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CATALOG OF ALASKAN EARTHQUAKES: JANUARY-MARCH 1984

BY

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1984

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Catalog of Alaskan Earthquakes

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CATALOG OF EARTHQUAKES IN CENTRAL AND SOUTHCENTRAL ALASKA, THE KODIAK ISLAND AND ALASKA PENINSULA AREAS

January-March, 1984

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TABLE OF CONTENTS

INTRODUCTION

This catalog lists routinely determined parameters of earthquakes occurring within and adjacent to the areas encompassed by the network of seismograph stations operated and/or recorded by the Geophysical Institute of the University of Alaska (UAGI). Our goal in generating this catalog is to provide a convenient reference source for the earthquake activity in the areas covered and to provide a quantitative set of information on the basis of which interested researchers, administrators, planners, and others can judge to what extent related data files residing on the Geophysical Institute's computer system, might be useful for their various needs. We therefore not only provide hypocentral parameters but also information about the quality of input data and accuracy of the derived parameters, so that potential users of both raw and derived data can obtain some idea as to which type of further data analysis these data would lend themselves. While, on account of the number of events, the present catalog is the result of routine processing, reasonable care has been taken to locate earthquakes accurately and to use as many useful data as possible. This is especially true for events of magnitude 3 and larger. Additional data, primarily from networks operated by other agencies, and more sophisticated methods of anlaysis might, however, in many cases lead to more accurate locations.

DATA

The data used in preparing this catalog are derived from two principal sources: from seismic stations operated by the Geophysical Institute and from seismic stations operated by other agencies but continuously recorded by us under various data sharing or data exchange agreements. Also, for events of about magnitude 3 or larger, arrival times for many stations of NOAA's Tsunami

Warning System are made available to us in the form of copies of their daily TELEX message of arrival times sent to the National Environmental Information Service in Boulder.

Figure 1 shows all stations of the University of Alaska network, and all stations operated by various other agencies (with the exception of the NOAA station Nikolski which locates just outside the map area) from which data have been used for the preparation of this catalog.

Geographic coordinates and other pertinent information about these stations are given in Table 1.

Signals from the various, usually remotely located, stations are transmitted by means of a combination of UAGI operated VHF radio links and leased commercial telephone circuits to one of the two recording centers of the University of Alaska network in Homer and Fairbanks. Remote stations are serviced and calibrated once a year, stations with year-round road access are serviced more often if necessary. In the case of malfunctioning, the difficulties of access associated with many stations can lead to lengthy data losses and, in turn, to lower detection thresholds and solution qualities for earthquakes located in the affected regions. In order to discern such conditions we provide a station use record in Figure 2. Stations with lengthy outages can be identified on this figure. It should be noted, however, that especially in the case of stations not operated by the University of Alaska non-use does not necessarily imply station outage but rather that no data were required for earthquake location purposes.

The data are recorded on 16 mm film on several Teledyne Geotech Develocorders, each of which has a maximum capacity of 20 channels. Satellite linked clocks provide timing marks which are superposed on the records. Figure 3 gives the typical response of the total system from transducer to recorder.

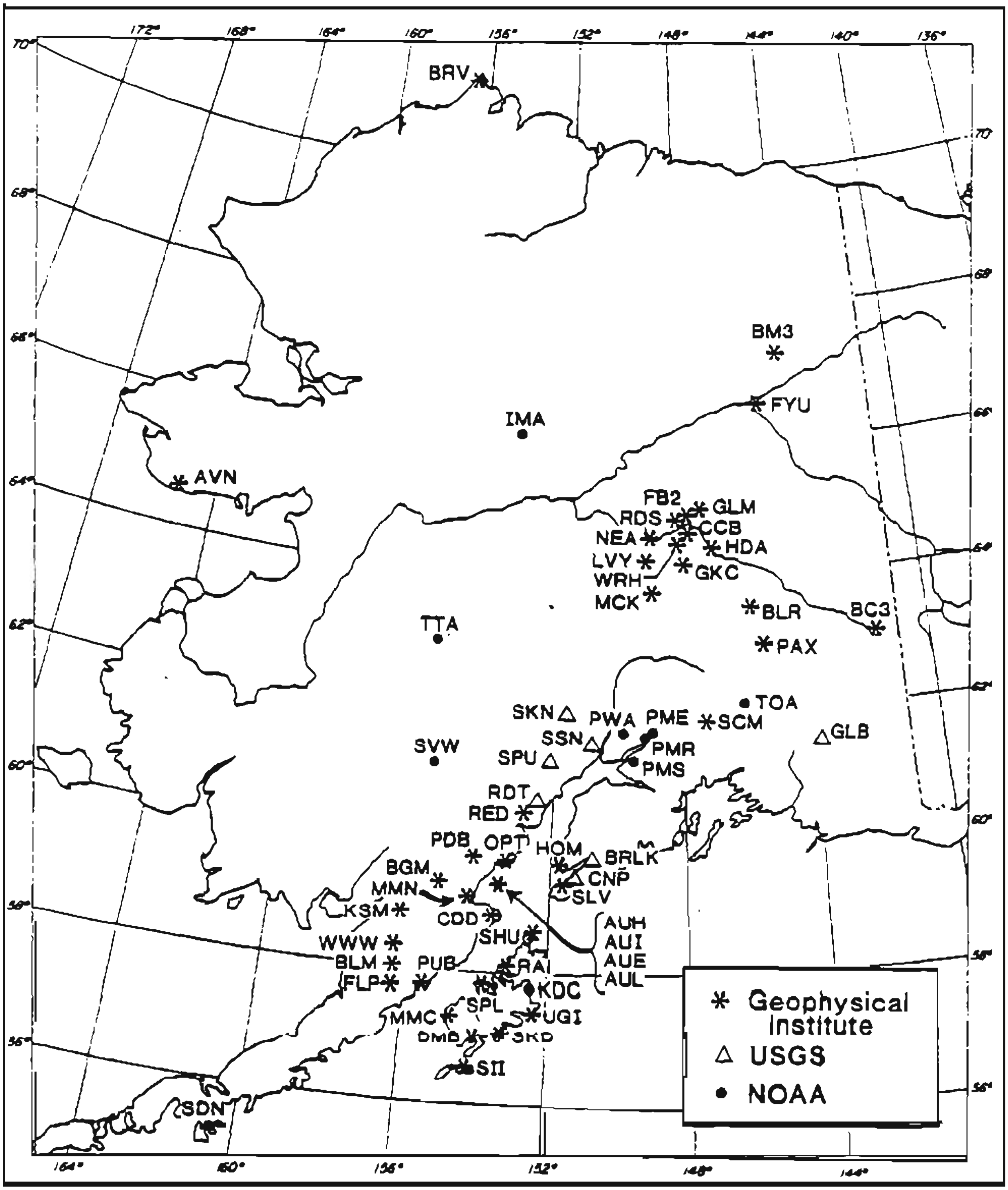

Figure 1: All seismograph stations operated by the University of Alaska and stations of other organizations from which data were used in preparing this bulletin. The stations BGM POB, and SLV were originally installed and operated by USGS and are presently maintained by the University of Alaska.

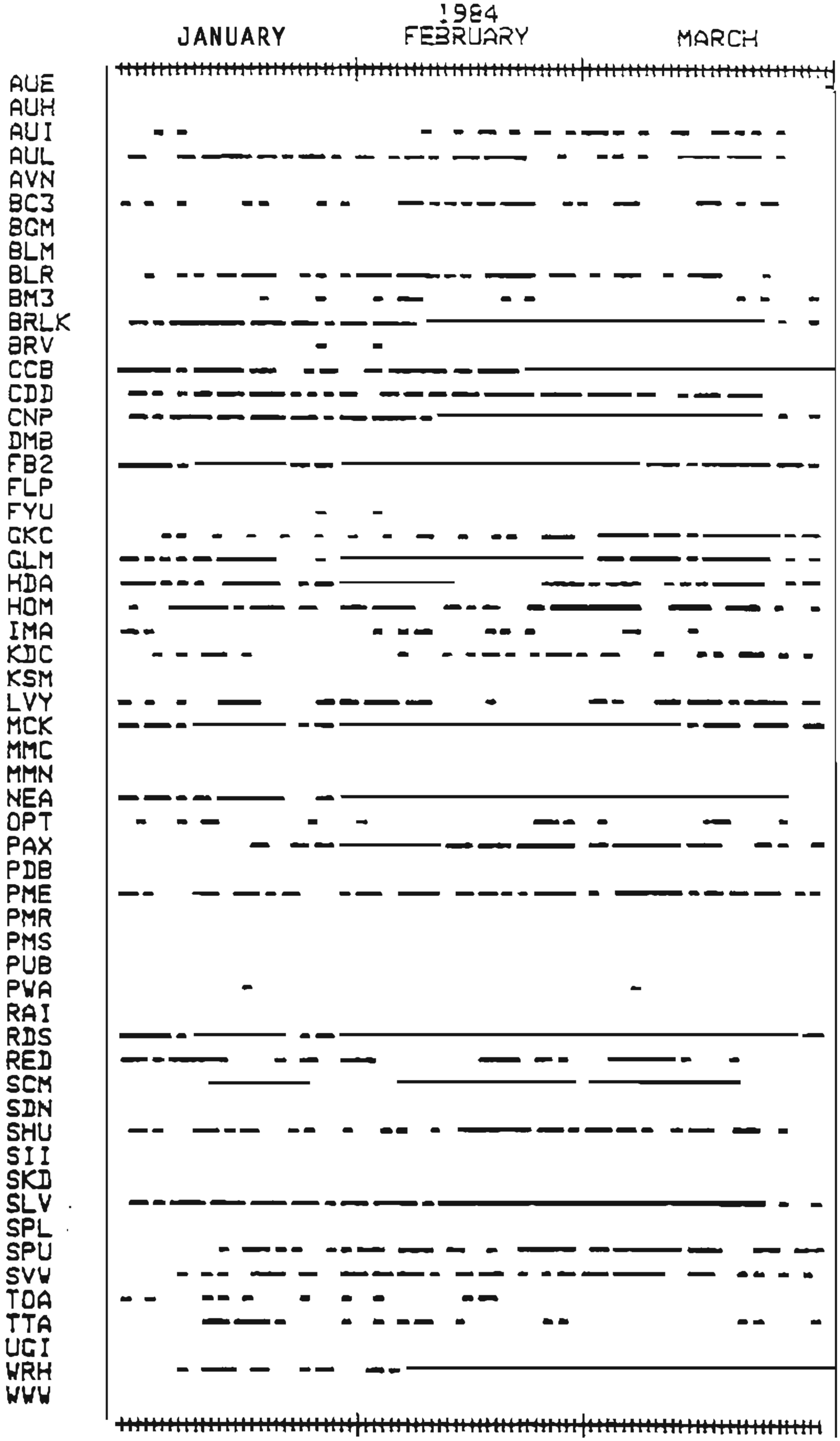

Figure-P: Station use *record.* A dash associated with a particular station on a particular date means that at least one arrival-time reading from that station was used on that date.

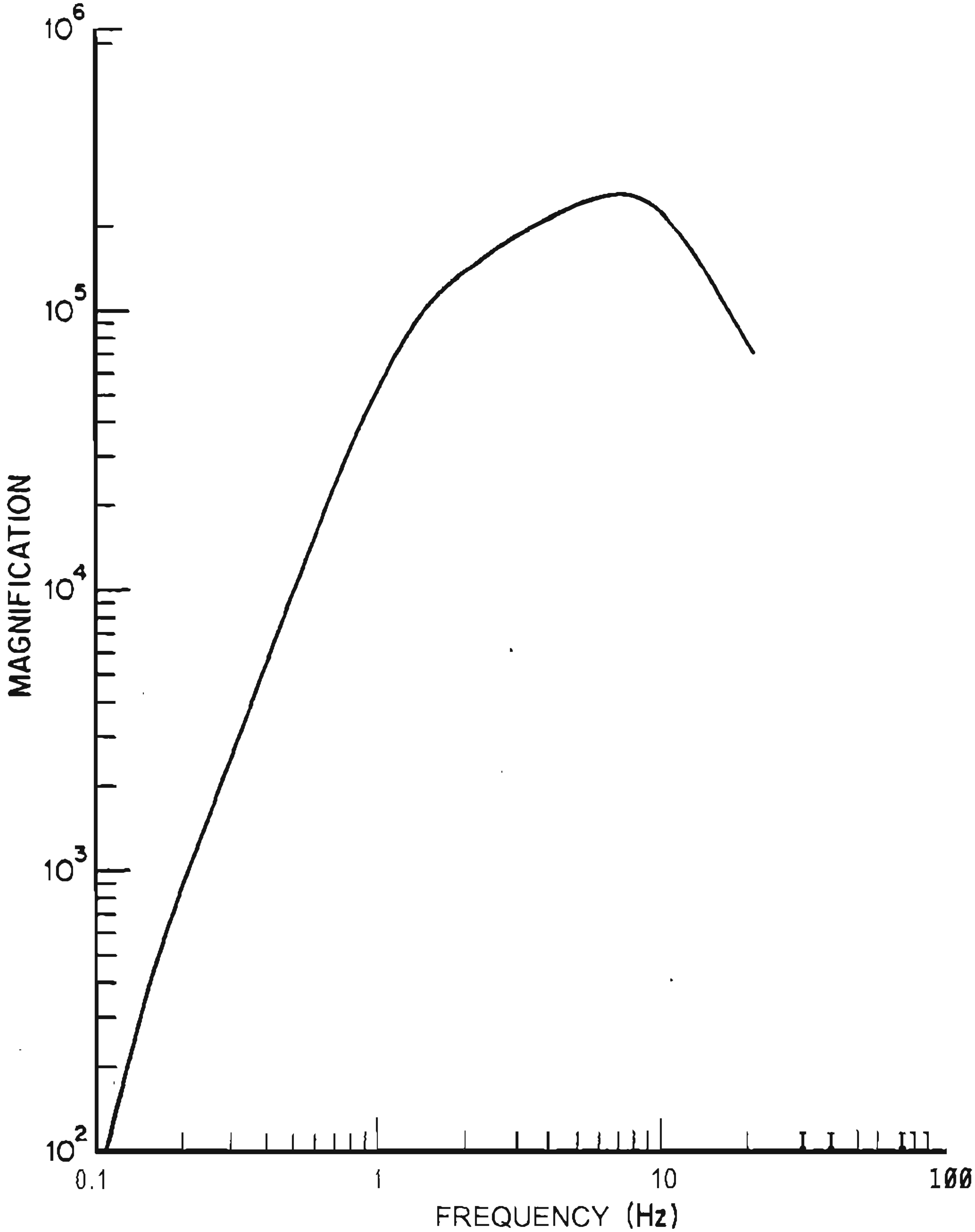

Figure 3: Typical system response curve for University of Alaska stations.

