GEOLOGICAL SURVEY CIRCULAR 723-C

Earthquakes in the United States, July–September 1974

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By C. W. Stover, R. B. Simon, and W. J. Person

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INTRODUCTION

The earthquake information in this publication supplements that contained in the NEIS (National Earthquake Information Service) publications, PDE ("Preliminary Determination of Epicenters") and "Preliminary Determination of Epicenters, Monthly Listing," to the extent of providing detailed felt and intensity data, as well as isoseismal maps for United States earthquakes. The purpose is to provide a complete listing of macroseismic effects of earthquakes, which can be used in risk studies, nuclear power plant site evaluations, seismicity studies, and answering inquiries by the public.

This publication contains two major sections. The first (table 1) is a tabular listing of earthquakes in chronological order by State, consisting of the following basic information: Date, origin time, hypocenter, magnitude, maximum intensity , and the computational source of the hypocenter. The second section consists of two maps and table 2, which lists detailed intensity information. The list of earthquakes in table 1 was compiled from those located in the United States or off the coasts that were published in the PDE; from hypocenters in California above magnitude 3.5, supplied by California Institute of Technology, Pasadena, and the University of California at Berkeley; and from any others that were felt or that caused damage, regardless of magnitude or availability of a hypocenter. Known or suspected explosions are also listed.

The intensities and macroseismic data were compiled from information obtained through questionnaires sent to post offices in the epicentral area, from newspaper articles, and with the cooperation of other government agencies, State institutions, local organizations, and individuals. (See "Acknowledgments" for a list of collaborators.) Anyone wishing to submit felt or damage information on earthquakes for inclusion in future reports should send it to the National Earthquake Information Service, Stop 967, Box 25046, Denver Federal Center, Denver, Colo. 80225. Copies of the "Earthquake Report" questionnaire can be obtained at this address.

The isoseismal maps were compiled from the data reported on the "Earthquake Report" forms (fig. 1) supplemented by additional data as described above. The primary method used by the NEIS to collect macroseismic information was a questionnaire canvass using the "Earthquake Report" forms, which were mailed to postmasters in the area affected by the earthquake. The postmasters completed the forms and returned them to the NEIS where they were evaluated, an intensity value was assigned, and an isoseismal map was compiled. The isoseismals were based on a subjective grouping of intensity values, which may be a single value or a range of values. Any isoseismal may include a lower or higher intensity if it falls among a set of the values being contoured and cannot be differentiated by another isoseismal. The lowest contour line may not enclose all the points shown on the map, because the contouring encompasses only the contiguous intensity values.

These data will be made available for inclusion in the "Earthquake Description" section of "United States Earthquakes," an annual publication, to which later data from other sources may be added for the purposes of updating and completeness. "United States Earthquakes" is published jointly by the U.S. Geological Survey, Department of the Interior, and the Environmental Data Service NOAA, Department of Commerce.

DISCUSSION OF TABLES

The parameters for the earthquakes in table 1 and table 2 include the date, origin time, hypocenter (epicenter and focal depth), magnitude, intensity,

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
EARTHQUAKE REPORT

Form Approved
OMB No. 41-R0013

1. An earthquake was felt ☐ not felt ☐

Date of shock _____

Time _____ A.M.

_____ P.M.

If felt, please supply information below *(Underline appropriate words or fill spaces.)*
If not felt, please sign and return card, which requires no postage.

2. YOUR LOCATION DURING EARTHQUAKE

a. City, County, State _____

Township, Range, Section, Quarter Section, or Geographic Coordinates _____

b. **Ground:**
Rocky, gravelly, loose, compact, marshy, filled in, or _____
Level, sloping, steep, or _____

c. **If inside, type of construction:**
Wood, brick, stone, or _____

d. **Quality of construction:**
New, old, well built, poorly built, or _____

e. **No. of floors in building:**

f. **Observer's floor:**

g. **Activity when earthquake occurred:**
Walking, sitting, lying down, sleeping

h. **If outside, you, others were:**
Quiet, active

3. EFFECTS ON POPULATION

a. **Felt by:**
No one, very few, several, many, all (in your home) (in community)

b. **Awakened:**
No one, few, many, all (in your home) (in community)

c. **Frightened:**
No one, few, many, all (in your home) (in community); general panic

4. RELATED SOUNDS

a. **Rattling of windows, doors, dishes, etc.** _____

b. **Creaking of building** (Describe) _____

c. **Earth noises:** Faint, moderate, loud _____

5. PHYSICAL EFFECTS AND DAMAGE

a. **Outside:**

(1) Trees and bushes shaken, vehicles rocked, etc. _____
(2) Ground cracked; landslides; water disturbed, etc. _____
(3) Chimneys, tombstones, elevated water tanks, etc., cracked, twisted, overturned _____
(4) Other effects _____

b. **Buildings:**

(1) Hanging objects swung moderately, violently. Direction _____
(2) Small objects shifted, overturned, fell _____
(3) Furniture shifted, overturned, broken _____
(4) Plaster cracked, broken, fell _____
(5) Windows cracked _____
(6) Structural elements of brick, wood, or _____
Damage: None, slight, moderate, great _____

Signature and address of observer

Additional information would be appreciated. Use space on reverse side.

FIGURE 1.—Example of the "Earthquake Report" form used for evaluating the intensities of earthquakes.

and hypocenter source. The origin time and date are listed in two time zones. The primary zone is Universal Coordinated Time (UTC), and the secondary one is local standard time based on the time-zone maps in figures 2 and 3. The times are adjusted one hour less for daylight-saving time. The epicenters listed in tables 1 and 2, which were taken from those published in the PDE, are listed here to two or three decimals. The accuracy of the epicenters is that claimed by the institution supplying the hypocenter, which is, in general, accurate to the number of decimals listed; however, the epicenters located by the NEIS have a varying degree of accuracy, depending on their continental or oceanic location. The oceanic hypocenters are less accurate than those on the continent, even though both are listed to two decimals. The hypocenter source in table 1 is shown by an assigned letter code (headnotes to tables 1 and 2); in table 2 the letter enclosed in parentheses after the date indicates the source of hypocenter and magnitude parameters. Figures 4, 5, and 6 are maps showing the earthquake epicenters listed in table 1. The magnitudes plotted in these figures are based on M_L or m_{bLg}, if neither was computed, then on M_S, and finally on m_b, when it was the only magnitude computed.

The magnitude values listed in tables 1 and 2 were compiled from data furnished to the PDE by cooperating institutions and from calculations by the NEIS. The computational sources are labelled according to the assigned letter codes shown in headnotes to tables 1 and 2; the letter follows the value listed under the column heading "Magnitude." In table 1, the absence of a letter code indicates that the NEIS is the source. In table 2 the magnitude source is the same as the location source unless

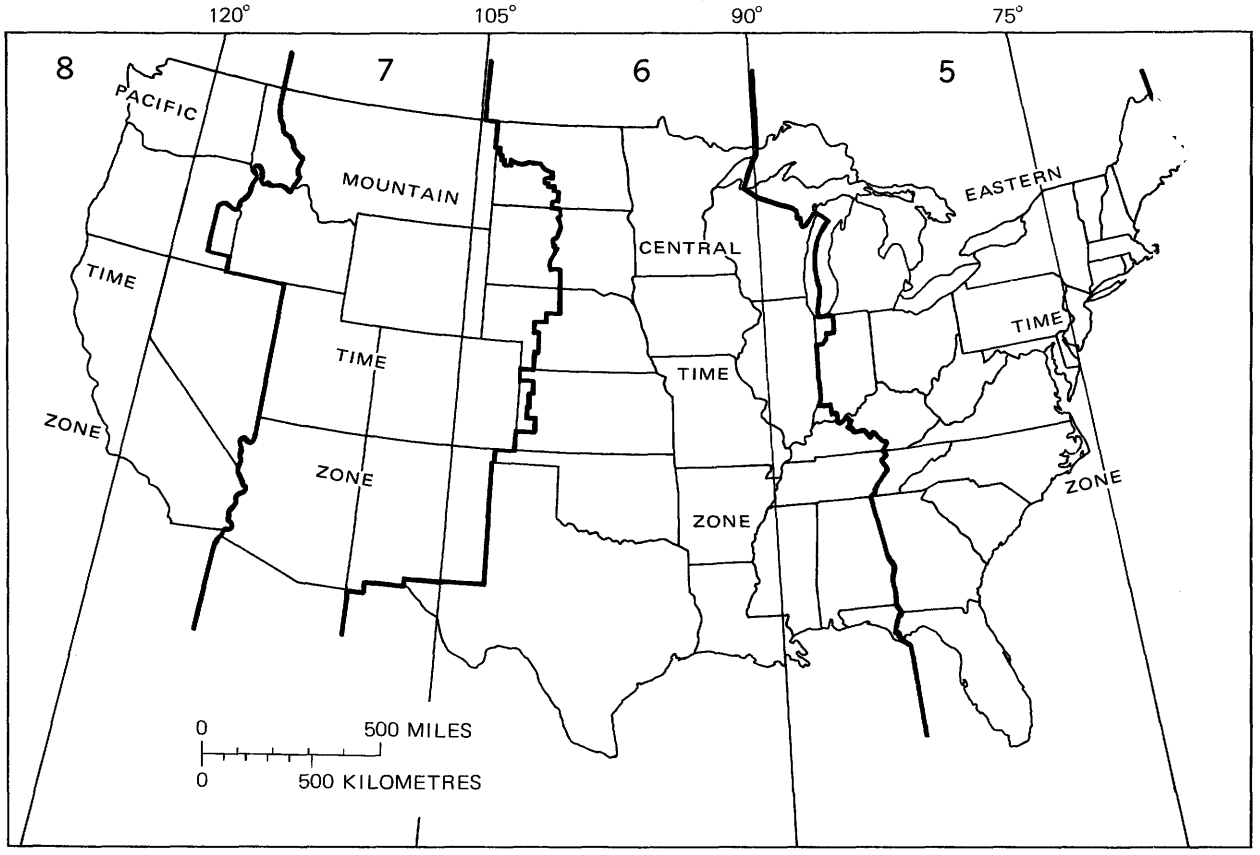

FIGURE 2.—Standard time zones of the conterminous United States. The number in each zone shows the number of hours to be subtracted from Universal Coordinated Time to convert to local standard time. (Subtract 1 hour less for local daylight-saving time.)

