STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

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Report of Investigations 87-11
SUMMARY OF ALASKA EARTHQUAKES
FOR THE PERIOD
OCTOBER, NOVEMBER, AND DECEMBER, 1985

Compiled by
Hans Pulpan and J.N. Davies

STATE OF ALASKA
Department of Natural Resources
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

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CONTENTS

FIGURES

TABLES

SUMMARY OF ALASKA EARTHQUAKES FOR THE PERIOD OCTOBER, NOVEMBER, AND DECEMBER, 1985

Compiled by
Hans Pulpan[1] and J.N. Davies[1]

INTRODUCTION

This report lists the parameters of earthquakes that occurred in and near areas encompassed by the network of seismograph stations operated or recorded by the University of Alaska Geophysical Institute (UAGI) (fig. 1; table 1). The goal of this report is to provide a convenient reference source for earthquake activity in the seismic-network area and quantitative information that researchers, administrators, planners, and other interested people can use. Therefore, this report contains hypocentral parameters and information about the quality of the data, including precision of the parameters. Because of the substantial quantity of data, this report is based on routine data processing. Earthquakes are located as accurately as possible, although additional data and more sophisticated methods of analysis might lead to more accurate locations.

DATA COLLECTION

The data used in this report were derived from two principal sources: 1) seismic stations operated by UAGI; and 2) seismic stations operated by other agencies whose data are continuously recorded by UAGI under data-sharing or data-exchange agreements. For earthquakes of local magnitude (M_L) $\geq$ 3, we received reports of earthquake arrival times at several stations of the Alaska Tsunami Warning System, which is operated by the National Oceanic and Atmospheric Administration (NOAA).

Signals from various stations are transmitted by UAGI-operated VHF radio links and leased commercial telephone circuits to two recording centers, one in Homer and one in Fairbanks, that are operated by the University of Alaska. Remote stations are serviced and calibrated annually; stations easily accessible by road are serviced more frequently, if necessary. Difficult access to many stations can result in lengthy data losses if instruments have malfunctioned (fig. 2). Significant data losses result in lower detection thresholds and poorer solution qualities for earthquakes in the affected regions.

Data are recorded on 16-mm film on several Teledyne Geotech Develocorders with 20-channel capacity. Satellite-linked clocks provide time marks, which are superimposed on the records. Figure 3 shows the typical response of the seismic-network system from transducer to recorder.

DATA PROCESSING

Arrival time of body waves is read from the 16-mm film with Geotech filmviewers that provide time resolution of 0.1 s/mm; thus the impulsive arrivals can be read to 0.05 s.

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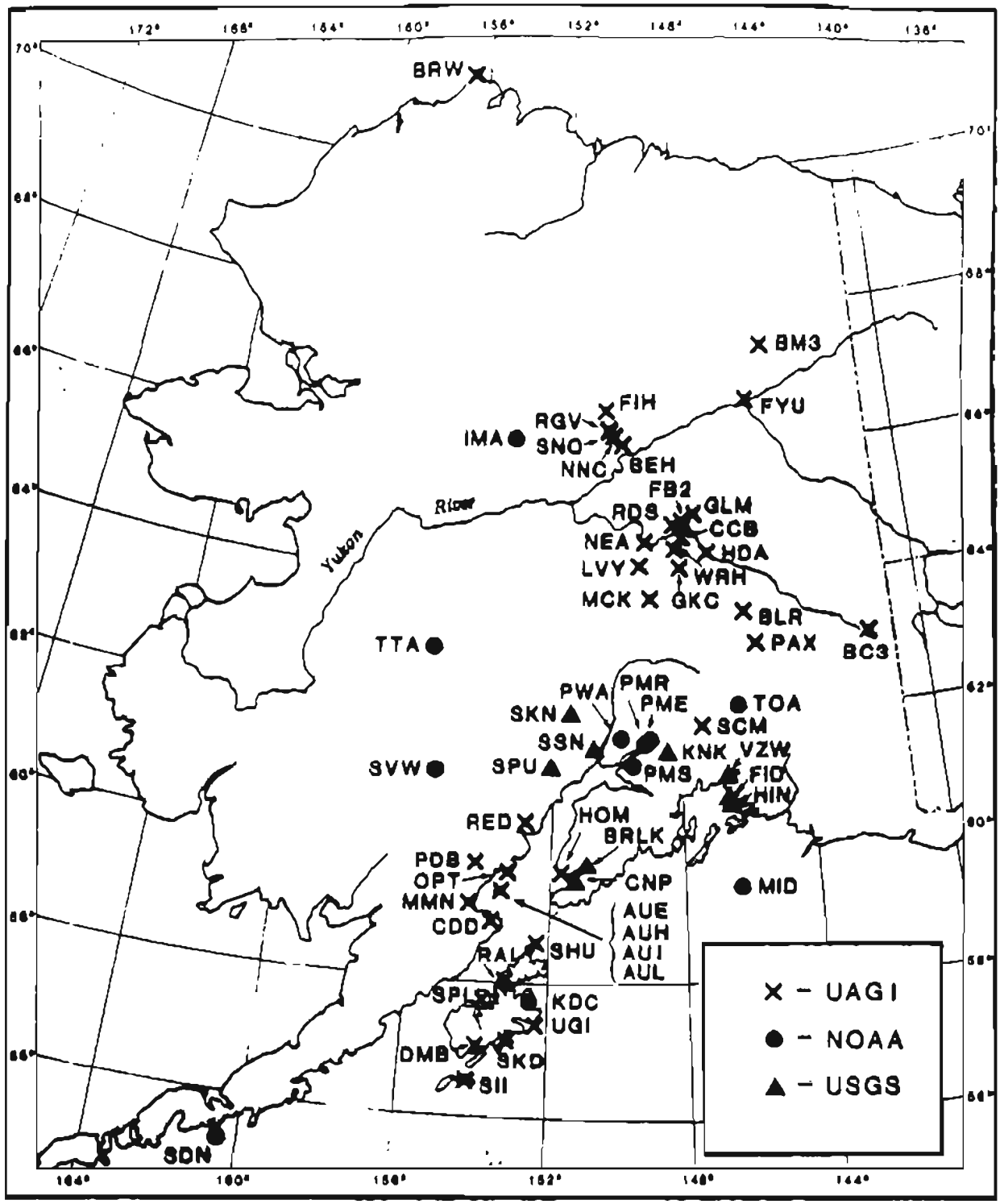

Figure 1. Seismic-network stations operated in Alaska by the University of Alaska Geophysical Institute (UAGI), National Oceanic and Atmospheric Administration (NOAA), or U.S. Geological Survey (USGS). See table 1 for station names used in this report.

Table 1. Seismic-network stations used to prepare this report.

Code	Station	Latitude (N)	Longitude (W)	Elevation (m)	Velocity model[a]	Operator[b]
AUE	Augustine East	59° 21.54'	153° 22.33'	172	2	UAGI
AUH	Augustine Hill	59° 21.83'	153° 26.61'	900	2	UAGI
AUI	Augustine Island	59° 20.11'	153° 25.66'	293	2	UAGI
AUL	Augustine Lava Flow	59° 22.93'	153° 26.07'	360	2	UAGI
BC3	Beaver Creek	63° 3.95'	141° 46.96'	848	1	UAGI
BM3	Burnt Mountain	67° 25.17'	144° 36.25'	500	1	UAGI
BRLK	Bradley Lake	59° 45.85'	150° 53.13'	631	2	USGS
BRW	Barrow	71° 18.20'	156° 44.90'	0	1	UAGI
CCB	Clear Creek Butte	64° 38.80'	147° 48.33'	219	1	UAGI
CDD	Cape Douglas	58° 55.79'	153° 38.58'	622	2	UAGI
CNP	China Poot	59° 31.55'	151° 14.16'	564	2	USGS
CRP	Crater Peak	61° 16.02'	152° 9.33'	1,622	2	USGS
FB2	Fairbanks	64° 54.00'	147° 47.60'	320	1	UAGI
FYU	Fort Yukon	66° 33.96'	145° 13.90'	137	1	UAGI
GKC	Gold King Creek	64° 10.72'	147° 56.08'	490	1	UAGI
GLM	Gilmore Dome	64° 59.24'	147° 23.34'	820	1	UAGI
HOM	Homer	59° 39.50'	151° 38.60'	198	2	UAGI
IMA	Indian Mountain	66° 4.11'	153° 40.72'	1,380	1	NOAA
KDC	Kodiak	57° 44.87'	152° 29.50'	13	3	NOAA
LVY	Levy	64° 13.00'	149° 15.20'	230	1	UAGI
MCK	McKinley Park	64° 43.94'	148° 56.10'	618	1	UAGI
MID	Middleton Island	59° 25.67'	146° 20.34'	37	4	NOAA
MMN	McNeil River	59° 11.11'	154° 20.20'	442	2	UAGI
MSP	Moose Pass	60° 29.35'	149° 21.64'	150	1	USGS
NEA	Nenana	64° 34.63'	149° 4.63'	364	1	UAGI
OPT	Oil Point	59° 39.16'	153° 13.78'	450	2	UAGI
PDB	Pedro Bay	59° 47.27'	154° 11.55'	305	2	UAGI/USGS
PME	Palmer East	61° 37.90'	149° 1.70'	228	2	NOAA
PMR	Palmer Observatory	61° 35.33'	149° 7.85'	100	2	NOAA
PMS	Palmer - Arctic Valley	61° 14.68'	149° 33.63'	716	2	NOAA
PWA	Palmer West - Houston	61° 39.06'	149° 52.72'	137	2	UAGI
RDS	Richard D. Siegrist	64° 49.59'	148° 8.68'	930	1	UAGI
RED	Redoubt Volcano	60° 25.14'	152° 46.32'	1,067	2	UAGI
SAW	Sawmill	61° 48.49'	148° 19.98'	740	2	USGS
SCM	Sheep Mountain	61° 50.00'	147° 19.66'	1,020	4	UAGI
SDN	Sand Point	55° 20.48'	160° 29.83'	23	6	NOAA
SHU	Shuyak Island	58° 37.68'	152° 20.93'	10	3	UAGI
SKN	Skwentna	61° 58.82'	151° 31.78'	564	2	USGS
SPU	Mount Spurr	61° 10.90'	152° 3.26'	800	2	USGS
SVW	Sparrevohn	61° 6.49'	155° 37.30'	762	2	NOAA
TOA	Tolsona	62° 6.29'	146° 10.34'	909	4	NOAA
TTA	Tatalina	62° 55.81'	156° 1.32'	914	2	NOAA
WRH	Wood River	64° 28.28'	148° 5.39'	314	1	UAGI

[a] For velocity models 1, 2, 3, 4, and 6, see tables 2, 3, 4, 5, and 7, respectively.
[b] UAGI - University of Alaska Geophysical Institute; USGS - U.S. Geological Survey; NOAA - National Oceanic and Atmospheric Administration.

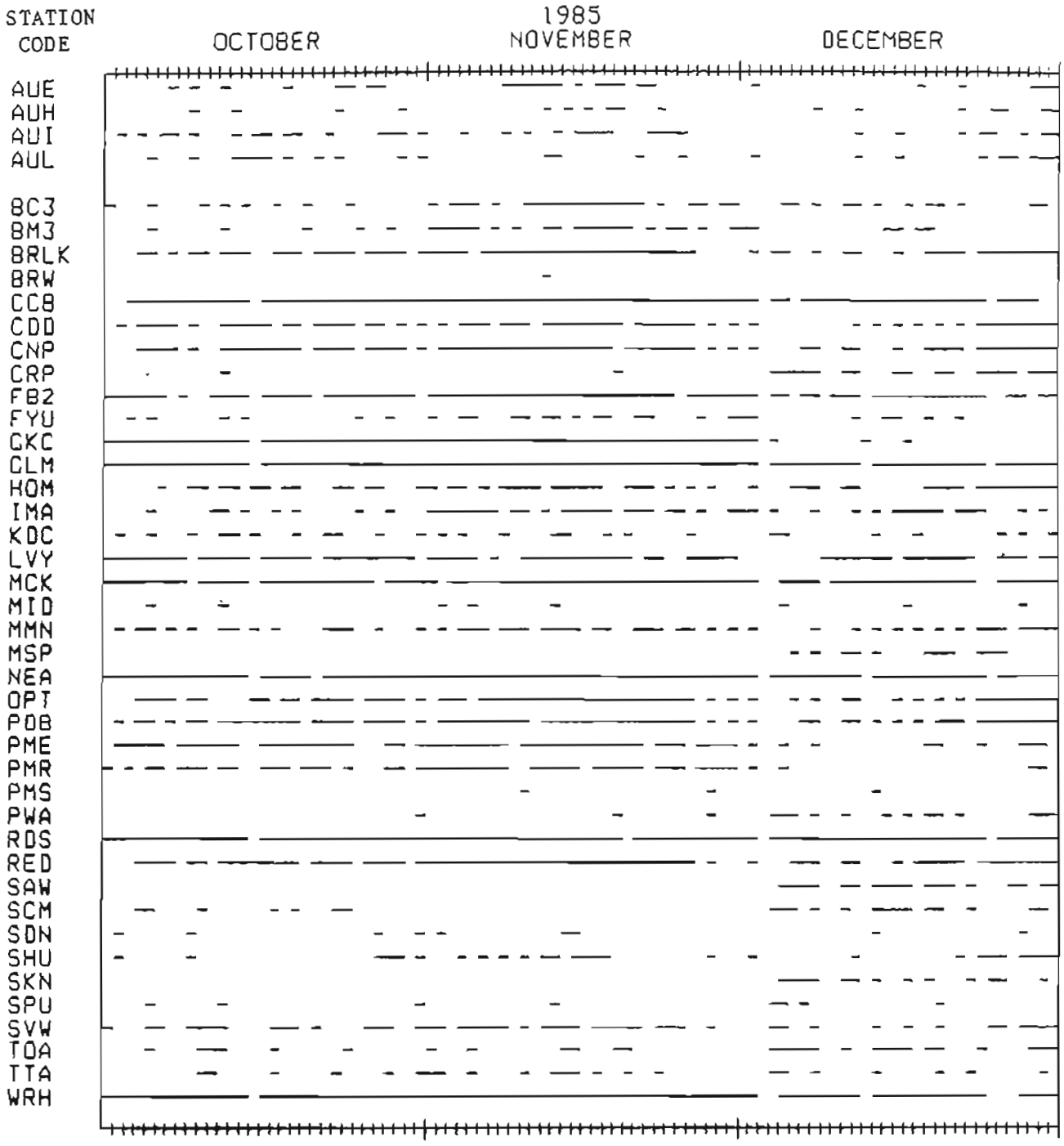

Figure 2. Station-use record. Lines indicate that at least one arrival time was read from a specific station that was operating on a specific day. Short-term nonuse does not imply that a station was malfunctioning, but rather that no data were required to locate earthquakes. See table 1 for station names.

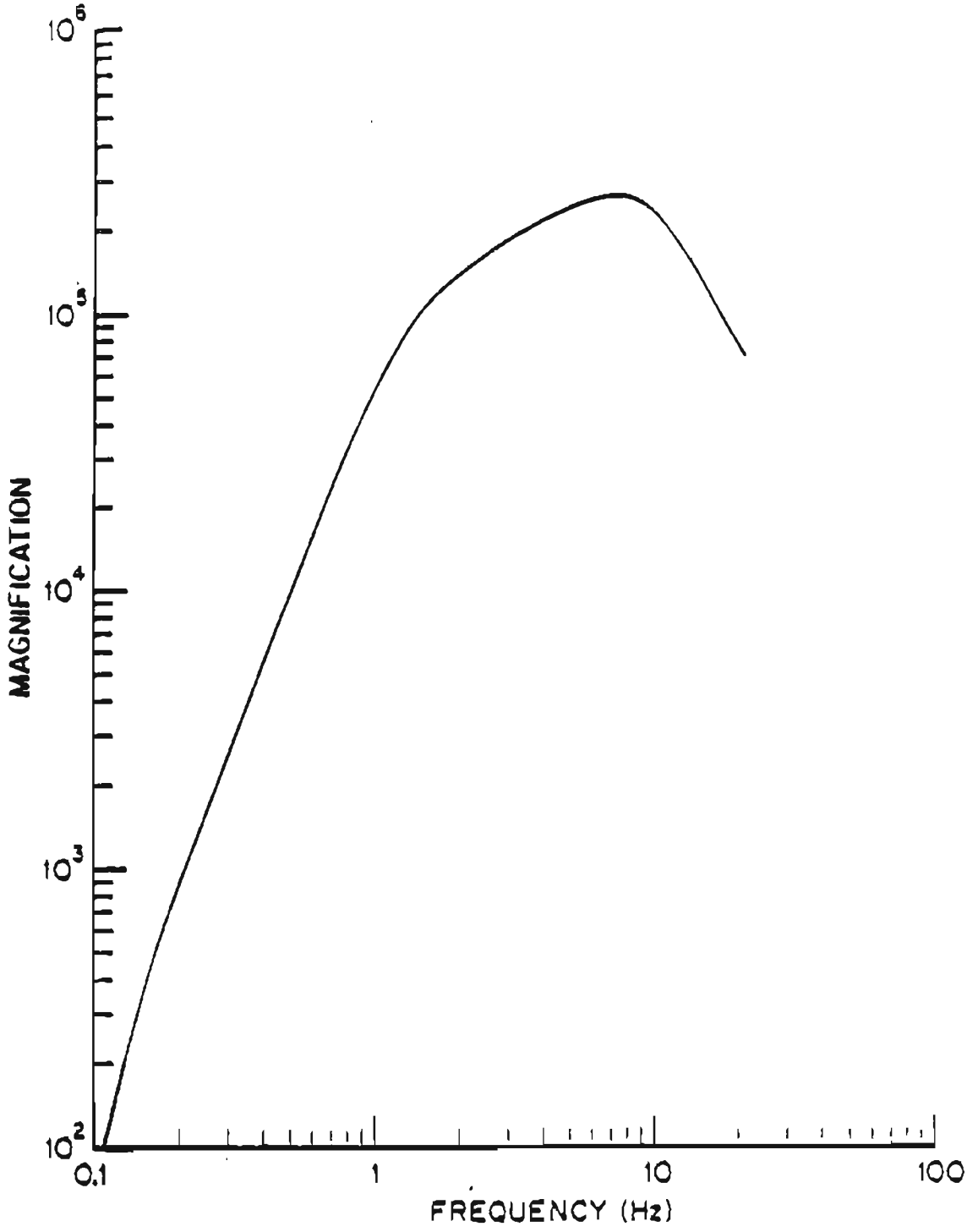

Figure 3. Typical response of a seismic-network station operated by the University of Alaska Geophysical Institute. Magnification is the ratio of the amplitude measured on the filmviewer to that of the actual ground motion recorded. Actual values vary with station.