STATION NAME	CODE	LATITUDE (N)	LONGITUDE (W)	ELEV (M)	VELOCITY MODEL	OPERATOR
ANVIL MOUNTAIN	AVN	64 33.90	165 22.28	323	1	UA
AUGUSTINE EAST	AUE	59 21.54	153 22.33	172	2	UA
AUGUSTINE HILL	AUH	59 21.83	153 26.61	900	2	UA
AUGUSTINE ISLAND	AUI	59 20.11	153 25.66	293	2	UA
AUGUSTINE LAVA FLOW	AUL	59 22.93	153 26.07	360	2	UA
BEAVER CREEK	BC3	63 6.00	141 45.50	762	1	UA
BIG MOUNTAIN	BGM	59 23.56	153 13.76	625	2	UA/USGS
BLUE MOUNTAIN	BLM	58 2.70	156 20.70	539	3	UA
BLACK RAPIDS	ALA	63 30.10	145 50.70	810	1	UA
BURNT MOUNTAIN	BM3	67 17.18	144 25.17	306	1	UA
BRADLEY LAKE	BRLK	59 65.85	150 53.13	631	2	USGS
BARROW	BRV	71 16.43	156 47.08	13	1	UA
CLEAR CREEK BUTTE	CCB	64 38.80	147 08.33	219	1	UA
CAPE DOUGLAS	c m	58 53.79	153 38.58	622	2	UA
CHINA Poor	CNP	59 31.55	151 14.16	564	2	USGS
DEADMAN MY	DMB	57 5.23	153 57.63	300	3	UA
FAIRBANKS	FB2	64 54.00	147 47.60	320	1	UA
FEATHERLY PASS	FLP .	57 42.40	156 16.10	486	3	UA
FORT YUKON	FYU	66 33.96	145 13.90	137	1	UA
GOLD KING CREEK	GKC	64 10.72	147 56.08	490	1	UA
GILAHINA BUTTE	GLB	61 26.51	143 48.63	845	S	USGS
GILMORE DOME	GLM	64 59.26	147 23.34	820	1	UA
HARDING LAKE	HDA	64 24.35	146 57.23	450	1	UA
HOMER	HOM	59 39.50	151 38.60	198	2	UA
INDIAN MOUNTAIN	INA	66 4.10	153 40.72	1380	1	NOM
KODIAK	KDC	57 44.87	152 29.50	13	3	NOM
KING SALMON MOUNTAIN	KSM	58 51.80	156 10.50	560	3	UA
LEVY	LVY	64 13.00	149 15.20	230	1	UA
MCKINLEY PARK	MCK	63 43.94	148 56.10	618	1	UA
MIDDLE CAPE	MMC	57 20.00	154 38.10	340	3	UA
MCNEIL RIVER	MMN	59 11.11	154 20.20	442	2	UA
NENANA	NEA	64 34.63	149 0.63	364	1	UA
NIKOLSKI	NKI	52 56.56	168 51.44	0	2	NOM
OIL POINT	OPT	59 39.16	153 13.78	450	2	UA
PAXSON	PAX	62 58.25	145 28.12	1130	1	UA
PEDRO MY	PDA	59 67.27	154 11.55	305	2	UA/USGS
PALMER EAST	PME	61 37.70	149 1.90	232	2	NOM
PALMER OBSERVATORY	P m	61 35.53	149 7.85	100	2	NOM
ARCTIC VALLEY - PALMER	PMS	6L 14.68	149 33.63	716	2	NOAA
PUALE RAY	PUB	57 46.40	155 31.00	280	3	CA
HOUSTON - PALMER WEST	PWA	61 39.05	149 52.72	137	2	UA
RASPBERRY ISLAND	RAI	58 3.63	153 9.55	520	3	UA
RICHARD D. SIEGRIST	RDS	64 49.59	148 8.68	930	1	UA
REDOUBT	RDT	60 34.43	152 26.37	930	2	USGS
REDOUBT VOLCANO	RED	60 25.14	152 46.32	1067	2	UA
SHEEP MOUNTAIN	SCM	61 50.00	147 19.66	1020	4	UA
SAND POINT	SDN	55 20.40	160 29.83	19	6	NOM
SHUYAK ISLAND	SHU	58 37.68	152 20.93	10	3	UA
SITKINAK ISLAND	SII	56 33.60	154 10.92	500	3	UA
SITKALIDAK ISLAND	SKD	57 9.66	153 4.82	135	3	UA
SKWENTNA	SKN	61 58.86	151 31.78	564	2	USGS
SELDOVIA	SLV	59 28.28	151 34.83	91	2	UA/USGS
SPIRIDON LAKE	SPL	57 45.55	153 46.28	600	3	UA
MOUNT SPURR	SPU	61 10.90	152 3.26	800	2	USGS
SUSITNA MOUNTAIN	SSN	61 27.83	150 44.60	1297	1	USGS
SPARREVOHN	S W	61 6.49	155 37.30	762	2	NOM
TOLSONA	TOA	62 6.29	1b6 10.36	909	4	NOM
TATALINA	TTA	62 55.80	156 1.32	916	2	NOM
UGAK ISLAND	UGI	57 23.6;	152 16.90	213	3	UA
WOOD RIVER HILL	WRH	64 28.28	148 5.39	314	1	UA
WONDER WHY RIDGE	WWW	58 20.90	156 19.90	414	3	UA

Table 1. Names and pertinent parameters of seismic stations used in preparing this catalog. For description of velocity models see text.

DATA PROCESSING

Arrival times are read on Geotech filmviewers which provide a resolution of up to 3 lines per millimeter. Thus, the most impulsive arrivals can be read to .05 sec.

Earthquake locations are based on P and S arrivals. As many S arrivals as possible are used to help constrain hypocentral depth. The large majority of the S readings are obtained from vertical components since only few three component systems are recorded. Owing to the nature of the multichannel film recordings in the case of a large event, traces overlap each other making the identification of S arrivals very difficult. The gradual transition to a digital tape recording system, presently underway, will greatly improve this situation.

After identification of events and determination of arrival times, phase data are processed by computer to obtain the earthquake parameters using the computer program HYPOELLIPSE (Lahr, 1980). Each solution is checked for travel time residuals greater than or equal to 0.5 sec and for the spatial distribution of stations used. Events that produce large residuals are re-read and for shocks with poor station distribution readings are sought from additional stations, not recorded by the University of Alaska. Events recorded by only five stations or less receive little additional attention. Events of magnitude 3.5 and larger are processed very carefully, sometimes by changing various control parameters in the computer program.

VELOCITY MODELS

Since most computer algorithms for locating earthquakes are based upon some iterative scheme of minimizing the difference between calculated and observed travel times between hypocenter and the stations, a seismic velocity structure has to be provided.

The tectonic regime and geological setting vary greatly throughout the area covered by the University of Alaska network. Although our knowledge of the details of the seismic velocity structure is rather limited, considerable variation seems to exist. To take this variation into account each of the University of Alaska stations, depending on its location, is associated with one of three different velocity models. Regardless of the location of the hypocenter, that structure is used in calculating the travel time to that station. The models used are all one dimensional, varying only with depth, and lateral velocity variation (which is especially strong in the vicinity of the subduction zone) is not taken into account. For stations which are not part of the University of Alaska network we generally use models adopted by the operators of these stations. Column 6 of Table 1 indicates the particular velocity model with which each station is associated.

The University of Alaska presently uses the following models:

Model 1

Layer	Depth (km)	P Velocity (km/sec)
1		5.9
2	24-40 0-24	7.4
3	40-76	7.9
4	76-300	8.3
5	301-545	10.4
6	Below 545	12.6

This model is used primarily in central and northern Alaska. It was derived from travel-time studies to central Alaskan stations from teleseismic and regional earthquakes (Biswas and Bhattacharya, 1974).

Model 2

Layer	Depth (km)	P Velocity (km/sec)
1	o-2	2.75
2	2-4	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

This model is associated with stations located in the Cook Inlet-Kenai Peninsula area. It is based on the model of Matumoto and Page (1969) determined for the Kenai Peninsula from travel time studies of 1964 Alaska earthquake aftershocks. This model is used by USGS in this area for location purposes.

Model 3

Laler	Depth (km)	P Velocity (km/sec)
2	1.6-12 0-1.6	4.2
		5.5
3	12-42	6.6
4	42-60	8.06
5	60-80	8.09
6	80-100	8.11
7	100-150	8.14
8	150-200	8.27
9	200-250	8.41
10	250-300	8.50
11	300-350	8.74
12	below 350	9.02

This model is used in connection with stations located on Kodiak Island and the Alaska Peninsula. This structure was obtained by Engdahl and Tarr (1970) from refraction experiments, in the central Aleutians.

For all models the S velocity is taken to be equal to the P velocity divided by the square root of three.

MAGNITUDE

Magnitudes are determined from the maximum amplitude of the body wave trace. The relationship derived by Richter (1954) for records of local California earthquakes from horizontal, standard Wood Anderson seismographs is used. Proper adjustments are made for differences in the response characteristics and magnification between the standard instrument and the system actually used. However, no corrections are made for any differences in attenuation properties between California and the various Alaskan regions or the fact that vertical rather than horizontal ground motion is measured.

For a given earthquake, its magnitude is usually calculated at several stations and then averaged.

In the case of large events, when the maximum trace amplitude saturates on most of our stations, we frequently list local magnitude as determined by NOAA's Palmer Observatory. When this is the case, it is indicated in the listings after the event. When available, we also list felt reports after the events and observations of the Modified Mercalli Intensity (Richter, 1958). The definitions of the various intensity levels are given in the Appendix.

DISCUSSION OF THE CATALOG

The Appendix lists hypocenter parameters, magnitude and quality parameters of earthquakes located during the first quarter of 1984. The listings are in two groups: one for events north of 61°N and one for events south of it.

Epicenters for the same time period are plotted in Figures 4 through 6. For the areas of Figures 4 and 5, the epicenters of events of $M_L > 3$ are shown in Figures 7 and 8 respectively. Figure 6 shows only events located outside the areas encompassed by Figures 4 and 5. These events are generally of poor quality and located either because our network appeared to be the only one

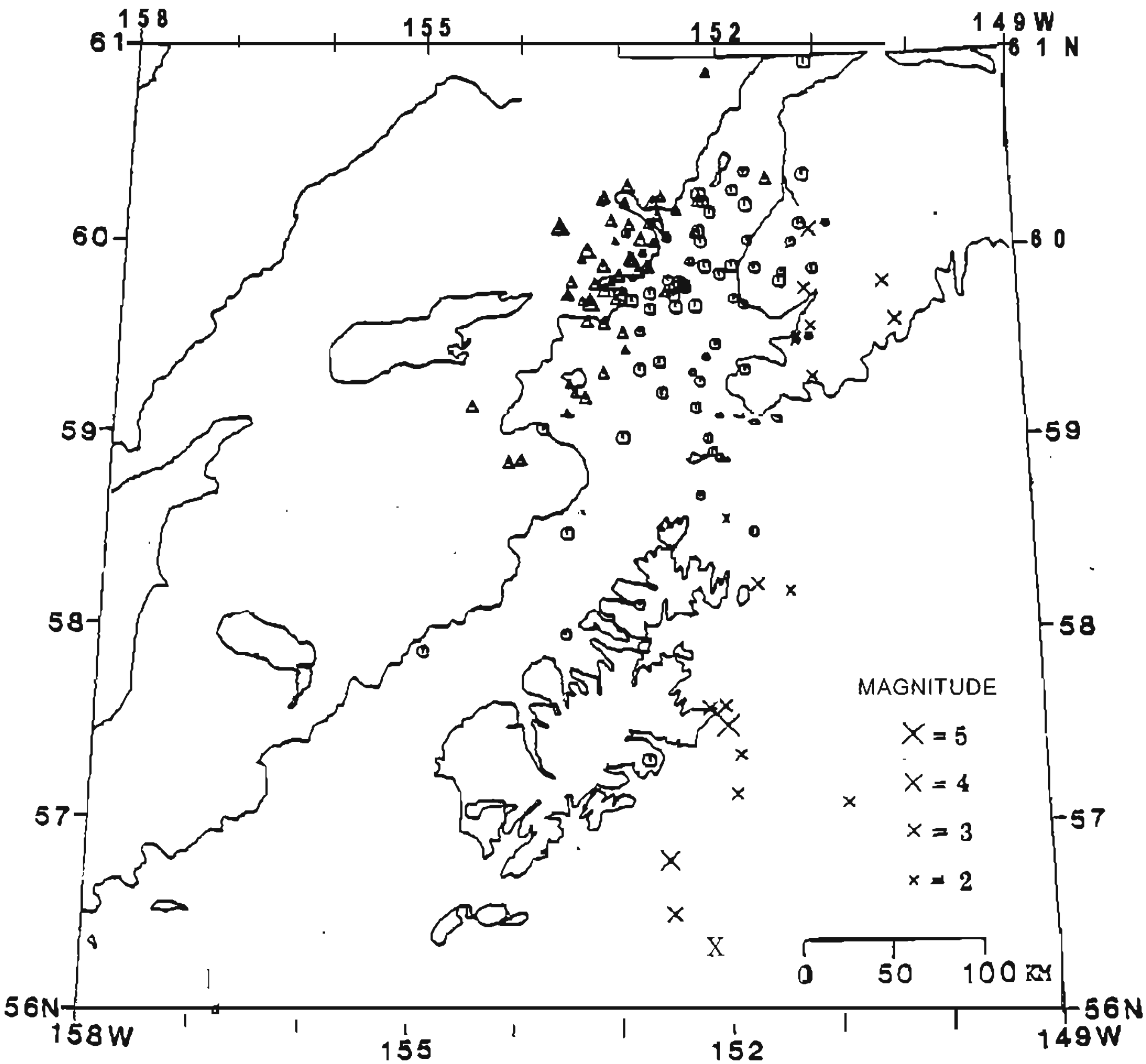

Figure 4: Epicenters of earthquakes south of 61°N located during the first quarter of 1984. Symbol size varies with magnitude as indicated. Different symbols are used for indicating depth range of earthquakes: × for 0 to 35 km, ⊙ for 36 to 100 km, ▲ for deeper than 100 km.

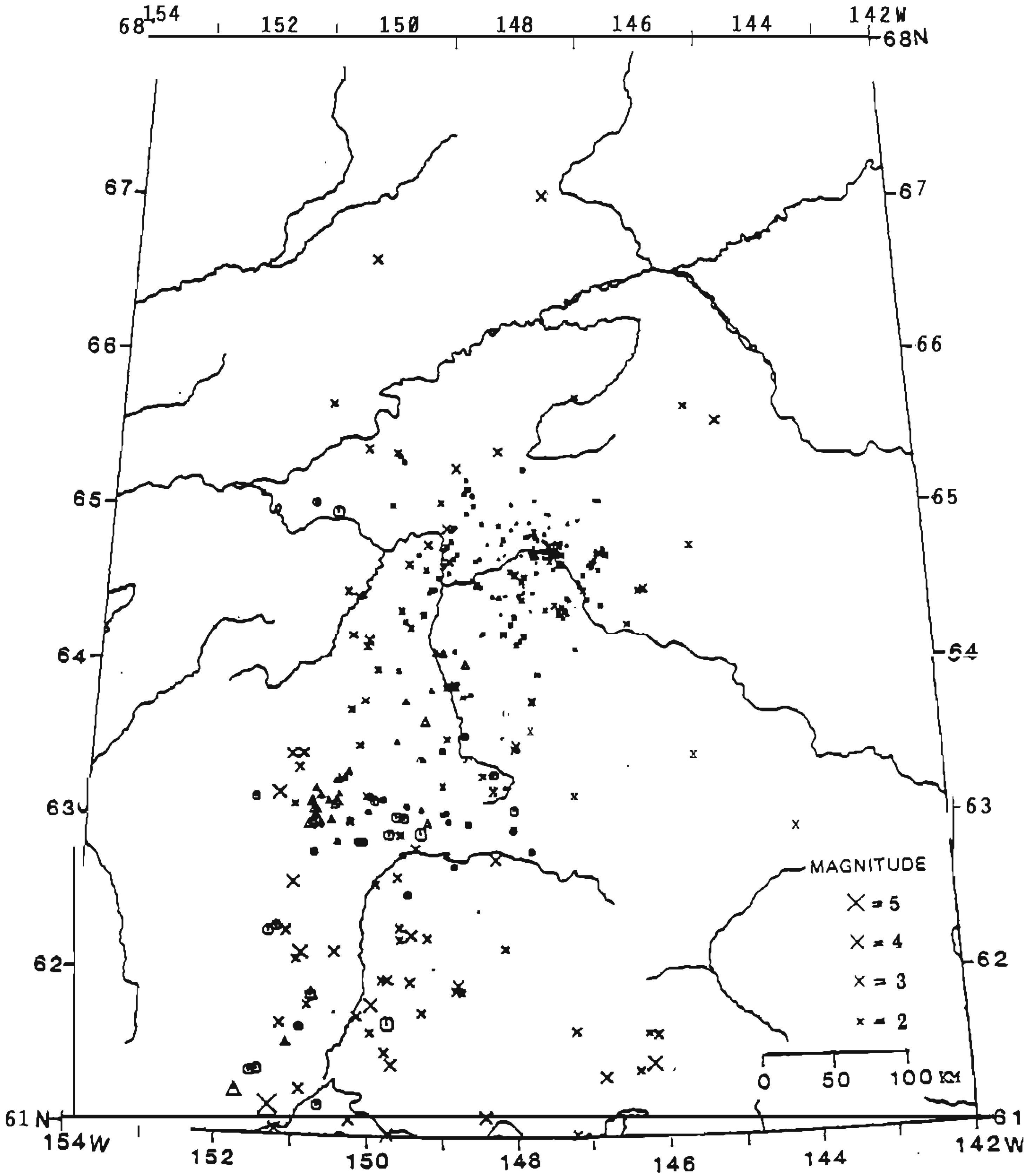

Figure 5: Epicenters of earthquakes north of 61°N located during the first quarter of 1984. Symbols as in Figure 4.