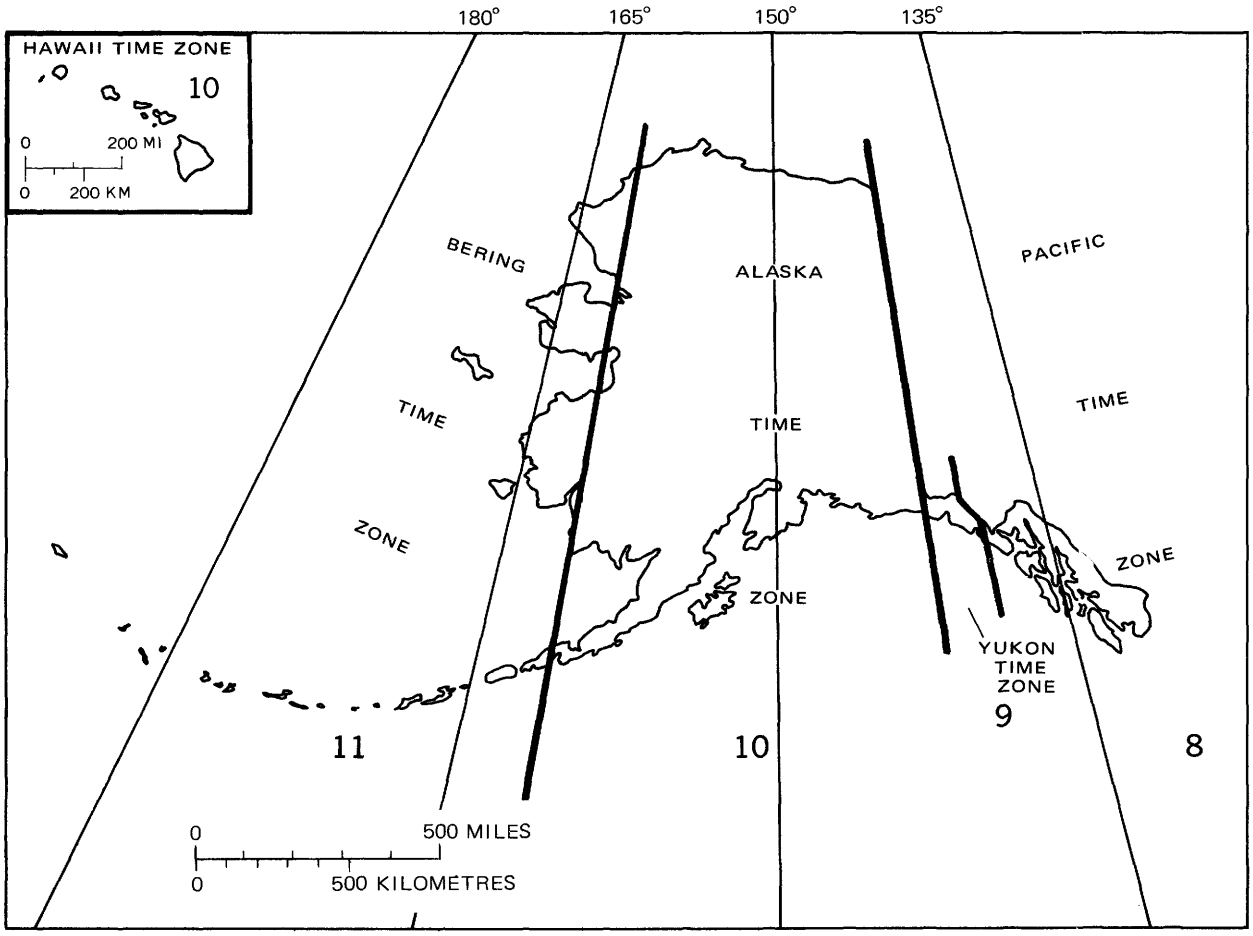

FIGURE 3.—Standard time zones of Alaska and Hawaii. The number in each zone shows the number of hours to be subtracted from Universal Coordinated time to convert to local standard time. (Subtract 1 hour less for local daylight-saving time.)

indicated otherwise, by an alphabetic character to the right of the magnitude value. The magnitude values calculated by the NEIS are based on the following formulas:

$$M_S = \log(A/T) + 1.66 \log D + 3.3, \quad (1)$$

as adopted by the International Association of Seismology and Physics of the Earth's Interior (IASPEI; Bath, 1966, p. 153), where A is the maximum horizontal surface-wave ground amplitude in micrometres, T is the period in seconds, and $18 \leqslant T \leqslant 22$, and D is the distance in geocentric degrees (station to epicenter) and $20° \; D \; 160°$. No depth correction is made for depth less than 50 km.

$$m_b = \log(A/T) + G(D, h), \quad (2)$$

as defined by Gutenberg and Richter (1956), except that T, the period in seconds, is restricted to $0.1 \leqslant T \leqslant 3.0$, and A, the ground amplitude in micrometres, is not necessarily the maximum of the P-wave group. Q is a function of distance D and depth h, where $D \geqslant 5°$.

$$M_L = \log A - \log A_0, \quad (3)$$

as defined by Richter (1958, p. 340), where A is the maximum trace amplitude in millimetres, written by a Wood-Anderson torsion seismometer, and $\log A$ is a standard value as a function of distance, where the distance is $\leqslant 600$ km. M_L values are also calculated from other seismometers by conversion of recorded ground motion to the expected response of the torsion seismometer.

$$m_{bLg} = 3.75 + 0.90(\log D) + \log(A/T) \quad 0.5° \leqslant D \leqslant 4°,$$

$$m_{bLg} = 3.30 + 1.66(\log D) + \log(A/T) \quad 4° \leqslant D \leqslant 30°, \quad (4)$$

as proposed by Nuttli (1973), where A/T is expressed

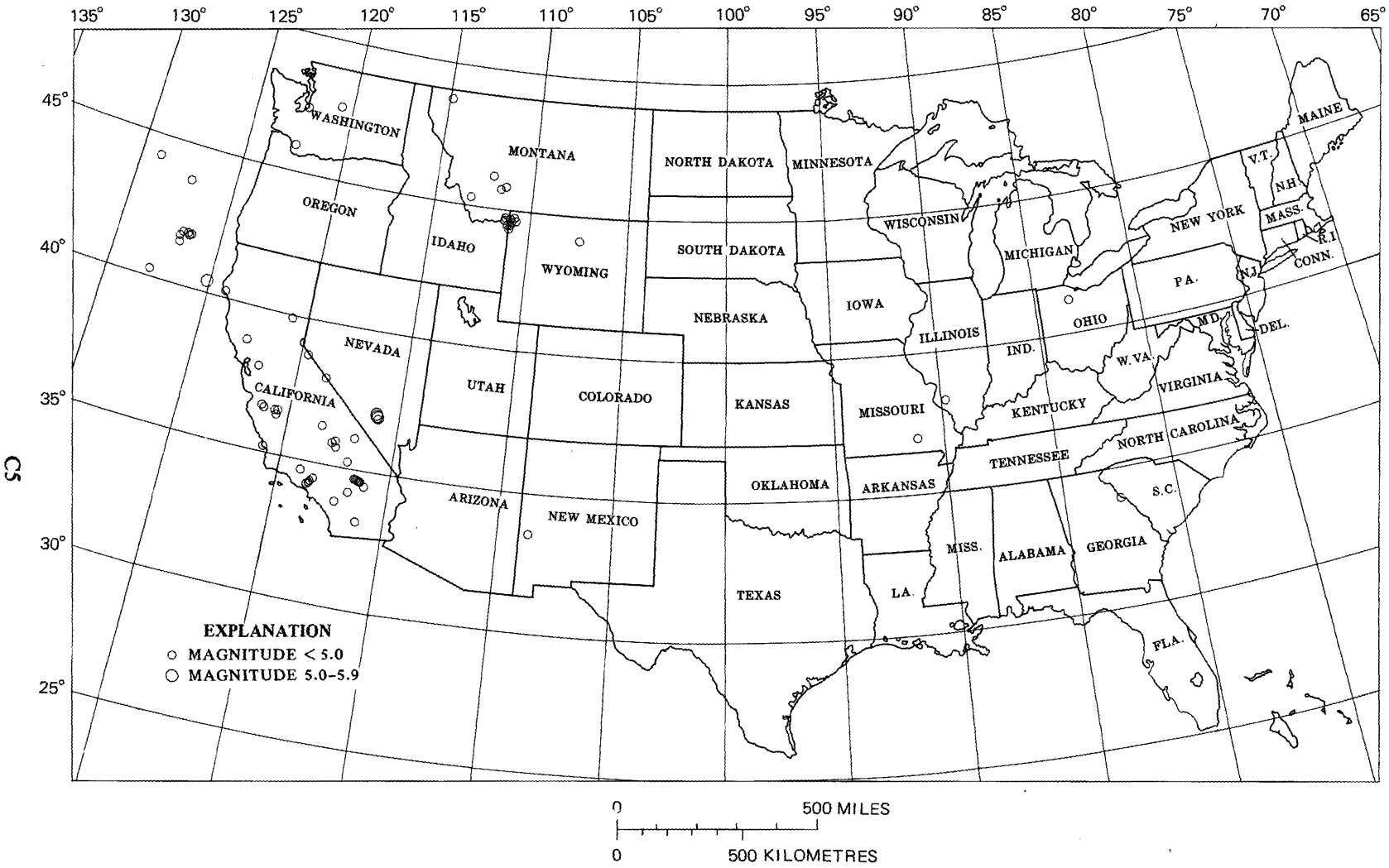

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FIGURE 4.—Earthquake epicenters in the conterminous United States for July–September 1974, plotted from table 1.

TABLE 1.—*Summary of United States earthquakes for July—September 1974*

[Source of the hypocenter and magnitudes: (B) University of California at Berkeley; (G) U.S. Geological Survey, National Earthquake Information Service; (H) U.S. Geological Survey, Hawaiian Volcano Observatory; (M) NOAA, Palmer Observatory, Alaska; (P) California Institute of Technology, Pasadena; (S) St. Louis University, St. Louis, Missouri; (W) University of Washington, Seattle. N, normal depth; UTC, Universal Coordinated Time. For names of local time zones, see figures 2 and 3. Leaders (...) indicate no information available]

