STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

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Report of Investigations 86-4

SUMMARY OF ALASKA EARTHQUAKES FOR THE PERIOD JULY, AUGUST, AND SEPTEMBER 1984

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 JULY, AUGUST, AND SEPTEMBER 1984

Compiled by
Hans Pulpan[1] and J.N. Davies,[2] editors

INTRODUCTION

This report lists the parameters of earthquakes that occur 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 data and precision of the parameters. Because of the substantial quantity of data, this report is based on routine data processing. However, earthquakes are located as accurately and with as many useful data as possible. Additional data and more sophisticated methods of analysis might lead to more accurate locations.

DATA COLLECTION

The data used in this report are derived from two principal sources: seismic stations operated by UAGI and 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) ≥3, we receive records of earthquake arrival times at several stations of the Alaska Tsunami Warning System that 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 one of two recording centers in Homer and 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. Significant data losses result in lower detection thresholds and poorer solution qualities for earthquakes in the affected regions. To discern such conditions, a station-use record is provided in figure 2.

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

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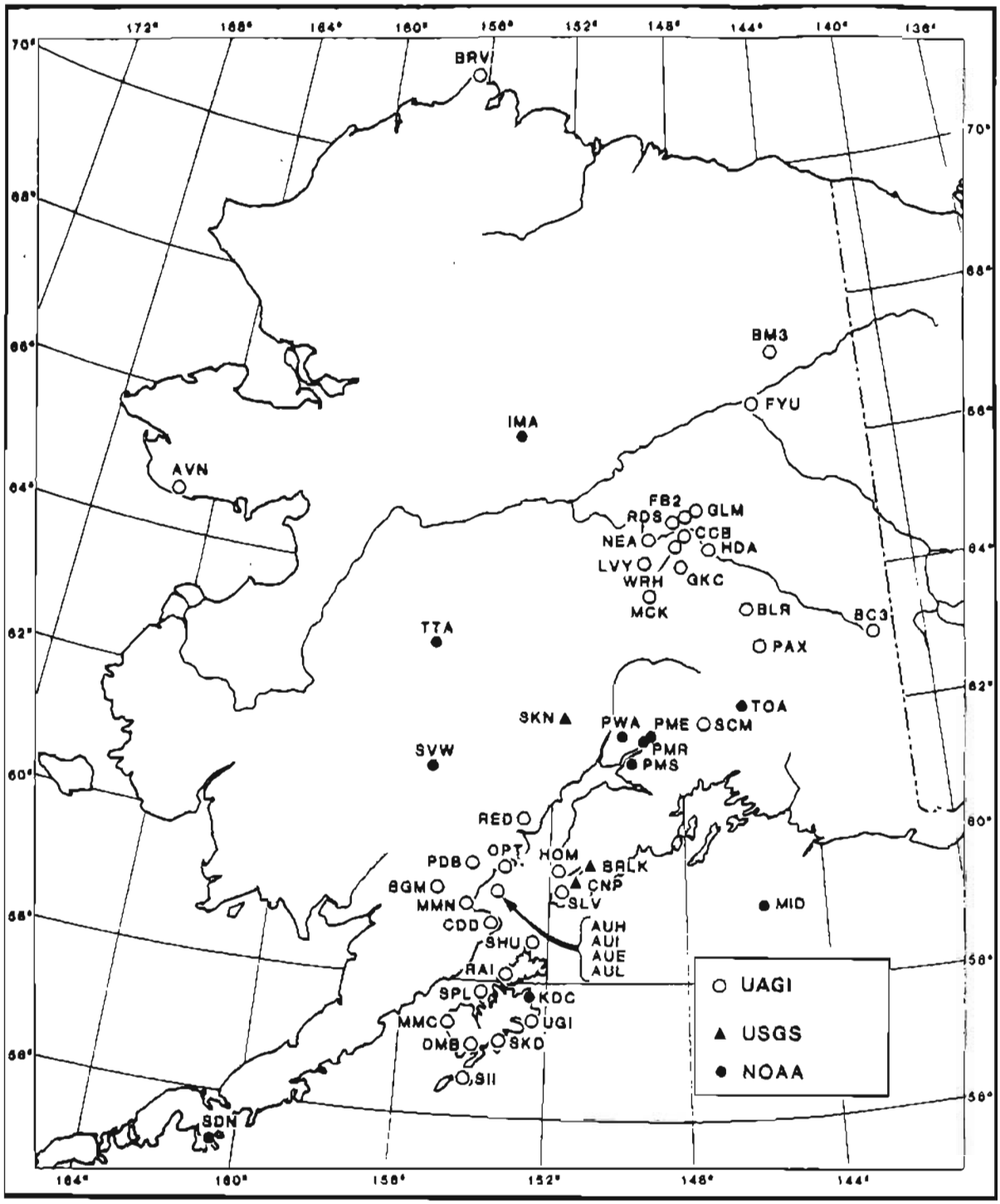

Figure 1. All seismic-network stations operated by the University of Alaska and by other organizations whose data were used in this report. Stations BGM, PDB, and SLV were installed and operated by the U.S. Geological Survey and are currently operated by the University of Alaska. See table 1 for station names.

Table 1. Names and parameters of seismic-network stations used to prepare this report.

Code	Station	Latitude (N.)	Longitude (W.)	Elevation (m)	Velocity model[a]	Operator
ANV	Anvil Mountain	64° 33.90'	165° 22.28'	323	1	UAGI[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° 4.00'	141° 45.50'	762	1	UAGI
BGM	Big Mountain	59° 23.56'	155° 13.76'	625	2	UA/USGS[c]
BLM	Blue Mountain	58° 2.70'	156° 20.70'	539	3	UAGI
BLR	Black Rapids	63° 30.10'	145° 50.70'	810	1	UAGI
BM3	Burnt Mountain	67° 17.18'	144° 25.17'	305	1	UAGI
BRLK	Bradley Lake	59° 45.85'	150° 53.13'	631	2	USGS
BRV	Barrow	71° 16.43'	156° 47.08'	13	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
CTG	Chinitna Glacier	60° 57.90'	141° 20.00'	1554	5	USGS
DMB	Deadman Bay	57° 5.23'	153° 57.63'	300	3	UAGI
FB2	Fairbanks	64° 54.00'	147° 47.60'	320	1	UAGI
FLP	Featherly Pass	57° 42.40'	156° 16.10'	486	3	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
HDA	Harding Lake	64° 24.35'	146° 57.23'	450	1	UAGI
HOM	Homer	59° 39.50'	151° 38.60'	198	2	UAGI[d]
IMA	Indian Mountain	66° 4.10'	153° 40.72'	1380	1	NOAA
KDC	Kodiak	57° 44.87'	152° 29.50'	13	3	NOAA
KSM	King Salmon Mountain	58° 51.80'	156° 10.50'	560	3	UAGI
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° 20.33'	37	4	NOAA
MMC	Middle Cape	57° 20.00'	154° 38.10'	340	3	UAGI
MMN	McNeil River	59° 11.11'	154° 20.20'	442	2	UAGI
MSP	Moose Pass	60° 29.35'	149° 21.64'	150	2	USGS
NEA	Nenana	64° 34.63'	149° 4.63'	364	1	UAGI
NKI	Nikolski	52° 56.56'	168° 51.44'	8	2	NOAA
OPT	Oil Point	59° 39.16'	153° 13.78'	450	2	UAGI
PAX	Paxson	62° 58.25'	145° 28.12'	1130	1	UAGI
PDB	Pedro Bay	59° 47.27'	154° 11.55'	305	2	UA/USGS
PME	Palmer East	61° 37.70'	149° 1.90'	232	2	NOAA
PMR	Palmer Observatory	61° 35.53'	149° 7.85'	100	2	NOAA
PMS	Palmer - Arctic Valley	61° 14.68'	149° 33.63'	716	2	NOAA
PUB	Puale Bay	57° 46.40'	155° 31.00'	280	3	UAGI

[a] See tables 2, 3, and 4.
[b] University of Alaska Geophysical Institute.
[c] U.S. Geological Survey.
[d] National Oceanic and Atmospheric Administration.

Table 1. (con.)

Code	Station	Latitude (N.)	Longitude (W.)	Elevation (m)	Velocity model	Operator
PWA	Palmer West - Houston	61° 39.05'	149° 52.72'	137	2	UAGI
RAI	Raspberry Island	58° 3.63'	153° 9.55'	520	3	UAGI
RDT	Redoubt	60° 34.43'	152° 24.37'	930	2	USGS
RDS	Richard D. Siegrist	64° 49.59'	148° 8.68'	930	1	UAGI
RED	Redoubt Volcano	60° 25.14'	152° 46.32'	1087	2	UAGI
SCM	Sheep Mountain	61° 50.00'	147° 19.66'	1020	4	UAGI
SDN	Sand Point	55° 20.40'	160° 29.83'	19	6	NOAA
SHU	Shuyak Island	58° 37.68'	152° 20.93'	10	3	UAGI
SII	Sitkinak Island	56° 33.60'	154° 10.92'	500	3	UAGI
SKD	Sitkalidak Island	57° 9.85'	153° 4.82'	135	3	UAGI
SKN	Skwentna	61° 58.86'	151° 31.78'	564	2	USGS
SLV	Seldovia	59° 28.28'	151° 34.83'	91	2	UA/USGS
SPL	Spiridon Lake	57° 45.55'	153° 46.28'	600	3	UAGI
SPU	Mount Spurr	61° 10.90'	152° 3.26'	800	2	USGS
SSN	Susitna Mountain	61° 27.83'	150° 44.60'	1297	1	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° 55.80'	156° 1.32'	914	2	NOAA
UGI	Ugak Island	57° 23.67'	152° 16.90'	213	3	UAGI
WRH	Wood River Hill	64° 28.28'	148° 5.39'	314	1	UAGI
WWW	Wonder Why Ridge	58° 20.90'	156° 19.90'	414	3	UAGI

DATA PROCESSING

Arrival times of body waves are read from the 16-mm film with Geotech filmviewers that provide a time resolution of 0.1 s/mm. Thus, the impulsive arrivals can be read to 0.05 s.

Earthquake locations are based on arrival times of P and S waves. As many S arrivals as possible are used 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 the spatial distribution of stations used. Solutions that have residuals 0.5 s or greater are reread. If the 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.

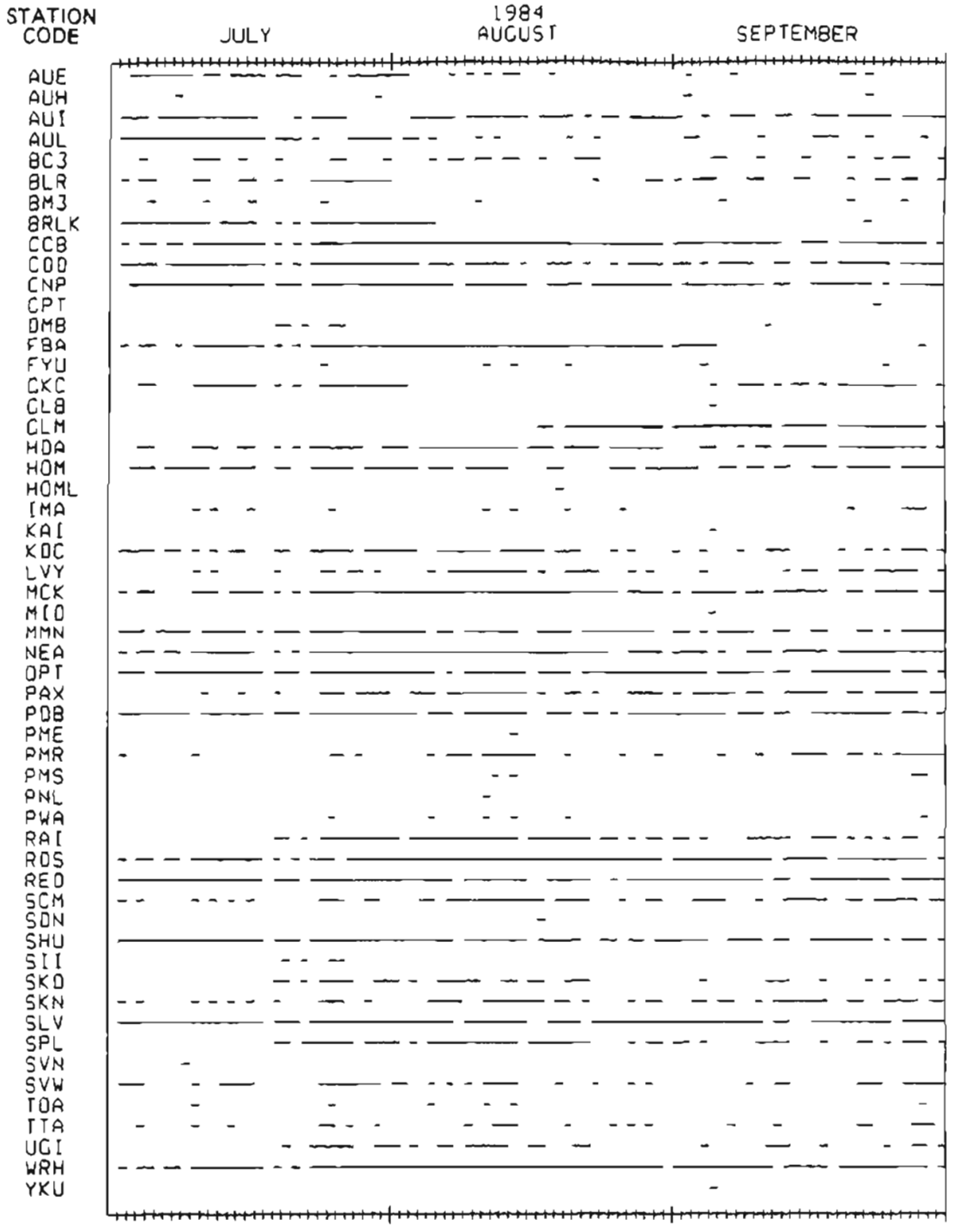

Figure 2. Station-use record. Lines indicate that at least one arrival-time was read from a specific station operating on a specific day. Nonuse does not imply that a station was malfunctioning, but rather that no data were required to locate earthquakes. See table 1 for station names.

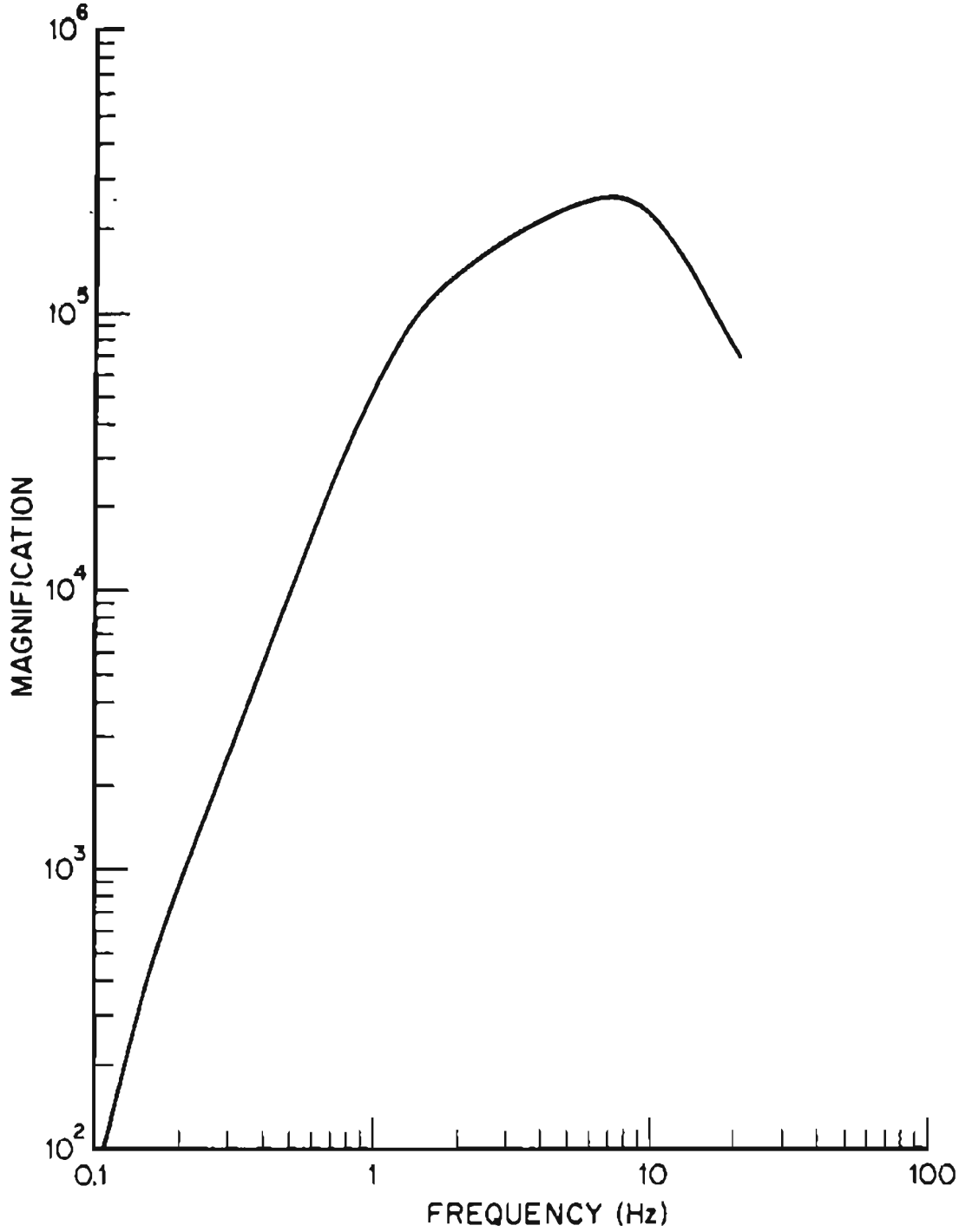

Figure 3. Typical response of a seismic-network station operated by the University of Alaska Geophysical Institute. Magnification is the ratio of the amplitude measured on the filmviewer to that of the actual ground motion recorded. Actual values vary with station.