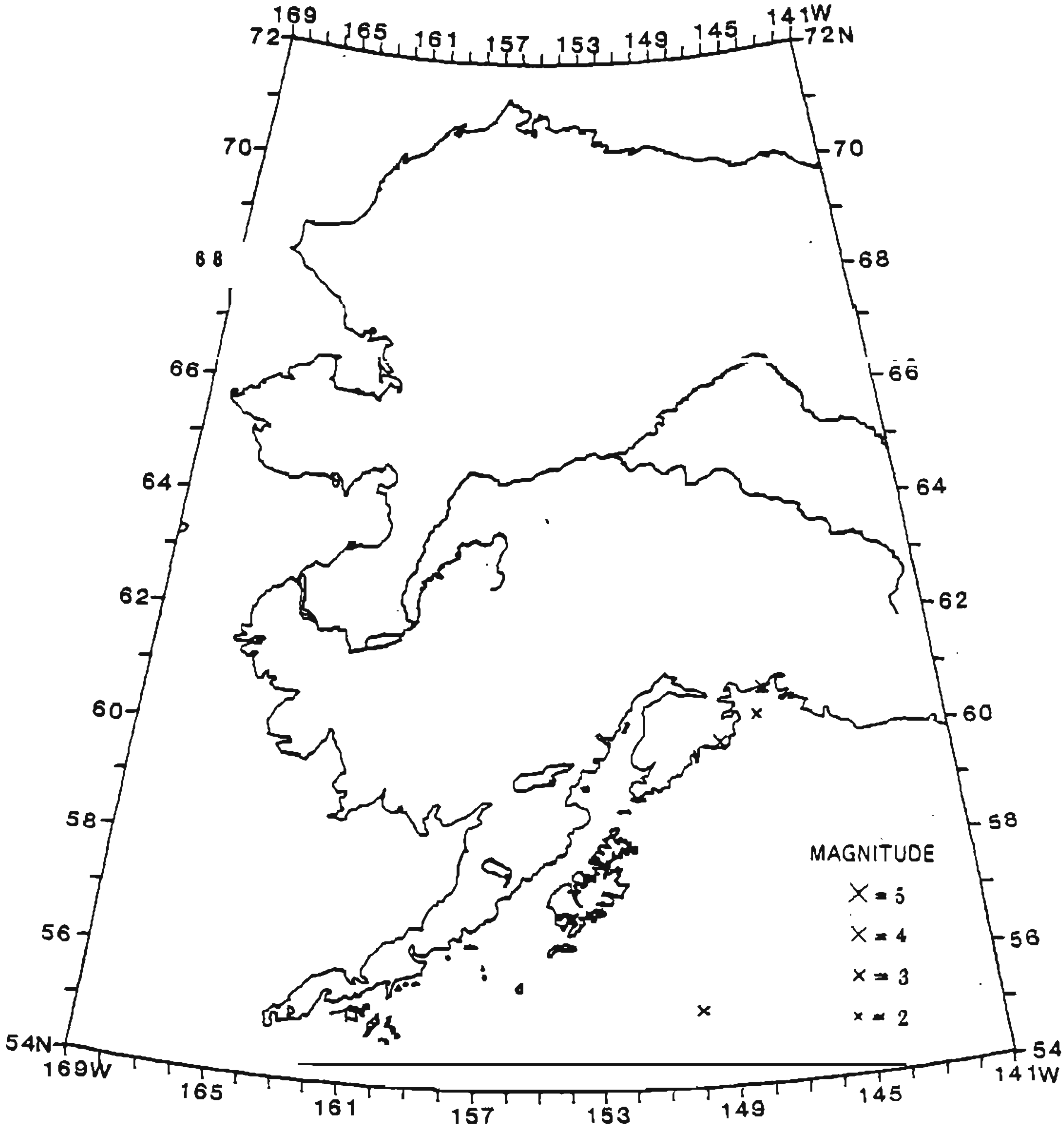

Figure 6: Epicenters of earthquakes located in the first quarter of 1984 and not shown in either Figure 4 or Figure 5. Symbols as in Figure 4.

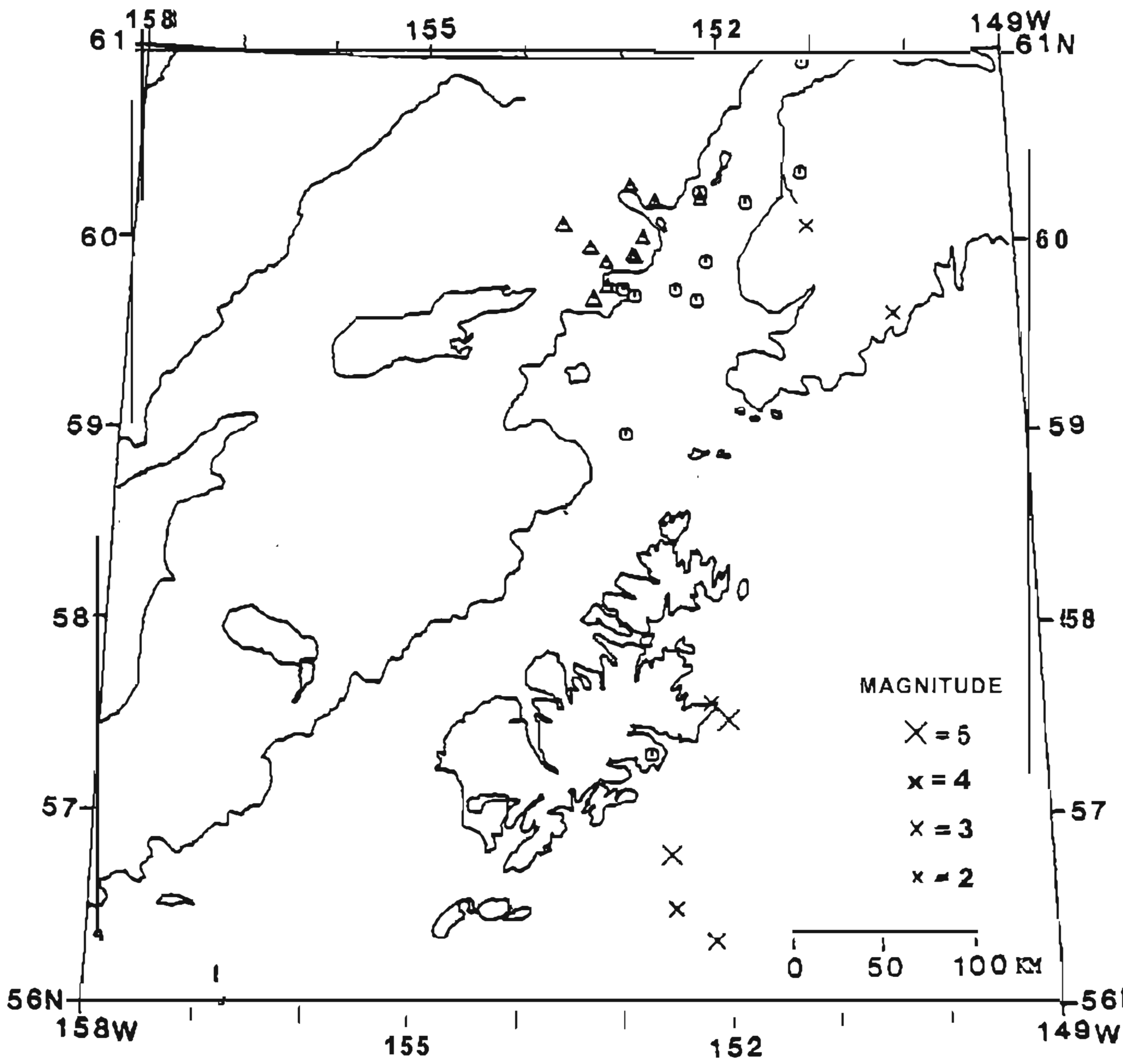

Figure 7: Epicenters of earthquakes of magnitude $M_L \geq 3$ south of 61°N located during the first quarter of 1984. Symbols as in Figure 4.

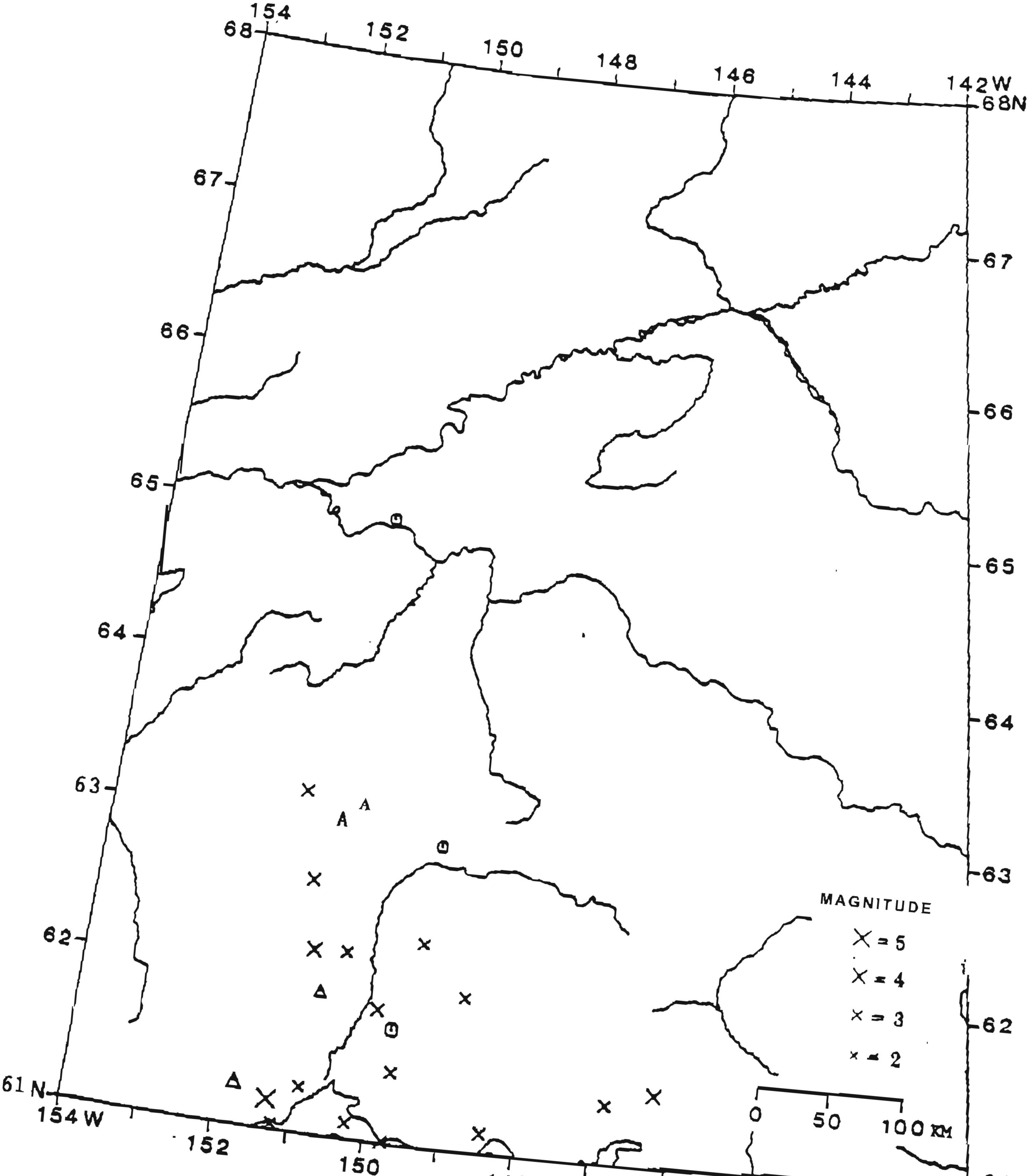

Figure 8: Epicenters of earthquakes of magnitude M_L > 3 north of 61°N located during the first quartet of 1984. Symbols as in Figure 4.

capable of locating them or because a large number of station readings was available, a fact we thought useful to disseminate by incorporation into the catalog.

Detection threshold and quality of solution vary throughout the areas shown in Figures 4 through 6. For the areas of Figures 4 and 5 the catalog is probably complete for magnitudes larger than 3.0 to 3.5 (see Figure 7 and 8, respectively). As is apparent from Figure 1, station density varies considerably throughout these areas, and with it detection threshold levels.

The quality (i.e., reliability) of a hypocenter can be assessed from two sets of information provided in the listings for each earthquake: from the quality of the input data and from the results of certain statistical tests.

The number of P and S phases used in locating the earthquake (NP and NS, respectively in the listings), the largest azimuthal separation between stations as measured from the epicenter (GAP), and the distances from the 'epicenter to the closest and third closest station (D1, D3) are the most important aspects of the input data that control the hypocenter quality. A GAP of more than 180° means that the event lies outside the network and locations will be less reliable. Also, the higher the ratio of D1 to hypocentral depth is above unity the less reliable will be the depth of the event. Considering the unevenness of station coverage indicated in Figure 1, it is clear that the potential for high quality solutions varies greatly throughout the area of the figure.

The root-mean-square travel-time residual (RMS) and the horizontal (ERH) and vertical (ERZ) projections of the maximum axes of the one-standard-deviation confidence ellipsoid reflect the relative accuracy of the solution.

Since we use fairly simplified velocity models, it is likely that the RMS residuals measure primarily the incompatibility of these models and only secondarily random reading errors and phase misidentifications. While ERH and ERZ measure, respectively, the precision of epicenter and depth fairly well, it is difficult to say what the absolute accuracy of the locations is, since we lack the proper calibration events (explosions) to perform studies in that regard.

