	1.1
22	22	41	50.7	60 0.1	145 37.1	23.3	1.7	17	7	181	64	0.43	1.6	1.2 A	38	2	1.6	128	11	0.8	298	79	1.2
23	3	13	18.8	60 16.0	140 59.5	10.0	1.5	11	5	128	73	0.15	1.1	1.8 A	300	3	0.7	31	16	1.0	200	74	1.8
23	7	52	36.4	60 3.4	140 12.5	19.2	1.5	9	2	141	51	0.41	2.0	1.6 A	301	3	0.8	210	28	2.1	37	62	1.4
23	8	9	2.6	60 3.4	140 14.7	21.5	0.6	5	2	198	49	0.12	3.2	2.1 B	282	2	1.0	12	13	3.3	183	77	2.0
23	13	18	30.4	60 13.6	140 56.2	2.8	0.7	4	2	166	119	0.10	3.3	6.1 C	120	2	1.5	29	27	1.1	214	63	6.8
23	13	51	35.5	60 15.0	140 49.6	14.8	1.7	20	4	136	66	0.47	1.1	1.9 A	322	8	0.7	54	17	0.9	208	71	2.0
23	14	16	50.6	60 14.4	140 56.3	2.6	0.7	4	2	168	117	0.19	2.7	4.7 B	97	9	1.4	3	27	1.0	204	61	5.3
23	14	17	13.4	62 27.9	147 49.2	22.0	2.2	22	11	126	119	0.63	1.6	1.4 A	69	27	1.0	179	34	1.8	310	44	1.4
23	15	8	24.8	60 17.8	141 10.6	15.0	1.7	21	7	55	55	0.56	1.1	2.0 A	290	7	0.7	21	16	0.9	177	73	2.1
						2.4	ML	EMRC															
23	15	9	29.6	61 53.5	148 58.2	6.3	1.3	11	7	180	55	0.71	1.1	1.4 A	4	10	1.0	268	30	0.7	110	58	1.6
23	17	26	47.5	61 45.9	149 36.0	44.2	1.5	10	7	163	58	0.46	1.5	1.7 A	112	7	0.8	17	30	1.3	214	59	1.9
23	18	28	20.9	60 18.3	143 2.6	6.3	0.8	10	2	103	50	0.53	1.7	2.3 A	314	9	0.8	50	33	1.1	211	55	2.7
23	19	49	51.8	60 38.8	143 14.0	19.6	1.1	7	2	87	73	0.50	1.3	3.6 B	157	7	0.9	66	11	1.1	279	77	3.7
23	21	12	2.2	60 10.6	141 9.1	13.9	0.8	7	1	141	88	0.45	3.2	2.3 B	90	26	1.2	199	34	3.8	331	45	0.8
23	22	34	27.7	60 21.7	140 56.8	10.4	1.2	7	4	139	71	0.34	2.0	3.2 B	334	9	0.9	69	25	1.3	226	63	3.6
24	3	19	31.9	60 32.8	142 51.6	16.2	1.6	14	5	83	61	0.74	1.2	2.0 A	130	12	0.6	36	20	1.0	249	66	2.1
24	7	47	25.7	60 32.8	142 42.0	18.2	1.1	6	2	171	81	0.48	2.0	3.6 B	279	5	2.0	10	9	0.9	160	80	3.7
24	13	17	52.8	60 27.3	141 32.3	11.9	1.8	20	6	59	64	0.47	1.6	3.2 B	126	1	0.9	36	20	1.2	219	70	3.4
						2.5	ML	EMRC															
24	14	56	59.4	61 32.3	150 29.5	60.0	1.7	9	6	133	74	0.19	1.5	2.6 B	273	1	0.7	183	10	1.4	9	80	2.7
24	16	56	49.4	60 3.8	140 44.3	5.5	0.9	5	3	147	87	0.37	3.9	3.2 B	109	19	0.8	214	36	4.6	357	48	2.5
24	17	15	1.4	61 36.6	149 39.6	37.5	1.6	12	5	161	41	0.40	1.5	1.1 A	210	14	1.5	113	24	0.8	327	62	1.1
24	17	24	25.2	60 17.5	140 57.4	6.3	0.9	6	3	160	104	0.18	1.9	3.5 B	125	3	1.0	34	26	0.9	221	64	3.9
24	18	7	54.4	60 55.8	149 40.0	41.9	1.2	8	5	87	52	0.23	1.3	2.4 A	312	4	1.3	43	7	0.9	193	82	2.5