Earthquake locations are based on arrival times of P and S waves. As many S arrivals are used as possible to help determine hypocentral depth. Most S readings are obtained from vertical components because few three-component systems are recorded. When large earthquakes occur, traces overlap on multichannel-film recorders; consequently, S arrivals are difficult to identify.

After earthquakes are identified and arrival times are determined, phase data are processed with the HYPOELLIPSE computer program (Lahr, 1980) to obtain earthquake parameters. Each solution is checked for the root-mean-square (RMS) error of travel-time residuals and for the spatial distribution of stations used. Solutions that have residuals ≥ 0.5 s are reread. If stations used are poorly distributed, additional data are sought from stations not recorded by UAGI. Events recorded by fewer than six stations receive less attention. Data for earthquakes of $M_L \geq 3.5$ are processed more carefully, sometimes by changing control parameters in the computer program.

VELOCITY MODELS

Tectonic regime and geologic setting vary greatly throughout the area covered by the UAGI seismic network. Although our knowledge of the seismic-velocity structure is limited, significant variations exist. To account for these variations, each UAGI station is generally associated with one of three velocity models (tables 2 through 4), depending on the station's location. The models vary only with depth; lateral variation is not considered. For stations outside the UAGI seismic network, we generally use models adopted by the station's operators (table 1). For all models,
S velocity = $\frac{\text{P velocity}}{3}$.

Model 1 (table 2) is used primarily in central and northern Alaska (figs. 4 and 5) and is based on unpublished data by Biswas (oral commun., 1978). The upper mantle structure is based on travel-time studies by Biswas and Bhattacharya (1974).

Table 2. Velocity model 1.

Layer	Depth (km)	P velocity (km/sec)
1	0–24	5.9
2	24–40	7.4
3	40–76	7.9
4	76–300	8.3
5	300–545	10.4
6	>545	12.6

Table 3. Velocity model 2.

Layer	Depth (km)	P velocity (km/sec)
1	0-2	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	>65	8.3

Model 2 (table 3) is associated with stations located in the Cook Inlet-Kenai Peninsula area (figs. 6 and 7) and is used by the USGS for locating earthquakes in the same area. It is a modified version of the model determined by Matumoto and Page (1969) from travel-time studies of aftershocks of the 1964 Great Alaska Earthquake.

Table 4. Velocity model 3.

Layer	Depth (km)	P velocity (km/sec)
1	0-1.6	4.2
2	1.6-12	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	>350	9.02

Model 3 (table 4) is used on Kodiak Island and the Alaska Peninsula. The depth and velocity of the first three layers are based on refraction experiments in the central Aleutian Islands (Engdahl and Tarr, 1970). The remaining layers are based on work by Herrin and others (1968).

Two additional models are used for some stations east of long 148.75° W. (Fogelman and others, 1983). Model 4 (table 5) applies to stations between long 144.5° W. and long 148.75° W.; model 5 (table 6), to stations east of long 144.5° W.

Table 5. Velocity model 4.

Layer	Depth (km)	P velocity (km/sec)
1	0-0.1	2.75
2	0.1-39	6.4
3	>39	8.0

Table 6. Velocity model 5.

Layer	Depth (km)	P velocity (km/sec)
1	0-0.1	2.75
2	0.1-20	6.0
3	20-32	7.0
4	>32	8.2

Model 6 (table 7) is used for stations on the westernmost part of the Alaska Peninsula. It is adopted from Lamont-Doherty Geological Observatory, where it is applied to earthquakes in the Shumagin Island seismic network (Hauksson, 1985).

Table 7. Velocity model 6.

Layer	Depth (km)	P velocity (km/sec)
1	0-1.79	3.44
2	1.79-3.65	5.56
3	3.65-10.18	6.06
4	10.18-22.63	6.72
5	22.63-38.51	7.61
6	38.51-90.19	7.90
7	>90.19	8.26

EARTHQUAKE MAGNITUDE

Earthquake magnitudes were determined from the maximum amplitude of the body-wave trace. Because regional body-wave phases were used, we determined local magnitudes (M_L). The magnitude calculations are based on the relationships derived by Richter (1958), who used earthquake data recorded on standard horizontal Wood-Anderson seismographs in California. Corrections were made for differences in response and magnification between the standard instruments used by Richter and the instruments we used. No corrections were made for differences in attenuation properties between California and Alaska. Additionally, no corrections were made for measuring vertical ground motion rather than horizontal ground motion.

The magnitude of each earthquake is usually calculated at several seismic-network stations and then averaged. When large earthquakes occur, the instrument response saturates the maximum trace amplitude of the recorder at most of our stations; therefore, we frequently list local magnitude determined by NOAA's Palmer Observatory. Felt reports and intensity observations based on the Modified Mercalli Intensity Scale (app. A; Richter, 1958) are also listed.

RECORDED EARTHQUAKES

Appendix B lists hypocenter, magnitude, and quality parameters for each earthquake of $M_L \geq 3$ that was located during the fourth quarter of 1985 (also see figs. 5, 7, and 8). The list probably contains all earthquakes of $M_L \geq 3$ that occurred in the area shown in figures 4 and 5. Appendix C lists the same parameters for all earthquakes that were located during the same period (also see figs. 4, 6, and 8). Solution qualities vary throughout the areas shown in figures 4, 6, and 8. As shown in figure 1, the distribution of stations varies significantly; thus detection-threshold levels also vary significantly.

The reliability of a hypocenter location can be assessed from two sets of information: 1) the quality of the input data; and 2) the results of statistical tests. The number of P and S phases used to locate the earthquake (NP, NS), 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 parameters that control reliability of the hypocenter location. A GAP of more than 180° means the epicenter is located outside the seismic network; therefore, locations will generally be less reliable. Also, as D1 exceeds hypocentral depth, determinations of hypocentral depth become less accurate. Magnitude threshold and location reliability vary throughout the state because of the uneven distribution of stations (fig. 1).

The RMS travel-time residual and the horizontal (ERH) and vertical (ERZ) projections of the maximum axes of the one-standard-deviation confidence ellipsoid reflect the precision of the solution. Because we use simplified velocity models, the RMS residuals probably measure the inaccuracy of these models with respect to the real crust and upper mantle and only secondarily account for random reading errors and phase misidentifications. Although the precision of hypocentral locations is fairly well indicated by ERH and ERZ, their absolute accuracy is difficult to determine because adequate calibration studies with known sources, such as explosions, have not been performed in the region.

Seismicity south of lat 61° N. (fig. 6) dominantly reflects the subduction of the North Pacific plate beneath the North American plate. A well-defined Benioff zone dips about 45° NW. below Cook Inlet and the Alaska Peninsula. Near lat 60° N., high seismic activity at depths greater than 70 km is typical of the area. The Benioff zone terminates at about lat 64° N. A cluster of hypocenters at an intermediate depth (>50 km) near lat 63° N. (below Mt. McKinley) pinpoints where the strike of the Benioff zone changes from north-northeast to northeast. The cluster of shallow hypocenters near

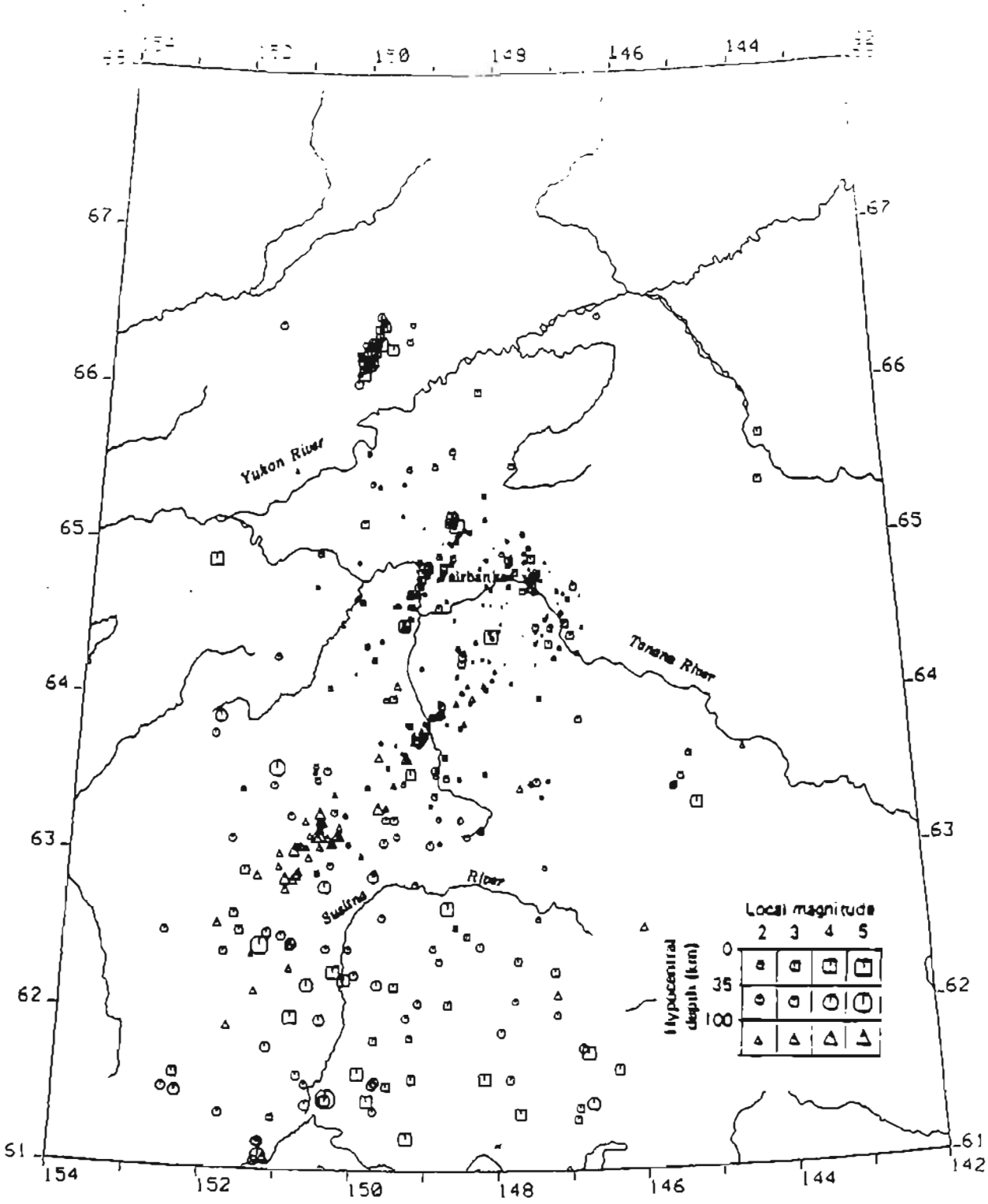

Figure 4. Epicenters of earthquakes that occurred in central Alaska north of lat 61° N. during the fourth quarter of 1985. Symbols larger or smaller than those shown on explanation were interpolated.

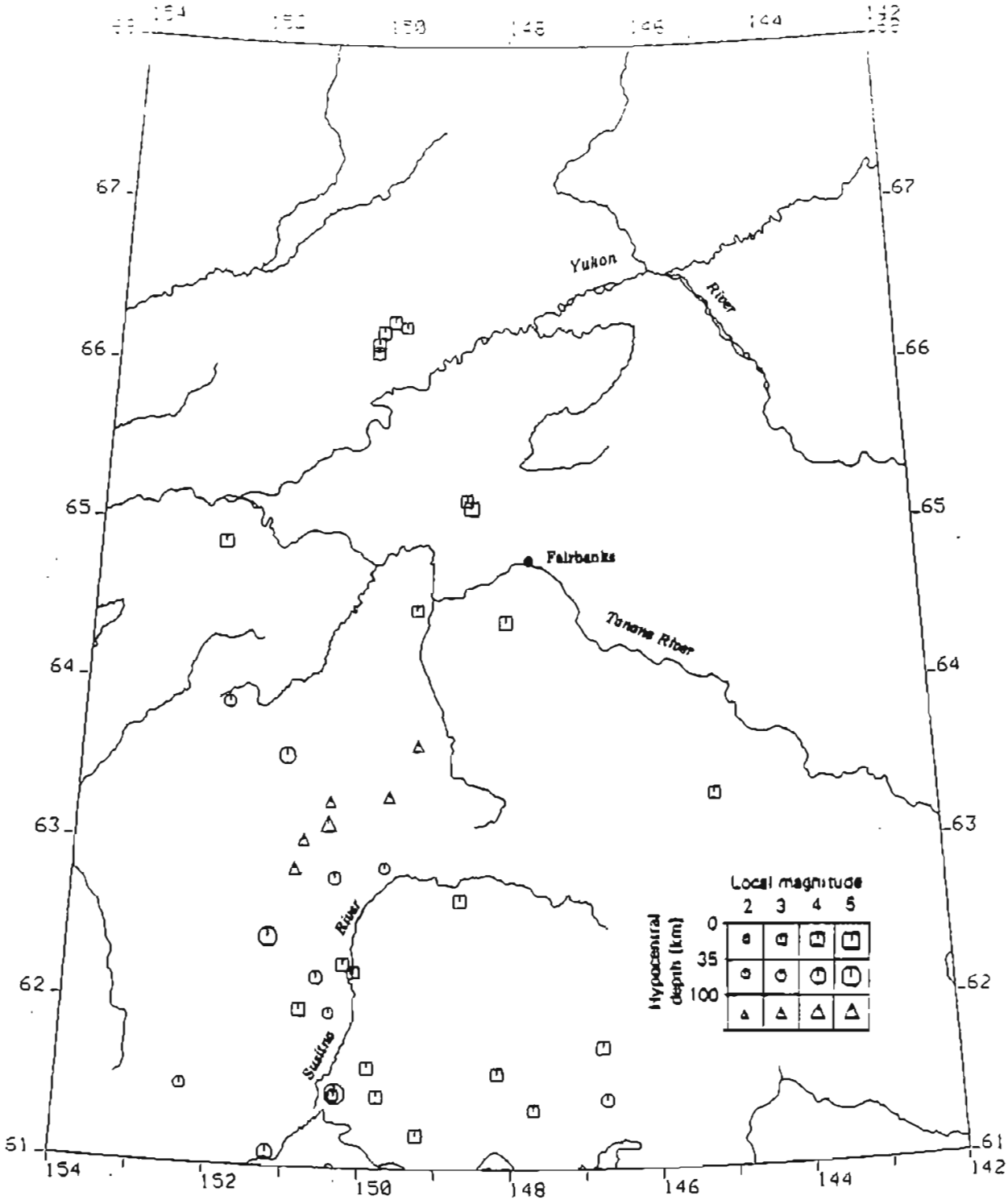

Figure 5. Epicenters of earthquakes with $M_L \geq 3$ that occurred in central Alaska north of lat 61° N. during the fourth quarter of 1985. Symbols larger or smaller than those shown on explanation were interpolated.

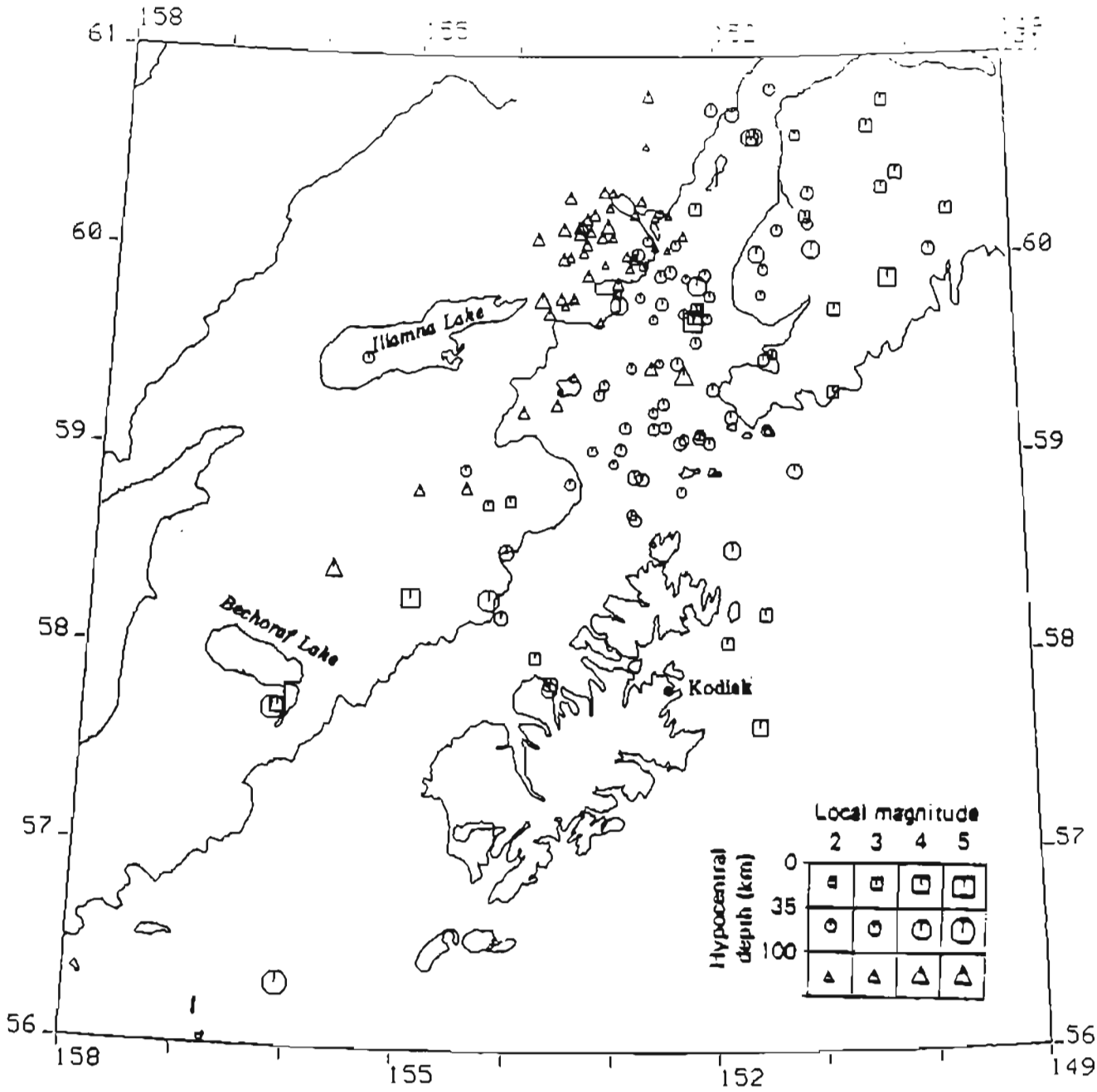

Figure 6. Epicenters of earthquakes that occurred in the Cook Inlet-Kenai Peninsula area south of lat 61° N. during the fourth quarter of 1985. Symbols larger or smaller than those shown on explanation were interpolated.