The seismicity south of 61°N (Figure 4) is dominated by the subduction of the North Pacific plate beneath the North American plate. A well-defined Benioff zone dips below Cook Inlet and the Alaska Peninsula in a generally north-westerly direction with a dip of approximately 45 degrees. The relatively high level of seismic activity near 60°N at depths larger than about 70 km is a persistent feature of the area. The Benioff zone also dominates the seismicity of the southern portion of Figure 5 and terminates at about 64°N. A cluster of intermediate depth (> 50 km) seismicity near 63°N, below Mt. McKinley (Denali), is also a static feature of the seismicity of the area and pinpoints the region where the strike of the Benioff zone changes from north-northeasterly towards a more northeasterly direction. It should be noted that because of the large station spacing, the depth resolution of the hypocenters is rather poor between 62°N and 63°N. The cluster of shallow-depth earthquakes near Fairbanks is a long-term feature of the central Alaskan seismicity. While the relatively great station density near Fairbanks provides the lowest detection threshold throughout the network (with the exception of Augustine Volcano) the concentration of epicenters is indicative of a seismically very active zone.

There was *no* unusual seismic activity during the period covered. The largest events recorded were one of magnitude M_L = 5.2 approximately 40 km west of Anchorage and one of magnitude M_L = 5.0 off the southwest coast of Kodiak Island. The stations of the Kodiak Island and Alaska Peninsula network were not operating during this period and only few events were recorded in these areas.

ACKNOWLEDGEMENTS

We thank Tom Sokolowski and the staff of the NOAA Tsunami Warning System in Palmer for permitting and helping us to record several of their station signals on a continuous basis. We also thank John Lahr of the USGS for sharing several of his station signals with us and also for providing us with the HYPOELLIPSE computer program.

The operation of the seismic networks and the preparation of this report were made possible by grants from the Division of Geological and Geophysical Surveys of the State of Alaska and by support from the Geophysical Institute of the University of Alaska. We are especially grateful to John Davies of the Division of Geological and Geophysics Surveys for his continued support.

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APPENDIX

Catalog Format

Earthquakes 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 nine hours.

(2) LAT N, LONG W: epicenter in degrees and minutes of north latitude and west longitude.

(3) DEPTH, depth of focus in kilometers.

(4) MAG, magnitude from maximum trace amplitude.

(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) D1, distance in kilometers to the closest station to the epicenter.

(9) D3, distance in kilometers to the third closest station to the epicenter.

(10) RMS, root-mean-square error in seconds of the travel time residuals:

$$RMS = \sqrt{\sum_i (Rp_i^2 + RS_i^2) / (NP + NS)}$$

where Rp_i and RS_i are the observed minus the computed arrival times of P- and S-waves respectively at the i-th station.

(11) ERH, largest horizontal deviation in kilometers from the hypocenter within the one-standard-deviation confidence ellipsoid. The quantity is a measure of the epicentral precision for an event. Values of ERH that exceed 99 km are tabulated as 99 km.

(12) 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 of the event. Values of ERZ that exceed 99 km are listed as 99 km.

(13) Q, Quality of the hypocenter. This index is a measure of the precision of the hypocenters and reflects both the quality of the input data and the solution. These qualities are determined as follows:

Solution Quality	RMS	ERH	ERZ
A	< .15	< 1.0	< 2.0
B	< .30	< 2.5	< 5.0
C	< .50	< 5.0	
D	others		

Data Quality	NP + NS	GAP	01
A	> 6	< 90	< depth or 5 km
B	> 6	< 135	< 2*depth or 10 km
C	> 6	< 180	< 50 km
D	others		

Q in the average (rounded to the poorer quality) of the solution and the data qualities.

ALASKAN EARTHQUAKES SOUTH OF 61 DEGREES NORTH LATITUDE, 1984

1984	ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	N P	NS	GAP DEG	D1 KM	D3 KM	RMS SEC	ERH KM	ERZ KM	Q
JAN 01	0	35	2.2	59	50.4	152	21.5	74.3	2.8	9	4	208	45	69	0.16	3.5	3.1	D
04	5	43	12.5	59	54.8	152	49.3	105.7	3.0	10	3	247	69	86	0.25	4.9	3.9	D
04	21	17	22.3	60	14.9	151	43.3	70.0	3.1	10	5	210	61	71	0.33	3.0	3.4	D
05	0	35	37.4	59	51.5	153	29.2	132.6	2.6	10	2	207	27	74	0.25	2.9	4.5	D
07	1	14	49.0	58	10.6	152	49.3	40.3	2.4	10	2	173	52	97	0.33	2.3	2.3	D
09	0	29	19.0	59	48.5	152	32.8	103.9	2.5	7	2	225	54	69	0.18	13.3	8.4	D
09	7	55	22.1	59	51.4	152	24.5	76.4	2.8	10	5	210	48	66	0.40	3.2	2.8	D
09	20	50	7.6	59	53.8	151	59.8	67.6	2.6	8	3	170	33	60	0.27	3.0	2.9	c
10	1	38	57.0	60	18.1	152	11.6	93.4	3.3	16	6	192	35	93	0.36	2.1	3.5	D
10	6	15	43.3	60	3.7	152	11.1	70.3	2.7	8	3	169	51	74	0.22	4.0	3.9	D
10	23	48	31.6	59	51.8	153	5.1	112.1	1.8	10	3	176	25	64	0.13	2.1	3.8	C
11	4	1	3.3	59	49.9	152	27.0	78.4	2.8	8	3	216	49	68	0.22	3.8	3.8	D
12	0	43	51.7	60	23.5	151	8.4	52.5	3.1	9	3	256	71	90	0.39	3.1	6.0	D
12	2	43	44.2	59	37.4	151	6.4	4.2	2.1	8	4	176	13	31	0.49	2.2	74.1	c
12	10	59	6.4	60	4.6	152	47.5	117.3	3.4	8	3	227	38	96	0.34	5.0	3.8	D
12	16	14	8.1	59	20.1	153	30.2	109.7	2.1	10	4	188	7	110	0.33	2.1	3.1	D
13	13	30	41.8	59	58.8	152	54.0	100.3	3.1	7	3	161	41	79	0.35	3.3	3.5	c
13	19	33	52.6	60	15.9	152	40.0	109.4	3.5	16	3	96	18	89	0.37	2.0	2.7	C
14	11	44	27.3	59	45.2	153	17.5	134.5	4.0	12	4	190	12	80	0.45	2.1	2.4	D
15	7	11	7.3	57	37.8	152	10.1	21.7	3.2	8	0	287	23	208	0.37	17.8	12.8	D
15	7	21	2.3	57	11.3	151	55.5	10.9	2.6	6	0	320	71	255	0.18	31.3	99.0	D
15	7	24	31.1	57	23.4	151	52.9	2.6	2.5	5	1	306	54	271	0.19	99.0	80.1	D
15	7	30	1.2	56	23.3	152	9.4	0.0	4.0	10	0	250	153	345	0.50	11.5	3.4	D
15	7	47	1.1	57	38.7	152	1.0	11.1	2.9	8	1	277	31	205	0.48	15.3	28.7	D
15	12	2	45.6	56	33.6	152	31.2	10.4	3.4	9	0	230	132	339	0.36	16.0	99.0	D
15	12	28	53.3	57	32.6	152	0.1	14.7	5.0	10	0	294	37	182	0.40	12.6	3.7	D
									PMR ML= 5.0									
16	13	39	30.0	59	53.4	153	0.6	120.4	2.9	8	3	253	62	108	0.20	8.7	6.9	D
17	2	56	2.8	59	24.4	151	45.8	51.7	2.4	8	3	203	13	33	0.10	3.6	2.1	D
17	5	49	16.2	59	39.6	153	19.7	129.2	2.8	11	3	147	32	95	0.28	5.2	3.2	D
18	1	18	12.5	60	58.9	147	5.7	12.1	3.1	12	2	202	96	134	0.20	3.0	3.2	D
19	4	34	56.4	60	10.3	153	5.1	119.6	2.7	9	2	161	90	115	0.33	3.3	6.9	D
19	19	26	29.9	59	47.6	153	31.6	152.2	2.6	6	1	266	46	133	0.10	6.8	6.1	D
19	20	12	19.9	60	56.0	151	5.0	66.3	3.1	20	5	113	58	134	0.33	1.8	4.0	c
20	10	21	9.3	60	9.3	152	42.7	110.2	2.5	9	3	167	81	108	0.39	4.2	4.6	D
20	16	58	55.5	59	45.4	153	18.8	132.6	2.3	8	2	257	42	103	0.11	5.9	5.3	D

ALASKAN EARTHQUAKES SOUTH OF 61 DEGREES NORTH LATITUDE, 1984

	ORIGIN	TIME			LAT N		LONG W		DEPTH	MAG	NP	NS	GAP	D1	D3	RMS	ERH	ERZ	Q
	1984	HR	MN	SEC	DEG	MIN	DEG	MIN	KM				DEG	KM	KM	SEC	KM	KM	
JAN	20	18	23	30.5	60	1.1	153	19.5	128.5	3.5	13	3	126	71	116	0.37	2.8	4.9	C
	20	20	55	51.1	59	47.9	152	42.0	95.8	2.7	11	3	138	62	73	0.30	3.0	2.5	D
	21	4	24	9.9	60	19.3	151	51.4	86.8	2.5	9	3	204	75	95	0.43	4.2	5.6	D
	22	11	47	30.6	60	15.9	152	9.0	81.2	2.6	11	4	190	73	94	0.43	2.7	4.4	D
	22	23	38	8.7	60	4.0	153	2.5	111.3	1.8	7	2	114	42	91	0.12	3.6	3.4	C
	24	1	52	24.3	58	57.6	152	5.9	49.7	2.3	9	3	164	40	80	0.11	2.1	4.2	C
	25	5	29	22.6	60	0.3	152	46.3	93.2	1.8	7	2	151	46	90	0.13	3.2	4.8	C
	25	21	14	41.3	59	56.2	152	8.8	86.2	3.1	9	4	179	42	64	0.31	3.7	2.7	C
	26	7	12	12.2	59	28.3	152	8.9	62.6	1.7	7	3	252	32	78	0.25	3.2	4.8	D
	26	11	40	6.2	60	5.0	152	31.5	93.1	2.0	8	2	130	40	95	0.14	3.3	5.3	C
	26	12	34	52.3	59	36.0	152	58.3	105.7	2.9	16	6	73	16	75	0.46	2.2	3.0	B
	26	15	25	37.0	59	26.9	152	36.5	75.5	2.7	16	5	84	42	58	0.20	1.4	2.1	B
	26	15	36	40.3	59	47.7	152	59.4	94.0	3.1	13	3	96	21	71	0.35	1.8	1.9	C
	28	10	43	50.2	59	9.5	152	1.8	47.9	2.0	8	3	208	43	84	0.19	5.5	3.7	D
	30	4	40	50.8	59	38.9	153	9.3	113.2	2.9	13	6	174	85	89	0.42	1.6	2.4	D
	31	0	23	33.6	59	58.5	153	23.0	142.5	2.0	10	3	129	60	116	0.31	2.7	3.5	C
	31	2	57	45.9	60	6.1	152	14.4	96.8	2.4	8	3	169	46	79	0.23	5.1	3.2	D
	31	11	25	14.5	59	43.1	152	41.9	82.2	2.6	10	4	129	56	78	0.27	1.3	2.8	B
FEB	01	11	43	25.6	60	8.9	152	54.2	102.7	2.7	11	5	172	31	106	0.43	4.6	2.6	D
	01	20	13	18.5	59	45.6	152	52.6	96.9	3.0	14	7	125	23	70	0.36	1.5	2.0	C
	02	14	36	39.8	60	16.8	152	11.8	100.4	3.3	11	1	242	35	228	0.17	9.2	8.9	D
	04	0	29	13.4	59	56.2	152	43.5	114.8	2.6	12	4	149	68	83	0.33	3.1	2.7	D
	05	23	56	14.8	59	54.0	151	22.5	57.3	2.0	6	2	269	31	42	0.09	6.2	6.0	D
	06	7	23	50.2	59	30.8	152	57.0	104.5	1.8	8	2	193	31	78	0.15	4.1	4.9	D
	06	8	15	5.5	59	59.0	152	53.2	117.7	2.1	7	2	256	74	106	0.23	9.2	7.8	D
	06	13	34	58.0	59	34.0	151	15.0	10.5	2.2	6	2	128	5	25	0.24	1.8	3.5	B
	06	16	9	51.7	59	32.8	151	15.5	12.0	1.9	7	3	111	3	25	0.47	1.6	3.3	C
	07	1	52	20.7	59	58.2	152	52.2	111.0	3.4	9	3	150	73	91	0.40	5.0	7.1	D
	07	15	48	44.6	59	46.1	153	2.5	120.1	2.5	7	1	242	48	89	0.12	10.5	6.8	D
	09	22	37	37.0	60	3.5	152	39.7	108.3	2.1	6	2	257	87	100	0.13	10.6	9.5	D
	10	9	55	35.8	59	13.3	154	26.3	162.6	2.9	7	2	200	58	201	0.47	5.9	4.6	D
	11	12	59	59.7	60	10.1	149	46.5	1.2		5	2	355	77	128	0.44	40.1	7.2	D
	12	0	5	2.8	59	47.7	153	30.9	136.5	2.3	9	4	266	46	115	0.38	8.9	7.0	D
	13	11	14	53.1	60	8.6	151	11.2	58.0	2.7	8	3	281	45	69	0.13	5.1	5.3	D
	13	16	6	8.6	56	54.1	153	25.0	2.2		6	1	326	110	100	0.02	38.0	31.0	D