24	18	39	5.1	61 20.8	150 20.5	49.9	2.6	24	6	78	70	0.37	1.2	3.5 B	268	0	0.8	178	8	1.1	358	82	3.5
24	18	53	43.1	61 22.1	150 23.5	48.0	1.6	11	5	169	91	0.17	2.0	2.7 B	263	8	1.0	355	10	2.0	135	77	2.7
24	21	57	33.7	60 12.4	140 59.7	5.8	0.7	5	2	163	108	0.12	4.0	5.2 C	83	24	1.2	341	26	1.4	210	53	6.4
24	23	11	20.2	60 22.4	141 41.5	17.0	1.2	4	2	163	66	0.15	4.3	17.1 D	65	4	1.8	334	13	1.0	172	76	17.6
24	23	11	53.1	60 23.5	141 42.0	10.6	1.0	6	3	139	66	0.35	1.6	4.4 B	328	7	0.6	59	14	1.1	212	74	4.6
25	3	58	21.4	60 11.3	140 56.6	3.7	0.7	5	4	149	104	0.12	2.4	4.4 B	314	6	1.4	47	27	0.8	212	62	5.0
25	3	58	58.2	60 21.7	141 9.0	5.1	0.8	3	3	169	125	0.12	3.2	4.9 B	342	13	0.8	78	24	2.4	226	62	5.4
25	7	13	57.0	60 18.5	141 12.0	1.8	1.1	6	3	152	96	0.22	1.9	3.3 B	306	9	1.0	39	17	1.6	189	71	3.5
25	7	47	45.7	64 19.3	145 13.3	15.0	3.8	19	1	240	297	0.59	11.3	24.7 D	333	0	1.9	243	9	10.7	63	81	25.0
						3.0	ML	PMR															
25	8	29	49.2	61 6.7	149 27.9	35.1	1.0	5	3	117	70	0.15	2.0	4.8 B	288	10	1.7	196	12	1.1	57	74	4.9
25	8	43	17.1	59 37.2	141 1.2	5.4	1.2	6	2	119	77	0.12	1.7	2.4 A	13	10	1.4	109	30	0.9	267	58	2.7
25	9	7	17.5	61 29.0	140 27.9	7.4	2.2	12	4	156	162	0.87	4.4	6.4 C	301	11	1.9	204	32	1.0	48	56	7.7
						2.5	ML	EMRC															
25	9	40	54.5	61 30.6	150 36.8	49.4	1.8	14	5	111	71	0.49	1.4	3.4 B	89	4	0.8	180	9	1.3	335	80	3.5
25	12	30	48.1	60 10.1	140 58.0	5.5	1.3	7	1	121	78	0.17	6.2	7.2 C	94	23	1.2	349	31	1.4	214	50	9.4

SOUTHERN ALASKA EARTHQUAKES. JAN - MAR 1980

1980	ORIGIN TIME	LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3		
HR	MIN	SEC	MIN	MIN	MM			DEG	KM	SEC	KM	KM	DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM		
MAR	25 12 41	10.9	60 14.8	140 38.4	10.9	0.8	6	167	95	0.36	2.2	2.4	A	119	3	0.8	26	41	1.2	212	49	3.0	
	25 13 46	1.9	62 56.1	149 21.4	59.9	3.3	17	4	109	188	0.76	2.9	20.9	D	345	1	2.9	75	3	1.9	237	87	21.0
	25 15 2	33.4	60 59.7	150 22.0	50.2	1.4	5	134	79	0.27	1.5	3.6	B	273	5	0.9	182	6	1.5	42	82	3.7	
	25 15 25	8.6	61 0.1	147 21.9	3.3	2.3	17	6	116	58	0.63	1.2	1.9	A	183	14	1.1	277	19	0.6	58	66	2.0
	25 16 0	37.7	62 17.8	148 4.3	38.0	3.2	27	4	203	96	0.50	2.5	1.3	A	357	0	2.5	87	36	0.9	267	54	1.5
	25 17 41	50.7	61 50.8	149 29.5	15.0	1.1	10	5	163	61	0.66	1.5	4.2	B	200	7	1.2	291	16	0.6	87	73	4.3