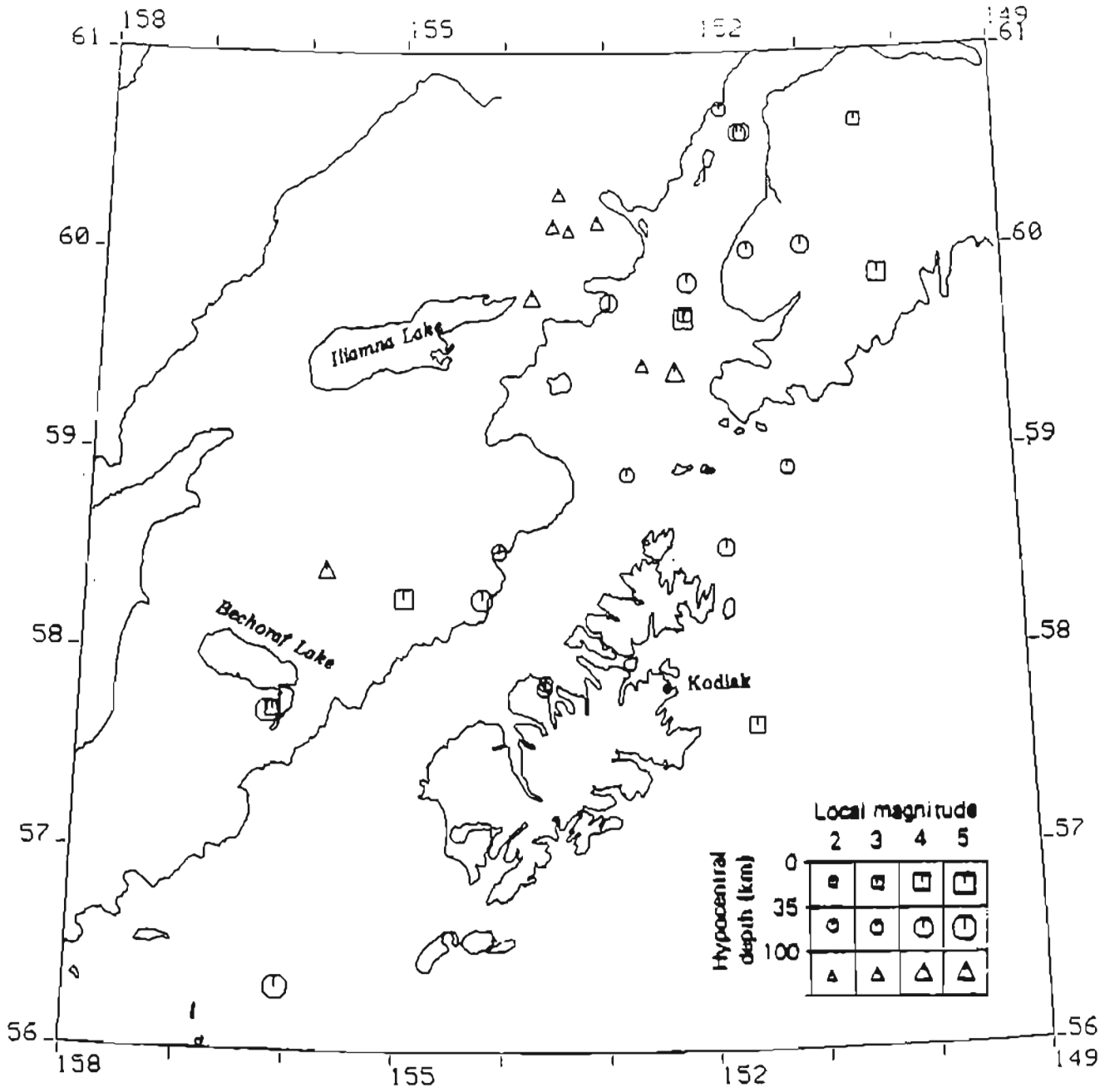

Figure 7. Epicenters of earthquakes with $M_L \geq 3$ that occurred in the Cook Inlet-Kenai Peninsula area south of lat 61° N. during the fourth quarter of 1985. Symbols larger or smaller than those shown on explanation were interpolated.

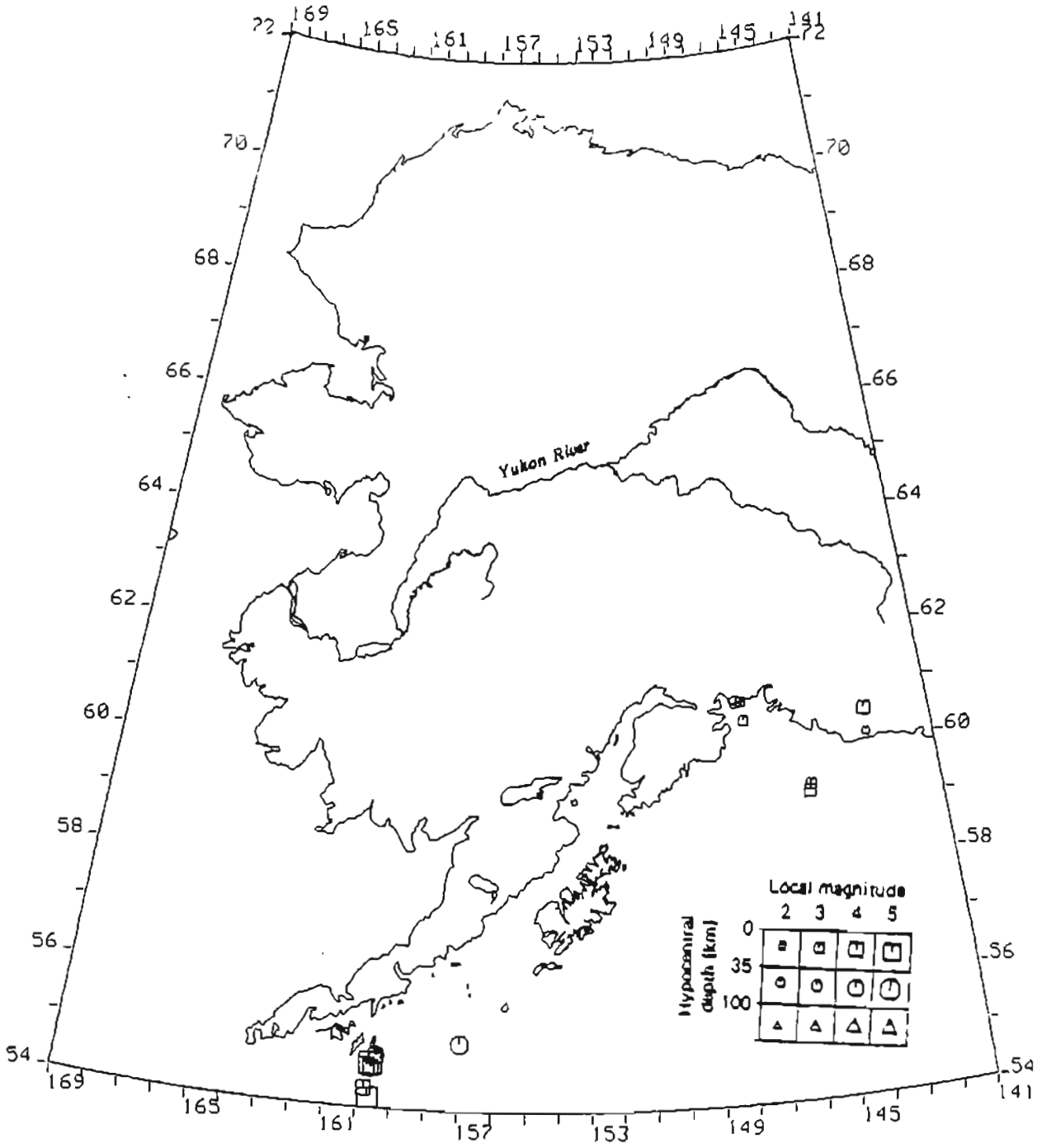

Figure 8. Epicenters of earthquakes that occurred in Alaska in the fourth quarter of 1985 and are not shown in figures 4 or 5. Symbols larger or smaller than those shown on explanation were interpolated.

Fairbanks is characteristic of seismic activity in central Alaska. Although the seismic-station distribution near Fairbanks is dense and provides the lowest detection threshold throughout the network, with the exception of Augustine Volcano, the concentration of epicenters indicates a very active seismic zone.

ACKNOWLEDGMENTS

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

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APPENDIX A

Modified Mercalli scale (1956 version).

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

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

III. Felt indoors. Hanging objects swing. 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 walls and frame creak.

V. Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small 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, glassware broken. Knickknacks, books, etc., fall off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D cracked. Small bells ring (church, school). Trees, bushes shaken (visibly or heard to rustle--CFR[a]).

VII. Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices (also unbraced parapets and architectural ornaments--CFR[a]). 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. Masonry 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 ground. In alluviated areas, sand and mud ejected, earthquake fountains, sand craters.

[a]CFR refers to supplemental comments by Charles F. Richter.

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.

APPENDIX B

Alaska earthquakes of $M_L \geq 3$ located during the fourth quarter of 1985.[a]

1985	ORIGIN HR	TIME MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NP	NS	GAP DEG	DI KM	D3 KM	RMS SEC	ERH KM	ERZ KM	Q
OCT	02	09	46	11.7	58	16.5	154	57.1	3.2	4.5	7	0	146	105	157	0.29	7.7	25.1	D
	03	02	44	26.3	61	12.5	149	14.8	21.3	3.7	22	1	90	43	151	0.40	1.9	2.7	C
										PALMER ML = 3.8									
										FELT AT EAGLE RIVER, EKLUTNA LAKE AND ANCHORAGE									
	08	11	36	9.9	63	39.0	149	17.4	119.8	3.4*	11	0	184	20	89	0.14	5.9	5.3	D
	09	04	07	42.3	59	25.1	152	18.5	104.6	4.6*	10	0	103	46	61	0.28	2.2	8.7	C
										NEIS MB = 4.8									
										FELT (III) AT HOMER									
	09	09	33	35.1	54	46.6	159	36.8	30.0	6.3	*6	0	283	88	388	0.24	99.0	99.0	D
										NEIS MB = 6.2, MS = 6.6									
										SLIGHT DAMAGE (VI) AT SAND POINT. FELT (V) AT COLD BAY, CHIGNIK LAKE AND CHIGNIK LAGOON. FELT (IV) AT FALSE PASS, KING COVE, PERRYVILLE, AND PORT HEIDEN.									
	09	14	16	22.0	54	34.8	159	28.7	23.5	4.2	5	0	266	81	100	0.00	99.0	99.0	D
										PALMER ML = 4.3, NEIS MB = 5.0									
	10	10	04	34.7	61	29.3	152	21.4	76.1	3.2	12	0	122	121	208	0.31	4.5	13.1	C
	11	06	23	13.4	63	19.6	149	41.1	107.3	3.5*	14	0	84	59	128	0.20	3.4	5.3	B
	12	09	32	24.9	66	18.8	149	38.1	0.7	3.1	12	1	152	173	174	0.34	5.2	18.1	D
	12	18	48	4.9	61	3.2	151	11.8	64.9	4.2*	15	0	152	114	161	0.38	3.0	5.0	D
										FELT (II) AT ANCHORAGE									
	12	21	16	34.1	60	56.1	147	42.3	39.4	3.4	9	0	124	105	154	0.28	2.1	8.1	D
	17	14	38	13.3	61	22.0	147	41.7	25.9	3.2*	14	0	170	56	115	0.33	3.3	3.9	D
	18	08	08	43.2	60	8.7	153	31.1	161.8	3.3	13	0	90	81	97	0.26	3.7	8.4	C
										PALMER ML = 3.3									
	19	12	43	20.2	61	38.7	150	50.2	18.3	3.7*	11	0	140	103	218	0.30	5.8	16.8	D
										FELT (II) AT ANCHORAGE									
	23	08	02	49.4	58	30.8	154	2.1	80.1	3.4	8	1	218	82	102	0.17	3.5	4.3	D
	23	18	41	8.2	62	18.0	150	15.8	31.6	3.7*	11	0	150	96	177	0.20	4.1	5.0	D
										FELT (II) AT CHASE AND FELT (III) AT TALKEETNA AND TRAPPERS CREEK									
	24	22	25	42.4	63	20.3	148	7.3	30.8	3.5*	12	0	130	168	193	0.37	5.4	31.1	D
	27	19	03	41.5	58	18.2	154	11.9	76.0	4.8*	12	0	114	102	130	0.29	6.0	9.8	C
										NEIS MB = 5.4									
	28	17	55	47.3	66	13.8	149	58.4	10.0	3.5*	10	1	152	170	178	0.30	2.2	8.0	D
	31	06	58	9.1	60	42.8	151	48.5	81.2	3.1	8	2	131	82	136	0.30	1.8	5.8	C
	31	18	32	42.3	60	38.8	150	28.4	18.8	3.0	9	2	180	102	116	0.28	2.2	7.4	D
	31	20	17	36.7	57	42.1	156	13.4	49.5	5.1*	9	0	140	222	250	0.29	5.4	99.0	D
										NEIS MB = 4.7									
	31	22	07	54.9	57	42.9	156	10.4	33.3	3.4*	4	0	165	196	219	0.28	17.4	20.7	D
NOV	01	02	32	8.0	63	9.2	150	31.0	120.4	4.7*	15	0	96	102	172	0.20	3.1	8.6	C
										NEIS MB = 4.7									
										FELT (II) AT TALKEETNA									
	01	23	08	18.0	64	28.5	148	3.1	8.3	3.9*	13	0	133	6	28	0.36	1.4	1.8	C
										FELT (III) AT FAIRBANKS									
	02	04	39	41.9	55	9.9	156	58.5	39.8	4.8	11	0	227	225	488	0.36	21.1	17.4	D
	04	09	59	18.8	58	55.5	151	13.1	48.2	3.2	10	0	199	67	85	0.22	3.3	9.1	D
	08	01	28	1.8	62	28.8	151	17.2	88.5	5.1*	17	0	87	147	188	0.20	3.8	18.0	C
										NEIS MB = 5.1									
										FELT (IV) AT TALKEETNA AND FELT (III) AT CHUGIAK SUTTON, DENALI NATIONAL PARK, KASILOF, WILLOW, AND COOPER LANDING. ALSO FELT (II) AT PALMER, ANCHORAGE AND FAIRBANKS.									
	08	19	01	21.2	62	11.0	150	37.3	72.8	3.7*	10	0	213	102	193	0.18	9.8	7.1	D
										FELT (III) AT TALKEETNA AND BIG LAKE AND FELT (II) AT PALMER									
	07	12	13	54.9	62	51.9	150	58.1	110.6	3.5*	15	1	138	173	213	0.27	5.7	19.6	C
	07	13	32	47.3	61	48.2	148	48.7	28.9	3.7*	10	0	205	121	298	0.22	7.0	21.1	D
										FELT (II) AT KENNY LAKE AND CHITNA									
	08	11	06	32.9	59	27.1	152	38.1	101.6	3.2*	14	0	86	40	47	0.20	1.6	4.3	B
	09	15	26	19.8	60	0.9	151	34.2	38.3	3.7	9	0	181	40	98	0.19	3.9	8.1	D
										FELT (II) AT HOMER									
	10	10	44	13.8	63	2.7	150	51.4	127.4	3.4*	16	0	101	153	192	0.37	3.3	13.8	C
	12	08	50	40.7	71	22.8	137	8.7	15.8	4.1*	10	0	238	372	626	0.15	35.8	99.0	D
	13	09	38	42.4	60	35.7	151	37.8	68.9	3.8*	16	0	62	66	104	0.33	1.8	4.8	B
										NEIS MB = 4.6									
										FELT AT KENAI									

[a] See explanation of column headings at end of appendix C.

