DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

United States Earthquakes, 1975

By

Jerry L. Coffman

and

Carl W. Stover

Open-File report 84-975

Prepared in cooperation with National Oceanic and Atmospheric Administration.

1984

Contributors

Contributors to this publication are listed below according to the type of data supplied or service performed.

Hypocenters and magnitudes:

Gerald J. Dunphy, U.S. Geological Survey
W. Leroy Irby, U.S. Geological Survey
R. Kangas, U.S. Geological Survey
John H. Minsch, U.S. Geological Survey
Waverly J. Person, U.S. Geological Survey
Hawaiian Volcano Observatory, U.S. Geological Survey

Intensities:

Jerry L. Coffman, NOAA, Environmental Data Service
Ruth B. Simon, U.S. Geological Survey

Geodesy:

B.K. Meade, NOAA, NOS, National Geodetic Survey

Tsunamis:

Mark G. Spaeth, NOAA, National Weather Service

Strong-motion seismograph data:

Charles F. Knudson, U.S. Geological Survey
Richard P. Maley, U.S. Geological Survey

Well-water levels:

Kenneth L. Rennick, U.S. Geological Survey

Computer programs, editorial assistance, and manuscript review:

Beverly Armstrong, NOAA, Environmental Data Service
Sharon R. Johnson, NOAA, Environmental Data Service
Leslie D. Morris, NOAA, Environmental Data Service
Carl A. von Hake, NOAA, Environmental Data Service
Carol Weathers, NOAA, Environmental Data Service

Contents

LIST OF TABLES

LIST OF ILLUSTRATIONS

Introduction

This publication contains descriptions of all earthquakes that occurred in the United States and nearby territories in 1975. Its purpose is to provide a continuous history of U.S. earthquakes for use in seismic risk studies, site evaluations for nuclear powerplants, design of earthquake-resistive structures, and for answering inquiries from the scientific and general public. Each description includes date, origin time, epicenter, and epicenter source of the earthquake, maximum intensity (Modified Mercalli), and macroseismic effects reported in the area.

This publication is composed of four major chapters: Summary of Earthquake Activity (which includes table 1--a chronological listing of U.S. earthquakes located by the U.S. Geological Survey (USGS) in 1975--and a summary of macroseismic data reported for each earthquake); Principal Earthquakes of the World (table 2); Miscellaneous Activities (which contains information on crustal movement studies, tsunamis, and tables 3 and 4--fluctuations in well-water levels and earthquakes associated with the fluctuations); and Strong-Motion Seismograph Data (table 5).

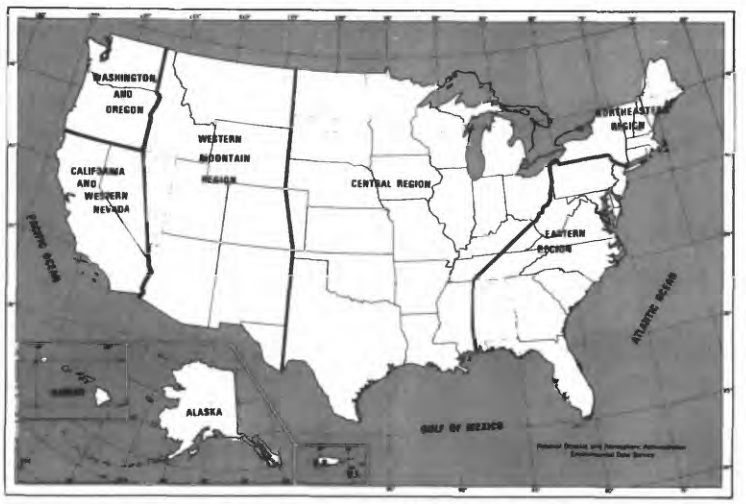
The Summary of Earthquake Activity chapter, the principal section of this publication, lists earthquakes chronologically in 11 regions (see illustration on p. 2), an arrangement that highlights the natural seismic divisions. The regions are (1) Northeastern; (2) Eastern; (3) Central; (4) Western Mountain; (5) California and Western Nevada; (6) Washington and Oregon; (7) Alaska; (8) Hawaii; (9) Panama Canal Zone; (10) Puerto Rico; and (11) Virgin Islands.

EARTHQUAKE INFORMATION SERVICES

The National Geophysical and Solar-Terrestrial Data Center (NGSDC), one of the five major facilities of NOAA's Environmental Data Service, is responsible for data activities in the field of seismology. Its services include preparing local and regional seismic histories for engineers, actuaries, and other scientists, and answering direct inquiries from the public on all aspects of historical earthquakes. Additional services and products include publishing annual earthquake summaries and revised historical earthquake reports; and making available copies of seismograms, accelerograms, displacement meter records, digitized strong-motion seismograms, and epicenter lists in several formats. Many of these products and services are based on seismic records or other data that have originated with USGS recording networks or with USGS data-reduction facilities. Information concerning services and products of NGSDC may be obtained from the National Geophysical and Solar-Terrestrial Data Center, NOAA/EDS, Boulder, Colo. 80302.

During 1975, the locations of 5,342 epicenters were announced in the twice-weekly Preliminary Determination of Epicenters (PDE) list. Epicenters are published when sufficient information has accumulated to insure a reasonable degree of accuracy. The results are preliminary and do not always agree with later epicenters determined from additional seismic readings or from new data with critical azimuths and distances. For special studies, an inquiry should be made to the USGS (Branch of Seismicity and Earth Structure, Stop 967, Box 25046, Denver Federal Center, Denver, Colo. 80225) for possible recomputation of epicenters of interest.

USGS coordinates the collection of all types of earthquake information, with the special objective of correlating instrumentally determined earthquake locations with noninstrumental locations indicated by intensity data. This correlation is achieved through intensive regional investigations of earthquakes by local organizations and USGS. Primary data are gathered by a canvass of the epicentral area using questionnaire cards. Cities that receive questionnaire cards are selected by computer, based upon an analysis of the earthquake magnitude and projected felt area. When returned and analyzed, this information is used to map the seismic areas of the country in order to promote public safety through a better understanding of earthquake phenomena. Because the success of this data collection program depends largely on the cooperation of local officials and citizens, all who receive earthquake questionnaire cards are urged to complete and return them to the office indicated.



Seismic Regions of the United States

EPICENTER MAPS

Figure 1 is a plot of all earthquake epicenters listed in table 1. Each earthquake is indicated by a small dot.

Figure 2 is a computer plot of 1975 earthquakes by Modified Mercalli intensity. Maximum intensities are plotted in Arabic numerals at the location that each occurred. Earthquakes of intensity I-IV are represented by dots. Bulletins of the University of California Seismographic Station at Berkeley and the California Institute of Technology Seismological Laboratory at Pasadena should be consulted for additional details on epicenters in California.

The selection of intensity or isoseismal maps (figs. 3-8, 11-16, and 19-21) is governed largely by the size of the area affected, the minimum radius generally being about 80 km (50 miles). This means that sharp, localized shocks of intensity VI (which occur mostly in California) may not be represented by these maps, whereas others of intensity V and VI (which occur largely in the Eastern and Central States) often will be illustrated because of the larger felt area. Numerals on these computer-plotted maps represent the maximum Mercalli intensities at each town. Isoseismal contours are a generalization of intensity data and are extrapolated to regions that have no observations. They do not take into account each intensity observation.

MAGNITUDE AND INTENSITY RATINGS

Magnitude is a measure of the "size" of an earthquake and is roughly related to the energy release at its focus. Although the magnitude scale has neither "top" nor "bottom" values, the highest ever recorded was magnitude 8.9 and the lowest about -3. On this logarithmic scale, a magnitude 6 shallow-focus earthquake represents elastic-wave energy approximately 30 times greater than that generated by a magnitude 5 earthquake, 900 times greater than that of a magnitude 4 shock, etc. Many factors enter into the determination of earthquake magnitude, including earthquake focal depth, frequency content of the sampled energy, and the earthquake radiation pattern. The magnitude values calculated by USGS are based on the following formulae:

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

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 micrometers; T is the period in seconds, and $18 \leq T \leq 22$, and D is the distance in geocentric degrees (station to epicenter) and $20° \leq D \leq 160°$. No depth correction is made for depth less than 50 km.

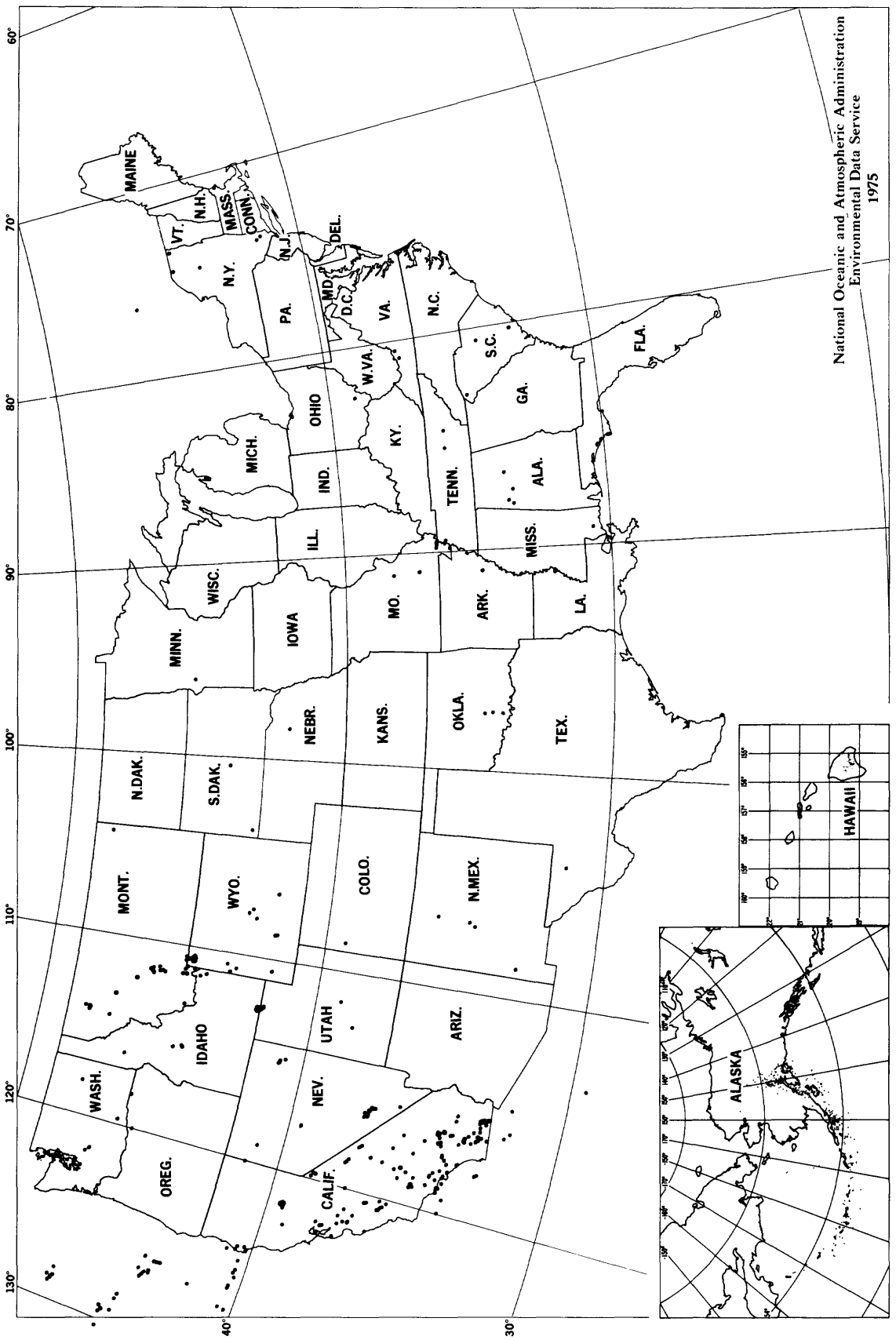


Figure 1. Plot of United States earthquake epicenters in 1975

$$mb = \log (A/T) + Q (D,h), \quad (2)$$

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

$$ML = \log A - \log A_o, \quad (3)$$

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

$$mbLg = 3.75+0.90(\log D)+\log(A/T) \quad (4)$$
$$0.5° \leq D \leq 4°,$$

$$mbLg = 3.30+1.66(\log D)+\log(A/T)$$
$$4° \leq D \leq 30°,$$

as proposed by Nuttli (1973), where A/T is expressed in micrometers per second, calculated from the vertical-component 1-second Lg waves, and D is the distance in geocentric degrees.

References cited above are as follows:

(1) Bath, Markus, 1966, "Earthquake Energy and Magnitude," in Physics and Chemistry of the Earth, vol. 7, Oxford and New York, Pergamon Press, pp. 115-165.

(2) Gutenberg, B. and Richter, C.F., 1956, "Magnitude and Energy of Earthquakes," Annali di Geofisica, vol. IX, no. 1, pp. 1-15.

(3) Richter, C.F., 1958, Elementary Seismology, San Francisco, Calif., W.H. Freeman and Co., Inc., 768 pp.

(4) Nuttli, O.W., 1973, "Seismic Wave Attenuation and Magnitude Relations for Eastern North America," Jour. Geophys. Res., vol. 78, no. 5, pp. 876-885.

The term intensity as applied to earthquakes represents a quantity determined from the effects on people, manmade objects, and the Earth's surface (landslides, ground fissures, etc.). Intensities are assigned according to the descriptions listed in the Modified Mercalli (MM) Intensity Scale of 1931 (see next section). There are 12 steps to the MM scale; these are discrete steps, which is the reason Roman rather than Arabic numerals are used. An earthquake in a populated area will have different intensities at different localities, owing to the distance from the epicenter of the earthquake, local geological conditions, structural design of buildings, and the magnitude of the earthquake.

The text of this publication gives the intensity for each city where the earthquake was felt and summaries of the strongest effects reported. Each earthquake is further characterized by its maximum intensity, and this is given in the text and in table 1.

Although it is recognized that the Modified Mercalli Intensity Scale is in many instances inadequate for present-day requirements, it has been the guide used by NOAA and the USGS and will continue to be so used until a new scale has been devised and has acceptance in the engineering and seismological communities. As stated above, intensities on the MM scale are discrete numbers. However, bracketed intensities (e.g., VII-VIII) have been used in some cases in the past to describe the effects of earthquakes where the evidence for the higher intensity is less clear. This practice has been abandoned for current earthquakes. For historical earthquakes, questions concerning the interpretation of intensities in such cases or in cases where new data may point to a different maximum intensity should be referred to USGS.

MODIFIED MERCALLI INTENSITY SCALE OF 1931

[Adapted from Sieberg's Mercalli-Cancani scale, modified and condensed]

I. Not felt - or, except rarely under especially favorable circumstances. Under certain conditions, at and outside the boundary of the area in which a great shock is

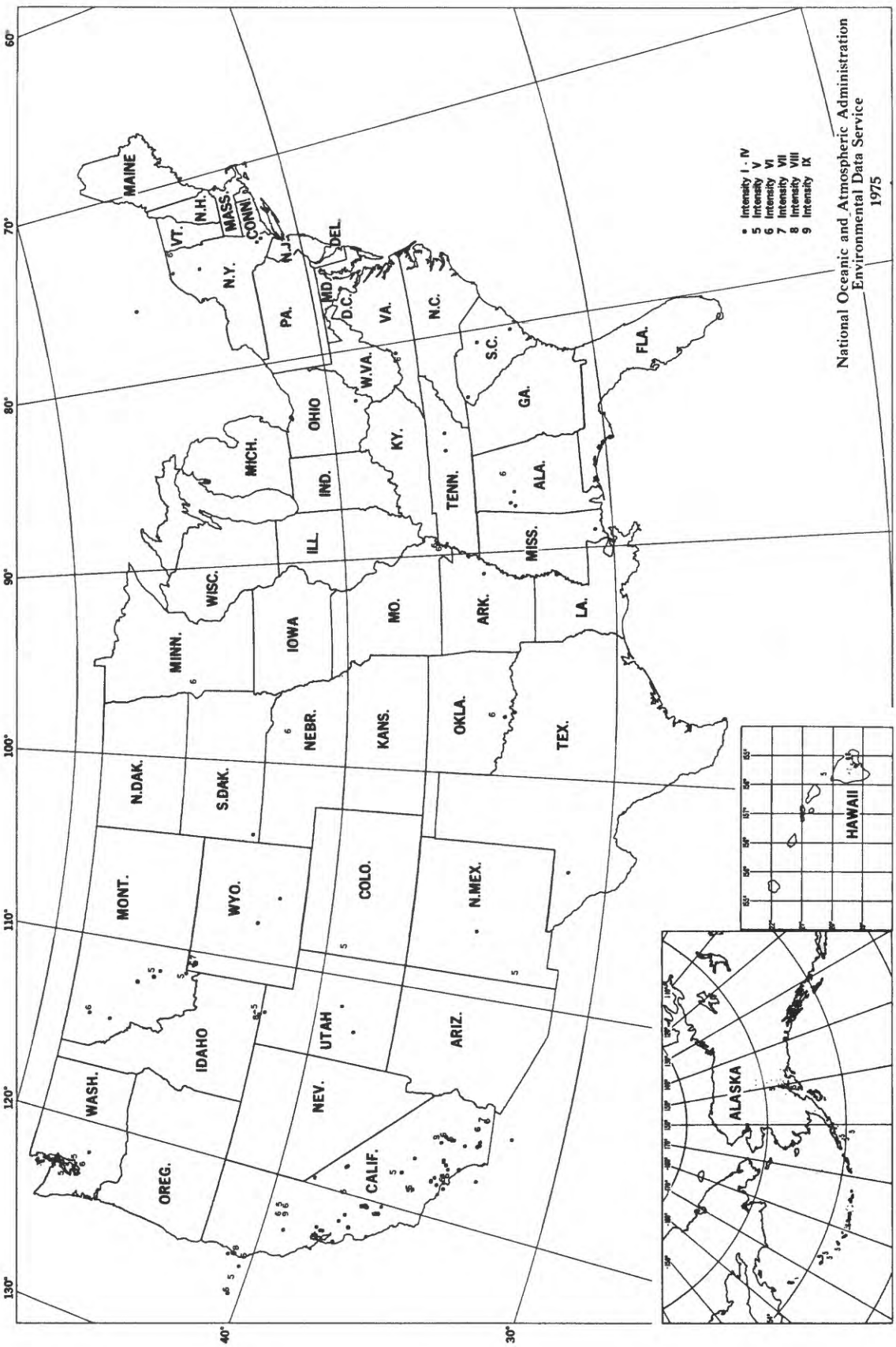


Figure 2. Plot of earthquakes by Modified Mercalli intensity in 1975

felt: sometimes birds, animals, reported uneasy or disturbed; sometimes dizziness or nausea experienced; sometimes trees, structures, liquids, bodies of water, may sway--doors may swing, very slowly.

II. Felt indoors by few, especially on upper floors, or by sensitive, or nervous persons. Also, as in grade I, but often more noticeably: sometimes hanging objects may swing, especially when delicately suspended; sometimes trees, structures, liquids, bodies of water, may sway, doors may swing, very slowly; sometimes birds, animals, reported uneasy or disturbed; sometimes dizziness or nausea experienced.

III. Felt indoors by several, motion usually rapid vibration. Sometimes not recognized to be an earthquake at first. Duration estimated in some cases. Vibration like that due to passing of light, or lightly loaded trucks, or heavy trucks some distance away. Hanging objects may swing slightly. Movements may be appreciable on upper levels of tall structures. Rocked standing motor cars slightly.

IV. Felt indoors by many, outdoors by few. Awakened few, especially light sleepers. Frightened no one, unless apprehensive from previous experience. Vibration like that due to passing of heavy, or heavily loaded trucks. Sensation like heavy body striking building, or falling of heavy objects inside. Rattling of dishes, windows, doors; glassware and crockery clink and clash. Creaking of walls, frame, especially in the upper range of this grade. Hanging objects swung, in numerous instances. Disturbed liquids in open vessels slightly. Rocked standing motor cars noticeably.

V. Felt indoors by practically all, outdoors by many or most: outdoors direction estimated. Awakened many, or most. Frightened few--slight excitement, a few ran outdoors. Buildings trembled throughout. Broke dishes, glassware, to some extent. Cracked windows--in some cases, but not generally. Overturned vases, small or unstable objects, in many instances, with occasional fall. Hanging objects, doors, swing generally or considerably. Knocked pictures against walls, or swung them out of place. Opened, or closed, doors, shutters, abruptly. Pendulum clocks stopped, started, or ran fast, or slow. Moved small objects, furnishings, the latter to slight extent. Spilled liquids in small amounts from well-filled open containers. Trees, bushes, shaken slightly.

VI. Felt by all, indoors and outdoors. Frightened many, excitement general, some alarm, many ran outdoors. Awakened all. Persons made to move unsteadily. Trees, bushes, shaken slightly to moderately. Liquid set in strong motion. Small bells rang--church, chapel, school, etc. Damage slight in poorly built buildings. Fall of plaster in small amount. Cracked plaster somewhat, especially fine cracks in chimneys in some instances. Broke dishes, glassware, in considerable quantity, also some windows. Fall of knickknacks, books, pictures. Overturned furniture in many instances. Moved furnishings of moderately heavy kind.

VII. Frightened all--general alarm, all ran outdoors. Some, or many, found it difficult to stand. Noticed by persons driving motor cars. Trees and bushes shaken moderately to strongly. Waves on ponds, lakes, and running water. Water turbid from mud stirred up. Incaving to some extent of sand or gravel stream banks. Rang large church bells, etc. Suspended objects made to quiver. Damage negligible in buildings of good design and construction, slight to moderate in well-built ordinary buildings, considerable in poorly built or badly designed buildings, adobe houses, old walls (especially where laid up without mortar), spires, etc. Cracked chimneys to considerable extent, walls to some extent. Fall of plaster in considerable to large amount, also some stucco. Broke numerous windows, furniture to some extent. Shook down loosened brickwork and tiles. Broke weak chimneys at the roofline (sometimes damaging roofs). Fall of cornices from towers and high buildings. Dislodged bricks and stones. Overturned heavy furniture, with damage from breaking. Damage considerable to concrete irrigation ditches.

VIII. Fright general--alarm approaches panic. Disturbed persons driving motor cars. Trees shaken strongly--branches, trunks, broken off, especially palm trees. Ejected sand and mud in small amounts. Changes: temporary, permanent; in flow of springs and wells; dry wells renewed flow; in temperature of spring and well waters. Damage slight in structures (brick) built especially to withstand earthquakes. Considerable in ordinary substantial buildings, partial collapse: racked, tumbled down, wooden houses in some cases; threw out panel walls in frame structures, broke off decayed piling. Fall of walls. Cracked, broke, solid stone walls seriously. Wet ground to some extent, also ground on steep slopes. Twisting, fall, of chimneys, columns, monuments, also factory stacks, towers. Moved conspicuously, overturned, very heavy furniture.

IX. Panic general. Cracked ground conspicuously. Damage considerable in (masonry) structures built especially to withstand earthquakes: threw out of plumb some wood-frame houses built especially to withstand earthquakes; great in substantial (masonry) buildings, some collapse in large part; or wholly shifted frame buildings off foundations, racked frames; serious to reservoirs; underground pipes sometimes broken.

X. Cracked ground, especially when loose and wet, up to widths of several inches; fissures up to a yard in width ran parallel to canal and stream banks. Landslides considerable from river banks and steep coasts. Shifted sand and mud horizontally on beaches and flat land. Changed level of water in wells. Threw water on banks of canals, lakes, rivers, etc. Damage serious to dams, dikes, embankments. Severe to well-built wooden structures and bridges, some destroyed. Developed dangerous cracks in excellent brick walls. Destroyed most masonry and frame structures, also their foundations. Bent railroad rails slightly. Tore apart, or crushed endwise, pipelines buried in earth. Open cracks and broad wavy folds in cement pavements and asphalt road surfaces.

XI. Disturbances in ground many and widespread, varying with ground material. Broad fissures, earth slumps, and land slips in soft, wet ground. Ejected water in large amounts charged with sand and mud. Caused sea-waves ("tidal" waves) of significant magnitude. Damage severe to wood-frame structures, especially near shock centers. Great to dams, dikes, embankments, often for long distances. Few, if any (masonry), structures remained standing. Destroyed large well-built bridges by the wrecking of supporting piers, or pillars. Affected yielding wooden bridges less. Bent railroad rails greatly, and thrust them endwise. Put pipelines buried in earth completely out of service.

XII. Damage total--practically all works of construction damaged greatly or destroyed. Disturbances in ground great and varied, numerous shearing cracks. Landslides, falls of rock of significant character, slumping of river banks, etc., numerous and extensive. Wrenched loose, tore off, large rock masses. Fault slips in firm rock, with notable horizontal and vertical offset displacements. Water channels, surface and underground, disturbed and modifed greatly. Dammed lakes, produced waterfalls, deflected rivers, etc. Waves seen on ground surfaces (actually seen, probably, in some cases). Distorted lines of sight and level. Threw objects upward into the air.

ACKNOWLEDGMENTS

Active cooperation in earthquake investigations in the United States is provided by several seismology collaborators. The following served as collaborators to NOAA and USGS during 1975.

Alabama.--L.J. Eisele, Spring Hill College, Mobile.
Alaska.--Staff of NOAA-Palmer Observatory, Palmer, and J.B. Townshend, College Observatory, College.
Arizona.--Richard T. Moore, University of Arizona, Tucson.
California (at large).--Nina Scott, San Francisco.
California (northern).--Bruce A. Bolt, University of California, Berkeley.
California (southern).--Clarence R. Allen, California Institute of Technology, Pasadena.
Colorado.--Maurice W. Major, Colorado School of Mines, Golden.
Connecticut.--Edward F. Chiburis, University of Connecticut, Groton.
Delaware.--Robert R. Jordan, University of Delaware, Newark.
Florida and Georgia.--Leland T. Long, Georgia Institute of Technology, Atlanta.
Hawaii.--Robert Koyanagi, USGS, Hawaii Volcano Observatory, Hawaiian National Park.
Idaho.--Melvin W. Jackson, Morrison-Knudsen Co., Inc., Industrial Engineering Group, Boise.
Indiana.--Robert F. Blakely, Department of Natural Resources, Geological Survey, Bloomington.
Iowa.--J.P. Kopp, Loras College, Dubuque.
Kansas.--Robert J. Harris, Kansas State University, Manhattan.
Kentucky.--G. Randy Keller, University of Kentucky, Lexington.
Michigan.--James T. Wilson, University of Michigan, Ann Arbor.
Minnesota.--Harold Mooney, University of Minnesota, Minneapolis.
Mississippi, Louisiana area.--Fred Followill, University of Mississippi, University.
Missouri, Illinois, Arkansas area.--William J. Stauder and Otto Nuttli, Saint Louis University, Saint Louis.
Montana.--Stephen W. Nile, Gallatin Gateway.
Nevada.--Allen Ryall, University of Nevada, Reno.
New England.--Francis J. Donohoe, S.J., Daniel J. Linehan, S.J., and James W. Skehan, S.J., Weston College, Weston, Mass.
New Mexico.--Allan R. Sanford, New Mexico Institute of Mining and Technology, Socorro.
New York.--Lynn R. Sykes, Lamont-Doherty Geological Observatory, Palisades.
North Carolina.--David M. Stewart, University of North Carolina, Chapel Hill.
Ohio.--Edward J. Walter, John Carroll University, Cleveland.

Oklahoma.--James E. Lawson, Jr., University of Oklahoma, Leonard.
Oregon.--Richard W. Couch, Oregon State University, Corvallis.
Pennsylvania.--Benjamin F. Howell, Jr., Pennsylvania State University, University Park.
South Carolina.--Pradeep Talwani, University of South Carolina, Columbia.
Tennessee.--Berlen C. Moneymaker, Knoxville.
Texas.--James Dorman, University of Texas, Galveston.
Utah.--Kenneth Cook, University of Utah, Salt Lake City.
Virginia.--G.A. Bollinger, Virginia Polytechnic Institute and State University, Blacksburg.
Washington.--Norman Rasmussen and Robert S. Crosson, University of Washington, Seattle.
West Virginia.--R.W. Laird, West Virginia University, Morgantown.
Wisconsin.--David E. Willis, University of Wisconsin, Milwaukee.

Earthquake Descriptions

INTRODUCTION

The origin time of earthquake occurrences listed in the regions that follow is given in standard time. Times are expressed continuously from midnight to midnight, or 0 to 24 hours. Universal coordinated time is given in parentheses for earthquakes with instrumental epicenters. The following symbols are used to indicate authority for arrival or origin times, epicenters, and/or magnitudes. Refer to table 1 for magnitude and depth values determined for earthquakes with instrumental epicenters.

ADK--NOAA, Adak Observatory, Adak, Alaska.
ATL--Georgia Institute of Technology, Atlanta.
B--Seismographic Station, Univ. of California, Berkeley.
CDM--California Division of Mines and Geology, Sacramento.
CLE--John Carroll Univ., Cleveland, Ohio.
COL--USGS, College Observatory, College, Alaska.
NMI--New Mexico Institute of Mining and Tech., Socorro.
PAL--Lamont-Doherty Geological Observatory, Columbia Univ., Palisades, N.Y.
P--Seismological Laboratory, California Institute of Tech., Pasadena.
ROL--Univ. of Missouri, Rolla, Mo.
SEA--University of Washington, Seattle.
SIT--USGS, Sitka Observatory, Sitka, Alaska.
SLM--Dept. of Earth and Atmospheric Sciences, Saint Louis Univ.
U--University of Utah, Salt Lake City.
USGS--U.S. Geological Survey, Golden, Colo.
VPI--Virginia Polytechnic and State Univ., Blacksburg.
WES--Weston Observatory, Weston, Mass.

Sources of noninstrumental information (macroseismic data) in this publication include questionnaire canvasses conducted by the U.S. Geological Survey; newspaper articles; bulletins of the Seismological Society of America; special earthquake reports of other organizations; and information collected by NOAA's National Weather Service. Instrumental data are provided by the U.S. Geological Survey, National Earthquake Information Service.