	25 19 55	36.5	61 22.9	150 40.2	65.5	2.1	19	10	89	77	0.60	0.9	3.0	B	279	1	0.8	189	3	0.9	27	87	3.0
	25 20 52	57.8	60 12.4	141 8.2	14.2	2.0	13	4	70	72	0.42	1.8	2.7	B	81	18	1.5	344	21	1.0	208	62	3.0
	25 23 48	56.5	61 22.1	146 47.6	10.8	1.7	4	4	276	126	0.07	5.3	5.0	C	37	20	1.6	289	40	2.8	147	43	6.8
	26 0 18	34.3	60 6.9	148 11.4	6.4	1.8	19	4	195	83	0.69	1.9	2.8	B	154	11	1.5	251	29	0.7	46	58	3.2
	26 0 49	58.4	58 30.9	139 56.2	11.0	1.8a	3	2	336	161	0.04	17.8	18.3	D	299	8	11.0	37	43	4.5	201	46	25.0
	26 3 38	18.4	58 36.6	136 51.0	10.5	2.7	7	2	281	197	1.29	20.0	19.1	D	36	25	4.6	286	36	13.8	152	44	25.0
	26 5 44	46.2	60 14.7	140 58.5	11.6	0.7	3	3	154	116	0.16	7.2	10.1	D	98	11	2.1	1	33	1.2	204	55	12.3
	26 8 53	22.2	61 35.1	146 28.9	32.0	2.2	24	9	80	53	0.74	0.8	1.0	A	282	13	0.6	185	29	0.7	33	58	1.0
	26 13 53	36.7	61 39.7	148 43.5	36.3	1.5	15	4	128	31	0.35	1.5	1.0	A	244	8	0.8	338	25	1.6	138	64	0.8
	26 14 7	31.9	61 39.6	148 45.4	37.2	1.0	7	4	164	32	0.29	2.2	1.4	A	69	6	1.3	336	26	2.4	171	63	1.1
	26 17 30	1.2	62 38.2	149 29.7	44.0	3.0	27	2	103	118	0.65	3.0	4.2	C	352	0	3.0	82	2	1.5	262	88	6.2
	26 18 44	21.3	61 0.1	146 56.9	21.2	1.1	22	13	86	36	0.59	0.8	1.2	A	173	7	0.8	264	12	0.4	53	76	1.3
	26 21 21	13.9	61 0.6	150 5.7	57.4	1.7a	8	6	98	71	0.35	2.7	7.5	C	286	5	1.1	17	16	1.6	179	73	7.8
	27 2 5	50.1	62 12.3	151 33.9	93.0	3.9	24	3	163	117	0.54	3.4	3.9	B	83	6	1.7	177	34	2.9	344	55	4.3
	27 2 5	50.1	62 12.3	151 33.9	93.0	3.9	24	3	163	117	0.54	3.4	3.9	B	83	6	1.7	177	34	2.9	344	55	4.3
	27 2 10	9.6	60 17.7	140 49.2	5.0	0.8	6	4	141	80	0.25	2.2	5.5	C	117	6	1.0	25	19	0.8	224	70	5.8
	27 2 18	7.1	60 12.8	140 16.4	17.8	1.5a	6	3	180	78	0.26	4.0	5.4	C	109	4	1.1	16	34	2.3	205	56	6.4
	27 3 0	4.8	60 10.1	139 20.9	6.1	0.5	4	3	221	84	0.19	2.3	4.5	B	132	8	1.7	39	21	1.4	242	67	4.8
	27 6 24	7.2	61 16.3	142 51.9	15.0	1.2	5	4	182	89	0.80	14.4	8.6	D	297	1	0.8	206	29	16.3	29	61	4.0
	27 6 26	40.5	59 56.1	140 18.3	10.9	0.9	4	1	194	97	0.39	3.2	6.7	C	183	13	2.4	277	18	1.2	59	68	7.2
	27 7 5	12.4	60 13.0	140 43.7	15.0	1.1a	4	1	174	127	0.46	7.2	9.3	C	341	23	1.7	84	28	1.2	218	52	11.7
	27 9 54	44.2	60 15.0	140 56.0	13.4	1.7	18	7	72	69	0.31	1.3	2.3	A	106	1	0.8	15	22	1.0	198	68	2.4
	27 13 13	55.8	60 16.1	140 56.2	5.0	0.9	7	1	144	81	0.13	2.3	5.0	B	108	4	1.2	17	23	0.9	207	67	5.4