ALASKAN EARTHQUAKES SOUTH OF 61 DEGREES NORTH LATITUDE, 1984

1984	ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NP	NS	GAP DEG	D1 KM	D3 KM	RMS SEC	ERH KM	ERZ KM	Q
FEB 13	23	32	35 6	60	7 5	153	37.0	158.6	2.7	13	4	135	69	133	0.38	2 3	3.1	D
14	4	22	39.8	59	23.7	153	9.8	112.3	2.7	15	7	105	16	90	0.36	1.9	2.0	c
14	18	17	25.2	59	38.5	150	15.0	15.0	3.0	15	6	191	38	78	0.45	2.2	2.9	D
									FELT IN HOMER									
14	19	1	24.0	59	46.0	151	51.7	83.1	2.2	8	3	205	37	55	0.13	7.1	5.1	D
15	7	30	39.3	57	7.9	150	53.0	34.5	2.6	7	2	306	118	264	0.21	10.5	11.9	D
16	6	31	0.1	58	54.5	154	5.8	122 0	2.8	12	4	198	26	106	0.27	2.4	2.0	D
16	14	17	53.4	57	21.8	152	44 6	36.7	3.2	11	1	311	45	182	0.46	6 1	2.3	D
16	14	55	52.5	60	6.9	152	12.2	96 3	2 8	11	3	175	60	83	0.39	3.6	4.1	D
16	17	3	1.4	60	22.9	151	31.1	102.3	2.9	10	4	221	77	97	0.42	6.5	5.3	D
16	20	53	5.6	59	2.3	152	58.4	64.7	3.2	14	5	95	40	58	0.38	1.2	2.3	C
17	22	26	2.6	59	17.4	152	35.1	74.1	2.5	12	5	99	50	73	0.27	1 4	3.4	B
17	22	36	0.5	58	44.1	152	13.8	44 8	2.2	10	4	177	14	90	0.35	1.7	3.1	c
18	4	26	53.7	59	44.0	152	14.9	90.7	3.1	13	3	108	35	62	0.40	1 9	3.1	c
19	5	5	44.0	59	52.7	152	52.1	91.6	1.5	7	2	244	61	86	0.23	6.1	6.9	D
19	14	59	48 7	59	56.5	153	9.8	125.3	3 0	11	3	188	58	91	0.32	2.1	2.4	D
20	9	20	57.9	55	21.8	149	56.9	30.0	2.8	5	0	342	468	494	0.31	99.0	99.0	D
20	10	34	51.7	59	16.1	153	20.6	101.7	3.0	10	3	133	14	92	0.43	2.0	3.3	c
20	21	20	23.1	58	36.9	151	59.0	11.6	1.8	6	0	248	21	102	0.36	8.9	31.8	D
21	19	52	12.6	58	32.5	153	30 9	65.7	3.0	8	1	193	44	107	0.22	2.3	3.3	D
23	3	19	20.2	59	20.8	152	12 6	78 9	2.4	14	5	116	38	59	0.26	1 8	2.3	B
23	8	5	42.5	59	17.7	153	27.0	103.4	2.1	9	3	181	5	42	0 27	3.9	2.8	D
24	6	47	5.7	60	20.9	152	54.9	134.7	3.2	18	5	106	11	105	0.45	1.9	3.1	c
24	20	5	6.3	60	25.0	151	43.9	83.0	2.4	11	4	236	57	87	0.19	2.3	3.8	D
25	1	40	40.6	59	48.8	151	9.7	20.4	2.6	5	0	219	16	45	0.01	11.9	21.4	D
25	7	55	20.6	58	16.7	151	41.3	0.8	2.9	8	2	204	55	133	0.41	2.9	1 7	D
25	21	47	32.3	59	49 5	152	20.5	86 5	2.2	8	3	205	54	71	0.13	5.2	5.0	D
27	3	12	23.6	59	43.7	152	26.6	87.9	2.9	13	4	134	45	57	0.34	2.4	2.5	C
									FELT INI HOMER									
27	10	27	11 1	56	50.5	152	33.7	34 0	4.5	9	1	329	101	241	0 31	16.8	5.2	D
									PMR ML= 4.5									
28	1	0	40.9	59	56.2	151	52.6	76.6	2.9	7	3	307	34	58	0.13	5.8	4.1	D
29	4	6	57.5	59	49.0	153	9.3	127.4	3.2	13	4	120	51	97	0 42	2.8	3.2	C
29	23	8	43 5	58	14.3	151	22.9	13 8	2.2	9	2	221	71	138	0.47	2.5	2.8	D
MAR 01	3	10	9.0	59	10.6	153	31.6	113.3	3.0	12	5	139	19	91	0.34	2.0	2.1	c
01	14	2	26.9	60	1.4	151	19.3	53.7		7	3	296	38	56	0.17	6.3	7.2	D

ALASKAN EARTHQUAKES SOUTH OF 61 DEGREES NORTH LATITUDE, 1984

	ORIGIN TIME			LAT N		LONG W		DEPTH	MAG	N P	NS	GAP	D1	D3	RMS	ERH	ERZ	Q
1984	HR	MN	SEC	DEG	MIN	DEG	MIN	KM				DEG	KM	KM	SEC	KM	KM	
MAR 01	19	47	26.6	59	45.5	153	22.3	143.9	2.2	7	2	265	47	106	0.17	15.0	8.0	D
01	20	54	15.4	59	47.5	152	58.7	168.2	2.7	7	2	249	77	103	0.16	12.9	5.6	D
02	7	56	15.4	58	0.9	153	31.6	42.7	2.5	5	1	241	68	102	0.12	10.4	20.8	D
02	15	53	57.4	60	15.7	152	56.9	110.5	2.3	10	3	171	99	117	0.32	3.2	6.5	D
03	18	38	59.6	59	54.8	151	4.2	43.5	2.4	10	3	206	20	44	0.16	1.8	2.8	C
03	19	41	38.5	59	47.5	152	27.6	71.6	3.0	15	4	105	46	61	0.31	1.6	2.8	C
03	20	49	0.9	59	36.2	152	48.0	94.2	2.3	9	3	125	44	89	0.11	1.7	4.3	B
04	5	49	33.3	59	33.9	151	7.4	47.0	1.8	5	1	204	8	28	0.01	6.5	5.4	D
04	10	51	51.6	59	50.3	150	21.6	33.2	2.8	10	4	298	31	75	0.18	3.2	2.4	D
05	1	52	15.4	60	12.6	152	5.0	88.8	2.6	15	5	184	45	83	0.41	1.7	2.9	D
05	6	41	44.4	59	52.0	152	31.1	81.8	2.5	11	4	123	54	69	0.26	2.1	2.9	B
06	12	17	21.5	60	13.3	152	25.4	103.2	2.4	10	3	161	29	96	0.28	3.5	3.3	c
08	9	37	22.8	59	51.2	151	24.1	76.3	2.9	15	4	158	26	38	0.35	2.1	2.0	c
08	18	40	55.5	60	55.7	152	6.8	106.3	2.3	10	4	299	67	146	0.44	6.4	6.9	D
09	10	56	11.5	61	36.0	151	6.4	111.4	2.6	6	1	240	160	239	0.11	23.0	34.9	D
10	0	56	24.4	62	0.6	149	46.7	0.2	2.6	7	1	264	239	288	0.20	56.5	22.1	D
12	8	49	10.5	59	44.1	151	46.0	61.9	2.1	10	4	122	11	38	0.33	2.4	2.7	C
13	10	39	58.4	60	12.1	152	37.3	118.5	2.6	11	3	269	82	102	0.42	6.1	4.9	D
14	10	37	24.7	60	6.4	152	56.0	99.6	2.1	10	4	159	85	104	0.42	3.8	5.4	D
15	4	7	40.5	59	49.9	152	19.6	76.4		6	2	321	43	70	0.15	8.4	10.0	D
15	8	16	11.6	59	24.5	152	48.3	81.4	2.8	14	5	105	36	71	0.31	1.7	2.5	C
16	7	14	30.5	59	23.7	152	17.3	66.9	1.8	8	3	221	41	61	0.17	4.8	4.0	D
16	11	11	12.3	60	16.4	153	11.6	137.7	2.1	8	2	167	69	127	0.20	5.3	10.7	D
16	20	7	16.6	60	17.9	152	35.0	107.0	2.4	12	4	182	81	112	0.38	2.9	3.4	D
17	2	12	39.4	59	12.8	152	15.3	47.3	2.4	13	5	126	48	68	0.24	1.1	5.5	c
17	15	51	26.4	58	55.3	153	58.5	109.0	2.5	8	2	279	19	92	0.08	5.0	3.0	D
18	18	8	45.2	59	32.2	152	3.2	77.1	2.5	8	3	149	28	68	0.19	6.5	3.8	D
19	21	55	28.3	59	55.5	151	38.7	49.2	2.5	10	3	161	30	50	0.40	2.3	3.4	c
20	5	14	35.8	60	17.6	153	9.3	164.1	2.7	15	2	115	108	127	0.42	2.8	4.0	c
21	5	47	32.0	59	1.8	152	8.5	66.7	2.2	11	3	146	46	76	0.39	2.1	3.5	c
22	6	50	39.9	59	21.9	151	5.9	30.8	2.2	10	3	207	20	45	0.19	1.9	2.5	C
22	15	50	27.8	59	57.5	152	17.6	98.7	2.1	7	3	322	50	77	0.28	7.8	5.1	D
22	17	50	16.3	57	55.2	154	54.7	81.1	2.8	6	1	291	135	170	0.08	14.9	21.9	D
25	3	58	25.6	60	4.0	151	42.8	53.9	2.4	10	3	244	46	66	0.20	3.4	3.9	D
25	8	21	19.8	59	4.7	153	45.3	95.6	2.7	12	3	183	34	71	0.30	2.5	2.6	D

ALASKAN EARTHQUAKES SOUTH OF 61 DEGREES NORTH LATITUDE, 1984

1984	ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NP	NS	GAP DEG	D1 KM	D3 KM	RMS SEC	ERH KM	ERZ KM	Q
MAR 28	1	30	9.1	60	8.6	153	36.1	209.6	3.8	12	2	149	143	274	0.61	4.8	13.3	D
29	4	53	50.8	60	8.6	150	55.1	60.5	1.8	6	2	320	42	71	0.10	9.2	7.2	D
29	6	51	55.7	60	3.1	151	16.6	57.4	2.1	8	4	300	39	59	0.12	6.4	6.7	D
29	18	52	5.2	60	4.5	148	43.8	0.3	3.4	6	2	253	126	174	0.47	9.5	2.6	D
									PMR ML= 3.4									
31	6	3	7.2	59	50.9	153	15.0	146.2	2.8	8	3	266	55	119	0.18	6.7	3.1	D
31	7	36	29.7	58	32.8	151	43.1	41.4	2.4	7	2	188	38	103	0.28	14.3	8.8	D

ALASKAN EARTHQUAKES NORTH OF 61 DEGREES NORTH LATITUDE, 1984

ORIGIN TIME 1984	HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	N P	NS	GAP DEG	D1 KM	D3 KM	RMS SEC	ERH KM	ERZ KM	Q
JAN 01	4	14	3.4	64	48.5	147	31.6	10.4	0.6	7	3	198	16	22	0.08	1.4	4.3	c
01	4	25	53.8	64	43.6	146	51.0	0.6	1.2	8	3	229	36	47	0.26	1.9	94.4	D
01	17	21	42.0	64	13 6	147	54.3	0.5	1.2	5	1	263	47	68	0.39	2.9	99.0	D
01	19	3	14.7	64	25 4	148	16.5	101.7	1.3	5	1	186	29	51	0.44	11.8	6.1	D
02	18	6	19.1	63	6 5	150	50.2	146.8	2.4	7	0	237	118	185	0.12	16.9	10.7	D
03	0	57	38.1	64	41 6	146	52.6	2.1	1.1	6	1	223	32	45	0.14	3.3	58 8	D
03	3	22	45 3	64	37.2	147	54.3	21.1	1.5	9	3	149	6	32	0.29	1.1	2.5	C
03	3	44	18.1	63	37.0	147	49.8	0.6	1.9	10	2	258	56	98	0.43	1.7	3.6	D
03	11	40	8.1	61	51.0	149	59.7	1.5	3.6	14	0	103	54	133	0.39	2.2	1.4	D
									PMR ML= 3.6			FELT III PALMER II ANCHORAGE.						
03	18	52	48.2	63	3.3	149	41.7	93.2	2.8	14	0	95	85	173	0.20	2.7	5.9	C
04	1	44	42.1	64	37.6	147	1 1	1.1	0 9	7	3	196	25	44	0.07	1.3	46.1	D
04	7	42	55.4	63	0.1	150	46.3	0.6	2.3	8	1	236	178	221	0.41	7.3	1.7	D
04	20	4	34.9	65	25.8	150	14.4	17.2	2.1	9	0	173	110	129	0.25	3.4	31.5	D
05	7	33	46.8	64	45.2	147	30.2	16.7	1.1	6	2	185	19	32	0.10	2.9	6.2	D
06	9	4	11.7	64	3.2	148	45.8	132.5	2.4	14	3	114	30	60	0.33	2.2	2.3	C
06	18	56	27.5	64	51.2	147	41.0	12.3	0.6	7	3	151	7	22	0.17	1.2	3.6	C
06	21	36	24.4	63	54.6	148	54.3	1.0	2.0	11	2	149	20	75	0.35	1.4	1.4	c
07	17	40	25.5	64	44.0	148	57.3	14.7	1.0	6	1	232	18	56	0.32	4.9	2.0	D
08	15	21	15.3	64	48.8	147	44.7	7.3	0.2	6	2	207	10	26	0.27	45.4	64.7	D
08	16	23	22.7	64	46 0	147	23.6	4 7	1.0	5	1	152	24	36	0 05	1.9	32.2	D
08	21	56	58.4	63	44.9	150	21.9	5.6	1.7	7	3	303	71	128	0.53	3.2	1.8	D
10	4	30	49.4	64	23.9	147	17.3	17.6	1.6	11	2	91	16	63	0 35	1.8	1.8	C
10	22	22	2.3	63	30.9	148	2.6	14.8	2.3	17	4	130	50	98	0.30	1.6	1.7	c
12	12	2	32.9	64	14.8	145	12.3	5.7	1.7	11	3	99	49	63	0.15	0.9	3.3	c
13	3	7	2.1	64	52 6	147	51.4	13.5	1.0	7	1	161	4	25	0 22	2.1	3.4	c
13	9	57	49.1	64	0.8	150	0 8	11.7	1.5	7	2	275	62	106	0.42	3.4	1.9	D
14	23	19	47.1	61	54.3	150	47.4	37 5	3 0	7	0	273	98	225	0.46	99.0	27.2	D
15	1	26	3.3	66	39.7	150	12.e	25.7	2.3	7	2	337	226	238	0.44	99.0	99.0	D
15	3	40	51.7	64	44.3	149	7.2	9.4	0.6	10	3	244	18	58	0.16	3.4	4.4	D
15	7	4	39.2	64	53.b	147	35.0	8.5	0.9	10	3	13c	10	28	0.33	1.4	3.6	C
15	11	23	4.3	64	0.4	149	42.6	15.3	1.1	9	3	257	32	71	0.39	3.4	1.6	D
15	13	51	52.9	64	42.8	146	53.1	2 5	1 0	8	2	222	34	44	0.14	1.9	31.9	D
15	19	14	46.8	63	13.4	148	21.3	1.4	2.4	15	2	111	64	129	0.22	1.6	0.7	c
16	3	5	10.0	63	59.4	147	41.9	4.7	1.3	11	2	208	57	67	0.30	1.4	32.7	D
16	3	38	53.[illegible]	63	10.6	148	21.7	74.4	2.4	13	2	166	53	127	0.40	2.0	4.5	D