Roman numerals in the earthquake descriptions refer to the Modified Mercalli Intensity Scale of 1931 (see page 3), which gives about equal weight to the disturbance of inanimate objects and to personal reactions. When more than one degree of intensity is reported from a town, the town is assigned the highest intensity reported. All earthquake reports that contain minimal information are assigned intensity II. For brevity, intensity is abbreviated int. in the descriptions that follow.

Table 1, which follows the earthquake descriptions, is a chronological listing of all earthquake hypocenters in the United States and its nearby territories for 1975. It contains the following information for each event: date/origin time (Universal coordinated time), hypocenter (epicenter and depth), region of occurrence, Modified Mercalli intensity, and magnitude(s) computed. Only those earthquakes listed in table 1 with intensity designations are described in the regions that follow.

NORTHEASTERN REGION

(Time given in this region is eastern standard. If an epicenter is quoted, Universal Time is given in parentheses. This region includes Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont.)

Jan. 15. 14:16:31.6 (19:16). Epicenter 44.90°N, 74.56°W, northern New York, PAL. Felt over a small area of northern New York and southern Ontario, Canada. Int. IV at Brasher Falls, Brushton, Fort Covington, Hogansburg, Lawrenceville, and Malone; int. III at Moira; int. II at Bangor, Massena, North Bangor, and Cornwall (Ontario), Canada.

June 9. 13:39:23.3 (18:39). Epicenter 44.90°N, 73.57°W, northern New York, PAL. Int. VI. Felt over an area of approximately 13,000 sq km, including Massachusetts, New Hampshire, New York, Vermont, and southern Quebec, Canada (see fig. 3). Slight damage occurred at Beekmantown, N.Y., and Fairfax, Vt. The Canadian felt data were furnished by R. Wetmiller, Seismological Service of Canada, Ottawa.

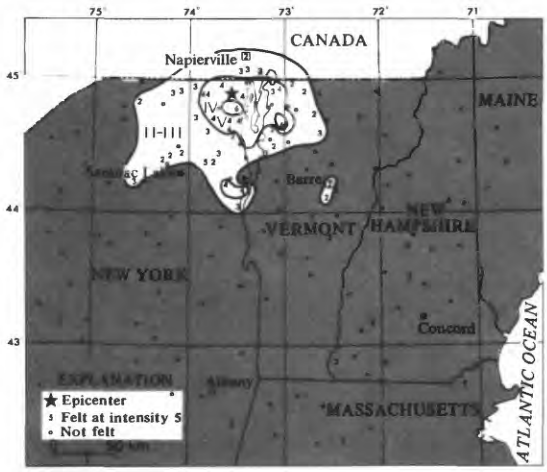


Figure 3. Area affected by New York earthquake of June 9

INT. VI IN NEW YORK

Beekmantown.--A Plattsburgh, N.Y., resident reported,"Chimney and fireplace cracked at Beekmantown."

INT. VI IN VERMONT

Fairfax.--Felt by several; frightened many. Damage slight.

INT. V IN NEW YORK

Churubusco, Elizabethtown, Morrisonville, Plattsburgh, and Wilmington.

INT. IV IN NEW HAMPSHIRE

Bartlett.

INT. IV IN NEW YORK

Chazy, Dannemora, Ellenburg, Ellenburg Depot, Mooers Forks, Port Kent, Rouses Point, Schuyler Falls, and Westport.

INT. IV IN VERMONT

Highgate Center, Isle La Motte, and North Hero.

INT. III IN NEW HAMPSHIRE

Plymouth and Washington.

INT. III IN NEW YORK

Ausable Forks, Burke, Chateaugay, Lyon Mountain, Piercefield, Port Henry, and Redford.

INT. III IN VERMONT

Hyde Park and Swanton.

INT. III IN CANADA

Clareneville, Guay Motel on Highway #15 Quebec, and Lacolle.

INT. II IN MASSACHUSETTS

Belchertown.

INT. II IN NEW HAMPSHIRE

Chesterfield and Hill.

INT. II IN NEW YORK

Blue Mountain Lake, Brushton, Central Square, East Chatham, Gabriels, Jay, Peru, Upper Saint Regis, and Vermontville.

INT. II IN VERMONT

Barre, Beebe Plain, Belvidere Center, Burlington (press), Chittenden, Enosburg Falls, Essex Junction (press), Franklin, Milton (press), South Royalton, and Williamstown.

INT. II IN CANADA

Napierville.

July 12. 07:37:15.4 (12:37). Epicenter 46.51°N, 76.14°W, southern Quebec, Canada, USGS. Int. IV in northern New York at Chase Mills and Winthrop. Also felt in southern Quebec, Canada.

July 19. 15:59:32.2 (20:59). Epicenter 41.43°N, 73.79°W, New York, PAL. Int. III at Mahopac and Scotia; int. II in the Putnam Valley area.

Aug. 2. 20:03:22.0 (Aug. 3, 01:03). Epicenter 42.67°N, 70.85°W, southern New England (northeastern Massachusetts), WES. Int. III at Newburyport and West Newbury; int. II at Andover, Essex, Ipswich, and North Andover.

Sept. 23. About 18:00. The press reported that houses shook in Carmel, Kent, and Putnam Counties, Conn. Not recorded by seismographs in the area.

Sept. 24. 09:30; Sept. 25. Between 14:55 and 15:10. The press reported that houses shook and windows rattled in the Lake Peekskill, N.Y., area on these dates. Not recorded by seismographs in the area.

Oct. 9. 23:54. Int. II near Lewiston, Maine.

Oct. 24. 02:43:12.4 (07:43). Epicenter 41.59°N, 73.93°W, New York, PAL. This was one of a swarm of five small earthquakes felt in this area. Int. II at Poughkeepsie and Wappingers Falls.

Nov. 3. 15:54:55.9 (20:54). Epicenter 43.89°N, 74.64°W, New York, PAL. This earthquake was felt widely in Essex, Franklin, Fulton, Hamilton, Herkimer, Lewis, and Warren Counties. Electrical service was interrupted for 1,000 Harrisville area residents for 42 minutes according to the press. Aftershocks were reported on Nov. 3, 21:06, Nov. 4, 15:26, and Nov. 5, 11:53, all in the vicinity of Racquette Lake. Int. IV at Hague, Keene Valley, Minerva, Mineville, North Creek, Olmstedville (electricity out momentarily), South Schroon, Tahawus, and Westport; int. III at Cleverdale, Essex, Grant (press), Indian Lake (press), Long Lake (press), Moriah Center, Newcomb (similar effects on Nov. 5, 15:04), North Hudson, and Silver Bay; int. II at Blue Mountain Lake, Copenhagen (press), Fort Drum (press), Gloversville, North River, Old Forge, Saranac Lake, and Watertown; int. II in Ontario, Canada, at Belleville and Brockville.

EASTERN REGION

(Time given in this region is eastern standard. If an epicenter is quoted, Universal Time is given in parentheses. This region includes Alabama, Delaware, Florida, Georgia, Kentucky (eastern), Maryland, Mississippi (eastern), New Jersey, North Carolina, Pennsylvania, South Carolina, Tennessee (eastern), Virginia, Washington, D.C., and West Virginia.)

Mar. 1. 06:50:00.2 (11:50). Epicenter 33.55°N, 87.99°W, northwestern Alabama, USGS. Int. IV in north Saint Louis County where windows rattled. Several telephone calls were received about the tremor at the NOAA National Weather Service office (near St. Charles, Mo.). Int. II at Smithville, Miss., located near the Alabama-Mississippi border.

Mar. 7. 07:45:13.5 (12:45). Epicenter 37.32°N, 80.48°W, southwestern Virginia, VPI. Int. II at Bane, Fort Branch, Harrisburg, and Pearisburg (press).

Apr. 28. 00:46:51.9 (05:46). Epicenter 32.97°N, 80.23°W, South Carolina, USGS. Felt over an area of 200 sq km (Talwani, 1977). Int. IV at Bethera, Charleston, Mount Holly, and Mount Pleasant; int. II at Goose Creek (press), Saint George, and Summerville (press).

May 2. 11:22:58.7 (16:22). Epicenter 35.92°N, 84.45°W, eastern Tennessee, USGS. Int. III at Oakdale; int. II at Kingston, Knoxville, Oak Ridge (telephone communication), and Rockwood.

May 14. 18:03:05.9 (23:03). Epicenter 35.95°N, 85.25°W, Tennessee, USGS. Int. II in Oak Ridge area.

June 24. 06:11:36.0 (11:11). Epicenter 33.72°N, 87.84°W, northwestern Alabama, USGS. Int. IV at Bankston, Belk, and Fayette where windows and dishes rattled. It was not reported outside Fayette County.

Aug. 28. 23:22:51.9 (Aug. 29, 04:22). Epicenter 33.82°N, 86.60°W, northern Alabama, USGS. Int. VI. Felt over an area of approximately 25,000 sq km (see fig. 4) of northern Alabama and southern Tennessee. Slight damage occurred at Palmerdale and Watson, Ala.

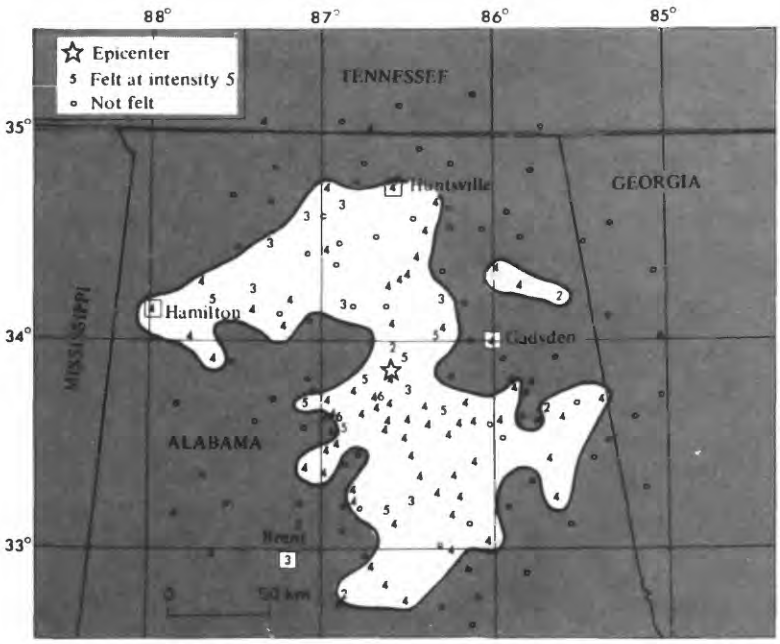


Figure 4. Area affected by Alabama earthquake of August 28

INT. VI IN ALABAMA

Palmerdale.--Felt by and awakened all in home. Sheetrock ceiling cracked. Table lamps shifted. Hanging objects swung moderately. "Most thought it was an explosion."

Watson.--Felt by several; awakened and frightened few. Furniture and small objects shifted slightly. Hanging objects swung moderately. Damage slight.

INT. V IN ALABAMA

Allgood, Altoona, Bon Air, Burnwell, Clay, Coalburg, Columbiana, Haleyville, Morris, Muscadine, New Hope, Trafford, and Wattsville.

INT. IV IN ALABAMA

Acmar, Addison, Adger, Alden, Alexandria, Alpine, Alton, Arab, Arley, Baileyton, Bear Creek, Bessemer, Birmingham (press), Blountsville, Brilliant, Brookside, Bynum, Cardiff, Clanton, Collinsville, Cooks Springs, Cragford, Cropwell, Delta, Dixiana, Double Springs, Eldridge, Fairfield, Gadsden (press), Gallant, Geraldine, Goodwater, Hamilton, Harpersville, Hartselle, Heflin, Henagar, Huntsville, Joppa, Leeds, Lincoln, Moundville, New Castle, Odenville, Paint Rock, Pelham, Pinson, Ragland, Remlap, Riverside, Sayre, Shelby, Siluria, Sterrett, Sycamore, Sylacauga, Talladega, Tanner, Thorsby, Trussville, Union Grove, Verbena, and Walnut Grove.

INT. IV IN TENNESSEE

Five Points (press) and Taft.

INT. III IN ALABAMA

Belle Mina, Brent, Crossville, Dolomite, Grayson, Horton, Kimberly, Moulton, Springville, Trinity, Vinemont, and Wilsonville.

INT. II IN ALABAMA

Cedar Bluff, Choccolocco, Cleveland, and West Blockton.

Sept. 9. 06:52:44.1 (11:52). Epicenter 30.66°N, 89.25°W, southern Mississippi, USGS. Int. IV at Perlington (at railroad yard); int. II at Bay St. Louis (NOAA, National Weather Service).

Oct. 17. 23:31. This was the first of a series of small earthquakes that occurred in the vicinity of Lake Jocassee, S.C., in October and November. Int. IV at Lake Jocassee Dam and Keowee River Dam, S.C.; int. II 10 km east-northeast of Salem.

Nov. 7. 18:39:32.7 (23:39). Epicenter 33.55°N, 87.36°W, Alabama, USGS. Int. II north of Tuscaloosa.

Nov. 11. 03:10:39.3 (08:10). Epicenter 37.19°N, 80.84°W, southwestern Virginia, USGS. The press reported the earthquake was felt in Giles, Montgomery, and Pulaski Counties and that windows were broken in the Blacksburg area (unconfirmed). Int. VI. Two instances of cracked plaster were reported at Poplar Hill (midway between Pearisburg and Dublin). Int. V at Dublin (antique plate on table broke) and Ripplemead; int. IV at Radford, Eggleston, Narrows, Pearisburg, and Rich Creek. This earthquake canvass was conducted by G.A. Bollinger, Virginia Polytechnic Institute and State University, Blacksburg, Va.

Nov. 15. 20:01:03.5 (Nov. 16, 01:01). Epicenter 34.26°N, 80.57°W, South Carolina, USGS. Int. II at Camden.

Nov. 25. 10:17:33.7 (15:17). Epicenter 34.87°N, 82.96°W, South Carolina, USGS. Felt principally in Oconee County, S.C., and Swain, Jackson, and Transylvania Counties, N.C. Int. IV in South Carolina at Longcreek, Mountain Rest, Salem, and Tamassee and in North Carolina at Lake Toxaway; int. III in South Carolina at Newry and Wahalla and in North Carolina at Almond, Brevard (press), Cashiers, Rosman, and Seneca; int. II at Madison, S.C.

Dec. 4. 06:57. The NOAA National Weather Service reported the earthquake was felt in an area 20-25 km south and west of the Daytona Beach, Fla., area. Int. IV at Daytona Beach and Holly Hill; int. III throughout Volusia County (press).

Dec. 8. 13:02:23, ATL. Int. II at Jocassee Hydro-Station, S.C. (reported by Law Engineering Testing Co., Marietta, Ga.).

CENTRAL REGION

(Time given in this region is central standard. If an epicenter is quoted, Universal Time is given in parentheses. This region includes Arkansas, Colorado (eastern), Illinois, Indiana, Iowa, Kansas, Kentucky (western), Louisiana, Michigan, Minnesota, Mississippi (western), Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee (western), Texas (eastern), and Wisconsin.)

Jan. 2. 03:18:59.7 (09:18). Epicenter 34.87°N, 90.94°W, Arkansas, SLM. Int. II in the Forest City area.

Jan. 4. No time given. Several residents of Shelby County Tenn., reported an earthquake on this date.

Feb. 3. 04:31. North-central Ohio. Houses shook in Seneca and Sandusky Counties according to press accounts. Int. IV at Burgoon, Fremont, Melmore, Millersville, Republic, and Tiffin; int. III at Fostoria (press), Lakeside, and Marblehead. This earthquake canvass was conducted by E. J. Walter, John Carroll University, Cleveland, Ohio.

Feb. 13. 13:43:57.6 (19:43). Epicenter 36.52°N, 89.56°W, New Madrid, Mo., region, SLM. Int. V. Felt over a small area, including parts of Missouri, Illinois, Tennessee, and Kentucky. A window reportedly was cracked at Marston, Mo., where the shock frightened many in the community. Loud earth noises were heard. At Conran, all in the community felt the earthquake.

INT. V IN MISSOURI

Conran and Marston.

INT. IV IN MISSOURI

Portageville.

INT. IV IN ILLINOIS

Pulaski and Tamms.

INT. IV IN TENNESSEE

Union City.

INT. II IN ILLINOIS

Villa Ridge.

INT. II IN KENTUCKY

Barlow.

INT. II IN MISSOURI

Kewanee and McGee.

Feb. 16. 17:21:31.5 (23:21). Epicenter 39.05°N, 82.42°W, southern Ohio, USGS. Felt in the Jackson, Ohio-Point Pleasant, W. Va., region. Int. IV at Addison, Coalton, Oak Hill, Rio Grande, Thurman, and Wilkesville, Ohio, and Point Pleasant, W. Va; int. III at Jackson and Vinton, Ohio; int. II at Danville (press) and South Webster, Ohio. This earthquake canvass was conducted by E. J. Walter, John Carroll University, Cleveland, Ohio.

Feb. 20. 13:45. Marston, Mo. Int. IV. The New Madrid, Mo., Weekly Record reported a local earthquake in the community of Marston, which is located in southeast Missouri a few miles southwest of New Madrid. The tremor apparently was strongest at the school, where the children were evacuated because of the strong motion.

Mar. 1. 13:12:49, ROL. Int. II at Elmhurst, Ill., about 24 km southwest of Chicago. The press reported that the shock was noted in eastern Missouri and southern Illinois.

May 13. 01:53:38.5 (07:53). Epicenter 42.12°N, 98.45°W, northeastern Nebraska, USGS. Int. VI. At Bartlett, Nebr., the earthquake caused noticeable cracks in stucco. It also awakened and frightened many residents of that community, and knocked cans from shelves in one store. Int. V at Chambers, Nebr; int. II at Hudson, S.D.

May 15. 23:57:01.5 (May 16, 05:57). Epicenter 43.24°N, 103.68°W, southwestern South Dakota, USGS. Int. IV at Provo; int. II at Edgemont (telephone communication).

June 13. 16:40:27.2 (22:40). Epicenter 36.54°N, 89.68°W, New Madrid, Mo., region, SLM. Int. VI. Felt over a small area of Missouri, Tennessee, Arkansas, and Kentucky. Slight damage was reported at Lilbourn, where plaster cracked and fell. Furniture overturned and broke at Marston, Mo.

INT. VI IN MISSOURI

Lilbourn.--Frightened many. Trees and bushes shook. Plaster cracked and fell. Damage slight.

Marston.--Felt by and frightened all. Furniture overturned and broke; small objects fell. Faint earth noises.

INT. V IN MISSOURI

Kewanee.

INT. IV IN MISSOURI

Campbell, Gideon, Grayridge, Hayti, New Madrid, Qulin, Risco, and Sikeston.

INT. IV IN TENNESSEE

Hornbeak and Troy.

INT. III IN ARKANSAS

Saint Francis and Wilson.

INT. III IN KENTUCKY

Hickman.

INT. III IN MISSOURI

Arcadia, Ironton, and Matthews.

INT. III IN TENNESSEE

Miston.

INT. II IN ARKANSAS

Success.

INT. II IN MISSOURI

Clarkton, Cooter, Fisk, Lutesville, and McGee.

INT. II IN TENNESSEE

Jackson, Samburg, and Springcreek.

July 6. 02:48:13.9 (08:48). Epicenter 36.19°N, 89.49°W, New Madrid, Mo., region (western Tennessee), SLM. Int. II at Miston, Tenn.

July 9. 08:54:15.1 (14:54). Epicenter 45.67°N, 96.04°W, western Minnesota, USGS. Int. VI. No major damage was caused by this earthquake, which was felt over an area of 82,000 sq km (see fig. 5) of western Minnesota, southeastern North Dakota, northeastern South Dakota, and northwestern Iowa. However, minor damage to walls and basement foundation was reported in and around the town of Morris.

INT. VI IN MINNESOTA

Alberta.--Felt by all; frightened many. KMRS Radio Station reported cracks in church basement and parsonage of Church of the Nazarene; inside foundation damage 8 km south of Alberta. Damage slight.

Chokio.--Felt by and awakened many. KMRS Radio Station reported chimney damage,

widening of basement cracks, and cracks in wall of new building. Loud earth noises. Small objects fell. Damage slight.

Glenwood.--Felt by many; frightened few. "Four basements cracked."

Kent.--Felt by many; frightened few. "Two basements cracked." Small objects moved on cupboard shelves.

Morris.--Felt by many. KMRS Radio Station reported cracks in basement walls, crack in foundation, and minor plaster cracks. "About 11 km south of Morris on Highway 59, several cracks appeared on north end of the Apostolic Christian Church."

Wheaton.--Felt by many; frightened few. Basements and foundations cracked; window and chimney cracked.

INT. V IN MINNESOTA

Appleton, Barnesville, Barrett, Barry, Beardsley, Benson, Brandon, Brooten, Browns Valley, Campbell, Canby, Clara City, Clinton, Clontarf, Collegeville, Cottonwood, Cyrus, Danvers, Dawson, De Graff, Donnelly, Dumont, Elbow Lake, Fergus Falls, Graceville, Grey Eagle, Hancock, Herman, Hoffman, Holdingford, Holloway, Holmes City, Johnson, Little Falls, Louisburg, Madison, Maynard, Milan, Montevideo, Murdock (well-water muddied), Nassau, Nelson, Norcross, Odessa, Ortonville, Paynesville, Perham, Rothsay, Sartell, Tenney, Tintah, Upsala, and Watson.

INT. V IN NORTH DAKOTA

Abercrombie, Cayuga, Christine, Cogswell, Geneseo, Hankinson, Lidgerwood, and Mantador.

INT. V IN SOUTH DAKOTA

Big Stone City, Bryant, Claire City, Corona, Langford, Milbank, Revillo, Rosholt, Sisseton, South Shore, Stockholm, Twin Brooks, and Wilmot.

Figure 5. Area affected by Minnesota earthquake of July 9

INT. IV IN IOWA

Sioux City.

INT. IV IN MINNESOTA

Albany, Alexandria, Ashby, Audubon, Avon, Battle Lake, Bellingham, Bluffton, Brainerd, Carlos, Clitherall, Comstock, Corona, Correll, Danube, Deer Creek, Doran, Elrosa, Erhard, Farwell, Foxhome, Freeport, Garfield, Grove City, Hanley Falls, Hawley, Hazel Run, Henning, Hewitt, Kensington, Kerkhoven, Lake Lillian, Litchfield, Lowry, Long Prairie, Marietta, Marshall, Melrose, Motley, New London, New Munich, New York Mills, North Redwood, Olivia, Ottertail, Pillager, Porter, Raymond, Richwood, Sabin, Sacred Heart, Sebeka, Sedan, Staples, Starbuck, Vining, Wabasso, Wadena, Wendell, and Willmar.

INT. IV IN NORTH DAKOTA

Absaraka, Chaffee, Colfax, De Lamere, Dwight, Fairmount, Fingal, Gwinner, Havana, Horace, Leonard, Lisbon, Mapleton, McLeod, Mooreton, Oriska, Wahpeton, and Wyndmere.

INT. IV IN SOUTH DAKOTA

Aberdeen, Bancroft, Eden, Gary, Hazel, Iroquois, New Effington, Ortley, Peever, Strandburg, Stratford, Summit, Tulare, Turton, Veblen, and White Rock.

INT. III IN MINNESOTA

Baker, Bertha, Browerville, Eagle Bend, Georgetown, Hector, Hitterdal, Mankato, Melby, Menahga, Minneapolis, Moorhead, Morton, Prinsburg, St. Cloud, Sunburg, Svea, Swanville, Ulen, Vergas, Villard, and Wood Lake.

INT. III IN NORTH DAKOTA

Barney, Gardner, Harwood, Rutland, Sheldon, Stirum, and West Fargo.

INT. III IN SOUTH DAKOTA

Albee, Amherst, Conde, Elkpoint, Erwin, Florence, Garden City, La Bolt, Lake Norden, Lily, Mansfield, Pierpont, Verdon, and Watertown.

INT. II IN MINNESOTA

Battle Lake, Belgrade, Belview, Boyd, Callaway, Clarissa, Dent, Detroit Lakes, Dilworth, Evansville, Frazee, Garrison, Greenbush, Little Sauk, Milroy, Miltona, Morgan, Parkers Prairie, St. Paul, Vesta, and Walnut Grove.

INT. II IN NORTH DAKOTA

Davenport, Fargo (press), Forbes, Great Bend, Hickson, Milnor, Page, Valley City, and Verona.

INT. II IN SOUTH DAKOTA

Aberdeen, Athol, Bradley, Davis, De Smet, Frankfort, Marvin, Millbank (press), Oldham, and Sioux Falls (press).

Aug. 11. 20:40:28.7, CLE. Int. II at Dayton, Ohio.

Sept. 12. 19:25:02.8 (Sept. 13, 01:25). Epicenter 34.14°N, 97.37°W, southern Oklahoma, USGS. Int. IV at Wilson.

Nov. 29. 08:29:40.9 (14:29). Epicenter 34.52°N, 97.35°W, Oklahoma, USGS. Int. VI. The press reported that foundations cracked at two houses 5 km northwest of Foster.

INT. IV

Foster and Pernell.

INT. III

Alpers, Hennepin, and Maysville.

Dec. 2. 21:00:33.3 (Dec. 3, 03:00). Epicenter 36.54°N, 89.57°W, New Madrid, Mo., region, SLM. Int. VI 8 km northeast of New Madrid where plaster was cracked.

WESTERN MOUNTAIN REGION

(Time given in this region is mountain standard. If an epicenter is quoted, Universal Time is given in parentheses. This region includes Arizona, Colorado (western), Idaho, Montana, Nevada (eastern), New Mexico, Texas (western), Utah, and Wyoming.)

Jan. 16. 21:18:56.1 (Jan. 17, 04:18). Epicenter 47.44°N, 114.35°W, Montana, USGS. Int. IV at Dixon; int. III at Moiese.

Jan. 29. 13:08:23.9 (20:08). Epicenter 45.07°N, 111.47°W, Montana, USGS. Int. V. At West Yellowstone, several grocery items were knocked from shelves in a store; many in the community were frightened. Loud earth noises. Felt by all at Madison Junction, Wyo., where curtains "danced" and apartment shook from side to side. Int. III at West Gate Garage, Wyo.; int. II at Old Faithful, Wyo.

Jan. 30. 07:48:40.3 (14:48). Epicenter 39.27°N, 108.65°W, western Colorado, USGS. Int. V. Felt over a small area around Grand Junction, from De Beque on the north, south to Whitewater, and west to Mack. Awakened all in community at Colorado National Monument; frightened few. General rumbling for 5 seconds. At Whitewater, felt by all in community; awakened and frightened few. Int. IV at Clifton, Fruita, Grand Junction, Mack, Mesa, and Palisade; int. III at Loma; int. II at Austin (1.6 km west of) and De Beque.

Jan. 30. 08:14. Int. II at Nez Perce (Yellowstone National Park), Mont.

Jan. 31. 00:10. Int. IV at West Yellowstone, Mont. Several aftershocks were felt.

Jan. 31. 01:54:45.1 (08:54). Epicenter 48.17°N, 114.14°W, northwestern Montana, USGS. Int. VI. Felt over a north-south area of Flathead and Lake Counties, from Coram in the north to Ronan in the south. Plaster cracked at one residence in Martin City, and snow was shaken off house.

INT. VI

Martin City.--Felt by and awakened many; frightened few. Snow fell off house; plaster cracked. Moderate earth noises.

INT. V

Creston and Proctor.

INT. IV

Big Arm, Bigfork, Coram, Hungry Horse, Kalispell, Lakeside, Somers, and Swan Lake.

INT. II

Kila, Mountain Brook (press), Polson, and Ronan.

Feb. 3. 18:32:52.1 (Feb. 4, 01:32). Epicenter 48.21°N, 114.11°W, northwestern Montana, USGS. Int. VI. Felt over about 50,000 sq km of northwestern Montana and Alberta and British Columbia, Canada (see fig. 6). Minor damage, mostly broken glassware and cracked plaster, occurred at Creston, Kalispell, and Martin City.

INT. VI IN MONTANA

Creston.--Basement walls cracked; dishes broke (press). Aftershock felt at about 19:00.

Kalispell.--Felt by and frightened all in community. Plaster cracked. Loud earth noises. Hanging objects swung.

Martin City.--Felt by and frightened many in community. Plaster cracked. Windows rattled. Loud earth noises.

INT. V IN CANADA

Jaffray.

INT. V IN MONTANA

Big Arm, Columbia Falls, Coram, Lakeside, Marion, Proctor, Somers, Trego, and Whitefish (press).

Figure 6. Area affected by Montana earthquake of February 3

INT. IV IN MONTANA

Bigfork, Cascade (press), Evergreen (press), Hungry Horse, Kila, Olney, Swan Lake, and West Glacier.

INT. III IN CANADA

(Alberta) Bellevue, Blairmore, Coleman, and Glenwood.

(British Columbia) Baynes Lake, Cranbrook, Elko, Fernie, Kimberley, Michel, Natal, Pincher Creek, Top of the World Provincial Park, and Wardner.

INT. III IN MONTANA

Stryker.

INT. II IN CANADA

(Alberta) Waterton Park.

(British Columbia) Creston, Kootenay Bay, Marysville, and Sidar.

INT. II IN MONTANA

Elmo (near), Eureka, Fortine, Libby, Mountain Brook (press), Perma, and Polson.

Feb. 7. 20:14:29.4 (Feb. 8, 03:14). Epicenter 45.95°N, 111.34°W, western Montana, USGS. Int. IV at Manhattan; int. II at Belgrade (press), Bozeman (press), Gallatin Gateway, Springdale, Three Forks, and Trident.

Mar. 4. 20:48:04.9 (Mar. 5, 03:48). Epicenter 34.55°N, 107.05°W, central New Mexico, NMI. Int. II near Belen.

Mar. 25. Early p.m. Trident, Mont. Two people felt an earth disturbance. "People have been feeling slight earthquakes for several weeks now."

Mar. 25. 07:59:58.0 (14:59). Epicenter 42.67°N, 108.10°W, central Wyoming, USGS. Int. III at South Pass City; int. II at Jeffrey City and Riverton (press).