Date (1974)	Origin time (UTC) hr min s	Lat	Long	Depth (km)	Magnitude m_b	Magnitude M_S	Magnitude M_L or m_{bLg}	Maximum intensity	Hypocenter source	Date	Hour (local time)	
					Alaska							
July	3...07 39 08.6	52.28 N.	170.79 W.	87	4.2	...	...	...	G	July	3...09 p.m.	BDT
July	3...23 05 51.6	61.97 N.	150.12 W.	36	...	...	2.9M	...	G	July	3...02 p.m.	ADT
July	9...01 04 03.9	66.95 N.	159.65 W.	35	3.7	...	...	...	G	July	8...04 p.m.	ADT
July	9...07 48 56.6	65.12 N.	152.03 W.	13	...	...	...	...	G	July	8...10 p.m.	ADT
July	11...02 17 57.8	62.38 N.	151.25 W.	92	4.2	...	...	...	G	July	10...05 p.m.	ADT
July	13...12 44 50.7	61.49 N.	145.00 W.	55	4.7	...	...	IV	G	July	13...03 a.m.	ADT
July	13...14 48 50.0	62.22 N.	151.21 W.	85	4.4	...	...	IV	G	July	13...05 a.m.	ADT
July	17...10 42 42.3	51.66 N.	173.50 W.	45	5.0	...	...	...	G	July	18...12 a.m.	BDT
July	19...15 03 41.7	65.51 N.	150.00 W.	33	...	...	3.1G	...	G	July	19...06 a.m.	ADT
July	20...00 48 03.9	51.59 N.	173.54 W.	45	4.9	4.2	...	...	G	July	19...02 p.m.	BDT
July	20...01 04 33.8	51.82 N.	173.49 W.	N	4.3	...	...	..	G	July	19...03 p.m.	BDT
July	20...04 22 54.7	69.88 N.	145.46 W.	N	...	...	...	...	G	July	19...07 p.m.	ADT
July	23...02 39 41.9	59.67 N.	146.12 W.	32	3.9	...	3.6M	...	G	July	22...05 p.m.	ADT
July	24...10 16 56.2	55.79 N.	162.25 W.	113	4.1	...	...	...	G	July	24...01 a.m.	ADT
July	26...20 37 17.8	51.06 N.	170.45 W.	N	4.9	...	...	...	G	July	26...10 a.m.	BDT
July	27...05 18 59.3	63.48 N.	151.34 W.	57	...	...	...	...	G	July	26...08 p.m.	ADT
July	27...18 20 52.9	51.47 N.	179.15 E.	56	4.4	...	...	...	G	July	27...08 a.m.	BDT
July	28...12 54 47.1	63.50 N.	151.58 W.	61	...	...	...	...	G	July	28...03 a.m.	ADT
July	28...21 56 12.7	63.75 N.	148.29 W.	92	3.7	...	...	...	G	July	28...12 p.m.	ADT
July	29...11 37 44.0	59.70 N.	152.72 W.	84	4.5	...	...	V	G	July	29...02 a.m.	ADT
July	31...09 20 51.6	60.52 N.	150.04 W.	44	4.3	...	...	IV	G	July	31...12 a.m.	ADT
Aug.	1...05 06 19.5	56.72 N.	152.09 W.	24	4.6	...	...	...	G	July	31...08 p.m.	ADT
Aug.	1...05 07 59.0	56.51 N.	152.31 W.	10	5.2	6.1	...	...	G	July	31...08 p.m.	ADT
Aug.	1...05 55 38.2	56.67 N	152.10 W.	N	5.7	6.3	...	...	G	July	31...08 p.m.	ADT
Aug.	1...06 07 17.0	56.59 N.	152.39 W.	15	4.6	...	...	...	G	July	31...09 p.m.	ADT
Aug.	1...06 14 54.2	56.72 N.	151.93 W.	N	3.8	...	...	...	G	July	31...09 p.m.	ADT
Aug.	1...06 17 02.3	56.64 N.	152.07 W.	19	4.5	...	...	...	G	July	31...09 p.m.	ADT
Aug.	1...06 32 00.4	56.70 N.	152.21 W.	7	4.3	...	...	....	G	July	31...09 p.m.	ADT
Aug.	1...06 36 49.0	56.66 N.	152.15 W.	27	3.8	...	...	...	G	July	31...09 p.m.	ADT
Aug.	1...06 48 16.3	56.71 N.	152.19 W.	16	4.4	...	...	...	G	July	31...09 p.m.	ADT
Aug.	1...07 10 47.8	56.65 N.	152.05 W.	15	4.3	...	...	...	G	July	31...10 p.m.	ADT
Aug.	1...07 15 02.4	56.73 N.	151.85 W.	N	3.9	...	...	...	G	July	31...10 p.m.	ADT
Aug.	1...07 18 12.2	56.60 N.	152.06 W.	16	4.2	...	...	...	G	July	31...10 p.m.	ADT
Aug.	1...07 44 53.3	56.70 N.	151.94 W.	N	3.8	...	...	...	G	July	31...10 p.m.	ADT
Aug.	1...07 59 56.9	56.63 N.	152.26 W.	N	5.2	6.0	...	...	G	July	31...10 p.m.	ADT
Aug.	1...08 17 26.6	56.67 N.	152.13 W.	N	4.1	...	...	...	G	July	31...11 p.m.	ADT
Aug.	1...08 26 41.1	56.64 N.	152.17 W.	N	3.9	...	...	...	G	July	31...11 p.m.	ADT
Aug.	1...14 05 20.1	56.69 N.	152.07 W.	N	3.8	...	...	...	G	Aug.	1...05 a.m.	ADT
Aug.	1...15 29 31.9	56.77 N.	152.22 W.	N	4.0	...	...	...	G	Aug.	1...06 a.m.	ADT
Aug.	2...09 22 20.3	57.08 N.	152.30 W.	64	4.0	...	...	...	G	Aug.	2...12 a.m.	ADT
Aug.	2...17 03 02.9	56.59 N.	152.24 W.	36	4.1	...	...	...	G	Aug.	2...08 a.m.	ADT
Aug.	2...19 59 36.5	62.79 N.	149.64 W.	104	...	...	...	...	G	Aug.	2...10 a.m.	ADT
Aug.	3...20 03 31.0	56.54 N.	152.14 W.	N	4.1	...	...	...	G	Aug.	3...11 a.m.	ADT
Aug.	4...05 43 56.3	51.64 N.	179.10 W.	42	4.1	...	...	...	G	Aug.	3...07 pm.	BDT

TABLE 1.—*Summary of United States earthquakes for July—September 1974*—Continued

Date (1974)	Origin time (UTC) hr min s	Lat	Long	Depth (km)	Magnitude m_b	Magnitude M_S	Magnitude M_L or m_{bLg}	Maximum intensity	Hypocenter source	Date	Hour (local time)
Alaska—Continued											
Aug.	4...21 36 16.7	56.75 N.	152.00 W.	40	4.3	...	...	...	G	Aug.	4...12 p.m. ADT
Aug.	5...00 54 07.7	52.34 N.	173.36 W.	66	5.1	...	...	...	G	Aug.	4...02 p.m. BDT
Aug.	5...13 13 30.0	60.90 N.	146.96 W.	69	...	...	...	...	G	Aug.	5...04 a.m. ADT
Aug.	6...02 37 42.3	60.24 N.	153.32 W.	136	5.0	...	...	IV	G	Aug.	5...05 p.m. ADT
Aug.	6...12 59 55.6	56.55 N.	152.46 W.	16	4.5	4.7	...	...	G	Aug.	6...03 a.m. ADT
Aug.	6...18 05 25.3	56.72 N.	152.41 W.	N	4.6	...	...	...	G	Aug.	6...09 a.m. ADT
Aug.	7...08 21 01.8	56.78 N.	152.30 W.	32	4.6	...	4.3M	...	G	Aug.	7...11 p.m. ADT
Aug.	7...08 23 36.8	56.64 N.	152.31 W.	N	4.9	5.3	5.0M	...	G	Aug.	7...11 p.m. ADT
Aug.	7...08 50 31.2	56.85 N.	152.36 W.	67	3.9	...	...	...	G	Aug.	7...11 p.m. ADT
Aug.	7...15 30 29.5	56.74 N.	152.38 W.	N	4.6	...	...	...	G	Aug.	7...06 a.m. ADT
Aug.	7...15 59 38.5	56.79 N.	152.11 W.	N	4.5	...	...	...	G	Aug.	7...06 a.m. ADT
Aug.	9...07 50 41.9	59.49 N.	144.96 W.	N	3.7	...	4.0M	...	G	Aug.	8...10 p.m. ADT
Aug.	11...12 57 48.1	66.02 N.	165.50 W.	N	4.1	...	...	II	G	Aug.	11...02 a.m. BDT
Aug.	11...14 44 29.9	60.90 N.	146.73 W.	N	...	...	3.3M	...	G	Aug.	11...05 a.m. ADT
Aug.	13...03 46 20.3	51.52 N.	178.11 W.	52	5.8	5.9B	...	V	G	Aug.	12...05 p.m. BDT
Aug.	14...05 34 54.4	51.56 N.	178.14 W.	56	5.7	5.2B	...	III	G	Aug.	13...07 p.m. BDT
Aug.	14...16 04 53.7	59.51 N.	144.65 W.	8	3.7	...	4.0M	...	G	Aug.	14...07 a.m. ADT
Aug.	16...09 41 31.7	51.49 N.	177.82 W.	46	5.7	{5.8	...	IV	G	Aug.	15...11 p.m. BDT
Aug.	17...20 55 04.4	52.78 N.	168.75 W.	56	4.3	{5.5B}	...	...	G	Aug.	17...10 a.m. BDT
Aug.	18...07 37 14.7	60.36 N.	150.64 W.	51	3.5	...	...	...	G	Aug.	17...10 p.m. ADT
Aug.	18...10 04 19.5	57.82 N.	153.29 W.	59	3.5	...	...	...	G	Aug.	18...01 a.m. ADT
Aug.	18...17 16 26.0	50.55 N.	175.10 E.	N	5.0	4.7	...	...	G	Aug.	18...07 a.m. BDT
Aug.	20...20 45 01.4	52.24 N.	174.97 E.	58	5.6	5.1B	...	V	G	Aug.	20...10 a.m. BDT
Aug.	21...02 33 43.9	62.57 N.	150.92 W.	N	...	...	3.2M	...	G	Aug.	20...05 p.m. ADT
Aug.	22...03 58 31.6	51.42 N.	176.31 W.	44	4.1	...	...	II	G	Aug.	21...05 p.m. BDT
Aug.	22...22 54 39.5	61.51 N.	150.92 W.	N	...	...	...	...	G	Aug.	22...01 p.m. ADT
Aug.	23...04 57 40.8	63.04 N.	150.85 W.	127	3.7	...	...	...	G	Aug.	22...07 p.m. ADT
Aug.	24...10 41 11.2	52.40 N.	168.27 W.	41	5.7	5.6	...	...	G	Aug.	24...12 a.m. BDT
Aug.	24...14 24 27.3	52.64 N.	168.20 W.	42	3.9	...	...	...	G	Aug.	24...04 a.m. BDT
Aug.	24...18 16 56.0	51.66 N.	178.61 W.	66	4.0	...	...	II	G	Aug.	24...08 a.m. BDT
Aug.	24...22 18 55.4	52.29 N.	168.31 W.	37	5.3	4.5	...	...	G	Aug.	24...12 p.m. BDT
Aug.	25...01 13 09.2	52.43 N.	168.66 W.	59	4.1	...	...	...	G	Aug.	24...03 p.m. BDT
Aug.	25...04 15 39.6	51.30 N.	173.40 E.	25	4.8	...	...	...	G	Aug.	24...06 p.m. BDT
Aug.	25...09 22 32.5	52.71 N.	166.91 W.	N	4.5	...	...	...	G	Aug.	24...11 p.m. BDT
Aug.	25...16 59 37.1	52.76 N.	168.10 W.	49	4.3	...	...	...	G	Aug.	25...06 a.m. BDT
Aug.	27...19 24 55.0	51.94 N.	178.83 W.	36	4.4	...	...	II	G	Aug.	27...09 a.m. BDT
Aug.	28...18 43 25.7	59.50 N.	144.45 W.	4	4.9	4.6	4.7M	...	G	Aug.	28...09 a.m. ADT
Aug.	29...06 40 03.3	50.23 N.	177.64 E.	N	4.9	...	...	...	G	Aug.	28...08 p.m. BDT
Aug.	29...22 58 52.6	62.62 N.	152.04 W.	N	3.9	...	4.1M	...	G	Aug.	29...01 p.m. ADT
Aug.	31...21 39 44.3	51.32 N.	173.60 E.	14	4.6	...	...	...	G	Aug.	31...11 a.m. BDT
Sept.	2...06 07 08.7	60.22 N.	151.34 W.	94	...	...	...	...	G	Sept.	1...09 p.m. ADT
Sept.	6...01 16 46.5	63.14 N.	150.85 W.	130	3.9	...	...	...	G	Sept.	5...04 p.m. ADT
Sept.	7...12 27 35.4	58.96 N.	151.59 W.	91	...	...	...	...	G	Sept.	7...03 a.m. ADT
Sept.	8...07 30 14.9	62.14 N.	150.93 W.	75	3.6	...	...	...	G	Sept.	7...10 p.m. ADT
Sept.	8...16 30 56.4	51.51 N.	178.97 E.	93	4.4	...	...	...	G	Sept.	8...06 a.m. BDT
Sept.	10...05 26 19.3	59.89 N.	151.71 W.	86	3.7	...	...	IV	G	Sept.	9...08 p.m. ADT