ALASKAN EARTHQUAKES NORTH OF 61 DEGREES NORTH LATITUDE, 1984

1984	ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	N P	NS	GAP DEG	D1 KM	D3 KM	RMS SEC	ERH KM	ERZ KM	Q
JAN 16	15	34	2.0	64	49.5	149	20.0	9.4	2.2	10	2	267	30	71	0.19	2.9	1.5	D
16	22	35	54.7	64	36.5	149	10.5	15.4	1.1	7	1	238	6	54	0.20	3.8	3.5	D
17	21	29	29.1	64	42.7	149	0.9	15.7	1.9	10	2	236	15	56	0.24	3.5	1.6	D
18	7	23	44.4	62	12.8	148	10.5	12.9	2.0	10	2	132	61	174	0.35	3.0	4.5	D
18	9	39	18.6	64	40.3	147	27.7	1.3	0.8	7	3	235	30	37	0.47	7.9	99.0	D
18	14	50	28.9	64	45.7	148	11.8	15.4	0.1	7	3	188	8	46	0.32	42.5	15.9	D
18	20	40	24.1	64	7.4	149	4.9	137.0	2.0	10	2	151	13	51	0.15	4.3	3.7	D
19	2	16	28.9	60	30.8	147	24.3	10.9	2.3	6	2	269	147	264	0.47	3.6	2.5	D
19	6	45	52.0	63	2.5	149	35.6	96.0	2.5	13	2	154	84	160	0.39	2.7	5.1	D
19	7	24	15.0	64	49.1	147	22.2	5.2	1.2	8	2	159	19	37	0.19	1.1	2.8	C
19	23	9	10.8	63	14.2	150	48.9	128.8	1.9	10	1	198	109	192	0.36	4.1	3.6	D
20	4	36	42.8	61	16.5	151	45.2	220.1	4.3	6	0	257	175	197	0.17	34.1	76.8	D
20	12	4	55.0	64	35.2	147	55.8	14.2	1.3	9	3	95	29	51	0.35	1.1	2.3	C
20	18	44	5.6	62	57.7	148	5.6	76.3	1.9	15	3	106	96	132	0.45	1.6	5.6	C
20	19	40	2.2	64	48.0	147	27.8	19.6	1.2	9	3	141	19	24	0.41	1.1	1.1	c
20	20	24	58.2	63	41.0	149	19.3	111.5	2.7	15	0	159	20	100	0.26	2.8	4.5	C
20	21	35	34.4	63	55.5	149	3.5	0.8		6	0	219	22	77	0.25	12.3	99.0	D
21	1	48	34.0	64	7.8	149	11.9	127.0	2.0	9	1	203	46	89	0.12	5.0	4.6	D
21	6	6	15.5	64	47.4	147	48.5	0.4	0.2	6	2	136	12	17	0.31	1.4	99.0	c
22	16	0	24.3	61	50.7	150	50.7	4.8	2.3	14	3	82	98	185	0.52	1.4	1.8	D
24	7	24	38.4	62	5.0	149	9.6	14.9		7	2	134	51	183	0.09	1.8	3.1	c
25	20	21	47.6	64	24.7	147	23.5	4.4	0.9	6	2	134	21	34	0.09	1.7	16.2	C
25	21	19	55.0	61	22.9	146	49.3	20.5	3.2	19	1	209	57	121	0.45	2.2	1.8	D
27	10	51	23.2	68	4.8	147	8.1	27.3	3.6	13	0	168	145	345	0.58	6.5	15.3	D
27	14	57	22.4	64	24.5	147	35.1	0.1	1.1	5	1	131	30	56	0.14	1.3	99.0	D
25	23	57	16.2	64	41.7	149	36.2	10.5	2.0	10	2	271	28	71	0.22	3.0	1.4	D
28	22	20	50.5	62	33.3	149	31.4	40.5	2.1	15	3	142	135	166	0.56	3.4	89.0	D
28	22	42	20.5	64	8.5	148	55.0	1.1	0.7	6	2	222	46	54	0.40	4.5	98.3	D
28	22	45	41.0	63	27.5	151	0.6	u.3	2.5	10	3	298	108	157	0.47	3.5	1.7	D
30	5	24	6.3	62	47.3	148	18.9	12.3	2.9	19	0	68	110	134	0.50	1.6	3.0	D
30	18	39	6.8	63	1.4	149	15.5	101.9	2.3	10	0	221	61	174	0.21	5.2	7.6	D
31	3	52	21.5	63	34.6	148	13.0	6.3		6	0	182	40	111	0.23	1.9	2.4	C
FEB 01	9	33	35.4	64	54.7	147	44.4	24.8	1.5	7	2	179	3	22	0.26	4.5	4.8	C
01	13	37	50.6	64	34.2	148	35.9	21.8	1.4	8	2	125	23	53	0.35	3.0	1.7	c
01	15	41	38.3	61	55.9	146	45.9	3.9	1.7	8	1	112	37	194	0.49	3.1	4.6	C

ALASKAN EARTHQUAKES NORTH OF 61 DEGREES NORTH LATITUDE, 1984

1984	ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NP	NS	CAP DEG	D1 KM	D3 KM	RMS SEC	ERH KM	ERZ KM	Q
FEB02	2	11	44.8	63	33.8	149	0.5	11.7	1.6	16	6	196	19	113	0.37	2.1	1.4	D
Ø2	5	28	47.6	63	30.9	150	13.9	18.7	1.8	4	0	322	69	178	Ø.28	99.0	35.Ø	D
Ø2	7	36	25.8	62	2Ø.3	151	17.0	44.6	2.5	10	1	185	135	196	0.38	3.4	35.7	D
Ø2	15	14	42.6	64	47.6	147	37.8	4Ø.5	1.3	6	1	115	14	25	Ø.45	3.Ø	3.1	c
Ø2	23	5	2.5	63	6.2	150	47.5	128.9	2.1	9	1	296	116	185	0.18	9.0	5.8	D
Ø2	23	44	14.4	64	45.8	147	56.3	6.5	0.1	6	2	13Ø	12	17	Ø.Ø3	1.5	3.4	B
Ø3	0	5	12.8	64	19.0	146	23.1	1.6	1.6	13	4	195	29	84	Ø.26	2.2	3.9	c
Ø3	6	35	22.8	64	33.4	148	37.5	Ø.7	Ø.6	4	1	230	22	55	Ø.Ø7	82.6	99.0	D
Ø3	7	16	31.8	61	58.7	148	49.0	16.7	3.1	11	1	161	41	139	0.36	4.4	5.8	C
Ø3	7	48	19.5	63	2.2	15Ø	47.3	1Ø5.3	4.Ø	21	1	116	121	191	0.46	1.6	7.2	C
Ø3	23	17	13.8	62	1Ø.6	15Ø	56.8	Ø.5	3.9	23	0	59	118	193	0.56	2.0	1.6	D
									FELT IN ANCHORAGE, BIG LAKE AND WASILLA.									
Ø4	4	9	26.2	63	19.2	148	31.3	3.9	1.8	8	2	233	-5Ø	135	Ø.46	5.4	5.1	D
Ø4	12	4	37.1	64	33.5	148	3E.3	1.6	Ø.7	5	2	23Ø	21	56	Ø.Ø6	81.2	99.0	D
Ø4	14	18	52.3	64	31.5	147	54.7	2.5	Ø.8	7	2	171	36	48	Ø.25	1.5	37.8	C
Ø4	18	34	18.3	64	53.3	147	50.2	12.8	0.1	5	2	182	2	24	Ø.21	99.0	4.6	D
Ø5	13	11	43.Ø	65	1.9	147	33.7	0.0	Ø.3	6	3	25Ø	10	36	Ø.14	2.7	99.0	D
Ø5	16	7	42.5	64	28.6	147	56.Ø	2.5	1.3	11	4	112	4Ø	48	Ø.23	1.2	40.0	c
Ø5	16	11	43.2	64	25.7	147	2Ø.1	0.6	1.2	8	3	128	19	59	Ø.21	1.5	63.1	C
Ø5	23	3	26.1	64	11.9	15Ø	9.Ø	17.3	2.2	11	1	280	67	1Ø4	Ø.14	3.3	1.7	D
Ø6	1	10	38.9	61	46.2	149	18.5	4.1	2.1	8	0	119	24	162	Ø.37	3.5	5.7	c
Ø6	11	19	36.7	63	1.7	150	20.7	1Ø4.8	2.Ø	7	0	29Ø	1Ø6	227	Ø.Ø7	23.8	11.1	D
Ø6	12	15	35.5	64	55.7	149	3.9	28.5	2.3	11	0	122	39	6Ø	Ø.46	1.9	3.6	C
Ø6	12	41	56.1	64	39.3	148	6.1	23.Ø	1.4	7	2	144	19	48	0.39	26.3	22.9	D
Ø6	14	1	5Ø.6	64	45.Ø	147	44.5	14.1	1.7	6	0	103	17	31	Ø.14	1.7	2.7	B
06	21	1	1Ø.3	64	44.6	14b	57.2	4.3	Ø.2	5	1	234	20	56	Ø.3Ø	5.Ø	22.3	D
Ø7	0	32	38.6	63	14.8	148	11.1	64.6	1.1	10	2	224	66	141	0.10	2.8	6.Ø	D
Ø7	1	36	3.9	65	6.6	146	49.6	5.Ø	0.6	6	1	337	30	70	0.11	6.7	24.3	D
07	2	21	30.9	63	8.3	150	33.0	130.2	2.4	16	4	229	104	186	0.41	3.Ø	3.1	D
Ø7	4	51	19.1	64	32.1	144	13.2	13.6	0.7	6	3	318	8	61	0.09	1.9	1.8	D
05	8	2Ø	13.5	64	31.1	150	28.5	16.2	1.9	8	3	292	67	115	0.19	3.7	1.7	D
Ø7	8	21	18.6	64	29.2	150	19.3	17.7	1.7	7	2	287	60	1b8	Ø.26	2.2	1.6	D
07	14	25	1.5	64	46.1	146	45.6:	7.Ø	2.6	10	0	106	38	51	Ø.23	2.7	2.7	C
Ø7	17	3Ø	35.1	61	41.2	147	12.3	34.4	2.3	11	2	228	18	169	Ø.43	5.Ø	2.Ø	D
Ø7	18	0	53.2	64	46.3	146	44.G	0.1	1.2	8	3	237	36	49	Ø.2Ø	2.Ø	99.0	D
07	18	33	37.9	63	50.4	148	47.0	1.4	1.4	7	3	190	14	114	0.22	2.3	44.Ø	D

ALASKAN EARTHQUAKES NORTH OF 61 DEGREES NORTH LATITUDE, 1984

1984		ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NP	NS	CAP DEG	D1 KM	D3 KM	RMS SEC	ERH KM	ERZ KM	Q
FEB	08	1	19	15.9	61	55.1	150	47.3	118 4	3.4	18	3	111	98	182	0.75	2.2	7.0	c
	08	9	40	49.2	63	35.2	148	46.0	99.0	2.1	13	3	172	19	112	0.32	2.4	4.4	c
	08	21	9	56.5	64	44.0	148	5.5	12 2	0.3	7	3	167	11	23	0.10	1.5	2.3	C
	08	21	31	4.5	65	25.5	148	17.6	13.4	2.3	12	4	297	63	67	0.39	1.7	1 3	D
	08	22	57	26.8	63	11.2	150	4.2	97 5	2 0	11	2	330	83	162	0.15	7.2	3.4	D
	09	1	9	27.8	64	4R.0	146	43.2	3.3	1.0	8	2	251	38	52	0.34	3.5	26.3	D
	09	6	0	38.9	64	29.9	148	21.9	0.3	0.7	8	4	245	35	53	0.26	2.5	99.0	D
	09	11	41	5.7	61	40.4	149	59.8	8 3	2.0	5	1	172	51	142	0.04	4.8	3.2	D
	09	15	24	8 9	64	15.3	148	12.5	0 6	1 3	11	4	138	51	63	0.36	1.2	99.0	D
	09	21	55	56.6	64	54.5	148	59.4	7.4	0.8	10	4	257	38	57	0.23	2.3	10.0	D
	09	22	6	34.2	63	10.0	150	51.7	111.8	2.3	15	4	261	115	184	0.33	3.3	4.1	D
	09	22	34	44.1	64	35.6	147	56.6	19.7	1.0	15	7	71	9	28	0.38	0.9	1.8	B
	09	22	42	27.9	62	17.9	149	28.1	8.7	3.1	23	4	62	78	162	0.49	1.6	2.2	D
	10	2	12	54 1	64	42.9	147	42.2	15 3	0.5	7	3	224	9	24	0.12	3.5	2.0	D
	10	21	17	44.9	61	39.7	146	7.0	17 2	2.4	9	2	217	67	155	0.38	3.3	2.3	D
	11	0	52	44.5	64	34.8	147	4.7	0 5	0.9	9	3	181	20	48	0.20	1.8	97 0	D
	12	3	35	54 1	64	51 7	148	12.3	15 0	1 1	9	3	197	5	41	0.39	1.3	2.7	D
	12	4	6	58.2	63	21.b	151	4.1	1 3	2 2	8	4	203	114	191	0.53	4.7	5 1	D
	12	5	13	20.6	63	29.6	148	4.2	13.5	2 0	15	4	134	51	111	0.42	3.1	3.5	D
	12	5	51	4.6	63	11 8	150	44.7	117.3	2.0	7	1	258	174	233	0.07	10.4	10.7	D
	12	6	36	17.9	64	46.0	147	28.7	20.7	1.7	7	2	139	19	32	0.28	2.2	1.8	C
	13	15	13	44.6	62	48.6	149	36 4	93.6	1.7	5	0	210	108	211	0.10	6.2	11.4	D
	13	23	1	12.7	62	53.9	150	30.1	120.2	1 8	9	1	176	122	203	0.26	3.8	6.9	D
	13	23	26	42.1	64	59.G	147	5.3	8.2	0.5	9	3	262	14	51	0.18	1.9	4.0	c
	14	2	26	50.3	64	38.0	146	2.5	20.1	1 8	14	4	84	11	22	0.48	1.1	1 1	B
	14	2	34	0.2	64	8.8	147	8.6	9.9	1.0	13	4	120	30	64	0.44	1.2	5.4	c
	14	5	39	49.9	62	20.5	149	38.0	17.6	2.0	6	1	208	86	159	0.34	6.8	5.3	D
	14	9	47	49.3	62	53.6	150	8.5	88.9	1.8	9	1	226	111	203	0.16	2.8	8.8	D
	14	19	58	34.0	64	41.3	149	6.9	12 1	1.2	11	4	252	13	55	0.15	1.6	1.3	c
	14	22	33	22.3	64	31.1	147	46.0	17.9	0.5	6	2	253	14	39	0.25	4.9	2.1	D
	14	22	51	13.2	65	4.2	149	52.0	26.5	1.1	9	2	308	67	100	0.39	5.1	69.2	D
	15	2	27	37.4	64	47.8	147	24.3	9 6	0.6	7	3	220	21	35	0.16	3.1	9.2	D
	15	6	29	49.3	65	6.8	147	43.7	5.4	0.5	4	1	280	21	38	0.05	99.0	99.0	D
	15	7	59	58.1	64	22.8	149	22.1	20.9	1.0	6	2	229	26	77	0.26	8.6	1.9	D
	15	10	18	42.7	64	33.8	147	4.6	2.b	1 1	6	2	179	19	51	0.12	3.5	22.0	c