Mar. 26. 21:48:51.6 (Mar. 27, 04:48). Epicenter 42.07°N, 112.55°W, eastern Idaho, USGS. Int. V. This foreshock of the Mar. 27 earthquake at 19:31 was felt over a small area around Malad City, Idaho. At Malad City, many were awakened and frightened, but no

damage was sustained. Trees and bushes reportedly were shaken. At Stone, Idaho, small objects shifted and doors rattled. Int. IV at Cornish, Utah; int. III at Dayton and Holbrook, Idaho; int. II at Clifton, Paris, and Weston, Idaho, and Bear River City, Howell, Newton, and Smithfield, Utah.

Mar. 27. 16:00. Glen, Mont. Slight earthquake was reported felt by one person.

Mar. 27. 19:31:05.7 (Mar. 28, 02:31). Epicenter 42.06°N, 112.55°W, eastern Idaho, USGS. Int. VIII. This was the largest magnitude earthquake in the Idaho-Utah area since a magnitude 6.6 tremor occurred near Kosmo, Utah, in March 1934. It was preceded by a foreshock (mag. 4.4) about 22 hours earlier, and was followed by several small aftershocks, many of which were felt by area residents. Fourteen aftershocks ranging in magnitude from 3.8 to 4.7 were located by the USGS from March 27-31. The main earthquake was felt over approximately 160,000 sq km, including parts of Idaho, Utah, Nevada, Wyoming, and Colorado (see fig. 7).

The epicenter of the principal earthquake occurred in Pocatello Valley, Idaho (in the Ridgedale area), a sparsely populated region that was uninhabited at the time of the earthquake. Several of the ranch houses were shifted on their foundations and chimneys were knocked over. Geologists discovered one fracture zone in the snow in the south-central section of Pocatello Valley, but surface faulting was not in evidence. The fracture zone, which was thought to be the result of lurching, was about 0.6 km long and up to 5 cm in width. Many snow avalanches were triggered northeast of Pocatello Valley.

The nearest population center to the area is Malad City, Idaho, located about 20 km northeast of the epicenter. About 40% of the chimneys on old buildings were damaged in this city. Cracks occurred in plaster walls and around window and door frames of both old and new buildings. In the commercial area parapets were knocked down, plate glass windows were broken, and stock was thrown from grocery shelves. According to the Salt Lake City Deseret News, dated Apr. 22, 1975, damage to about 300 private houses and 11 business firms amounted to approximately $1 million.

INT. VIII IN IDAHO

Ridgedale area (Pocatello Valley).--Several houses in the area shifted off their foundations. On the Lee Fuhriman farm, one full corrugated-metal silo split open at the door (see fig. 8). A 24.7-cu m (700-bushel) bin shifted south, then north, rotating clockwise. One 123.3-cu m (3,500-bushel) bin collapsed at the 3- or 3.5-m level. One of the newer silos shifted sufficiently to break five of seven retaining rings; the bottom edges of two new silos were curled under (all silos were full). One 2 X 4 wooden crossbrace in the barn roof was split. A fuel tank overturned and a tractor-trailer moved from parking space, leaving skid marks. At the Seth Hamlin ranch, 2 km northeast of the Fuhriman farm, a 1.6-cu m (500-gallon) oil drum on stilts 1.5 m high and 1 m wide fell to the ground. The schoolhouse in Ridgedale, which sustained damage in the earthquake of March 1934, was again damaged. Snow avalanches were triggered northeast of Pocatello Valley.

The Salt Lake City Tribune of Mar. 30, 1975, reported that foundations of houses were cracked badly in the uninhabited farm area in Pocatello Valley near the Idaho-Utah border. (Most of these farms are inhabited only in the summer and fall.) Everything on shelves in homes fell to the floor. A 4536-kg (10,000-lb) farm tractor stored in a barn was moved about 0.3 m to the north.

INT. VII IN IDAHO

Malad City.--Felt by and frightened all. Chimneys cracked and twisted; plaster cracked. Small objects fell. Trees and bushes shook; vehicles rocked. Moderate damage. A USGS field inspection team visited the epicentral area soon after the earthquake occurred and reported the following:

"Many cracks were noted around windows and door frames. A tall brick chimney at the old high school was knocked down. The high school gymnasium separated from the main building, and acoustical wall panel fell down. The firehouse had cracks all around the tops of the walls. Chimneys of good, recent construction sustained no damage, but 40% of those on old structures were damaged to some extent."

The Salt Lake City Deseret News (dated Apr. 28, 1975) reported that a rock fireplace caved into the living room of a house at 181 Bannock, and that 3.6-cm cracks opened in the elementary school and the high school gymnasium.

Stone.--Felt by and frightened many in community. Cement garage floor cracked, plaster and windows cracked. Water was disturbed. Several bricks were knocked from two poorly constructed chimneys. Knickknacks and pictures were broken. Moderate damage.

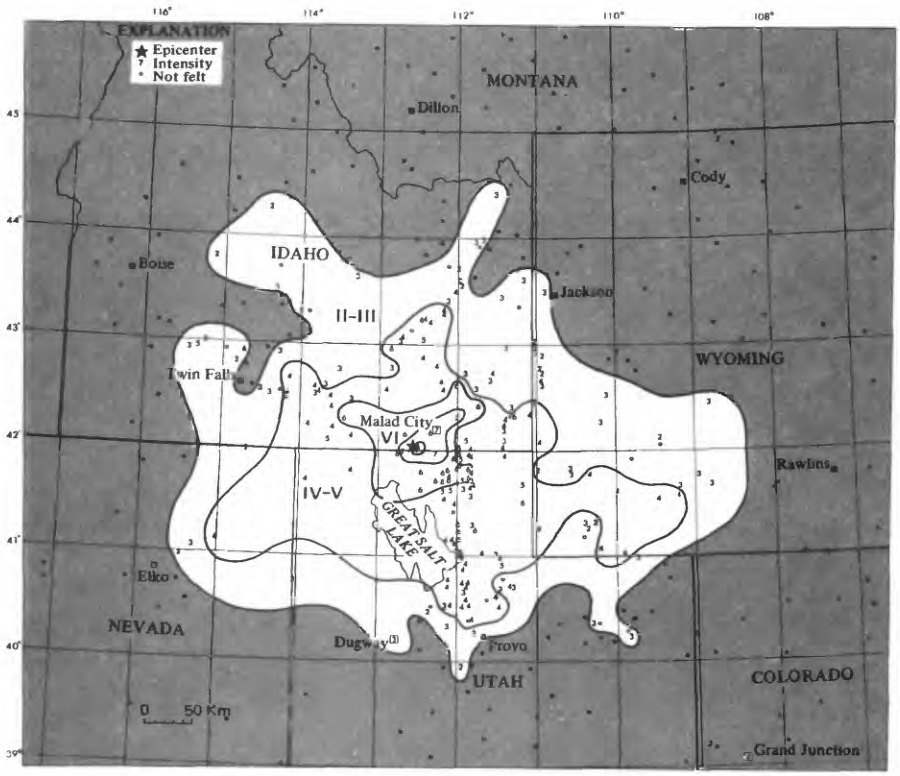


Figure 7. Area affected by Idaho earthquake of March 27

Figure 8. The March 27 earthquake damaged this metal silo in Pocatello Valley, Idaho

Figure 9. The March 27 earthquake left this damage on Main Street in Malad City, Idaho

Figure 10. B.N. Kahser measures fissures found along north Salt Lake foothills after March 27 earthquake

Swan Lake.--Felt by and frightened all in community. Water in wells became muddy. Hanging objects swung violently. Trees and bushes shook; vehicles rocked. No damage was found.

INT. VII IN UTAH

Portage.--Felt by and frightened all in community. Closets and other furniture shifted, overturned, and broke. Plaster fell in some homes. Canned goods fell from basement shelves and broke. Moderate damage.

INT. VI IN IDAHO

Dayton.--Felt by and frightened all. Cracks in ceilings and plaster. Small objects shifted.

Dingle.--Felt by most in community. Fireplace cracked slightly. Damage slight.

Gwenford.--Chimney of poor construction broke off at roofline (located 1.6 km north of Samaria).

Holbrook.--Frightened many in community. About 20% of the poorly constructed chimneys had loose bricks knocked off. At the Kent Smith ranch, 4 km east of Holbrook, a heavy console TV was knocked over and a new chimney cracked at the roofline and shifted south. Two old chimneys rotated counterclockwise. Much plaster cracked, wallpaper split, and light curtain rods fell off wall at one end. Dishes broke.

Lava Hot Springs.--Felt by all in high school gymnasium. Walls cracked. Hairline cracks in plaster. Damage slight.

Malta.--Felt by and frightened all in community. Garage floor cracked. Plaster cracked. Small objects shifted. Damage slight.

Moreland.--Plaster cracked. Furniture shifted. Damage slight.

Pleasant View.--Two houses had chimney damage. Bricks fell from one chimney onto roof; one was completely broken off 0.3 m above the roofline.

Samaria.--Several houses of poor to moderate construction had chimney damage. Bricks were found on roofs of three houses 2 km east of Samaria. At reservoir #2, a tall chimney broke at its base and shifted. The Salt Lake City Deseret News (dated Apr. 28, 1975) reported that the chandlier swung so hard it almost hit the ceiling in one home; most of the water spilled out of a bathtub.

St. John.--One chimney cracked; another chimney had three bricks knocked off. Both were of poor or old construction.

Thatcher.--Felt by and frightened many in community. Plaster cracked.

INT. VI IN UTAH

Bothwell.--One old chimney rotated 45° clockwise. About 11 km west of town in Blue Spring Hills, one brick was knocked off an old chimney.

Cache Junction.--Felt by and frightened all in community. Plaster cracked. Damage slight.

Clearfield.--Felt by and frightened many in community. Plaster cracked. Furniture shifted.

Deweyville.--Felt by all in community; frightened many. Furniture shifted. Slight damage. Small objects overturned and fell.

Fielding.--Frightened all in home. Three houses had bricks loosened in chimneys. Small objects fell. $100 in breakage.

Garland.--Bricks were knocked off one chimney.

Howell.--Felt by all in community; frightened all in home. One brick was knocked off an old chimney. Plaster cracked. Small objects fell.

Huntsville.--Felt by all and frightened many in community. Ceilings and walls cracked. Furniture moved. Small objects fell.

Logan.--Felt by many in community; few frightened. Chimneys were damaged. Damage slight.

Newton.--Felt by and frightened all in community. Plaster cracked. Small objects fell.

North Ogden.--Felt by and frightened all in home. Chairs and tables shifted approximately 5 cm.

Odgen.--Felt by all in home; few frightened. Plaster cracked.

Promontory.--Bricks were loosened or knocked from three old chimneys.

Riverside.--Felt by all in community; frightened many. Bricks were knocked from two old chimneys. Plaster cracked. Small objects shifted. Slight damage.

Smithfield.--Felt by many in community; frightened few. "Some people reported slight cracks." Damage slight.

Snowville.--Felt by all and frightened many in community. Ten percent of the poorly constructed or old chimneys were cracked; 1% sustained fallen bricks. Plaster cracked and fell. Windows cracked. Small objects overturned and broke. Hanging objects swung violently east-west. Moderate damage.

Tremonton.--Felt by all in community; frightened few. Bricks were loosened or displaced on a few old chimneys.

Woodruff.--Felt by and frightened many in community. Loose bricks fell onto roof from two old chimneys. Furniture shifted.

INT. VI IN WYOMING

Grover.--Disturbed water. Little damage.

INT. V IN IDAHO

Acequia, Albion, Almo, Arimo, Blackfoot, Bridge, Clifton, Declo, Eden, Elba, Fort Hall, Glenns Ferry, Gooding, Hazelton, Inkom, Lewisville, McCammon, Oakley, Paul, Picabo, Preston, Rockland, Twin Falls, and Weston.

INT. V IN UTAH

Altamont, Bear River City, Bingham Canyon, Coalville, Collinston, Corinne, Cornish, Eden, Farmington, Garland, Grouse Creek, Honeyville, Hyde Park, Kaysville, Layton, Lewiston, Mendon, Oakley, Richmond, Randolph, Saltair, Sandy, Trenton, and Wellsville.

INT. V IN WYOMING

Freedom, Lonetree, McKinnon, Reliance, and Thayne.

INT. IV IN IDAHO

Aberdeen, Basalt, Burley, Conda, Firth, Fish Haven, Franklin, Geneva, Georgetown, Heyburn, Idaho Falls, Montpelier, Ovid, Paris, Pocatello, St. Charles, Soda Springs, and Springfield.

INT. IV IN NEVADA

Montello and Wells.

INT. IV IN UTAH

American Fork, Brigham City, Draper, Echo, Farmington, Garden City, Hill Air Force Base, Hooper, Hunter, Hyrum, Lark, Layton, Magna, Manila, Midway, Millville, Morgan, Neda, Park City, Park Valley, Peoa, Riverton, Roosevelt, Roy, Salt Lake City, Wendover, and Woods Cross.

INT. IV IN WYOMING

Big Piney, Cokeville, Evanston, Fairview, Granger, Green River, La Barge, Opal, Point of Rocks, and Rock Springs.

INT. III IN COLORADO

Clark.

INT. III IN IDAHO

American Falls, Arco, Atomic City, Bancroft, Birmington, Bear Lake, Dietrich, Grace, Hagerman, Hailey, Hammett, Kimberly, King Hill, Minidoka, Murtaugh, Parker, Rupert, Saint Anthony, Shelley, Sterling, Swan Valley, Ucon, Victor, and Wayan.

INT. III IN NEVADA

Deeth.

INT. III IN UTAH

Altamont, Bountiful, Cedar Valley, Dugway, Eden, Garland, Heber City, Henefer, Kamas, Murray, Orem, Paradise, Providence, and Randlett.

INT. III IN WYOMING

Elk Mountain, Etna, Ft. Bridger, Frontier, Kemmerer, Smoot, Superior, and Wilson.

INT. II IN COLORADO

Glade Park.

INT. II IN IDAHO

Atlanta, Clayton, Iona, and Menan.

INT. II IN NEVADA

Halleck and Jackpot.

INT. II IN UTAH

Elberta, Fillmore, Ibapah, and Stockton.

INT. II IN WYOMING

Afton, Auburn, Bedford, Deaver, Etna, Farson, Lyman, Mountain View, and Saint Stephens.

Mar. 28. 06:11:16.6 (13:11). Epicenter 42.05°N, 112.48°W, eastern Idaho, U. Int. II-IV throughout southern Idaho and northern Utah.

Mar. 28. 09:15:06.9 (16:15). Epicenter 42.03°N, 112.53°W, eastern Idaho, U. Int. II-III throughout southern Idaho and northern Utah.

Mar. 28. 22:44:32.6 (Mar. 29, 05:44). Epicenter 42.08°N, 112.45°W, eastern Idaho, U. Int. II-IV throughout southern Idaho and northern Utah.

Mar. 29. 06:01:19.8 (13:01). Epicenter 42.02°N, 112.52°W, eastern Idaho, U. Int. V in Utah at Deweyville and Riverside; int. IV in Utah at Cache Junction, Clarkston, Collinston, Corinne, Farmington, Fielding, Garland, Hooper, Howell, Layton, Mendon, Millville, Portage, and Trenton; int. III in Idaho at Atomic City, Grace, Malad City, Rockland, Shelley, and Tetonia; int. III in Utah at Bear River City, Draper, Murray, and Woodruff; int. III in Wyoming at Etna; int. II in Idaho at Alamo, Clifton, and Preston; int. II in Utah at Grouse Creek, Ibapah, Kearns, Stockton, and Wellsville; int. II in Wyoming at Mountain View, Saint Stephens, and Wilson.

Apr. 25. 20:26. The press reported a minor earthquake rattled some buildings in the Carson City, Nev., area on this date. It was recorded at the University of Nevada at Reno.

May 2. 01:56:58.8 (08:56). Epicenter 46.18°N, 111.44°W, Montana, USGS. Int. V at Radersburg and Trident (3 shocks were felt between 1-3 a.m. m.d.t.); int. IV at Logan and Manhattan; int. III at Toston.

May 2. 02:22:56.5 (09:22). Epicenter 46.16°N, 111.64°W, Montana, USGS. Int. II at Trident.

May 2. 04:27:55.8 (11:27). Epicenter 46.13°N, 111.70°W, Montana, USGS. Int. II at Trident.

June 20. 03:54:44.0 (10:54), 04:10. Epicenter 45.00°N, 111.22°W, Montana, USGS. The naturalist living in Norris Geyser Basin Museum reported that he was awakened several times by tremors between 3 and 5 a.m. m.s.t. Int. IV at Madison Junction (03:10, 03:54, and 04:10), and Norris Geyser Basin, in Yellowstone National Park, Wyo.

June 29. 20:26:47.2 (June 30, 03:26). Epicenter 42.11°N, 112.47°W, eastern Idaho, SLC. Int. II at Malad City, Idaho, and Snowville, Utah.

June 30. 11:54:13.4 (18:54). Epicenter 44.75°N, 110.61°W, Yellowstone National Park, Wyo., USGS. Int. VII. Felt over about 50,000 sq km of Wyoming, Montana, and Idaho. Also reported felt in at least one town in South Dakota, Nebraska, Utah, and Washington (see fig. 11). According to press reports, rock or landslides closed or hindered traffic on many roads in Yellowstone National Park. About 91 kg of rock was cleared from the largest slide between Norris and Madison. Rocks fell from Obsidian Cliff along the Virginia Cascade. Geysers in the Park were affected, some becoming more active and louder in the Park after the earthquake. The Powell, Wyo., Tribune, dated July 15, 1975, stated: "Two new geysers formed, the Gibbon River was muddied, and the earth settled and cracked in the back country." Telephone service was out for several hours at Madison, Old Faithful, and West Yellowstone. A resident of Livingston, Mont., driving north of Gardiner (on Route 89) at a speed of 80 kph, reported that for 20 to 30 seconds, it felt as though the road were corrugated. Several aftershocks occurred in the area through early July.

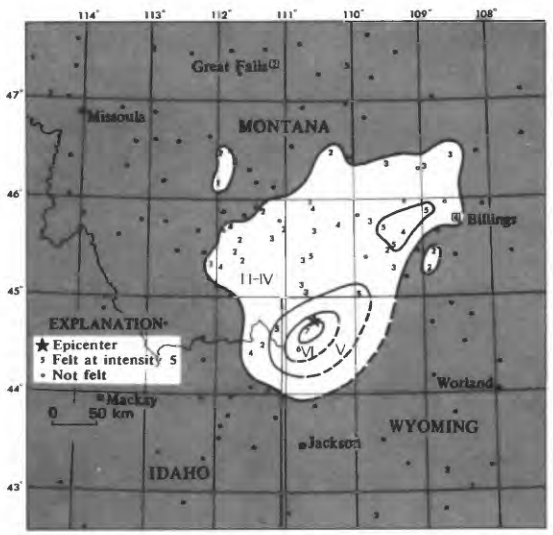


Figure 11. Area affected by Wyoming earthquake of June 30

INT. VII IN WYOMING

Norris Junction (Yellowstone National Park).--Chimney fell; cracks 90 m long occurred in a hard-packed parking lot (land at both ends of lot was swampy).

INT. VI IN WYOMING

Old Faithful (Yellowstone National Park).--Many small objects were broken in gift shop (press). Telephone service was disrupted.

INT. V IN MONTANA

Cooke City, Molt, Pray, Reedpoint, and West Yellowstone.

INT. IV IN IDAHO

Island Park.

INT. IV IN MONTANA

Absarokee, Bearcreek, Billings (press), Clyde Park, Columbus, Harrison, Silvergate, Springdale, Virginia City, and West Fork.

INT. IV IN WASHINGTON

Albion.

INT. III IN IDAHO

Huston.

INT. III IN MONTANA

Alder, Coffee Creek, Corwin Springs, Emigrant, Gallatin Gateway, Gardiner, Greycliff, Lavina, Livingston, Luther, Roundup, Shawmut, and Wilsail.

INT. II IN IDAHO

Donnelly, Elk River, Macks Inn, Moyie Springs, and Silverton.

INT. II IN MONTANA

Alberton, Boulder, Bozeman (press), Bridger, Clancy, Edgar, Fishtail, Fort Harrison, Great Falls (press), Homestead, Jeffers, Manhattan, Martinsdale, McAllister, Norris, Stockett, and Sula.

INT. II IN SOUTH DAKOTA

Provo.

INT. II IN NEVADA

Wells.

INT. II IN UTAH

Snowville.

INT. II IN WASHINGTON

Clarkston.

INT. II IN WYOMING

Boulder and Morton.

June 30. 12:17:04.8 (19:17). Epicenter 44.92°N, 110.65°W, Yellowstone National Park, Wyo., USGS. Int. II at Wolf Lake (USGS).

June 30. 13:20:56.6 (20:20). Epicenter 44.69°N, 110.59°W, Yellowstone National Park, Wyo., USGS. Int. III at Tower Junction (USGS).

June 30. 21:16:22.5 (July 1, 04:16). Epicenter 44.79°N, 110.74°W, Yellowstone National Park, Wyo., USGS. Int. II at Mammoth Hot Springs, Norris Junction, and Tower Junction.

July 1. 08:57:47.8 (15:57). Epicenter 44.79°N, 110.74°W, Yellowstone National Park., USGS. Int. II at Norris Junction.

July 2. 01:29:29.6 (08:29). Epicenter 44.79°N, 110.76°W, Yellowstone National Park, Wyo., USGS. Int. II at Norris Junction.

July 5. 12:17:39.0 (19:17). Epicenter 44.71°N, 110.62°W, Yellowstone National Park, Wyo., USGS. Int. IV. Felt by all vacationers staying at Yellowstone Village Cabins. Int. III at Canyon Village.

July 5. 13:08:29.7 (20:08). Epicenter 44.76°W, 110.64°W, Yellowstone National Park, Wyo., USGS. Int. III at Norris Junction.

July 6. 17:51:27.9 (July 7, 00:51). Epicenter 44.76°N, 110.57°W, Yellowstone National Park, USGS. Int. II at Canyon and Norris Junction.

July 8. 02:37:27.3 (09:37). Epicenter 29.46°N, 113.35°W, western Arizona-Mexico border region, USGS. Int. II at Tucson, Ariz.

July 11. 09:39:22.1 (16:39). Epicenter 41.98°N, 106.73°W, southeastern Wyoming, USGS. Int. II at Rawlins.

July 13. 03:01:07.2 (10:01). Epicenter 44.71°N, 110.67°W, Yellowstone National Park, Wyo., USGS. Int. IV at Canyon (some aftershocks).

July 18. 08:06:22.5 (15:06). Epicenter 46.72°N, 112.12°W, western Montana, USGS. Int. IV at Big Arm, Fort Harrison, Helena, and Marysville; int. III at Clancy and Rollins; int. II at Austin, Galata, Great Falls (press), Jeffers, and Missoula (press).

July 18. 11:39:02.6 (18:39). Epicenter 46.69°N, 112.13°W, western Montana, USGS. Int. II in Helena area.

July 19. 05:00:22.8 (12:00). Epicenter 46.69°N, 112.10°W, western Montana, USGS. Int. II in Helena area.

Aug. 1. 00:27:57.3 (07:27). Epicenter 31.43°N, 104.01°W, southwestern Texas, USGS. Int. II at Valentine.

Sept. 9. 23:39:42.5 (Sept. 10, 06:39). Epicenter 38.48°N, 112.56°W, southwestern Utah, USGS. Int. II at Beaver, Covefort, and Sulphurdale.

Sept. 12. 11:26:06.4 (18:26). Epicenter 42.07°N, 112.57°W, eastern Idaho, U. Int. III in Utah at Portage and Riverside; int. II in Idaho at Holbrook.

Sept. 13. 21:13:24.2 (Sept. 14, 04:13). Epicenter 41.87°N, 112.43°W, northern Utah, USGS. Int. III in Utah at Portage and Riverside; int II in Idaho at Holbrook.

Sept. 22. 03:42:36.2 (10:42). Epicenter 42.08°N, 112.45°W, eastern Idaho, U. Int. IV at Holbrook, Idaho, and Portage, Utah.

Oct. 6. 08:50:46.9 (15:50). Epicenter 39.07°N, 111.45°W, central Utah, USGS. Int. II at Manti.

Oct. 20. 07:17:54.8 (14:17). Epicenter 48.20°N, 114.28°W, northwestern Montana, USGS. Int. IV at Big Arm; int. III at Somers.

Oct. 30. 12:06. Int. II at Somers, Mont. (telephone report).

Dec. 3. 03:12:22.8 (10:12). Epicenter 32.83°N, 108.66°W, New Mexico, USGS. Int. V at Mule Creek and Redrock, N.M., and Duncan, Ariz.; int IV at Buckhorn, Cliff, Fort Bayard, Gila, and Silver City, N.M. (press).

CALIFORNIA AND WESTERN NEVADA

(Time given in this region is Pacific standard. If an epicenter is quoted, Universal Time is given in parentheses. All towns are located in California unless otherwise noted.)

Jan. 2. 21:55:31.6 (Jan. 3, 05:55). Epicenter 33.55°N, 117.65°W, southern California, P. Int. IV at Laguna Beach, San Clemente, South Laguna Beach, and Trabuco Canyon; int. III at Dana Point and Laguna Hills; int. II (reported by the press) at El Toro, Newport Beach, San Juan Capistrano, and Santa Ana.

Jan. 2. 22:00:52.8 (Jan. 3, 06:00). Epicenter 33.53°N, 117.63°W, southern California, P. Int. IV at Laguna Beach; int. II at El Toro (press), Mission Viejo (press), San Clemente (press), and San Juan Capistrano (press).

Jan. 6. 03:17:12.3 (11:17). Epicenter 35.93°N, 120.53°W, central California, USGS. Felt over an area of about 18,000 sq km of the coastal area of southern California. Int.

V at Atascadero, Avila Beach, Bradley, Cayucos, Cholame, Coalinga, Creston, Harmony, Huron, Jolon, San Ardo, San Luis Obispo, San Simeon, and Templeton; int. IV at Arroyo Grande, Avenal, Cambria, King City, Lockwood, Morro Bay, Paso Robles, San Juan Bautista, San Miguel, Santa Margarita, and Shandon; int. III at Gonzales; int. II at Camp Roberts, Santa Maria (press), and Soledad.

Jan. 7. 18:05. Int. III at Eureka and Ferndale.

Jan. 7. 18:55. Int. III at Eureka; int. II at Ferndale.

Jan. 11. 17:37:17.2 (Jan. 12, 01:37). Epicenter 40.22°N, 124.26°W, near coast of northern California, B. Felt over an area of about 7,000 sq km (see fig. 12). Int. VI at Petrolia where the earthquake was felt by all; frightened many. One TV antenna fell; small amount of chimney damage was reported. Small objects fell. Int. V at Ferndale, Honeydew, and Loleta; int. IV at Alderpoint, Bayside, Blue Lake, Bridgeville, Eureka, Fortuna, Garberville, Hydesville, Miranda, Piercy, Rio Dell, Samoa, Scotia, Westhaven, and Whitethorn; int. III at Blocksburg, Kneeland, Phillipsville, Redcrest, Trinidad, and Willow Creek; int. II at Burnt Ranch.

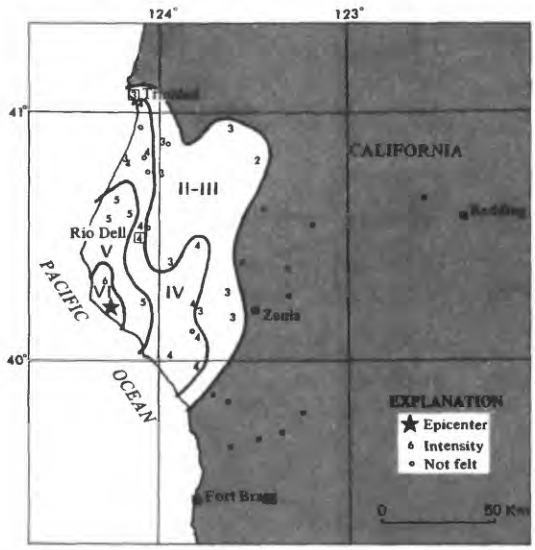


Figure 12. Area affected by northern California earthquake of January 11

Jan. 12. 13:22:14.9 (21:22). Epicenter 32.80°N, 117.97°W, off coast of California, P. Int. IV at Anaheim, Avalon (Catalina Island), Lakeside, and La Jolla; int. III at Laguna Beach, Los Angeles, San Diego, Santa Ana, Seal Beach, and Winchester; int. II at Glendale, El Cajon (press), El Toro, Lakeside (press), Newport Beach, and San Clemente-San Diego area (press).

Jan. 13. 03:21:49.9 (11:21). Epicenter 33.82°N, 118.08°W, southern California, P. See fig. 13 for a plot of the intensity data. Int. VI at Lakewood where the earthquake awakened all in community. The press reported minor damage at Long Beach where many were awakened and frightened. Long Beach observer reported plaster cracked and fell "in other apartments." Int. V at Anaheim, Bell, Bellflower, Compton, Cypress, Downey, Lynwood, Maywood, Paramount, Seal Beach, Signal Hill, and Wilmington; int. IV at Artesia, Cardiff by the Sea, Hermosa Beach, Huntington Beach, Huntington Park, Los Angeles, Sunset Beach, Temecula, Vista, Westminster, Whittier, and Winchester; int III at Bloomington, Carson (press), Cypress, La Mirada, Monterey Park, Mt. Baldy, Pico Rivera, Placentia, Stanton, and Torrance; int. II at Mt. Wilson.

Jan. 13. About 15:00. Int. III at Etiwanda.

Jan. 13. 23:58:41.3 (Jan. 14, 07:58). Epicenter 33.82°N, 118.07°W, southern California, P. Int. V in Long Beach area, but no damage occurred. The press reported

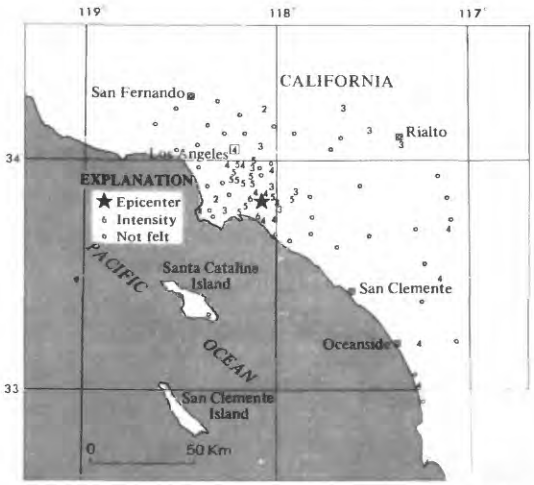


Figure 13. Area affected by southern California earthquake of January 13

that the earthquake was felt at Anaheim, Buena Park, Cypress, Downey, Huntington Beach, Lakewood, La Palma, Long Beach, and Santa Ana.