VELOCITY MODELS

The 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 associated with one of three velocity models (see tables 1 through 4), depending on the station's location. The models vary only with depth; lateral variation of velocity 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 = $\frac{\text{P velocity}}{\sqrt{3}}$.

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	301-545	10.4
6	>545	12.6

Model 1 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 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 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 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).

EARTHQUAKE MAGNITUDE

Earthquake magnitudes are determined from the maximum amplitude of the body-wave trace. Because regional body-wave phases are used, we determine local magnitudes (M_L). The relationship we use was derived by Richter (1958) using 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. However, 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 (table 5; Richter, 1958) are also listed. The intensity levels are defined in the explanation at the end of table 5.

RECORDED EARTHQUAKES

Appendix A lists hypocenter, magnitude, and quality parameters for each earthquake of $M_L \geq 3$ that was located during the third quarter of 1984 (see also figs. 5, 7, and 8). Appendix B lists the same parameters for all earthquakes that were located during the same period (see also figs. 4 and 6). Detection threshold and solution quality vary throughout the areas shown in figures 4, 6, and 8. Appendix A is probably complete for $M_L > 3$. As shown

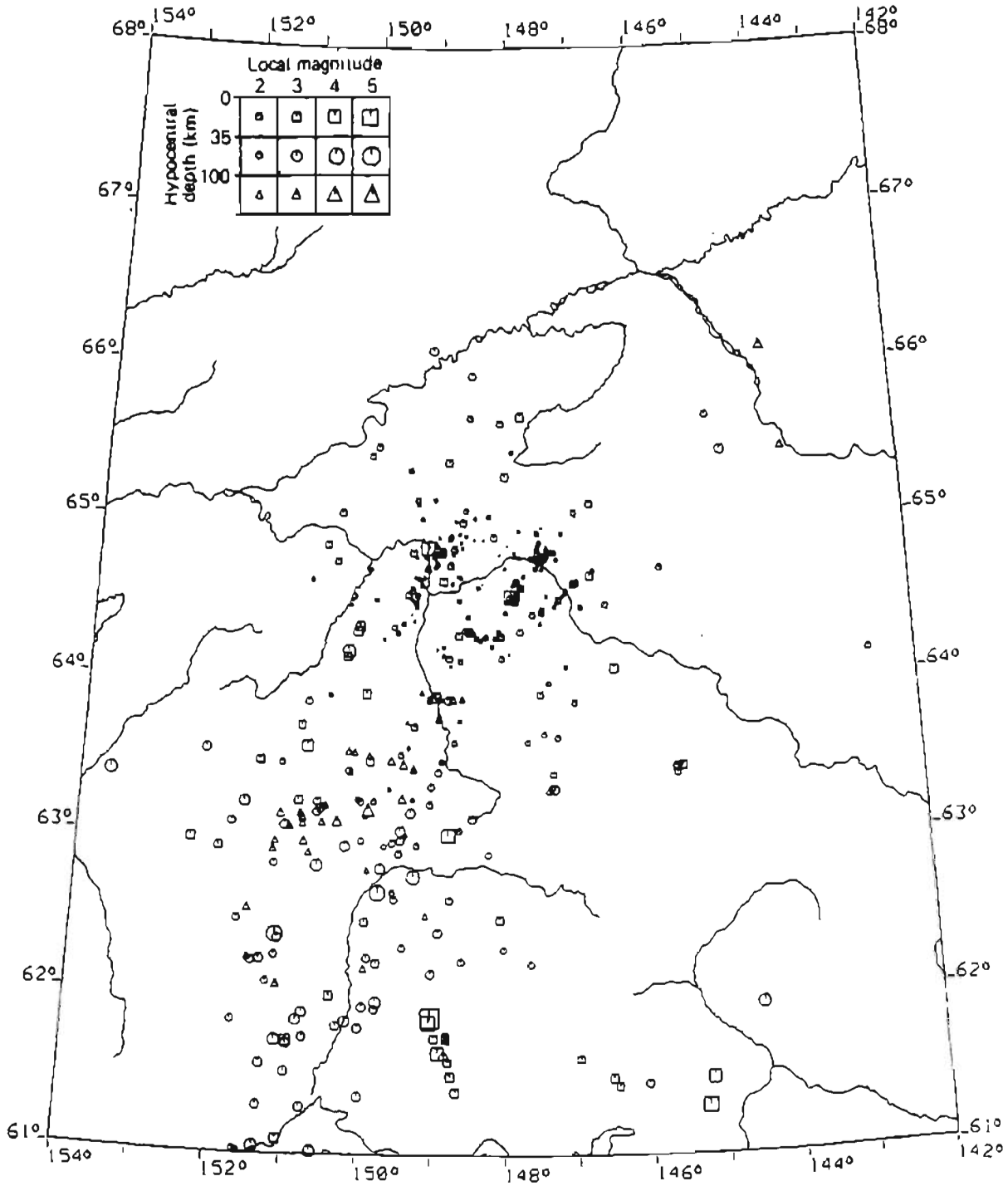

Figure 4. Epicenters of earthquakes that occurred north of lat 61° N. during the third quarter of 1984. Symbol sizes are shown for local magnitudes 2 through 5. Symbols larger or smaller than those shown reflect local magnitudes that must be interpolated relative to the symbol sizes shown.

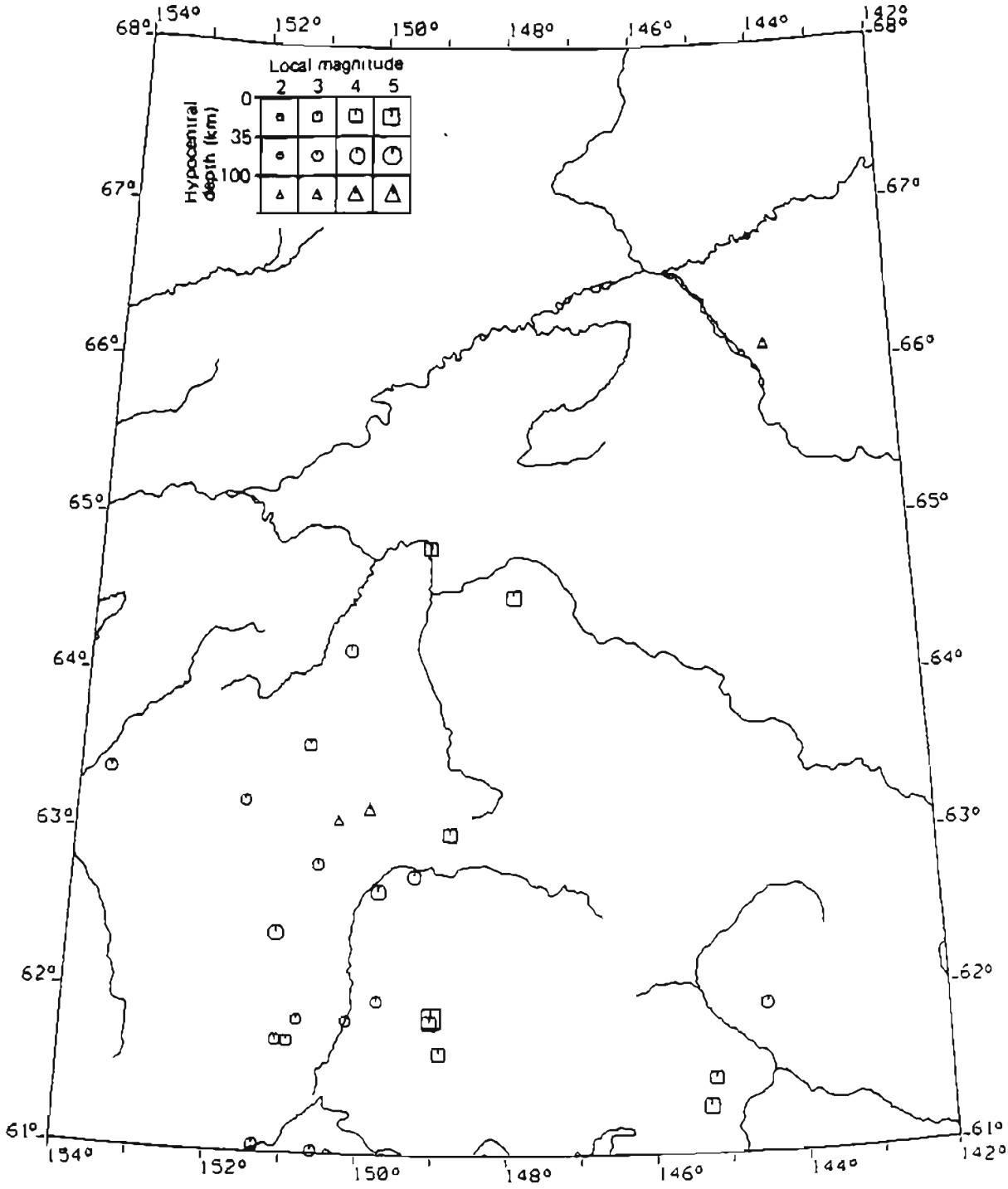

Figure 5. Epicenters of earthquakes with $M_L \geq 3$ that occurred north of lat 61° N. during the third quarter of 1984. Symbol sizes are shown for local magnitudes 2 through 5. Symbols larger or smaller than those shown reflect local magnitudes that must be interpolated relative to the symbol sizes shown.

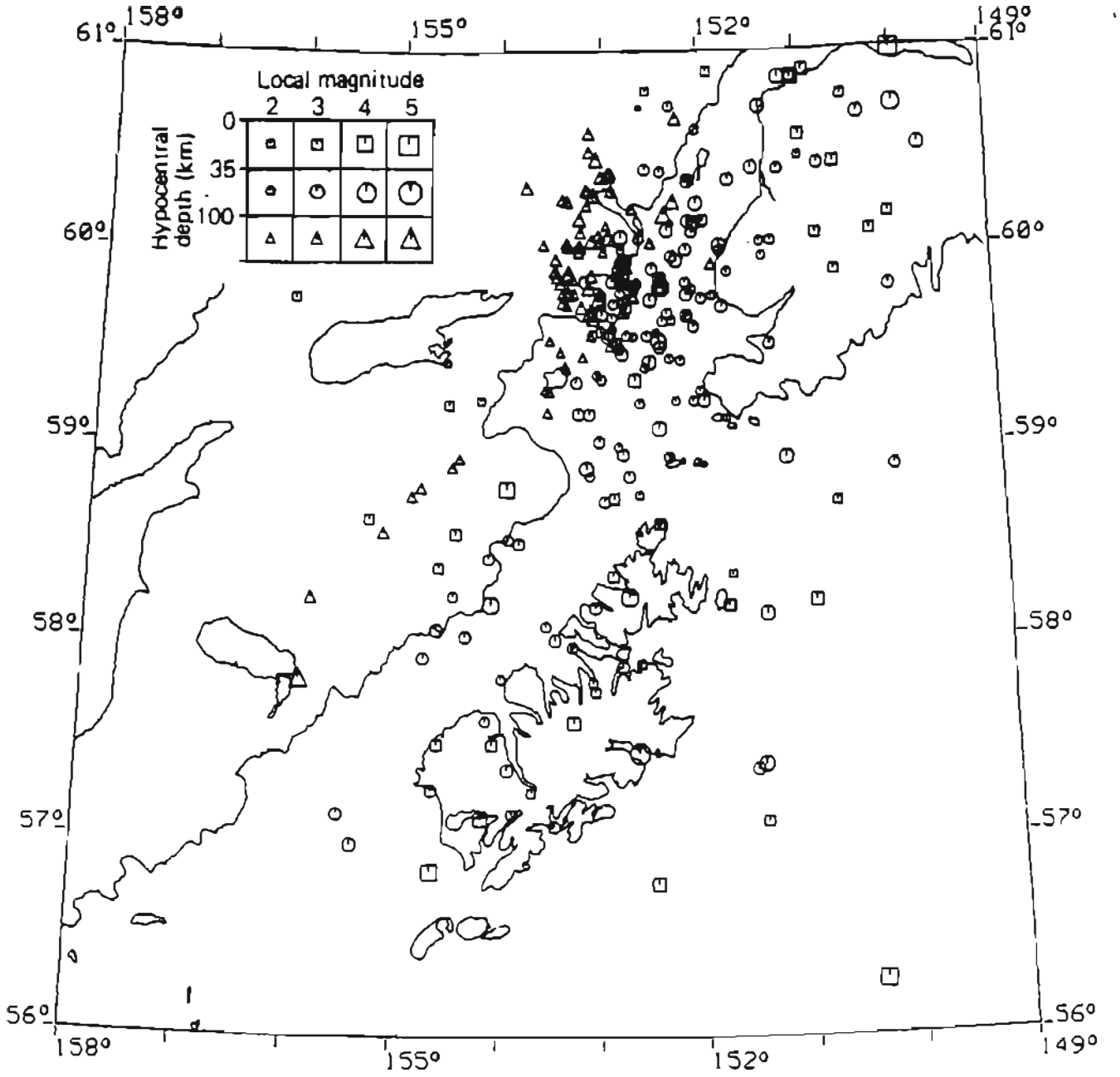

Figure 6. Epicenters of earthquakes that occurred south of lat 61° N. during the third quarter of 1984. Symbol sizes are shown for local magnitudes 2 through 5. Symbols larger or smaller than those shown reflect local magnitudes that must be interpolated relative to the symbol sizes shown.

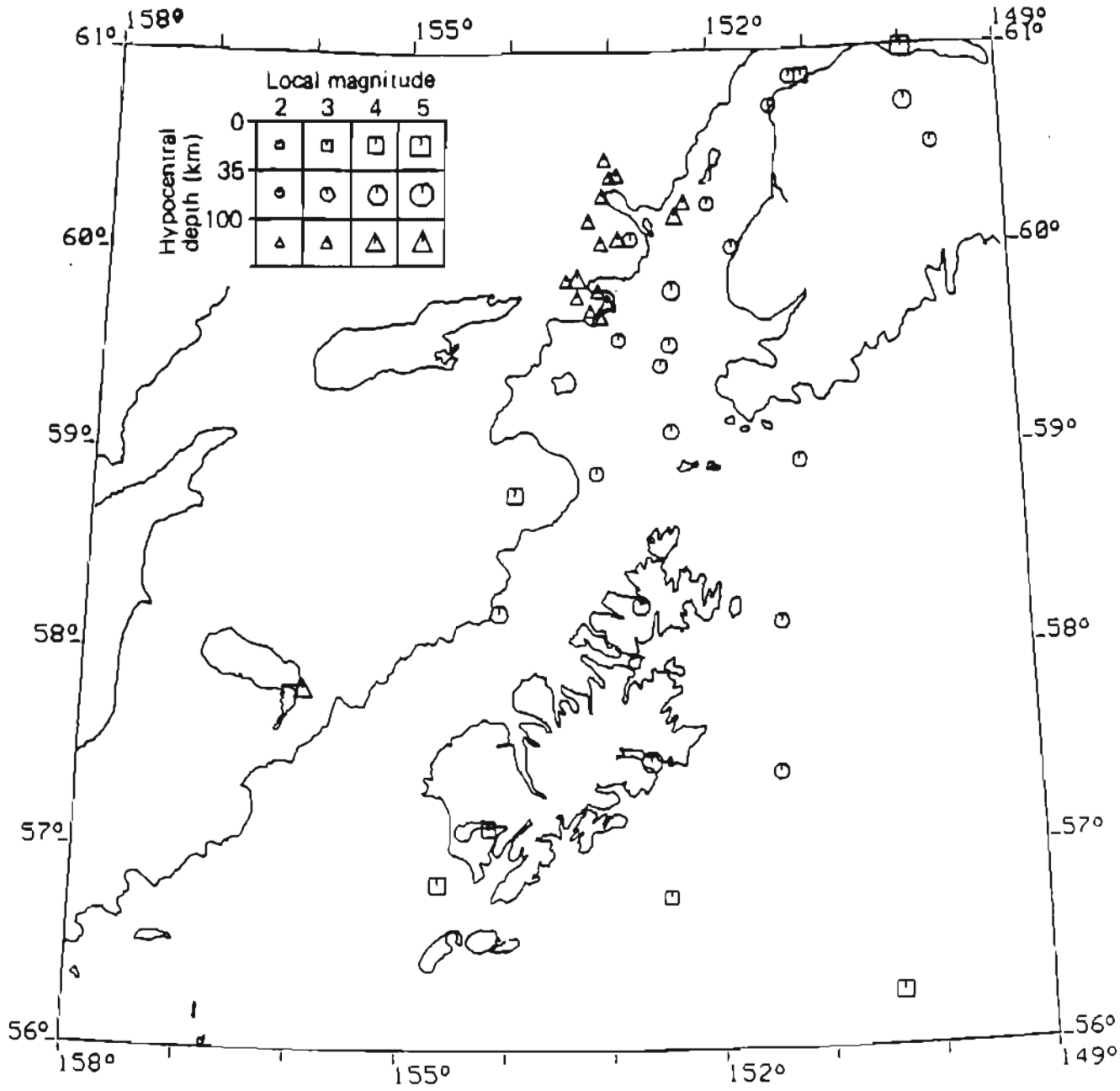

Figure 7. Epicenters of earthquakes with $M_L \geq 3$ that occurred south of lat 61° N. during the third quarter of 1984. Symbol sizes are shown for local magnitudes 2 through 5. Symbols larger or smaller than those shown reflect local magnitudes that must be interpolated relative to the symbol sizes shown.