ALASKAN EARTHQUAKES NORTH OF 61 DEGREES NORTH LATITUDE, 1984

1984	ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	N P	NS	GAP DEG	D1 KM	D3 KM	RMS SEC	ERH KM	ERZ KM	Q
FEB 15	16	49	39.9	64	46.2	147	46.7	8.1	1.1	7	2	116	15	30	0.27	1.9	6.2	C
16	2	24	33.1	64	13.9	150	23.0	25.1	2.0	11	4	290	74	114	0.29	2.7	99.0	D
16	6	10	0.2	63	5.2	150	5.3	94.4	1.9	12	2	243	92	163	0.28	3.4	3.3	D
16	16	29	44.3	64	44.7	147	45.1	9.8	1.1	9	4	120	17	32	0.34	0.9	4.3	c
17	0	54	39.6	64	51.0	148	59.8	0.4	1.1	10	4	251	31	57	0.22	2.0	99.0	D
17	8	50	51.6	64	22.4	149	23.1	14.2	1.4	12	5	230	27	75	0.38	1.6	1.0	D
17	12	4	11.5	63	2.5	150	50.7	125.1	2.2	13	4	189	123	192	0.44	2.4	3.6	D
17	12	55	49.8	61	56.6	148	50.6	25.1	2.3	8	2	163	37	200	0.32	2.5	5.6	C
17	16	47	55.2	63	9.8	151,	31.4	129.1	3.0	18	2	105	102	173	0.34	2.1	4.7	c
17	21	9	22.7	63	11.8	150	7.2	2.5	1.6	7	2	284	162	198	0.33	16.8	14.0	D
18	1	34	48.2	64	50.3	147	49.0	13.3	0.4	6	2	220	8	22	0.18	3.9	3.2	D
18	5	55	47.8	64	45.9	148	54.3	21.7	1.0	8	3	229	23	51	0.43	1.7	1.6	D
18	10	14	37.3	64	55.4	148	5.6	14.3	0.5	5	2	245	11	34	0.08	99.0	99.0	D
18	19	7	57.7	63	11.5	147	12.2	25.4	1.9	9	2	201	76	105	0.34	2.6	99.0	D
18	20	56	24.9	63	29.2	149	4.4	92.3	1.9	10	3	329	28	120	0.22	6.2	2.0	D
18	21	10	15.3	64	21.4	147	19.4	1.3	0.8	7	2	216	19	40	0.11	3.1	31.2	D
19	1	49	33.7	64	14.6	148	32.0	9.6	0.9	12	6	159	33	57	0.41	0.9	5.1	c
19	4	31	51.0	64	43.9	148	59.0	12.5	0.6	8	1	234	18	52	0.10	3.3	1.6	D
19	7	24	12.0	61	25.2	146	22.0	12.6	2.0	6	I	266	69	179	0.46	6.5	3.3	D
19	11	23	35.1	65	42.4	145	26.6	1.4	1.8	11	3	171	96	142	0.45	3.2	2.3	D
19	20	31	17.8	63	53.2	149	14.4	108.9	1.3	9	1	227	23	86	0.11	5.7	4.0	D
19	23	47	12.6	63	5.7	148	4.5	88.8	2.5	14	1	126	83	133	0.34	1.8	5.2	C
20	2	27	15.5	64	47.6	149	5.2	10.3	0.8	7	3	260	24	60	0.09	4.0	6.9	D
20	14	58	23.6	64	35.8	148	40.2	21.3	1.0	9	4	140	20	54	0.48	3.1	1.3	c
20	14	59	14.1	64	39.8	146	47.3	5.6	1.1	8	3	198	30	55	0.14	2.7	3.7	c
20	23	7	34.0	64	22.8	147	14.4	7.4	0.4	6	2	159	14	40	0.02	1.9	5.9	c
20	23	18	7.3	63	4.9	150	36.2	128.0	2.0	8	0	256	106	175	0.14	14.2	10.0	D
21	11	13	12.9	64	41.5	146	56.4	0.6	0.7	6	2	214	32	47	0.11	2.4	99.0	D
21	12	18	22.4	62	49.5	150	49.1	77.6	2.0	13	2	183	138	194	0.43	2.7	9.2	D
21	16	31	49.4	62	56.4	149	47.6	93.6	2.8	11	1	206	98	1b6	0.21	3.8	7.3	D
21	16	36	49.1	63	4.5	149	2.6	80.6	1.7	11	3	213	74	167	0.48	2.4	2.9	D
22	1	9	32.0	64	47.6	147	29.6	12.5	0.7	6	2	206	22	31	0.08	3.1	3.1	D
22	3	31	58.4	63	23.5	146	26.4	101.6	1.4	4	1	214	32	116	0.00	6.1	2.6	D
22	3	52	30.8	65	23.0	149	46.4	40.2	1.4	7	3	320	96	107	0.26	2.5	99.0	D
22	4	39	13.1	64	51.0	147	24.9	4.9	0.2	6	2	213	15	35	0.09	3.5	13.7	D

ALASKAN EARTHQUAKES NORTH OF 61 DEGREES NORTH LATITUDE, 1984

	ORIGIN TIME			LAT N		LONG W		DEPTH	MAG	NP	NS	GAP	D1	D3	RMS	ERH	ERZ	Q
1984	HR	MN	SEC	DEG	MIN	DEG	MTN	KM				DEG	KM	KM	SEC	KM	KM	
FEB 22	10	48	14.5	65	1.2	147	30.3	0.3	0.4	4	1	248	7	37	0.10	99.0	99.0	D
22	16	4	41.6	65	1.2	150	39.8	39.9	3.1	13	0	121	90	136	0.27	2.7	16.0	D
22	22	15	11.9	63	51.8	148	40.5	0.6	0.8	4	0	196	20	97	0.17	99.0	99.0	D
23	0	42	6.8	64	46.4	147	27.6	12.3	0.3	10	5	214	21	24	0.09	1.3	3.0	c
23	5	25	48.1	64	48.1	147	31.6	9.6	0.6	7	3	199	17	30	0.15	3.0	7.5	D
23	10	6	46.9	62	37.2	149	57.8	8.2	2.0	11	3	156	121	163	0.49	1.4	1.6	D
23	15	28	1.6	64	56.0	148	0.6	0.6	0.5	4	1	243	13	29	0.20	99.0	99.0	D
23	16	56	13.9	64	57.8	147	13.9	10.6	0.7	4	1	321	8	46	0.00	99.0	99.0	D
24	0	10	15.6	65	18.6	147	54.8	13.1	1.1	9	3	291	44	55	0.22	2.2	2.5	C
24	1	3	27.7	64	35.6	148	55.0	13.9	Ct6	7	3	157	8	45	0.06	1.4	2.6	C
24	8	19	34.7	63	8.0	151	5.9	5.0	1.7	4	0	197	127	223	0.19	85.8	60.3	D
24	15	42	45.3	64	17.5	149	34.0	18.7	1.5	7	3	243	40	91	0.43	4.6	1.1	D
24	20	31	20.8	63	32.6	149	42.7	105.9	1.6	9	1	270	44	119	0.32	7.1	2.4	D
24	21	31	5.0	64	42.0	147	20.0	16.4	1.4	4	0	260	23	32	0.00	8.8	22.0	D
24	22	52	6.1	64	46.7	147	48.3	11.9	0.5	10	5	140	14	17	0.22	1.0	2.0	c
25	1	27	18.6	64	50.5	147	34.1	5.8	0.9	9	3	121	13	24	0.32	1.0	5.3	c
25	6	25	22.7	64	45.7	147	31.0	3.8	0.6	8	3	195	15	25	0.12	1.7	10.7	D
25	7	32	46.4	61	25.0	151	28.7	68.1	2.9	12	2	151	41	225	0.43	5.4	5.4	c
25	10	29	30.3	63	7.8	149	33.4	93.7	1.5	11	2	167	74	191	0.33	2.0	2.9	D
25	12	5	58.2	63	0.7	148	41.7	74.0	1.8	13	3	165	81	155	0.39	1.7	3.2	D
25	12	55	38.4	64	23.0	148	14.6	5.6	0.4	6	1	212	12	50	0.40	2.4	4.3	D
25	14	55	12.1	62	0.4	149	51.7	12.9	2.1	9	2	141	61	148	0.40	1.5	2.5	D
25	23	29	50.9	64	30.2	147	58.4	10.1	1.0	9	3	109	7	36	0.29	1.5	2.5	B
26	0	22	22.5	65	4.5	148	40.1	26.1	0.8	8	2	259	37	59	0.27	4.2	13.4	D
26	7	32	45.5	61	24.1	151	34.4	74.0	2.8	20	5	90	36	186	0.63	1.4	2.2	c
26	11	23	27.1	61	27.6	149	42.9	15.2	3.3	20	1	131	41	133	G 53	2.4	2.8	D
									FELT TN ANCHORAGE AND VICINITY									
26	18	10	39.6	64	45.6	149	27.9	12.4	0.7	6	2	301	28	73	0.11	4.9	9.2	D
26	20	14	25.9	61	32.2	149	48.2	9.h	2.5	14	3	177	42	135	0.33	2.2	2.0	c
26	21	54	46.2	61	10	144	44.4	14.9	3.6	18	3	151	78	153	U.23	2.0	2.9	c
26	23	7	2.0	64	40.5	146	53.9	0.6	0.8	5	0	219	30	44	0.09	2.8	99.0	D
27	12	20	45.h	61	46.5	150	10.8	10.5	2.6	11	1	133	63	151	0.31	1.6	2.9	D
27	15	36	56.7	63	4e.4	149	36.1	140.0	l.p.	8	1	272	34	105	0.06	6.4	3.7	D
27	20	13	27.8	64	45.9	147	30.3	6.4	0.6	9	3	188	20	31	0.10	1.5	5.3	D
27	22	41	1.2	64	46.3	147	44.8	13.1	1.0	13	6	102	14	20	0.32	0.9	1.8	c
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	78.1	1.9	8	2	341	73	166	0.14	11.3	4.0	D

ALASKAN EARTHQUAKES NORTH OF 61 DEGREES NORTH LATITUDE, 1984

1984		ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NP	NS	GAP DEG	D1 KM	D3 KM	RMS SEC	ERH KM	ERZ KM	Q
FEB	28	1	1	50.9	64	30.4	148	10.5	5.0	0.1	3	0	229	6	36	0.00	99.0	99.0	D
	28	5	12	46.2	64	44.5	147	34.9	'13.0	1.0	8	4	249	15	28	0.08	2.0	2.5	C
	28	5	14	6.0	64	33.4	147	54.3	6.7	0.2	5	2	198	11	32	0.03	4.1	3.9	D
	28	5	20	51.7	64	57.8	148	32.3	16.2	0.9	6	2	302	24	50	0.04	5.1	5.6	D
	28	7	7	2.1	64	46.6	147	33.8	16.2	0.3	8	4	255	18	28	0.16	2.0	2.4	C
	28	8	14	41.9	64	46.3	147	45.7	16.6	1.4	11	3	100	14	19	0.24	1.2	1.3	B
	28	8	23	6.2	64	46.3	147	47.1	14.8	0.1	7	3	186	14	18	0.12	1.5	2.1	C
	28	8	28	57.1	65	46.6	147	5.8	[illegible]	1.5	5	1	350	103	153	0.14	21.2	4.9	D
	28	10	45	43.3	63	48.5	150	10.6	15.1	1.8	4	0	294	62	126	0.12	99.0	48.2	D
	28	12	27	42.3	64	47.8	147	34.7	16.0	0.5	6	2	192	15	27	0.08	3.2	5.2	D
	28	20	30	39.6	64	46.4	147	48.3	15.5	0.2	7	3	178	14	17	0.07	1.5	2.1	C
	29	1	22	19.9	63	25.7	144	22.6	92.9	1.4	7	1	320	40	132	0.03	6.8	2.5	D
	29	1	30	44.8	62	58.6	148	4.6	13.0	1.5	6	0	171	95	167	0.28	38.9	21.3	D
	29	2	19	26.4	65	24.7	149	45.0	33.4	1.6	9	4	321	99	111	0.42	5.2	35.9	D
	29	11	0	59.6	64	31.2	149	18.4	17.0	0.9	9	3	250	13	65	0.15	1.8	1.5	D
	29	14	3	59.0	61	0.9	147	12.4	21.1	2.4	6	1	309	91	316	0.19	6.1	3.7	D
	29	16	51	34.9	62	40.0	144	40.0	7.3	2.2	10	2	149	120	153	0.46	2.2	2.3	D
	29	16	55	41.5	64	52.3	147	43.2	15.1	1.1	8	3	99	5	21	0.31	2.3	2.9	C
	29	23	47	10.9	64	44.3	148	16.4	15.4	0.5	9	4	147	12	29	0.27	0.9	3.5	C
MAR	01	19	36	13.8	64	50.1	147	20.4	7.9	0.6	7	3	293	23	38	0.10	2.7	7.3	D
	02	10	0	28.3	63	20.8	150	24.0	133.7	2.2	8	0	287	85	152	0.14	24.9	16.8	D
	02	13	1	49.9	62	37.5	151	4.9	0.6	3.5	15	2	186	154	169	0.78	2.0	1.0	D
	02	13	20	19.2	61	28.0	146	11.0	30.4	3.5	8	0	256	73	172	0.50	9.7	5.7	D
										PMR	ML=	3.9							
	02	14	57	31.8	62	27.2	148	33.2	19.2		12	0	116	94	144	0.47	2.4	4.8	D
	02	17	41	15.3	63	25.5	148	45.6	8.3	0.9	4	0	240	35	144	0.08	90.4	35.3	D
	02	18	49	31.1	64	42.3	147	22.6	20.2	1.6	7	1	190	21	39	0.20	2.4	1.7	D
	03	1	23	46.9	63	0.1	150	54.3	131.6	2.7	13	1	169	128	197	0.32	3.7	4.0	D
	03	1	28	[illegible]	63	55.5	[illegible]	54.9	0.4	1.6	10	0	150	22	73	0.38	1.8	3.8	C
	03	2	12	10.5	64	32.4	149	16.8	17.1	0.6	9	3	241	11	58	0.35	1.8	1.6	D
	04	4	51	40.0	64	45.0	147	42.2	11.7	0.9	9	3	161	13	23	0.39	1.2	4.2	C
	04	6	16	30.8	64	33.2	148	32.8	0.9	0.8	8	2	164	24	36	0.34	1.3	61.5	C
	04	16	2	24.7	65	14.6	148	46.5	22.4	1.0	10	4	282	55	71	0.29	1.7	1.0	C
	04	19	0	29.9	65	18.8	146	56.0	18.9	2.6	10	1	291	66	81	0.14	3.5	1.5	D
	04	21	21	25.9	65	11.0	[illegible]	44.0	14.9	1.0	9	2	275	49	67	0.29	2.2	2.5	C
	05	9	37	17.1	65	11.2	146	46.4	6.7	0.9	11	5	276	50	69	0.38	2.4	25.5	D

ALASKAN EARTHQUAKES NORTH OF 61 DEGREES NORTH LATITUDE 1984

ORIGIN 1984	TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	N P	NS	GAP DEG	D1 KM	D3 KM	RMS SEC	ERH KM	ERZ KM	Q
MAR 05	10	21	3.5	63	26.7	145	32.0	6.4	1.9	10	3	133	17	128	0.50	2.6	1.9	D
05	11	44	24.0	65	9.4	148	48.6	16.0	0.9	12	6	274	48	66	0.18	2.1	7.0	D
05	11	48	41.0	65	8.5	148	40.6	25.6	0.9	9	3	268	43	63	0.40	2.5	28.8	D
05	16	23	6.3	62	18.4	151	23.6	92.0	2.8	13	1	188	130	202	0.28	3.8	15.0	D
05	20	37	32.6	64	49.9	148	26.9	11.9	0.5	5	1	279	14	37	0.05	6.1	4.7	D
05	22	22	43.8	64	49.1	147	33.5	11.4	0.3	10	5	189	14	23	0.18	1.2	2.7	C
05	22	53	17.6	64	15.5	148	30.1	18.8	1.1	13	5	122	29	45	0.35	0.8	0.9	c
06	10	12	21.1	64	24.6	147	24.0	0.8	0.6	8	3	134	22	34	0.26	0.8	50.2	C
06	12	7	9.7	63	8.6	150	53.0	136.1	1.8	7	0	198	117	226	0.19	5.9	10.0	D
06	19	22	14.4	64	19.7	149	38.3	16.0	1.2	9	3	252	39	76	0.43	2.0	2.0	D
06	20	33	20.8	63	27.1	151	10.4	6.6	2.7	12	1	148	115	189	0.51	2.7	3.1	D
06	21	48	56.7	64	46.6	147	34.5	13.9	0.5	6	3	254	17	28	0.05	2.1	3.0	c
07	2	35	57.0	61	7.9	148	26.4	18.0	3.4	24	0	167	62	96	0.42	1.7	2.2	D
									FELT II	PALMER AND ANCHORAGE.								
07	5	7	23.4	65	42.8	150	47.7	2.5	1.8	7	2	193	137	167	0.31	14.2	10.5	D
07	15	32	48.3	63	6.0	149	21.2	82.8	1.6	7	1	284	74	165	0.28	8.4	3.4	D
07	16	40	51.4	64	45.4	147	28.6	9.4	0.6	9	4	214	20	26	0.15	1.3	3.6	C
07	19	38	51.0	65	21.0	149	42.9	72.6	1.4	9	3	309	91	103	0.45	8.9	12.3	D
08	0	57	26.3	63	44.3	148	10.2	89.4	1.2	6	1	256	38	82	0.06	12.8	3.2	D
08	2	57	49.7	63	12.6	150	29.6	115.3	1.8	6	0	290	97	184	0.02	29.2	13.4	D
08	9	37	24.1	60	6.9	151	5.6	0.6	3.1	7	0	291	130	280	0.32	31.6	2.6	D
08	22	25	3.8	63	10.1	151	39.6	311.5	2.4	10	1	212	150	216	1.25	18.9	59.3	D
09	5	33	59.6	64	47.0	147	44.3	10.1	0.1	6	2	203	13	20	0.13	1.7	3.2	C
09	10	56	12.0	61	42.0	150	56.3	54.3	2.4	16	3	90	83	174	0.33	1.7	4.1	c
09	12	18	44.8	64	15.3	148	30.2	15.6	0.4	6	1	216	29	45	0.10	2.0	5.1	D
09	21	15	47.8	64	56.2	148	57.1	2.9	0.8	9	3	256	40	55	0.17	1.7	29.5	D
10	0	56	25.4	61	60.0	149	28.6	12.0	2.6	14	1	74	48	164	0.36	2.5	3.7	c
10	10	24	27.5	64	56.5	147	30.6	9.7	0.5	10	5	157	6	33	0.20	1.4	2.2	c
10	11	48	1.5	64	46.4	147	24.6	3.2	1.0	9	3	199	23	24	0.16	1.6	11.3	D
10	12	39	39.8	64	46.0	147	24.6	5.8	0.8	8	3	223	23	25	0.09	1.6	7.3	D
10	12	44	43.2	64	23.6	145	42.0	22.6	1.6	9	2	283	30	78	0.28	3.8	1.1	D
11	5	43	15.1	64	46.5	147	27.6	3.1	0.9	10	4	152	21	23	0.20	1.2	10.4	D
11	7	13	37.2	64	46.1	147	22.6	0.1	0.6	8	3	227	24	25	0.12	1.6	99.0	D
11	11	26	33.1	65	5.2	148	5.5	14.4	0.7	9	4	283	25	35	0.11	2.4	3.8	c
11	13	43	0.5	64	44.1	148	34.0	12.1	0.8	9	4	269	23	38	0.12	2.3	4.6	c
11	21	51	31.9	64	38.7	149	1.1	14.1	0.9	9	4	223	8	49	0.40	2.1	2.1	D