1985	ORIGIN HR	TIME 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
NOV	13	09	40	47.8	60	38.9	151	38.0	78.0	3.8*	11	0	108	68	101	0.25	1.9	4.9	B
										NEIS MB = 4.3									
										FELT AT KENAI AND HOMER									
	13	19	56	24.9	57	49.7	153	36.3	66.7	3.4	13	0	246	67	123	0.27	7.4	9.0	D
	14	20	48	53.8	61	37.3	149	54.4	9.9	3.6*	8	0	136	41	208	0.34	10.0	48.5	C
										FELT AT ANCHORAGE									
	14	22	17	39.4	54	10.7	159	38.0	22.7	5.7*	10	0	292	141	645	0.14	99.0	98.6	D
										NEIS MB = 5.5, MZS = 5.7 PALMER MS = 5.9									
										FELT (IV) AT COLD BAY, SAND POINT, KING COVE, AND FALSE PASS									
	14	23	39	28.5	54	43.7	159	43.9	12.8	4.5*	5	0	211	84	781	0.11	15.1	11.2	D
	15	15	58	24.3	54	41.5	159	35.6	7.6	4.3*	7	0	287	93	598	0.28	99.0	99.0	D
										NEIS MB = 4.7									
										FELT AT SAND POINT									
	16	11	33	46.7	54	20.4	159	46.5	10.3	4.2*	5	0	291	121	100	0.38	85.4	99.0	D
										FELT AT SAND POINT									
	17	04	11	47.9	58	54.0	152	48.0	74.7	3.1	11	0	138	40	60	0.18	3.3	6.9	C
	17	22	40	54.0	62	48.6	150	24.6	97.3	3.8*	18	1	100	127	151	0.26	3.1	8.8	C
	18	06	00	48.8	57	51.2	153	38.4	66.5	3.2	11	0	244	66	120	0.19	6.8	9.6	D
	19	19	58	55.8	62	13.2	150	7.1	27.1	3.4*	9	2	130	65	87	0.37	1.6	4.3	D
	20	11	36	14.4	61	26.6	149	46.5	34.0	3.5*	19	0	131	38	197	0.22	2.9	2.9	C
										FELT AT ANCHORAGE, BIG LAKE AND EAGLE RIVER									
	21	18	39	35.3	60	7.2	153	21.6	132.0	3.0	8	2	172	47	60	0.21	3.3	3.5	C
	21	19	03	26.6	61	25.6	146	42.9	70.8	3.6*	12	0	217	128	281	0.38	12.2	19.0	D
										FELT AT VALDEZ									
	26	09	51	32.7	57	38.1	151	35.6	11.7	3.7	5	1	274	55	236	0.30	21.0	18.0	D
DEC	01	03	05	49.4	68	17.5	149	46.5	34.5	3.6*	8	0	155	178	180	0.28	2.3	99.0	D
	02	15	37	39.4	66	8.9	150	1.5	30.6	3.3*	9	0	145	165	169	0.23	4.8	7.4	D
	05	15	18	29.2	59	17.1	148	26.6	12.5	3.4*	7	2	241	53	196	0.30	4.4	6.5	D
	08	07	32	23.5	59	53.1	150	15.1	30.6	4.2*	10	0	199	38	64	0.32	4.3	4.8	D
										NEIS MB = 4.8									
										FELT AT HOMER AND SEWARD									
	08	16	24	14.2	60	33.7	143	14.9	7.5	3.6*	10	0	157	25	261	0.32	5.4	5.1	C
	08	20	05	36.4	63	17.2	150	30.2	133.4	3.2*	16	2	71	93	178	0.40	2.9	4.9	B
	11	11	50	23.9	60	2.1	151	0.5	67.6	3.5	9	2	106	31	58	0.27	2.5	4.0	B
	12	02	21	29.9	66	9.2	150	1.4	1.5	3.5*	7	1	167	166	174	0.37	3.1	8.2	D
	12	08	54	52.0	60	9.6	153	4.5	143.3	3.3	13	0	145	33	75	0.35	4.0	9.5	C
	14	13	50	10.9	58	25.0	155	41.9	157.5	4.2*	10	0	136	116	178	0.38	3.2	5.7	D
										FELT AT KING SALMON AIR FORCE BASE									
	15	05	30	8.9	65	11.3	148	37.7	9.4	3.4*	10	0	197	46	63	0.23	3.6	3.4	D
	17	04	11	0.0	61	35.5	148	10.6	27.9	3.5*	15	0	201	26	91	0.41	3.3	2.3	D
										FELT (II) AT CHICKALOON AND SUTTON									
	19	08	10	55.9	65	8.5	148	33.5	24.6	4.0	14	0	97	40	58	0.33	3.5	11.5	C
	20	14	48	49.8	61	57.7	150	26.3	59.3	3.1*	13	0	114	45	112	0.28	3.2	6.5	C
	22	08	02	59.7	64	29.6	149	20.4	18.1	3.3*	11	0	128	16	60	0.19	3.0	1.2	C
										FELT (IV) AT NENANA AND (III) AT FAIRBANKS									
	23	00	45	38.9	64	53.4	152	10.8	34.3	3.7*	11	0	112	152	192	0.25	4.7	30.8	D
	24	14	44	28.4	63	53.3	151	58.7	43.3	3.3*	4	0	195	231	293	0.13	10.9	59.1	D
										FELT (III) AT LAKE MINCHUMINA									
	26	18	37	57.9	59	51.7	152	10.4	92.0	4.2*	15	0	57	37	68	0.22	1.6	4.2	B
										NEIS MB = 4.5									
										FELT (II) AT HOMER, NINILCHIK AND ANCHOR POINT									
	28	15	07	11.1	60	18.1	153	27.4	178.1	3.0	11	0	92	40	74	0.31	3.1	8.3	C
	28	17	47	7.6	58	31.6	151	30.5	35.1	3.9*	10	1	183	32	114	0.28	2.0	2.1	C
	28	07	44	39.8	56	18.9	156	4.1	42.9	5.3	15	0	196	270	325	0.32	11.6	20.1	D
	29	09	17	15.6	59	45.8	152	57.6	98.6	3.9	13	0	75	20	51	0.18	1.6	4.6	B
	30	05	14	9.0	62	7.5	154	20.6	30.8	3.5*	13	0	111	125	148	0.35	2.0	8.0	D
	30	06	06	13.0	59	47.5	153	43.6	161.4	3.9*	13	0	62	26	50	0.20	2.6	7.1	B
	30	09	46	36.2	62	52.7	149	44.1	84.4	3.0*	17	0	60	103	140	0.30	2.8	7.8	C
	30	12	41	4.1	61	27.8	150	19.2	32.0	5.5	12	0	116	32	164	0.34	2.4	3.9	C
										FELT (V) AT ANCHORAGE AND EAGLE RIVER. FELT (IV) AT CHUGIAK, COOPER LANDING, ELMENDORF AIR FORCE BASE, GIRDWOOD, KENAI, PALMER, PETERS CREEK, SUTTON, SKWENTNA, TYONEK, WILLOW, AND WASILLA. ALSO FELT (III) AT SEWARD.									

APPENDIX B (con.)

1988	ORIGIN HR	TIME 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
DEC 30	14	00	31.2	61	26.9	150	20.1	48.4	3.0*	7	0	116	33	168	0.24	4.6	4.9	C
									FELT AT ANCHORAGE									
30	14	23	15.9	62	40.8	148	41.1	25.8	3.7*	13	0	73	99	118	0.32	2.3	6.5	D
									FELT (III) AT TALKEETNA									
30	14	35	37.9	61	27.0	150	20.4	48.6	3.4*	9	0	116	33	168	0.28	3.0	4.2	C
30	20	13	21.4	63	34.2	151	7.9	40.2	4.8*	10	0	131	202	241	0.30	3.8	17.7	D
									NEIS MB = 5.1									
									FELT (III) DENALI NATIONAL PARK									
31	02	08	1.2	59	40.9	152	12.8	15.8	4.4*	12	0	81	32	58	0.32	1.2	3.2	C
									NEIS MB = 4.6									
									FELT (IV) AT HOMER AND (III) AT ANCHOR POINT									
31	12	24	31.3	59	42.3	152	11.8	26.2	3.1	10	1	133	32	59	0.33	1.7	4.3	C

APPENDIX C

Alaska earthquakes of all magnitudes located during the fourth quarter of 1985.[a]

1985	ORIGIN HR	MN	TIME 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
OCT 01	01	49	3.5	64	40.9	149	14.0	15.5	1.2	8	0	247	14	54	0.06	4.9	1.6	D
01	04	53	37.4	64	55.5	147	26.5	10.5	2.1	7	1	176	7	35	0.26	2.1	1.9	C
01	20	11	36.1	63	11.0	148	12.8	85.4	2.0	10	0	134	71	126	0.19	4.7	7.0	C
01	20	54	8.6	65	10.8	148	8.4	19.9	1.2	6	2	267	35	41	0.40	4.4	2.1	D
02	05	01	8.1	63	52.0	149	1.5	12.8	1.2	6	1	180	16	79	0.39	9.9	4.7	D
02	09	46	11.7	58	16.5	154	57.1	3.2	4.5	7	0	146	105	157	0.29	7.7	25.1	D
02	12	48	55.8	63	50.5	148	30.3	11.2	1.1	6	1	218	24	73	0.27	3.1	2.7	D
02	12	52	40.5	64	20.9	147	2.2	6.5	1.2	7	1	260	48	71	0.15	2.6	26.1	D
02	13	36	9.1	62	26.1	148	13.8	81.7	2.2	8	0	197	99	195	0.34	15.8	24.8	D
03	07	33	37.8	64	19.3	148	27.4	11.5	1.2	5	3	192	24	41	0.21	1.3	4.1	C
03	08	41	48.1	63	4.7	150	50.6	137.3	1.9	9	0	236	120	187	0.13	16.3	11.7	D
03	14	49	6.4	65	31.4	147	43.8	15.0	1.6	7	3	191	62	80	0.37	2.4	2.3	D
03	14	57	11.8	64	47.8	147	46.0	13.8	0.7	6	2	146	12	18	0.17	1.5	3.1	C
04	05	23	34.4	63	13.2	150	26.2	120.4	1.8	8	0	331	94	164	0.17	90.2	65.2	D
04	10	23	38.7	61	19.6	146	55.8	16.2	2.1*	5	1	166	36	69	0.15	10.7	12.3	C
									SMALLEST EARTHQUAKE REPORTED FELT IN SOUTH-CENTRAL ALASKA									
04	15	25	34.0	64	47.7	147	21.0	6.2	0.7	5	3	230	22	27	0.20	1.9	6.7	D
04	18	09	0.0	59	48.1	152	44.9	86.4	2.1	8	2	99	32	69	0.11	2.2	2.6	B
04	18	09	14.4	60	36.2	151	9.8	13.4	2.3	5	2	273	91	120	0.30	60.3	66.2	D
04	19	24	50.2	64	21.5	149	53.0	21.9	1.3	6	4	271	46	87	0.38	2.6	1.2	D
05	02	44	26.3	61	12.5	149	14.8	21.3	3.7	22	1	90	43	151	0.40	1.9	2.7	C
									PALMER ML = 3.8									
									FELT AT EAGLE RIVER, EKLUTNA LAKE AND ANCHORAGE									
05	06	04	17.6	63	8.5	149	24.4	92.4	1.9	9	1	332	70	137	0.32	7.7	2.9	D
05	08	21	16.1	66	10.4	149	52.3	31.1	2.0	8	0	149	170	175	0.40	2.4	99.0	D
05	17	31	38.2	59	28.9	155	27.1	90.0	2.5	5	0	277	120	239	0.18	18.8	14.6	D
06	03	59	0.4	63	14.1	150	42.4	138.9	2.1	10	0	234	104	170	0.14	15.1	13.2	D
06	05	40	11.1	63	17.5	150	18.3	97.2	2.0	7	0	329	84	155	0.26	93.8	62.3	D
06	21	28	35.4	60	8.0	153	15.0	141.0	2.5	5	0	210	41	90	0.21	9.7	21.0	D
07	13	30	4.7	59	8.6	152	36.6	74.6	2.6	9	0	188	50	64	0.09	3.2	6.4	D
07	16	40	59.9	64	10.1	148	33.4	14.8	1.1	5	0	130	30	92	0.14	2.1	13.8	D
07	23	17	10.1	63	27.4	147	39.3	112.2	2.0	8	0	292	71	115	0.10	18.2	19.7	D
08	11	36	9.9	63	39.0	149	17.4	119.8	3.4*	11	0	184	20	89	0.14	5.9	5.3	D
09	04	07	42.3	59	25.1	152	18.5	104.6	4.6*	10	0	103	46	61	0.28	2.2	8.7	C
									NEIS MB = 4.8									
									FELT (III) AT HOMER									
09	09	33	35.1	54	46.6	159	36.8	30.0	6.3*	6	0	283	85	588	0.24	99.0	99.0	D
									NEIS MB = 6.2, MS = 6.6									
									SLIGHT DAMAGE (VI) AT SAND POINT. FELT (V) AT COLD BAY, CHIGNIK LAKE AND CHIGNIK LAGOON. FELT (IV) AT FALSE PASS, KING COVE, PERRYVILLE, AND PORT HEIDEN.									
09	12	56	28.6	61	21.6	151	45.8	82.7	2.5	8	0	219	118	149	0.18	5.9	13.2	D
09	14	16	22.0	54	54.8	159	28.7	23.5	4.2	5	0	266	81	100	0.00	99.0	99.0	D
									PALMER ML = 4.3, NEIS MB = 5.0									
09	14	29	54.8	60	24.7	150	8.6	25.2	2.9	10	1	187	83	119	0.32	3.4	11.3	D
09	15	37	37.8	65	31.3	148	54.2	0.4	1.6	6	1	305	85	106	0.09	9.3	4.5	D
10	06	41	47.4	61	32.9	150	37.2	61.0	2.1	6	0	293	79	258	0.16	99.0	99.0	D
10	10	04	34.7	61	29.3	152	21.4	76.1	3.2	12	0	122	121	208	0.31	4.5	13.1	C
10	10	39	35.0	62	47.9	150	57.7	122.9	2.5	10	0	150	146	216	0.31	12.4	15.1	D
10	12	48	43.8	63	35.0	149	33.3	10.5	1.1	5	0	310	35	104	0.11	16.6	3.7	D
10	18	32	0.2	62	3.9	148	40.8	20.3	2.3	9	2	147	52	131	0.32	5.4	9.4	D
11	06	23	13.4	63	19.6	149	41.1	107.3	3.5*	14	0	84	59	128	0.20	3.4	5.3	B
12	00	25	18.9	62	29.9	148	24.9	30.0	1.8	7	0	189	102	221	0.21	63.1	42.7	D
12	07	07	16.6	64	50.0	147	23.5	8.4	0.6	5	3	220	17	29	0.08	1.6	4.5	C
12	09	32	24.9	66	15.6	149	35.1	0.7	3.1	12	1	152	173	174	0.34	5.2	18.1	D
12	10	59	23.6	63	24.5	150	18.4	133.1	1.7	10	0	223	77	144	0.15	12.7	12.4	D
12	18	45	4.9	61	5.2	151	11.8	64.9	4.2*	15	0	152	114	161	0.38	3.0	5.0	D
									FELT (II) AT ANCHORAGE									
12	19	12	13.5	61	3.3	151	15.6	72.9	2.7	7	0	150	109	170	0.03	7.1	12.6	D
12	21	16	54.1	60	56.1	147	42.3	39.4	3.4	9	0	124	105	154	0.25	2.1	8.1	D
12	21	31	28.8	61	10.8	151	12.9	68.9	2.8	14	0	107	45	120	0.15	2.0	3.1	B

[a]See explanation of column headings at end of appendix C.

1988	ORIGIN HR	MN	TIME 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
OCT 13	00	52	40.0	60	1.6	149	49.8	44.7	2.9	7	2	199	66	169	0.23	4.5	4.2	D
13	00	53	1.8	61	35.3	149	10.5	23.0	2.5	9	0	282	2	239	0.38	52.7	22.8	D
13	07	00	56.4	58	57.9	153	0.1	71.3	2.0	6	1	207	37	114	0.10	3.0	3.3	C
13	13	44	17.9	61	47.0	146	50.2	78.4	2.5	9	0	268	123	273	0.37	99.0	99.0	D
13	15	47	30.3	60	5.1	152	40.4	91.8	2.1	6	1	117	38	91	0.15	3.5	6.1	C
13	16	16	37.4	59	44.0	150	47.8	28.6	3.0	7	3	203	6	48	0.31	2.8	2.5	D
13	16	19	27.5	64	16.2	148	5.0	5.5	0.7	7	0	122	12	44	0.07	2.1	10.4	C
14	01	28	48.9	64	59.9	147	28.9	17.9	1.2	6	1	226	5	37	0.11	3.1	1.2	D
14	05	45	45.0	66	2.3	150	6.4	32.3	2.2	7	0	160	162	166	0.31	3.6	99.0	D
14	08	20	56.2	59	41.8	152	4.4	82.6	2.2	6	0	116	91	65	0.11	3.3	16.0	C
14	23	43	8.4	64	46.3	147	25.2	11.2	2.3	10	0	118	20	25	0.17	2.0	1.8	B
15	19	41	35.0	59	28.2	152	22.6	73.8	2.9	7	1	147	47	62	0.12	2.8	3.9	C
15	19	54	52.3	58	12.1	151	31.3	15.8	2.9	6	1	223	77	149	0.31	21.6	45.5	D
16	11	48	41.3	62	36.9	149	36.3	86.2	2.1	11	0	198	114	129	0.23	13.5	12.1	D
16	17	06	28.3	59	21.7	153	6.0	95.7	2.3	8	0	134	19	33	0.04	3.2	8.1	C
17	01	35	21.2	64	48.1	148	47.0	13.7	0.7	5	3	223	29	50	0.32	2.2	3.5	D
17	07	28	31.3	59	47.9	153	24.9	110.9	2.0	5	0	118	44	86	0.01	10.5	34.1	D
17	14	16	6.6	63	15.0	148	30.5	90.5	1.8	7	2	174	58	138	0.29	7.8	5.4	D
17	14	38	13.3	61	22.0	147	41.7	25.9	3.2*	14	0	170	56	118	0.33	3.3	3.9	D
17	18	27	18.4	63	11.0	150	29.5	114.0	2.4	11	0	226	99	168	0.17	10.4	8.0	D
17	18	36	53.0	62	30.6	151	11.7	74.7	2.6	9	1	106	149	248	0.39	34.9	82.8	C
17	23	20	53.6	62	20.6	147	42.4	34.8	2.0	14	0	117	60	105	0.40	4.0	8.1	C
18	02	07	11.2	59	28.5	152	33.2	65.3	1.8	5	0	165	48	75	0.06	19.1	44.6	D
18	05	05	43.2	60	8.7	153	31.1	161.8	3.3	13	0	90	51	57	0.28	3.7	8.4	C
									PALMER ML = 3.3									
18	12	07	9.5	64	16.7	151	11.2	83.8	1.9	7	2	307	94	126	0.35	6.2	7.5	D
18	16	37	55.4	64	44.3	149	5.3	13.3	0.9	7	1	242	18	59	0.16	4.7	2.1	D
18	17	43	47.7	60	20.4	150	17.8	26.7	2.7	8	0	293	72	107	0.20	23.3	13.0	D
19	03	31	32.3	59	43.2	153	39.2	152.7	2.9	9	0	146	26	68	0.30	2.8	6.6	C
19	03	32	36.2	63	47.5	149	0.6	30.0	1.4	8	0	195	8	88	0.26	27.2	38.6	D
19	04	22	31.4	60	3.9	152	23.3	91.9	2.3	8	2	139	48	91	0.15	3.0	5.4	C
19	10	53	20.8	63	7.8	150	23.2	106.8	2.2	10	2	225	99	169	0.24	9.4	5.8	D
19	12	43	20.2	61	58.7	150	60.2	15.3	3.7*	11	0	140	103	218	0.30	5.6	16.8	D
									FELT (II) AT ANCHORAGE									
19	13	24	48.6	63	46.1	149	3.7	51.4	1.9	6	0	227	7	115	0.20	34.6	38.2	D
19	14	53	26.4	61	34.2	149	40.5	41.1	2.7	10	1	120	35	212	0.32	2.7	3.9	C
19	18	22	49.2	64	28.2	149	19.7	15.9	1.6	8	2	239	17	69	0.21	2.5	1.9	D
19	20	57	6.9	64	30.5	148	57.4	8.5	2.2	9	0	280	44	87	0.18	4.1	3.7	D
19	22	44	13.7	61	36.3	152	24.1	30.0	2.7	6	0	166	179	296	0.28	99.0	99.0	D
20	04	43	50.6	63	0.1	150	39.0	114.7	2.1	10	0	230	118	174	0.17	14.9	10.7	D
20	22	29	1.6	64	28.9	147	23.6	0.2	1.7	9	1	218	27	43	0.35	2.3	99.0	D
20	23	52	9.5	63	39.1	149	41.2	138.3	2.6	11	0	280	38	104	0.11	13.9	17.9	D
21	10	43	4.6	59	13.6	152	36.8	69.1	2.2	6	2	178	50	68	0.10	2.1	3.9	C
21	12	14	40.9	59	40.9	153	8.8	102.4	2.0	5	1	101	60	89	0.08	2.7	7.8	C
21	15	48	50.8	62	29.6	150	59.4	88.6	2.4	9	0	147	140	173	0.15	14.7	26.4	D
22	00	15	48.5	64	52.5	148	59.7	9.7	2.3	8	0	280	33	87	0.15	4.9	7.5	D
22	00	16	37.5	64	51.9	148	58.9	19.7	2.3	7	2	249	32	56	0.29	2.2	1.2	C
22	01	35	43.5	62	52.8	151	21.5	120.6	2.5	11	0	250	194	184	0.14	17.3	15.2	D
22	02	43	39.6	65	3.9	148	33.7	17.5	1.2	7	3	284	33	56	0.32	2.4	1.4	D
22	05	43	29.5	63	13.9	150	31.1	121.8	2.0	9	0	229	97	166	0.13	16.1	12.2	D
22	13	28	40.2	63	33.4	150	25.1	40.1	2.1	11	0	227	76	131	0.26	10.1	7.4	D
22	23	30	47.9	59	8.8	152	9.3	46.7	2.7	9	3	140	71	87	0.34	1.7	5.1	D
23	02	37	34.4	59	20.4	152	1.3	61.6	2.8	10	3	160	41	77	0.15	2.9	3.9	C
23	05	02	49.4	58	30.8	154	2.1	80.1	3.4	8	1	218	52	102	0.17	3.9	4.3	D
23	06	42	19.2	60	19.7	153	1.5	112.5	2.2	5	2	166	17	108	0.18	3.6	5.8	D
23	08	22	27.9	63	31.1	148	42.8	9.9	1.7	9	0	308	26	83	0.22	14.8	3.0	D
23	16	14	57.8	63	6.7	151	43.7	40.7	2.0	6	0	335	156	209	0.29	99.0	99.0	D
23	16	41	8.2	62	16.0	150	15.8	31.6	3.7*	11	0	150	96	177	0.20	4.1	5.0	D
									FELT (II) AT CHASE AND FELT (III) AT TALKEETNA AND TRAPPERS CREEK									
23	20	15	6.4	60	13.1	152	48.3	114.7	2.5	7	1	126	23	91	0.14	4.6	4.8	C
24	03	11	41.5	64	28.8	146	52.9	2.1	2.2	5	1	254	61	67	0.30	5.8	99.0	D
24	05	05	26.2	62	28.5	150	53.0	93.0	2.2	11	0	200	131	197	0.30	5.7	14.1	D
24	09	35	42.8	59	13.6	153	53.7	119.0	2.8	10	3	104	26	33	0.23	2.8	2.3	C

APPENDIX C (con.)