Table 5. 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 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., 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[3]).

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). 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.

[3]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.

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: the quality of the input data and the results of statistical tests. The number of P and S phases used to locate the earthquake (NP and 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 the reliability of the hypocenter location. A GAP of more than 180° means that the epicenter is located outside the seismic network; therefore, locations will generally be less reliable. Also, as D1 exceeds hypocentral depth, the reliability of hypocentral depth decreases. 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 incompatibility of these models; they 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 more northeast. The cluster of shallow hypocenters near Fairbanks is characteristic of the 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.

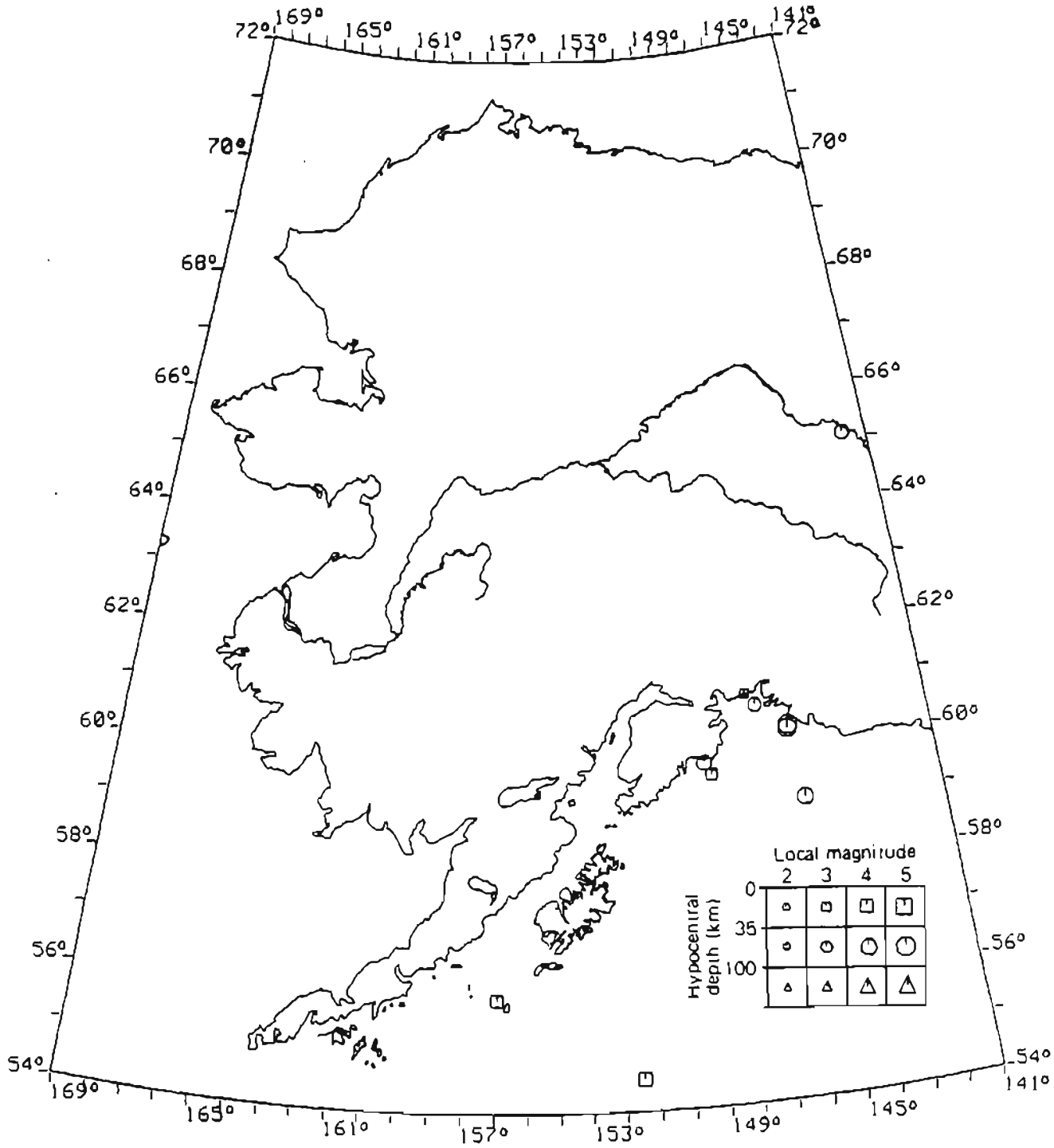

Figure 8. Epicenters of earthquakes that occurred in the third quarter of 1984 and are not shown in figures 4 or 5. Symbol sizes are shown for local magnitudes 2 through 5. Symbols larger or smaller than those shown reflect local magnitudes that must be interpolated relative to the symbol sizes shown.

SIGNIFICANT EVENT

The most significant earthquake that occurred in Alaska during the third quarter of 1984 was an earthquake of M_L = 5.7 that occurred August 14, 1984, about 80 km northeast of Anchorage. The epicenter, derived by the UAGI, was located 10 km from the surface trace of the Castle Mountain fault. The USGS used additional local and regional station readings and located the epicenter more precisely within 1 km of the surface trace (J. Lahr, written commun., 1984). This location, as well as the alignment of aftershocks, and the first-motion focal-mechanism solution of the main shock strongly indicate that this earthquake was associated with slip along the Castle Mountain fault and that the Talkeetna segment of the fault is currently active.

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

Data for Alaska earthquakes of $M_L \geq 3$ that were located during the third quarter 1984.[a]

1984	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
AUG 01	3	8	21.7	58	47.2	153	55.8	1.7	3.5	12	1	137	23	71	0.39	2.1	2.3	C
02	4	50	34.2	60	46.9	146	55.9	43.4	3.5	10	2	329	246	297	0.16	21.6	58.0	D
05	14	11	1.2	61	58.1	149	45.9	41.6	3.1	4	2	305	237	295	0.50	99.0	99 0	D
05	17	34	31.0	62	45.9	149	16 5	73.3	3.8*	13	1	166	128	145	0.29	1.9	5 1	D
05	17	43	38.5	60	61.7	151	8.9	59.3	3.0	12	7	264	102	149	0.42	3.4	7 1	D
	07	8	38	12.4	61	1.0	150	35.0	98.3	3.3	7	0	314	101	314	0.21	99.0	99.0	D
										PALMER ML = 3.4								
										FELT III AT ANCHORAGE, EAGLE RIVER AND PALMER.								
	07	14	15	30.6	58	11.7	154	4.5	77.9	3.7	17	3	186	92	86	0.33	2.6	2.9	D
	09	8	14	51.2	60	15.5	152	15.1	105.2	3.4	14	4	177	34	87	0.34	2.2	3.1	C
	09	14	43	40.4	61	60.6	150	10.5	77.9	3.1	11	0	253	62	220	0.28	41.8	50.1	D
	10	17	7	54 3	56	16.2	150	22.7	3.3	3.9	8	0	310	171	209	0.19	99.0	89.9	D
	11	1	57	25.4	59	32.6	152	24.4	77.0	3.4	18	3	85	45	48	0.26	1.4	3.3	B
	11	7	17	14.1	59	52.5	153	25.8	134.1	3.0	11	10	133	27	60	0.38	1.8	1.7	C
	11	23	31	44.0	63	7.1	150	21.4	113.4	3.0*	15	0	103	99	165	0.21	2.6	6.3	C
	13	0	29	49.1	57	23.2	151	26.2	41.7	3.4	8	0	264	81	102	0.15	9.9	14 7	D
	14	0	56	22.8	61	42.9	150	57.7	3.8	3 0	14	7	86	42	192	0.32	1.1	1 7	C
	14	1	2	8.3	61	52.1	149	0.9	3.8	5.7*	18	0	90	27	82	0.42	1.6	2.9	C
										NEIS MB = 5.7, SLIGHT DAMAGE								
										FELT VI AT PALMER AND WILLOW, FELT V AT ANCHORAGE, TALKEETNA, AND VALDEZ. THIS EVENT WAS FELT THROUGH OUT MUCH OF SOUTHERN ALASKA FROM FAIRBANKS TO HOMER.								
	14	1	54	37.3	61	50.2	149	2.4	3 8	4.2*	9	0	124	23	90	0.48	3.8	5.4	C
										FELT IV AT ANCHORAGE AND IN THE PALMER WASILLA AREA.								
	14	7	41	7.9	61	38.6	118	54.3	29.3	3.7*	14	0	143	7	57	0.32	2.0	1.9	C
										FELT III AT PALMER AND WASILLA								
	14	12	34	43.1	66	6.8	143	58.8	111.8	3.0	7	0	209	76	242	0.35	17.8	34.6	D
										PALMER ML = 3.9								
	16	18	26	56.7	54	33.0	151	28.9	31.3	3.7	9	2	348	308	362	0.32	99 0	99 0	D
										PALMER ML = 4.5								
	17	10	1	4 4	53	29.8	156	37 1	41.7	4 8	10	0	280	325	507	0.18	77.6	57 7	D
										NEIS MB = 4 6, PALMER ML = 4.5								
	17	10	2	28.8	59	34.3	152	54.8	44.4	3.1	6	0	330	398	601	1 04	99.0	99 0	D
	19	4	31	27.7	60	42.7	149	58.2	39.6	4.0*	13	0	284	150	157	0.25	27.9	6.9	D
										FELT AT ANCHORAGE, KENAI, PALMER, AND WASILLA.								
	20	7	34	41.0	55	56.8	155	56 1	30.0	3.3	4	1	341	222	290	0.23	99.0	99 0	D
	22	14	35	32 8	57	6 6	154	9.6	17.9	3.2	6	0	273	66	118	0.34	18.1	12 1	D
	23	20	41	51 4	64	32.5	147	53.8	13.4	4.1*	10	0	83	12	34	0.18	1.2	1 6	B
										FELT III AT FORT WAINWRIGHT, ALSO FELT AT FAIRBAKS AND EIELSON AIR FORCE BASE.								
	26	3	32	47.3	60	43.1	151	21 5	94.9	3.1	10	1	124	119	140	0.35	4.7	11 4	C
										PALMER ML = 3.4								
										FELT ON THE KENAI PENINSULA								
	27	6	38	14 8	58	56 8	151	9.4	42.0	3.2	11	2	215	63	78	0.29	3.6	5 2	D
										PALMER ML = 4 0								
	27	20	41	18.5	59	53.1	153	19.3	130.6	4.5	12	2	81	26	62	0.28	2.1	4 5	B
										NEIS MB = 4 5								
	29	7	20	47.1	60	28.1	153	2.7	131.1	3 3	13	3	139	18	99	0 34	3.0	4 4	C
	30	5	31	29.8	60	17.5	153	4 2	143 8	3 2	8	4	180	22	84	0.34	3 2	2.8	D
SEP	04	8	47	35.9	64	51.1	149	8.0	21 1	3 6	13	0	217	31	64	0 32	3.0	1 2	D
										PALMER ML = 3.6								
										FELT III AT NEANANA, ALSO FELT AT FAIRBANKS AND HEALY								
	05	18	24	0.6	59	7.3	145	36.3	65 3	4 2*	8	0	230	54	317	0 25	11.1	10.9	D
										NEIS MB = 4 6								
	06	7	21	33.9	65	7.3	141	56.0	47 7	3.8	6	0	202	229	283	0.17	4.2	99 0	D
	06	8	29	38.8	59	6.1	152	24 6	81.1	3.3	5	0	201	73	77	0 04	5 1	18 4	D
	07	7	19	23.8	63	2.0	148	47 1	33 4	3 9	7	1	288	359	412	0.10	57.6	99 0	D
	10	19	22	31.8	60	51 8	151	1 0	12 3	3.3	7	1	288	128	225	0 39	37.1	35.8	D
										FELT III AT ANCHORAGE								

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

*Magnitude value determined by Alaska Tsunami Warning System (NOAA Palmer Observatory).

APPENDIX A (con.)

1984	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
SEP 13	4	6	19.8	58	14.1	152	43.3	54.0	3.9	15	1	134	32	56	0.25	1.7	3.6	B
15	12	51	59.8	61	43.1	151	7.0	73.1	3.2	6	2	227	37	200	0.20	10.0	6 5	D
									PALMER ML = 3.2									
20	4	17	28.1	60	22.5	145	52.0	36.2	5.0*	13	0	275	181	290	0.24	22.9	8.2	D
									NEIS MB = 5.4, MS = 5.0, BERKLEY MS = 5.1									
									FELT IV AT CORDOVA, ANCHORAGE, AND SUTTON.									
									FELT III AT VALDEZ, SEWARD, PALMER, CHUGIAK,									
									AND CHITINA. FELT II AT EAGLE RIVER.									
20	4	28	6.4	60	19.1	145	53.7	65.4	4.7*	15	0	270	186	296	0 34	10.5	5 9	D
									NEIS MB = 5.1, MS = 4.6									
									FELT IV AT CORDOVA AND FELT III AT VALDEZ,									
									SEWARD, ANCHORAGE, PALMER, AND CHITINA.									
20	5	11	37.4	60	1.7	151	48.8	72.1	3.2	8	3	203	42	64	0.25	2.7	3.2	D
22	18	2	24.1	60	11.8	152	20.5	103.8	3.9	19	0	163	35	78	0.25	2.8	6.1	C
23	4	2	2.2	61	17.8	145	15.9	8.7	4.2	6	0	240	125	209	0.10	6.6	3.8	D
24	10	20	31.3	60	3.6	153	5.0	131.6	3.2	9	4	139	44	69	0 32	2.4	2.2	C
25	1	13	13.9	63	13.4	151	40.0	45.5	3.0	5	1	333	148	197	0 37	11.3	99.0	D
26	13	32	13.4	60	30.2	149	42.8	42.0	3.1	9	1	309	143	169	0 35	5.6	9 0	D
26	14	59	26 2	63	11.8	149	55.8	104 1	3.8*	17	0	120	78	148	0.27	2.3	5 5	C
									NEIS MB = 3 6									
									FELT III AT TRAPPERS CREEK AND CANTWELL.									
									FELT II AT ANCHORAGE.									
27	9	2	54 3	59	49.2	153	6.7	114.5	3.3	15	4	86	20	61	0.34	1.6	2.6	B
27	11	20	8.5	63	23.0	153	35 0	70.4	3.4*	4	0	130	133	304	0 08	41.1	99 0	D
28	10	24	8.0	62	23.4	151	9.5	47 3	4.4	14	0	65	106	153	0 50	1.9	20 7	D
28	23	24	40.3	58	8.8	151	23.2	61.1	3.2	7	1	210	79	149	0.39	3.8	12.1	D
29	8	2	23.8	61	50.8	150	50.4	83.1	3.0	8	2	107	39	185	0.19	2.3	3.8	B
29	14	19	17.0	60	58.9	149	58.3	34.5	4.3	9	0	257	165	177	0.33	18 1	15.0	D
									NEIS MB = 4.6, PALMER ML = 4.7, FELT III									
									AT ANCHORAGE AND II AT PALMER, WASILLA AND									
									WILLOW.									
30	9	37	21.6	62	50.0	150	37.4	96.3	3.3	9	4	174	106	169	0.28	2.1	6.4	D

Explanation for Appendix A

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. Quotation marks around an entry mean that the value determined by the Alaska Tsumani Warning System (Palmer) was used.
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. The quantity measures the epicentral precision for an earthquake. Values of ERH >99 km are tabulated 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 that >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.