TABLE 1.—*Summary of United States earthquakes for July—September 1974*—Continued

Date (1974)	Origin time (UTC) hr min s	Lat	Long	Depth (km)	Magnitude m_b	Magnitude M_S	Magnitude M_L or m_{bLg}	Maximum intensity	Hypocenter source	Date	Hour (local time)
Alaska—Continued											
Sept.	11...10 56 48.4	60.27 N.	151.03 W.	N	4.3	...	4.1M	V	G	Sept.	11...01 a.m. ADT
Sept.	12...06 26 35.8	53.87 N.	164.43 W.	39	4.4	...	...	...	G	Sept.	11...09 p.m. ADT
Sept.	14...05 10 28.6	60.47 N.	151.13 W.	96	...	...	...	...	G	Sept.	13...08 p.m. ADT
Sept.	14...08 56 55.2	59.98 N.	151.34 W.	100	4.6	...	...	...	G	Sept.	13...11 p.m. ADT
Sept.	15...10 03 00.2	59.81 N.	152.94 W.	118	...	...	...	...	G	Sept.	15...01 a.m. ADT
Sept.	15...10 13 34.1	59.80 N.	152.88 W.	119	...	...	...	...	G	Sept.	15...01 a.m. ADT
Sept.	17...02 01 23.2	56.72 N.	151.65 W.	17	5.0	5.1	5.2M	...	G	Sept.	16...05 p.m. ADT
Sept.	17...02 58 26.9	61.68 N.	150.73 W.	63	...	...	...	...	G	Sept.	16...05 a.m. ADT
Sept.	18...20 06 24.1	62.34 N.	149.75 W.	56	...	...	...	...	G	Sept.	18...11 p.m. ADT
Sept.	20...01 49 37.4	59.96 N.	141.44 W.	5	3.9	...	...	...	G	Sept.	19...04 p.m. ADT
Sept.	21...20 34 34.6	59.55 N.	143.75 W.	108	...	...	...	...	G	Sept.	21...11 a.m. ADT
Sept.	22...14 39 41.3	63.09 N.	150.76 W.	146	...	...	...	...	G	Sept.	22...05 a.m. ADT
Sept.	23...11 57 10.1	61.84 N.	150.13 W.	61	3.4	...	...	...	G	Sept.	23...02 a.m. ADT
Sept.	24...15 39 19.7	59.69 N.	153.36 W.	150	...	...	...	...	G	Sept.	24...06 a.m. ADT
Sept.	25...11 27 18.3	52.28 N.	176.54 E.	106	4.1	...	...	...	G	Sept.	25...01 a.m. BDT
Sept.	25...11 53 36.0	64.25 N.	148.52 W.	12	...	...	...	...	G	Sept.	25...02 a.m. ADT
Sept.	25...17 51 24.3	62.28 N.	151.12 W.	96	...	...	...	...	G	Sept.	25...08 a.m. ADT
Sept.	26...01 37 27.7	65.03 N.	148.21 W.	15	...	...	...	...	G	Sept.	25...04 p.m. ADT
Sept.	26...05 28 48.9	64.24 N.	144.62 W.	N	3.6	...	...	...	G	Sept.	25...08 p.m. ADT
Sept.	26...05 40 22.0	64.17 N.	144.36 W.	N	...	...	3.0M	...	G	Sept.	25...08 p.m. ADT
Sept.	26...11 29 23.3	54.29 N.	164.75 W.	31	4.9	4.4	...	...	G	Sept.	26...01 a.m. BDT
Sept.	26...16 03 54.7	61.35 N.	146.83 W.	20	...	...	3.0M	...	G	Sept.	26...07 a.m. ADT
Sept.	27...03 36 25.7	61.57 N.	149.94 W.	72	3.7	...	...	II	G	Sept.	26...06 p.m. ADT
Sept.	28...02 51 54.0	64.47 N.	147.73 W.	30	3.6	...	4.0M	IV	G	Sept.	27...05 p.m. ADT
Sept.	28...13 08 56.4	60.93 N.	147.45 W.	65	...	...	...	...	G	Sept.	28...04 a.m. ADT
Sept.	28...17 33 32.8	60.04 N.	140.62 W.	10	4.1	...	4.6M	...	G	Sept.	28...08 a.m. ADT
Sept.	30...08 35 05.8	51.42 N.	179.04 W.	53	4.3	...	...	...	G	Sept.	29...10 p.m. BDT
California											
July	5...13 10 29.4	36.17 N.	116.83 W.	8	...	...	3.3P	...	P	July	5...06 a.m. PDT
July	6...04 03 56.0	36.55 N.	121.18 W.	5	...	...	3.1B	...	B	July	5...09 p.m. PDT
July	6...06 10 41.8	38.76 N.	119.67 W.	5	...	...	3.7B	...	B	July	5...11 p.m. PDT
July	10...07 46 28.2	34.17 N.	116.72 W.	8	...	...	3.3P	II	P	July	10...12 a.m. PDT
July	13...11 09 57.5	40.37 N.	125.18 W.	1	5.0	...	4.0B	...	G	July	13...04 a.m. PDT
July	30...07 39 07.8	34.69 N.	116.52 W.	10	4.4	...	4.5P	...	G	July	30...12 a.m. PDT
July	30...07 46 35.6	34.68 N.	116.41 W.	10	...	...	3.9P	...	G	July	30...12 a.m. PDT
July	30...07 50 09.9	34.63 N.	116.28 W.	10	...	...	3.8P	...	G	July	30...12 a.m. PDT
July	30...07 51 58.9	34.62 N.	116.27 W.	10	...	...	4.1P	...	G	July	30...12 a.m. PDT
July	30...08 36 52.8	34.62 N.	116.37 W.	10	4.1	...	4.7P	...	G	July	30...01 a.m. PDT
July	30...08 53 54.2	34.62 N.	116.30 W.	10	...	...	3.9P	...	G	July	30...01 a.m. PDT
July	30...09 07 06.5	34.66 N.	116.48 W.	10	...	...	3.1P	...	G	July	30...02 a.m. PDT
July	30...10 22 17.0	34.49 N.	116.05 W.	10	...	...	3.6P	...	G	July	30...03 a.m. PDT
July	30...10 48 50.4	34.67 N.	116.44 W.	10	...	...	3.6P	...	G	July	30...03 a.m. PDT
July	30...12 23 02.7	34.48 N.	116.07 W.	10	...	...	3.7P	...	G	July	30...05 a.m. PDT
July	31...01 19 04.2	34.63 N.	116.30 W.	10	...	...	3.5P	...	G	July	30...06 p.m. PDT
July	31...07 31 27.3	35.70 N.	117.61 W.	10	...	...	4.0P	...	G	July	31...12 a.m. PDT
July	31...09 07 18.7	34.65 N.	116.34 W.	10	...	...	4.0P	...	G	July	31...02 a.m. PDT
July	31...10 47 52.8	34.63 N.	116.30 W.	10	...	...	3.5P	...	G	July	31...03 a.m. PDT
July	31...13 29 53.3	34.66 N.	116.31 W.	10	...	...	3.6P	...	G	July	31...06 a.m. PDT

TABLE 1.—*Summary of United States earthquakes for July—September 1974*—Continued

Date (1974)	Origin time (UTC) hr min s	Lat	Long	Depth (km)	Magnitude m_b	Magnitude M_S	Magnitude M_L or m_{bLg}	Maximum intensity	Hypocenter source	Date	Hour (local time)
California—Continued											
July	31...21 52 08.8	34.62 N.	116.33 W.	10	...	...	3.5P	...	G	July	31...02 p.m. PDT
July	31...21 56 03.8	34.61 N.	116.36 W.	10	...	...	3.0P	...	G	July	31...02 p.m. PDT
Aug.	1...09 04 05.3	34.63 N.	116.33 W.	5	...	...	3.4P	...	G	Aug.	1...02 a.m. PDT
Aug.	2...06 52 32.2	34.65 N.	116.30 W.	5	...	...	3.0P	...	G	Aug.	1...11 p.m. PDT
Aug.	4...03 43 54.0	38.00 N.	121.86 W.	24	...	...	3.2B	III	B	Aug.	3...08 p.m. PDT
Aug.	4...08 30 32.3	34.62 N.	116.45 W.	5	...	...	3.0P	...	G	Aug.	4...01 a.m. PDT
Aug.	9...12 19 59.5	40.22 N.	124.15 W.	7	3.9	...	3.9B	V	G	Aug.	9...05 a.m. PDT
Aug.	10...18 47 ...	Near Ferndale		...	...	...	...	III	...	Aug.	10...11 a.m. PDT
Aug.	14...14 45 55.4	34.43 N.	118.37 W.	7	4.3	...	4.3P	V	P	Aug.	14...07 a.m. PDT
Aug.	17...20 19 35.6	34.62 N.	116.37 W.	8	...	...	3.4P	...	P	Aug.	17...01 p.m. PDT
Aug.	19...01 03 41.6	36.37 N.	118.40 W.	8	...	...	2.6P	...	P	Aug.	18...05 p.m. PDT
Aug.	19...12 47 19.0	36.518 N.	120.690 W.	9	4.2	...	4.1B	...	G	Aug.	19...05 a.m. PDT
Aug.	21...19 38 03.3	38.06 N.	118.67 W.	10	...	...	...	...	G	Aug.	21...12 p.m. PDT
Aug.	25...10 10 59.3	35.89 N.	117.66 W.	10	4.1	...	4.0P	...	G	Aug.	25...03 a.m. PDT
Aug.	25...12 21 58.8	35.85 N.	117.82 W.	8	...	...	3.7P	...	P	Aug.	25...05 a.m. PDT
Aug.	25...15 06 19.3	36.397 N.	120.537 W.	8	...	...	3.3B	...	B	Aug.	25...08 a.m. PDT
Aug.	29...22 50 ...	Near Eureka		...	...	...	...	III	...	Aug.	29...03 p.m. PDT
Aug.	30...08 57 ...	Near Hollister		...	...	...	...	II	...	Aug.	30...01 a.m. PDT
Sept.	5...05 11 10.1	36.567 N.	120.520 W.	6	...	...	3.2B	...	B	Sept.	4...10 p.m. PDT
Sept.	6...13 23 31.4	34.29 N.	118.52 W.	8	...	...	3.0P	II	P	Sept.	6...06 a.m. PDT
Sept.	6...14 40 42.9	34.20 N.	118.58 W.	8	...	...	3.3P	II	P	Sept.	6...07 a.m. PDT
Sept.	7...20 45 56.1	36.57 N.	121.21 W.	7	...	...	3.1B	...	B	Sept.	7...01 p.m. PDT
Sept.	7...23 12 06.4	38.03 N.	118.63 W.	2	...	...	3.5B	...	B	Sept.	7...04 p.m. PDT
Sept.	7...23 40 35.8	34.25 N.	118.50 W.	8	...	...	3.0P	...	P	Sept.	7...04 p.m. PDT
Sept.	8...12 20 48.6	33.18 N.	116.17 W.	8	3.7	...	3.5P	...	P	Sept.	8...05 a.m. PDT
Sept.	8...12 57 44.0	33.17 N.	116.22 W.	9	...	...	3.0P	...	P	Sept.	8...05 a.m. PDT
Sept.	12...01 27 32.5	38.817 N.	122.648 W.	8	4.1	...	3.8B	II	B	Sept.	11...06 p.m. PDT
Sept.	13...16 29 38.4	35.28 N.	116.98 W.	8	...	...	3.2P	...	P	Sept.	13...09 a.m. PDT
Sept.	17...07 44 42.8	34.67 N.	118.98 W.	8	3.5	...	3.1P	...	P	Sept.	17...12 a.m. PDT
Sept.	21...04 32 ...	Near Eureka		...	...	...	...	III	...	Sept.	20...09 p.m. PDT
Sept.	21...10 37 42.7	33.77 N.	117.25 W.	8	4.2	...	4.2P	VI	P	Sept.	21...03 a.m. PDT
Sept.	24...20 07 24.8	35.19 N.	120.85 W.	8	...	...	{3.1B / 3.5P}	II	G	Sept.	24...01 p.m. PDT
Sept.	29...01 26 48.9	39.91 N.	120.79 W.	10	4.7	...	3.8B	...	G	Sept.	28...06 p.m. PDT
California—Off the coast											
July	3...05 00 58.6	40.42 N.	125.14 W.	12	5.4	5.2	5.1B	V	G	July	2...10 p.m. PDT
July	6...12 41 26.3	40.28 N.	127.95 W.	28	3.8	...	...	...	G	July	6...05 a.m. PDT
July	13...11 09 57.5	40.37 N.	125.18 W.	1	5.0	...	4.0B	II	G	July	13...04 a.m. PDT
July	25...21 56 44.5	40.36 N.	125.28 W.	10	4.4	...	4.0B	...	G	July	25...02 p.m. PDT
July	26...05 28 15.9	41.92 N.	126.69 W.	N	4.4	...	...	...	G	July	25...10 p.m. PDT
Sept.	12...05 18 29.9	41.53 N.	126.93 W.	N	4.0	...	...	...	G	Sept.	11...10 p.m. PDT
Sept.	12...05 19 35.3	41.86 N.	126.60 W.	N	5.0	4.9	5.1B	...	G	Sept.	11...10 p.m. PDT
Sept.	12...05 24 33.9	41.92 N.	126.46 W.	N	4.4	...	...	...	G	Sept.	11...10 p.m. PDT
Sept.	12...06 40 55.0	41.89 N.	126.89 W.	N	4.2	...	...	...	G	Sept.	11...11 p.m. PDT
Sept.	12...08 08 17.9	41.77 N.	126.97 W.	N	4.1	...	...	II	G	Sept.	12...01 a.m. PDT
Georgia											
Aug.	2...08 52 09.8	33.872 N.	82.488 W.	1	4.3	...	4.9G	VI	G	Aug.	2...04 a.m. EDT
Hawaii											
July	12...00 17 17.6	19.47 N.	155.44 W.	8	...	...	3.2H	H	H	July	11...03 p.m. HDT
July	13...01 32 59.0	19.45 N.	155.73 W.	8	...	...	3.6H	II	H	July	12...04 p.m. HDT