1988	ORIGIN HR	MN	TIME SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NP	NS	GAP DEG	D1 KM	D3 KM	RMS SEC	ERH KM	ER2 KM	Q
OCT 24	14	54	16.3	65	2.5	147	47.9	24.4	0.9	7	2	237	16	29	0.26	3.6	5.8	D
24	22	25	42.4	63	20.3	145	7.3	30.8	3.5*	12	0	130	168	193	0.37	5.4	51.1	D
25	04	29	35.8	65	59.5	148	14.4	7.9	2.0	8	3	226	119	130	0.32	3.9	1.9	D
25	19	20	37.5	63	53.3	146	47.7	4.8	1.8	8	0	274	64	97	0.29	7.1	3.3	D
25	19	48	48.8	65	8.7	149	57.8	32.9	2.2	10	0	154	76	106	0.33	3.3	11.6	D
26	00	19	39.0	64	20.9	148	32.6	19.9	1.4	8	2	193	26	36	0.11	2.4	1.8	D
26	05	57	47.4	64	23.4	149	40.2	16.0	1.1	9	3	260	28	77	0.21	2.0	1.4	C
26	10	01	4.3	64	44.7	146	49.1	17.2	2.0	7	3	266	38	49	0.22	2.3	1.3	D
26	12	36	34.3	63	27.5	151	9.8	62.1	2.1	6	1	325	118	161	0.25	8.2	16.8	D
26	18	29	56.6	60	17.2	152	44.3	125.7	2.6	9	0	126	18	93	0.24	5.7	12.6	C
26	23	37	34.6	60	6.8	152	19.1	124.6	2.4	4	0	151	42	89	0.11	32.0	99.0	D
27	00	27	34.3	64	43.0	147	34.4	14.3	1.7	7	2	180	14	30	0.20	1.8	3.4	C
27	07	35	1.2	63	34.2	148	52.1	62.0	2.3	8	0	312	78	108	0.12	50.5	31.9	D
27	08	18	11.4	58	42.6	152	49.2	75.0	2.3	6	4	253	54	128	0.33	2.5	2.9	D
27	12	08	4.8	64	44.2	147	26.1	18.7	2.6	7	1	197	20	28	0.29	2.6	1.7	D
27	19	03	41.6	58	18.2	154	11.9	76.0	4.8*	12	0	114	102	130	0.29	6.0	9.8	C
									NEIS MB - 5.4									
28	01	04	31.8	64	37.1	147	33.3	13.6	0.5	4	1	158	5	26	0.09	2.3	4.2	D
28	06	33	34.0	66	12.5	150	6.3	29.0	2.2	7	0	152	162	181	0.26	3.8	9.4	D
28	07	38	48.1	64	51.6	147	28.8	15.4	0.7	6	3	198	15	29	0.21	2.2	3.0	C
28	08	28	14.3	61	30.7	152	32.2	79.8	2.6	9	0	300	181	309	0.21	99.0	99.0	D
28	11	14	45.8	60	48.4	152	40.7	126.6	2.8	6	2	216	44	141	0.23	4.0	6.4	D
28	12	54	31.9	64	22.6	147	12.2	0.9	2.2	9	0	238	42	44	0.14	3.2	99.0	D
28	17	55	47.3	66	13.8	149	56.4	10.0	3.5*	10	1	152	170	178	0.30	2.2	8.0	D
28	19	08	1.0	64	54.6	147	44.1	20.1	0.9	7	0	174	3	22	0.03	2.2	1.3	C
28	20	38	19.9	64	17.1	147	7.7	16.8	1.2	8	2	245	41	62	0.21	2.3	1.9	D
28	23	58	57.8	66	8.9	149	56.5	3.5	2.2	7	2	148	169	174	0.39	2.3	4.3	D
29	01	10	42.4	63	14.8	149	27.0	79.9	2.3	11	2	190	60	180	0.31	4.9	2.4	D
29	01	20	17.5	63	56.0	148	49.5	9.9	1.2	9	0	136	23	91	0.29	1.6	3.0	C
29	01	27	51.2	64	53.3	147	46.8	25.5	1.1	7	4	124	1	22	0.25	1.7	1.8	B
29	14	19	49.8	60	2.5	152	28.6	124.6	1.7	5	0	130	48	91	0.03	7.0	30.6	D
29	23	52	51.3	59	8.9	152	53.5	84.7	2.6	8	1	93	37	50	0.11	2.4	3.5	C
30	03	13	21.0	64	31.8	148	38.0	8.7	0.8	5	3	143	24	40	0.38	1.2	7.9	C
30	17	10	19.0	63	54.1	148	56.5	9.9	1.0	7	0	158	19	68	0.24	1.9	4.7	C
31	06	56	9.1	60	42.8	151	48.8	81.2	3.1	8	2	131	62	136	0.30	1.8	5.6	C
31	10	18	13.7	64	4.1	148	29.1	21.4	1.2	7	1	146	30	49	0.30	2.0	1.4	C
31	11	01	6.7	59	59.8	152	48.4	103.2	2.4	6	3	108	45	75	0.11	3.4	3.6	C
31	16	11	52.7	60	15.3	153	3.4	140.2	2.2	7	0	95	24	82	0.10	6.1	18.7	C
31	18	32	42.3	60	38.8	150	28.4	15.8	3.0	9	2	160	102	116	0.28	2.2	7.4	D
31	20	17	38.7	57	42.1	156	13.4	49.5	5.1*	9	0	140	222	250	0.29	5.4	99.0	D
									NEIS MB - 4.7									
31	22	07	54.9	57	42.9	156	10.4	33.3	3.4*	4	0	166	196	219	0.26	17.4	20.7	D
NOV 01	00	14	48.7	64	38.2	149	57.6	15.0	1.4	5	0	282	43	92	0.10	9.7	3.9	D
01	02	09	59.7	66	13.6	149	58.8	1.9	2.3	8	2	152	168	183	0.40	3.1	4.4	D
01	02	32	5.0	63	9.2	150	31.0	120.4	4.7*	15	0	96	102	172	0.20	5.1	8.6	C
									NEIS MB - 4.7									
									FELT (II) AT TALKEETNA									
01	03	12	24.5	64	43.0	147	3.7	14.2	1.1	6	1	242	34	40	0.06	3.7	8.6	D
01	04	06	53.1	64	16.8	148	10.9	13.2	0.7	5	0	150	17	45	0.09	3.8	7.5	D
01	04	09	0.8	64	44.7	147	47.3	15.0	1.3	9	1	149	11	19	0.20	1.5	1.7	C
01	04	27	31.4	62	33.9	151	53.5	217.3	2.6	9	0	267	182	227	0.13	33.3	30.3	D
01	08	26	59.0	63	59.9	148	48.7	7.6	1.2	10	2	135	33	63	0.30	1.7	2.4	C
01	09	08	10.9	64	55.1	148	8.7	15.2	0.9	7	2	206	10	34	0.14	2.2	1.4	C
01	14	03	48.8	64	43.6	147	29.6	16.3	0.3	5	2	215	18	33	0.27	3.3	3.1	D
01	15	40	26.4	64	48.3	147	48.1	13.6	0.2	4	1	148	18	27	0.03	2.0	3.7	C
01	18	17	53.6	64	25.9	147	17.7	1.1	0.7	7	1	232	34	42	0.09	3.0	99.0	D
01	23	08	15.0	64	25.5	148	3.1	8.3	3.9*	13	0	133	6	28	0.36	1.4	1.8	C
									FELT (III) AT FAIRBANKS									
01	23	15	44.0	64	25.4	148	1.4	7.4	0.4	7	1	146	6	28	0.23	1.5	3.2	C
01	23	17	1.4	64	24.8	148	2.3	6.5	0.5	6	0	144	7	28	0.08	1.6	3.6	C
01	23	29	56.0	64	26.7	148	4.2	7.4	0.8	7	1	217	3	43	0.15	2.6	2.5	D
02	01	19	26.9	63	55.5	148	46.5	8.8	1.4	8	1	270	40	69	0.18	3.6	1.7	D
02	01	21	14.5	64	24.8	148	1.5	5.3	0.3	5	1	149	7	28	0.04	1.7	2.4	C
02	02	10	38.8	64	24.9	148	1.4	6.6	0.5	7	0	149	7	28	0.10	1.4	3.5	C

1985	ORIGIN HR	MN	TIME 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	
NOV	02	03	41 57.2	63	7.4	149	3.3	17.2	0.6	5	0	279	54	80	0.06	8.7	3.4	
	02	04	39 41.9	58	9.9	156	58.8	39.8	4.8	11	0	227	225	465	0.36	21.1	17.4	
	02	04	52 57.2	64	53.5	150	1.9	40.1	1.2	7	0	291	57	90	0.11	22.6	6.4	
	02	06	09 32.8	64	46.0	147	27.1	1.6	0.2	4	1	216	22	34	0.09	3.2	27.2	
	02	08	04 41.1	63	29.8	150	32.9	13.1	1.6	9	1	230	140	162	0.31	12.4	17.6	
	02	09	26 56.3	64	18.9	146	47.3	12.6	1.1	7	2	276	58	65	0.13	2.2	2.5	
	02	13	53 4.9	64	37.0	149	28.6	19.4	0.9	6	2	304	17	66	0.08	3.7	1.2	
	02	15	40 51.1	66	25.0	149	16.3	40.5	1.5	7	2	250	181	202	0.40	3.9	99.0	
	02	17	42 52.2	63	51.1	149	14.0	15.7	1.6	5	2	306	81	121	0.21	4.1	1.9	
	02	19	34 49.5	63	52.3	148	27.1	110.8	1.6	8	0	279	43	69	0.07	18.1	25.9	
	02	22	57 53.4	60	20.0	153	7.0	127.0	2.7	5	2	198	21	88	0.18	4.2	3.9	
	03	01	48 25.0	59	54.5	152	32.6	76.3	2.8	6	4	114	48	58	0.13	1.8	3.7	
	03	02	18 13.5	64	47.1	147	25.6	0.3	0.3	6	1	196	22	24	0.06	2.3	99.0	
	03	05	48 23.6	62	32.8	145	56.8	122.3	2.5	8	0	253	207	249	0.35	21.8	44.7	
	03	06	03 7.8	64	51.1	147	23.7	12.1	0.4	5	1	217	15	30	0.13	2.8	6.1	
	03	08	08 40.8	64	25.0	148	1.9	7.5	0.6	7	0	144	7	28	0.13	1.4	3.2	
	03	08	46 2.8	64	46.2	147	30.2	9.4	0.4	4	1	208	20	31	0.04	3.0	4.8	
	03	10	24 39.7	64	26.7	147	23.4	0.1	0.6	8	2	222	30	40	0.20	1.9	99.0	
	03	11	29 54.3	64	48.9	147	26.5	3.2	0.1	4	0	218	22	34	0.13	3.4	32.4	
	03	12	25 31.7	66	23.7	151	19.9	76.7	2.2	7	1	174	112	228	0.29	12.6	34.1	
	03	14	04 11.2	62	37.7	151	39.8	31.9	2.3	8	2	217	176	272	0.23	46.2	99.0	
	03	14	23 30.4	64	24.9	148	1.1	7.1	0.6	5	0	180	7	28	0.02	1.8	3.8	
	03	14	33 34.9	64	24.7	148	2.8	2.4	0.4	8	0	142	7	29	0.28	1.3	6.9	
	03	18	43 40.6	62	7.7	147	10.1	199.9	2.6	8	1	270	232	266	0.32	19.6	19.6	
	03	17	51 26.7	63	50.0	148	34.2	118.2	1.7	8	0	154	37	69	0.18	5.7	7.0	
	03	21	04 5.6	63	27.2	149	50.3	2.4	1.4	6	1	208	85	131	0.23	3.6	6.5	
	03	21	11 59.7	64	25.3	148	1.8	7.4	0.6	9	1	148	6	27	0.23	1.4	3.0	
	03	21	13 51.9	64	24.5	148	1.6	11.6	0.4	8	1	148	8	29	0.21	1.8	1.7	
	04	00	17 4.8	63	26.8	145	27.3	30.3	1.7	5	0	181	147	178	0.12	6.2	7.7	
	04	02	54 17.6	58	3.5	151	53.6	22.4	2.8	5	1	209	50	168	0.20	13.2	26.5	
	04	07	13 46.5	64	56.3	148	9.5	16.0	0.1	6	1	209	11	35	0.11	2.6	1.8	
	04	07	40 4.1	60	3.5	152	36.0	108.9	1.9	5	2	121	41	94	0.21	3.1	3.4	
	04	07	59 36.9	63	5.0	150	5.5	69.5	1.4	5	0	344	174	208	0.07	99.0	99.0	
	04	09	59 18.5	58	55.5	151	13.1	48.2	3.2	10	0	199	67	85	0.22	3.3	9.1	
	04	10	00 21.5	63	28.9	149	19.5	74.7	1.6	8	0	322	82	123	0.31	79.4	91.1	
	04	11	17 8.4	64	6.9	148	9.9	110.0	1.6	10	1	132	13	62	0.14	4.6	2.6	
	04	13	48 50.9	64	42.6	149	15.0	12.0	1.2	7	1	279	17	62	0.21	3.3	4.5	
	04	14	16 29.2	66	18.6	149	18.9	8.4	1.8	6	1	244	172	198	0.38	18.8	16.7	
	04	15	03 49.3	61	55.1	151	42.2	114.1	2.6	14	1	135	141	227	0.27	3.8	8.1	
	04	18	33 45.1	64	54.3	147	32.6	18.1	0.8	7	1	155	12	30	0.16	2.1	1.2	
	04	21	54 34.5	66	9.8	149	57.9	15.2	1.8	7	1	149	168	177	0.28	2.8	7.9	
	04	22	24 51.2	64	42.3	149	16.4	17.6	1.3	7	1	261	17	62	0.16	4.3	1.6	
	04	23	20 18.8	60	6.3	153	1.3	120.0	2.0	7	3	139	38	74	0.16	2.8	3.0	
	04	23	21 12.1	63	40.6	149	21.1	39.8	1.0	8	0	295	22	101	0.18	30.9	13.8	
	05	01	28 1.8	62	25.8	151	17.2	88.8	3.1*	17	0	87	147	188	0.20	3.8	18.0	
									NEIS MB - 3.1									
									FELT (IV) AT TALKEETNA AND FELT (III) AT CHUGIA SUTTON, DENALI NATIONAL PARK, KASILOF, WILLOW, AND COOPER LANDING. ALSO FELT (II) PALMER, ANCHORAGE AND FAIRBANKS.									
	05	02	18 59.3	63	43.7	149	26.8	39.2	0.8	7	0	281	25	96	0.36	20.1	18.9	
	05	11	04 42.5	63	25.7	151	36.7	0.5	1.4	6	1	256	137	208	0.35	6.6	2.6	
	05	11	25 13.3	64	52.7	148	37.0	12.4	0.1	4	0	287	23	52	0.00	13.3	8.8	
	05	11	48 55.6	64	36.8	149	18.3	18.6	1.2	8	2	254	10	59	0.06	2.9	1.5	
	05	14	54 5.7	64	54.0	147	14.4	11.8	0.8	5	0	256	12	39	0.09	9.2	19.6	
	05	15	46 14.2	64	36.8	149	30.0	24.3	0.7	5	0	268	21	70	0.14	9.1	1.4	
	05	17	48 42.5	59	45.7	153	29.8	115.8	2.1	8	0	114	39	84	0.07	10.9	38.0	
	05	19	01 21.2	62	11.0	150	37.3	72.8	3.7*	10	0	213	102	193	0.18	9.8	7.1	
									FELT (III) AT TALKEETNA AND BIG LAKE AND FELT (II) AT PALMER									
	05	20	00 19.1	64	41.3	148	43.7	17.2	0.5	4	0	293	48	69	0.00	13.5	27.1	
	06	01	41 40.4	63	15.4	148	48.9	94.7	1.5	7	2	331	53	140	0.37	9.6	3.5	
	06	04	44 46.2	60	0.7	152	53.2	111.6	2.3	7	3	116	44	77	0.17	2.7	2.8	
	06	09	42 50.5	64	59.1	147	27.7	18.3	0.1	5	2	203	4	37	0.05	2.2	2.3	

APPENDIX C (con.)