APPENDIX B

Data for Alaska earthquakes of all magnitudes that were located during the third quarter 1984.[a]

1984	HR	MN	SEC	DEG	MIN	DEG	MIN	KM				DEG	KM	KM	SEC	KM	KM	
JUL 02	6	7	59.6	64	51.8	147	56.8	8.9	0.9	4	3	174	8	25	0.05	1.9	3.2	C
02	12	13	16.6	61	16.2	151	19.5	63.4	2.5	7	2	265	126	205	0.23	5.7	10.2	D
02	16	41	38.8	61	56.2	149	57.0	71.2	2.5	8	1	180	83	207	0.47	4.8	6.0	D
02	21	29	39.8	57	38.0	153	16.3	20.3	3.0	11	1	271	49	150	0.40	5.7	10.3	D
03	8	41	12.3	59	50.7	152	7.8	57.5	2.2	9	4	189	34	62	0.31	2.9	4.4	D
03	7	21	48.5	60	18.8	153	8.0	132.5	2.6	13	2	116	24	83	0.41	2.2	2.2	C
03	15	4	17.8	58	20.6	152	52.7	12.5	2.6	6	3	158	44	115	0.27	6.2	7.1	C
03	20	13	22.4	59	27.5	152	16.1	67.4	1.9	9	4	94	41	57	0.36	1.7	2.2	C
04	1	54	6.6	64	34.0	147	49.9	10.1	0.8	6	1	105	9	33	0.16	1.4	3.9	B
04	6	4	24.4	61	56.3	144	27.7	37.1	3.5	7	0	327	425	466	0.27	99.0	71.2	D
									PALMER ML = 3.7									
04	8	44	12.3	62	59.8	149	27.9	86.5	2.3	12	3	142	66	155	0.41	2.3	5.1	D
04	11	37	39.2	61	34.1	151	18.6	47.5	2.8	7	1	229	151	214	0.62	14.1	99.0	D
04	12	46	38.7	64	42.6	148	15.6	10.7	0.3	5	3	134	14	28	0.20	1.0	3.2	B
04	16	27	5.7	64	31.4	148	39.6	9.0	1.1	7	2	109	21	42	0.30	1.5	6.2	C
04	16	29	34.0	59	14.5	151	57.1	57.1	2.7	8	3	147	50	72	0.12	1.6	3.3	C
04	16	53	51.2	58	43.5	152	57.7	67.0	2.5	13	5	136	37	73	0.36	1.5	2.3	C
04	20	10	26.6	59	2.1	153	0.8	61.5	2.5	10	5	113	38	46	0.36	1.3	2.2	C
05	4	57	2.2	63	25.0	147	17.4	25.0	1.7	7	3	212	73	91	0.62	2.4	99.0	D
05	11	34	44.2	58	57.2	152	16.9	54.3	2.3	8	2	139	36	75	0.15	1.9	4.1	C
05	13	48	14.6	65	41.3	147	45.2	7.2	2.3	8	1	187	85	116	0.41	4.2	1.7	D
05	14	30	20.2	60	8.8	152	2.2	75.3	2.9	9	3	176	81	59	0.34	2.4	3.6	D
05	18	56	5.2	58	21.0	151	42.8	4.1	1.8	4	0	203	48	128	0.00	26.2	28.9	D
06	10	17	7.0	60	6.8	152	16.7	40.0	1.4	4	2	166	41	89	1.35	5.2	8.1	D
06	19	6	52.1	59	20.1	153	14.4	99.9	2.6	10	3	109	8	12	0.97	1.6	3.7	C
07	1	27	12.5	60	24.9	151	26.5	54.4	3.0	12	3	246	73	85	0.36	2.5	4.5	D
07	1	32	17.7	59	22.5	153	2.2	74.0	1.9	6	3	161	33	83	0.24	2.1	3.8	C
07	9	58	49.8	58	51.3	152	42.9	54.0	2.6	12	4	108	33	67	0.25	1.0	3.7	B
07	16	21	13.1	65	3.8	150	25.6	24.0	1.8	4	3	333	84	129	0.41	63.2	61.3	D
07	23	25	14.0	60	21.5	152	5.7	93.4	3.0	12	5	213	38	94	0.46	2.3	2.8	D
08	0	16	46.6	59	41.1	152	58.7	98.1	2.7	14	6	88	15	43	0.36	1.5	1.7	B
08	2	37	17.7	58	53.7	153	8.3	72.7	3.2	15	2	115	29	55	0.36	1.7	4.0	C
08	4	48	18.6	60	23.0	152	59.8	128.9	3.0	12	3	222	13	111	0.58	3.0	2.7	D
08	7	55	26.9	65	1.6	149	13.2	2.2	1.1	5	2	289	51	69	0.15	5.2	88.2	D
08	18	53	34.1	58	30.4	153	48.5	59.0	2.6	7	2	256	48	86	0.27	3.1	5.6	D
09	15	39	17.8	59	56.7	152	44.9	97.2	2.6	9	5	102	42	70	0.39	1.6	2.1	C
09	18	29	27.3	59	55.6	152	43.4	100.9	2.7	13	4	102	42	68	0.36	1.6	2.3	C
10	0	36	13.5	63	52.4	146	58.4	11.9	1.7	10	1	136	58	70	0.30	1.5	1.3	C
10	2	7	56.0	60	22.0	152	6.3	78.7	1.5	8	3	215	37	101	0.20	4.4	3.1	D
10	7	49	31.8	60	40.6	150	20.4	38.3	3.0	8	3	298	108	137	0.48	3.1	7.6	D
10	10	12	20.0	62	57.5	150	14.3	92.3	2.7	15	2	69	108	149	0.28	1.8	8.0	C
10	14	25	38.5	59	34.9	152	54.5	98.0	2.2	10	3	74	20	40	0.26	1.4	3.9	B
10	22	53	41.3	56	46.2	152	28.5	8.2	3.0	4	0	347	109	100	0.77	99.0	99.0	D
11	2	8	50.0	59	48.6	152	42.0	78.2	2.3	8	2	114	35	83	0.26	2.2	4.9	B
11	5	20	44.7	60	3.2	153	0.5	123.7	2.3	8	4	159	43	79	0.27	2.0	2.2	C
11	6	31	1.8	59	47.0	152	7.3	69.2	2.7	9	6	118	30	58	0.29	1.3	2.0	B
11	9	6	30.3	59	13.2	154	30.7	11.0	2.3	10	4	253	11	63	0.60	2.0	1.9	D
11	18	2	49.4	63	27.2	145	31.0	1.9	2.1	6	3	134	17	128	0.43	2.0	1.6	C
11	22	27	26.5	65	57.2	148	29.4	87.1	2.0	6	2	231	122	149	0.35	9.7	12.1	D
11	22	30	33.0	64	40.3	148	43.9	8.2	2.0	12	1	108	32	57	0.24	2.1	2.5	C
12	5	58	0.6	64	11.4	150	15.8	38.2	3.7	13	0	129	49	83	0.22	2.0	2.1	B
12	6	3	39.1	64	9.3	150	16.7	30.5	2.2	7	4	265	50	81	0.35	2.6	7.1	D
12	11	9	4.0	63	43.1	150	53.6	6.1	2.1	7	3	212	97	130	0.40	2.7	1.5	D
12	20	53	17.2	59	35.4	152	28.0	66.6	1.7	6	2	174	45	68	0.20	3.7	3.7	C
12	21	7	58.0	58	12.7	150	54.5	14.6	2.9	11	2	249	98	146	0.52	2.6	3.5	D
13	6	0	24.6	59	53.0	153	5.1	106.3	2.6	10	7	115	27	62	0.26	1.4	1.6	B
13	6	14	46.9	64	38.6	149	20.9	23.7	1.2	6	3	301	13	63	0.49	3.1	1.7	D
13	8	59	51.1	61	28.5	145	11.1	30.7	3.7	10	0	324	366	416	0.21	99.0	61.1	D

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

* Magnitude value determined by Alaska Tsunami Warning System (NOAA Palmer Observatory).

APPENDIX B (con.)

1984	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
JUL	13 20	3	17.8	59	45.5	156	5.3	25.4	2.2	5	3	248	107	153	0.68	2.9	99.0	D
	13 23	6	56.5	59	47.1	152	59.6	107.4	2.3	11	4	99	20	56	0.19	1.4	2.9	B
	13 23	25	20.5	59	35.7	152	59.3	84.5	2.3	7	3	122	15	38	0.13	2.6	2.6	C
	14 2	8	41.5	58	44.8	154	52.0	116.8	2.7	10	2	224	58	106	0.44	5.6	2.9	D
	14 4	21	18.2	62	14.7	151	32.4	111.9	2.0	6	0	205	29	225	0.06	17.7	25.9	D
	14 5	40	11.9	63	54.6	148	59.2	6.4	2.7	7	0	184	20	75	0.39	6.8	68.0	D
	14 11	40	7.8	59	41.7	153	5.4	108.9	3.8	15	6	73	9	41	0.41	1.5	2.0	B
	14 18	12	59.6	60	8.4	152	56.2	117.3	2.1	7	4	109	32	80	0.24	1.8	2.1	B
	15 1	8	40.2	65	0.7	148	36.6	14.9	1.8	7	3	263	30	53	0.20	2.2	1.5	C
	15 10	55	30.0	59	39.1	152	16.6	78.1	2.1	6	4	162	36	60	0.31	1.9	2.9	C
	15 11	58	59.9	63	25.1	145	31.5	7.8	2.0	7	1	138	19	146	0.30	2.5	1.8	C
	15 13	51	14.4	59	47.5	153	19.3	127.9	3.2	15	5	67	16	48	0.36	1.8	1.7	B
	15 15	33	15.9	59	14.5	152	3.5	55.5	2.1	10	4	194	37	57	0.22	2.1	2.7	C
	15 18	7	53.1	65	4.7	146	57.2	11.5	1.4	4	4	335	44	63	0.15	3.9	14.0	D
	15 21	1	19.2	64	47.9	147	26.4	20.0	1.5	7	4	207	20	34	0.36	1.3	0.8	D
	16 7	21	50.4	59	57.7	152	46.3	99.8	2.3	11	5	101	43	72	0.40	1.5	1.8	C
	16 11	9	44.7	63	35.2	150	47.9	26.0	3.3	13	0	143	94	155	0.33	2.3	4.3	D
									NEIS MB - 3.7, PALMER ML - 4.1									
									FELT IV AT KANTISHNA LODGE, WONDER LAKE AND DENALI NATIONAL PARK HEADQUARTERS.									
	16 11	40	25.2	59	10.6	153	6.5	77.7	2.6	7	5	86	25	41	0.27	1.4	2.3	B
	16 16	32	16.3	64	49.1	149	20.5	12.2	1.9	8	2	272	30	71	0.32	1.9	2.0	D
	17 1	26	47.9	59	34.5	153	5.4	103.8	2.2	7	3	134	12	67	0.47	3.5	3.5	C
	17 3	31	29.3	64	43.9	149	8.2	189.8	2.3	5	1	258	48	64	0.34	27.4	9.4	D
	17 21	45	24.9	59	31.0	152	23.7	65.0	2.6	8	3	100	47	58	0.28	1.3	2.7	B
	19 3	37	45.7	59	54.0	148	52.9	40.0	3.9	10	1	296	113	159	0.57	6.6	5.9	D
									NEIS MB - 4.4									
	19 10	27	56.4	59	55.3	152	44.9	87.9	2.5	10	4	100	40	69	0.61	1.7	2.8	C
	19 14	11	24.8	60	3.8	152	52.0	111.1	2.3	7	3	119	40	80	0.16	2.7	2.7	C
	19 14	58	6.6	63	27.3	149	17.6	106.1	2.2	12	2	149	36	126	0.39	2.2	3.4	C
	19 19	41	19.2	64	43.2	145	41.1	46.6	1.8	6	3	318	70	102	0.33	4.4	11.5	D
	19 19	59	30.1	59	24.9	152	33.0	63.8	2.0	6	2	147	47	55	0.33	2.1	4.1	C
	19 22	40	33.3	64	19.5	148	30.5	16.0	2.1	9	1	78	26	38	0.26	1.0	5.5	C
	19 22	43	52.2	64	25.0	148	31.6	6.5	1.2	4	3	231	22	43	0.29	2.6	5.4	D
	20 7	49	31.9	57	7.8	155	31.5	95.3	2.6	6	3	286	95	127	0.92	7.7	7.5	D
	20 9	45	53.1	59	54.6	152	48.2	93.9	2.8	16	8	111	37	69	0.58	1.3	2.0	C
	21 2	19	57.1	65	7.5	149	16.7	0.2	1.0	5	2	298	62	74	0.39	2.8	99.0	D
	21 3	35	17.8	63	54.0	149	4.4	12.0	1.6	5	0	223	20	104	0.11	4.4	2.4	D
	21 7	12	22.4	59	39.0	152	21.8	91.3	2.3	9	5	95	49	65	0.26	1.9	2.0	B
	21 13	15	21.6	64	48.2	147	22.9	5.1	1.3	6	2	216	22	36	0.21	2.3	10.0	D
	21 14	40	25.5	60	5.3	153	0.7	123.5	2.7	11	2	136	39	74	0.21	2.6	2.4	C
	22 14	55	7.7	58	14.1	154	26.9	87.2	2.3	5	3	289	66	131	0.17	7.0	5.0	D
	23 3	8	19.8	59	41.3	152	18.9	87.4	2.3	7	6	118	38	52	0.30	2.0	2.5	C
	23 7	28	21.3	63	56.5	149	11.4	139.8	1.6	8	1	213	27	80	0.19	4.0	7.7	D
	23 9	40	50.1	60	5.9	152	3.4	68.2	2.4	9	5	167	53	75	0.27	1.6	2.6	C
	23 12	28	30.5	60	0.1	151	46.7	68.5	2.1	6	6	199	39	61	0.24	1.8	2.6	C
	23 17	0	33.7	59	26.5	152	30.2	67.0	3.2	14	1	88	47	53	0.70	1.5	4.1	C
	23 20	15	29.8	59	37.0	152	3.1	68.9	2.3	8	6	126	31	67	0.30	1.2	3.0	C
	24 0	48	41.2	62	49.0	149	44.6	90.4	2.9	12	2	144	110	166	0.32	1.7	7.0	D
	24 3	11	50.5	63	33.3	150	7.8	108.8	1.9	7	1	181	62	128	0.23	7.6	4.7	D
	24 3	21	47.5	63	10.2	150	38.5	98.9	2.2	6	3	306	106	175	0.36	4.7	5.0	D
	24 5	18	49.7	60	14.6	152	0.8	87.8	3.0	15	7	192	46	83	0.44	1.7	1.9	D
	24 5	54	5.9	64	53.5	148	38.3	0.2	0.6	4	3	237	40	48	0.31	2.0	99.0	D
	24 7	49	12.7	63	37.2	147	39.2	84.1	1.7	9	3	159	64	91	0.22	2.1	3.2	C
	24 8	29	21.0	63	29.7	149	54.6	2.7	2.3	9	6	171	55	124	0.37	2.2	1.2	D
	24 10	5	38.9	59	42.0	152	45.9	100.9	2.7	15	4	86	55	72	0.37	1.3	2.4	B
	24 10	6	46.6	64	16.3	148	20.7	47.3	1.2	5	0	283	26	49	0.59	24.5	21.8	D
	24 10	16	9.1	59	52.5	152	22.7	83.4	2.1	4	4	140	48	64	0.19	1.9	2.9	C
	24 10	34	57.9	63	5.0	151	1.3	127.5	2.2	6	0	299	192	235	0.04	45.1	46.8	D
	24 13	54	38.4	65	38.7	148	3.9	28.0	1.8	5	4	329	84	112	0.32	3.6	49.5	D
	24 14	57	49.2	60	0.8	152	47.1	90.7	1.8	6	3	120	45	83	0.30	2.5	3.9	C
	24 15	3	37.4	59	46.5	151	52.0	53.6	1.9	7	5	126	45	78	0.25	1.6	3.6	B
	24 15	50	14.4	57	26.6	152	38.3	61.3	4.5*	5	0	117	22	41	3.09	4.4	7.9	D
	24 20	15	4.7	66	6.7	149	5.7	40.7	2.4	7	0	232	148	171	0.31	8.7	99.0	D
	25 0	31	51.5	64	40.7	148	41.2	4.5	0.5	4	4	178	22	37	0.11	1.1	9.6	C
	25 3	10	8.9	62	9.0	149	1.2	44.0	2.4	9	4	248	96	204	0.40	2.4	48.2	D
	25 3	46	6.7	65	18.4	147	59.6	2.0	2.2	7	3	301	46	74	0.40	1.9	3.7	D

APPENDIX B (con.)