Jan. 21. 08:47:35.3 (16:47). Epicenter 32.93°N, 115.50°W, California-Mexico border region, P. Int. VI at Calipatria where the tremor was felt by all in home. Plaster fell; bricks separated. Small objects and furniture shifted. Int. V at Brawley, Calexico, Heber, and Seeley; int. IV at Lone Pine.

Jan. 22. 19:48:43.2 (Jan. 23, 03:48). Epicenter 33.92°N, 118.63°W, southern California, P. The press reported the earthquake was felt in the West Los Angeles area (int. III).

Jan. 23. 04:30:16.8 (12:30), 04:42:52.0 (12:42), 04:55:48.8 (12:55), 05:02:07.5 (13:02), 05:47:19.8 (13:47). Epicenters (1, 3, 4, and 5) 32.93°N, 115.48°W; (2) 32.92°N, 115.48°W, California-Mexico border region, P. These were part of a series of about 50 earthquakes that centered in the Brawley area on Jan. 23, 24, and 25. They were felt throughout Imperial Valley, according to press reports. The first tremor was int. IV at Mount Laguna and III at Palo Verde.

Jan. 23. 09:02:29.7 (17:02). Epicenter 32.96°N, 115.49°W, southern California, P. Felt over about 14,000 sq km of southern California and western Arizona (see fig. 14). Int. VII. This was the largest earthquake of the series that occurred near Brawley through Jan. 25. Felt throughout Imperial Valley, the shock caused extensive minor damage in Brawley, Calipatria, Calexico, and El Centro. The Brawley News (Jan. 28, 1975) reported damage at Brawley's Mayfair Market at about $3000; Cook's Market, several thousand dollars; Safeway, $800; and National Store, $2000. It also stated that a crack was discovered in the pavement of Keystone Road southeast of Brawley. Near there, cracks occurred in a private canal.

INT. VII

Brawley.--Felt by all; some frightened. Minor plaster cracks; windows broken. Small objects fell. According to the Imperial Valley Press (Jan. 23, 1975), several light fixtures fell from the ceiling at the National Store on Main Street and cracks appeared in outside wall ($2000 damage). Bits of plaster fell from some buildings on East Main Street.

Calipatria.--Felt by all in community; frightened many. A large crack appeared in the upper floor wall of the post office. Small pieces of plaster fell. Furniture shifted.

INT. VI

Calexico.--Felt by all in community; frightened few. Furniture shifted. The

Imperial Valley Press (Jan. 23, 1975) reported: Ceiling plaster cracked at De Anza Hotel; cracks along top of building, near roof, at Longhorn Motel; much merchandise damaged at Safeway.

El Centro.--Imperial Valley Press (Jan. 23, 1975) reported that the arcade buckled in front of Davell's shoe store on Main Street.

Ocotillo (5 km south of).--Fireplace cracked from top to bottom; tile flue lining split.

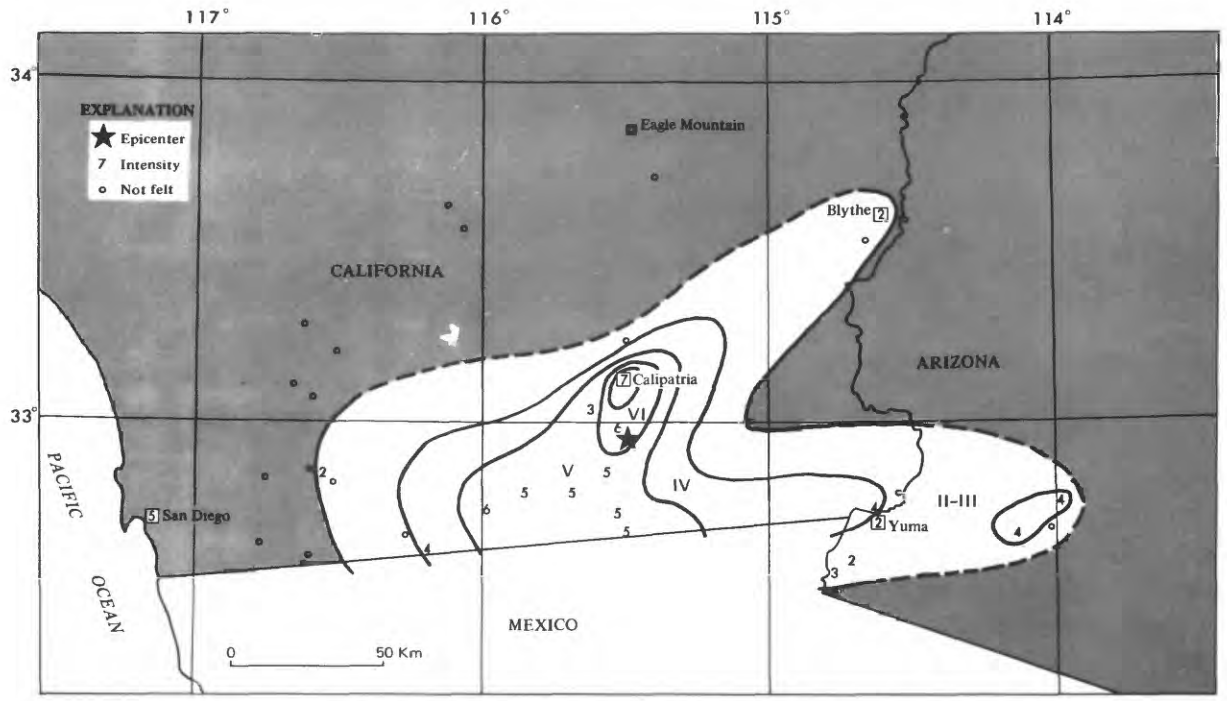


Figure 14. Area affected by southern California earthquake of January 23

INT. V

Heber, Imperial, Plaster City, San Diego, and Seeley.

INT. IV

Jacumba, Westmorland, and Winterhaven.

INT. IV IN ARIZONA

Roll, Wellton, and Yuma (press).

INT. III IN ARIZONA

Gadsden.

INT. II

Blythe and Guatay.

Jan. 23. 15:24:33.9 (23:24). Epicenter 33.01°N, 115.50°W, southern California, P. Int. VI. According to the El Centro Press (Jan. 24, 1975), the earthquake at 15:24 caused the most damage in Brawley's Northend. Ceiling tiles fell to the floor at the Mayfair Market and Thrifty's; a fine-line crack developed in the drugstore wall.

Jan. 27. 21:22:23.5 (Jan. 28, 05:22). Epicenter 34.19°N, 118.54°W, southern

California, P. Int. II in the Woodland Hills area of San Fernando, North Hollywood, Northridge, and Studio City according to the press.

Jan. 28. 05:53:16.4 (13:53). Epicenter 40.42°N, 125.45°W, off coast of northern California, USGS. Int. V. No damage was sustained but int. V effects occurred at Eureka, Fortuna, and Loleta; int. IV at Arcata, Bayside, Ferndale, Miranda, Rio Dell, and Scotia.

Feb. 10. 04:51:17.5 (12:51). Epicenter 34.40°N, 116.65°W, southern California, P. Int. IV at Apple Valley, Big Bear Lake, Fawnskin, Running Springs, and Winchester; int. III at Big Bear City and Morongo Valley; int. II at Arrowhead Lake, Barstow, Landers (press), Lucerne Valley, and White Water.

Feb. 12. 04:03:17.8 (12:03). Epicenter 35.97°N, 120.14°W, central California, USGS. Int. IV at Avenal (Kings County).

Feb. 16. 16:47:39.2 (Feb. 17, 00:47). Epicenter 33.00°N, 115.50°W, southern California, P. Int. II at Brawley.

Feb. 16. 16:53:01.4 (Feb. 17, 00:53). Epicenter 33.00°N, 115.50°W, southern California, P. Int. II at Brawley.

Feb. 16. 17:28:09.3 (Feb. 17, 01:28). Epicenter 40.44°N, 126.23°W, off coast of northern California, USGS. Int. II at Eureka.

Feb. 16. 20:57:49.2 (Feb. 17, 04:57). Epicenter 37.89°N, 121.99°W, central California, B. Int. III at Alamo; int. II at Berkeley, Danville, Ferndale, Lafayette, San Ramon, and Walnut Creek.

Feb. 18. 01:48:25.6 (09:48). Epicenter 33.92°N, 117.75°W, southern California, P. Int. II in Orange County.

Feb. 19. 19:58:10.8 (Feb. 20, 03:58). Epicenter 37.34°N, 121.32°W, central California, B. Int. II east of Mt. Hamilton.

Feb. 21. 11:36. Int. II at Ferndale.

Feb. 27. 14:22:55.2 (22:22). Epicenter 36.21°N, 121.65°W, central California, B. Int. II at Carmel Valley.

Mar. 3. 03:34:56.0 (11:34). Epicenter 36.94°N, 121.48°W, central California, B. Int. IV at Hollister, San Juan Bautista, Tres Pinos, and Watsonville; int. III at San Jose (felt on fifth floor); int. II at Moss Landing (Monterey County).

Mar. 3. 07:34:45.1 (15:34). Epicenter 33.93°N, 118.28°W, southern California, P. Int. VI. Minor damage occurred at Compton where the earthquake was felt by many and frightened few. Plaster cracked. Joints in concrete walk separated. Windows broke at Gardena (press).

INT. V

Santa Monica and Torrance.

INT. IV

El Segundo, Hawthorne, Inglewood, and South Gate.

INT. III

Huntington Park, Los Angeles, Manhattan Beach, Redondo Beach, and Sun Valley.

INT. II

Culver City, Downey, Lawndale, Long Beach, and Pico Rivera.

Mar. 3. 08:42:19.2 (16:42). Epicenter 34.33°N, 118.25°W, southern California, P. Int. II in Glendale-La Crescenta area (press).

Mar. 15. 12:59:43.2 (20:59). Epicenter 36.93°N, 121.49°W, central California, B. Int. II at Hollister (press).

Mar. 16. 16:13:44.7 (Mar. 17, 00:13). Epicenter 34.15°N, 117.47°W, southern California, P. Felt in western San Bernardino and Riverside Counties (press). Int. III at Etiwanda; int. II at Fontana and Ontario (press).

Mar. 19. 12:59:37.6 (20:59). Epicenter 39.22°N, 122.48°W, northern California, B. Int. II at Santa Cruz (press).

Apr. 3. 20:30 to 20:45. Int. III at Etiwanda. Three shocks were reported.

Apr. 4. 10:53:31.3 (18:53). Epicenter 32.98°N, 116.39°W, southern California, P. Int. III at Etiwanda and San Bernardino.

Apr. 10. 07:27:16.6 (15:27). Epicenter 35.56°N, 118.40°W, central California, P. Int. IV in Old Claraville area, south of Lake Isabella.

Apr. 11. 13:06:06.2 (21:06). Epicenter 34.08°N, 118.94°W, southern California, P. Int. IV at Camarillo (press).

Apr. 17. 01:18:33.8 (09:18). Epicenter 35.77°N, 118.54°W, central California, P. Int. V at Glennville, where all in community were awakened and small objects fell; furniture shifted at Bodfish and many were awakened. Int. IV at Camp Nelson, Johnsondale, Onyx, Springville, Weldon, and Wofford Heights; int. III at Miracle Hot Springs; int. II at California Hot Springs and Porterville.

Apr. 17. 17:41:32.4 (Apr. 18, 01:41). Epicenter 37.94°N, 122.32°W, central California, B. Int. V at Richmond, where all residents felt the earthquake, and at El Cerrito, where telephone lines were downed (press). The Berkeley Gazette (Apr. 20, 1975) reported that residents of Richmond and El Cerrito thought the Standard Oil Plant in Richmond had exploded. One woman said cups flew off her kitchen shelf. Telephones, according to the press, went dead. The Independent Gazette switchboard was knocked out for 5 minutes. Int. IV at Port Costa; int. III at Crockett, El Sobrante, Hercules, Pinole, Rodeo, San Pablo, and San Rafael; int. II at Albany, Berkeley (press), East Bay area, Federal, Terrace, Ross, San Francisco, and Vallejo.

Apr. 19. 20:11:18.3 (Apr. 20, 04:11). Epicenter 35.57°N, 118.38°W, central California, P. Int. II at Lake Isabella.

May 2. 10:03:23.1 (18:03). Epicenter 35.22°N, 117.63°W, central California, P. Int. III at Johannesburg (press) and Los Angeles; int. II at Ridgecrest.

May 4. 22:29:55.1 (May 5, 06:29). Epicenter 38.64°N, 119.69°W, California-Nevada border region, B. Int. II at Markleeville.

May 6. 18:35:28.6 (May 7, 02:35). Epicenter 40.38°N, 124.81°W, northern California, USGS. Int. II at Petrolia.

May 12. 16:21:35.6 (May 13, 00:21). Epicenter 35.00°N, 119.10°W, central California, P. Felt over an area of approximately 20,000 sq km. Int. V. Furniture shifted at Bakersfield; small objects shifted and overturned at Maricopa. Int. V affects also occurred at Lake Hughes and Santa Barbara, where all in the community felt the earthquake. Int. IV at Frazier Park and Summerland; int. III at Cuyama, Lamont, Lebec, McKittrick, Taft, and Thousand Oaks; int. II at Buttonwillow, Carpenteria, Glendale, Goleta (press), Keeler, Lancaster, Llano, Los Angeles (press), Mojave, Mount Wilson, Pond, Rolling Hill Estates, Santa Monica (press), Shaver Lake, Simi, Tarzana, and Woodland Hills.

May 31. 17:38:49.2 (June 1, 01:38). Epicenter 34.52°N, 116.50°W, southern California (Galway Lake area of San Bernardino Counry), P. Int. IX at epicenter. The epicentral area is generally uninhabited, which accounts for the low intensities reported from cities in the region. The following paragraphs are from Beeby and Hill (1975):

"Observed surface effects of the 31 May 1975 earthquake were of two types, ground rupture and ground shaking. Ground cracks were arranged in a left-stepping en echelon pattern indicative of right lateral strike-slip movement. This was confirmed by detailed examination of individual cracks which showed right lateral offsets ranging between 2 and 15 millimeters. Surface rupture, beginning about 1 kilometer north of Galway Lake and extending south toward Emerson Lake, was mapped for a distance of 6.8 kilometers in a zone up to 100 meters wide. It is proposed that this zone of rupture be named the Galway Lake fault.

"Ground rupture caused by the Galway Lake earthquake followed the trace of a pre-existing unmapped fault through the study area. Eroded older scarps, sheared basement highs and aligned dikes were common in the central portion of the new rupture zone. Shallow exploration pits dug across the cracks showed caliche filled older cracks and roots concentrated in the cracked zone. These features indicate that previous Quaternary ground rupture had occurred on the Galway Lake fault. Reconnaissance on the nearby

Emerson fault showed no evidence of surface rupture or movement caused there by the 31 May earthquake.

"Ground shaking effects, including cracking, overturned boulders, disrupted surfaces, rolled rocks, and collapsed animal burrows, were common in the central section of the Galway Lake rupture zone.

"The surface effects, especially ground cracking, were badly degraded due to heavy winds and drifting sand during the course of study. Fortunately, quantitative measurements had already been made...."

INT. IV

Aguanga, Amboy, Barstow, Cathedral City, Cedarpines Park, Lucerne Valley, San Bernardino, and Yermo.

INT. III

Bryn Mawr, Fawnskin, Joshua Tree, Morongo Valley, and Upland.

INT. II

Big Bear Lake, Daggett, Helendale, Indio, Rimforest, and Thermal.

June 5. 06:46:45.3 (14:46). Epicenter 35.05°N, 119.00°W, central California, USGS. Int. V. Felt throughout the Bakersfield area of Kern County. Trees and bushes shook at Lone Pine and California Hot Springs. At the latter town, snow fell from steep banks. At Pumpkin Center, a sofa moved (shifted). Int. IV at Lebec, Red Mountain, and Tupman; int. III at La Canada and Taft; int. II at Bradley, Camp Keweah, Cholame, Lytle Creek, Oro Grande, and Wheeler Ridge (press).

June 7. 00:46:22.4 (08:46). Epicenter 40.57°N, 124.14°W, northern California, USGS. Int. VII. Felt over approximately 25,000 sq km of northern California (see fig. 15). Moderate structural damage to chimneys and water mains occurred at Fortuna and Rio Dell; landslides were reported in the area. The following report was taken from Nason, et al (1975):

"An aerial reconnaissance of seismic-induced landslides in the Fortuna and Rio Dell areas... (showed) two types of apparent syntectonic landslide activity: 1) Various small portions of the Eel and Van Duzen River banks sloughed near Fortuna and Rio Dell. 2) Rock and soil falls from hardwall scarps of previously existing landslides were noticed in the upper reaches of Eel River and Salmon Creek." (Note: Landslides usually are associated with higher intensities than given here. However, this area has landslides at other times that are not seismically induced.)

INT. VII

Bear River.--More than 20% of the chimneys were damaged 3 km and 6 km east of Ferndale, Petrolia Road (USGS).

Carlotta.--Felt by, awakened, and frightened all. Chimneys cracked and twisted. Plaster cracked. Small objects fell. Hanging objects swung violently. "Severe jolt."

Fernbridge.--Felt by and frightened many in community. Water was disturbed. Chimney cracked. Plaster and windows cracked; furniture shifted. Hanging objects swung violently. Damage moderate to great.

Ferndale.--Felt by, awakened, and frightened all in community. Four chimneys twisted. One was badly cracked; shifted top 1/2 in. (1.3 cm). Plaster cracked; furniture shifted. Dishes, jars, bottles, etc., were broken. Hanging objects swung violently. The following was reported by the Eureka, Calif., Times Standard (dated June 8, 1975): "Ferndale suffered surprisingly little damage. Only one business window was broken, although a couple of others were cracked. There was quite a bit of goods bounced off shelves in houses and businesses."

Fielding.--Pipe broke in front of College of the Redwoods, southeast of Fields Landing (USGS). Walls cracked.

Fortuna.--Felt by and awakened all; frightened few; 10 weak chimneys toppled, 20 more were damaged (USGS). Sidewalks cracked and some sank 1/4 in. (0.7 cm). Furniture shifted (free-standing medicine cabinet in bathroom shifted, spilling some of its contents).

Plaster cracked and fell; windows cracked. Damage moderate. The Eureka, Calif., Times Standard (dated June 8, 1975) reported: "Main street in Fortuna was littered with the splintered remains of the shopping district's plate glass display windows, and a major casualty in the city was damage to the chimneys of many residences. The Fortuna United Methodist Church, 922 N St., suffered major damage to the building's interior and to the large, custom-built pipe organ. Goble's Mortuary, 560 12th St., reported many windows smashed, its pipe organ damaged and inoperative, and a large number of caskets damaged when they were jarred from their stands."

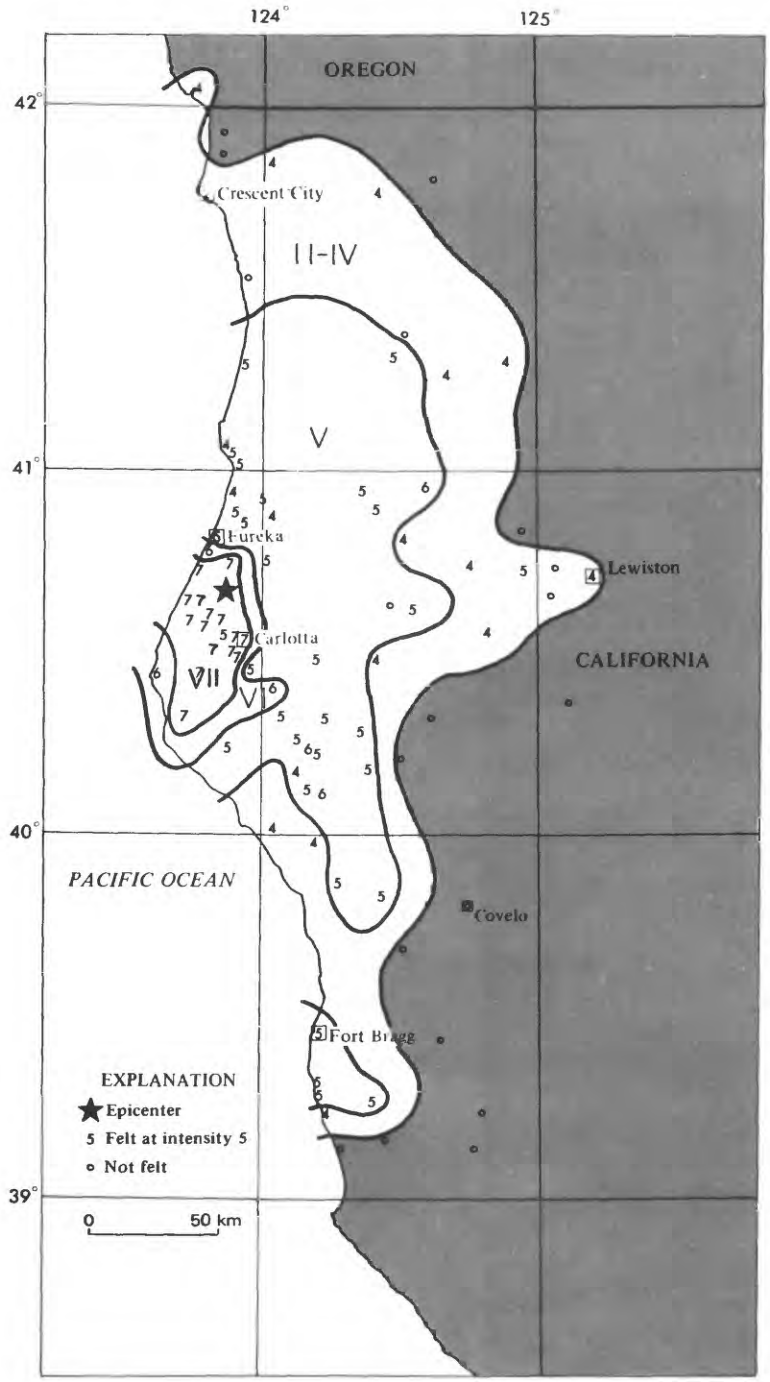


Figure 15. Area affected by northern California earthquake of June 7

Hydesville.--Felt by, awakened, and frightened many in community. One chimney was damaged (USGS). Small objects fell. Hanging objects swung violently. Trees and bushes shook. "The market suffered severe loss in liquor supplies, grocery items, etc., all knocked off shelves."

King Salmon.--Ground cracks in trailer park. Cracks and bridge movement near the Pacific Gas and Electric Nuclear Powerplant (California State University, G. Carver, oral comm., 1975).

Loleta.--Felt by, awakened, and frightened all in community. Chimneys cracked, twisted, and overturned. Furniture shifted. Plaster cracked and fell; windows cracked. Damage slight.

Petrolia.--Felt by, awakened, and frightened all in community. Chimneys damaged (cracked). Plaster cracked. Small objects fell. Hanging objects swung moderately. Aftershock felt at 08:43.

Rio Dell.--Felt by, awakened, and frightened all in community. Landslides. Chimneys cracked and twisted. Water main broke. Furniture shifted. Plaster cracked. Windows broke in homes and stores (all stores lost plate glass windows). Damage moderate. The Eureka, Calif., Times Standard (dated June 8, 1975) reported: "The most severe damage was reported in Rio Dell where the north water main was broken, a large number of store windows were broken, and the Scotia Bluffs fell across the Northwestern Pacific Railroad tracks, knocking out the tracks and tearing away the southern end of the trestle." A Rio Dell resident said:"Section of the bluff on Eel River's east bank fell across the railroad track and trestle, tearing out the track for about 125 yards (112 m). It brought down large redwood trees and huge rocks. The beach on the Rio Dell side was washed by a wave which penetrated the land 85 feet (25 1/2 m) from the river's edge. The police chief, who was a pedestrian on the Main Street (Highway 101), reported glass from plate glass windows shot across the four lanes four times during the principal quake (from east to west)."

Rohnerville.--Ten percent of the chimneys were damaged (USGS).

Scotia.--Felt by all in community; awakened and frightened many. Two old chimneys were damaged. Plaster cracked. Some windows broke. Trees and bushes shook. Damage slight.

Waddington.--Ten percent of the chimneys were damaged, one toppled (USGS).

INT. VI

Cape Mendocino, Denny, Eureka, Garberville, Miranda, and Redcrest.

INT. V

Alderpoint, Alton, Bayside, Blocksburg, Blue Lake, Bridgeville, Comptche, Crannell, Cummings, Fort Bragg, Honeydew, Hyampon, Junction City, Kneeland, Leggett, Little River, Mc Kinleyville, Mendocino, Myers Flat, Orick, Orleans, Phillipsville, Redway, Salyer, Samoa, Stafford, Weott, Westhaven, Willow Creek, and Whitlow.

INT. IV

Albion, Big Bar, Burnt Ranch, Cedar Ridge, Forks of Salmon, Gasquet, Harbor, Hayfork, Korbel, Lewiston, Piercy, Salmon Creek, Sawyers Bar, Trinidad, Van Duzen, and Whitethorn.

INT. II

Crescent City.

June 16. 21:27:08.0 (June 17, 05:27). Epicenter 38.07°N, 121.88°W, northern California, B. Int. II at Antioch, Concord, and Pittsburg (press).

June 17. 03:49:56.2 (11:49). Epicenter 32.78°N, 115.45°W, California-Mexico border region, P. Int. II in Brawley area.

June 18. 09:50:19.7 (17:50). Epicenter 37.19°N, 120.95°W, central California, B. Int. IV at Los Banos.

June 19. 07:23:52.2 (15:23). Epicenter 34.43°N, 118.47°W, southern California, P. Int. II in Sylmar area.

June 19. 08:17:53.1 (16:17). Epicenter 37.35°N, 122.31°W, central California, B. Int. IV at Menlo Park, Palo Alto (press), and Redwood City (Fire Dept.); int. II in the San Francisco Peninsula area.

June 19. 09:35. Int. II in northern California's Portola Valley area.

June 19. 11:01:53.1 (19:01). Epicenter 32.82°N, 115.43°W, California-Mexico border region, USGS. Int. II in El Centro area.

June 19. 21:34:00.6 (June 20, 05:34). Epicenter 37.34°N, 122.33°W, central California, B. Int. II in Portola Valley area.

June 19. 21:48:21.8 (June 20, 05:48). Epicenter 32.76°N, 115.41°W, California-Mexico border region, USGS. Felt over a small area in the southern California-northern Mexico region. Int. VI. Slight damage was reported, but not described, at Calexico. Small objects shifted at Imperial (V). Int. IV at Brawley, Campo, Seeley, and Winterhaven; int. III at Heber and Niland; int. II at Westmorland and at San Luis and Yuma, Ariz.

June 20. 00:16:17.7 (08:16). Epicenter 37.33°N, 122.35°W, central California, B. Int. II in Portola Valley area.

June 20. 14:15:38.8 (22:15). Epicenter 32.76°N, 115.40°W, California-Mexico border area, USGS. Int. IV in the El Centro area (press).

June 20. 18:55:28.6 (June 21, 02:55). Epicenter 32.77°N, 115.44°W, California-Mexico border area, P. Int. II in Imperial Valley (press).

June 27. 20:19:53.1 (June 28, 04:19). Epicenter 39.49°N, 121.61°W, northern California, B. Int. II in the vicinity of the Oroville Dam. Also felt from Palermo to Kelly Ridge (press).

June 29. 09:30. Int. II at Ferndale, Fortuna, Rio Dell, and Scotia (press).

July 7. 05:59:08.7 (13:59). Epicenter 33.96°N, 118.38°W, southern California, P. Int. II at Baldwin Hills, Culver City, El Segundo, Inglewood, Lennox, Manhattan Beach, Santa Monica, and Venice (press).

July 8. 11:01. Int. IV at Murphys, where few were awakened.

July 13. 20:48. Int. III at Lake Isabella.

July 17. 10:24:46.1 (18:24). Epicenter 31.88°N, 115.81°W, Baja California, P. Int. IV at Jacumba and San Diego (press); int. III at El Cajon; int. II at Brawley, El Centro, and Escondido.

July 23. 12:59:21.4. Mag. 3.1, B. Reported felt at Gilroy (int. II).

Aug. 1. 07:45:37.8 (15:45). Epicenter 39.45°N, 121.53°W, northern California, B. The felt information for this earthquake is incomplete because of confusion in responses for the main shock at 20:20:12.9 (UT). Int. V at Berry Creek, Browns Valley, Durham, Dutch Flat, East Nicolaus, Forbestown, Georgetown, Gold Run, Grass Valley, Gridley, Live Oak, Oregon House, Oroville, Palermo, and Stirling City; int. IV at Applegate, Beale AFB, Foresthill, and Goodyears Bar; int. III at Meadow Valley; int. II at Caribou, Chico, Esparto, Lincoln, Pleasant Grove, Stonyford, Storrie, and Wheatland.

Aug. 1. 08:27:17.8 (16:27). Epicenter 39.44°N, 121.54°W, northern California, B. Int. IV at Auburn and Beale AFB; int. III throughout Butte County and in western Sierra County; int. II at Sacramento.

Aug. 1. 12:20:12.9 (20:20). Epicenter 39.44°N, 121.53°W, northern California, B. Int. IX. This is the main shock of a series of earthquakes that began in the Lake Oroville area on Aug. 1 at 15:45 (UT). The principal earthquake was felt over an area of about 120,000 sq km (see fig. 16). Minor structural damage occurred at several schools, hospitals, and private dwellings in the Oroville-Thermalito area. It consisted mostly of cracked walls and chimneys, broken windows, loosened light fixtures, and broken plaster and ceiling tiles. Intensity IX was assigned to the normal surface faulting that accompanied and followed the earthquake. The following was excerpt from Clark, et al (1976):

"The main shock is notable for its...association with the first recorded surface faulting in the western foothills of the Sierra Nevada.... The distribution of

aftershocks led directly to our discovery of the 3.8-km-long N- to NNW-trending zone of new fractures.... The block to the east of the fault moved upward relative to that to the west as shown by at least 55 mm of slip across the surface ruptures and 180 mm of vertical movement of benchmarks near the rupture zone. The faulting follows a zone of earlier displacement that may have been active in Quaternary time."