1988	ORIGIN HR	MN	TIME SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NP	NS	GAP DEG	D1 KM	D3 KM	RMS SEC	ERH KM	ER2 KM	D
NOV 06	09	31	30.3	63	32.5	150	35.4	55.2	1.2	6	2	324	89	183	0 38	25.8	40.3	D
06	16	50	14.3	63	44.8	149	4.4	33.4	1.4	7	1	256	7	93	0.36	3.8	5 1	D
06	19	22	12.5	65	24.1	149	31.4	18.9	1.5	7	1	176	99	112	0.23	3.7	5.2	D
06	20	39	37.6	64	47.4	149	5.0	0.0	2.2	9	0	254	24	59	0.21	4.0	12.3	D
06	21	03	41.7	59	24.3	153	24.2	106.3	2.1	7	1	101	29	62	0.20	3.4	5.4	C
06	21	56	32.3	61	38.2	147	49.8	41.3	2.4	10	1	263	64	246	0.26	12.2	33.1	D
06	23	40	36.6	64	50.3	147	41.3	23.3	1.8	5	2	149	9	22	0.29	3.6	1.9	C
07	00	21	54.4	63	43.5	149	6.5	39.4	1.2	5	2	296	9	97	0.33	7.2	1.8	D
07	00	40	11.2	64	48.9	147	43.1	7.9	0.1	4	3	154	19	25	0.17	1.0	4.0	C
07	05	25	0.1	66	34.8	148	36.3	14.4	0.8	4	1	330	85	87	0.12	5.5	2.5	D
07	07	09	50.8	64	50.9	149	3.8	6.0	1.1	8	0	251	30	60	0.19	3.9	17.1	D
07	07	20	55.1	62	51.3	150	52.0	111.7	2.7	10	0	258	172	211	0.13	39.7	20.4	D
07	09	13	51.0	64	50.6	149	1.2	0.4	1.1	8	2	248	30	59	0.32	3.1	99.0	D
07	12	13	54.9	62	51.9	150	58.1	110.6	3.5*	15	1	138	173	213	0.27	5.7	19.6	C
07	13	32	47.3	61	48.2	148	48.7	28.9	3.7*	10	0	208	121	296	0.22	7.0	21.1	D
									FELT	(II)	AT	KENNY	LAKE	AND	CHITNA			
07	14	15	50.9	63	1.0	149	54.8	132.1	1.6	10	1	287	163	185	0.19	13.4	12.6	D
07	20	25	23.5	64	56.6	148	49.7	9.4	1.5	6	1	249	35	49	0.23	3.6	12.0	D
08	02	16	42.7	62	53.9	150	31.8	33.7	1.5	5	0	227	201	237	0.10	99.0	99.0	D
08	02	23	35.4	64	49.0	149	0.4	17.2	1.4	7	2	253	27	55	0.38	2.6	1.4	D
08	03	13	12.6	64	54.4	147	25.1	0.2	0.0	4	1	204	9	36	0.15	3.7	99.0	D
08	07	48	41.5	64	43.5	148	3.1	17.5	0.8	6	1	155	12	23	0.06	2.4	3.3	C
08	11	06	32.9	59	27.1	152	38.1	101.6	3.2*	14	0	86	40	47	0.20	1.6	4.5	B
08	14	57	51.5	64	16.2	149	46.4	18.4	1.5	8	0	259	48	84	0.26	3.6	1.6	D
08	17	41	18.0	63	44.7	149	11.7	29.1	1.2	8	0	268	13	93	0.37	49.4	48.7	D
09	01	39	22.9	66	20.0	148	8.8	10.7	1.4	6	2	269	91	57	0.20	2.3	1.4	D
09	01	56	17.2	64	47.0	147	17.9	9.0	0.6	4	1	249	23	29	0.12	4.2	8.9	D
09	04	08	0.2	64	44.5	149	5.7	20.3	1.8	8	1	256	19	59	0.27	3.3	1.3	D
09	15	26	19.8	60	0.9	151	34.2	58.3	3.7	9	0	181	40	58	0.19	3.9	8.1	D
									FELT	(II)	AT	HOMER						
09	20	18	45.2	66	23.0	149	48.4	15.5	2.2	7	2	160	178	190	0.33	6.7	3.6	D
09	21	03	42.0	64	53.7	148	39.1	12.5	1.2	7	2	230	25	41	0.20	2.4	3.4	C
09	23	28	8.3	64	7.5	147	45.7	14.6	0.9	7	1	223	10	55	0.40	6.7	2.5	D
10	00	45	54.7	59	2.2	152	56.1	70.5	2.7	8	0	111	42	44	0.08	2.6	6.4	C
10	01	12	41.4	64	46.4	148	49.5	1.5	0.4	4	0	289	36	63	0.07	12.4	99.0	D
10	05	23	54.1	59	52.3	152	58.2	108.0	2.9	6	1	107	28	69	0.13	5.7	5.7	C
10	06	02	58.0	64	34.4	147	0.9	0.0	1.2	4	0	247	39	61	0.03	4.1	99.0	D
10	10	44	12.5	63	2.7	150	51.4	127.4	3.4*	16	0	101	153	192	0.37	3.3	13.8	C
10	12	37	29.7	62	23.1	151	47.5	28.0	2.1	7	1	345	208	278	0.34	99.0	99.0	D
10	16	25	11.2	64	38.6	147	48.7	22.1	0.1	5	2	181	1	26	0.17	2.4	1 5	C
10	19	32	24.7	57	59.0	153	44.6	33.1	2.7	5	0	298	106	138	0.32	99.0	99.0	D
10	23	30	52.2	64	48.3	147	48.8	15.6	1.0	7	1	134	11	18	0.13	1.6	2.4	B
11	02	19	56.1	62	49.9	149	8.6	78.0	1.8	10	2	181	101	138	0.23	9.6	2.1	D
11	02	43	37.1	59	57.6	152	43.0	89.2	2.0	6	1	136	46	69	0.14	3.5	6.6	C
11	04	24	17.7	64	46.8	149	8.5	0.3	0.4	5	1	285	23	59	0.23	4.3	99.0	D
11	05	56	35.6	64	42.0	148	58.2	13.6	0.7	4	2	277	38	58	0.18	5.6	12.0	D
11	06	34	57.6	65	3.7	147	49.5	0.8	0.1	5	1	262	18	30	0.40	4.0	64.4	D
11	06	40	20.2	61	32.5	149	31.0	30.0	2.4	7	1	349	246	334	0.39	99.0	99.0	D
11	07	20	54.9	64	28.6	147	10.6	1.6	1.7	9	3	237	36	60	0.16	1.9	43.2	D
11	09	40	0.4	64	37.7	148	3.4	17.2	0.3	6	1	105	12	23	0.14	1.8	3.8	B
11	21	38	23.5	63	8.4	148	24.6	78.7	1.8	9	2	260	71	149	0.18	7.6	5.1	D
11	22	50	21.3	64	55.0	147	46.7	14.4	2.1	8	2	187	2	20	0.30	1.8	1.4	C
12	00	59	38.6	61	10.9	151	14.3	63.2	2.5	13	1	106	119	169	0.30	2.7	8.6	C
12	01	11	0.4	63	46.6	149	7.0	17.5	1.0	4	1	243	10	90	0.28	7 0	4.3	D
12	03	34	30.0	59	59.5	153	31.0	135.5	3.0	6	0	275	42	69	0.04	33.6	66.6	D
12	06	31	29.5	62	14.9	149	58.7	76.0	2.3	10	2	221	55	174	0.19	16.1	20.9	D
12	08	10	25.5	64	59.7	148	0.1	0.3	0.1	5	1	252	15	29	0.12	3.4	99.0	D
12	08	50	40.7	71	22.5	137	6.7	15.5	4.1*	10	0	238	372	626	0.15	35.5	99.0	D
12	10	45	41.4	59	29.3	151	30.7	46.1	2.5	6	2	169	16	99	0.22	3.1	4.5	C
12	15	32	46.2	64	42.0	149	2.5	4.2	0.5	6	1	240	14	52	0.40	3.4	12.7	D
12	21	40	10.3	64	5.5	148	2.5	10.7	0.9	7	1	260	36	59	0.29	3.5	12.5	D
13	02	15	34.4	63	30.5	148	19.9	1.4	1.5	5	2	175	148	180	0.37	4.0	5.3	D
13	04	31	59.3	64	50.5	147	9.7	12.9	0.0	5	2	261	20	38	0.31	3.2	7.3	D

1985	ORIGIN HR	MN	TIME 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
NOV 13	06	15	41.7	64	49.8	147	34.1	6.7	0.1	5	2	184	13	23	0.10	2.0	9.1	C
13	9	38	42.4	60	35.7	151	37.6	68.9	3.8*	16	0	62	66	104	0.35	1.8	4.8	B
									NEIS MB = 4.6									
									FELT AT KENAI									
13	09	40	47.6	60	35.9	151	35.0	75.0	3.8*	11	0	108	68	101	0.25	1.9	4.9	B
									NEIS MB = 4.3									
									FELT AT KENAI AND HOMER									
13	11	12	52.2	64	56.7	150	37.0	9.6	1.5	9	1	299	84	118	0.34	3.9	2.4	D
13	15	05	50.7	63	1.4	151	3.3	134.2	2.3	8	1	241	132	187	0.19	12.1	11.6	D
13	16	25	57.3	64	13.4	149	4.8	29.9	1.0	6	1	205	9	55	0.30	4.6	6.7	D
13	19	10	46.1	59	26.9	152	50.0	82.0	2.3	6	0	168	32	35	0.12	7.4	17.9	C
13	19	56	24.9	57	49.7	153	36.3	66.7	3.4	13	0	246	67	123	0.27	7.4	9.0	D
13	22	37	7.0	66	27.8	146	20.1	53.0	1.7	5	0	189	50	172	0.37	33.8	35.1	D
13	23	33	8.1	64	15.3	148	29.1	16.1	2.0	9	0	94	28	38	0.13	1.2	2.0	B
14	01	54	56.9	61	22.9	149	41.5	71.7	2.3	9	2	187	38	199	0.17	8.7	4.3	D
14	02	06	54.1	61	33.2	149	42.4	83.1	2.7	11	0	284	31	246	0.23	79.3	80.4	D
14	07	15	22.6	60	13.7	149	38.3	15.3	2.7	5	1	311	87	129	0.32	13.2	24.3	D
14	07	20	21.5	62	54.5	150	46.9	122.8	2.0	9	1	235	130	169	0.14	12.0	10.8	D
14	09	29	36.2	62	56.6	151	3.7	131.5	2.2	12	2	156	138	180	0.16	5.4	9.7	D
14	13	50	32.0	58	45.2	154	13.1	0.0	2.2	5	0	293	39	81	0.27	25.8	26.8	D
14	14	03	2.3	64	33.5	147	12.6	10.3	0.7	6	3	230	30	47	0.26	2.5	8.7	D
14	15	29	22.3	60	11.8	153	17.1	152.6	2.7	6	1	180	38	68	0.25	4.2	6.4	D
14	16	50	49.6	64	47.9	147	24.4	13.8	0.3	7	2	198	21	26	0.25	1.4	4.8	C
14	17	57	18.0	64	41.5	149	8.8	16.8	1.4	9	2	242	13	53	0.21	2.8	1.4	D
14	19	23	38.6	64	39.8	150	2.1	23.9	1.5	8	0	280	47	92	0.24	9.1	99.0	D
14	19	51	57.0	63	51.5	148	58.2	3.9	1.3	6	1	183	14	80	0.27	2.4	3.1	D
14	20	48	53.8	61	37.3	149	54.4	9.9	3.6*	8	0	136	41	208	0.34	10.0	48.5	C
									FELT AT ANCHORAGE									
14	20	56	50.1	63	28.4	149	28.1	109.2	1.8	9	1	324	39	109	0.18	6.5	3.0	D
14	22	17	39.4	54	10.7	159	38.0	22.7	5.7*	10	0	292	141	645	0.14	99.0	98.6	D
									NEIS MB = 5.5, MZS = 5.7, PALMER MS = 5.9									
									FELT (IV) AT COLD BAY, SAND POINT, KING COVE.									
									AND FALSE PASS									
14	23	39	28.5	54	43.7	159	43.9	12.8	4.5*	5	0	211	84	751	0.11	15.1	11.2	D
15	01	46	56.8	66	11.2	149	56.8	3.4	2.7	10	1	150	169	175	0.15	6.3	8.7	D
15	05	17	31.8	60	4.2	153	17.1	132.0	2.7	12	1	83	47	60	0.27	2.1	3.2	B
15	08	59	21.2	64	42.7	147	23.6	1.1	1.3	8	1	204	21	31	0.30	1.9	48.6	D
15	09	03	41.8	59	47.8	153	24.5	136.7	2.4	11	0	118	19	49	0.11	3.9	11.2	C
15	13	05	29.1	61	20.2	151	3.6	30.0	1.8	8	1	301	107	289	0.24	99.0	99.0	D
15	14	33	50.3	64	44.0	150	39.1	16.6	1.2	6	2	308	77	120	0.40	3.3	2.0	D
15	15	58	24.3	54	41.5	159	35.6	7.6	4.3*	7	0	287	93	595	0.28	99.0	99.0	D
									NEIS MB = 4.7									
									FELT AT SAND POINT									
15	17	00	9.8	62	53.3	150	48.9	103.4	2.5	16	2	137	167	207	0.24	4.5	12.8	D
15	19	31	12.7	64	38.6	149	7.0	14.3	0.3	4	1	260	8	53	0.00	4.4	3.6	D
16	01	31	52.8	65	30.0	149	18.1	32.5	1.5	5	1	329	93	106	0.02	9.7	66.9	D
16	03	38	4.9	64	12.1	148	0.0	13.4	0.9	8	0	111	4	50	0.07	2.4	3.2	B
16	04	17	16.8	65	24.2	149	22.1	4.6	1.0	6	1	304	86	93	0.38	6.9	99.0	D
16	06	45	19.8	63	59.7	148	21.6	14.0	0.7	5	1	179	29	55	0.07	6.7	8.8	C
16	06	49	42.7	63	28.9	147	29.5	87.2	1.5	9	3	200	77	114	0.18	3.6	3.7	D
16	07	09	50.7	63	16.4	150	8.8	95.5	1.4	8	0	217	79	155	0.18	11.5	9.1	D
16	09	16	9.6	66	17.1	150	1.5	27.9	1.5	6	1	156	167	189	0.38	7.1	9.2	D
16	11	33	48.7	54	20.4	159	46.5	10.3	4.2*	5	0	291	121	100	0.35	85.4	99.0	D
									FELT AT SAND POINT									
16	14	29	2.2	64	32.0	147	15.1	9.7	0.9	8	1	227	29	48	0.19	2.4	2.9	C
16	18	58	6.5	62	31.1	151	34.8	0.6	2.2	6	1	192	190	260	0.16	12.8	4.8	D
16	21	15	56.6	59	30.9	151	25.1	42.0	2.2	5	0	179	10	104	0.14	12.1	12.1	D
16	21	21	29.6	59	18.8	153	9.3	92.9	2.3	8	2	71	16	51	0.25	2.8	4.6	B
16	22	24	44.6	64	16.5	148	11.9	12.1	0.3	6	1	151	17	46	0.10	3.6	7.2	C
16	22	40	47.2	63	54.7	148	55.5	8.2	1.5	10	0	154	20	57	0.30	1.7	2.1	C
17	01	09	26.1	61	38.3	146	20.8	2.7	2.8	14	1	177	142	268	0.29	3.1	4.9	D
17	04	11	47.9	58	54.0	152	48.0	74.7	3.1	11	0	135	40	60	0.15	3.3	6.9	C
17	04	58	43.8	63	15.8	150	54.3	37.7	2.1	12	1	92	111	172	0.40	3.1	6.1	D
17	08	17	34.3	64	38.1	147	2.9	0.1	0.3	4	0	273	36	53	0.06	7.2	99.0	D
17	08	40	25.8	62	25.3	148	53.1	70.4	1.9	10	2	171	88	148	0.30	12.7	5.5	D