1984	ORIGIN HR	ORIGIN MN	TIME SEC	LAT N DEG	LAT N MIN	LONG W DEG	LONG W MIN	DEPTH KM	MAG	NP	NS	GAP DEG	D1 KM	D3 KM	RMS SEC	ERH KM	ERZ KM	Q
JUL 25	4	59	50.5	62	39.7	149	46.0	98.7	4.2	9	0	137	119	187	0.21	5.7	30.3	D
									NEIS MB - 4.2									
									FELT IV AT TALKEETNA AND WILLOW. FELT II AT ANCHORAGE. ALSO FELT AT PALMER AND WASILLA.									
25	5	27	20.3	57	53.8	152	36.9	34.8	2.0	5	3	216	18	59	0.28	2.2	3.5	C
25	6	54	0.1	64	32.8	147	48.7	12.4	1.5	8	4	109	11	35	0.36	0.7	3.2	C
25	7	8	28.2	64	19.4	147	46.0	36.8	1.9	3	2	318	23	64	0.57	14.6	9.7	D
25	9	7	41.3	64	25.8	147	34.7	11.0	1.6	9	2	106	25	30	0.20	1.0	1 8	C
25	9	39	31.4	60	10.4	153	12.4	155.3	3.3	14	3	92	37	70	0.33	2.0	3.2	C
25	12	36	46.2	61	27.8	157	25.8	45.7	4.8*	13	0	234	180	260	0.38	7.0	48.7	D
									NEIS MB - 4.2									
									FELT IV AT ANIAK AND AKIAK. FELT II AT BETHEL.									
25	13	58	42.5	60	59.5	147	15.2	17.7	2.3	7	3	262	94	240	0.27	2.8	1.8	D
25	15	7	31.5	63	54.0	148	44.5	108.1	2.4	12	4	141	21	71	0.28	2.3	1.8	C
25	15	54	31.8	64	32.9	147	22.8	6.5	0.9	5	2	154	23	35	0.21	1.8	6.8	C
25	16	22	16.4	59	45.4	152	29.6	77.8	2.9	15	5	101	43	81	0.31	1.5	2.3	C
25	21	59	33.1	64	37.6	147	0.0	4.5	1.1	5	3	226	25	49	0.24	2.1	11.0	D
25	23	29	41.8	56	50.0	154	37.7	29.3	3.5	6	0	236	41	115	0.65	6.6	2.4	D
26	8	26	3.7	58	51.3	153	6.4	41.7	2.0	4	4	124	51	89	0.33	1.4	7.3	C
26	9	7	30.3	57	15.3	154	36.0	62.4	2.7	10	5	204	45	82	0.19	3.4	3.6	D
26	10	12	40.6	59	14.6	152	14.3	61.0	1.9	8	2	125	45	65	0.17	1.8	3.3	B
26	14	1	5.8	59	43.3	153	11.2	109.4	3.0	13	7	99	8	57	0.27	1.7	2.4	B
26	14	20	24.3	58	33.8	155	8.5	123.7	2.7	7	7	244	84	120	0.36	4.2	3.6	D
26	16	24	46.2	61	26.9	146	31.8	26.7	2.5	11	0	224	58	175	0.24	4.9	3.9	D
26	16	48	47.0	59	45.8	153	0.9	117.9	3.6	16	4	79	17	66	0.30	1.5	3.5	B
26	17	44	18.2	63	16.0	149	26.9	120.0	2.6	12	1	149	58	147	0.39	2.2	5.2	D
26	18	58	43.3	59	47.5	152	47.5	77 0	2.0	10	6	91	29	70	0.33	1.2	2.0	C
26	21	0	51.1	60	2.1	153	19 1	136.3	2.5	8	3	154	43	58	0.42	3.5	4.1	C
26	21	4	55.5	62	59.2	151	12.9	115.5	2.0	5	0	302	141	226	0.07	44.9	15.7	D
26	23	27	30.2	63	45.4	148	57.4	27.3	1.1	4	1	198	3	92	0.26	6.0	4.7	D
27	1	38	21.6	64	31.3	147	11.9	1.3	1.7	5	3	171	18	51	0.21	1.6	38.9	C
27	3	3	38.1	59	53.5	151	42.4	67 3	2.0	6	5	201	26	48	0 21	2.6	2.6	C
27	8	53	10.5	60	4.7	152	48.9	96.4	3.1	13	5	107	38	85	0.34	1.7	2.4	C
27	7	28	11.2	60	35.8	153	7.3	155 8	2.8	12	4	282	28	108	0.45	3.7	3 2	D
27	7	29	6.6	64	12.8	148	58.7	7.0	0.7	5	1	216	13	52	0.42	3.9	10.9	D
27	7	39	51.5	60	4.6	152	54.8	109.4	3.7	17	1	95	39	79	0.30	1.9	4.2	C
27	8	39	50.3	64	19.4	148	30.5	8.4	1.0	8	4	78	25	38	0.28	0.8	4.3	C
27	19	22	38.5	60	4.8	150	48.0	27.4	2.3	6	5	272	66	81	0.30	2.4	12.3	D
27	20	31	99.4	63	54.2	148	36.2	106.9	1.7	7	2	151	25	68	0.14	3.4	4 1	C
28	5	32	59.8	64	47.4	147	36.1	11.8	1.0	5	3	248	15	26	0.32	1.9	2.2	D
28	5	37	33.2	64	17.6	148	2.7	12.6	1.7	7	2	186	20	54	0.35	1.6	5 5	D
28	6	38	7.8	63	1.6	149	24.2	81.5	1.5	5	1	286	82	186	0.16	7.9	4.7	D
28	6	46	28.7	59	57.8	153	27.3	141.9	2.8	11	7	78	37	63	0.44	1.8	2.0	B
28	7	42	13.4	64	5.2	148	23.8	28.6	2.5	4	3	330	93	118	0.73	6.3	77.4	D
28	7	53	25.3	63	52.7	149	4.8	96.2	1.4	6	0	204	18	82	0.35	9.4	13.3	D
28	10	41	26.7	64	8.3	148	38.3	17.4	1.4	7	4	139	38	53	0.38	1.3	1 0	C
28	11	40	23.7	63	25.3	150	11.4	100.0	1.4	5	0	322	71	140	0.24	71.3	55.5	D
28	12	19	2.4	62	28.5	149	56.7	21.7	2.1	8	4	214	107	197	0.39	5.2	7 2	D
28	13	27	40.3	63	39.2	147	13.4	58.3	1.8	8	4	174	71	85	0.31	1.8	5.7	D
28	16	14	24.0	59	36.7	152	52.3	85.7	1.7	9	4	78	41	77	0 19	1.3	3.3	B
28	20	30	42.0	59	17.7	151	59.6	91.2	1.9	6	5	217	31	79	0.18	3.1	2.6	D
28	21	45	3.9	64	8.3	148	46.5	0.4	0.6	5	3	154	42	53	0.22	1.3	99 0	C
28	22	22	53.0	59	43.8	153	20.1	127 1	2.2	9	6	104	11	63	0.33	1.7	3.6	C
28	22	22	44.8	64	47.7	147	50.6	11.6	0.8	4	3	162	12	17	0.14	1.2	2.4	C
29	0	57	13.2	59	34.5	152	43.9	76.8	2.2	10	5	79	29	66	0 31	1.1	2.2	B
29	0	58	49.3	59	34.4	152	39.8	75.3	1.8	7	4	81	33	62	0.21	1.4	2.3	B
29	4	59	38.6	59	0.4	152	49 0	63.6	1.9	5	3	166	48	55	0.19	3.8	4.3	C
29	8	20	46.1	63	19.1	149	38.2	86.1	1.3	6	0	272	58	149	0.05	18 9	8.5	D
29	9	18	34.2	60	24.0	152	53 6	120.3	2.5	9	7	206	7	99	0.36	2.3	3.1	D
29	11	36	58.0	63	9.1	150	52.3	66.7	1.6	6	2	193	116	182	0.36	8.2	11.1	D
29	13	43	3.2	62	13.3	151	29.4	39.6	2.3	8	2	311	212	289	0.28	54.7	99.0	D
29	15	19	48.4	63	5 8	151	50.2	42.6	2 3	9	2	336	161	228	0.23	6.3	99.0	D
29	16	36	48.9	60	40.1	152	13.3	105.4	3.0	15	5	217	41	125	0.38	2.3	3.4	D
29	22	15	19.1	63	32.2	149	28.5	88.3	1.6	5	2	319	35	148	0 13	14.0	3.5	D
29	23	38	51.8	62	16.9	149	25 3	73.4	2.0	8	1	137	116	160	0.41	2.7	5 1	D
29	23	59	20.2	60	23.8	152	55 2	136.7	3.1	14	5	131	9	98	0 55	2.0	2.8	C

APPENDIX B (con.)

1984	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
JUL 30	4	46	16.3	64	28.8	149	16.8	9.6	1.1	5	3	311	15	67	0.25	2.1	2.7	C
30	5	45	43.1	64	48.8	148	58.4	19.8	1.3	7	6	248	27	57	0.36	1.4	1 1	D
30	7	29	14.0	63	8.4	150	50.8	101.5	2.3	9	8	260	116	188	0.35	2.7	6.0	D
30	9	7	47.8	59	49.2	152	22.8	91.2	3.8	17	0	112	45	60	0.24	1.9	5.1	C
									NEIS	MB	=	4.2						
30	9	21	4.3	64	30.4	149	17.7	14.4	1.1	8	8	236	13	58	0.37	1.1	1.6	D
30	10	20	43.4	62	31.9	149	8.1	100.0	2.0	5	0	346	138	229	0.13	99.0	99.0	D
30	13	38	29.9	61	2.7	151	21.2	78.9	3.3*	11	0	256	104	155	0.34	9.7	10.3	D
30	16	33	19.2	57	49.0	155	55.4	128.0	4.3*	11	1	251	126	182	0.28	6.9	13.7	D
30	20	44	10.3	60	25.9	150	46.0	84.8	2.6	5	0	325	242	428	0.20	99.0	99.0	D
31	2	16	17.3	59	57.4	152	13.3	86.7	2.9	13	6	136	46	65	0.29	1.4	2.3	C
31	3	48	43.1	57	5.6	151	25.5	32.3	2.4	5	3	316	62	101	0.37	3.8	1.8	D
31	8	13	0.5	64	49.0	147	30.6	10.8	1.3	6	6	206	16	30	0.38	1.0	2.4	D
31	14	9	46.9	64	44.2	149	0.8	2.1	0.9	4	5	246	18	53	0.32	1.6	17.3	D
31	21	11	5.3	63	55.6	147	28.1	0.7	1.8	10	0	118	36	75	0.35	1.4	3.9	C
31	23	23	14.5	64	27.7	147	26.2	1.8	1.5	8	6	124	24	31	0.36	0.6	17.7	C
AUG 01	3	5	19.7	64	9.3	148	47.8	17.5	1.7	8	8	156	42	49	0.36	0.9	0.9	C
01	3	8	21.7	58	47.2	153	55.8	1.7	3.5	12	1	157	23	71	0.39	2.1	2.3	C
01	5	15	3.1	64	10.4	148	53.3	2.4	0.9	5	4	210	46	51	0.19	2.3	43.0	D
01	5	46	45.4	64	17.0	148	7.9	2.7	1.1	4	5	338	15	44	0.30	1.2	14.3	D
01	10	25	40.3	56	58.5	155	23.5	94.7	2.9	5	0	326	131	180	0.05	99.0	93 4	D
01	14	23	23.5	59	48.9	152	24.4	79.7	2.9	14	5	110	46	60	0.21	1.4	2.9	8
01	14	24	7.0	62	48.4	149	55.5	100.0	1.7	6	0	346	115	207	0.12	99.0	99.0	D
01	17	25	12.6	64	55.8	148	34.0	15.6	0.7	4	5	299	23	46	0.20	1.7	3.1	C
01	18	19	31.0	59	58.2	151	21.4	46.6	2.0	8	5	188	35	50	0.26	1.7	3.9	C
01	20	28	58.4	63	43.1	149	17.2	23.4	1.8	7	4	282	18	96	0.69	3.2	1.5	D
01	21	34	11.7	64	26.5	147	58.9	8.8	1.2	7	6	111	6	29	0.32	0.6	2.7	C
01	22	11	59.4	64	56.8	148	39.6	8.0	0.9	5	8	250	28	45	0.18	1.6	6.3	D
02	2	53	14.8	64	17.0	148	24.5	11.5	1.2	6	6	125	26	50	0.26	0.9	3.8	C
02	4	37	38.1	63	53.7	148	56.0	2.2	1.3	5	5	200	18	100	0.35	5.4	28.4	D
02	4	50	34.2	60	46.9	146	56.9	43.4	3.5	10	2	329	246	297	0.16	21.6	58.0	D
02	8	17	26.3	64	49 9	147	21.8	11.9	1.0	6	5	227	22	37	0.23	1.4	4 0	C
02	13	0	24.1	64	30.8	147	56.3	12.3	1.1	6	4	106	9	37	0.20	1.0	3.5	B
02	18	22	37 2	58	31.7	153	55.0	73.9	2.3	7	3	208	47	92	0.33	2.8	3 4	D
02	20	30	45.0	59	10.6	153	13.3	88.7	2.7	12	8	70	22	37	0.29	1.3	2.2	8
03	2	58	16.9	64	51 8	150	37.3	30.8	1 9	2	5	338	80	129	0.31	4.5	27.4	D
03	3	13	53.6	57	14.7	153	40.6	30.0	1.9	5	0	251	37	86	0.46	17.1	27.0	D
03	5	20	49.8	59	34.5	152	31.8	65.8	2.3	12	12	85	40	96	0.32	0.8	1.9	B
03	6	13	44.5	60	2.9	152	29.2	104.3	2.4	7	5	130	44	64	0.38	1.8	2.2	C
03	6	20	23.0	64	42.7	149	58.9	11.9	1.1	5	5	329	46	95	0.34	2.5	8.8	D
03	10	30	24.0	62	50.5	151	13.1	94.3	2.1	7	0	303	152	239	0.10	46.3	13.7	D
03	23	50	18.0	59	29.8	153	24.2	112.8	2.2	11	9	72	18	55	0.34	1.4	1.7	B
04	3	8	22.0	60	13.3	152	40.2	103.7	2.5	9	5	131	23	104	0.28	1.7	2.1	8
04	5	28	28.2	64	47.8	149	2.2	8.5	1.0	5	5	284	25	58	0 11	1.6	9.6	D
04	10	30	50.9	64	43.4	147	31.8	4.5	1.3	6	4	174	16	31	0.39	0.9	7.7	C
04	11	44	34.9	62	37.2	149	32.6	94.2	2.0	7	5	240	128	212	0.36	5.0	4.2	D
04	16	4	39.2	64	38.4	150	49.8	25.3	1.1	3	4	343	84	133	0.34	5 2	99.0	D
04	17	41	0.5	64	18.1	148	39.4	13.4	2.1	7	1	135	33	56	0.30	1.1	8.6	C
04	18	32	47.2	64	36.3	148	22.6	22.1	1.0	5	4	128	20	28	0.36	1.3	3.0	C
04	20	16	50.1	64	31.3	149	21.1	18.1	0.8	4	4	324	15	67	0.16	2.1	1.8	D
05	3	43	59.1	59	40.8	152	8.3	68.1	1.9	8	7	120	26	52	0.31	1.4	2.5	C
05	7	14	46.3	59	44.3	152	51.6	91.1	2.1	9	7	93	23	69	0.36	1.3	2.2	C
05	11	8	9.1	64	54.5	148	26.7	6.7	0.6	5	5	232	17	42	0.28	1.3	4.4	C
05	13	5	47.8	64	46.4	147	35.5	9.1	0.7	4	3	260	17	27	0 31	1.9	3.2	D
05	13	31	28.2	64	8.2	142	40.5	73.0	1.9	6	0	228	127	284	0.32	33.4	57 7	D
05	14	11	1.2	61	58.1	149	45.9	41.6	3.1	4	2	305	237	298	0.50	99.0	99.0	D
05	17	34	31.0	62	48.9	149	16.5	73.3	3.6*	13	1	166	128	148	0.29	1.9	5.1	D
05	17	43	38.5	60	51.7	151	8.9	59.3	3.0	12	7	264	102	149	0.42	3.4	7.1	D
05	19	55	11.0	63	26.3	149	17.4	9.4	1.3	5	4	337	37	129	0.31	3.7	1.3	D
05	22	45	41.6	63	47.7	148	56.3	117.8	1.8	9	5	141	7	88	0.32	2.8	2.0	C
06	4	24	39.0	64	37.6	147	48.1	23.9	0.9	6	4	120	2	28	0 31	1.2	0.8	C
06	6	19	6.5	65	7.8	146	43.0	21.8	1.9	5	1	304	57	75	0.17	4.1	2.3	D
06	7	9	20.9	63	5.2	151	5.4	60.4	2.6	6	3	335	130	214	0.48	12.8	24.3	D
06	13	14	51.5	58	56.0	152	46.2	60.9	2.6	12	8	93	45	56	0.38	0.9	2.7	C
06	14	32	44.3	58	11.5	151	45 0	34.1	2.9	5	4	238	60	84	0.31	1.7	1.3	D

APPENDIX B (con.)