ALASKAN EARTHQUAKES NORTH OF 61 DEGREES NORTH LATITUDE, 1984

	ORIGIN	TIME		LAT N		LONG W		DEPTH	MAG	NP	NS	GAP	D1	D3	RMS	ERH	ERZ	Q
1984	HR	MN	SEC	DEG	MIN	DEC	MTN	KM				DEG	KM	KM	SEC	KM	KM	
MAR 11	22	53	21.8	64	47.9	145	27.3	4.5	1.7	9	4	271	112	128	0.37	3.5	4.8	D
11	23	10	51.7	61	2.4	151	12.1	5.0	3.3	12	0	224	49	225	0.79	16.3	22.6	D
12	8	3	9.8	62	8.0	151	0.3	2.2	2.3	12	1	171	118	196	0.40	2.4	3.3	D
12	9	12	41.9	64	12.4	147	57.3	10.0	0.8	8	3	185	3	50	0.15	3.3	3.0	D
12	11	43	59.7	62	56.3	149	38.2	12.1	1.6	10	3	154	172	187	0.40	1.9	3.1	D
12	14	48	56.6	63	10.4	149	52.8	92.8	1.5	10	1	280	78	148	0.14	6.5	3.4	D
12	19	49	34.9	62	50.4	147	48.4	88.5	2.0	7	0	163	115	149	0.19	5.1	11.3	D
12	21	30	32.5	65	6.6	146	45.8	0.1	0.9	6	1	337	33	71	0.10	4.7	99.0	D
14	1	29	36.8	63	18.4	150	26.3	131.1	1.9	31	1	250	89	157	0.29	6.4	3.4	D
14	2	39	17.3	65	1.7	148	45.6	20.6	0.9	6	2	270	37	53	0.30	3.5	1.9	D
14	3	41	38.7	63	48.4	147	48.2	23.1	1.7	14	5	231	42	75	0.50	2.4	1.5	D
14	3	58	13.1	64	26.5	147	26.6	8.4	1.4	13	5	120	24	31	0.42	0.9	4.7	c
14	7	1	27.1	62	53.7	150	13.2	87.3	2.0	11	1	169	113	183	0.21	3.5	4.2	D
14	14	32	30.4	64	46.8	147	49.0	12.6	0.3	7	3	174	13	17	0.05	1.3	2.3	C
14	15	32	50.7	61	43.4	151	11.7	0.3	2.7	17	2	160	76	205	0.36	1.8	0.7	D
14	15	54	53.9	64	10.8	148	0.6	10.1	'1.2	10	3	131	4	53	0.23	1.5	2.4	B
14	16	1	51.8	64	32.4	146	8.3	14.8	2.q	12	3	222	42	89	0.45	1.4	1.2	D
14	20	32	53.9	61	44.0	149	46.2	39.5	3.9	15	0	138	41	136	0.46	4.5	7.1	c
									FELT IV PALMER, III ANCHORAGE.									
14	20	47	57.9	63	54.3	149	1.6	13.3	1.4	6	1	192	20	75	0.16	2.6	1.8	D
15	9	41	35.5	62	57.3	144	9.7	0.4	2.2	6	2	151	66	122	0.53	2.1	99.0	D
15	19	9	19.6	63	1.2	150	19.9	10.9	1.9	7	1	177	144	220	0.60	4.7	10.3	D
16	2	52	52.9	64	38.9	147	42.9	12.2	0.9	7	3	230	4	28	0.06	2.0	1.6	C
16	2	53	17.7	64	31.8	146	12.9	16.1	1.6	13	3	215	38	77	0.30	1.3	1.1	c
16	3	10	15.2	60	55.5	147	9.4	21.9	1.8	9	2	231	102	245	0.41	2.5	2.8	D
16	8	33	17.1	62	51.4	149	25.5	15.1	2.4	16	3	146	101	152	0.79	1.3	2.1	D
16	11	4	47.3	62	16.1	149	37.1	12.6	1.9	11	2	146	78	177	0.24	1.6	2.4	C
16	12	48	55.2	63	15.6	149	5.2	6.9	1.3	11	4	257	53	117	0.48	2.6	1.5	D
17	14	50	12.6	64	53.4	147	48.5	11.1	0.7	10	4	145	1	23	0.33	1.1	2.1	c
17	15	40	58.7	63	16.0	150	31.3	125.7	2.3	17	3	186	93	159	0.46	3.2	4.7	D
17	18	50	35.8	61	40.2	146	14.5	23.1	1.4	8	2	215	60	150	0.18	2.7	3.4	D
17	19	42	14.0	62	44.5	148	53.5	79.5	1.8	10	2	277	110	176	0.23	5.8	5.3	D
18	2	16	46.5	64	47.9	147	24.8	11.7	0.6	10	5	219	21	25	0.13	1.4	3.3	c
18	12	21	5.4	64	28.2	147	13.6	0.1	0.5	5	2	173	15	41	0.09	3.4	99.0	D
18	14	15	44.1	64	49.9	147	23.1	9.1	0.5	8	4	221	17	29	0.19	2.0	4.9	D
18	17	8	31.7	64	50.7	147	19.7	11.2	0.3	8	3	232	16	32	0.08	1.7	4.5	c

ALASKAN EARTHQUAKES NORTH OF 61 DEGREES NORTH LATITUDE, 1984

1964		ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NP	NS	GAP DEG	D1 KM	D3 KM	RMS SEC	ERH KM	ERZ KM	Q
MAR	Ib	20	52	42.9	65	5.6	149	9.4	10.8	1.5	10	4	292	56	68	Ø.3Ø	1.9	2.7	C
	18	23	26	20.0	64	43.3	148	37.4	12.4	1.1	12	5	189	26	38	Ø.23	1.0	1.6	C
	19	3	15	55.7	62	16.9	149	14.6	21.5	2.3	8	1	191	74	251	0.10	6.8	9.2	D
	19	6	20	14.5	64	9.7	150	10.4	16.8	2.1	13	4	281	45	77	Ø.34	1.7	0.9	D
	19	6	27	38.3	64	49.9	148	13.8	13.2	Ø.4	7	3	259	4	29	Ø.18	1.7	1.7	c
	19	10	3	27.5	64	51.2	147	35.7	9.7	Ø.4	9	4	171	11	25	0.19	1.2	2.7	C
	19	10	33	6.5	64	46.8	147	22.7	6.5	Ø.Ø	8	3	226	23	25	0.13	1.9	6.2	D
	19	14	35	38.6	64	43.2	147	3Ø.5	8.5	1.3	9	3	132	24	33	0.15	1.2	7.9	c
	19	20	33	23.5	64	5Ø.2	147	26.9	7.7	Ø.5	9	4	2Ø8	17	27	0.09	1.3	4.2	C
	2Ø	Ø	41	56.4	65	36.2	144	58.7	5.5	2.6	11	3	142	1Ø8	163	Ø.47	2.3	3.5	D
	2Ø	Ø	45	57.2	64	48.8	149	3.7	6.9	1.1	8	3	254	26	63	Ø.16	2.3	7.9	D
	2Ø	11	26	18.4	64	46.4	147	28.0	9.5	0.9	9	3	197	21	24	Ø.18	1.0	3.6	C
	21	9	17	15.3	64	45.6	147	20.0	2.6	1.4	11	3	161	25	27	Ø.18	1.1	21.6	C
	21	11	56	34.1	64	19.1	148	6.1	4.6	1.0	11	4	1Ø7	17	39	Ø.28	Ø.8	3.9	c
	22	1	31	45.4	61	6.3	150	14.7	8.Ø	3.1	15	3	132	87	154	Ø.35	1.7	1.5	D
	22	4	11	26.8	64	29.1	147	15.5	4.3	1.1	8	2	15Ø	17	4Ø	0.12	1.8	11.9	c
	22	18	28	36.4	64	45.6	146	40.3	2.5	1.4	9	3	252	42	56	0.15	1.6	46.9	D
	22	19	18	44.0	63	12.1	151	20.4	1Ø.2	3.5	5	Ø	216	134	214	0.18	8.1	55.2	D
										PMR ML=	3.5								
	22	19	23	0.7	64	21.9	148	2.8	5.8	1.3	8	3	185	12	34	Ø.24	2.5	3.2	C
	22	19	54	10.5	65	4.6	15Ø	59.8	37.7	2.3	8	3	322	1Ø7	138	Ø.56	4.7	4.6	D
	23	Ø	57	43.5	64	28.5	146	57.7	6.Ø	1.1	6	2	232	8	54	0.13	4.3	5.1	D
	23	3	3Ø	15.9	64	37.7	148	3.6	24.7	1.1	10	3	86	12	23	Ø.23	1.1	2.4	B
	23	5	4	5Ø.3	64	57.Ø	148	16.7	24.3	Ø.9	6	1	283	15	54	Ø.55	3.9	1.8	D
	23	6	38	36.7	61	11.4	151	16.7	5.Ø	5.2'	14	Ø	2Ø2	4Ø	3Ø9	Ø.81	18.7	4Ø.3	D
										PDE ML=	5.2 FELT IV AT HOMER, II AT KODIAK.								
	23	13	54	1.6	62	57.Ø	149	21.1	86.3	3.4	12	0	189	90	148	0.16	3.6	7.4	D
										PMR ML=	3.4								
	24	Ø	46	32.8	63	54.4	148	57.3	1Ø.7	1.7	8	1	160	19	58	Ø.3Ø	2.Ø	10.1	c
	24	16	43	35.7	61	48.Ø	150	29.0	38.3		9	Ø	147	79	166	0.32	2.3	4.Ø	D
	25	3	34	45.7	63	1.8	146	58.3	89.3	1.7	12	4	264	78	167	Ø.23	2.7	2.9	D
	26	1	45	39.0	64	49.4	147	14.5	1Ø.6	0.4	10	5	247	2Ø	33	Ø.12	1.6	4.2	C
	26	2	2	56.5	64	31.9	147	1.3	1Ø.6	1.3	11	4	186	15	52	Ø.Ø8	1.4	2.8	C
	27	3	26	52.7	62	11.2	150	29.6	8.9	3.0	7	1	166	99	171	0.17	1.7	2.3	C
	28	1	30	29.6	61	17.6	150	54.8	1.3	3.1	6	Ø	238	63	378	Ø.3Ø	99.0	99.0	D
	28	19	37	5.5	64	26.3	146	46.1	10.6	1.1	5	1	308	10	64	0.01	4.8	3.8	D
	29	2	4	12.1	64	22.h	147	23.4	Ø.3	1.1	6	2	148	21	35	Ø.43	1.6	99.Ø	C

ALASKAN EARTHQUAKES NORTH OF 61 DECREES NORTH LATITUDE, 1984

1984	ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NP	NS	CAP DEG	D1 KM	D3 KM	RMS SEC	ERH KM	ERZ KM	Q
MAR 29	5	25	44.8	63	1.9	150	35.6	115.5	2.1	8	0	182	114	188	0.14	4.7	9.4	D
29	10	26	42.6	63	9.6	150	0.2	80.0	2.4	13	2	169	83	153	0.55	3.1	3.0	D
29	12	5	7.3	62	18.9	151	9.4	13.4	2.6	4	1	249	228	272	0.42	14.6	27.1	D
30	12	40	59.5	62	49.0	149	0.0	12.9	1.7	8	2	140	102	190	0.85	2.2	3.2	D
31	0	17	51.1	64	39.6	149	21.5	17.8	1.4	11	4	259	17	65	0.55	2.3	1.0	D
31	2	51	34.2	64	45.8	147	43.7	22.0	2.1	8	2	156	13	30	0.24	2.1	1.2	c

MODIFIED MERCALLI SCALE, 1956 VERSION

I. Not felt. Some very low frequency effects, such as seiching in lakes, may be observed resulting from large, distinct earthquakes.

II. Felt by persons at rest, on upper floors, or favorably placed.

III. Felt indoors. Hanging objects suing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.

IV. Hanging objects swing. Vibration like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing motor cars rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV wooden nails and frame creak.

V. Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Smell unstable objects displaced or upset. Doors swing, close, open. Shutters pictures move. Pendulum clocks stop, start, change rate.

VI. Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassuare broken. Knickknacks, books. etc., oft shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry Ø cracked. Small bells ring (church. school). Trees. bushes shaken (visibly, or heard to rustle--CFR).

VII. Difficult to stand. Noticed by driven of motor cars. Hanging objects quiver. Furniture broken. Damage to masonry O, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices (also unbraced parapets and architectural ornaments--CFR). 'Some cracks in masonry C. Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.

VIII. Steering of motor cars affected. Damage to masonry C; partial collapse. Some damage to masonry B; none to masonry A. Fall of stucco and some masonry walls. Twisting, fall of chimneys. factory stacks, monuments, towers. elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.

IX. General panic. Mansonry D destroyed; masonry C heavily damaged. sometimes with complete collapse; masonry B seriously damaged. (General damage to foundations--CFR.) Frame structures, if not bolted, shifted off foundations. Frames racked. *Serious* damage *to* reservoirs. Underground pipes broken. Conspicuous cracks in gmund. In alluvlated areas sand and mud ejected. earthqudke fountains, sand Craters.

X. Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.

XI. Rails bent greatly. Underground pipelines completely out of service.

XII. Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown Into the air.

Note: CFR In parentheses refers to supplemental comments by Charles F. Richter.