	27 13 24	36.9	60 11.0	140 50.7	15.0	0.9a	4	1	166	126	0.28	13.8	12.8	D	341	30	1.7	93	32	1.3	219	43	18.8
	27 13 55	17.4	60 32.1	140 30.3	20.7	2.1	20	6	60	81	0.31	1.2	2.8	B	314	2	0.9	45	5	1.2	202	85	2.8
	27 13 56	3.6	60 32.2	140 31.3	21.5	2.5	17	5	65	82	0.30	1.4	3.3	B	127	2	0.8	37	6	1.3	235	84	3.3
	27 14 12	21.2	61 31.0	149 53.2	48.1	1.7	11	9	128	77	0.15	1.3	2.6	B	177	3	1.3	268	12	1.0	73	78	2.7
	27 16 14	4.1	60 1.1	145 34.4	24.0	2.0	23	5	167	61	0.59	1.6	1.3	A	119	18	0.7	19	29	1.8	237	55	1.2
	27 17 58	10.5	61 48.9	150 40.6	62.7	1.9	12	3	158	87	0.47	2.8	7.0	C	96	10	1.3	189	12	2.2	328	74	7.3
	27 18 3	7.8	60 14.4	140 58.0	16.3	1.0a	3	1	166	116	0.	4.2	18.1	D	302	1	1.6	32	4	4.0	198	86	18.2
	27 20 44	29.1	60 36.8	141 42.8	18.7	1.3	13	4	95	66	0.37	1.1	2.9	B	157	5	0.7	248	8	1.1	35	81	3.0
	27 22 10	19.5	60 11.2	141 19.5	11.5	0.9	6	2	118	83	0.33	2.9	2.9	B	304	23	0.9	52	36	1.6	189	45	3.8
	28 6 14	7.5	61 7.3	148 16.3	0.8	1.7	8	2	92	70	0.40	1.6	3.0	B	177	7	1.0	270	24	0.8	72	65	3.3
	28 7 7	32.2	61 47.5	148 53.5	36.3	2.2	19	5	188	48	0.39	2.3	1.1	A	332	14	2.3	74	41	0.9	227	46	1.1
	28 7 55	17.9	60 5.3	140 56.5	4.4	1.2	4	1	155	131	0.10	10.4	9.4	D	96	30	1.0	343	33	2.0	217	42	14.0
	28 12 28	5.4	61 38.6	149 47.7	40.3	2.1	18	5	143	46	0.49	1.2	2.2	A	12	0	1.2	102	6	0.9	282	84	2.2
	28 13 47	23.5	61 18.4	150 43.3	53.7	2.2	13	4	151	73	0.35	1.9	4.3	B	176	6	0.8	166	14	1.6	322	75	4.5
	28 13 52	23.8	60 58.8	146 45.4	13.7	1.9	21	6	81	29	0.56	0.9	1.1	A	176	6	0.9	268	18	0.6	68	71	1.1
	28 17 19	59.1	61 23.3	150 42.2	57.3	1.6	9	4	182	87	0.23	2.8	2.9	B	83	3	0.8	176	40	2.8	349	50	3.0
	28 17 41	34.8	60 17.9	141 17.9	5.1	1.3	7	2	125	74	0.21	1.3	3.2	B	335	9	0.9	66	9	1.2	201	77	3.3

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	ORIGIN TIME			LAT N	LONG W	DEPTH	MAG	NP	NS	GAP	D3	RMS	ERH	ERZ	AZ1	DIP1	SE1	AZ2	DIP2	SE2	AZ3	DIP3	SE3	
1980	HR	MM	SEC	DEG MIN	DEG MIN	KM				DEG	KM	SEC	KM		DEG	DEG	KM	DEG	DEG	KM	DEG	DEG	KM	
MAR	28	22	37	23.7	60 36.0	144 7.5	29.0	2.0	8	3	145	95	0.60	1.3	2.2 A	340	2	1.3	71	15	1.0	243	75	2.2
	28	22	49	52.9	60 22.0	140 44.9	2.3	1.3	7	2	176	80	0.35	2.5	5.5 C	290	0	1.0	20	20	1.5	200	70	5.8
	29	1	23	16.4	60 11.2	141 0.6	10.7	1.6	9	2	120	67	0.16	3.1	3.1 B	109	3	0.9	16	45	1.4	202	45	4.2