1984	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
AUG 06	22	33	2.3	64	49.3	147	50.7	11.4	0.6	5	4	159	9	20	0.30	1.0	2.2	C
06	23	33	19.6	63	29.4	151	28.0	5.0	2.3	4	6	222	128	166	0.38	3.3	2.3	D
07	4	10	48.9	64	38.3	146	58.9	11.7	1.0	4	5	229	26	48	0.32	1.5	4.7	D
07	8	35	12.4	61	1.0	150	36.0	96.3	3.3	7	0	314	101	314	0.21	99.0	99.0	D
									PALMER ML - 3.4									
									FELT III AT ANCHORAGE, EAGLE RIVER AND									
									PALMER.									
07	10	30	24.7	65	1.3	148	42.7	3.9	0.9	4	3	313	35	60	0.17	3.1	26.5	D
07	11	16	18.6	60	6.6	152	18.6	83.6	3.0	10	6	173	43	72	0.29	1.5	2.4	C
07	11	17	4.4	63	15.3	149	17.6	79.6	1.2	5	0	340	56	146	0.01	93.4	52.4	D
07	14	15	30.6	58	11.7	154	4.5	77.9	3.7	17	3	186	52	86	0.33	2.6	2.9	D
07	14	16	2.1	60	21.5	151	41.0	70.0	2.8	9	0	309	181	287	0.27	99.0	16 9	D
07	22	52	21.9	63	13.1	150	31.9	116.6	2.1	9	0	291	98	168	0.30	26.1	13.1	D
07	23	49	9.9	63	14.2	150	38.6	30.4	2.1	7	1	330	102	168	0.21	6.0	4.5	D
08	1	52	42.8	62	59.5	150	49.0	181.1	2.5	6	1	187	119	167	0.31	4.9	16 8	D
08	3	38	30.4	57	49.3	153	58.6	47.9	2.0	4	3	278	14	89	0.32	3.1	2.0	D
08	7	29	17.9	63	35.2	149	22.1	43.5	1.2	5	0	315	27	117	0.19	99.0	99.0	D
08	7	37	40.0	64	52.3	147	30.0	18.3	0.8	5	5	287	14	31	0.29	1.8	0 9	C
08	8	22	58.9	64	52.9	147	27.5	15.9	0.6	5	4	295	16	33	0.12	2.3	2.9	C
08	8	50	44.8	64	37.7	146	59.8	13.1	1.0	5	5	226	25	49	0.20	1.5	3.9	C
08	8	56	35.1	64	43.9	149	7.4	8.9	1.0	5	5	260	17	57	0.26	1.6	4.2	C
08	9	9	22.4	64	37.5	146	19.6	6.7	0.3	5	5	119	21	25	0.19	0.8	5.5	C
08	9	23	4.2	64	49.1	149	2.5	1.3	1.1	5	5	257	27	60	0.19	1.6	38 2	D
08	10	23	44.8	62	56.9	149	34.6	85.7	1.9	9	6	144	90	150	0.37	1.6	3.0	D
08	12	59	13.2	64	55.1	148	56.0	16.8	0.8	5	5	264	38	56	0.23	1.8	4.1	C
08	13	37	24.1	61	41.8	150	57.5	44.4	2.7	10	2	221	44	192	0.42	5.1	6.3	D
08	15	57	51.6	63	54.9	150	30.4	19.1	1.1	5	5	298	70	101	0.33	1.6	1.1	D
08	22	18	44.3	64	47.7	149	9.2	9.4	1.0	4	5	274	25	62	0.15	1.8	5.4	D
08	22	37	10.2	63	45.4	148	38.4	20.5	1.0	5	1	238	15	84	0.24	20.0	14.4	D
09	7	36	16.3	64	46.8	147	13 6	18.3	0.9	4	4	294	30	44	0.27	2.9	4.7	D
09	8	14	51.2	60	15.5	152	13.1	105.2	3.4	14	4	177	34	87	0.34	2.2	3.1	C
09	11	15	13.8	64	57.6	147	46.7	8.3	0.9	5	5	306	7	35	0.23	1.5	1.6	C
09	11	30	28.4	64	57.3	147	46.6	6.5	0.6	5	4	306	6	34	0.30	1.5	1.7	D
09	13	41	13.3	58	1.1	153	27.0	50.6	2.8	9	3	125	18	64	0.29	1.4	1.6	B
09	14	43	40.4	61	50.6	150	10.5	77.9	3.1	11	0	253	62	220	0.28	41.8	50.1	D
09	19	31	21.5	63	52.3	150	48.6	90.3	2.1	6	6	307	86	113	0.41	3.9	3.6	D
10	0	7	20.8	64	38.9	147	52.6	19.4	0.8	8	5	95	9	27	0.39	0.8	1.3	C
10	4	19	44.2	63	44.9	149	23.6	121.7	1.5	7	1	273	23	94	0.11	6.6	4.6	D
10	6	52	44.3	65	27.7	143	45.4	140.0	2.4	4	4	256	199	218	0.61	22.6	27.7	D
10	10	36	36.3	59	50.5	152	45.6	80.2	2.2	11	6	108	34	84	0.29	1.2	2.1	B
10	12	27	30.0	63	30.3	149	36.5	115.3	2.4	11	5	229	42	122	0.36	2.9	1.9	D
10	17	7	54 3	56	16.2	150	22.7	3.3	3.9	8	0	310	171	209	0.19	99.0	89.9	D
10	18	2	3.3	64	37.8	148	56 7	16.0	1.7	6	4	234	25	50	0.32	2.4	1.1	D
10	19	38	59.7	63	19.9	147	19.1	63.5	1.6	5	5	187	92	133	0.23	2.1	4.8	C
10	21	14	54.3	59	45.7	151	58.3	59.2	2.2	7	5	177	39	86	0.35	1.3	2.4	C
11	1	47	33.8	59	49.9	152	40.9	88.4	1.9	4	5	238	37	66	0.23	3.1	2.9	D
11	1	57	25.4	59	32.6	152	24.4	77.0	3.4	16	3	85	45	48	0.26	1.4	3.3	B
11	2	9	58.3	59	43.1	151	46.6	61.8	2.7	10	4	161	9	37	0.36	2.1	2.2	C
11	7	17	14.1	59	52.5	153	25.8	134.1	3.0	11	10	133	27	60	0.36	1.6	1.7	C
11	12	3	19.0	65	20.3	149	24.5	33.3	1.3	5	5	313	82	90	0.47	3.0	17.2	D
11	12	22	26.8	64	32.5	150	12.6	17.8	1.6	6	6	302	55	102	0.31	1.6	1.1	D
11	13	36	23.2	59	31.3	151	17.8	46.2	2.5	8	6	251	17	110	0.26	2.3	1.4	D
11	13	55	48.5	62	29.5	148	3.9	26.4	2.3	13	4	89	83	143	0.51	1.8	4.7	D
11	14	53	56.9	64	46.2	149	0.1	1.1	0.8	5	5	246	22	55	0.11	1.5	36.1	D
11	15	21	31.9	59	52.8	152	45.9	100.0	2.8	8	6	111	80	71	0.31	1.3	2.3	C
11	19	16	45.8	64	26.0	149	21.3	18.6	0.5	4	4	314	21	73	0.29	2.2	2.6	C
11	23	31	44.0	63	7.1	150	21.4	113.4	3.0	16	0	103	99	165	0.21	2.8	6.3	C
11	23	38	54.1	65	27.2	144	41.0	85.2	2.6	9	0	162	127	159	0.15	3.6	16.0	D
12	2	30	55.4	59	47.4	153	15.8	116.6	2.4	8	8	111	15	52	0.26	1.4	2.4	B
12	5	38	48.3	59	32.5	152	49.7	99.7	2.2	10	5	151	28	71	0.31	1.3	2.2	C
12	6	6	54.7	59	53.2	153	19.8	122.6	2.9	10	7	102	27	82	0 27	1.5	1.9	B
12	9	9	0.5	65	9.3	149	2.0	12.4	1.0	5	4	293	56	65	0.18	3.2	12.9	D
12	11	59	43.3	63	11.8	150	35.5	66.2	2.3	6	3	332	102	171	0.57	7.8	10.7	D
12	15	33	1.3	63	14.5	150	54.5	9.0	2.3	8	7	197	113	144	0.31	3.5	2.0	D
12	15	36	12.8	60	2.3	153	34 7	155.9	2.5	9	5	175	44	62	0 41	2.7	2.1	C
12	20	26	47.5	59	40.1	152	52.5	93.6	2.1	10	3	95	20	49	0.24	1.7	2.9	B
12	21	18	50.8	62	24 7	148	55.6	39.4	2.4	13	5	73	92	134	0.32	3.8	11.7	D

APPENDIX B (con.)

1984	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
AUG	12	22	22	25.6	62	29.0	151	42.3	38.6	2.1	7	3	217	57	268	0 32	27.0	62.3	D
	12	23	12	21.3	59	27.0	152	11.4	55.2	2.1	10	7	100	35	55	0.31	0.9	2.1	C
	13	0	0	26.5	64	26.8	147	15.2	0.1	1.0	5	4	149	17	40	0.24	1.4	99.0	C
	13	0	29	49.1	57	23.2	151	26.2	41.7	3.4	6	0	284	51	102	0.15	9.9	14.7	D
	13	2	30	22.3	59	47.3	153	22.7	123.8	2.4	12	5	116	17	48	0.29	1.5	2.3	B
	13	2	48	57.8	59	28.2	153	10.4	109.4	2.2	9	4	74	21	66	0.33	1.6	2.1	B
	13	3	41	39.3	63	37.2	148	42.6	12.2	1.5	7	7	298	17	100	0.31	1 5	0.9	D
	13	6	26	19.0	64	55.2	148	48.0	17.1	1.5	8	4	253	33	48	0.31	1.5	1.0	D
	13	7	11	5.6	63	53.4	148	48.7	62.3	2.1	9	3	130	19	74	0.28	3.1	3.1	B
	13	8	2	54.5	59	53.3	150	37.3	33.4	2.2	7	5	279	53	71	0.25	2.5	3.7	D
	13	8	11	27.7	64	55.9	148	46.5	17.5	1.0	5	5	254	32	47	0.20	1.6	3.5	C
	13	9	37	40.4	60	18.7	152	53.0	117.7	2.7	9	7	261	76	101	0.32	3.0	2.8	D
	13	11	25	24.4	60	26.1	150	36.2	2.6	2.6	11	0	243	104	119	0.26	12.3	46.6	D
	13	13	0	29.4	63	28.7	151	9.4	7.6	1.6	7	7	212	114	159	0.38	2.3	1.6	D
	13	15	9	33.5	62	59.2	152	23.6	32.4	2.5	10	6	132	121	192	0.35	1.6	4.4	D
	13	21	54	12.0	59	14.4	154	11.8	4.9	1.7	5	3	187	10	47	0.22	1.0	1.7	C
	13	22	21	49.9	64	43.2	147	32.1	16.6	1.1	6	8	173	15	31	0.38	0.9	1.7	C
	14	0	56	22.8	61	42.9	150	57.7	3.8	3.0	14	7	88	42	192	0.32	1.1	1.7	C
	14	1	2	8.3	61	52.1	149	0.9	3.8	5.7*	18	0	90	27	52	0.42	1.8	2.9	C
										NEIS MB - 5.7. SLIGHT DAMAGE									
										FELT VI AT PALMER AND WILLOW. FELT V AT									
										ANCHORAGE. TALKEETNA. AND VALDEZ. THIS									
										EVENT WAS FELT THROUGH OUT MUCH OF SOUTHERN									
										ALASKA FROM FAIRBANKS TO HOMER.									
	14	1	34	37.3	61	50.2	149	2.4	3.8	4.2*	9	0	124	23	90	0.45	3.8	3.4	C
										FELT IV AT ANCHORAGE AND IN THE PALMER									
										WASILLA AREA.									
	14	2	33	40.1	61	36.0	148	46.5	20.4	2.1	6	5	204	19	240	0.31	5.0	3.1	D
	14	4	26	15.2	61	48.8	150	17 9	47.8	2.5	9	5	175	67	157	0.40	2.4	5.0	D
	14	4	30	48.6	59	46.5	152	4.3	68.1	2.1	9	7	153	47	67	0.26	1.6	2.4	C
	14	4	31	14.2	57	21.5	153	54.7	37.7	2.8	11	1	244	45	90	0.33	4.2	2.2	D
	14	6	13	2.3	61	45.1	148	48 3	28.3	2.1	5	4	142	25	146	0.35	5.3	7.9	C
	14	7	33	53.3	61	44.2	148	57.8	17.8	2.3	9	5	127	18	136	0.41	5.6	5.7	C
	14	7	41	7.9	61	38.8	148	54.3	29.3	3.7*	14	0	143	7	57	0.32	2.0	1.9	C
										FELT III AT PALMER AND WASILLA									
	14	12	34	43.1	66	6.8	143	58.8	111.8	3.0	7	0	209	76	242	0 38	17.8	34.6	D
										PALMER ML - 3.9									
	14	18	15	5.0	62	56.3	152	0.3	24.1	2.1	6	3	230	110	212	0.40	5.0	6.1	D
	14	18	59	28.6	64	44.6	148	47.4	16.1	1.9	8	3	213	23	48	0.33	2.2	1.2	D
	15	5	43	57.0	61	29.6	148	44.6	33.4	2.5	10	3	229	23	157	0.34	4.0	2.7	D
	15	6	38	53.9	65	9.2	149	17.5	19.3	1.2	5	5	300	65	76	0.34	1.7	1.0	D
	15	10	40	32.9	59	34.9	153	4.4	93.0	2.2	6	6	83	12	67	0.29	1 5	2.5	B
	15	14	17	52.6	58	4.0	154	36.2	80.4	2.6	9	7	262	111	146	0.34	3.5	6.0	D
	15	20	10	56.6	64	38.7	149	13.2	19.1	0.6	4	5	290	10	58	0.35	1.7	1 9	D
	15	20	52	45.5	64	18.9	149	33.6	16.4	1.3	6	6	244	37	73	0.31	1 6	0.9	D
	15	21	12	40.4	64	49.5	148	53.7	1.0	1.3	5	5	243	29	53	0 22	1.5	47 1	D
	16	0	47	50.2	62	5.4	151	16.1	76.4	2.1	6	2	152	18	218	0.39	4.4	4 1	C
	16	2	31	30.7	64	33.4	149	24.8	22.4	1.8	7	4	257	16	68	0.62	2.7	1 3	D
	16	2	53	43.3	63	8.7	149	57.8	87.3	1.2	5	2	175	63	166	0.24	11.5	4.4	D
	16	4	18	17.5	63	14.4	149	51.0	83.1	1.7	5	4	175	71	165	0.36	36.2	7 7	D
	16	6	21	54.1	64	49.5	147	16.3	18.3	1.4	8	3	233	26	41	0 27	2.3	1.1	C
	16	7	33	45.7	61	53.9	150	45.8	67.1	2.8	4	3	172	41	181	0.32	5.4	4.2	D
	16	17	32	12.9	58	5.2	153	32.3	76.7	2.3	5	2	257	23	73	0.10	3.3	8.3	D
	16	18	26	56.7	54	33.0	151	28.9	31.3	3.7	5	2	348	308	362	0.32	99.0	99.0	D
										PALMER ML - 4.5									
	16	20	0	5.6	64	50.8	146	44.3	16.5	1.7	4	1	299	48	52	0.01	4.8	1.9	D
	17	3	32	46.2	63	25.0	145	31.3	2.1	1.7	8	7	132	50	172	0.34	1 2	1.6	C
	17	8	23	4.3	57	29.2	154	34.9	32.0	2.4	4	2	301	57	106	0.36	6.5	8.7	D
	17	10	1	4.4	53	29.8	156	37.1	41.7	4.5	10	0	280	325	507	0.18	77.6	57.7	D
										NEIS MB - 4.8. PALMER ML - 4.9									
	17	10	2	28.8	59	34.3	152	54.8	44.4	3.1	6	0	330	395	601	1.04	99.0	99.0	D
	17	10	56	43.7	62	39.9	149	34 2	64.1	1.6	8	1	213	123	174	0.25	11.1	13.8	D
	17	17	28	58.3	64	19.1	150	8 2	25.5	2.8	7	0	281	59	100	0.15	11.5	91.8	D
	17	19	55	4.3	57	36.5	154	7.4	59.4	2.3	4	3	280	27	80	0 38	3.3	3.6	D
	17	20	42	26.0	64	53.3	147	28 8	19.8	1.0	6	5	169	12	31	0.24	1.4	0 8	C
	17	21	40	17.5	57	8.2	153	52.2	32.6	2.0	2	4	279	48	100	0.12	2.7	3.6	D
	18	4	34	38.8	64	29.5	146	30.7	12.1	1.6	8	3	272	23	69	0 34	2.6	1.8	D
	18	6	17	8.8	59	50.5	152	47.2	83.3	2.7	10	11	108	33	64	0 34	1 1	1.9	C
	18	12	6	21.2	58	47.6	154	46.4	125.3	2.6	8	4	224	60	98	0.32	4.2	3.5	D

APPENDIX B (con.)