INT. IX

Lake Oroville area.--The following is excerpt from Clark, et al (1976): "Surface ruptures associated with the earthquakes formed a N-S zone nearly 3.8 km long that comes within 5.1 km of Lake Oroville. Slip vectors across the ruptures show normal faulting with E-W extension, west side relatively down.

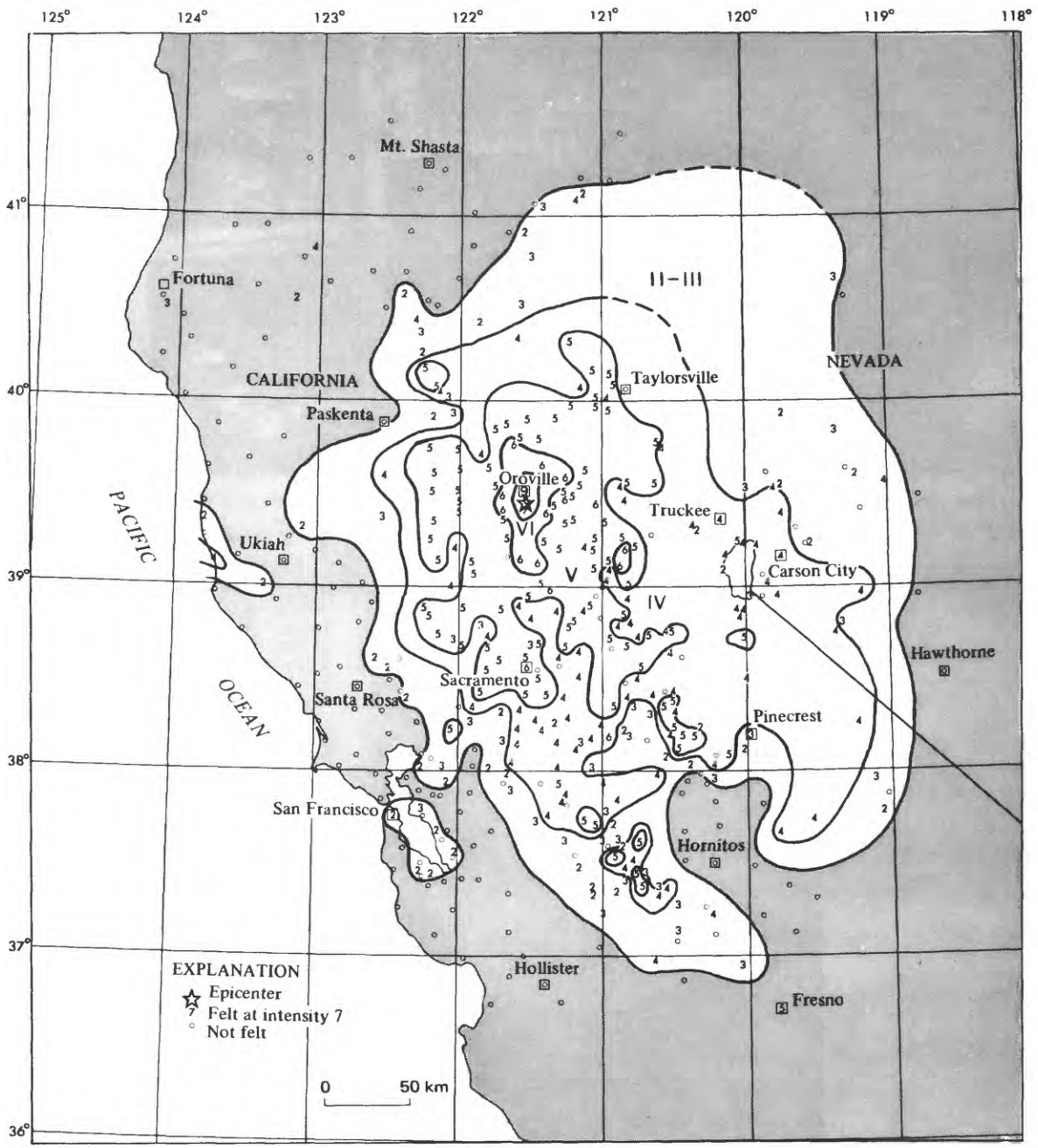


Figure 16. Area affected by northern California earthquake of August 1

"The 1.6-km-long south break is a narrow, linear zone of en echelon fractures with maximum slip of at least 55 mm. Vegetation beyond both ends of the detected fractures may conceal additional fractures and possible continuity with the colinear northwest break. Although the south break is slightly convex to the southwest, its azimuth ranges only from 145° to 164°. Most individual fractures are oriented more southerly, ranging in azimuth from 165° to 175° and producing a left-stepping en echelon pattern. Most fractures are 5 to 10 m long, overlap the next adjacent en echelon fractures by 1 to 3 m, and are separated from them by 1 to 3 m.

"Slip and length of fractures along the south break steadily increased for several months after the earthquake. According to Mr. Earle Soudan, a nearby resident, slip on the south break increased from about 5 mm shortly after the earthquake to 20 to 25 mm by August 10, when we mapped the break. Ten days later slip had increased by as much as 5 to 10 mm. These increases permitted detection of ruptures in areas where they could not be found earlier. On August 10 the south break consisted of three separate segments, but by August 20 these segments had joined into a single almost continuous fracture zone, and its measurable length had increased by about 0.1 km at each end. By October 29, measured slip had increased to 30 to 40 mm in many places with a maximum of 55 mm. No additional slip or increase in length could be measured by tape on November 30, 1975.

"Maximum slip on the northeast break reaches about 40 mm in both segments, although it is generally less than 30 mm. A vertical component, west side down, occurs locally. Azimuths of the slip vector range from 68° to 106° and strike of the fractures ranges from 138° to 222°. Thus, both left- and right-lateral components of slip may be present in fractures of the northeast break, depending on the angle between local trend of the fractures and azimuth of slip. In locations where the angle measured clockwise from strike to the slip azimuth is acute, a left-lateral component of slip is present. In one such place, the en echelon fractures step to the right in standard left-lateral fashion. In most places this angle is obtuse, resulting in a right-lateral component of slip.

"The northwest break consists of widely separated short segments of what may be a continuation at depth of the south break. Most of the segments consist of aligned fractures, visible in unplowed fields or roads, with displacements less than 10 mm. Maximum displacements were 12 mm in an unplowed field and an apparent opening displacement of about 20 mm in the paved road northeast of Wyandotte. We did not find significant or consistent vertical components of displacement. The northwest break generally is not visible, although presumably present, in olive orchards and irrigated pastures that occupy most of the terrain between the mapped segments. This break is clearly subordinate, in magnitude of slip, to the sub-parallel northeast break."

INT. VII

Oroville (1034 Middlehoff Lane).--Felt by and frightened all in community. "Many chimneys came down or had to be taken down. Chunks of plaster fell in home. Many broken windows all over Oroville." Water disturbed. Damage moderate to great.

Oroville (56 Sunset View Lane).--Felt by all; frightened many. Small ground cracks and slides. Plaster and chimney cracks; windows cracked. Damage moderate.

Oroville.--Felt by all; frightened many. Landslides. Chimneys twisted and overturned. Concrete driveways cracked. Plaster cracked. Knocked dishes, etc., to floor. Damage slight.

Oroville area.--The following was excerpt from California Division of Mines and Geology (1975):

"Bird Street School (built 1867 and rebuilt in 1912). Two Corinthian column capital decorations of clay tiles were dislodged from the top of the columns, one of which was directly over the main entrance. Two windows were broken which may have been the result of the earthquake.

"There was considerable plaster damage to the walls and ceiling throughout the building. It was obvious that the walls and ceilings moved separately as evidenced by the continuous cracks in the ceilings adjacent to the walls. Pieces of ceiling plaster fell in the auditorium, second floor classrooms and basement stair ceilings. Earthquake motion at this site was not sufficient to throw books from the shelves in the storage room on the first floor; however, a wash bowl was thrown off the wall in the cafeteria building.

"Burbank School. During the first visit on August 2 the east wall of this one-story brick pre-Field Act school building, built in 1925, was observed to be seriously damaged.

"This brick wall bulged dangerously outward several inches for a length of about ten

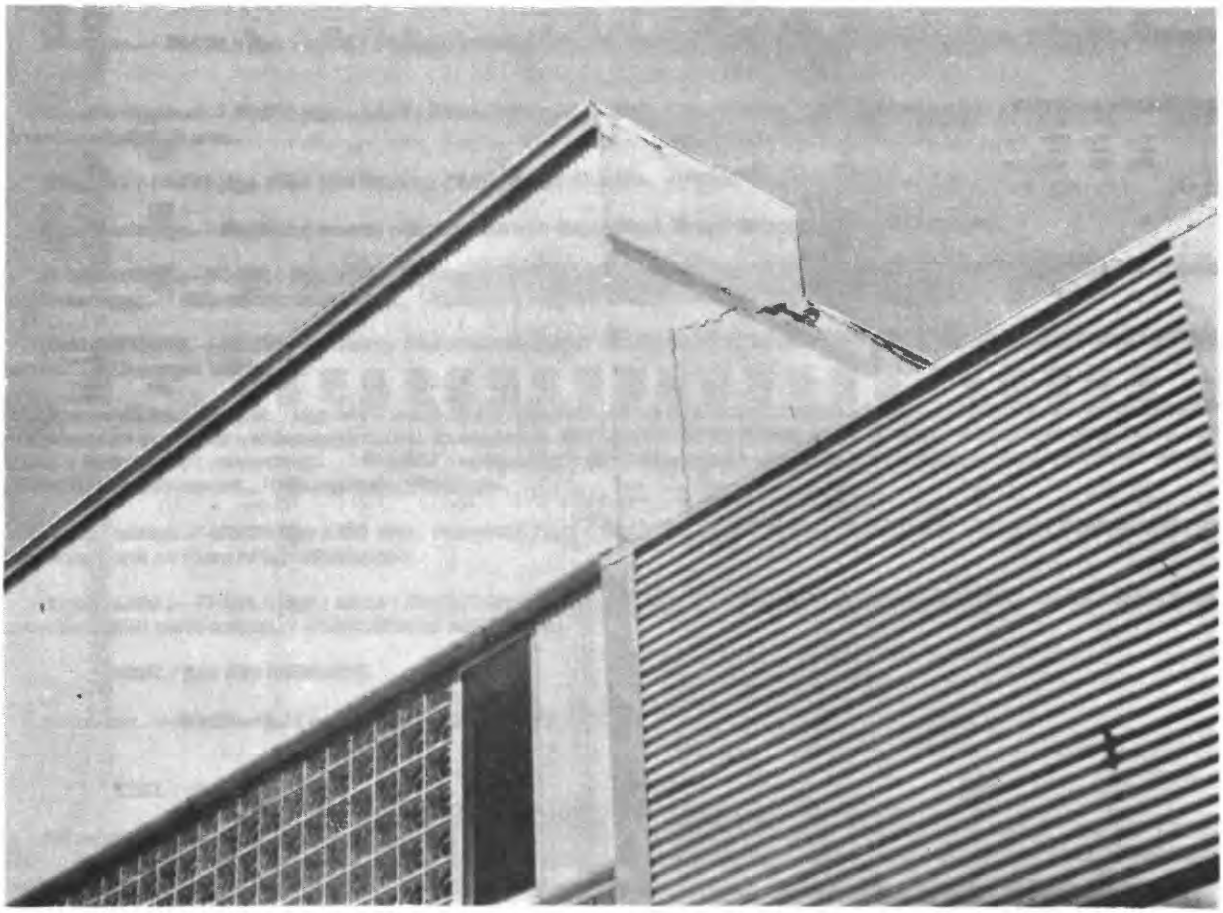


Figure 17. The August 1 earthquake caused exterior building cracks in Oroville, Calif.

Figure 18. Concrete building was 90% damaged by the August 1 Oroville, Calif., earthquake

feet in the center at the level of the roof. During the second visit on August 5, this east wall appeared to have moved out a bit further and a portion on the north wall was bulging in a similar manner but of lesser amount. The east wall was separating between the two brick wythes although they were tied with metal strips.

"The damage in a post-Field Act wood frame school constructed in 1947 at this site consisted of only very minimal plaster cracks, and several concentric ring light fixtures were tilted and hanging with one or two wires. One such ring fell to the floor.

"Eastside School. A pre-Field Act school building, built in 1925, sustained nominal plaster damage in the corners of the walls and at the junction of the wall and ceiling in several locations. One light fixture grill was hanging vertically suspended by one of the safety chains. Post-Field Act buildings on this site sustained no damage except possibly some very light plaster cracks.

"Center School. All buildings on this site were of post-Field Act construction. The only observed damage was several concentric ring light fixtures which were tilted and hanging with one or two hanger wires instead of three. Some light exterior plaster cracking was noted at several corners of the buildings and some of the contents of several storage shelves were spilled to the floor.

"Las Plumas High School. This is a rather large recently constructed complex. The 4-inch-wide plastic light fixture lenses were dropped to the floor throughout the site and at least two light tubes fell to the floor. Seismic expansion joints throughout the site did not indicate any movement. Two panes of glass were broken in the auto shop.

"Oakdale Heights School. This site is just down the street a short distance from Las Plumas and is also of recent construction. The light fixtures here were the same design as those at Las Plumas High School; however, no light lens damage occurred here because they were not installed. One window was broken, probably the result of the earthquake.

"Oroville High School. Several plastic light fixture lenses fell to the floor or desk tops in the classrooms.

"A fluorescent light tube fell to the floor in the shop. It was noted that the overhead door suspension system in the shop was very similar to that which dropped the doors in the Palermo Firehouse.

"Plastic light fixture lenses fell to the floor in several portable buildings on this site. The T-bar ceilings were also displaced in several of these portable classrooms.

"The Maintenance Building, a nonschool purpose building and not constructed under the provisions of the Field Act, had several cracks in the masonry walls. Some cracks were old and others were probably the result of the earthquakes.

"Palermo Elementary School. This is a post-Field Act school located in Palermo which is about 4 or 5 miles due south of Oroville and is within a mile of the epicenter of the largest shock. A window was possibly broken here due to the quake. Several light fixtures were damaged.

"Plaster was cracked all around the junction of the walls and ceiling of the multipurpose platform. This building was built in 1951.

"St. Thomas Church and School. On the August 2 visit several bricks were displaced from the church bell tower and the upper portions of the wall were cracked. The upper portion of the unreinforced brick chimney was knocked off. During the August 5 visit it was noted that several bricks fell out of the bell tower.

"Courthouse (downtown). The old portion of the courthouse and jail was cracked rather heavily and was vacated. The walls of this building appeared to be stuccoed masonry construction.

"From a casual review no damage was observed in the new portion of the courthouse probably built 5 to 10 years ago.

"Superior Court Building. This building was very recently constructed. Books were thrown to the floor and the bookcases were damaged. The concealed T-bar ceiling was damaged at several locations, most of which occurred around the perimeters in several rooms.

"Business District. A few, perhaps 5 percent to 10 percent, of the windowpanes were broken in the storefronts. T-bar ceilings were damaged, particularly around the

perimeters of the rooms. Several such ceilings had diagonal bracing wires installed within the system. In a department store the hangers became disconnected, allowing the ceiling to bulge or drop downward several inches in several places. In one instance the nail anchoring the hanger wire pulled out; in other instances it appeared that the bends formed in the hanger wire to level the ceiling had straightened out. A woman narrowly missed being hit by a falling T-bar in a clothing store dressing room. Pictures on the walls were askew or fell to the floor. Merchandise was thrown to the floor from shelves. Masonry walls were cracked in several buildings. Unanchored brick veneer was dislodged and on the verge of falling.

"Medical Center Hospital. This is basically a one-story hospital but a portion on a side hill is two stories. The Hospital Administrator was very pleased with the performance of the portion of the hospital emergency wing just recently constructed under the provision of 1973 Alquist Hospital Act. The only damage in that portion consisted of a crack in the hall ceiling plaster and several escutcheons around the sprinkler heads, which are merely held by friction, fell to the floor.

"Nonstructural plaster damage occurred in several areas throughout the older portion of this hospital, the oldest of which was probably about 10 years old. In the pharmacy and storage areas many bottle containers and other medications were damaged when they were thrown to the floor.

"This hospital has two basic exterior sources of electricity and when the original hospital was constructed the administrators considered requesting a waiver for the requirement of an emergency generator. The earthquake knocked out both sources of service and their emergency generator was required to continue to operate for about 2 hours due to intermittent source electrical service. The generator was mounted on the top of steel channels placed on a slab on grade. No anchor bolts were provided into the slab.

"The oxygen tank became displaced. It was about 4 feet in diameter and about 12 feet high and installed at the time of the original construction. The tank was supported by three legs and the anchor bolts were about five-eighths of an inch in diameter. Two such anchor bolts were pulled out of the concrete but appeared to penetrate the concrete only about an inch. One of the anchors held and the other two pulled out, thus allowing the tank to rock and rotated about one-half an inch.

"Bullards Bar Dam. A fisherman on the reservoir behind Bullards Bar Dam reported a single wave about a foot in height crossed the lake about 9:30 a.m., August 1, 1975. There was no wind; thus the water was smooth.

"Oroville Reservoir. The ranger at the Visitor's Center reported that most of the people on the lake at the time of the earthquakes were not aware of any special wave action or that an earthquake had occurred. One person did, however, report he noticed an unusual wave - perhaps about a foot high - at the time of the afternoon shake. He had just launched his boat and pushed off when the wave came by."

Oroville (about 8 km southwest of).--Following is an excerpt from a memo written by Dan N. Tidwell, Lowry and Associates, Sacramento, California, of his personal experience in this earthquake while working at the Mathews Ready Mix Plant:

"At approximately 1:20 p.m. [P.d.t.], I had just sat down in my truck to have lunch. My first indication was a distant 'roar,' perhaps like the rumble of a train. The shaking started within a few seconds and seemed to increase sharply after a few seconds of relatively minor movement. At this time, I made the decision to move away quickly from the plant. The door of the truck was open so I started running diagonally away from the plant. I ran approximately 50 yards and stopped and looked back at the plant. At this time, the major shaking was still going on and the entire earth and plant and auxiliary buildings appeared to be moving up and down 6 inches. The feeling was one of being on a giant rock crusher, very severe and very rapid, perhaps ten cycles per second. There was a lot of noise, both from the equipment shaking and the surrounding stockpiled materials settling and also a background roar of the quake itself.

"I would estimate the major motion lasted less than 30 seconds. In the minutes after the quake, I stayed in one place and could feel the earth "quiver" as if resonating. The aftershocks were frequent, every 5 minutes more or less, and were, for the most part, gentle bumps; however, at least one was severe enough to cause us to run out of the control room.

"Personally, I did not feel sick or dizzy at any time, although some of the drivers did. I think this is just an individual thing--I did not feel any "fear" at any time; however, I think this is because I did not feel threatened--I was outside and had

effectively planned what I was going to do and had a safe, clear area to run to. For someone closed up in a building, the feeling must be oppressive.

"They tell you to be calm. For a quake of this magnitude or greater, I don't think it is possible. The noise and movement compels you to want to move quickly--in any direction!"

Palermo (Butte County Fire Station).--Frightened all in community; general panic. "Cracking in cement walls and slight separation of wall to wall junctions and ceiling to wall." Numerous chimneys toppled and cracked. Water main broke. Small cracks in cement. "Overhead roll-up doors fell down because the tracks split apart."

The following is an excerpt from California Division of Mines and Geology (1975):

"Palermo Firehouse. This Division of Forestry firehouse was of recent construction - probably about 3 or 4 years old. Walls were tiltup concrete and were lightly cracked at one passthrough doorway and a horizontal crack occurred in midheight of the adjacent wall panel.

"Two overhead doors fell out of their tracks on top of the fire engines. The three-inch-long axles supporting the door on the horizontal overhead track came out of their housing as there was no retainer at the rear end of the axle and the track was free to deflect laterally, thus allowing the doors to fall on top of the fire engines."

Palermo.--Felt by all; general panic. Ground cracked. Water disturbed. Chimneys damaged. Plaster and windows cracked. Furniture shifted.

Thermalito.--Felt by all; frightened many. Railroad tracks buckled (unconfirmed). Small slides and small ground cracks. Chimneys cracked, some fell. Furniture shifted. Plaster cracked and fell. Windows cracked.

The following is an excerpt from the California Division of Mines and Geology (1975):

"Cracks were observed in a grassy area on the south side of Butte Avenue in Thermalito. The individual breaks were less than 3 m in length, and had a maximum of 7 cm of horizontal separation. There was no systematic pattern to the distribution of the cracks.

"A barbed wire fence runs along the south side of Butte Avenue for several hundred meters. The entire fence, with the exception of a 60-meter section, was constructed with split wooden posts and strands of tight barbed wire. The fence is well made and appears to be several decades old.

"A few hundred meters west of the intersection of Butte Avenue and 12th Street, a portion of the older fence has been replaced by a new fence constructed of steel fence posts and barbed wire. The new fence connects separated sections of the older fence. The strike of the older sections of fence is N90° E, and the strike of the new fence is N88° E. It appears that the old fence has been offset left-laterally about 2 m."

INT. VI

Alta, Bangor, Berry Creek, Biggs, Brownsville, Camptonville, Feather Falls, Marysville, Paradise (cracks in main beam of outside dock), Richvale, Sacramento, Sheridan (chimney cracked), Wallace, and Yuba City (slight damage at Beale AFB).

INT. V

Applegate, Artois, Auburn, Baxter, Belden, Big Trees, Blairsden, Broderick, Browns Valley, Bryte, Brooks (wave action on swimming pool), Butte City, Camino, Canyondam, Challenge, Chester, Chicago Park, Citrus Heights, Clarksburg, Clipper Mills, Clovis, Crescent Mills, Davis, Delevan, Delhi, Dixon, Dobbins, Downieville, Dunnigan, Durham, Dutch Flat, Elk Grove, Elverta, Fairfield, Forbestown, Foresthill, Forest Ranch, Garden Valley, Glencoe, Glenn, Gold Run, Grass Valley, Greenville, Gridley, Grimes, Guinda, Hamilton City, Hathaway Pines, Hickman, Ione, Iowa Hill, Keyes, Knights Landing, Lake Kirkwood, Live Oak, Livingston, Long Barn, Loomis, Madison, Magalia, Maxwell, Meadow Valley, Meridian, Mount Aukum, Mountain Ranch, Murphys, Nelson, Nevada City, North San Juan, Ordbend, Oregon House, Olivehurst, Orland, Pacific House, Parkway, Princeton, Proberta, Pulga, Quincy, Rackerby, Red Bluff, Rescue, Richardson Springs, Rio Oso, Ripon, Robbins, Rocklin, Rumsey, Salida, Sheep Ranch, Sierra City, Smartville, Stirling City, Stockton, Storrie, Strawberry Valley, Tahoe Vista, Trowbridge, Twain, Twin Bridges, Wheatland, Williams, Willows, Wilseyville, and Woodland.

INT. IV

Acampo, Alleghany, Amador City, Anderson, Arbuckle, Atwater, Avery, Banta, Bethel Island, Bridgeport, Calaveras Big Trees State Park, Canyon, Caribou, Carmichael, Castle AFB, Chico, Clements, Clio, Colfax, College City, Coloma, Colusa, Copperopolis, Courtland, Crystal Bay, Denair, Diamond Springs, Dos Palos, Echo Lake, East Nicolaus, El Dorado, El Portal, Elk Creek, Elmira, Esparto, Fair Oaks, Fallen Leaf, Farmington, Fiddletown, Folsom, French Camp, Genova, Georgetown, Gerber, Goodyears Bar, Graeagle, Greenwood, Grizzly Flats, Hazen, Herald, Hood, Isleton, Keddie, Kelsey, Kings Beach, Lathrop, Le Grand, Lincoln, Lincoln Village, Lodi, Lotus, McClellan AFB, Meadow Vista, Mineral, Newcastle, Nicolaus, North Highlands, Nubieber, Orangevale, Penryn, Pine Grove, Pioneer, Placerville, Pleasant Grove, Pollock Pines, Rail Road Flat, Represa, River Pines, Rough and Ready, Ryde, Sloughhouse, Smithflat, Soda Springs, Sutter Creek, Tahoe City, Tahoe Paradise, Tehama, Thornton, Truckee, Turlock, Twain Harte, Valley Home, Victor, Volcano, Walnut Grove, Waterford, Weed Heights, Weimar, Wellington, West Point, West Sacramento, Wilton, Winters, Yolo, and Yosemite National Park.

INT. IV IN NEVADA

Carson City, Minden, Reno, and Steamboat.

INT. III

Ballico, Byron, Capay, Cottonwood, Cressey, El Nido, Empire, Escalon, Gustine, Hat Creek, Hilmar, Jackson, Lee Vining, Linden, Lockeford, Los Molinos, Madera, Manzanita Lake, Martinez, McArthur, Merced, Modesto, Mokelumne Hill, Nixon, Oakland, Pinecrest, Rio Dell, Rio Linda, Rio Vista, Smith, Solano, South Lake Tahoe, Stonyford, Tracy, Travis AFB, Tuolumne, Vallecito, Valley Springs, Verdi, Vernalis, Vina, Winton, and Zamora.

INT. III IN NEVADA

Gerlach.

INT. II

Altaville, Angels Camp, Antioch, Arnold, Berkeley (telephone report), Bieber, Boonville, Calistoga, Campo Seco, Caspar, Cassel, Columbia, Corning, Crows Landing, Fremont, Galt, Gardnerville, Hayfork, Homewood, Hughson, June Lake, Knightsen, Liberty Farms, Manton, Menlo Park, Newman, Norden, Patterson, Paynes Creek, Philo (press), Pleasant Hill, Potter Valley, Redding, Redwood City, Riverbank, Rodeo, Sanitarium, San Lorenzo, Stevinson, Strawberry, Tahoma, Veterans Home, Woodbridge, and Yountville.

INT. II IN NEVADA

Dayton, Fernley, Lovelock, and Sparks.

Aug. 1. 12:25 (20:25). Epicenter 39.44°N, 121.53°W, northern California, CDM. Int. III throughout Butte County.

Aug. 1. 12:29 (20:29). Epicenter 39.44°N, 121.53°W, northern California, CDM. Int. III throughout Butte County.

Aug. 1. 13:21:50.7 (21:21). Epicenter 39.44°N, 121.53°W, northern California, B. Int. IV in Calaveras Big Trees State Park and Oroville area.

Aug. 1. 16:14:07.7 (Aug. 2, 00:14). Epicenter 33.52°N, 116.55°W, southern California, P. Int. III at Leucadia and San Diego; int. II at Anza, Palm Springs, and Vista (press).

Aug. 2. 09:24:29.2 (17:24). Epicenter 39.47°N, 121.47°W, northern California, B. Int. III throughout Butte County.

Aug. 2. 09:43:24.1 (17:43). Epicenter 39.48°N, 121.47°W, northern California, B. Int. III throughout the Oroville area.

Aug. 2. 12:22:16.3 (20:22). Epicenter 39.45°N, 121.46°W, northern California, B. Int. III throughout Butte and surrounding counties.

Aug. 2. 12:59:02.7 (20:59). Epicenter 39.41°N, 121.71°W, northern California, USGS. Int. VI at Oroville (reported by Berkeley with no description); int. III throughout Butte and surrounding counties.

Aug. 2. 17:03:05.8 (Aug. 3, 01:03). Epicenter 39.49°N, 121.52°W, northern California, B. Int. III throughout Butte County.

Aug. 2. 18:47:08.8 (Aug. 3, 02:47). Epicenter 39.48°N, 121.50°W, northern California, B. Int. III throughout the Oroville area.

Aug. 2. 21:57:17.3 (Aug. 3, 05:57). Epicenter 36.47°N, 120.35°W, central California, B. Int. III throughout Fresno County.

Aug. 2. 22:35:16.5 (Aug. 3, 06:35). Epicenter 36.46°N, 120.35°W, central California, B. Felt over an area of approximately 18,000 sq km (see fig. 19) of central California. Slight damage occurred at Firebaugh (Fresno County) and Three Rocks.

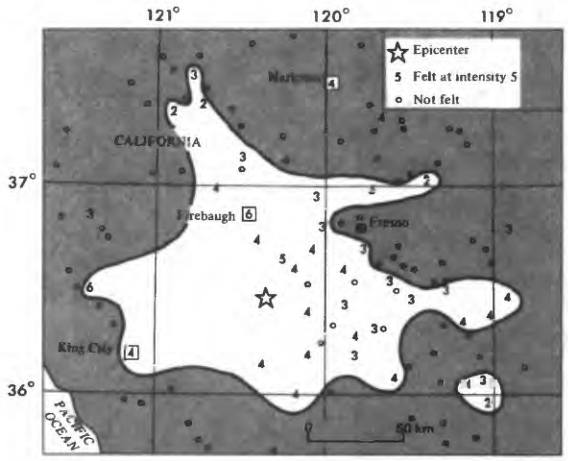


Figure 19. Area affected by central California earthquake of August 2

INT. VI

Firebaugh.--Felt by few. Waterline broke. Plaster cracked. Hanging objects swung moderately. Damage was reported to a church.

Three Rocks.--A church was damaged (reported by University of California, Berkeley).

INT. V

Avenal, Camp Kaweah (Sequoia National Park), Friant, and Tranquillity (two aftershocks).

INT. IV

Coalinga, Corcoran, Dos Palos, Five Points, King City, Laton, Lemoncove, Huron, Kerman, Lemoore, Mariposa, Mendota, Oakhurst, Poplar, Raisin, and San Joaquin.

INT. III

Armona, Biola, Calwa, Cutler, Denair, El Nido, Hollister, Hume, Madera, Porterville, Riverdale, Selma, Stratford, and Traver.

INT. II

Livingston, Stevinson, Terra Bella, Tollhouse, and throughout Fresno County.

Aug. 2. 22:37:52.0 (Aug. 3, 06:37). Epicenter 36.47°N, 120.35°W, central California, B. Int. II south of Fresno.