TABLE 1.—*Summary of United States earthquakes for July—September 1974*—Continued

Date (1974)	Origin time (UTC) hr min s	Lat	Long	Depth (km)	Magnitude m_b	Magnitude M_S	Magnitude M_L or m_{bLg}	Maximum intensity	Hypocenter source	Date	Hour (local time)
Hawaii—Continued											
July	13...16 37 46.5	19.36 N.	155.25 W.	8	...	...	3.4H	II	H	July	13...07 a.m. HDT
July	19...14 38 48.3	19.54 N.	155.29 W.	8	...	...	3.4H	II	H	July	19...05 a.m. HDT
July	19...15 00 02.9	19.39 N.	155.25 W.	1	...	...	3.0H	II	H	July	19...06 a.m. HDT
July	19...21 22 02.9	19.38 N.	155.26 W.	2	...	...	3.7H	II	H	July	19...12 p.m. HDT
July	20...02 41 48.0	19.80 N.	155.56 W.	26	...	...	4.0H	II	H	July	19...05 p.m. HDT
July	22...04 07 50.5	19.32 N.	155.22 W.	30	...	...	3.9H	II	H	July	21...07 p.m. HDT
July	24...04 13 02.3	19.39 N.	155.29 W.	14	...	...	3.9H	II	H	July	23...07 p.m. HDT
Aug.	8...06 44 36.3	19.48 N.	155.68 W.	8	...	...	3.4H	II	H	Aug.	7...09 p.m. HDT
Aug.	8...11 12 59.0	19.383 N.	155.300 W.	30	4.2	...	4.3H	II	H	Aug.	8...02 a.m. HDT
Aug.	12...21 26 20.5	19.38 N.	155.43 W.	8	...	...	3.8H	II	H	Aug.	12...12 p.m. HDT
Aug.	18...08 52 20.1	19.80 N.	156.17 W.	39	...	...	3.8H	II	H	Aug.	17...11 p.m. HDT
Aug.	21...08 38 23.4	19.55 N.	155.96 W.	6	...	...	3.3H	II	H	Aug.	20...11 p.m. HDT
Aug.	24...04 15 01.9	19.32 N.	155.22 W.	8	...	...	3.9H	II	H	Aug.	23...07 p.m. HDT
Aug.	28...07 49 41.0	19.33 N.	155.20 W.	7	...	...	4.6H	II	H	Aug.	27...10 p.m. HDT
Sept.	18...07 56 34.2	19.39 N.	155.87 W.	10	...	...	3.3H	II	H	Sept.	17...10 p.m. HDT
Sept.	20...01 51 37.3	19.78 N.	155.53 W.	38	...	...	3.5H	II	H	Sept.	19...04 p.m. HDT
Sept.	26...06 18 49.7	20.16 N.	155.55 W.	40	...	...	3.9H	II	H	Sept.	25...09 p.m. HDT
Idaho											
July	4...03 10 56.2	44.41 N.	111.11 W.	5	...	...	...	...	G	July	3...09 p.m. MDT
Aug.	30...19 33 20.5	44.36 N.	111.05 W.	5	...	...	...	III	G	Aug.	30...01 p.m. MDT
Illinois											
Aug.	22...22 33 59.6	38.23 N.	89.73 W.	12	...	...	2.5S	V	S	Aug.	22...05 p.m. CDT
Missouri											
Aug.	11...14 29 45.0	36.92 N.	91.17 W.	4	...	...	3.6S	V	S	Aug.	11...09 a.m. CDT
Montana											
July	1...18 23 07.3	44.56 N.	111.09 W.	5	4.8	...	5.1G	...	G	July	1...12 p.m. MDT
July	3...03 13 43.3	44.64 N.	111.23 W.	5	...	...	...	...	G	July	2...09 p.m. MDT
July	16...06 38 45.8	45.84 N.	111.37 W.	10	4.4	...	...	V	G	July	16...12 a.m. MDT
July	16...07 30 32.6	45.71 N.	111.68 W.	10	...	...	...	...	G	July	16...01 a.m. MDT
July	26...23 36 03.0	48.72 N.	114.89 W.	13	...	...	3.7G	...	G	July	26...05 p.m. MDT
Aug.	30...13 24 47.9	44.49 N.	111.10 W.	5	...	...	...	...	G	Aug.	30...07 a.m. MDT
Aug.	30...13 35 51.0	44.47 N.	111.11 W.	5	...	...	...	...	G	Aug.	30...07 a.m. MDT
Aug.	30...17 01 59.5	44.70 N.	111.23 W.	5	...	...	...	...	G	Aug.	30...11 a.m. MDT
Aug.	30...17 04 45.9	44.65 N.	111.09 W.	5	...	...	...	II		Aug.	30...11 a.m. MDT
Aug.	30...17 41 20.9	44.58 N.	111.12 W.	5	...	...	...	III	G	Aug.	30...11 a.m. MDT
Sept.	3...09 50 22.3	45.34 N.	113.14 W.	5	...	...	...	...	G	Sept.	3...03 a.m. MDT
Sept.	12...03 02 28.0	46.19 N.	112.10 W.	5	...	...	...	...	G	Sept.	11...09 p.m. MDT
Nevada											
July	10...16 00 00.1	37.068 N.	116.032 W.	0	5.7	...	5.6B	...	A	July	10...09 a.m. PDT
Aug.	14...14 00 00.1	37.023 N.	116.036 W.	0	4.6	...	4.3B	...	A	Aug.	14...07 a.m. PDT
Aug.	30...15 00 00.2	37.150 N.	116.083 W.	0	5.8	...	5.8B	...	A	Aug.	30...08 a.m. PDT
Sept.	26...15 05 00.2	37.133 N.	116.068 W.	0	5.6	4.2	5.0B	...	A	Sept.	26...08 a.m. PDT
New Mexico											
Sept.	29...13 13 49.1	36.60 N.	108.61 W.	5	...	...	...	...	G	Sept.	29...07 a.m. MDT
Ohio											
Sept.	29...02 26 17.1	41.24 N.	83.36 W.	1	...	...	3.0S	II	G	Sept.	28...09 p.m. CDT

TABLE 1.—*Summary of United States earthquakes for July—September 1974*—Continued

Date (1974)	Origin time (UTC) hr min s	Lat	Long	Depth (km)	Magnitude m_b	Magnitude M_S	Magnitude M_L or m_{bLg}	Maximum intensity	Hypocenter source	Date	Hour (local time)
Oregon—Off the Coast											
Aug.	18...19 23 29.5	43.79 N.	127.23 W.	N	4.1	...	...	...	G	Aug.	18...12 p.m. PDT
Sept.	25...03 32 16.3	44.32 N.	129.07 W.	N	4.0	...	...	...	G	Sept.	24...08 p.m. PDT
Washington											
July	14...11 14 38.0	47.6 N.	120.7 W.	...	3.3	...	...	...	W	July	14...04 a.m. PDT
July	29...03 28 28.0	45.9 N.	122.6 W.	...	3.0	...	...	...	W	July	28...08 p.m. PDT
Aug.	15...23 33 03.8	47.3 N.	122.4 W.	...	3.0	...	...	...	W	Aug.	15...04 p.m. PDT
Wyoming											
Aug.	30...16 41 59.1	44.70 N.	110.80 W.	1	4.5	...	4.5G	V	G	Aug.	30...10 a.m. MDT
Aug.	30...16 55 48.2	44.53 N.	111.02 W.	5	...	...	...	...	G	Aug.	30...10 a.m. MDT
Aug.	30...19 46 54.0	44.64 N.	110.77 W.	2	4.5	...	...	II	G	Aug.	30...01 p.m. MDT
Sept.	1...18 shocks between 15 and 21 hours.	Yellowstone National Park vicinity.		...	...	...	...	II	...	Sept.	1...09 a.m. 03 p.m. MDT
Sept.	19...15 36 11.4	44.11 N.	107.38 W.	10	4.4	...	...	IV	G	Sept.	19...09 a.m. MDT