1984	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
AUG 18	14	6	47.5	59	44.5	153	23.1	126.3	2.6	7	5	198	13	106	0.34	2.3	2.3	D
18	15	44	53.6	59	33.0	153	30.5	112.7	2.2	6	5	158	19	105	0.27	2.6	2.4	C
18	16	16	5.2	60	43.6	152	17.4	96.1	2.2	8	2	290	43	148	0.21	6.1	2.7	D
19	1	46	3.8	60	26.4	150	57.9	26.4	1.7	4	4	261	100	117	0.18	2.8	7.2	D
19	2	23	34.1	60	1.7	153	20.0	137.4	2.6	8	5	209	42	103	0.34	2.6	2.4	D
19	2	32	30.2	59	41.5	148	39.7	9.1	3.0	5	2	322	147	242	0.16	51.8	51.8	D
19	4	31	27.7	60	42.7	149	56.2	39.6	4.0*	13	0	284	150	157	0.25	27.9	6.9	D
									FELT AT ANCHORAGE, KENAI, PALMER, AND WASILLA.									
19	4	42	22.2	61	37.4	148	49.7	39.1	2.3	7	3	214	83	235	0.34	12.0	23.0	D
19	18	34	49.5	64	31.0	149	52.5	21.6	1.2	6	4	274	39	90	0.34	2.3	0.9	D
19	23	38	55.9	63	40.3	147	24.9	76.9	1.5	6	4	283	76	110	0.13	3.3	5.1	D
20	1	44	41.9	64	47.0	147	46.2	15.4	0.5	5	5	148	13	16	0.21	1.1	1.9	C
20	2	32	0.1	60	51.7	151	1.3	4.6	2.2	4	3	301	108	158	0.26	44.8	42.4	D
20	4	29	39.6	59	21.0	152	59.3	70.9	2.2	7	7	177	25	60	0.27	1.7	2.7	C
20	6	48	5.5	64	33.2	149	16.3	20.0	1.2	6	2	250	10	62	0.35	3.1	1 2	D
20	7	34	41.0	55	56.6	155	56.1	30.0	3.3	4	1	341	222	290	0.23	99.0	99.0	D
20	12	30	10.9	63	8.3	148	27.0	69.6	2.3	12	7	182	71	150	0.35	1.4	2.7	D
20	13	6	45.3	59	52.6	152	49.9	98.1	1.6	5	4	110	34	65	0.23	1.7	2.5	B
20	14	8	34.2	64	37.9	148	45.6	3.8	0.9	6	4	165	16	37	0.36	1.9	10.0	C
20	14	10	39.6	64	38.3	147	48.8	24.0	1.9	10	3	94	1	26	0.27	1.1	0.8	B
20	14	20	0.3	64	21.0	150	6.3	16.4	2.7	13	3	98	90	106	0.42	1.2	3.0	D
									PALMER ML - 3.2									
20	18	43	39.9	64	48.6	148	4.2	3.0	0.5	3	2	176	22	55	0.13	2.3	32.8	D
20	19	43	46.9	59	50.3	152	37.7	76.3	2.2	11	7	120	40	72	0.29	1.4	2.1	B
21	3	15	54.2	64	51.5	148	58.9	2.9	0.9	6	6	250	32	57	0.35	1.5	18.4	D
21	8	10	48.9	64	50.1	147	28.2	0.9	0.2	5	4	204	17	26	0.16	1.2	32.6	D
21	10	47	6.5	57	48.1	153	4.9	24.1	1.9	4	2	142	29	66	0.22	1.8	8.4	C
21	14	7	34.7	65	2.5	148	26.1	19.8	0.9	3	2	312	28	53	0.14	4.4	9 0	D
21	15	22	19.5	64	30.7	147	13.5	0.0	0.8	4	3	183	18	42	0.34	2.9	99.0	D
21	18	18	31.5	57	21.6	151	30.7	39.8	2.7	8	1	254	47	97	0.33	5.6	1.6	D
21	18	44	45.7	65	40.7	144	53.5	52.5	1 9	5	5	350	140	179	0 56	10.9	29.2	D
21	19	2	57.4	63	3.4	149	27.8	92.3	2.6	12	1	224	60	171	0.23	5.9	6.3	D
21	19	4	56.1	64	26.8	147	28.9	13.9	1.4	7	3	220	28	53	0.24	1.9	2.5	C
21	20	9	50.9	64	48.1	147	32 2	9 9	0.4	3	4	197	16	22	0 22	1.3	3 6	C
22	3	21	20.4	59	49.4	152	22 7	92.4	2.8	5	3	211	45	70	0 31	2.0	2.5	D
22	4	3	18.4	64	39.2	147	49.8	14.1	0.3	5	3	111	24	28	0.17	2.1	4.0	B
22	9	49	2.4	64	55.4	148	9.0	41.3	1.9	8	0	209	11	35	0.31	3.7	3.9	D
22	14	35	32.8	57	6.6	154	9 6	17.9	3.2	6	0	273	66	118	0.34	16.1	12.1	D
22	14	36	51 7	62	18.3	148	0.8	74.5	1 8	4	0	272	166	261	0.10	99.0	51.2	D
22	22	31	3.6	63	19.4	147	16.0	45.9	2.5	10	3	88	95	134	0.43	1.4	19.7	D
23	3	24	3.7	64	16.3	149	44.9	17.8	0.9	5	4	257	47	83	0.38	3.5	1.2	D
23	6	11	51.6	62	55.1	150	44.5	109.6	2.3	10	2	297	128	202	0.26	7.0	6.1	D
23	6	33	58.0	62	59.5	150	0.9	88.6	1.9	9	5	256	99	183	0 39	2.6	3 4	D
23	9	1	36.9	64	46.9	147	22.5	1.3	0.3	4	4	236	23	25	0 33	1.4	30.9	D
23	11	11	49.4	64	37.9	147	51.9	19.5	0.5	5	4	153	3	26	0.25	1.6	1.6	C
23	11	26	43.5	60	55.6	151	53.5	7.5	2.1	5	4	248	157	159	0 30	5.1	5.3	D
23	11	37	19.0	65	3.4	146	56.0	0.2	0.7	3	3	332	23	62	0 14	2.5	99.0	D
23	12	28	18.8	62	54.7	149	29.1	88.6	2.2	8	4	341	96	187	0.36	9.2	3.4	D
23	19	15	30.7	59	25.9	154	32.6	16.0	1.6	4	3	230	30	83	0.27	3.8	6.1	D
23	20	41	51.4	64	32.5	147	53.6	13.4	4.1*	10	0	83	12	34	0.15	1.2	1.6	B
									FELT III AT FORT WAINWRIGHT. ALSO FELT AT FAIRBANKS AND EIELSON AIR FORCE BASE.									
23	20	46	5.1	64	30.9	147	50.3	13.3	1.4	7	2	190	13	38	0.27	1.1	1.8	C
23	21	1	51.8	64	32.7	147	53.3	9.0	0.8	7	2	121	12	34	0.15	1.2	1.7	B
23	21	7	38.3	64	32.3	147	55.1	16.7	1.5	8	1	102	11	34	0.20	1.1	1.7	B
23	22	34	55.4	63	13.8	149	3.3	84.3	1.9	10	7	262	57	151	0.24	2.0	2.2	C
24	16	23	34.4	58	45.6	152	37.0	13.0	1.7	7	4	94	21	84	0.21	2.4	4.1	B
24	16	42	7.2	64	47.6	149	17.9	23.1	0.7	4	2	289	26	68	0.37	5.4	3.3	D
24	23	1	52.5	64	34.8	149	20.8	2.3	1.5	8	1	255	62	74	0.36	6.7	99.0	D
25	0	9	19.9	64	9 3	148	2.3	6.5	1.5	6	1	205	35	64	0.10	6.7	23.5	D
25	1	47	21.0	64	32.5	147	52.9	13 8	0.9	8	1	107	12	34	0.18	1.5	1.5	B
25	3	25	39.2	64	50.0	148	54.0	16.3	1.4	7	3	255	36	96	0.19	2.7	1.5	D
25	6	16	10.6	64	51 3	148	37.2	10.6	0.7	5	4	286	23	45	0.16	2.3	4.8	D
25	9	4	8.8	61	50.5	151	43.4	63.1	2.1	4	3	233	168	259	0 23	5.1	8.6	D
25	11	41	6.2	58	36.6	152	25.1	10.1	2.5	6	4	142	5	99	0.24	1.6	1.1	C

APPENDIX B (con.)

1984	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
AUG 25	14	37	1.1	58	44.4	152	51.8	10.0	2.8	8	4	111	32	74	0.29	1.3	2.2	C
26	3	32	47.3	60	43.1	151	21.5	94.9	3.1	10	1	124	119	140	0.35	4.7	11 4	C
									PALMER ML - 3.4									
									FELT ON THE KENAI PENINSULA									
26	4	12	22.3	64	56.5	147	8.6	17.0	1.0	4	2	290	13	48	0.17	2.8	4.6	D
26	6	37	2.3	64	51.1	147	22.0	3.2	0.8	6	4	162	21	37	0.25	1.5	12.3	C
26	21	58	34.3	64	32.8	147	50.8	11.9	1.3	6	2	128	12	35	0.11	1.2	3.9	B
26	22	5	27.3	64	35.7	147	45.9	10.6	1.3	6	2	110	6	32	0.26	1.2	3.3	B
27	0	54	27.2	64	19.2	146	4.7	18.8	1.1	6	5	180	17	56	0.38	1.0	2.0	C
27	4	58	6.0	63	55.3	149	59.3	15.7	2.5	6	0	269	49	111	0.27	22.0	3.6	D
27	8	38	14.8	58	58.8	151	9.4	42.0	3.2	11	2	215	63	76	0.29	3.6	5.2	D
									PALMER ML - 4.0									
27	9	14	33.4	59	9.2	151	43.9	38.2	1.7	8	8	178	37	68	0.17	1.5	3.0	C
27	10	48	43.3	64	54.5	148	48.7	22.7	1.2	5	5	297	33	56	0.32	1.8	0.8	D
27	18	0	24.6	64	47.4	147	31.5	13.0	0.7	5	5	201	18	23	0.17	1.3	2.6	C
27	20	41	15.5	59	53.1	153	19.3	130.6	4.5	12	2	81	26	62	0.28	2.1	4.8	B
									NEIS MB - 4.5									
27	21	15	58.5	62	11.2	149	56.6	130.9	2.2	6	2	188	86	246	0.32	7.9	12.9	D
28	6	47	21.8	64	48.8	148	45.0	1.8	0.8	6	5	222	29	46	0.25	1.2	21.1	D
28	9	34	31.2	64	37.0	149	12.6	18.0	1.1	7	6	251	8	56	0.36	1.5	0.8	D
28	10	32	22.6	64	38.6	146	53.6	0.9	2.1	6	2	190	11	52	0.35	1.5	2.7	D
28	11	10	38.7	63	10.0	150	52.6	130.0	1.5	5	1	296	150	223	0.05	16.4	27.7	D
28	13	40	31.5	61	1.5	151	36.5	84.6	1.5	3	3	309	93	177	0.28	4.1	9.3	D
28	14	27	45.9	61	0.8	151	33.5	81.8	1.8	3	3	308	94	177	0.16	4.6	8.9	D
28	19	12	16.4	63	14.2	150	1.8	80.6	1.9	6	0	291	187	200	0.28	61.3	29.9	D
28	20	23	12.5	58	1.9	154	19.5	72.4	2.6	8	1	300	108	134	0.12	15.0	10.8	D
29	0	3	0.2	60	9.5	152	5.8	89.8	2.7	5	1	265	47	118	0.09	16.8	23.7	D
29	2	15	20.8	64	39.3	149	14.8	3.4	0.9	5	5	291	12	59	0.30	1.7	10.3	D
29	4	43	15.5	64	23.5	149	19.0	14.9	0.7	4	4	223	24	74	0.28	1.8	3 4	C
29	5	2	18.1	59	53.9	153	28.5	126.9	2.2	6	4	140	31	70	0.32	2.7	2 3	C
29	7	20	47.1	60	28.1	153	2.7	151.1	3.3	13	3	139	18	99	0.34	3.0	4.4	C
29	7	21	6.2	61	31.0	150	58.3	64.4	2.7	11	0	253	60	268	0.37	9.8	7.3	D
29	14	12	7.7	60	46.1	150	30.2	20.2	2.1	4	3	303	130	156	0.28	23.4	72.5	D
29	18	12	28.1	64	48.3	147	30.4	14.2	1.5	7	2	134	20	25	0.36	1.1	4.9	C
30	2	29	44.0	64	47.3	147	30.3	7.8	0.4	4	5	209	19	23	0.15	1.2	4.5	C
30	2	29	22.3	64	47.2	147	35.2	11.7	0.8	7	6	122	16	24	0.39	0.7	2 0	C
30	5	31	29.8	60	17.5	153	4.2	143.8	3.2	8	4	180	22	84	0.34	3.2	2.8	D
30	8	50	17.3	59	48.0	150	4.5	78.7	2.6	5	4	310	72	165	1.17	4.4	4.6	D
30	9	39	39.7	63	59.9	147	21.1	1.4	1.4	8	5	127	76	93	0.37	1.0	2.0	D
30	14	44	21.9	64	52.9	149	1.0	12.8	0.9	8	6	256	34	58	0.25	1.6	4.9	C
30	15	46	7.9	59	46.6	152	39.5	114.6	2.5	6	1	108	59	70	0.19	2.7	5.0	C
30	21	36	48.4	61	23.7	148	40.2	26.1	2.6	9	4	240	33	185	0.39	3.4	2.7	D
30	21	37	3.7	58	22.7	154	35.3	4.0	2.2	5	2	223	82	91	0.27	4.2	4.5	D
31	18	24	2 8	60	53.8	150	53.8	22.3	2.6	5	3	304	116	154	0.35	18.0	56.5	D
31	21	34	46.5	59	50.3	152	48.3	80.8	1.9	7	6	109	32	66	0.27	1.5	2.3	B
SEP 01	1	31	30.1	64	47.9	147	31.6	13.2	0.3	5	3	199	17	22	0.14	1.5	2.9	C
01	8	0	27.6	59	26.2	153	21.3	111.3	2.1	6	5	171	10	57	0.23	2.8	1.9	C
01	9	5	42.0	59	24.3	153	20.7	100.7	2.0	7	5	131	9	56	0 31	2.2	2.8	C
01	19	40	12.9	64	40.0	149	10.6	15.0	0.8	3	2	317	11	56	0 00	3.5	3.3	D
01	20	31	54.3	60	3.1	152	59.9	111.2	2.7	11	5	130	43	73	0.33	2.3	2.4	C
01	20	32	53.3	60	1.7	153	11.9	100.0	2.8	8	0	333	470	548	0.35	99.0	99.0	D
02	6	3	10.0	64	45.5	150	28.1	20.5	1.7	5	5	335	70	118	0.22	3.7	1.4	D
02	6	56	55.9	65	27.7	147	53.9	13.7	1.0	5	4	326	58	72	0.23	3.5	1.4	D
02	7	36	20.8	60	14.1	153	8.1	138.3	2.4	8	3	174	29	77	0 31	3.2	4.2	C
02	9	56	31.1	60	0.3	152	57.6	104.6	2.2	7	5	154	42	73	0.30	2.7	3.4	C
02	10	24	44.5	59	54.1	153	27.3	129.0	2.8	11	9	140	30	61	0.37	2.1	1.9	C
02	10	37	15.1	59	56.2	151	51.9	153.4	2.7	6	1	238	33	58	0.36	5.1	4.0	D
03	6	2	53.0	60	3.0	151	15.4	53.1	2.2	7	4	242	49	67	0.33	2.8	4 0	D
03	6	11	13.4	65	29.3	149	54.1	49.3	1.9	6	3	316	109	119	0.38	4.9	24.9	D
03	10	1	4.1	64	40.0	149	18.5	17.3	0.8	5	5	297	18	62	0.20	1.8	2.2	C
03	10	4	21.7	58	42.8	150	40 3	7.4	2.2	5	1	285	98	99	0.31	33.2	35.3	D
									PALMER ML - 3.4									
03	13	16	52.6	61	28.8	148	3 5	38.7	2.3	10	2	274	80	229	0.12	7.9	7.6	D
03	17	51	5.7	64	20.0	148	34 4	11.2	1.3	7	4	138	28	51	0.18	1.3	6.6	C
04	4	12	35.1	58	37.6	155	16 8	14.9	2.2	3	2	248	131	144	0.12	99.0	99.0	D
04	8	47	38.9	64	51.1	149	8 0	21 1	3.8	13	0	217	31	64	0.32	3.0	1.2	D
									PALMER ML - 3.8									
									FELT III AT NEANANA. ALSO FELT AT FAIRBANKS AND HEALY									

APPENDIX B (con.)

1984	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
SEP 04	13	21	50.2	60	25.0	152	32.3	89.5	2.5	3	1	232	13	123	0.00	27.7	6.5	D
04	14	52	22.1	58	56.6	154	24.1	118.7	2.4	7	3	203	37	95	0.26	3.4	5.0	D
04	16	6	11.3	63	9.7	151	9.3	103.3	2.6	9	3	203	128	188	0.25	5.4	6.6	D
04	18	0	22.3	62	13.9	151	22.0	78.5	2.6	7	1	186	29	285	0.41	6.9	7.2	D
04	20	56	26.9	58	11.0	153	3.3	48.2	2.7	13	2	106	15	64	0.30	1.7	3.2	B
05	4	9	13.7	60	10.1	150	3.0	9.4	2.3	4	4	302	98	153	0.16	31.3	30.8	D
05	9	57	55.7	64	28.5	146	52.6	0.1	1.3	9	2	177	9	58	0.19	1.6	89.6	C
05	18	24	0.6	59	7.3	145	36.3	65.3	4.2*	8	0	230	54	317	0.25	11.1	10.9	D
									NEIS MB = 4.6									
06	3	5	4.5	59	48.4	152	38.3	86.6	1.4	5	4	121	37	70	0.19	3.0	3.9	C
06	7	21	33.9	65	7.3	141	56.0	47.7	3.8	6	0	202	229	283	0.17	4.2	99.0	D
06	8	29	58.8	59	6.1	152	24.6	81.1	3.3	5	0	201	73	77	0.04	5.1	18.4	D
06	14	8	24.5	61	36.3	148	56.0	32.9	2.1	8	6	244	32	171	0.47	3.4	1.4	D
06	22	49	36.0	64	54.4	148	18.7	12.8	0.4	5	4	213	12	45	0 23	1.8	2.1	C
07	7	19	23.8	63	2.0	148	47.1	33.4	3.9	7	1	288	359	412	0.10	57.6	99.0	D
07	8	35	39.4	59	50.4	153	24.1	143.4	2.9	7	4	273	23	101	0.20	2.5	2.9	D
07	18	38	58.7	63	32.2	149	55.3	104.2	1.8	7	5	184	54	161	0.39	2.1	2.4	D
08	1	54	23.4	64	47.9	147	27.5	4.0	0.8	5	3	142	21	33	0.06	1.0	13.3	C
08	2	27	39.7	60	24.3	152	23.0	83.0	2.3	7	4	232	21	113	0.26	2.4	4.0	D
08	9	59	55.7	57	53.1	152	47.3	63.1	2.6	8	3	198	23	166	0.30	4.5	5.9	D
08	13	13	30.7	60	4.2	152	36.0	97.2	2.3	7	5	142	40	86	0.27	1.9	2.7	C
08	15	37	18.2	60	24.6	151	10.8	43.4	2.4	5	5	271	88	107	0.33	2.5	4 5	D
08	23	26	40.7	64	33.0	147	8.3	2.7	0.7	6	4	165	18	47	0.34	1.1	11 9	C
09	2	5	47.2	59	30.6	152	48.5	84.9	2.2	6	6	92	29	70	0.33	1.3	2.8	C
09	2	14	29.8	61	17.8	150	44.9	40.2	2.6	5	4	280	147	209	0.28	3.6	8.3	D
09	13	41	33.4	60	1.6	153	13.2	132.9	2.8	9	7	148	50	78	0.30	2.1	2.5	C
09	20	47	37.7	63	18.5	147	21.3	64.9	1.6	9	5	191	79	101	0.41	1.8	3.2	D
09	22	26	32.7	59	44.9	152	45 8	93.1	2.1	7	7	106	29	75	0.33	1.2	2.2	C
09	23	4	44.5	60	34.8	150	57.1	25.3	2.7	8	4	267	102	118	0.37	2.8	10.4	D
10	2	17	4.5	60	2.8	151	22.3	84.6	2.0	6	5	234	46	65	0.34	2.2	3.0	D
10	2	25	52.1	59	51.0	152	52.8	95.1	2.4	10	10	101	30	64	0.32	1.2	2.0	C
10	5	4	30.3	60	8.1	152	2.8	70.2	2.2	7	5	197	51	78	0.32	1.7	2.7	D
10	7	39	5.9	64	46.4	147	24.3	6.8	0.8	6	5	150	24	36	0.22	0.8	6.4	C
10	11	23	0.5	63	27.1	145	32.3	3.2	2.2	8	3	134	18	127	0.61	2.7	3.1	D
10	12	10	45.6	64	13.8	148	10.7	14.3	1.0	8	5	98	13	80	0.35	0.9	2.1	C
10	19	22	31.8	60	51.8	151	1.0	12.3	3.3	7	1	288	128	225	0.39	37.1	35.8	D
									FELT III AT ANCHORAGE									
11	8	3	56.2	64	48.5	148	55.3	16.4	0.8	8	5	238	27	55	0.37	1.8	1.0	D
11	17	54	35.3	59	20.9	152	39.0	34.7	2.9	6	2	333	147	189	0.92	99.0	99.0	D
12	7	24	57.6	62	0.3	150	24.0	4.2	2.7	7	2	258	218	290	0.28	9.8	12.1	D
12	7	51	19.4	57	58.9	153	16.8	41.7	2.4	10	5	106	11	54	0.28	1.9	2.5	B
12	9	35	34.1	58	53.8	154	28.3	123.9	2.5	12	6	207	33	77	0.30	1.9	3.4	D
12	11	56	8.5	59	43.0	152	44.2	83.0	2.7	9	5	97	29	62	0.26	1.8	2.4	B
12	22	52	26.8	63	26.0	150	12.3	77.7	1.9	4	1	197	71	176	0.51	27.4	12.6	D
13	2	50	41.1	63	33.8	150	13.1	163.3	2.1	5	1	198	68	189	0.88	2.8	6.1	D
13	4	8	19.8	58	14.1	152	43.3	54.0	3.9	15	1	134	32	56	0.25	1 7	3.6	B
13	5	37	33.9	62	15.7	151	10.0	75.7	2.1	9	1	170	37	206	0.28	9.5	9 9	C
13	7	32	1.7	63	28.9	149	26.0	106.5	2.8	8	4	262	37	123	0.30	4.4	2.2	D
13	20	12	37.8	58	13.5	155	50.1	139.7	3.0	9	2	278	133	150	0 29	9.3	6.7	D
14	5	53	49.2	64	22.5	149	28.6	12.7	1.2	7	4	241	30	76	0.32	1.7	1.1	D
14	22	57	21.3	61	48.0	150	0.3	44.0	2.6	8	3	169	82	141	0.47	3.8	5.4	D
15	5	0	36.6	63	27.5	145	27.0	1.7	2.3	8	2	138	20	128	0.48	2.0	2.7	C
15	5	55	43.0	63	28.5	146	56.6	98.3	2.0	10	6	130	34	97	0.33	1.3	2.1	C
15	7	58	57.1	64	36.7	147	43.4	13.0	0.6	6	4	107	6	31	0.32	0.8	2.8	C
15	12	51	59.8	61	43.1	151	7.0	73.1	3.2	6	2	227	37	200	0.20	10.0	6.5	D
									PALMER ML = 3.2									
15	13	10	38.9	64	46.1	147	27 6	9.6	0.4	5	5	141	21	33	0.23	1.0	3.8	C
15	18	29	52.2	64	21.1	149	36.4	13.2	1.4	8	6	251	36	76	0.33	1 5	0 9	D
16	8	15	20.6	60	36.7	152	1 0	84.3	2.1	5	4	277	47	129	0.28	2.6	2.8	D
16	8	59	37.7	61	44.0	148	48.2	20.7	2.3	5	3	147	23	148	0.27	5.1	4.8	D
16	12	38	26.5	59	49.6	152	39.9	86.7	2.5	7	5	118	37	66	0.29	1.8	2.7	B
16	12	47	12.9	64	48.5	148	54.2	16.7	0.9	6	3	236	27	54	0.24	2.5	1.1	D
16	14	10	51.6	62	57.6	149	41.8	81.3	1.6	9	2	148	94	175	0.40	1.7	3.3	D
16	15	29	17.5	60	30.2	153	7 0	129.1	2.7	5	3	259	21	100	0.20	3.6	4 5	D
16	16	51	34.7	62	4.8	151	7.5	108.4	2.5	5	1	213	24	237	0.12	24.8	6.7	D
16	17	21	58.9	59	55.0	152	28.1	93.9	2.5	11	5	136	52	59	0.35	1.4	2.2	D
16	17	50	1.4	62	22.0	151	7.9	89.3	2.4	7	2	176	48	188	0.30	2.3	6.2	D