Aug. 5. 19:50:29.9 (Aug. 6, 03:50). Epicenter 39.48°N, 121.52°W, northern California, B. Felt throughout Butte County. Int. V at Hamilton City; int. IV at La Porte; int. II at Carmichael, Fair Oaks, and Goodyears Bar.

Aug. 7. 23:00:50.1 (Aug. 8, 07:00). Epicenter 39.50°N, 121.51°W, northern

California, B. Int. IV at Grass Valley; int. III at Foresthill; int. II throughout Butte County.

Aug. 9. 21:16:40.5 (Aug. 10, 05:16). Epicenter 37.37°N, 119.99°W, central California, B. Int. VI. Minor damage occurred at Mariposa and San Joaquin.

INT. VI

Mariposa.--Felt by all in community; frightened few. The San Francisco Examiner (dated Aug. 11, 1975) reported "broken windows and falling rocks, but no extensive damage."

San Joaquin.--Felt by, awakened, and frightened many. Small objects fell. Hanging objects swung moderately. Damage slight.

INT. V

Ahwahnee, Atwater, Auberry, Big Creek, Big Oak Flat, Biola, Coarsegold, Coulterville, El Portal, Fig Garden Village, Fish Camp, Fresno, Friant, Hornitos, Lakeshore, Le Grand, Long Barn, Madera, Merced, Oakhurst, O'Neals, Prather, Raisin, Raymond, Red Top, Sequoia National Park, Shaver Lake, Snelling, Strawberry, Tranquillity, Twain Harte, and Wishon.

INT. IV

Avery, Bass Lake, Chowchilla, Del Rey, Dos Palos, Fowler, Hathaway Pines, Murphys, North Fork, Tuolumne, and Yosemite National Park.

INT. III

Clovis, Cressey, El Nido, Hilmar, Huntington Lake, June Lake, and Pinecrest.

INT. II

Kerman, Moccasin, Soulsbyville, South Dos Palos, and Winton.

Aug. 10. 22:11:36.3 (Aug. 11, 06:11). Epicenter 39.45° N, 121.48° W, northern California, B. Int. VI. Slight damage was reported at Madison.

INT. VI

Madison.--Felt by several; awakened few. Asphalt pavement cracked (unverified). Damage slight.

INT. V

Arbuckle, Brownsville, Chico, Dobbins, Esparto, Forest Ranch, Gridley, Live Oak, North San Juan, Oregon House, Palermo, Rackerby, and Smartville.

INT. IV

Alleghany, Alta, Beale AFB, Browns Valley, Camptonville, Chicago Park, College City, Feather Falls, Forbestown, Gold Run, Grass Valley, Grimes, Herald, Marysville, Nevada City, Placerville, Richvale, Robbins, and Strawberry Valley.

INT. III

Bangor, Guinda, Knights Landing, Meridian, Richardson Springs, Storrie, Thornton, and Willows.

INT. II

Challenge, Hood, Nicolaus, West Sacramento, Wheatland, and Wilton.

Aug. 14. 00:08:49.8 (08:08). Epicenter 34.02°N, 116.43°W, southern California, P. Int. VI. Several press reports noted that the tremor opened a crack in the wall of one house at Palm Springs. No other damage was reported in the area. Int. V at North Palm Springs; int. IV at Desert Hot Springs, Indian Wells, Morongo Valley, Rancho Mirage, and Yucca Valley; int. II at Cathedral City and Twentynine Palms (press).

Aug. 14. 00:10:36.7 (08:10). Epicenter 34.03°N, 116.43°W, southern California, P. Int. III at Cathedral City, Desert Hot Springs, and Rancho Mirage; int. II at North Palm Springs (aftershock at about 01:00 felt).

Aug. 15. 14:27:51.8 (22:27). Epicenter 36.49°N, 120.39°W, central California, B. Int. V. The Fresno Bee reported that a table in a restaurant moved 7 1/2 cm (3 in.) at Three Rocks (near Cantara Creek); dishes fell from cabinet and shattered; cans fell from grocery shelves. Int. III throughout Fresno County.

Aug. 15. 21:48:09.4 (Aug. 16, 05:48). Epicenter 39.47°N, 121.52°W, northern California, B. Int. III throughout the Oroville area.

Aug. 16. 16:24:26.0 (Aug. 17, 00:24). Epicenter 37.61°N, 118.81°W, California-Nevada border region, USGS. Int. II in Bishop area.

Aug. 17. 02:50. Int. IV at Mariposa.

Aug. 19. 02:14. Int. IV at Etiwanda. Reports in the press described a slight earthquake in the Lytle Creek area at that time. It was also reported felt at Ontario, Upland, and Cucamonga (press).

Aug. 28. 23:52:42.6 (Aug. 29, 07:52). Epicenter 36.52°N, 120.39°W, central California, B. Int. V at Cantua Creek (Fresno County), where the earthquake awakened and frightened many in the community.

Sept. 8. 18:43:42.5 (Sept. 9, 02:43). Epicenter 40.92°N, 124.40°W, near coast of northern California, USGS. Int. V at Ferndale; int. III at Bayside, Eureka, Orick, Rio Dell, and Trinidad; int. II at Arcata, Fortuna, and Loleta.

Sept. 10. 02:39. Mag. 3.5, B. Int. II in the Oroville area.

Sept. 10. 04:38. Mag. 3.0, B. Int. II in the Oroville area.

Sept. 10. 09:39:05.2 (17:39). Epicenter 39.52°N, 121.54°W, northern California, CDM. Int. II in Oroville area.

Sept. 11. 18:00:46.6. Mag. 3.4, B. Felt in the Oroville area.

Sept. 13. 13:20:59.8 (21:20). Epicenter 36.00°N, 120.56°W, central California, B. Felt over an area of approximately 16,000 sq km of central California (see fig. 20). Int. VI. Slight damage occurred at Avenal, where plaster cracked and furniture shifted.

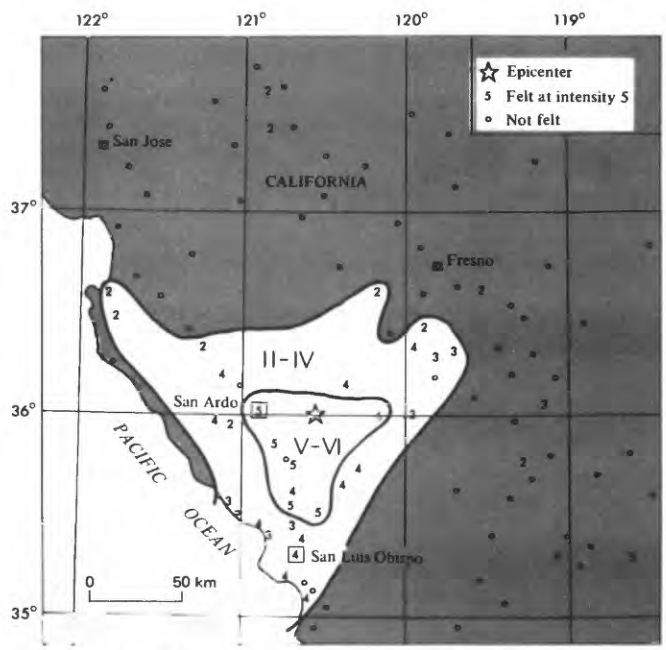


Figure 20. Area affected by central California earthquake of September 13

INT. VI

Avenal.--Felt by several and frightened few. Plaster cracked; ground cracked. Furniture shifted. Hanging objects swung violently east-west.

INT. V

Bradley, Coalinga, Creston, Jolon, San Ardo, San Miguel, Santa Margarita, Shandon, and Templeton.

INT. IV

Avila Beach, Cayucos, Cholame, King City, Lemoore Naval Air Station, Oceano, Paso Robles, and San Luis Obispo.

INT. III

Armona, Atascadero, Caliente, Cambria, Lemoore, Morro Bay, and Porterville.

INT. II

Carmel Valley, Delano, Greenfield, Grover City (press), Hilmar, Hughson, Kettleman City, Lockwood, Parlier, Riverdale, San Joaquin, Santa Maria (press), and Seaside.

Sept. 15. 04:31:16.4 (12:31). Epicenter 37.81°N, 121.97°W, central California, USGS. Int. IV at Diablo; int. III at Alamo and Danville; int. II at Walnut Hills.

Sept. 25. 18:31:07.1 (Sept. 26, 02:31). Epicenter 39.50°N, 121.50°W, northern California, B. Int. II at Grass Valley, Nevada City, and Oroville.

Sept. 26. 01:57:15.2 (09:57). Epicenter 39.44°N, 121.61°W, northern California, USGS. Int. IV in the Strawberry Valley region; int. III at Oroville.

Sept. 27. 14:34:38.1 (22:34). Epicenter 39.51°N, 121.54°W, northern California, B. Int. V at Grass Valley; int. IV throughout the Butte County area, Pacific House, and Strawberry Valley; int. III at Blairsden and Foresthill.

Oct. 1. 22:59. Mag. 2.5 (ML), B. Int. V at Nelson, where small objects were overturned and many were awakened.

Oct. 3. 01:44. Mag. 2.5 (ML), B. Int. II at the Danville Fire Department (telephone report).

Oct. 7. 13:12:44.4 (21:12). Epicenter 37.56°N, 118.75°W, California-Nevada border region, USGS. Int. IV at Crowley Lake Dam (Mono County).

Oct. 9. 23:44:47.4 (Oct. 10, 07:44). Epicenter 39.47°N, 121.50°W, northern California, B. Int. IV at Marysville and Palermo; int. II at Grass Valley and Oroville (press).

Oct. 11. 08:55:01.2 (16:55). Epicenter 34.10°N, 118.08°W, southern California, P. Int. III at Wildomar and in Pasadena area.

Oct. 14. 02:13:07.6 (10:13). Epicenter 33.06°N, 116.44°W, southern California, P. Int. IV in Cuyamaca Dam area; int. II at Anza-Borrego State Park (press) and in San Diego area.

Oct. 14. 03:11:19.4 (11:11). Epicenter 33.06°N, 116.47°W, southern California, P. Int. IV at Cuyamaca Dam area; int. II at Anza-Borrego State Park (press).

Oct. 15. 06:30. Int. IV at Fairmont Reservoir (near Lancaster).

Oct. 21. 01:15:51.9 (09:15). Epicenter 33.96°N, 116.41°W, southern California, P. Int. IV at Desert Hot Springs, Indio, Palm Desert, and Palm Springs (all from press reports).

Oct. 22. 23:53. Mag. 2.4 (ML), B. Int. IV at Menlo Park, Mountain View, and Palo Alto-Woodside area (press).

Oct. 23. 02:40. Int. IV at Gilroy.

Oct. 23. 14:14:02.4 (22:14). Epicenter 34.43°N, 118.42°W, southern California, P. Int. III in Newhall area (telephone report).

Oct. 27. 19:41:15.0 (Oct. 28, 03:41). Epicenter 39.52°N, 121.56°W, northern California, USGS. Int. IV at Storrie; int. III in Oroville area.

Nov. 3. 13:20. Int. III at Honcut.

Nov. 4. 18:37:19.8 (Nov. 5, 02:37). Epicenter 34.16°N, 117.38°W, southern California, P. Int. II in Fontana area.

Nov. 4. 21:37:45.9 (Nov. 5, 05:37). Epicenter 39.40°N, 121.59°W, northern California, USGS. Int. II at Grass Valley.

Nov. 5. 15:18. Int. II at Palermo.

Nov. 7. 02:45. Int. II at Grass Valley.

Nov. 14. 01:29:48.5 (09:29). Epicenter 40.62°N, 124.31°W, near coast of northern California, USGS. Felt from San Francisco into Oregon, according to press reports. Int. VI. Slight damage at Eureka.

INT. VI

Eureka.--Felt. Trees and bushes shook. Hanging objects swung moderately. Small objects shifted and fell. Windows were broken. Damage slight.

INT. V

Bayside, Bridgeville, Ferndale (dishes and dolls broken at shop), Rio Dell, and Willits.

INT. IV

Arcata, Fortuna, Little River, McKinleyville, Mendocino, Miranda, Petrolia, Phillipsville, and Westport.

INT. III

Trinidad.

Nov. 14. 19:35:01.6 (Nov. 15, 03:35). Epicenter 39.42°N, 121.57°W, northern California, B. Felt in the Oroville area and throughout Butte and Yuba Counties (press). Int. IV at Storrie; int. III at Grass Valley and Strawberry Valley.

Nov. 14. 22:13:27.6 (Nov. 15, 06:13). Epicenter 34.30°N, 116.34°W, southern California, P. Int. IV at Mecca and Morongo Valley; int. II at Beaumont and Palm Springs (press).

Nov. 15. 14:05:51.3 (22:05). Epicenter 34.25°N, 116.36°W, southern California, P. Int. II in Palm Springs area.

Nov. 18. 03:50:30.8 (11:50). Epicenter 36.93°N, 121.45°W, central California, B. Int. II in Hollister area (telephone report).

Nov. 18. 08:04:45.0 (16:04). Epicenter 34.03°N, 117.58°W, southern California, P. Int. II in Riverside-Fontana area, Mira Loma (press), and in San Bernardino County (press).

Nov. 22. 00:34. Int. V at Willits where small objects shifted.

Nov. 25. 14:50. Int. V at Hollister where furniture shifted.

Dec. 1. 23:12. Int. IV at Oroville.

Dec. 5. 17:22:11.0 (Dec. 6, 01:22). Epicenter 33.06°N, 115.54°W, southern California, P. Int. II in Brawley area.

Dec. 7. 10:59:10.1 (18:59). Epicenter 37.97°N, 122.36°W, northern California, B. Int. IV at Richmond (press); int. III at Albany and El Cerrito (telephone report).

Dec. 9. 03:01:43.3 (11:01). Epicenter 34.03°N, 117.59°W, southern California, P. Int. III at Etiwanda and Ontario (press); int. II at Corona (press).

Dec. 12. 01:57:59.0 (09:57). Epicenter 32.97°N, 115.49°W, southern California, P. Int. V at Brawley where many were awakened.

Dec. 14. 10:16:20.1 (18:16). Epicenter 34.29°N, 116.32°W, southern California, P. Int. VI. Slight damage occurred at Amboy. The press described the earthquake as slight.

INT. VI

Amboy.--Trees and bushes shook. Small objects moved. Plaster cracked.

INT. V

Yucca Valley.

INT. IV

Big Bear City, East Highlands, and Indio.

INT. III

Mecca, Morongo Valley, Palm Springs, and Rancho Mirage.

INT. II

Coachella.

Dec. 21. 19:33:19.8 (Dec. 22, 03:33). Epicenter 35.01°N, 119.01°W, central California, P. Int. IV at Frazier Park (press).

Dec. 28. 00:33:01.7. Mag. 3.2, B. Int. II in Santa Cruz area.

WASHINGTON AND OREGON

(All times are Pacific standard. If an epicenter is quoted, Universal Time is given in parentheses.)

Jan. 6. 22:11:53.0 (Jan. 7, 06:11). Epicenter 48.40°N, 122.60°W, northwest Washington, SEA. Int. II at La Conner.

Apr. 16. 11:09:29.0 (19:09). Epicenter 47.57°N, 122.91°W, Puget Sound, Wash., SEA. Int. V at Des Moines; int. III at Docton, Lakeview, and Vashon; int. II at Bellevue (press), Bremerton (press), Brinnon, Fox Island, Hansville, Kingston, Laurelhurst (press), Manchester, Potlatch, Seattle (press), Shelton, Silverdale, and Tacoma (press).

Apr. 17. 20:57:56.6 (Apr. 18, 04:57). Epicenter 46.94°N, 121.64°W, western Washington, SEA. Int. III in the Silver Creek area and Mt. Rainier National Park; int. II at Bremerton, Enumclaw (telephone communication), and Seattle.

Apr. 22. 17:03:42.4 (Apr. 23, 01:03). Epicenter 47.08°N, 122.65°W, Puget Sound, Wash., SEA. Int. VI. The earthquake was felt throughout the southern Puget Sound area. Slight damage occurred at Sumner, a few kilometers east of Tacoma.

INT. VI

Sumner.--Felt by all in home. Floor creaked. Tar on roof cracked. Damage slight.

INT. V

Alder, East Olympia, and Spanaway (press).

INT. IV

Anderson Island, Elbe, La Grande, Lakewood Center, Longbranch, North Bend, Olympia, Puyallup, Southgate, Tacoma, Tenino, and Wilkeson.

INT. III

Carbonado, Dockton, Eatonville, Fort Lewis, McMillin, Parkland, and Preston.

INT. II

Auburn (press), Buckley, Snoqualmie, Tumwater, and West Seattle (press).

June 15. 09:51. Mag. 2.4 (ML), SEA. Int. II in the Kennewick, Wash., area.

July 13. 21:50:34.6 (July 14, 05:50). Epicenter 47.33°N, 122.41°W, Puget Sound region, Wash., SEA. Int. V at Docton, Milton, and Vashon; int. IV at Tacoma; int. III at Auburn, Lakewood Center, Port Orchard, South Prairie, Sumner, and White Center; int. II at Anderson Island, Brinnon, Gig Harbor, Grapeview, Olalla, Roosevelt, Seabeck, and Seattle (press).

July 24. 03:42:11.8 (11:42). Epicenter 47.32°N, 122.41°W, Puget Sound region, Wash., SEA. Int. V at Milton, Puyallup, and Redondo; int. IV at Algona, Auburn, Burley, Docton, Gig Harbor, Lakewood Center, Manchester, Pacific, Port Orchard, Seattle, and Wilkeson; int. II at Snoqualmie.

Nov. 7. 16:37:22.0. Mag 1.8, USGS. Felt 6 km east of Vale, Oreg.

ALASKA

(Time given in this state is Alaska standard, 150° meridian. If an epicenter is quoted, Universal Time is given in parentheses. Authority for epicenters, arrival times, and/or magnitudes is given after each parameter.)

Jan. 1. 11:15:54.8 (21:15). Epicenter 61.41°N, 150.06°W, southern Alaska, USGS. Int. III at Anchorage, Palmer, and Wasilla (press).

Jan. 8. 07:38:19.1 (17:38). Epicenter 52.40°N, 175.5° W, Andreanof Islands, USGS. Int. III at Adak.

Jan. 10. 10:40:39.6 (20:40). Epicenter 51.59°N, 178.46°W, Andreanof Islands, USGS. Int. II at Adak.

Jan. 12. 14:31:55.6 (Jan. 13, 00:31). Epicenter 61.43°N, 150.49°W, southern Alaska, USGS. Int. V at Hope and Tyonek; int. IV at Anchorage and Palmer (press); int. II at Homer and Wasilla (press).

Jan. 16. 04:05:48.8 (14:05). Epicenter 62.90°N, 148.31°W, central Alaska, USGS. Int. II at Chulitna and Palmer.

Jan. 22. 13:20:41.2, ADK. Int. II at Adak.

Jan. 24. 01:07:09.8 (11:07). Epicenter 64.80°N, 147.41°W, central Alaska, USGS. Int. II in Fairbanks area.

Jan. 24. 12:43:00.2 (22:43). Epicenter 51.81°N, 175.31°W, Andreanof Islands, USGS. Int. IV at Adak.

Jan. 25. 15:12:17.7 (Jan. 26, 01:12). Epicenter 61.75°N, 149.70°W, southern Alaska, USGS. Int. II at Palmer area (including Mirror Lake and White's Crossing).

Jan. 26. 14:23:09.7 (Jan. 27, 00:23). Epicenter 61.28°N, 149.81°W, southern Alaska, USGS. Int. III at Anchorage, Palmer, and Wasilla (press).

Jan. 27. 11:33:32.2 (21:33). Epicenter 52.49°N, 176.19°W, Andreanof Islands, USGS. Int. II at Adak.

Jan. 27. 21:25:01.2 (Jan. 28, 07:25). Epicenter 61.35°N, 149.97°W, southern Alaska, USGS. Int. III at Anchorage, Chugiak, and Palmer.

Jan. 30. 16:27:37.2 (Jan. 31, 02:27). Epicenter 52.92°N, 168.47°W, Fox Islands, USGS. Int. II at Nikolski.

Feb. 1. 20:55. Int. II on Attu Island.

Feb. 1. 21:24:53.3 (Feb. 2, 07:24). Epicenter 53.05°N, 173.45°E, Near Islands, USGS. Int. II at Adak and Shemya.

Feb. 1. 22:43:39.1 (Feb. 2, 08:43). Epicenter 53.11°N,173.50°E, Near Islands, USGS. Int. IX. This major earthquake caused severe damage on Shemya Island and injured 15 people. Large crevasses in the earth were reported. The Shemya Air Force Base airport runway sustained cracks. Landslides occurred. Many minor aftershocks were felt during the 2-3 weeks following the principal tremor.

INT. IX

Shemya.--Felt by, awakened, and frightened all. Crevasses with up to 16.5 m of vertical displacement occurred. Cracks in the airport runway of 0.4 m were noted. Landslides; water disturbed; elevated water tanks twisted. Furniture overturned; plaster fell; windows broke. Large generators, pumps, and other heavy equipment were knocked off their mountings. All communications were out of service temporarily. The press reported 15 people sustained minor injuries and that underground waterpipes were broken.

INT. V

Attu.--Felt by all; awakened and frightened few. Furniture and small objects shifted. Hanging objects swung violently.

Feb. 2. 01:50, 02:30. Int. IV on Shemya Island.

Feb. 2. 05:19:48.4 (15:19). Epicenter 51.81°N, 175.40°W, Andreanof Islands, USGS. Int. II at Adak.

Feb. 2. 05:38. Int. IV on Attu Island.

Feb. 2. 05:53:06.9 (15:53). Epicenter 52.94°N, 173.56°E, Near Islands, USGS. Int. II at Shemya.

Feb. 4. 17:56. Int. IV on Shemya Island.

Feb. 7. 00:22:46.2 (10:22). Epicenter 52.40°N, 174.24°E, Near Islands, USGS. Int. V on Shemya Island.

Feb. 9. 01:01:19.4 (11:01). Epicenter 52.82°N, 174.49°E, Near Islands, USGS. Int. V on Shemya Island.

Feb. 10. 00:05:38.0 (10:05). Epicenter 60.70°N, 147.00°W, southern Alaska, USGS. Int. II at Anchorage and Palmer.

Feb. 12. 05:45:35.1 (15:45). Epicenter 63.52°N, 148.73°W, central Alaska, USGS. Int. IV at Cantwell; int. III at Fairbanks and Healy.

Feb. 14. 21:51:15.6 (Feb. 15, 07:51). Epicenter 51.84°N, 175.26°W, Andreanof Islands, USGS. Int. II at Adak.

Feb. 15. 07:53:57.7, ADK. Int. II at Adak.

Feb. 21. 12:51:17.0, COL. Int. II at College Observatory.

Feb. 21. 22:36:07.4 (Feb. 22, 08:36). Epicenter 51.38°N, 179.42° W, Andreanof Islands, USGS. Int. VI at Adak (USGS report).

Feb. 22. 15:56:35.0, ADK. Int. II at Adak.

Feb. 22. 19:09:43.3 (Feb. 23, 05:09). Epicenter 51.27°N, 179.27°W, Andreanof Islands, USGS. Int. II at Adak.

Mar. 4. 01:09:45.2, ADK. Int. II at Adak.

Mar. 5. 20:16:07.8, SIT. Int. II at Sitka.

Mar. 9. 04:19:42.1 (14:19). Epicenter 65.84°N, 149.89°W, central Alaska, USGS. Int. II in Fairbanks area.

Mar. 12. 00:43:33.1 (10:43). Epicenter 51.53°N, 177.75°W, Andreanof Islands, USGS. Int. IV at Adak.

Mar. 12. 04:05:31.5 (14:05). Epicenter 61.92°N, 150.31°W, southern Alaska, USGS. Int. II in Palmer-Anchorage area (including Pittman and Wasilla).

Mar. 14. 08:30:35.5, COL. Int. III in Fairbanks area.

Mar. 16. 13:51. Int. III at College Observatory.

Mar. 17. 07:39:29.2 (17:39). Epicenter 51.85°N, 175.29°W, Andreanof Islands, USGS. Int. IV at Adak.

Mar. 19. 14:13:55.3, COL. Int. III in Fairbanks area.

Mar. 19. 21:11:35.7 (Mar. 20, 07:11). Epicenter 51.26°N, 179.63°W, Andreanof Islands, USGS. Int. II at Adak.

Mar. 19. 21:30:38.8 (Mar. 20, 07:30). Epicenter 51.32°N, 179.56°W, Andreanof Islands, USGS. Int. II at Adak.

Apr. 2. 04:43:21.9 (14:43). Epicenter 51.62°N, 178.29°W, Andreanof Islands, USGS. Int. III at Adak.

Apr. 5. 03:43:50.1, ADK. Int. II at Adak.

Apr. 7. 12:13:46.1 (22:13). Epicenter 61.56°N, 150.57°W, southern Alaska, USGS. Int. II at Houston and Spenard.

Apr. 11. 00:47:15.3 (10:47). Epicenter 54.10°N, 163.25°W, Unimak Islands, USGS. Int. IV at Cold Bay.

Apr. 13. 04:16:43.4 (14:16). Epicenter 65.34°N, 150.09°W, central Alaska, USGS. Int. IV at Fairbanks.

Apr. 14. 06:42:32.8 (16:42). Epicenter 57.95°N, 156.94°W, Alaska Peninsula, USGS. Int. IV at Fairbanks.

Apr. 15. 23:01:39.7 (Apr. 16, 09:01). Epicenter 64.93°N, 148.71°W, central Alaska, USGS. Int. IV at Fairbanks and Nenana.

Apr. 17. 22:52:32.6 (Apr. 18, 08:52). Epicenter 61.81°N, 150.56°W, southern Alaska, USGS. Int. III at Palmer.

Apr. 18. 12:47:08.9 (22:47). Epicenter 52.93°N, 173.34°E, Near Islands, USGS. Int. III on Attu Island.

Apr. 22. 06:14, COL. Int. IV at Cold Bay.

Apr. 25. 20:40:58.1, ADK. Int. II at Adak.

Apr. 29. 13:25:04.0, COL. Int. IV in Fairbanks area.

May 12. 13:51:25.0 (23:51). Epicenter 51.57°N, 176.22°W, Andreanof Islands, USGS. Int. IV at Adak.

May 15. 02:05:38.5 (12:05). Epicenter 51.72°N, 175.42°W, Andreanof Islands, USGS. Int. II at Adak.

May 15. 21:57:47.5 (May 16, 07:57). Epicenter 54.09°N, 163.09°W, Unimak Island region, USGS. Int. V at False Pass; int. IV at Cape Sarichef, Cold Bay, and King Cove; int. II at Driftwood Bay and Dutch Harbor.

May 18. 05:42:59.1 (15:42). Epicenter 63.17°N, 150.26°W, central Alaska, USGS. No damage was reported, but the shock was felt strongly. Int. V at Mt. McKinley National Park and Tyonek; int. IV at Cantwell, Clam Gulch, Ester, Healy, Medfra, Nenana, Summit, Skwentna, and Talkeetna; int. III at Anchorage, Glennallen, Manley, Hot Springs, Palmer, and Wasilla; int. II at Anchor Point, Eagle River, Fairbanks, Lake Minchumina, Valdez, Whittier, and Willow.

May 20. 20:34:54.9 (May 21, 06:34). Epicenter 60.18°N, 147.58°W, southern Alaska, USGS. Int. II at Anchorage and Middleton Island.

June 4. 10:35:56.8 (20:35). Epicenter 51.94°N, 179.58°W, Andreanof Islands, USGS. Int. II at Adak.

June 10. 19:14:08.2 (June 11, 05:14). Epicenter 62.17°N, 149.64°W, central Alaska, USGS. Int. II at Anchorage and Palmer.

July 8. 10:57:22.7 (20:57). Epicenter 51.55°N, 178.29°W, Andreanof Islands, USGS. Int. III at Adak.

July 14. 08:09:31.7 (18:09). Epicenter 60.70°N, 151.28°W, Kenai Peninsula, USGS. Int. II in Kenai Peninsula and at Palmer.

July 25. 00:40:25.0 (10:40). Epicenter 55.06°N, 160.38°W, Alaska Peninsula, USGS. Reportedly felt strongly at Sand Point. Int. IV at Cold Bay.

Aug. 2. 00:18:17.9 (10:18). Epicenter 53.39°N, 161.49°W, south of Alaska, USGS. Int. V at King Cove; int. IV at Cold Bay.

Aug. 21. 12:19:21.1 (22:19). Epicenter 60.36°N, 151.19°W, Kenai Peninsula, USGS. Int. V at Homer where small objects shifted; felt by all in community.

Sept. 8. 13:19:02.2 (23:19). Epicenter 61.53°N, 146.24°W, southern Alaska, USGS. Int. II at Valdez.

Sept. 21. 11:05. Int. IV at Fairbanks.

Sept. 28. 21:46:33.4 (Sept. 29, 07:46). Epicenter 51.55°N, 177.87°W, Andreanof Islands, USGS. Int. III at Adak.

Sept. 29. 22:28:12.2 (Sept. 30, 08:28). Epicenter 51.71°N, 179.45°W, Andreanof Islands, USGS. Int. II at Adak.

Oct. 22. 05:27:04.0 (15:27). Epicenter 61.69°N, 149.88°W, southern Alaska, USGS. Int. IV at Anchorage, Nancy, and Palmer (press).

Oct. 23. 13:11:31.6 (23:11). Epicenter 61.73°N, 150.12°W, southern Alaska, USGS. Int. III at Palmer and Willow.

Oct. 27. 20:40:59.0 (Oct. 28, 06:40). Epicenter 61.42°N, 152.42°W, southern Alaska, USGS. Int. III in Anchorage area.

Oct. 30. 02:36:11.5 (12:36). Epicenter 51.36°N, 179.35°W, Andreanof Islands, USGS. Int. II at Adak.

Nov. 5. 15:06:42.1 (Nov. 6, 01:06). Epicenter 51.87°N, 176.23°E, Rat Islands, USGS. Int. V at Shemya Air Force Base where all in community felt the shock.

Nov. 7. 06:19. Int. III at Shemya Air Force Base.

Nov. 12. 16:54:01.2 (Nov. 13, 02:54). Epicenter 54.37°N, 162.66°W, Alaska Peninsula, USGS. Int. V at Cold Bay where small objects shifted.