	29	5	7	8.4	61 49.8	149 5.6	2.0	1.2	7	3	208	57	0.73	3.9	6.1 C	41	0	1.0	311	31	1.6	131	59	7.1
	29	5	19	32.5	60 16.7	140 56.4	5.0	1.2	8	2	132	79	0.21	2.2	4.8 B	101	7	1.1	8	21	0.9	208	68	5.2
	29	5	41	8.5	61 5.2	150 52.4	26.6	1.7	10	2	139	73	0.84	1.2	13.6 D	268	1	0.9	178	1	1.2	43	89	13.6
	29	7	15	21.9	59 30.4	138 33.9	0.7	1.9	8	3	210	78	0.43	3.1	3.1 B	306	24	2.6	53	33	1.1	187	47	3.9
	29	7	23	15.6	60 8.9	148 18.5	29.6	2.0	14	7	193	79	0.46	2.4	1.8 A	75	23	0.9	332	28	2.5	198	52	1.6
	29	7	47	34.2	61 40.3	149 25.5	30.1	2.0	18	4	170	48	0.48	1.6	1.2 A	346	8	1.6	79	18	0.9	233	70	1.2
	29	7	57	16.8	60 14.0	140 55.7	10.2	1.6	8	3	129	78	0.19	1.9	2.7 B	331	21	0.8	71	24	1.2	205	57	3.1
	29	12	50	56.0	61 0.6	147 2.2	18.4	2.2	13	4	86	40	0.53	1.1	1.3 A	8	6	1.0	277	13	0.6	122	76	1.3
	29	14	2	55.0	61 2.7	146 46.8	21.3	2.7	16	2	87	37	0.51	1.1	1.2 A	261	8	0.6	358	37	1.1	161	52	1.2
	29	22	0	30.5	63 33.9	148 59.9	33.0	3.2	8	2	165	218	0.36	11.9	19.0 D	16	8	2.0	111	29	5.6	272	60	21.8
	30	6	23	11.4	63 13.4	149 4.8	38.8	2.8	7	2	156	182	0.63	6.3	7.8 C	26	19	2.0	128	31	3.1	269	52	9.6
	30	6	43	20.7	62 19.2	148 56.7	35.6	2.3	10	2	226	89	0.22	2.5	2.2 B	101	14	1.2	201	35	2.8	353	52	1.8
	30	17	42	43.1	59 57.3	141 15.5	10.8	1.5	3	1	188	113	0.01	23.4	9.5 D	10	19	1.6	107	21	25.0	241	61	3.8
	30	19	9	39.7	60 2.3	140 43.6	5.4	1.4	4	3	144	62	0.40	6.2	10.4 D	106	10	1.0	11	27	2.8	215	61	11.8
	30	19	54	55.2	60 11.2	141 13.9	14.1	2.0	5	2	110	67	0.06	1.7	2.8 B	78	4	1.5	347	25	1.1	177	65	3.0
	30	21	48	37.2	61 38.8	147 17.7	14.9	1.8	12	3	169	75	0.48	1.5	1.7 A	291	9	0.7	199	10	1.5	62	76	1.7
	31	3	29	55.0	60 12.8	151 0.7	73.3	2.7	19	3	122	88	0.59	3.3	6.6 C	94	12	1.3	359	21	1.8	212	65	7.2
	31	13	4	33.4	60 16.7	141 14.4	8.0	1.1	4	1	116	77	0.08	17.0	18.3 D	346	13	1.7	87	40	1.3	242	47	25.0
	31	16	26	10.5	63 31.7	147 16.3	40.0	3.6	14	2	152	236	0.66	5.6	22.7 D	181	3	1.8	271	9	4.2	73	81	23.0
	31	19	19	57.6	59 56.8	140 12.0	15.9	0.6	5	2	158	55	0.33	3.4	3.4 B	292	7	1.0	196	44	2.8	29	45	4.0
	31	19	21	27.9	60 2.2	139 42.6	13.6	1.1	3	2	347	80	0.27	12.1	3.6 D	252	13	12.4	349	28	3.9	140	59	1.8
	31	21	31	25.8	60 6.9	141 16.9	12.4	1.1	6	2	154	95	0.19	3.4	1.5 B	205	10	3.5	302	37	0.9	102	51	1.7
	31	23	49	11.4	61 25.8	146 0.6	36.2	1.6	18	7	51	43	0.40	1.0	0.8 A	164	25	0.9	53	39	1.0	278	41	0.5