APPENDIX B (con.)

1984	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
SEP 16	22	42	53.8	63	6.1	150	50.3	119.1	2.0	6	2	191	118	147	0.31	2.6	4.1	D
17	0	28	2.4	60	2.8	153	20.4	148.7	2.6	6	5	234	44	104	0.35	3.4	2.4	D
17	3	0	12.2	62	12.9	149	46.3	73.2	2.4	6	3	112	77	135	0.38	4.0	7.3	C
17	3	12	58.3	59	28.9	152	46.7	78.5	2.7	12	2	79	32	40	0.30	1.6	2.6	B
17	6	20	19.0	62	56.0	149	14.1	85.8	1.7	9	6	134	67	162	0.34	1.4	2.9	C
17	6	30	10.8	59	17.8	153	33.9	101.9	2.1	6	3	143	12	66	0.35	3.9	3.9	C
17	8	24	16.0	59	11.0	153	32.0	118.8	2.3	8	6	114	23	46	0.33	2.6	2.7	C
17	10	45	58.3	61	58.3	149	46.9	72.8	2.3	10	3	138	50	206	0.52	3.2	3.7	D
17	12	9	37.2	61	5.8	151	2.7	33.5	2.7	5	2	311	120	183	0.25	4.4	99.0	D
17	21	14	17.4	64	36.8	147	0.1	3.2	1.1	7	3	198	23	46	0.24	1.9	15.3	D
18	9	32	56.0	60	8.1	150	14.9	10.5	2.3	5	2	319	83	174	0.19	27.2	37.5	D
18	10	31	43.3	59	56.6	152	47.8	89.0	2.3	9	6	114	41	72	0.31	1.3	2.3	C
18	23	3	4.0	58	53.4	150	5.6	90.5	2.5	8	5	284	96	134	1.11	3.3	4.7	D
19	1	49	23.3	59	13.6	152	36.2	87.3	2.2	9	5	101	46	84	0.30	1.5	2.8	C
19	10	34	27.1	64	35.7	147	43.5	11.9	1.0	7	5	99	7	33	0.36	0.7	2.5	C
19	12	48	28.3	64	56.7	147	30.6	9.0	1.3	7	4	164	7	36	0.36	1.4	2.3	C
19	13	18	0.9	64	45.1	146	59.4	21.2	1.0	8	5	238	20	63	0.35	1.9	0.7	D
19	16	1	46.8	64	40.4	147	43.1	24.6	0.8	7	5	105	5	29	0.40	0.9	1.3	C
20	1	59	31.0	59	57.7	152	43.7	99.3	2.5	8	3	122	45	76	0.27	1.9	4.1	B
20	4	17	28.1	60	22.5	146	52.0	36.2	5.0*	13	0	276	161	290	0.24	22.9	8.2	D
									NEIS MB - 5.4, MS - 5.0, BERKLEY MS - 5.1									
									FELT IV AT CORDOVA, ANCHORAGE, AND SUTTON.									
									FELT III AT VALDEZ, SEWARD, PALMER, CHUGIAK,									
									AND CHITINA. FELT II AT EAGLE RIVER.									
20	4	28	6.4	60	19.1	148	53.7	65.4	4.7*	15	0	270	186	296	0.34	10.6	8.9	D
									NEIS MB - 5.1, MS - 4.6									
									FELT IV AT CORDOVA AND FELT III AT VALDEZ.									
									SEWARD, ANCHORAGE, PALMER, AND CHITINA.									
20	5	11	37.4	60	1.7	151	46.6	72.1	3.2	8	3	203	42	64	0.28	2.7	3.2	D
20	20	29	44.3	64	19.1	148	27.1	15.0	0.9	7	5	120	24	41	0.40	1.1	2.8	C
21	0	20	11.7	62	13.6	148	36.0	41.8	2.0	4	3	138	80	169	0.57	2.8	58.1	D
21	1	3	44.8	63	6.7	150	34.1	101.0	2.2	8	2	162	107	139	0.24	7.6	6.7	D
21	2	46	28.3	65	25.6	149	60.0	27.1	1.6	5	2	316	108	132	0.08	6.9	99.0	D
21	11	30	32.2	62	56.1	151	14.5	106.2	2.1	9	4	201	107	215	0.36	3.7	4.9	D
21	12	32	43.7	64	43.1	147	26.5	19.1	0.8	7	3	141	19	36	0.71	1.4	1.3	D
21	18	33	54.7	60	19.6	153	45.2	197.4	2.8	11	4	109	56	81	0.31	3.6	3.2	C
21	18	54	38.9	60	0.6	152	7.1	80.1	2.6	9	2	175	47	67	0.34	2.1	5.2	C
21	20	7	46.5	61	44.4	150	44.7	68.5	2.4	11	2	203	49	181	0.42	4.8	4.7	D
22	2	12	48.9	64	22.5	147	28.4	4.3	0.9	6	4	144	28	32	0.30	0.7	9.1	C
22	5	59	37.5	57	56.5	154	43.6	83.2	2.7	12	6	236	60	129	0.34	2.2	3.0	D
22	18	2	24.1	60	11.6	152	20.5	105.8	3.9	19	0	163	35	78	0.25	2.8	6.1	C
22	18	11	36.6	64	51.0	147	30.8	9.2	0.9	6	6	130	18	30	0.21	0.7	3.0	B
22	18	12	18.2	64	50.5	147	30.4	4.4	0.7	5	5	132	17	30	0.28	1.1	7.0	C
23	4	2	2.2	61	17.8	148	19.9	8.7	4.2	6	0	240	125	209	0.10	6.8	3.8	D
23	9	57	46 0	68	3.3	146	13.8	23.6	1.1	4	4	243	26	90	0.57	1.9	0.9	D
23	8	47	45.2	64	42.4	146	41.6	14.6	1.1	5	2	247	36	54	0.58	1.6	10.2	D
23	12	47	58.1	68	8.3	148	34.2	18.5	1.3	7	6	258	38	61	0 33	1.3	0.9	D
23	13	38	13.5	60	18.5	153	7.5	138.1	2.7	8	1	113	23	83	0.31	2.8	4.8	C
24	0	21	58.8	64	40.1	148	38.3	11.8	0.8	6	3	168	23	34	0.31	1.7	4.0	C
24	3	55	25.0	65	23.5	148	49.7	7.4	2.0	10	3	221	71	92	0.41	2.2	1.3	D
24	3	2	45.0	63	20.4	149	2.5	83.4	1.9	9	7	263	44	135	0.38	2.2	2.2	D
24	6	53	51.8	57	4.4	153	27.8	36.3	2.7	5	5	260	25	80	0.27	2.0	1.3	D
24	9	10	47.3	64	28.8	146	52.2	1.9	1.0	5	3	229	9	89	0.10	1.6	13.5	D
24	9	12	16.9	64	41.3	147	30.1	0.3	0.2	5	3	131	16	34	0.12	1.2	99.0	C
24	10	20	31.3	60	3.8	153	5.0	131.6	3.2	9	4	139	44	69	0.32	2.4	2.2	C
24	13	48	39.0	61	21.9	149	59.0	43.6	2.8	5	1	242	107	269	0.39	7.5	22.8	D
									FELT II ANCHORAGE									
24	15	51	12.5	58	25.8	154	6.2	87.3	2.5	9	6	186	82	77	0 25	2.6	2.4	D
24	17	47	11.0	62	14.8	149	54 0	88.8	2.2	4	2	144	90	173	0.28	4.1	9.5	D
24	18	7	56.4	59	58.7	152	16.3	83.2	2.6	7	5	160	30	65	0.24	1.6	2.1	C
24	19	36	27.3	57	48.5	153	3.5	29.8	2.1	7	4	89	34	43	0.34	1.2	2.8	C
25	1	13	13.9	63	13.4	151	40.0	45.5	3.0	5	1	333	148	197	0.37	11.3	99.0	D
25	3	29	58.8	63	29.9	148	33.8	81.1	1.4	7	5	241	26	116	0.21	2.3	2.3	C
25	4	20	8.1	64	10.8	147	58.8	11.7	0.8	5	5	168	0	52	0 21	1.4	1.6	C
25	5	1	8.8	64	17 4	148	16.1	19.4	1.4	9	6	80	20	48	0.29	0.7	2.3	B
25	9	15	26.1	64	34.4	147	5.4	16.0	1.4	7	4	178	20	48	0.42	1.2	1.2	C
25	16	29	56.0	64	44.9	147	29.0	7.2	0.5	5	5	189	19	33	0.15	1.2	4.3	C

APPENDIX B (con.)

1984	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
SEP 25	17	35	18.6	61	26.6	146	27.4	21.3	2.1	5	2	227	65	179	0.14	3.7	3.2	D
26	2	43	14.4	65	40.7	148	30.9	25.0	1.6	7	3	313	93	120	0.57	3.1	99.0	D
26	4	18	30.2	62	33.4	151	34.4	112.5	2.3	9	1	210	64	218	0.34	4.3	10.4	D
26	7	34	36.6	59	31.4	152	53.9	105.5	2.3	12	7	73	24	73	0.35	1.4	2.3	B
26	13	32	13.4	60	30.2	149	42.6	42.0	3.1	9	1	309	143	169	0.35	5.6	9 0	D
26	14	39	26.2	63	11.5	149	55.6	104.1	3.5*	17	0	120	78	148	0.27	2.3	5.5	C
									NEIS MB - 3.6									
									FELT III AT TRAPPERS CREEK AND CANTWELL.									
									FELT II AT ANCHORAGE.									
26	16	59	28.6	62	37.0	148	46.3	78.2	2.0	10	2	108	115	160	0.39	1.9	7.9	C
26	17	30	46.8	58	39.7	153	4.0	111.7	2.8	10	1	87	9	85	0.19	2.0	4.3	B
27	3	42	33.6	60	8.2	153	11.8	133.5	2.5	10	6	86	42	66	0.29	2.1	2.6	B
27	6	45	18.0	60	16.1	153	23.2	164.9	2.5	7	6	203	38	70	0.32	3.4	3.9	D
27	8	11	8.6	63	15.2	150	4.5	94.2	1.6	9	3	170	78	160	0.23	2.6	2.6	D
27	9	2	34.3	59	49.2	153	6.7	114.5	3.3	15	4	86	20	61	0.34	1.6	2.6	B
27	11	20	8.5	63	23.0	153	38.0	70.4	3.4*	4	0	130	133	304	0.06	41.1	99.0	D
27	18	45	39.0	64	40.9	147	41.7	12.4	0.4	6	5	108	7	30	0.34	0.7	2.7	C
27	19	47	31.0	63	3.7	148	37.9	77.4	1.7	9	7	256	76	132	0.25	2.4	2.8	C
27	21	35	30.9	62	12.6	147	37.8	41.4	1.9	5	4	110	45	140	0.51	4.0	11 9	C
27	21	38	46.2	64	13.7	148	53.2	17.4	0.9	7	5	205	47	55	0.36	1.5	1.2	D
28	0	40	45.6	60	15.4	153	20.2	164.8	2.7	6	4	237	36	96	0.34	3.1	2.4	D
28	1	55	15.1	59	17.3	153	31.1	107.9	2.3	9	7	89	7	44	0.34	1.4	2.1	B
28	10	24	8.0	62	23.4	151	9.5	47.3	4.4	14	0	65	106	153	0.50	1.9	20.7	D
28	11	34	9.2	60	0.2	153	12.8	124.4	2.5	6	4	141	39	60	0.24	1.9	2.2	C
28	11	43	5.8	60	9.4	151	56.9	85.1	2.6	6	4	207	54	79	0.30	2.5	3.1	D
28	20	25	12.9	64	43.4	147	59.4	12.3	0.8	6	4	61	12	29	0.34	0.8	2.4	B
28	23	24	40.3	58	8.8	151	23.2	61.1	3.2	7	1	210	79	149	0.39	3.8	12.1	D
28	23	58	5.6	59	52.2	152	23.8	76.6	2.7	6	4	137	48	64	0.26	1.8	2.5	C
29	8	2	23.6	61	50.5	150	50 4	83.1	3.0	8	2	107	39	185	0.19	2.3	3.8	B
29	14	19	17.0	60	58.9	149	58.3	34.5	4.3	9	0	267	168	177	0.33	18.1	15.0	D
									NEIS MB - 4.6, PALMER ML - 4.7, FELT III									
									AT ANCHORAGE AND II AT PALMER, WASILLA AND									
									WILLOW.									
30	1	49	5.1	62	54.4	148	13.3	86.1	1.9	5	3	99	99	140	0.26	1.9	5 9	C
30	3	41	42.2	58	33.2	154	25.8	5.9	2.7	6	2	208	62	93	0.14	2.0	3.4	C
30	8	27	21.1	64	36.9	146	57.8	10.5	1.0	7	4	208	23	48	0.27	1.1	3.9	C
30	9	37	21.6	62	50.0	150	37.4	96.3	3.3	9	4	174	106	169	0.28	2.1	6.4	D
30	12	15	21.5	64	58.8	147	26.6	9.0	0.4	4	4	190	3	41	0.16	2.5	2.3	C
30	12	30	12.5	63	33.3	152	14.5	64.7	2.5	7	3	244	164	179	1.27	4.6	9.3	D
30	12	31	28.0	57	29 2	154	3.5	0.2	2.5	8	2	234	35	83	0.31	3.9	1.6	D
30	14	24	2.2	60	48.2	152	31.9	5.9	1.8	5	4	230	137	158	0.32	3.0	3.4	D
30	14	53	27.1	60	43.2	152	35.8	0.4	1.1	4	2	289	35	150	0.26	5.3	2.3	D
30	17	56	22.9	59	40.6	152	7.4	64.1	2.6	6	3	131	83	83	0.35	1.4	4.8	C
30	22	11	1.4	64	5.9	147	5.8	0.8	1.0	5	3	271	35	64	0.16	1.8	96.1	D
30	22	18	16 0	63	10.4	149	19.5	98.5	2.7	12	1	140	65	132	0.30	2.9	5.6	D

Explanation for Appendix B

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 that follows an entry means that the value determined by the Alaska Tsumani Warning System (Palmer) was used.
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. The quantity measures the epicentral precision for an earthquake. Values of ERH >99 km are tabulated 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 that >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.