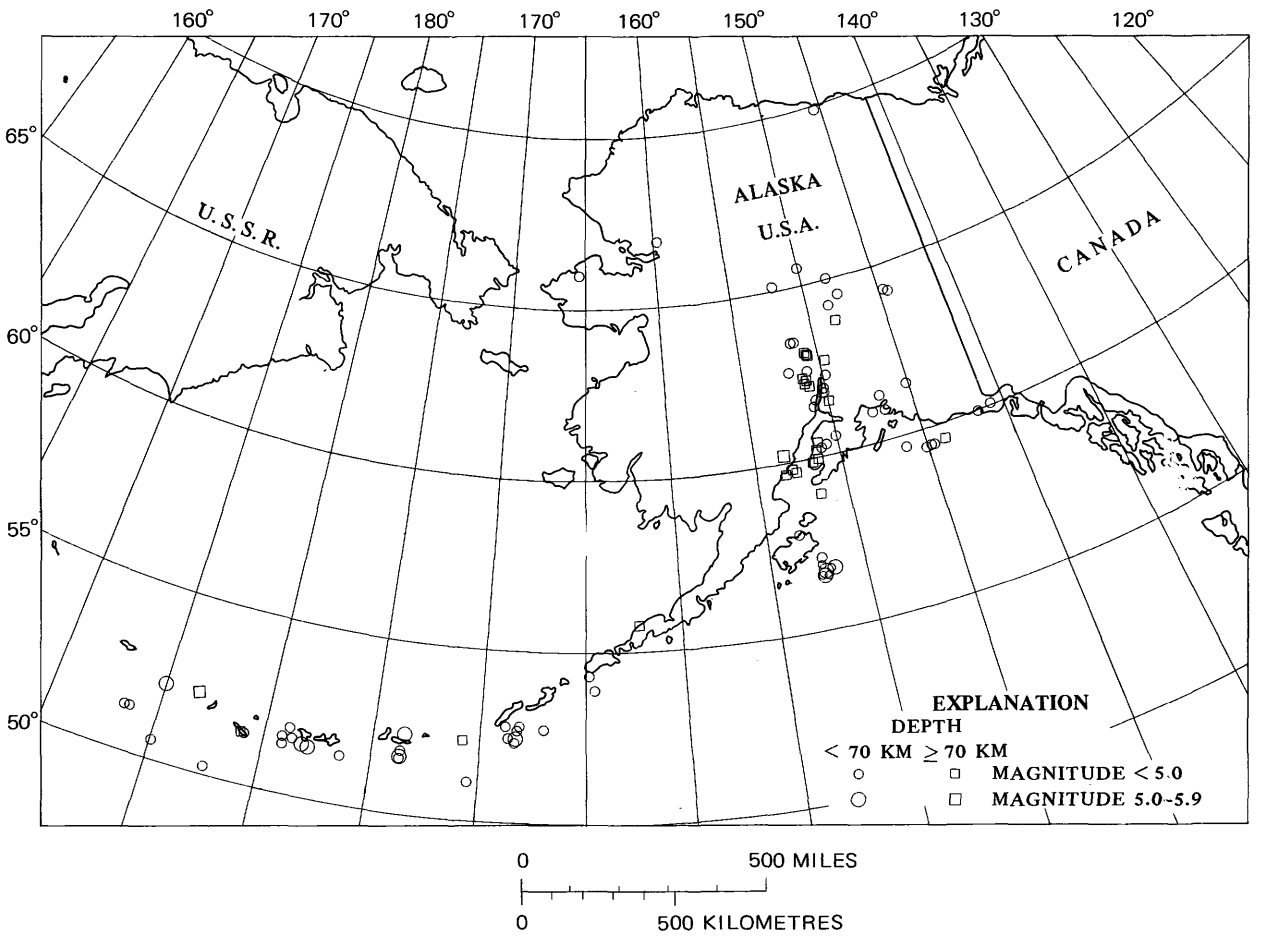

FIGURE 5.—Earthquake epicenters in Alaska for July—September 1974, plotted from table 1.

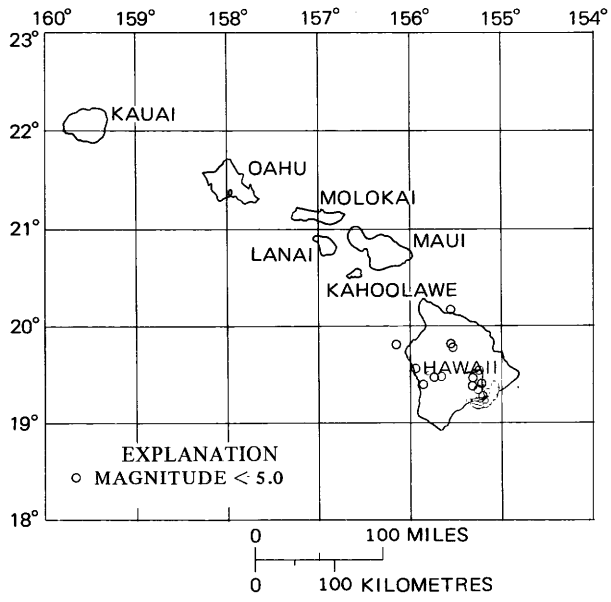

FIGURE 6.—Earthquake epicenters in Hawaii for July–September 1974, plotted from table 1.

in micrometres per second, calculated from the vertical-component 1-second *Lg* waves, and *D* is the distance in geocentric degrees.

All of the intensity values (indicated by Roman numerals) listed in this summary were derived, using the Modified Mercalli Intensity Scale of 1931, as shown below, from the evaluation of "Earthquake Report" forms, from field reports by U.S. Geological Survey personnel, engineerig firms, or universities and from detailed macroseismic data communicated to the NEIS by people in the area affected by the earthquake. All earthquake reports received which contain minimal information are assigned an Intensity II. These reports are filed in the offices of the NEIS and are available for detailed study.

MODIFIED MERCALLI INTENSITY (DAMAGE) SCALE OF 1931

[abridged]

I. Not felt except by a very few under especially favorable circumstances.

II. Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.

III. Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motorcars may rock slightly. Vibration like passing truck. Duration estimated.

IV. During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, and doors disturbed; walls make creaking sound. Sensation like heavy truck striking building. Standing motorcars rocked noticeably.

V. Felt by nearly everyone; many awakened. Some dishes, windows, and so forth, broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.

VI. Felt by all; many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.

VII. Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures. Some chimneys broken. Noticed by persons driving motorcars.

VIII. Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motorcars disturbed.

IX. Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.

X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.

TABLE 2.—*Summary of macroseismic data for United States earthquakes, July—September 1974*

[Sources of the hypocenter and magnitudes: (B) University of California at Berkeley; (G) U.S. Geological Survey, National Earthquake Information Service; (H) U.S. Geological Survey, Hawaiian Volcano Observatory; (M) NOAA, Palmer Observatory, Alaska; (P) California Institute of Technology, Pasadena; (S) St. Louis University, St. Louis, Missouri; (W) University of Washington, Seattle. Dates and origin times are listed in Universal Coordinated Time (UTC), giving the hour, minute, and second. Only earthquakes with intensity data and explosions are listed]

Alaska

13 July (G) Southern Alaska
Origin time: 12 44 50.7
Epicenter: 61.49° N., 145.00° W.
Depth: 55 km
Magnitude: 4.7 m_b
Intensity IV: Chitina, Tonsina, Valdez.
Intensity III: Glennallen, Cooper Center.

13 July (G) Central Alaska
Origin time: 14 48 50.0
Epicenter: 62.22° N., 151.21° W.
Depth: 85 km
Magnitude: 4.4 m_b
Intensity IV: Kashwitna, Talkeetna.

29 July (G) Southern Alaska
Origin time: 11 37 44.0
Epicenter: 59.70° N., 152.72° W.
Depth: 84 km
Magnitude: 4.5 m_b
Intensity V: Homer.

The National Weather Service station at Homer reported that many of the community were awakened at 1:40 a.m.; hanging objects swung moderately. A few in the community were frightened.

31 July (G) Kenai Peninsula, Alaska
Origin time: 09 20 51.6
Epicenter: 60.52° N., 150.04° W.
Depth: 44 km
Magnitude: 4.3 m_b
Intensity IV: Homer.
Intensity III: Anchorage.

6 August (G) Southern Alaska
Origin time: 02 37 42.3
Epicenter: 60.24° N., 153.32° W.
Depth: 136 km
Magnitude: 5.0 m_b
Intensity IV: Anchorage, Homer.

11 August (G) Fox Islands, Aleutian Islands
Origin time: 12 57 48.1
Epicenter: 66.02° N., 165.50° W.
Depth: Normal.
Magnitude: 4.1 m_b
Intensity II: Western Seward Peninsula.

13 August (G) Andreanof Islands, Aleutian Islands
Origin time: 03 46 20.3
Epicenter: 51.52° N., 178.11° W.
Depth: 52 km

13 August (G) Andreanof Islands, Aleutian Islands—Con.
Magnitude: 5.8 m_b, 5.9 M_S (B)
Intensity V: Adak.

14 August (G) Andreanof Islands, Aleutian Islands
Origin time: 05 34 54.4
Epicenter: 51.56° N., 178.14° W.
Depth: 56 km
Magnitude: 5.7 m_b, 5.2 M_S (B)
Intensity III: Adak.

16 August (G) Andreanof Islands, Aleutian Islands
Origin time: 09 41 31.7
Epicenter: 51.49° N., 177.82° W.
Depth: 46 km
Magnitude: 5.7 m_b, 5.8 M_S, 5.5 M_S (B)
Intensity IV: Adak, Atka.

20 August (G) Rat Island, Aleutian Islands
Origin time: 20 45 01.4
Epicenter: 52.24° N., 174.97° E.
Depth: 58 km
Magnitude: 5.6 m_b, 5.1 M_S (B)
Intensity V: Shemya.

22 August (G) Andreanof Islands, Aleutian Islands
Origin time: 03 58 31.6
Epicenter: 51.42° N., 176.31° W.
Depth: 44 km
Magnitude: 4.1 m_b
Intensity II: Adak.

24 August (G) Andreanof Islands, Aleutian Islands
Origin time: 18 16 56.0
Epicenter: 51.66° N., 178.61° W.
Depth: 66 km
Magnitude: 4.0 m_b
Intensity II: Adak.

27 August (G) Andreanof Islands, Aleutian Islands
Origin time: 19 24 55.0
Epicenter: 51.94° N., 178.83° W.
Depth: 36 km
Magnitude: 4.4 m_b
Intensity II: Adak.

10 September (G) Kenai Peninsula, Alaska
Origin time: 05 26 19.3
Epicenter: 59.89° N., 151.71° W.
Depth: 86 km
Magnitude: 3.7 m_b
Intensity IV: Homer.

11 September (G) Kenai Peninsula, Alaska
Origin time: 10 56 48.4
Epicenter: 60.27° N., 151.03° W.
Depth: Normal.
Magnitude: 4.1 M_L (M)
Intensity V: Cohoe.

TABLE 2.—*Summary of macroseismic data for United States earthquakes, July-September 1974*—Continued

27 September (G) Southern Alaska
Origin time: 03 36 25.7
Epicenter: 61.57° N., 149.94° W.
Depth: 72 km
Magnitude: 3.7 m_b
Intensity II: Anchorage.

28 September (G) Central Alaska
Origin time: 02 51 54.0
Epicenter: 64.47° N., 147.73° W.
Depth: 30 km
Magnitude: 3.6 m_b, 4.1 M_L (M)
Intensity IV: College Observatory.