1985		ORIGIN HR	MN	TIME 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
NOV	17	11	21	56.8	63	5.9	149	35.7	92.6	2.3	10	3	244	78	146	0.28	7.1	3.3	C
	17	11	34	36.0	63	35.2	150	34.7	14.6	1.5	6	1	315	83	133	0.28	5.4	3.2	C
	17	12	53	11.4	66	17.3	149	36.5	40.4	1.7	7	2	156	170	184	0.39	7.0	99.0	D
	17	14	19	37.8	62	5.2	147	48.2	40.0	1.8	8	1	230	84	193	0.23	29.3	77.6	C
	17	18	01	57.4	64	29.0	146	42.7	0.3	0.7	6	1	287	56	66	0.19	2.9	99.0	D
	17	19	18	24.1	65	12.1	149	23.1	24.3	0.9	6	1	295	71	82	0.34	4.4	99.0	D
	17	22	40	54.0	62	48.6	150	24.8	97.3	3.5*	15	1	100	127	151	0.26	3.1	8.2	C
	18	01	37	50.8	63	8.3	150	13.2	160.3	2.5	11	1	247	92	162	0.34	7.6	3.2	D
	18	03	50	51.9	65	22.8	143	58.2	2.7	2.0	8	1	242	145	200	0.22	22.9	19.8	D
	18	03	57	23.7	60	1.7	153	19.2	140.0	2.3	8	0	153	42	56	0.06	5.7	13.8	C
	18	06	00	48.8	57	51.2	153	35.4	66.8	3.2	11	0	244	66	120	0.19	6.8	9.6	D
	18	07	51	10.9	66	28.9	149	44.1	4.0	2.0	7	1	246	182	194	0.36	12.8	12.4	D
	18	11	40	55.9	62	57.0	150	20.5	99.4	1.9	9	0	222	113	162	0.22	13.0	10.6	D
	18	12	31	43.0	64	50.1	147	23.8	19.4	0.9	7	2	199	17	29	0.23	2.0	1.9	C
	18	14	14	35.8	64	49.3	147	24.8	18.8	1.5	7	2	196	19	27	0.17	1.4	1.5	C
	18	14	31	12.0	63	39.3	148	12.6	11.0	1.5	6	0	180	146	168	0.37	6.0	99.0	D
	18	14	48	40.5	59	4.3	152	20.9	60.9	2.8	8	2	208	87	76	0.19	2.0	4.7	C
	18	16	05	54.2	63	24.3	148	52.6	13.8	1.6	6	0	321	37	98	0.19	41.2	7.3	D
	18	17	44	44.1	64	44.8	147	28.9	13.1	0.7	6	1	196	20	27	0.12	2.3	6.2	D
	18	19	03	54.8	64	54.2	149	7.3	18.6	1.4	8	1	258	37	63	0.31	3.8	1.7	D
	18	19	44	1.4	59	54.8	153	16.2	129.8	2.9	15	2	126	29	62	0.11	2.8	2.2	C
	18	20	17	11.8	62	36.5	147	25.1	29.4	1.5	9	1	218	138	147	0.40	7.5	8.2	D
	19	18	10	46.8	59	12.1	151	50.2	69.5	2.9	7	2	214	83	93	0.14	2.9	4.6	D
	19	18	54	12.3	63	14.8	149	34.2	91.2	2.1	14	1	132	63	132	0.27	4.5	2.5	C
	19	19	58	56.8	62	13.2	150	7.1	27.1	3.4*	9	2	130	65	87	0.37	1.6	4.3	D
	20	08	13	58.7	60	46.6	150	16.1	22.5	2.7	13	2	163	110	118	0.27	1.8	6.8	D
	20	08	51	16.0	63	38.3	148	43.7	4.2	1.5	8	1	152	13	70	0.38	2.5	3.5	C
	20	11	38	14.4	61	26.8	149	46.5	34.0	3.9*	19	0	131	38	197	0.22	2.9	2.9	C
										FELT	AT	ANCHORAGE,		BIG	LAKE	AND	EAGLE	RIVER	
	20	14	01	3.7	61	58.7	149	15.7	48.7	2.1	10	2	144	41	196	0.28	7.2	9.1	C
	21	04	35	47.4	59	57.1	152	51.4	106.1	2.3	7	0	108	39	77	0.13	4.0	12.0	C
	21	10	11	34.5	64	39.8	146	54.4	5.5	1.2	8	3	256	43	80	0.14	3.1	23.1	D
	21	11	44	25.3	59	48.7	151	31.9	58.5	2.2	8	2	143	38	97	0.07	3.7	5.5	C
	21	18	39	35.3	60	7.2	153	21.6	132.0	3.0	8	2	172	47	60	0.21	3.3	2.3	C
	21	19	03	26.6	61	25.6	146	42.9	70.8	3.6*	12	0	217	128	281	0.38	12.2	19.0	D
										FELT	AT	VALDEZ							
	21	19	14	51.4	58	50.4	164	26.1	124.2	2.8	8	1	290	39	107	0.08	6.3	5.4	D
	21	19	58	27.3	59	43.3	152	18.9	74.2	2.0	8	4	152	52	81	0.23	3.1	3.3	C
	21	23	07	58.8	59	5.4	152	18.5	59.4	2.3	7	3	228	72	110	0.26	2.9	6.5	D
	22	00	35	56.0	59	15.9	153	34.0	127.8	3.0	8	0	110	15	48	0.12	4.8	12.2	C
	22	07	24	0.2	62	56.4	147	19.5	39.5	1.4	7	0	319	120	192	0.17	66.1	99.0	D
	22	11	51	56.3	59	19.2	150	49.5	30.3	2.7	7	0	276	33	60	0.25	9.8	4.1	D
	22	15	59	52.9	64	48.9	147	33.6	11.6	0.1	6	1	172	15	22	0.10	2.2	7.3	C
	22	16	47	30.0	65	1.6	148	46.1	2.7	0.4	6	1	257	37	52	0.20	3.8	43.2	D
	22	17	51	33.3	64	56.6	147	44.6	29.7	0.8	6	2	198	5	23	1.04	1.9	2.2	D
	22	17	51	35.7	64	54.0	147	35.2	8.8	0.1	5	3	156	10	28	0.10	1.4	4.3	C
	22	20	43	24.9	66	9.4	150	0.6	0.1	1.6	7	1	149	166	178	0.34	2.5	8.1	D
	22	22	04	6.5	65	5.2	147	34.1	14.1	1.2	6	3	270	14	50	0.28	2.0	1.4	C
	23	00	37	25.0	64	6.9	148	24.2	107.2	1.4	6	2	157	24	50	0.21	8.8	3.5	D
	23	01	44	30.3	64	47.5	147	24.3	11.4	0.3	4	1	221	22	36	0.04	3.5	4.8	D
	23	02	46	4.9	64	27.8	147	55.8	5.5	0.5	7	1	157	8	32	0.09	1.6	4.5	C
	23	06	25	40.3	63	27.3	148	25.8	21.4	1.5	6	1	180	147	176	0.31	8.1	6.9	D
	23	06	42	1.6	65	36.0	149	56.0	70.5	1.4	6	1	318	120	126	0.10	11.9	23.6	D
	23	07	08	53.0	63	5.9	148	47.9	59.0	1.2	6	0	267	71	179	0.14	57.2	44.2	D
	23	08	08	45.4	58	10.9	134	4.5	73.2	3.0	6	1	308	67	134	0.13	7.9	6.5	D
	23	09	41	16.0	61	47.2	151	9.3	88.3	2.8	15	0	110	109	176	0.21	5.9	16.6	C
	23	09	52	26.7	64	37.3	149	27.0	17.7	1.0	7	1	261	19	67	0.17	4.3	1.6	D
	23	11	59	8.9	60	50.1	151	25.0	96.8	2.5	5	0	287	88	148	0.04	31.3	28.0	D
	23	12	42	29.4	60	36.6	147	28.4	0.4	2.6	10	1	276	142	357	0.23	12.4	4.1	D
	23	13	19	51.9	64	49.4	147	23.3	17.4	0.9	7	3	200	18	28	0.20	1.4	1.3	C
	23	13	47	14.6	64	52.8	147	49.1	13.7	0.5	7	3	138	3	24	0.21	1.8	1.6	C
	23	17	08	10.1	64	50.1	147	20.7	5.6	1.6	7	1	208	17	36	0.22	1.6	3.3	C
	23	18	24	7.0	64	48.8	147	33.9	0.0	0.0	4	1	188	21	28	0.18	2.4	99.0	D
	23	18	36	3.8	65	23.0	149	44.2	72.7	1.1	6	1	310	98	106	0.19	10.1	14.2	D

APPENDIX C (con.)

1985	ORIGIN HR	MN	TIME 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	
NOV 23	20	58	17.4	64	47.9	147	32.0	11.9	0.3	4	3	198	21	29	0.08	1.4	3.2	C
23	23	10	38.3	58	41.0	152	47.2	71.3	2.6	8	0	257	57	85	0.20	6.6	8.6	D
23	23	40	56.4	63	5.3	150	18.4	112.4	2.0	9	2	222	99	169	0.19	6.0	4.5	D
24	02	23	46.3	64	48.7	147	32.4	11.8	0.3	5	4	195	16	22	0.14	1.2	2.7	C
24	03	53	14.4	62	30.3	152	37.0	33.0	1.8	7	1	281	209	231	0.17	93.4	99.0	D
24	06	41	32.0	64	47.1	148	51.0	5.7	0.3	5	2	226	26	51	0.19	3.0	7.7	C
24	08	35	30.9	66	14.6	149	52.8	2.8	1.7	6	2	153	173	181	0.37	3.2	4.7	C
24	09	28	32.7	64	50.7	149	9.4	17.4	0.6	6	1	266	30	66	0.23	4.6	1.8	C
24	13	07	20.1	64	37.9	148	10.1	8.9	0.4	7	2	101	18	22	0.08	1.2	4.1	C
24	14	01	29.9	64	47.5	147	29.4	12.7	0.3	5	3	185	22	31	0.12	1.4	2.9	C
24	14	29	1.3	63	51.5	149	16.3	19.5	1.1	8	0	236	22	81	0.19	4.8	3.7	C
24	14	33	50.1	63	44.5	149	39.6	90.7	1.2	8	0	288	36	98	0.20	37.0	36.8	D
24	15	00	40.2	60	1.1	152	46.2	95.9	2.8	9	2	104	45	75	0.17	1.9	2.8	C
24	15	39	37.6	59	53.8	152	17.3	72.3	1.9	5	3	125	60	72	0.11	2.3	4.1	C
24	17	49	16.7	64	57.8	147	50.2	1.2	0.0	5	1	208	21	35	0.22	1.9	50.4	D
24	19	09	48.1	63	50.2	148	57.9	3.7	0.8	6	1	184	12	83	0.29	5.5	23.6	D
24	21	20	58.3	59	49.0	152	89.0	89.6	1.9	6	1	110	23	68	0.11	3.6	7.4	C
24	22	36	19.4	65	28.8	151	1.4	118.1	1.4	6	1	172	138	165	0.37	29.0	11.4	D
25	00	31	30.9	66	5.9	150	5.9	4.9	1.4	6	2	146	162	176	0.26	10.8	5.9	D
25	04	47	19.3	64	30.5	149	21.0	14.6	1.0	6	2	251	18	68	0.18	1.9	2.2	C
25	12	39	49.9	62	17.4	150	52.4	106.7	2.0	8	2	134	120	188	0.40	5.1	9.0	C
25	13	13	46.6	63	51.9	148	42.5	4.1	0.6	7	2	170	19	74	0.36	2.5	3.0	C
25	18	39	16.1	60	9.3	153	21.8	136.0	2.8	9	2	179	44	62	0.16	3.5	2.9	C
26	03	26	38.7	60	14.7	152	11.4	20.7	2.8	6	1	188	38	88	0.20	2.6	6.6	D
26	08	10	48.2	63	29.5	147	26.0	68.0	2.1	8	1	193	80	146	0.17	5.9	16.3	D
26	09	51	32.7	57	38.1	151	38.6	11.7	3.7	5	1	274	95	236	0.30	21.0	18.0	D
26	11	20	47.8	64	28.9	147	34.7	3.7	0.2	5	0	203	28	33	0.02	4.6	46.5	D
27	00	47	0.8	65	2.2	148	38.4	21.1	0.9	7	3	251	32	36	0.16	1.9	1.6	C
27	06	28	38.2	63	11.9	150	13.8	117.4	2.1	10	4	218	68	158	0.40	7.8	4.4	D
27	07	17	30.8	64	14.8	147	24.5	18.7	0.5	6	1	286	27	49	0.08	5.7	3.8	D
27	08	28	53.9	63	19.6	149	34.5	102.7	1.6	6	1	329	58	171	0.28	10.0	3.1	D
27	12	12	22.0	63	14.1	150	28.8	121.3	1.9	12	2	226	95	164	0.26	7.9	4.9	D
27	16	11	32.7	66	16.7	148	51.8	2.8	2.2	6	2	158	174	287	0.39	6.9	6.1	D
27	20	56	45.9	68	40.7	143	52.8	28.9	2.2	8	1	273	181	217	0.28	47.3	90.7	D
27	23	36	40.9	64	15.1	147	51.0	16.8	0.3	5	0	192	9	44	0.04	6.6	12.4	D
28	03	58	1.8	63	3.9	150	40.9	114.4	1.7	4	1	338	115	186	0.37	17.1	13.4	D
28	04	42	54.2	64	43.6	147	23.2	18.4	0.5	7	1	204	22	29	0.12	2.1	4.5	C
28	05	03	58.7	62	24.8	150	4.1	80.3	1.8	7	1	227	103	158	0.34	14.6	16.8	D
28	08	08	11.9	62	54.4	151	32.0	33.4	2.6	8	1	163	160	193	0.39	13.7	39.6	D
28	08	27	57.8	64	30.3	147	54.7	12.3	0.6	5	2	157	9	36	0.08	2.3	2.0	C
28	19	47	22.2	58	53.4	152	43.2	72.6	2.6	7	0	132	36	90	0.13	5.1	11.8	C
28	23	09	4.8	61	28.1	150	38.9	98.4	2.9*	4	1	307	46	81	0.10	7.5	7.8	D
									FELT AT PALMER									
28	23	39	44.1	66	17.2	149	48.6	25.0	1.5	6	2	237	178	180	0.39	8.2	10.1	D
29	01	18	7.5	64	44.2	147	30.8	11.1	0.1	4	2	211	17	32	0.03	3.1	3.5	D
29	02	59	11.1	64	53.0	147	19.5	16.5	0.1	4	2	234	12	39	0.22	4.0	2.6	D
29	03	57	5.3	64	5.2	150	24.7	24.5	1.4	8	3	291	58	85	0.36	3.9	99.0	D
29	06	17	2.7	64	24.0	147	22.3	2.6	0.3	5	1	229	35	37	0.10	3.8	96.3	D
29	07	16	57.9	64	40.1	146	56.1	9.8	0.4	5	1	253	42	60	0.06	4.2	17.3	D
29	07	22	36.3	64	10.9	150	2.3	14.5	0.6	6	1	274	64	100	0.08	10.3	2.0	D
29	08	01	13.5	64	39.0	148	43.2	13.0	0.9	8	5	169	19	38	0.24	0.8	1.4	C
29	13	29	13.4	63	8.5	150	38.4	117.3	2.0	11	2	230	108	177	0.31	8.6	5.8	D
29	14	17	48.7	63	20.3	148	58.8	9.8	1.2	6	1	330	44	133	0.26	9.8	2.6	D
29	22	44	58.7	63	23.7	147	20.9	3.9	1.0	5	0	308	87	125	0.26	94.5	33.4	D
30	00	22	29.1	64	47.2	147	32.0	11.9	0.8	7	4	240	18	29	0.22	1.4	1.6	C
30	03	31	8.1	63	30.0	147	14.9	14.1	0.9	7	1	290	83	116	0.27	4.8	2.6	D
30	03	35	51.0	61	53.3	147	57.1	57.6	2.3	10	3	238	84	212	0.37	13.2	19.5	D
30	04	51	41.4	62	20.5	148	48.0	76.4	2.0	10	2	178	80	158	0.30	13.9	9.3	D
30	06	14	7.5	64	43.8	147	28.7	13.1	0.1	6	2	192	18	34	0.08	1.7	4.7	C
30	07	51	3.4	63	32.9	148	9.1	21.9	1.3	5	2	290	44	103	0.20	18.4	13.5	D
30	08	08	52.2	66	1.9	148	40.4	14.9	0.8	7	2	283	34	54	0.18	2.4	2.1	D
30	10	47	43.4	64	22.8	147	23.8	12.0	0.9	7	1	227	34	36	0.16	3.8	6.8	C
30	13	04	50.4	66	23.7	149	44.7	1.9	2.1	9	2	182	181	191	0.37	3.0	4.8	D
30	19	10	8.3	68	13.9	149	49.8	0.2	1.7	10	1	182	175	200	0.32	7.2	9.4	D
30	15	31	11.4	63	40.9	144	25.4	124.8	1.8	8	1	160	149	221	0.38	7.5	12.9	D

APPENDIX C (con.)

1985	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
NOV 30	16	26	23.1	58	46.4	154	0.1	0.1	2.4	5	0	278	27	114	0.26	41.0	39.3	
30	17	24	54.0	64	16.1	148	19.2	12.7	0.7	8	1	89	21	46	0.26	1.3	5.6	
DEC 01	00	47	14.3	63	32.4	148	51.5	15.2	1.5	7	2	318	22	111	0.28	4.7	1.5	
01	03	05	49.4	66	17.5	149	46.5	34.3	3.6*	8	0	155	178	180	0.28	2.3	99.0	
01	03	10	54.5	66	18.3	149	55.2	19.3	1.9	6	3	187	171	185	0.30	2.7	4.7	
01	08	14	10.7	63	46.8	152	3.0	40.3	2.1	5	0	326	154	206	0.16	89.9	99.0	
02	03	12	11.7	64	2.2	148	19.9	109.2	1.9	8	2	171	25	50	0.26	5.4	3.1	
02	04	48	41.3	59	4.2	152	3.3	69.7	2.6	6	1	219	69	93	0.30	5.0	7.2	
02	08	23	34.7	62	11.3	149	39.6	37.3	2.9	7	1	209	70	176	0.21	39.9	99.0	
02	11	46	20.6	60	9.5	153	19.9	134.5	3.0	7	0	177	42	63	0.16	6.6	16.3	C
02	15	37	39.4	66	8.9	150	1.8	30.6	3.3*	9	0	145	165	169	0.23	4.8	7.4	D
02	15	55	59.6	66	13.7	149	59.5	15.9	2.4	7	3	153	167	180	0.19	3.0	4.4	C
02	16	02	33.8	59	46.3	152	31.7	84.7	2.9	6	5	142	42	74	0.22	3.4	4.1	C
04	01	01	56.5	64	57.5	147	53.0	17.7	1.4	6	1	208	8	24	0.32	3.3	1.7	D
04	04	28	28.7	59	16.2	152	30.7	47.2	2.3	9	1	142	107	215	0.29	5.5	30.0	D
04	07	00	41.0	60	6.4	153	7.9	123.4	2.7	7	0	139	131	140	0.31	3.5	14.2	D
04	07	01	25.3	64	45.2	148	7.4	24.3	1.0	5	2	119	8	23	0.11	2.2	0.9	C
04	16	37	57.8	66	27.8	149	46.7	42.2	2.3	8	3	248	181	198	0.31	8.2	99.0	D
05	00	09	51.2	64	57.6	147	32.8	14.0	1.0	5	2	188	8	32	0.14	2.1	2.2	C
05	03	42	33.5	61	36.3	150	43.8	58.2	2.4	6	2	234	59	162	0.20	8.2	7.0	D
08	08	37	7.7	60	13.1	153	12.6	154.6	2.8	7	1	137	125	139	0.21	4.2	6.3	D
08	08	37	24.8	61	8.0	151	8.0	112.6	2.8	10	0	308	92	220	0.29	65.3	43.0	D
08	12	06	53.1	62	54.4	149	43.8	96.1	1.6	6	0	186	100	142	0.24	7.0	10.0	D
08	14	02	16.4	59	23.9	148	23.3	13.3	2.8*	8	0	225	54	184	0.19	4.4	4.3	D
08	15	18	29.2	59	17.1	148	26.6	12.8	3.4*	7	2	241	53	195	0.30	4.4	3.5	D
08	19	25	28.9	64	26.7	149	21.5	14.5	1.0	5	1	245	17	70	0.13	4.4	1.9	D
08	02	15	51.9	62	4.5	149	5.8	49.1	2.2	5	1	234	50	153	0.33	8.2	6.2	D
08	10	15	55.6	60	9.8	151	3.0	47.7	2.4	6	2	143	99	137	0.14	3.9	8.8	D
08	14	25	59.8	62	10.7	149	25.8	28.2	2.4	9	0	166	63	117	0.40	1.9	3.2	D
07	00	23	2.5	60	33.6	152	41.9	139.9	1.8	6	2	186	18	84	0.15	11.8	9.8	D
07	01	48	59.8	64	32.7	149	15.9	14.5	0.9	6	1	249	10	62	0.11	3.8	1.1	D
07	07	15	26.0	59	55.9	152	26.7	89.8	2.8	8	2	138	54	82	0.21	2.6	2.7	D
07	10	02	0.1	64	6.7	149	26.0	163.4	2.3	8	0	211	49	76	0.06	11.6	12.3	D
08	04	51	49.5	62	22.4	151	24.5	107.9	1.6	8	1	241	114	173	0.30	9.8	7.4	D
08	07	32	23.5	59	53.1	150	16.1	30.6	4.2*	10	0	199	38	84	0.32	4.3	4.8	D
									NEIS MB = 4.6									
									FELT AT HOMER AND SEWARD									
08	09	47	47.1	62	8.4	151	20.9	111.4	2.3	6	0	257	95	214	0.09	24.7	37.5	D
08	13	15	16.4	64	48.8	147	46.1	13.2	0.7	6	4	143	10	19	0.23	1.0	1.7	C
08	16	24	14.2	60	33.7	143	14.9	7.6	3.6*	10	0	157	25	261	0.32	5.4	5.1	C
08	17	49	7.2	59	8.1	151	28.3	42.9	2.4	7	0	248	46	118	0.27	6.7	4.4	D
08	19	09	25.3	60	11.9	151	4.4	6.2	2.6	6	0	175	78	180	0.19	3.7	34.5	D
08	20	08	38.4	63	17.2	150	30.2	133.4	3.2*	18	2	71	93	178	0.40	2.9	4.9	B
09	09	44	32.7	64	51.7	148	57.4	7.5	1.0	6	3	247	32	60	0.16	3.3	8.3	D
10	10	30	47.7	64	1.4	149	29.0	14.7	2.0	8	0	237	24	68	0.31	3.1	1.4	D
10	16	49	26.9	64	1.0	149	35.5	14.5	1.5	7	0	247	28	67	0.28	5.8	1.6	D
11	01	45	50.7	63	8.5	150	16.5	129.9	2.5	8	0	210	94	167	0.09	15.3	8.5	D
11	11	38	31.0	60	34.6	151	37.0	71.8	2.2	4	4	178	66	100	0.14	1.6	3.4	C
11	11	50	23.9	60	2.1	151	0.8	67.6	3.8	9	2	106	31	98	0.27	2.5	4.0	B
11	14	31	27.0	61	24.0	148	53.7	18.3	2.2	6	1	228	53	89	0.29	4.7	3.7	D
11	17	49	2.0	64	1.8	147	21.9	0.9	1.4	8	1	248	80	84	0.32	2.2	99.0	D
12	02	21	29.9	66	9.2	150	1.4	1.8	3.5*	7	1	187	166	174	0.37	3.1	8.2	D
12	08	20	12.6	65	12.1	148	38.5	21.6	3.0	7	0	275	52	73	0.30	8.2	2.5	D
12	08	54	52.0	60	9.8	153	4.5	143.3	3.3	13	0	148	33	75	0.38	4.0	9.5	C
12	11	33	9.4	63	4.1	150	47.8	142.9	2.0	9	1	249	119	188	0.15	11.6	9.5	D
12	15	27	54.0	59	47.7	153	32.2	151.2	3.0	9	1	169	23	81	0.28	3.4	4.7	C
12	23	28	10.7	64	55.8	148	37.1	18.0	1.7	8	0	234	25	45	0.33	3.4	2.3	D
13	21	51	10.3	63	46.9	149	11.1	30.0	1.4	5	0	242	14	76	0.36	99.0	99.0	D
14	08	33	10.0	63	5.1	148	56.3	74.7	2.3	12	1	186	72	148	0.33	4.7	2.8	D
14	08	43	18.2	64	8.3	148	7.8	13.5	1.2	8	0	208	43	57	0.14	2.5	2.6	C
14	13	50	10.9	58	28.0	138	41.9	187.8	4.2*	10	0	138	116	178	0.38	3.2	5.7	D
									FELT AT KING SALMON AIR FORCE BASE									
14	16	16	52.3	64	36.3	148	49.8	17.8	2.0	7	0	157	12	41	0.08	2.3	2.0	C
14	17	52	29.2	63	4.9	150	21.3	101.8	2.0	11	2	237	101	176	0.37	7.0	5.1	D