Nov. 29. 19:31:25.7 (Nov. 30, 05:31). Epicenter 52.30°N, 176.27°W, Andreanof Islands, USGS. Int. III at Adak.

Dec. 1. 12:15:21.2 (22:15). Epicenter 61.47°N, 149.14° W, southern Alaska, USGS. Int. IV at Chugiak, Palmer, and Wasilla; int. II at Anchorage.

Dec. 2. 21:38:10.2 (Dec. 3, 07:38). Epicenter 61.67°N, 150.83°W, southern Alaska, USGS. Int. II at Anchorage and Palmer.

Dec. 21. 03:24:05.1 (13:24). Epicenter 53.16°N, 168.97°W, Fox Islands, USGS. Int. IV at Nikolski Village.

Dec. 25. 06:50:42.0 (16:50). Epicenter 61.82°N, 148.68°W, southern Alaska, USGS. Int. II at Sutton.

Dec. 26. 03:40:07.8 (13:40). Epicenter 62.47°N, 150.04°W, central Alaska, USGS. Int. IV at Talkeetna; int. III at Gold Creek.

Dec. 29. 07:52:33.5 (17:52). Epicenter 62.30°N, 148.63°W, central Alaska, USGS. Int. IV at Talkeetna.

HAWAII

(The following list includes felt earthquakes of magnitude 3.0, as determined by the Hawaiian Volcano Observatory. The time is given in Hawaiian standard. If an epicenter is quoted, Universal Time is given in parentheses.)

Jan. 1. 01:02:06.9 (11:02). Epicenter 19.18°N, 155.34°W, Island of Hawaii. Int. III at Pahala; int. II at Hilo and Volcano.

Jan. 1. 02:41:10.3 (12:41). Epicenter 19.22°N, 155.35°W, Island of Hawaii. Int. IV at Pahala; int. III at Hilo and Volcano; int. II at Kamuela and Kona.

Jan. 1. 03:05:45.6 (13:05). Epicenter 19.23°N, 155.37°W, Island of Hawaii. Int. III at Pahala; int. II at Hilo.

Jan. 1. 05:18:12.7 (15:18). Epicenter 19.26°N, 155.39°W, Island of Hawaii. Int. III at Pahala; int. II at Hilo.

Jan. 1. 09:11:35.2 (19:11). Epicenter 19.25°N, 155.38°W, Island of Hawaii. Int. III at Pahala; int. II at Hilo.

Jan. 1. 09:46:45.4 (19:46). Epicenter 19.25°N, 155.41°W, Island of Hawaii. Int. IV at Pahala; int. III at Hilo; int. II at Volcano.

Jan. 1. 10:27:04.6 (20:27). Epicenter 19.21°N, 155.36°W, Island of Hawaii. Int. III at Pahala; int. II at Hilo.

Jan. 1. 10:46:48.7 (20:46). Epicenter 19.26°N, 155.40°W, Island of Hawaii. Int. IV at Pahala; int. III at Hilo and Puna.

Jan. 1. 11:28:54.1 (21:28). Epicenter 19.19°N, 155.36°W, Island of Hawaii. Int. IV at Pahala; int. III at Hilo.

Jan. 1. 15:35:18.7 (Jan. 2, 01:35). Epicenter 19.28°N, 155.23°W, Island of Hawaii. Int. III at Pahala; int. II at Hilo.

Jan. 2. 03:27:42.7 (13:27). Epicenter 19.22°N, 155.38°W, Island of Hawaii. Int. V at Pahala; int. IV at Hilo; int. III at Kamuela and Volcano.

Jan. 2. 03:49:07.5 (13:49). Epicenter 19.31°N, 155.39°W, Island of Hawaii. Int. III at Pahala; int. II at Hilo.

Jan. 3. 01:45:50.1 (11:45). Epicenter 19.17°N, 155.38°W, Island of Hawaii. Int. IV at Pahala; int. II at Hilo and Volcano.

Jan. 3. 07:32:49.0 (17:32). Epicenter 19.20°N, 155.36°W, Island of Hawaii. Int. V at Pahala; int. IV at Glenwood, Hilo, and Volcano; int. II at Kamuela and Kona.

Jan. 3. 08:14:45.9 (18:14). Epicenter 19.23°N, 155.38°W, Island of Hawaii. Int. III at Pahala; int. II at Volcano.

Jan. 3. 11:17:28.8 (21:17). Epicenter 19.26°N, 155.37°W, Island of Hawaii. Int. III at Pahala; int. II at Volcano.

Jan. 3. 20:35:52.2 (Jan. 4, 06:35). Epicenter 19.35°N, 155.13°W, Island of Hawaii. Int. IV at Hilo; int. III at Glenwood, Keaau, Kealakekua, Pepeekeo, and Volcano; int. II at Kamuela and Pahoa.

Jan. 4. 02:13:27.7 (12:13). Epicenter 19.24°N, 155.38°W, Island of Hawaii. Int. IV at Pahala; int. III at Hilo and Volcano.

Jan 4. 15:32:04.9 (Jan. 5, 01:32). Epicenter 19.25°N, 155.37°W, Island of Hawaii. Int. V at Pahala; int. IV at Hilo and Mountain View; int. III at Keaau, Pepeekeo, Pohakuloa, and Volcano; int. II at Honokaa and Keauhou.

Jan. 4. 19:28:03.0 (Jan. 5, 05:28). Epicenter 19.24°N, 155.41°W, Island of Hawaii. Int. IV at Pahala; int. III at Volcano.

Jan. 5. 00:48:39.3 (10:48). Epicenter 19.24°N, 155.38°W, Island of Hawaii. Int. III at Pahala; int. II at Hilo and Volcano.

Jan. 6. 17:47:02.6 (Jan. 7, 03:47). Epicenter 19.28°N, 155.40°W, Island of Hawaii. Int. IV at Pahala; int. III at Volcano.

Jan. 7. 22:13:31.1 (Jan. 8, 08:13). Epicenter 19.26°N, 155.34°W, Island of Hawaii. Int. III at Pahala; int. II at South Kona.

Jan. 8. 05:52:49.9 (15:52). Epicenter 19.26°N, 155.34°W, Island of Hawaii. Int. III at Pahala, South Kona, and Volcano.

Feb. 7. 06:46:52.2 (16:46). Epicenter 19.24°N, 155.54°W, Island of Hawaii. Int. III at South Kona.

Feb. 21. 11:19:40.3 (21:19). Epicenter 19.37°N, 155.11°W, Island of Hawaii. Int. III at Hilo and Pahoa.

Mar. 10. 00:14:12.6 (10:14). Epicenter 19.42°N, 155.47°W, Island of Hawaii. Int. III at Pahala and Volcano; int. II at Captain Cook, Hilo, and Mountain View.

Mar. 26. 10:06:03.0 (20:06). Epicenter 19.47°N, 155.60°W, Island of Hawaii. Int. III at Mauna Loa Observatory and South Kona; int. II at Pahala and Volcano.

Apr. 4. 13:09:55.8 (23:09). Epicenter 19.33°N, 155.23°W, Island of Hawaii. Int. III at Hilo and Pahoa.

Apr. 4. 13:35:17.3 (23:35). Epicenter 19.32°N, 155.23°W, Island of Hawaii. Int. III at Hilo and Pahoa; int. II at Kahuku Ranch.

Apr. 5. 10:24:09.6 (20:24). Epicenter 19.28°N, 155.38°W, Island of Hawaii. Int. III at Kahuku Ranch.

Apr. 5. 11:56:57.9 (21:56). Epicenter 19.29°N, 155.37°W, Island of Hawaii. Int. III at Kahuku Ranch.

Apr. 6. 12:15:55.3 (22:15). Epicenter 19.32°N, 155.22°W, Island of Hawaii. Int. III at Hilo; int. II at Pohakuloa and Volcano.

Apr. 10. 14:18:40.1 (Apr. 11, 00:18). Epicenter 19.35°N, 155.14°W, Island of Hawaii. Int. II at Volcano.

Apr. 11. 06:22:24.7 (16:22). Epicenter 19.35°N, 155.15°W, Island of Hawaii. Int. II at Volcano.

Apr. 17. 23:30:14.6 (Apr. 18, 09:30). Epicenter 19.31°N, 155.22°W, Island of Hawaii. Int. III at Hilo, Mountain View, and Volcano.

Apr. 18. 03:22:28.9 (13:22). Epicenter 19.31°N, 155.22°W, Island of Hawaii. Int. III at Hilo, Glenwood, and Volcano.

Apr. 24. 14:46:55.7 (Apr. 25, 00:46). Epicenter 19.27°N, 155.39°W, Island of Hawaii. Int. II at Kapapala Ranch.

Apr. 29. 01:14:20.7 (11:14). Epicenter 19.43°N, 155.59°W, Island of Hawaii. Int. II at Kona.

Apr. 29. 01:48:07.5 (11:48). Epicenter 19.40°N, 155.28°W, Island of Hawaii. Int. II at Glenwood, Keaau, and Volcano.

Apr. 29. 19:23:09.9 (Apr. 30, 05:23). Epicenter 19.39°N, 155.48°W, Island of Hawaii. Int. III at Kapapala Ranch.

May 10. 19:32:51.7 (May 11, 05:32). Epicenter 19.35°N, 155.13°W, Island of Hawaii. Int. IV at Hilo.

May 21. 22:32:58.6 (May 22, 08:32). Epicenter 20.30°N, 155.65°W, north of the Island of Hawaii. Int. V at Kamuela; int. IV on Maui Island; int. III at Hilo and Kona; int. II on Oahu Island.

May 22. 04:46:05.3 (14:46). Epicenter 19.37°N, 155.46°W, Island of Hawaii. Int. II at Kapapala Ranch.

May 27. 16:15:34.9 (May 28, 02:15). Epicenter 19.47°N, 155.58°W, Island of Hawaii. Int. II at Kapapala Ranch.

July 4. 17:40:55.1 (July 5, 03:40). Epicenter 19.35°N, 155.32°W, Island of Hawaii. Int. IV at Kau; int. III at Hilo, Kona, and Puna.

July 5. 23:18:18.3 (July 6, 09:18). Epicenter 19.45°N, 155.60°W, Island of Hawaii. Int. IV at Kau; int. III at Hilo, Kona, Pahala, and Volcano.

July 5. 23:25:45.9 (July 6, 09:25). Epicenter 19.43°N, 155.64°W, Island of Hawaii. Int. IV at Kau; int. III at Hilo, Kona, Pahala, and Volcano.

July 7. 05:39:48.6 (15:39). Epicenter 19.51°N, 155.45°W, Island of Hawaii. Int. III at Kau and Volcano.

July 7. 14:47:41.9 (July 8, 00:47). Epicenter 19.51°N, 155.48°W, Island of Hawaii. Int. IV at Kau; int. III in the southern part of the Island.

July 7. 18:39:52.2 (July 8, 04:39). Epicenter 19.51°N, 155.45°W, Island of Hawaii. Int. IV at Kau; int. III at Hilo, Kona, Pahala, and Volcano.

July 8. 01:09:07.5 (11:09). Epicenter 19.52°N, 155.47°W, Island of Hawaii. Int. III at Pahala.

July 8. 20:07:02.6 (July 9, 06:07). Epicenter 19.51°N, 155.46°W, Island of Hawaii. Int. IV at Kau; int. III at Hilo, Kona, Pahala, and Volcano.

July 9. 05:47:42.7 (15:47). Epicenter 19.52°N, 155.46°W, Island of Hawaii. Int. IV at Kau; int. III at Hilo, Kona, Pahala, and Volcano.

July 9. 08:40:03.4 (18:40). Epicenter 19.51°N, 155.47°W, Island of Hawaii. Int. IV at Kau; int. III Islandwide.

July 18. 21:19:58.1 (July 19, 07:19). Epicenter 19.24°N, 155.01°W, Island of Hawaii. Int. III at Hilo.

July 22. 15:12:32.7 (July 23, 01:12). Epicenter 19.78°N, 156.20°W, Island of Hawaii. Int. III at Kona.

July 30. 13:31:22.4 (23:31) Epicenter 19.52°N, 155.60°W, Island of Hawaii. Int. III at Pahala and South Kona.

Aug. 5. 07:36:38.6 (17:36). Epicenter 19.25°N, 155.39°W, Island of Hawaii. Int. III at Kau; int. II at Kapapala Ranch and Pahala.

Aug. 18. 07:08:55.9 (17:08). Epicenter 19.62°N, 156.09°W, Island of Hawaii. Int. III at Kona.

Aug. 24. 05:45:35.4 (15:45). Epicenter 19.35°N, 155.28°W, Island of Hawaii. Int. III at Volcano.

Aug. 27. 07:34:44.2 (17:34). Epicenter 19.44°N, 155.47°W, Island of Hawaii. Int. IV at Kau; int. III at Keaau, Pahoa, South Kona, and Volcano.

Sept. 10. 08:34:11.0 (18:34). Epicenter 19.35°N, 155.19°W, Island of Hawaii. Int. III at Hilo and Volcano.

Sept. 21. 19:46:01.5 (Sept. 22, 05:46). Epicenter 19.33°N, 155.21°W, Island of Hawaii. Int. III at Hilo and Kurtistown.

Oct. 1. 21:34:39.5 (Oct. 2, 07:34). Epicenter 19.32°N, 155.23°W, Island of Hawaii. Int. IV in Puna, Amaloa subdivision, Glenwood, Hilo, Pohakuloa training area (National Weather Service report), and Volcano.

Oct. 26. 23:37:40.2 (Oct. 27, 09:37). Epicenter 19.31°N, 155.46°W, Island of Hawaii. Int. III in Kau, Pahala, and Kapapala.

Oct. 27. 19:35:52.8 (Oct. 28, 05:35). Epicenter 19.32°N, 155.23°W, Island of Hawaii. Int. IV in Puna, Hilo, and Volcano.

Oct. 31. 04:50:53.6 (14:50). Epicenter 19.18°N, 155.64°W, Island of Hawaii. Int. IV in Kona.

Nov. 6. 02:05:28.4 (12:05). Epicenter 19.32°N, 155.31°W, Island of Hawaii. Int. V in Kau; int. III at Honolulu and Islandwide on Hawaii.

Nov. 6. 03:21:18.7 (13:21). Epicenter 19.31°N, 155.31°W, Island of Hawaii. Int. IV in Kau; int. III in Hilo-Puna area. Felt Islandwide.

Nov. 6. 04:02:56.5 (14:02). Epicenter 19.32°N, 155.31°W, Island of Hawaii. Int. IV in Kau; int. III in Hilo-Puna area. Felt Islandwide.

Nov. 10. 01:26:29.8 (11:26). Epicenter 19.35°N, 155.04°W, Island of Hawaii. Felt Islandwide. Int. IV in Puna; int. III at Hilo, Honokaa, and Volcano.

Nov. 13. 23:02:04.8 (Nov. 14, 09:02). Epicenter 19.36°N, 155.07°W, Island of Hawaii. Int. IV in Puna and Hilo.

Nov. 14. 01:23:25.8 (11:23). Epicenter 19.32°N, 155.34°W, Island of Hawaii. Int. IV in Kau and Kona.

Nov. 14. 01:51:45.3 (11:51). Epicenter 18.97°N, 155.48°W, Island of Hawaii. Int. III in Kau and Kona.

Nov. 15. 12:55:21.2 (22:55). Epicenter 19.32°N, 155.22°W, Island of Hawaii. Int. IV in Hilo and Puna.

Nov. 18. 13:10:01.9 (23:10). Epicenter 19.37°N, 155.07°W, Island of Hawaii. Int. III in Hilo.

NOTE: The list of Hawaii earthquakes is incomplete for the period between Nov. 19 and Dec. 31 owing to the swarm of aftershocks that occurred after the Nov. 29 earthquake.

Nov. 29. 03:35:41.0 (13:35). Epicenter 19.35°N, 155.06°W, Island of Hawaii. Int. VI in Hilo and Puna.

Nov. 29. 04:47:40.3 (14:47). Epicenter 19.34°N, 155.03°W, Island of Hawaii. This is the largest earthquake in Hawaii since April 2, 1868, when an int. X shock centered near the south coast of Hawaii Island and generated a tsunami with an 18-m wave height on the Kau-Puna coast.

This earthquake was felt throughout Hawaii Island and on Lanai, Molokai, and Oahu (see fig. 21). Int. VIII. Extensive structural damage occurred in the southeastern part of the Island at Hilo, Hawaii Volcanoes National Park, Kurtistown, Opihikao, and Pahoa (Tilling et al, 1976). Damage from the earthquake and tsunami has been estimated at $4.1 million; two people were killed.

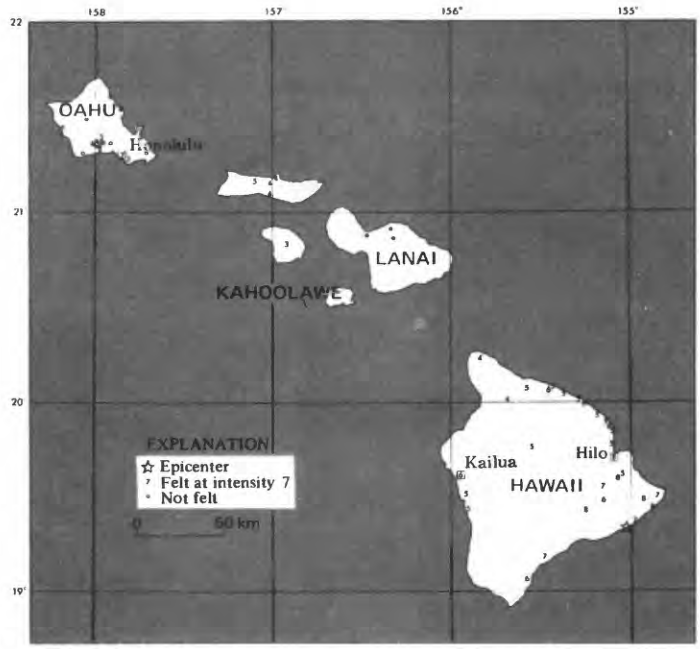


Figure 21. Area affected by Hawaii earthquake of November 29

The tsunami caused an estimated $1.5 million in damage. The largest wave was 6 m high [average height] at a location near the earthquake epicenter (about 4 km southwest of Kalapaua). About a dozen dwellings were totally or partially destroyed, and a dozen boats were severely damaged (Loomis, 1975). The hypocenter was centered about 5 km beneath the Kalapana area on the southeastern coast of the Island. The earthquake was preceded by

numerous foreshocks, massive ground movements, hundreds of aftershocks, and a volcanic eruption. The south flank of Kilauea volcano, which forms the southeastern part of the Island, was deformed by dislocations of old and new faults along a zone 25 km long. Downward and seaward, fault displacements resulted in widespread subsidence, locally as much as 3.5 m; coconut palms were left standing in the sea and a small nearshore island was nearly submerged. A brief, small-volume volcanic eruption, triggered by the earthquake, and associated ground movements occurred at Kilauea's summit about three-quarters of an hour later.

INT. VIII

Hilo.--Steel-reinforced concrete structures (hospital, schools, libraries) sustained minor cracks, floor-to-wall separations, and bowing of walls. In some of these structures, 2.5- to 5-cm vertical drops in floor sections occurred. Hotels, apartments, and business establishments sustained both structural and equipment damage. Hollow tile blocks cracked; breaks in waterlines and swimming pool were reported. Minor cracks occurred in concrete walls, floors, and in plaster.

Fifty-one private dwellings sustained losses from broken waterpipes and windows. Houses and garages shifted on foundations; stone walls, fences, and stairways collapsed. Cesspools caved in. Doors were out of plumb. Brick chimneys cracked and crumbled. Cupboards were torn from walls; ceramic tile floors chipped. Minor cracks in the ground and road occurred.

Hawaii Volcanoes National Park.--Extensive ground cracking caused heavy road damage in the National Park (see fig. 22). On the Crater Rim, road damage was reported in the Waldron Ledge section, Kilauea Military Camp section, Halemaumau section, and Keanakakoi section. Damage was also noted on the Chain of Craters, Ainahou, and Hilina Pali Roads. Watertanks at the Youth Conservation Corps and at Kipuka Nene were damaged. Waterlines in several areas broke. Fireplace chimneys at Kilauea Military Camp collapsed.

Kurtistown.--Damage to seven residences included: House and garage moved from foundations; 10-cm wall separation; roof separation; rock wall damage; cracked concrete steps; and broken chinaware.

Opihikao.--Two watertanks at a church were destroyed.

Pahoa.--Three homes moved from foundation. Other damage included a broken waterline and collapsed watertank and toolshed.

Volcano.--One residence collapsed. Three wooden watertanks were destroyed and several others were damaged.

INT. VII

Black Sands subdivision.--Damage reports from two residences included: House dropped 7.5 cm. Watertank fell; house beams and walls cracked.

Hawaiian Paradise Park.--One house shifted off foundation; cabinets toppled from walls.

Kalapana.--A wood-frame residential house shifted 0.9-1.2 m from foundation. One watertank was damaged. Many small cracks in road. Residents reported that loose objects fell off shelves and strong shaking occurred.

Kapoho.--Minor ground cracks and small rockfalls from walls of cinder cones.

Mountainview.--Floor of watertank cracked; Plexiglas cracked; TV set shifted off stand and fell to the floor; rock wall damaged.

Pahala.--One homeowner reported doors became distorted, house moved from concrete foundation, furniture and stereo were overturned.

INT. VI

Glenwood.--Loose objects fell off shelves; water splashed out of fish bowl.

Hawaiian Beaches.--Concrete slab cracked in garage.

Holualola.--Landslides. Hanging objects swung slightly. Small objects moved. Electricity was interrupted. Damage slight.

Honokaa.--Slight damage.

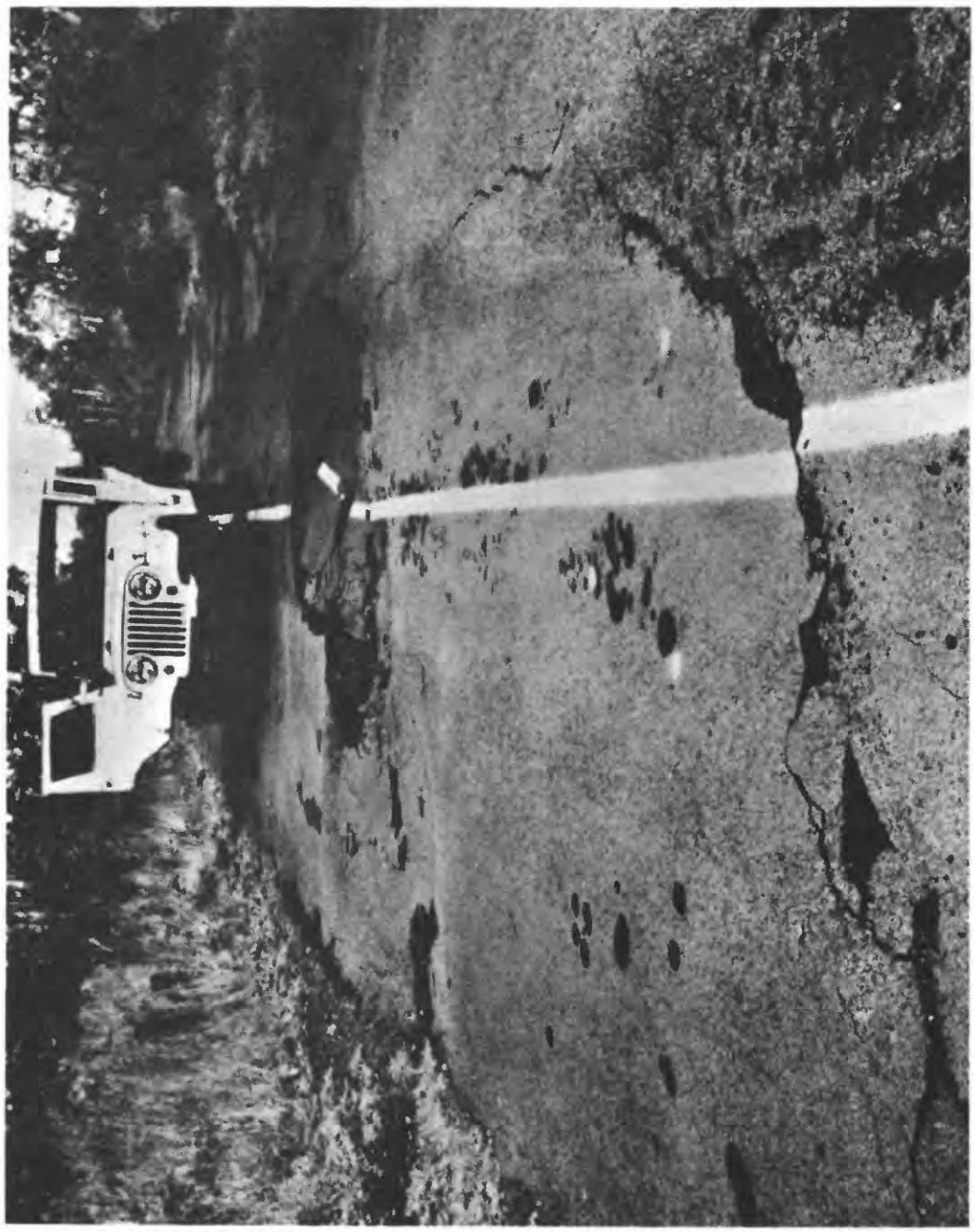


Figure 22. The November 29 earthquake damaged this highway in Hawaii Volcanoes National Park

Honomu.--Landslides on Coast Road; loose objects fell from shelves. Damage slight.

Kailua.--Slight damage.

Laupahoehoe.--Landslides on Coast Road; loose objects fell from shelves.

Naalehu.--Foundation to one ranchhouse cracked, and roof was damaged.

INT. V

Hakalau, Hawaiian Volcano Observatory, Honalo, Hoolehua (Molokai I.), Keaau, Kealakekua, Kukuihaele, Ninole, Ookala, Paauhau, Paauilo, Papaikou, Pearl City (Oahu I.), Pepeekeo, and Pohakuloa training area.

INT. IV

Hawi, Kaaawa (Oahu I.), Kalaupapa (Molokai I.), Kamuela, Kaunakakakai (Molokai I.), and Kualapuu (Molokai I.).

INT. III

Honolulu (Oahu I.) and Lanai City (Lanai I.).

Dec. 1. 12:19:03.0 (22:19). Epicenter 19.36°N, 155.01°W, Island of Hawaii. Int. III in Hilo.

Dec. 2. 00:15:47.9 (10:15). Epicenter 19.36°N, 155.25°W, Island of Hawaii. Int. IV at Hilo, Puna, and Volcano.

Dec. 2. 14:21:25.7 (Dec. 3, 00:21). Epicenter 19.31°N, 155.38°W, Island of Hawaii. Int. III at Hilo, Puna and Volcano.

Dec. 2. 18:56:24.9 (Dec. 3, 04:56). Epicenter 19.38°N, 155.11°W, Island of Hawaii. Int. IV in Hilo, Pahala, and Papaikuu.

Dec. 3. 20:27:56.6 (Dec. 4, 06:27). Epicenter 19.34°N, 155.09°W, Island of Hawaii. Int. III at Naalehu and Puna.

Dec. 3. 20:43:53.8 (Dec. 4, 06:43). Epicenter 19.31°N, 155.34°W, Island of Hawaii. Int. III in Puna and Volcano.

Dec. 4. 01:09:07.7 (11:09). Epicenter 19.38°N, 154.98°W, Island of Hawaii. Int. IV in Puna.

Dec. 4. 11:39:09.8 (21:39). Epicenter 19.36°N, 154.98°W, Island of Hawaii. Int. III at Kalapana, Puna, and Volcano.

Dec. 5. 18:11:55.0 (Dec. 6, 04:11). Epicenter 19.29°N, 155.35°W, Island of Hawaii. Int. IV at Hilo, Puna, and Volcano.

Dec. 9. 13:55:54.4 (23:55). Epicenter 19.36°N, 155.13°W, Island of Hawaii. Int. IV at Kalapana, Puna, and Volcano.

Dec. 10. 15:43:16.7 (Dec. 11, 01:43). Epicenter 19.34°N, 155.20°W, Island of Hawaii. Int. IV at Hilo, Puna, and Volcano.

Dec. 11. 05:41:18.9 (15:41). Epicenter 19.37°N, 155.12°W, Island of Hawaii. Int. III in Puna and Volcano.

Dec. 12. 15:36:54.5 (Dec. 13, 01:36). Epicenter 19.36°N, 155.14°W, Island of Hawaii. Int. IV at Hilo, Kalapana, Puna, and Volcano.

Dec. 13. 00:53:36.0 (10:53). Epicenter 19.37°N, 155.05°W, Island of Hawaii. Int. IV at Hilo, Kalapana, and Puna.

Dec. 26. 22:55:24.0 (Dec. 27, 08:55). Epicenter 20.00°N, 156.00°W, Island of Hawaii. Int. II in northern Hawaii.

PANAMA CANAL ZONE

(Time given is 75° meridian. Universal time is given in parentheses.)

Jan. 24. 22:08:41.5 (Jan. 25, 02:08). Epicenter 7.22°N, 77.77°W, Panama-Colombia border region, USGS. Int. III at Balboa Heights.

PUERTO RICO

(Time given is 60° meridian. Universal time is given in parentheses.)

Mar. 18. 00:19:39.7 (04:19). Epicenter 19.21° N, 69.86° W, Dominican Republic region, USGS. Int. II at Mayaguez, P.R.

June 17. 01:01:13.5 (05:01). Epicenter 18.50° N, 66.34° W, Puerto Rico region, USGS. Int. VI at Rio Grande where concrete cracked, furniture shifted, and small objects fell. Int. V at Aguas Buenas, Arecibo, Caguas, Camuy, Catano, Comerio, Corozal, Ensenada, Juana Diaz, Juncos, Orocovis, Penuelas, Ponce, Trujillo Alto, and Utuado; int. IV at Adjuntas, Aguada, Aguadilla, Aibonito, Barceloneta, Bayamon, Florida, Guayama, Guayanilla, Hatillo, Los Marias, La Plata, Maricao, Morovis, Quebradillas, Roosevelt Roads (U.S. Naval Base), San German, San Lorenzo, San Sebastian, and Vega Alta; int. III at Cidra; int. II at Sabana Seca.