California

10 July (P) Southern California
Origin time: 07 46 28.2
Epicenter: 34.17° N., 116.72° W.
Depth: 8 km
Magnitude: 3.3 M_L
Intensity II: San Bernardino area

4 August (B) Northern California
Origin time: 03 43 54.0
Epicenter: 38.00° N., 121.86° W.
Depth: 24 km
Magnitude: 3.2 M_L
Intensity III: Hollister, Pittsburg.

9 August (G) Near coast northern California
Origin time: 12 19 59.5
Epicenter: 40.22° N., 124.15° W.
Depth: 7 km
Magnitude: 3.9 M_L (B)
Intensity V: Petrolia.
Intensity IV: Ferndale, Rio Dell.

10 August Northern California
Origin time: 18 47
Epicenter: Not located.
Depth: None computed.
Magnitude: None computed.
Intensity III: Ferndale.

14 August (P) Southern California
Origin time: 14 45 55.4
Epicenter: 34.43° N., 118.37° W.
Depth: 7 km
Magnitude: 4.3 m_b (G), 4.3 M_L

Felt over an area of about 10,000 square kilometres (6,200 mi^2) (fig. 7).

Intensity V: Burbank, South El Monte, Glendale, Lake Hughes, Newhall, Tujunga, Verdugo City.

Intensity IV: Acton, Agoura, Alhambra, Arleta, Canoga Park, Chatsworth, El Monte, Etiwanda, Fullerton, Glendale, Granada Hills, La Canada, La Crescenta, Los Angeles, Monterey Park, Montrose, Newbury Park, North Hollywood, Northridge, Olive, Pacoima, Panorama City, Pasadena, Placentia, Rosemead, Sepulveda, Sunland, Temple City, Topanga, Universal City, Valyermo, Ventura.

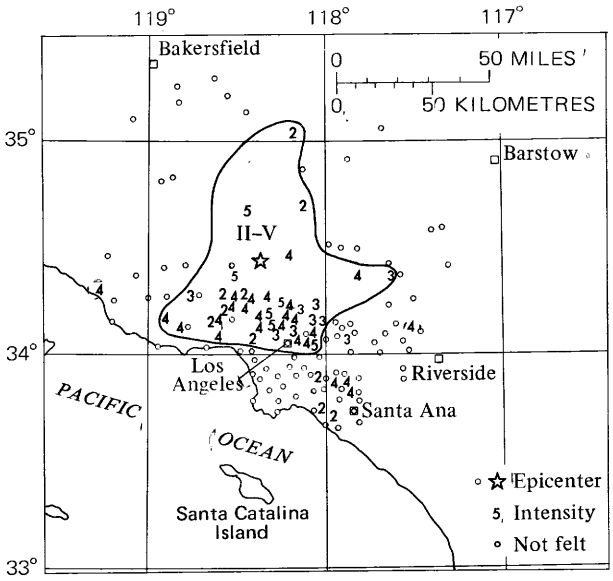

FIGURE 7.—Isoseismal map for the southern California earthquake of 14 August 1974, 14 45 55.4 UTC.

TABLE 2.—*Summary of macroseismic data for United States earthquakes, July-September 1974*—Continued

14 August (P) Southern California—Continued
Intensity III: Altadena, Arcadia, Monrovia, Mt. Wilson, Newbury Park, Sierra Madre, Simi Valley, South Pasadena, Sun Valley, West Covina, Wrightwood.
Intensity II: Beverly Hills, Calabasas, Fountain Valley, La Mirada, Lancaster, Mojave, Reseda, San Fernando, Westminster, Woodland Hills.

29 August Northern California
Origin time: 22 50
Epicenter: Not located.
Depth: None computed.
Magnitude: None computed.
Intensity III: Eureka.

30 August Central California
Origin time: 08 57
Epicenter: Not located.
Depth: None computed.
Magnitude: None computed.
Intensity II: Hollister.

6 September (P) Southern California
Origin time: 13 23 31.4
Epicenter: 34.29° N., 118.52° W.
Depth: 8 km
Magnitude: 3.0 M_L
Intensity II: San Fernando area.

6 September (P) Southern California
Origin time: 14 40 42.9
Epicenter: 34.2° N., 118.58° W.
Depth: 8 km
Magnitude: 3.3 M_L
Intensity II: Saugus.

TABLE 2.—*Summary of macroseismic data for United States earthquakes, July-September 1974*—Continued

12 September (B) Northern California
Origin time: 01 27 32.5
Epicenter: 38.817° N., 122.648° W.
Depth: 8 km
Magnitude: 4.1 m_b (G), 3.8 M_L
Intensity II: Geysers powerplant.

21 September Northern California (possibly off coast)
Origin time: 04 32
Epicenter: Not located.
Depth: None computed.
Magnitude: None computed.
Intensity III: Fortuna, Rio Dell.
Intensity II: Bayside.

21 September (P) Southern California
Origin time: 10 37 42.7
Epicenter: 33.77° N., 117.25° W.
Depth: 8 km
Magnitude: 4.2 m_b (G), 4.2 M_L
Intensity VI: Sunnymead, minor damage.
Intensity V: Beaumont.
Intensity IV: Calimesa, Redlands, Yucaipa.

24 September (G) Central California
Origin time: 20 07 24.8
Epicenter: 35.19° N., 120.85° W.
Depth: 8 km
Magnitude: 3.1 M_L (B), 3.5 M_L (P)
Intensity II: Diablo Canyon, Morro Bay, San Luis Obispo.

California—Off the coast

3 July (G) Northern California
Origin time: 05 00 58.6
Epicenter: 40.42° N., 125.14° W.
Depth: 12 km
Magnitude: 5.4 m_b, 5.2 M_S, 5.1 M_L (B)
Intensity V: Bridgeville, Eureka.
Intensity IV: Ferndale, Fortuna, Petrolia.
Intensity III: Miranda, Rio Dell.

13 July (G) Northern California
Origin time: 11 09 57.5
Epicenter: 40.37° N., 125.18° W.
Depth: 1 km
Magnitude: 5.0 m_b, 4.0 M_L (B)
Intensity II: Ferndale.

12 September (G) Northern California
Origin time: 08 08 17.9
Epicenter: 41.77° N., 129.97° W.
Depth: Normal.
Magnitude: 4.1 m_b
Intensity II: Geysers powerplant.

TABLE 2.—*Summary of macroseismic data for United States earthquakes, July-September 1974*—Continued

Georgia

2 August (G) Georgia
Origin time: 08 52 09.8
Epicenter: 33.872° N., 82.488° W.
Depth: 1 km
Magnitude: 4.3 m_b, 4.9 m_{bLg}, 4.8 m_{bLg} (S)

This earthquake was felt over 36,000 square kilometres (14,000 mi^2). The area of modified Mercalli intensities of IV—VI (fig. 8) was approximately 9,600 square kilometres (3,700 mi^2). Slight damage, consisting of cracks in cement, at Bobby Brown State Park was confirmed by Dr. Timothy Long of Georgia Institute of Technology, Atlanta. An intensity survey of the Lincoln County, Ga.,—McCormick County, S.C., earthquake of August 2, 1974, was conducted by Arthur F. Benson and Gerald H. Fogle (1974) of Law Engineering Testing Co., Marietta, Ga., through questionnaires published in a local newspaper. They found a maximum modified Mercalli Intensity V within the area of NEIS maximum intensity, although there were few responses of the higher intensities due to sparseness of population in that area. The average area intensities reported by Benson and Fogle agree generally with those obtained by NEIS. The last previous earthquake with Modified Mercalli Intensity VI was reported near Lincolnton, Georgia, in 1875. Smaller events having magnitudes less than 3.5 m_b have been recorded in the last 10 years.

Intensity VI:
Georgia—Bobby Brown State Park (slight damage).

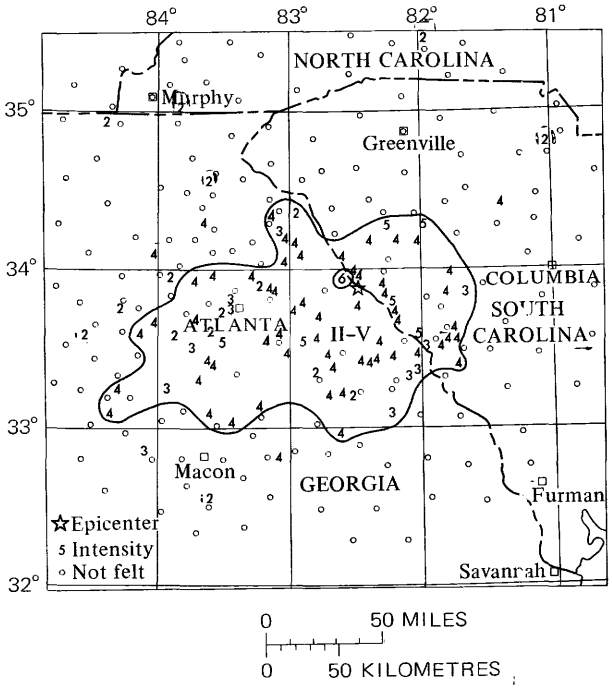

FIGURE 8.—Isoseismal map for the eastern Georgia earthquake of 2 August 1974, 08 52 09.8 UTC.

TABLE 2.—*Summary of macroseismic data for United States earthquakes, July-September 1974*—Continued

2 August (G) Georgia—Continued

Intensity V:

Georgia—Crawfordville, Madison, Robinson (Athens).

South Carolina—Cross Hill, Hodges, Parksville.

Intensity IV:

Georgia—Appling, Augusta, Bethlehem, Boneville, Bowman, Buford, Canon, Carlton, Conyers, Crawford, Davisboro, Dearing, Dewy Rose, Elberton, Gibson, Gillsville, Greensboro, Griffin, Grovetown, Haddock, Hardwick, Harlem, Kelly, Lexington, Lincolnton, Mitchell, Monticello, Norwood, Oxford, Penfield, Philomath, Rayle, Round Oak, Shady Dale, Sharon, Social Circle, Statham, Toomsboro, Union Point, Warrenton, Washington, White Plains, Winterville, Zebulon.

South Carolina—Abbeyville, Aiken, Bath, Clair, Calhoun Falls, Clarks Hills, Graniteville, Greenwood, Johnston, Lowndesville, McCormick, Modoc, Mount Carmel, New Ellenton, Ninety Six, Plum Branch, Saluda, Warrenville, Willington.

Intensity III:

Georgia—Bishop, Culloden, Farmington, Gough, Gracewood, Hephzibah, Indian Springs, Mansfield, Vanna.

South Carolina—North Augusta, Ridge Spring.

Intensity II:

Georgia—Arnoldsville, Avera, Avondale, Bonaire, Bostwick, Demorest, Fry, Gwinnett, Hartwell, Mayfield, Newton, Rutledge, Stonewall.

North Carolina—Hayesville, Union Mills.

South Carolina—Belton, Edgemoor.

Hawaii

12 July (H) Hawaii Island
Origin time: 00 17 17.6
Epicenter: 19.47° N., 155.44° W.
Depth: 8 km
Magnitude: 3.2 M_L
Intensity II: Aniahou Ranch, Glennwood, Hawaii Volcanoes National Park, Hilo, Kona, Kurtistown, Volcano.