1988	ORIGIN HR	TIME 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	
DEC	15	01	21	58.4	64	48.1	147	21.8	9.4	0.7	5	5	227	21	27	0.14	1.4	4.2	
	15	05	30	8.9	63	11.3	148	37.7	9.4	3.4	10	0	197	46	63	0.23	3.6	3.4	
	15	07	47	8.7	64	47.5	147	29.0	11.0	0.8	5	4	208	19	22	0.15	1.6	4	
	15	22	25	54.7	61	50.1	149	42.1	32.0	2.2	8	0	165	23	125	0.37	2.9	2.5	
	16	03	29	16.9	59	6.9	152	9.2	72.4	2.3	4	2	266	69	102	0.19	4.9	3.4	
	16	03	43	7.7	66	20.4	149	47.8	2.2	2.2	8	2	138	178	187	0.39	7.4	5.8	
	16	06	32	45.0	66	1.0	148	38.2	15.7	0.8	6	3	249	32	53	0.25	1.8	4.3	
	16	07	21	37.4	59	19.8	153	32.3	13.9	1.2	5	2	103	6	45	0.31	6.5	4.3	C
	16	07	35	43.8	61	59.7	147	10.8	55.9	2.1	6	1	127	20	64	0.32	6.0	9.2	C
	16	08	27	49.0	66	10.4	150	2.8	17.2	2.3	6	1	169	165	180	0.20	3.3	7.2	
	16	11	16	3.9	64	31.8	148	12.7	15.4	0.8	6	2	197	8	31	0.16	1.4	1.4	C
	16	15	41	11.4	64	41.9	149	15.5	17.0	1.2	6	3	282	16	62	0.23	1.7	1.3	C
	16	15	48	10.8	65	37.0	148	37.8	10.2	1.8	7	1	223	89	91	0.27	4.4	3.3	
	16	20	14	57.8	64	23.4	148	16.6	18.8	1.0	6	3	159	13	44	0.25	1.2	1.1	C
	17	02	31	48.3	64	32.0	149	13.6	13.4	0.9	8	3	319	9	61	0.03	1.9	1.1	C
	17	04	11	0.0	61	35.5	148	10.8	27.9	3.5	15	0	201	26	91	0.41	3.3	2.3	D
										FELT	(II)	AT	CHICKALOON		AND	SUTTON		
	17	13	31	18.0	61	51.2	149	12.4	24.7	1.8	5	1	142	42	99	0.26	3.6	2.8	C
	17	15	25	53.2	62	33.3	148	34.4	10.4	1.4	4	0	150	84	100	0.00	18.9	19.0	D
	17	18	31	41.2	60	10.2	143	17.2	9.4	2.1	5	1	208	39	266	0.13	18.8	10.0	D
	18	05	15	55.9	66	12.4	150	5.0	24.9	1.9	6	1	152	163	180	0.36	12.4	47.5	D
	18	08	16	43.0	58	49.5	154	53.8	121.4	2.8	7	1	251	51	106	0.22	8.1	2.9	D
	18	19	05	49.4	64	17.9	148	28.3	16.5	2.2	6	0	157	27	43	0.11	1.7	2.0	C
	18	19	48	50.3	63	54.7	148	30.1	3.6	1.7	7	0	163	21	75	0.05	2.3	3.5	C
	19	03	26	41.2	62	16.2	147	11.8	33.2	2.5	12	0	87	49	120	0.37	4.1	6.8	C
	19	05	38	3.9	59	56.3	151	30.2	66.7	2.3	8	2	114	40	88	0.11	3.0	4.3	C
	19	08	10	58.9	65	8.5	148	33.8	24.6	4.0	14	0	97	40	88	0.33	3.8	11.5	C
	19	08	14	52.8	65	2.4	148	33.6	18.4	1.3	6	4	250	31	86	0.40	2.2	4.2	D
	19	08	20	12.9	65	9.8	148	39.9	17.0	3.0	9	0	271	45	83	0.20	5.9	2.6	D
	19	10	08	58.8	65	5.4	148	31.1	19.1	1.2	6	2	257	34	60	0.20	2.9	9.7	D
	20	03	39	10.2	59	58.1	153	6.2	106.1	1.9	7	1	128	36	64	0.17	3.4	3.5	C
	20	07	20	26.4	60	0.3	153	27.0	142.9	2.2	6	0	159	41	59	0.06	7.5	18.4	C
	20	14	32	54.8	60	12.3	152	36.2	101.8	1.9	8	2	96	26	100	0.23	2.0	4.6	B
	20	14	46	49.8	61	57.7	150	26.3	89.3	3.1	13	0	114	45	112	0.28	3.2	6.5	C
	20	14	52	55.2	60	12.7	152	27.9	102.4	1.7	5	3	208	29	110	0.22	3.1	2.7	D
	20	18	57	36.7	63	54.7	148	52.3	2.9	1.8	9	0	142	20	73	0.16	2.0	2.8	C
	20	23	45	5.7	60	56.2	147	30.5	29.5	2.4	9	2	122	55	112	0.33	1.9	2.3	C
	21	05	24	38.6	65	7.8	148	35.5	10.0	0.8	6	2	264	40	89	0.33	4.2	14.7	D
	21	11	44	59.8	63	56.8	148	46.7	10.4	1.8	8	1	164	29	64	0.17	1.9	1.7	C
	21	15	14	42.2	63	48.0	149	10.8	123.4	1.6	9	0	187	14	87	0.07	7.7	7.8	D
	21	16	42	39.2	60	19.0	151	2.8	54.8	2.9	7	2	107	62	89	0.28	1.6	6.0	C
	21	21	11	8.2	65	6.7	148	26.7	14.8	1.0	3	3	299	33	32	0.16	2.8	5.4	D
	22	01	06	17.8	64	48.7	147	32.0	13.8	0.7	5	5	196	16	23	0.16	1.2	2.3	C
	22	05	18	37.6	58	49.7	152	20.2	66.9	2.2	9	0	144	22	84	0.13	4.3	7.7	C
	22	08	02	59.7	64	29.6	149	20.4	18.1	3.3	11	0	128	16	60	0.19	3.0	1.2	C
										FELT	(IV)	AT	NENANA	AND	(III)	AT	FAIRBANKS	
	22	09	43	0.1	59	1.8	153	13.0	81.0	2.3	8	0	114	27	67	0.30	3.4	7.6	C
	22	14	49	3.4	63	49.5	149	4.3	112.0	1.8	8	0	159	12	84	0.10	7.7	13.4	D
	22	22	31	37.4	66	24.2	149	42.4	24.7	2.8	8	2	183	183	190	0.25	5.4	7.3	D
	23	23	38	37.7	59	41.8	152	36.7	86.8	2.0	6	1	160	35	80	0.23	4.0	7.6	C
	23	00	20	1.4	63	4.6	150	48.4	137.9	2.2	10	0	248	117	187	0.14	16.9	11.0	D
	23	00	48	38.9	64	53.4	152	10.8	34.3	3.7	11	0	112	182	192	0.25	4.7	30.8	D
	24	00	02	21.6	60	13.3	152	32.8	97.7	1.8	5	1	108	25	106	0.15	2.2	6.8	C
	24	01	31	27.9	58	51.8	153	25.6	75.4	2.4	8	1	189	15	89	0.18	5.3	3.9	D
	24	04	04	3.1	64	47.8	148	30.6	20.9	0.9	5	0	227	27	51	0.02	3.6	2.4	D
	24	08	22	57.2	59	48.4	152	2.9	61.0	2.4	10	1	111	28	69	0.30	2.4	2.9	B
	24	14	44	28.4	63	53.3	151	58.7	43.3	3.3	4	0	198	231	293	0.13	10.9	59.1	D
										FELT	(III)	AT	LAKE	MINCHUMINA				
	25	09	08	26.8	59	54.9	152	5.8	78.7	2.7	9	2	137	68	70	0.27	2.7	6.0	D
	25	18	37	57.9	59	51.7	152	10.4	92.0	4.2	15	0	57	37	65	0.22	1.6	4.2	B
										NEIS	MB	=	4.9					
										FELT	(II)	AT	HOMER,	NINILCHIK	AND	ANCHOR	POINT	
	26	03	17	38.3	63	30.8	148	31.7	4.7	1.2	6	0	303	32	122	0.14	22.1	14.3	D
	26	03	29	16.8	60	44.3	152	1.7	85.3	2.8	7	1	151	94	122	0.21	3.2	3.3	D

APPENDIX C (con.)

1985	ORIGIN HR	MN	TIME 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
DEC 26	15	07	11.1	60	18.1	153	27.4	176.1	3.0	11	0	92	40	74	0.31	3.1	8.3	C
26	17	47	7.6	58	31.6	151	50.3	35.1	3.9*	10	1	183	32	114	0.25	2.0	2.1	C
27	01	10	3.4	63	4.2	150	29.8	131.5	2.1	8	0	241	107	180	0.15	17.3	10.1	D
27	17	52	28.9	60	5.8	153	46.7	163.8	3.0	7	1	179	42	66	0.14	4.8	3.5	D
27	22	28	49.8	59	9.1	152	29.7	69.3	2.8	5	3	191	70	114	0.21	2.2	3.8	C
28	07	28	31.7	64	62.3	148	48.5	17.1	1.9	8	0	233	30	46	0.15	3.4	2.2	D
28	07	44	39.8	58	18.9	156	4.1	42.9	5.3	18	0	196	270	325	0.32	11.6	20.1	D
28	10	17	16.9	63	37.7	149	17.3	119.9	1.8	8	0	195	21	106	0.12	8.1	7.4	D
28	18	01	32.2	64	40.6	149	17.2	16.6	1.2	7	0	260	13	57	0.08	5.0	1.7	D
29	09	17	15.6	59	45.8	152	57.6	98.6	3.9	13	0	73	20	51	0.18	1.6	4.6	B
									PALMER ML = 3.3									
29	16	40	17.3	62	24.8	150	22.5	38.4	2.0	11	1	212	89	112	0.38	5.0	5.0	D
30	02	49	52.9	63	7.8	150	31.5	145.6	2.4	8	0	215	104	168	0.18	9.8	10.6	D
30	05	14	9.0	62	7.5	154	20.6	30.8	3.8*	13	0	111	128	148	0.35	2.0	6.0	D
30	05	59	55.8	60	8.0	161	21.7	40.3	2.8	7	2	165	49	68	0.21	1.8	5.7	C
30	06	06	13.0	59	47.5	153	43.6	161.4	3.9*	13	0	62	26	50	0.20	2.6	7.1	B
30	09	46	38.2	62	52.7	149	44.1	84.4	3.0*	17	0	60	103	140	0.30	2.8	7.6	C
30	12	41	4.1	61	27.6	150	19.2	52.0	5.5	12	0	116	32	164	0.34	2.4	3.9	C
									FELT (V) AT ANCHORAGE AND EAGLE RIVER. FELT (IV) AT CHUGIAK, COOPER LANDING, ELMENDORF AIR FORCE BASE, GIRDWOOD, KENAI, PALMER, PETERS CREEK, SKWENTNA, SUTTON, TYONEK, WILLOW AND WASILLA. ALSO FELT (III) AT SEWARD									
30	13	34	38.7	64	36.6	149	12.8	15.9	1.3	6	0	241	8	56	0.10	4.2	1.3	D
30	14	00	31.2	61	26.9	150	20.1	48.4	3.0*	7	0	116	33	165	0.24	4.6	4.9	C
									FELT AT ANCHORAGE									
30	14	07	15.6	62	26.5	150	51.5	62.7	2.9*	16	1	96	62	132	0.34	1.7	7.3	C
30	14	23	15.9	62	40.8	148	41.1	26.6	3.7*	13	0	73	99	118	0.32	2.3	6.5	D
									FELT (III) AT TALKEETNA									
30	14	35	37.9	61	27.0	150	20.4	48.6	3.4*	9	0	116	33	165	0.28	3.0	4.2	C
30	18	57	20.5	58	55.6	154	26.9	63.1	2.4	7	0	279	30	74	0.35	21.4	25.3	D
30	20	13	21.4	63	34.2	151	7.9	40.2	4.5*	10	0	131	208	241	0.30	3.8	17.7	D
									NEIS MB = 5.1									
									FELT (III) AT DENALI NATIONAL PARK									
30	22	52	9.3	59	34.6	152	11.4	68.7	2.5	5	2	186	69	99	0.17	2.6	3.1	D
31	02	05	1.2	59	40.9	152	12.5	15.5	4.4*	12	0	81	32	58	0.32	1.2	3.2	C
									NEIS MB = 4.6									
									FELT (IV) AT HOMER AND (III) AT ANCHOR POINT									
31	09	26	27.5	59	44.5	152	11.0	33.5	2.3	7	4	123	32	60	0.32	1.2	3.5	C
31	12	20	9.0	59	44.6	152	10.4	26.9	2.6	7	1	124	31	60	0.21	2.0	4.5	B
31	12	24	31.3	59	42.3	152	11.6	26.2	3.1	10	1	133	32	59	0.33	1.7	4.3	C
31	21	03	15.4	65	5.9	148	22.2	16.9	1.2	5	1	254	32	48	0.19	4.7	7.8	D
31	23	03	58.5	63	32.5	149	13.5	14.4	3.0	10	0	170	28	116	0.35	3.7	1.6	C

Explanation for Appendixes B and C

Earthquakes are listed in chronological order. The following data are given for each earthquake.

1. ORIGIN TIME in Universal Time (UT): date, hour (HR), minute (MN), and second (SEC). To convert to Alaska Standard Time (AST), subtract 9 hr.
2. LAT N, LONG W: epicenter in degrees and minutes of north latitude and west longitude.
3. DEPTH: depth of focus (measured in kilometers).
4. MAG: local magnitude from maximum trace amplitude. An asterisk indicates that the value determined by the Alaska Tsumani Warning System (Palmer) was used. Sometimes the Palmer magnitude is given as an additional magnitude in a separate line following the parameter listings. If available, National Environmental Information Service (NEIS) body wave (MB) or surfacewave (MS) magnitudes, or both, are given in a separate line following the event parameter listings.
5. NP: number of P arrivals used to locate earthquake.
6. NS: number of S arrivals used to locate earthquake.
7. GAP: largest azimuthal separation between stations (measured in degrees).
8. D1: distance from the closest station to the epicenter (measured in kilometers).
9. D3: distance from the third closest station to the epicenter (measured in kilometers).
10. RMS: root-mean-square error of the travel-time residuals (measured in seconds).
11. ERH: largest horizontal deviation (measured in kilometers) from the hypocenter within the one-standard-deviation confidence ellipsoid. This quantity measures the epicentral precision for an earthquake. Values of ERH >99 km are listed as 99 km.
12. ERZ: largest vertical deviation (measured in kilometers) from the hypocenter within the one-standard deviation confidence ellipsoid. This quantity measures the precision of the hypocentral depth. Values of ERZ >99 km are listed as 99 km.
13. Q: reliability of the hypocenter. This index measures precision of the hypocenter location and also reflects the quality of the data used to derive the hypocenter parameters.