13 July (H) Hawaii Island
Origin time: 01 32 59.0
Epicenter: 19.45° N., 155.73° W.
Depth: 8 km
Magnitude: 3.6 M_L
Intensity II: Kainaliu.

13 July (H) Hawaii Island
Origin time: 16 37 46.5
Epicenter: 19.36° N., 155.25° W.
Depth: 8 km
Magnitude: 3.4 M_L
Intensity II: Ainahou Ranch.

19 July (H) Hawaii Island
Origin time: 14 38 48.3
Epicenter: 18.54° N., 155.29° W.
Depth: 8 km
Magnitude: 3.4 M_L
Intensity II: Volcano.

TABLE 2.—*Summary of macroseismic data for United States earthquakes, July-September 1974*—Continued

19 July (H) Hawaii Island
Origin time: 15 00 02.9
Epicenter: 19.39° N., 155.25° W.
Depth: 1 km
Magnitude: 3.0 M_L
Intensity II: Hawaii Volcanoes National Park, Volcano.

19 July (H) Hawaii Island
Origin time: 21 22 02.9
Epicenter: 19.38° N., 155.26° W.
Depth: 2 km
Magnitude: 3.7 M_L
Intensity II: Hawaii Volcanoes National Park, Volcano.

20 July (H) Hawaii Island
Origin time: 02 41 48.0
Epicenter: 19.80° N., 155.56° W.
Depth: 26 km
Magnitude: 4.0 M_L
Intensity II: Honokaa.

22 July (H) Hawaii Island
Origin time: 04 07 50.5
Epicenter: 19.32° N., 155.22° W.
Depth: 30 km
Magnitude: 3.9 M_L
Intensity II: Hilo, Volcano.

24 July (H) Hawaii Island
Origin time: 04 13 02.3
Epicenter: 19.39° N., 155.29° W.
Depth: 14 km
Magnitude: 3.9 M_L
Intensity II: Ainahou Ranch, Kapapala Ranch.

8 August (H) Hawaii Island
Origin time: 06 44 36.3
Epicenter: 19.48° N., 155.68° W.
Depth: 8 km
Magnitude: 3.4 M_L
Intensity II: Kona

8 August (H) Hawaii Island
Origin time: 11 12 59.0
Epicenter: 19.383° N., 155.300° W.
Depth: 30 km
Magnitude: 4.2 m_b (G), 4.3 M_L
Intensity II: Glenwood, Hawaii Volcanoes National Park, Hilo, Honokaa, Kapapala Ranch, Kona, Puna, Volcano.

12 August (H) Hawaii Island
Origin time: 21 26 20.5
Epicenter: 19.38° N., 155.43° W.
Depth: 8 km
Magnitude: 3.8 M_L
Intensity II: Kona.

TABLE 2.—*Summary of macroseismic data for United States earthquakes, July-September 1974*—Continued

18 August (H) Hawaii Island
Origin time: 08 52 20.1
Epicenter: 19.80° N., 156.17° W.
Depth: 39 km
Magnitude: 3.8 M_L
Intensity II: Kona.

21 August (H) Hawaii Island
Origin time: 08 38 23.4
Epicenter: 19.55° N., 155.96° W.
Depth: 6 km
Magnitude: 3.3 M_L
Intensity II: Kealakekua.

24 August (H) Hawaii Island
Origin time: 04 15 01.9
Epicenter: 19.32° N., 155.22° W.
Depth: 8 km
Magnitude: 3.9 M_L
Intensity II: Hilo.

28 August (H) Hawaii Island
Origin time 07 49 41.0
Epicenter: 19.33° N., 155.20° W.
Depth: 7 km
Magnitude: 4.6 M_L
Intensity II: Hawaii Volcanoes National Park, Hilo, Holualoa, Honokaa, Hookena, Kapapala Ranch, Keaau, Kurtistown, Laupahoehoe, Mountainview, Naalehu, Pahala, Pahoa, South Kona, Volcano.

18 September (H) Hawaii Island
Origin time: 07 56 34.2
Epicenter: 19.39° N., 155.87° W.
Depth: 10 km
Magnitude: 3.3 M_L
Intensity II: South Kona.

20 September (H) Hawaii Island
Origin time: 01 51 37.3
Epicenter: 19.78° N., 155.53° W.
Depth: 38 km
Magnitude: 3.5 M_L
Intensity II: Hilo.

26 September (H) Hawaii Island
Origin time: 06 18 49.7
Epicenter: 20.16° N., 155.55° W.
Depth: 40 km
Magnitude: 3.9 M_L
Intensity II: Honokaa, Kamuela.

Idaho

30 August (G) Hebgen Lake Region
Origin time: 19 33 20.5
Epicenter: 44.36° N., 111.05° W.
Depth: 5 km
Magnitude: None Computed.
Intensity III: Norris, Wyoming (duration estimated to have been 3 seconds).

TABLE 2.—*Summary of macroseismic data for United States earthquakes, July-September 1974*—Continued

Illinois

22 August (S) Southern Illinois
Origin time: 22 33 59.6
Epicenter: 38.23° N., 89.73° W.
Depth: 12 km
Magnitude: 2.5 m_{bLg}
Intensity V: Marrissa area.

Missouri

11 August (S) Southern Missouri
Origin time: 14 29 45.0
Epicenter: 36.92° N., 91.17° W.
Depth: 4 km
Magnitude: 3.6 m_{bLg}
Intensity V: Fremont.
Intensity IV: Alton, Irontown, Winona.
Intensity III: Belleview, Centerville, Thayer.
Intensity II: Boswell, Hiram, Jackson, McGee, Newburg, New Madrid, Solo, Success, Teresita, Thomasville, Thornfield, Womack.

Montana

16 July (G) Western Montana
Origin time: 06 38 45.8
Epicenter: 45.84° N., 111.37° W.
Depth: 10 km
Magnitude: 4.4 m_b
Intensity V: Maudlow, Norris, Springdale.
Intensity IV: Belt, Jeffers, Manhattan, Shawmut, Trident, Viriginia City, Willow Creek.
Intensity III: Butte, Gardiner, Harrison, Jefferson City, Pony, Twin Bridges.
Intensity II: Bozeman, Cameron, Canyon Creek, Fort Shaw, Garrison, Glen, Greycliff, Livingston, Ramsay, Silver Gate, White Sulphur Springs, Winston.

30 August (G) Hebgen Lake Region
Origin time: 17 04 45.9
Epicenter: 44.65° N., 11.09° W.
Depth: 5 km
Magnitude: None computed.
Intensity II: Old Faithful, Wyo.

30 August (G) Hebgen Lake Region
Origin time: 17 41 20.9
Epicenter: 44.58° N., 111.12° W.
Depth: 5 km
Magnitude: None computed.
Intensity III: Norris, Wyo. (duration estimated to have been 3 seconds).

Nevada

10 July (A) Southern Nevada
Origin time: 16 00 00.1
Epicenter: 37.068° N., 116.032° W.
Depth: 0 km
Magnitude: 5.7 m_b (G), 5.6 M_L (B)
Nevada Test Site explosion.

TABLE 2.—*Summary of macroseismic data for United States earthquakes, July-September 1974*—Continued

14 August (A) Southern Nevada
Origin time: 14 00 00.1
Epicenter: 37.023° N., 116.036° W.
Depth: 0 km
Magnitude: 4.6 m_b (G), 4.3 M_L *(B)*
Nevada Test Site explosion.

30 August (A) Southern Nevada
Origin time: 15 00 00.2
Epicenter: 37.150° N., 116.083° W.
Depth: 0 km
Magnitude: 5.8 m_b (G), 5.8 M_L (B)
Nevada Test Site explosion.

26 September (A) Southern Nevada
Origin time: 15 05 00.2
Epicenter: 37.133° N., 116.068° W.
Depth: 0 km
Magnitude: 5.6 m_b (G), 4.2 M_s (G), 5.0 M_L (B)
Nevada Test Site explosion.

Ohio

29 September (G) Northern Ohio
Origin time: 02 26 17.1
Epicenter: 41.24° N., 83.36° W.
Depth: 1 km
Magnitude: 3.0 m_{bLg} (S)
Intensity II: Bowling Green, Findlay, Fostoria, Tiffin.

Wyoming

30 August (G) Yellowstone National Park
Origin time: 16 41 59.1
Epicenter: 44.70° N., 110.80° W.
Depth: 1 km
Magnitude: 4.5 m_b, 4.5 M_L
Information provided by R. A. Hutchinson, National Park Service, who reported that 114 tremors were recorded on seismograph at the Old Faithful Visitor Center on August 30.

Intensity V: Norris (heard and felt by naturalist and visitors on conducted walk into Geyser basin, buckled knees and shook trees); Old Faithful (felt or heard by majority of people in area; lasted about 10 seconds. Visitor Center shook, its large front windows rattled loudly, and ballpoint pens moved on desk. Telephone lines and powerlines behind Old Faithful Inn were observed to bounce up and down at least 15 centimetres (6 in.) for about 1 minute after the quake.); West Yellowstone (visitor reported that some items were

TABLE 2.—*Summary of macroseismic data for United States earthquakes, July-September 1974*—Continued

30 August (G) Yellowstone National Park—Continued
Intensity V—Continued

knocked off walls in stores and shops; KWYS radio station reported 3- to 4-second east-west rocking motion felt in studio).

Intensity IV: Grant Village (caused pictures hanging on walls in residence to start swinging and rattling), Mammoth (slight shaking, could hear building crack), Tower Junction (felt, heard rumbling also), Madison Junction (shook building very strongly, loud rumling lasted at least several seconds).

Intensity III: Canyon Lake, West thumb.

30 August (G) Yellowstone National Park
Origin time: 19 46 54.0
Epicenter: 44.64° N., 110.77° W.
Depth: 2 km
Magnitude: 4.5 *m*
Intensity II: Old Faithful.

1 September Yellowstone National Park
No origin times or locations computed.

The times (UTC) listed below are those of 18 felt (Intensity II) earthquakes at Norris Geyser Basin, reported by R. A. Hutchinson, Geothermal Specialist, National Park Service.

Hour	*Min.*	
15	30	
15	32	
16	16	
16	20	
16	25	
16	28	
16	29	
16	33	"Strongest."
16	36	"Strong."
16	53	
17	15	
17	18	
17	24	
18	13	
19	26	
19	46	"Strong."
21	09	"Duration around 5 seconds."
21	24	

19 September (G) Northern Wyoming
Origin time: 15 36 11.4
Epicenter: 44.11° N., 107.38° W.
Depth: 10 km
Magnitude: 4.4 m_b
Intensity IV: Ten Sleep.

XI. Few, if any (masonry), structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.

XII. Damage total. Waves seen on ground surfaces. Lines of sight and level distorted. Objects thrown upward into the air.

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HAWAII: Robert Y. Koyanagi, U.S. Geological Survey, Hawaiian Volcano Observatory, Hawaii National Park.

MISSOURI: Otto Nuttli, Department of Geology and Geophysics, St. Louis University, St. Louis.

NEW YORK: Staff of Lamont-Doherty Geological Observatory, Palisades, New York.

WASHINGTON: Robert S. Crosson, Geophysics Program, University of Washington, Seattle.

WYOMING: R. A. Hutchinson, National Park Service, Yellowstone National Park.

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