VIRGIN ISLANDS

No earthquakes were reported felt in this area in 1975.

REFERENCES

Beeby, David L. and Robert L. Hill, "Galway Lake Fault," California Geology, Calif. Division of Mines and Geology, Sacramento, vol. 28, no. 10, pp. 219-221, Oct. 1975.

California Division of Mines and Geology, "Oroville, California Earthquake of 1 August 1975, Special Report 124," Sacramento, 152 pp., 1975.

Carver, G., California State University, 1975 (personal communication).

Clark, Malcomb M., Robert V. Sharp, Robert O. Castle, and Philip W. Harsh, "Surface Faulting Near Lake Oroville, California, in August, 1975," Bull. Seis. Soc. Am., vol. 66, no. 1, pp. 1101-1110, 1976.

Loomis, H.G., "Tsunami Wave Heights in Hawaii," HIG-76-5, Univ. of Hawaii and National Oceanic and Atmospheric Administration, Honolulu, 95 pp., 1976.

Nason, Robert, Edwin L. Harp, Harry La Gesse, and Richard P. Maley, "Investigations of the 7 June 1975 Earthquake in Humboldt County, California," USGS Open File Report No. 75-404, Menlo Park, California, 28 pp, 1975.

Rojahn, C. and B.J. Morrill, "The Investigation of Hawaiian Earthquakes of November 29, 1975: Strong-Motion Data and Damage Reconnaissance Report, Bull. Seis. Soc. Am., vol. 67, no 2, pp. 493-515, Apr. 1977.

Talwani, Pradeep, "An Intensity Survey of the April 28, 1975, Summerville, S.C., Earthquake," Bull. Seis. Soc. Am., vol. 67, no. 2, pp. 547-549, Apr. 1977.

Tilling, R.I., R.Y. Koyanagi, P.W. Lipman, J.P. Lockwood, J.G. Moore, and D.A. Swanson, "Earthquake and Related Catastrophic Events, Island of Hawaii, November 29, 1975--A Preliminary Report," U.S. Geol. Survey Circ. 740, 33 pp., 1976.

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975

(SOURCE. PRELIMINARY DETERMINATION OF EPICENTERS MONTHLY LISTING, PUBLISHED BY U.S. GEOLOGICAL SURVEY.)

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JAN 01	11	02	06.9	19.18N	155.34W	HAWAII	III	005	4.7		4.1	
JAN 01	12	41	10.3	19.22N	155.35W	HAWAII	IV	004	4.7		4.6	
JAN 01	13	05	45.6	19.23N	155.37W	HAWAII	III	008			3.6	
JAN 01	13	18	59.6	19.06N	155.90W	HAWAII		010	4.5			
JAN 01	13	20	54.5	19.48N	155.58W	HAWAII		010	5.1	5.3		
JAN 01	13	44	16.0	19.20N	155.40W	HAWAII		005				
JAN 01	13	44	36.3	19.07N	155.85W	HAWAII		010	4.7		4.9	
JAN 01	15	18	12.7	19.26N	155.39W	HAWAII	III	006			3.5	
JAN 01	19	11	35.2	19.25N	155.38W	HAWAII	III	008			3.6	
JAN 01	19	46	45.4	19.25N	155.41W	HAWAII	IV	007	4.9		4.3	
JAN 01	20	27	04.6	19.21N	155.36W	HAWAII	III	003			3.6	
JAN 01	20	46	48.7	19.26N	155.40W	HAWAII	IV	005	4.5		4.3	
JAN 01	21	15	54.8	61.41N	150.06W	SOUTHERN ALASKA	III	063	3.8			
JAN 01	21	28	54.1	19.19N	155.36W	HAWAII	IV	006			4.1	
JAN 02	01	35	18.7	19.28N	155.23W	HAWAII	III	008			3.7	
JAN 02	09	18	59.7	34.87N	090.94W	ARKANSAS	II	025				2.9SLM
JAN 02	09	27	58.0	19.20N	155.40W	HAWAII		005	4.7		4.1	
JAN 02	13	27	42.7	19.22N	155.38W	HAWAII	V	007	4.5	4.2	4.9	
JAN 02	13	49	07.5	19.31N	155.39W	HAWAII	III	007			3.8	
JAN 02	16	41	43.8	63.02N	150.78W	CENTRAL ALASKA		151				
JAN 03	05	55	31.6	33.55N	117.65W	SOUTHERN CALIFORNIA	IV	005	4.3			3.8PAS

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JAN 03	06	00	52.8	33.53N	117.63W	SOUTHERN CALIFORNIA	IV	008	3.6			3.3PAS
JAN 03	11	45	50.1	19.17N	155.38W	HAWAII	IV	006			3.9	
JAN 03	17	32	49.0	19.20N	155.36W	HAWAII	V	007	4.7		4.9	
JAN 03	18	14	45.9	19.23N	155.38W	HAWAII	III	007			3.5	
JAN 03	21	17	28.8	19.26N	155.37W	HAWAII	III	009			3.7	
JAN 04	06	35	52.2	19.35N	155.13W	HAWAII	IV	008	4.3		4.4	
JAN 04	12	13	27.7	19.24N	155.38W	HAWAII	IV	006			3.8	
JAN 05	01	32	04.9	19.25N	155.37W	HAWAII	V	007	5.1	5.3	4.9	
JAN 05	05	28	03.0	19.24N	155.41W	HAWAII	IV	007			3.8	
JAN 05	10	48	39.3	19.24N	155.38W	HAWAII	III	007			4.0	
JAN 05	16	26	59.6	53.73N	169.00E	KOMANDORSKY ISLANDS REGION		045	4.6			
JAN 06	11	17	12.3	35.93N	120.53W	CENTRAL CALIFORNIA	V	010	4.5	4.1		4.6PAS
JAN 06	23	12	17.8	54.30N	165.78W	FOX ISLANDS, ALEUTIAN ISLANDS		102	5.1			
JAN 07	00	55	27.8	62.34N	149.26W	CENTRAL ALASKA		071	3.6			
JAN 07	03	47	02.6	19.28N	155.40W	HAWAII	IV	008	4.4		4.4	
JAN 07	06	11	53.0	48.40N	122.60W	WASHINGTON	II	020				
JAN 08	08	13	31.1	19.26N	155.34W	HAWAII	III	007			3.5	
JAN 08	11	43	38.6	52.42N	168.35W	FOX ISLANDS, ALEUTIAN ISLANDS		056	4.0			
JAN 08	13	03	01.4	46.76N	128.89W	OFF COAST OF WASHINGTON		033	4.1			
JAN 08	13	09	08.2	46.71N	128.70W	OFF COAST OF WASHINGTON		033	4.4			
JAN 08	13	47	41.6	46.76N	128.27W	OFF COAST OF WASHINGTON		033	4.3			
JAN 08	15	52	49.9	19.26N	155.34W	HAWAII	III	007			4.1	

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JAN 08	16	25	48.7	46.92N	128.73W	OFF COAST OF WASHINGTON		033	4.1			
JAN 08	17	38	19.1	52.40N	175.55W	ANDREANOF ISLANDS, ALEUTIAN IS.	III	114	5.1			
JAN 08	20	11	17.9	46.76N	128.80W	OFF COAST OF WASHINGTON		033	4.1			
JAN 08	21	29	21.2	46.83N	129.03W	OFF COAST OF WASHINGTON		033	4.6			
JAN 08	22	03	27.4	63.07N	151.00W	CENTRAL ALASKA		132				
JAN 09	05	10	18.2	61.69N	151.75W	SOUTHERN ALASKA		126	3.9			
JAN 10	15	31	00.8	38.20N	091.04W	MISSOURI		000				3.2SLM
JAN 10	20	40	39.6	51.59N	178.46W	ANDREANOF ISLANDS, ALEUTIAN IS.	II	063	4.9			
JAN 11	14	44	17.8	34.02N	118.88W	SOUTHERN CALIFORNIA		008				3.0PAS
JAN 12	01	37	17.2	40.22N	124.26W	NEAR COAST OF NORTHERN CALIF.	DAMAGE VI	002	4.7			4.4BRK
JAN 12	17	26	00.1	61.72N	146.63W	SOUTHERN ALASKA		033				3.0PMR
JAN 12	21	22	14.9	32.80N	117.97W	OFF COAST OF CALIFORNIA	IV	008	5.1			4.5PAS
JAN 12	22	01	25.7	59.59N	149.16W	KENAI PENINSULA, ALASKA		046	4.7			
JAN 13	00	31	55.6	61.43N	150.49W	SOUTHERN ALASKA	V	066	4.8			
JAN 13	09	19	10.3	52.22N	171.14W	FOX ISLANDS, ALEUTIAN ISLANDS		042	5.7	5.6		5.5BRK
JAN 13	11	21	49.9	33.82N	118.08W	SOUTHERN CALIFORNIA	DAMAGE VI	012	3.8			3.5PAS
JAN 13	19	29	16.2	51.28N	178.16W	ANDREANOF ISLANDS, ALEUTIAN IS.		046	4.9			
JAN 14	07	58	41.3	33.82N	118.07W	SOUTHERN CALIFORNIA	V	015				3.1PAS
JAN 15	02	23	17.5	51.12N	179.19W	ANDREANOF ISLANDS, ALEUTIAN IS.		057	4.6			
JAN 15	19	16	31.6	44.90N	074.56W	NEW YORK	IV	000				2.6PAL
JAN 16	14	05	48.8	62.90N	148.31W	CENTRAL ALASKA	II	033				3.6PMR
JAN 16	14	07	24.7	54.61N	160.46W	ALASKA PENINSULA		010				

*SEE FOOTNOTES AT END OF TABLE

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY		DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JAN 16	23	43	11.2	40.55N	127.24W	OFF COAST OF NORTHERN CALIFORNIA			033	4.1			3.6BRK
JAN 17	01	33	52.0	61.66N	150.90W	SOUTHERN ALASKA			070	3.8			
JAN 17	01	52	58.5	63.19N	150.84W	CENTRAL ALASKA			038				3.0PMR
JAN 17	04	18	56.1	47.44N	114.35W	MONTANA		IV	005	4.4			
JAN 17	09	07	17.3	65.61N	150.08W	ALASKA			033	3.7			3.9PMR
JAN 17	14	54	01.2	48.36N	114.10W	MONTANA			006				
JAN 18	14	58	51.7	54.71N	160.51W	ALASKA PENINSULA			023				
JAN 18	23	39	39.4	55.16N	159.61W	ALASKA PENINSULA			046				
JAN 19	00	47	52.3	55.34N	160.25W	ALASKA PENINSULA			065				
JAN 19	03	21	04.1	55.44N	160.16W	ALASKA PENINSULA			069				
JAN 19	08	09	48.1	44.21N	128.44W	OFF COAST OF OREGON			033	4.5			
JAN 19	14	28	50.4	36.27N	118.38W	CENTRAL CALIFORNIA			002	4.1			3.8PAS
JAN 19	22	54	55.0	59.60N	146.14W	GULF OF ALASKA			033	3.8			3.4PMR
JAN 20	05	51	23.1	63.77N	149.23W	CENTRAL ALASKA			123	4.4			
JAN 21	04	45	53.6	62.61N	151.07W	CENTRAL ALASKA			086	3.5			
JAN 21	06	41	05.1	52.51N	168.61W	FOX ISLANDS, ALEUTIAN ISLANDS			033	4.6			
JAN 21	16	47	35.3	32.93N	115.50W	CALIFORNIA-MEXICO BORDER REGION	DAMAGE	VI	008				3.2PAS
JAN 21	21	47	49.4	55.77N	158.01W	ALASKA PENINSULA			035	4.9			4.6PMR
JAN 21	21	47	52.2	55.43N	158.63W	ALASKA PENINSULA			030				
JAN 22	00	15	15.5	55.37N	158.13W	ALASKA PENINSULA			039				
JAN 22	21	19	16.4	63.40N	150.40W	CENTRAL ALASKA			128				
JAN 23	03	48	43.2	33.92N	118.63W	SOUTHERN CALIFORNIA		III	012				3.0PAS

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY		DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JAN 23	06	50	05.8	60.57N	147.59W	SOUTHERN ALASKA			033	3.7			3.0PMR
JAN 23	11	12	12.0	62.84N	150.62W	CENTRAL ALASKA			102				
JAN 23	12	20	59.8	32.95N	115.50W	CALIFORNIA-MEXICO BORDER REGION			008				3.0PAS
JAN 23	12	30	16.8	32.93N	115.48W	CALIFORNIA-MEXICO BORDER REGION		IV	010	4.3			4.0PAS
JAN 23	12	42	52.0	32.92N	115.48W	CALIFORNIA-MEXICO BORDER REGION		II	008	4.2			3.9PAS
JAN 23	12	49	55.5	32.94N	115.48W	CALIFORNIA-MEXICO BORDER REGION			006				3.1PAS
JAN 23	12	55	48.8	32.93N	115.48W	CALIFORNIA-MEXICO BORDER REGION		II	004	4.6			4.3PAS
JAN 23	13	02	07.5	32.93N	115.48W	CALIFORNIA-MEXICO BORDER REGION		II	005	4.3			3.8PAS
JAN 23	13	47	19.8	32.93N	115.48W	CALIFORNIA-MEXICO BORDER REGION		II	005	4.2			4.0PAS
JAN 23	14	15	39.9	32.92N	115.43W	CALIFORNIA-MEXICO BORDER REGION			005	4.3			3.4PAS
JAN 23	14	49	09.7	32.95N	115.48W	CALIFORNIA-MEXICO BORDER REGION			004	4.0			3.7PAS
JAN 23	15	14	06.4	32.98N	116.00W	SOUTHERN CALIFORNIA			008	4.0			3.3PAS
JAN 23	15	45	40.0	32.95N	115.48W	CALIFORNIA-MEXICO BORDER REGION			005	4.5			4.3PAS
JAN 23	17	02	29.7	32.96N	115.49W	SOUTHERN CALIFORNIA	DAMAGE	VII	008	4.9	4.6		4.8PAS
JAN 23	18	15	30.1	32.93N	115.50W	CALIFORNIA-MEXICO BORDER REGION			006				3.6PAS
JAN 23	21	45	16.4	32.90N	115.48W	CALIFORNIA-MEXICO BORDER REGION			005	4.0			3.5PAS
JAN 23	22	21	04.8	33.00N	115.50W	SOUTHERN CALIFORNIA			010	4.0			3.5PAS
JAN 23	22	28	11.4	33.00N	115.50W	SOUTHERN CALIFORNIA			006				3.4PAS
JAN 23	23	24	33.9	33.01N	115.50W	SOUTHERN CALIFORNIA	DAMAGE	VI	001	4.3			4.0PAS
JAN 23	23	31	55.9	62.02N	147.96W	CENTRAL ALASKA			033				
JAN 24	04	00	39.6	32.96N	115.49W	SOUTHERN CALIFORNIA			004	3.9			3.4PAS
JAN 24	06	45	52.8	32.90N	115.49W	CALIFORNIA-MEXICO BORDER REGION			004	3.9			4.0PAS

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JAN 24	11	07	09.8	64.80N	147.41W	CENTRAL ALASKA	II	022				3.2PMR
JAN 24	11	15	02.2	32.93N	115.49W	CALIFORNIA-MEXICO BORDER REGION		004	3.9			3.4PAS
JAN 24	16	52	02.0	32.96N	115.46W	SOUTHERN CALIFORNIA		004				3.1PAS
JAN 24	18	26	55.3	32.92N	115.48W	CALIFORNIA-MEXICO BORDER REGION		004				3.9PAS
JAN 24	19	42	22.5	32.92N	115.48W	CALIFORNIA-MEXICO BORDER REGION		005				3.5PAS
JAN 24	19	57	13.3	32.92N	115.48W	CALIFORNIA-MEXICO BORDER REGION		006				3.2PAS
JAN 24	22	10	17.9	52.34N	178.95E	RAT ISLANDS, ALEUTIAN ISLANDS		154	4.1			
JAN 24	22	43	00.2	51.81N	175.31W	ANDREANOF ISLANDS, ALEUTIAN IS.	IV	056	4.6			
JAN 25	01	08	33.6	55.57N	158.83W	ALASKA PENINSULA		055				
JAN 25	02	08	41.5	07.22N	077.77W	PANAMA-COLOMBIA BORDER REGION	III	036	6.1	6.5		
JAN 25	02	59	24.5	59.53N	153.12W	SOUTHERN ALASKA		142				
JAN 25	05	08	39.1	32.99N	115.50W	SOUTHERN CALIFORNIA		006				3.5PAS
JAN 25	05	22	19.0	32.95N	115.50W	CALIFORNIA-MEXICO BORDER REGION		005				3.1PAS
JAN 25	06	01	33.2	33.00N	115.50W	SOUTHERN CALIFORNIA		006				3.6PAS
JAN 25	07	00	11.5	32.95N	115.50W	CALIFORNIA-MEXICO BORDER REGION		005				3.1PAS
JAN 25	07	01	49.7	32.95N	115.50W	CALIFORNIA-MEXICO BORDER REGION		005				3.7PAS
JAN 25	13	09	00.5	32.95N	115.50W	CALIFORNIA-MEXICO BORDER REGION		005				3.4PAS
JAN 25	14	31	01.3	32.95N	115.50W	CALIFORNIA-MEXICO BORDER REGION		006	4.6			4.3PAS
JAN 25	14	42	43.1	32.95N	115.50W	CALIFORNIA-MEXICO BORDER REGION		005				3.1PAS
JAN 25	14	53	51.0	32.95N	115.52W	CALIFORNIA-MEXICO BORDER REGION		006	3.9			3.6PAS
JAN 25	15	56	18.7	33.00N	115.50W	SOUTHERN CALIFORNIA		005				3.3PAS
JAN 25	17	04	33.9	51.07N	170.98W	FOX ISLANDS, ALEUTIAN ISLANDS		033	4.9			

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JAN 25	18	02	08.1	32.95N	115.50W	CALIFORNIA-MEXICO BORDER REGION		009	4.1			3.6PAS
JAN 25	18	11	44.0	33.00N	115.50W	SOUTHERN CALIFORNIA		007				3.0PAS
JAN 25	22	35	52.8	32.95N	115.50W	CALIFORNIA-MEXICO BORDER REGION		008				3.1PAS
JAN 26	01	12	17.7	61.75N	149.70W	SOUTHERN ALASKA	II	028				3.0PMR
JAN 26	03	41	56.4	32.97N	115.51W	SOUTHERN CALIFORNIA		013	4.2			3.7PAS
JAN 26	04	51	44.6	33.00N	115.52W	SOUTHERN CALIFORNIA		005				3.0PAS
JAN 26	14	19	11.1	32.99N	115.50W	SOUTHERN CALIFORNIA		011				3.0PAS
JAN 26	19	27	12.4	53.36N	163.35W	UNIMAK ISLAND REGION		080				
JAN 26	19	27	13.1	53.75N	163.68W	UNIMAK ISLAND REGION		033	4.3			
JAN 27	00	23	09.7	61.28N	149.81W	SOUTHERN ALASKA	III	046	3.9			
JAN 27	04	51	58.1	53.73N	163.56W	UNIMAK ISLAND REGION		033	4.3			
JAN 27	06	42	35.4	65.41N	150.05W	ALASKA		016	3.5			3.6PMR
JAN 27	09	24	17.1	60.43N	147.72W	SOUTHERN ALASKA		033	3.7			3.2PMR
JAN 27	18	37	07.6	57.30N	156.78W	ALASKA PENINSULA		033	3.9			3.9PMR
JAN 27	21	33	32.2	52.49N	176.19W	ANDREANOF ISLANDS, ALEUTIAN IS.	II	150	4.9			
JAN 28	02	02	50.4	61.46N	145.99W	SOUTHERN ALASKA		033				
JAN 28	04	27	52.7	62.80N	150.73W	CENTRAL ALASKA		092				
JAN 28	05	22	23.5	34.19N	118.54W	SOUTHERN CALIFORNIA	II	012				2.8PAS
JAN 28	07	25	01.2	61.35N	149.97W	SOUTHERN ALASKA	III	042	3.7			
JAN 28	11	53	30.7	56.13N	164.61E	KOMANDORSKY ISLANDS REGION		033	5.2	5.2		
JAN 28	13	53	16.4	40.42N	125.45W	OFF COAST OF NORTHERN CALIFORNIA	V	010	4.9	5.0		4.8BRK
JAN 28	20	08	26.0	51.47N	179.00E	RAT ISLANDS, ALEUTIAN ISLANDS		077	4.8			

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY		DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JAN 29	18	27	29.6	55.77N	159.87W	ALASKA PENINSULA			085				
JAN 29	20	08	23.9	45.07N	111.47W	MONTANA		V	005	4.2			
JAN 30	14	48	40.3	39.27N	108.65W	COLORADO		V	005	4.4		3.7	
JAN 30	19	34	14.2	55.04N	159.79W	ALASKA PENINSULA			048				
JAN 30	20	02	49.2	54.73N	160.52W	ALASKA PENINSULA			030				
JAN 31	02	27	37.2	52.92N	168.47W	FOX ISLANDS, ALEUTIAN ISLANDS		II	059	4.2			
JAN 31	08	54	45.1	48.17N	114.14W	MONTANA	DAMAGE	VI	005	4.1		3.8	
FEB 01	05	52	22.2	53.49N	163.30W	UNIMAK ISLAND REGION			018	4.6			
FEB 02	01	12	01.1	61.98N	150.96W	CENTRAL ALASKA			078				
FEB 02	07	24	53.3	53.05N	173.45E	NEAR ISLANDS, ALEUTIAN ISLANDS		II	025	5.9	5.5		
FEB 02	08	43	39.1	53.11N	173.50E	NEAR ISLANDS, ALEUTIAN ISLANDS	DAMAGE	IX	010	6.1	7.6		7.5PAS
FEB 02	15	19	48.4	51.81N	175.40W	ANDREANOF ISLANDS, ALEUTIAN IS.		II	056	4.1			
FEB 02	15	53	06.9	52.94N	173.56E	NEAR ISLANDS, ALEUTIAN ISLANDS		II	031	4.9	4.5		
FEB 03	22	01	48.1	55.06N	160.93W	ALASKA PENINSULA			066				
FEB 04	01	32	52.1	48.21N	114.11W	MONTANA	DAMAGE	VI	008	4.6		5.0	
FEB 04	01	35	22.9	65.48N	150.01W	ALASKA			026				3.3PMR
FEB 04	09	29	27.9	53.11N	173.39E	NEAR ISLANDS, ALEUTIAN ISLANDS			033	4.8	4.5		
FEB 04	09	47	49.2	63.03N	151.02W	CENTRAL ALASKA			130	3.3			
FEB 05	01	13	58.8	60.06N	152.73W	SOUTHERN ALASKA			128	4.2			
FEB 05	21	12	34.1	63.82N	149.29W	CENTRAL ALASKA			127				
FEB 06	03	04	31.4	44.58N	130.35W	OFF COAST OF OREGON			033	4.3			
FEB 07	10	22	46.2	52.40N	174.24E	NEAR ISLANDS, ALEUTIAN ISLANDS		V	033	4.4			

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
FEB 07	16	46	52.2	19.24N	155.54W	HAWAII	III	008			3.6	
FEB 07	22	01	35.8	55.73N	158.48W	ALASKA PENINSULA		030				
FEB 08	03	14	29.4	45.95N	111.34W	MONTANA	IV	005			4.0	
FEB 08	11	54	14.3	52.49N	169.66W	FOX ISLANDS, ALEUTIAN ISLANDS		054	4.0			
FEB 08	23	48	25.5	52.62N	169.18W	FOX ISLANDS, ALEUTIAN ISLANDS		033	4.5			
FEB 09	02	51	18.2	33.02N	115.52W	SOUTHERN CALIFORNIA		008				3.1PAS
FEB 09	03	45	25.7	32.90N	115.47W	CALIFORNIA-MEXICO BORDER REGION		008				3.2PAS
FEB 09	09	13	04.0	52.05N	170.99W	FOX ISLANDS, ALEUTIAN ISLANDS		044	4.4			
FEB 09	09	31	37.5	63.13N	149.85W	CENTRAL ALASKA		100	3.4			
FEB 09	11	01	19.4	52.82N	174.49E	NEAR ISLANDS, ALEUTIAN ISLANDS	V	014	5.4	5.4		
FEB 09	23	59	10.7	51.90N	167.94W	FOX ISLANDS, ALEUTIAN ISLANDS		044	3.7			
FEB 10	02	27	18.2	63.26N	150.70W	CENTRAL ALASKA		104				
FEB 10	04	51	26.8	52.53N	168.32W	FOX ISLANDS, ALEUTIAN ISLANDS		033	4.0			
FEB 10	09	46	50.5	60.66N	147.23W	SOUTHERN ALASKA		055	3.4			
FEB 10	10	05	38.0	60.70N	147.00W	SOUTHERN ALASKA	II	033	4.3			4.7PMR
FEB 10	12	51	17.5	34.40N	116.65W	SOUTHERN CALIFORNIA	IV	005	4.3			4.4PAS
FEB 10	14	03	30.3	60.09N	153.49W	SOUTHERN ALASKA		147	3.4			
FEB 11	14	30	38.6	54.45N	161.00W	ALASKA PENINSULA		021	4.6			
FEB 11	14	30	39.5	54.20N	160.77W	ALASKA PENINSULA		040				
FEB 12	01	50	25.6	54.64N	161.98W	ALASKA PENINSULA		060				
FEB 12	07	10	06.6	54.85N	160.29W	ALASKA PENINSULA		033				
FEB 12	12	03	17.8	35.97N	120.14W	CENTRAL CALIFORNIA	IV	012				3.6PAS

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
FEB 12	15	45	35.1	63.52N	148.73W	CENTRAL ALASKA	IV	033	4.0			4.5PMR
FEB 13	17	33	31.4	55.23N	159.34W	ALASKA PENINSULA		007				
FEB 13	19	43	57.6	36.52N	089.56W	NEW MADRID, MISSOURI REGION	V	005				3.3SLM
FEB 13	23	26	35.7	62.79N	151.05W	CENTRAL ALASKA		068				
FEB 14	18	04	01.1	60.97N	147.15W	SOUTHERN ALASKA		044				
FEB 15	07	51	15.6	51.84N	175.26W	ANDREANOF ISLANOS, ALEUTIAN IS.	II	049	4.4			
FEB 15	20	05	09.7	52.28N	169.98W	FOX ISLANDS, ALEUTIAN ISLANDS		033	4.8			
FEB 16	03	30	03.0	55.37N	159.66W	ALASKA PENINSULA		068				
FEB 16	08	01	58.3	55.66N	158.96W	ALASKA PENINSULA		062				
FEB 16	21	45	02.0	41.23N	120.02W	NORTHERN CALIFORNIA		010				3.7BRK
FEB 16	23	21	31.5	39.05N	082.42W	OHIO	IV	005	4.4			3.3SLM
FEB 17	00	47	39.2	33.00N	115.50W	SOUTHERN CALIFORNIA		005				3.0PAS
FEB 17	00	53	01.4	33.00N	115.50W	SOUTHERN CALIFORNIA	II	006				3.3PAS
FEB 17	01	28	09.3	40.44N	126.23W	OFF COAST OF NORTHERN CALIFORNIA	II	004	4.6	4.3		4.6BRK
FEB 17	04	57	49.2	37.89N	121.99W	CENTRAL CALIFORNIA	III	010				3.1BRK
FEB 17	09	18	26.1	43.57N	126.89W	OFF COAST OF OREGON		033	4.6	4.1		
FEB 18	05	01	07.0	62.95N	149.87W	CENTRAL ALASKA		033				
FEB 18	09	48	25.6	33.92N	117.75W	SOUTHERN CALIFORNIA	II	003	4.0			2.8PAS
FEB 18	19	02	23.9	59.89N	152.92W	SOUTHERN ALASKA		097	4.0			
FEB 19	04	42	55.7	62.55N	151.26W	CENTRAL ALASKA		096				
FEB 19	07	28	58.5	51.72N	175.08E	RAT ISLANDS, ALEUTIAN ISLANDS		055	4.6			
FEB 20	03	58	10.8	37.34N	121.32W	CENTRAL CALIFORNIA	II	006				3.4BRK

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
FEB 20	04	59	51.8	53.11N	174.57W	ANDREANOF ISLANDS, ALEUTIAN IS.		228	4.0			
FEB 21	01	26	41.0	51.56N	175.30E	RAT ISLANDS, ALEUTIAN ISLANDS		052	4.2			
FEB 21	09	56	12.1	44.25N	128.70W	OFF COAST OF OREGON		033	4.3			
FEB 21	21	19	40.3	19.37N	155.11W	HAWAII	III	008			3.5	
FEB 22	08	36	07.4	51.38N	179.42W	ANDREANOF ISLANDS, ALEUTIAN IS.	VI	048	6.3	6.5		
FEB 22	10	20	09.9	51.32N	179.56W	ANDREANOF ISLANDS, ALEUTIAN IS.		052	4.3			
FEB 22	15	36	30.5	51.03N	174.16E	NEAR ISLANDS, ALEUTIAN ISLANDS		033	4.4			
FEB 22	16	27	19.7	51.17N	179.50W	ANDREANOF ISLANDS, ALEUTIAN IS.		047	4.2			
FEB 22	19	58	10.0	51.40N	179.51W	ANDREANOF ISLANDS, ALEUTIAN IS.		046	4.8			
FEB 22	20	28	44.6	60.01N	153.04W	SOUTHERN ALASKA		128				
FEB 22	21	15	31.3	44.94N	110.68W	YELLOWSTONE NATIONAL PARK, WYO.		010				
FEB 22	22	47	45.8	51.32N	179.34W	ANDREANOF ISLANDS, ALEUTIAN IS.		062	5.1			
FEB 23	01	16	14.4	51.35N	179.42W	ANDREANOF ISLANDS, ALEUTIAN IS.		055	5.0			
FEB 23	05	09	43.3	51.27N	179.27W	ANDREANOF ISLANDS, ALEUTIAN IS.	II	050	5.0			
FEB 23	10	22	00.6	34.08N	118.87W	SOUTHERN CALIFORNIA		015				3.2PAS
FEB 23	21	26	52.1	63.55N	151.12W	CENTRAL ALASKA		033				3.3PMR
FEB 24	03	09	07.1	63.51N	151.22W	CENTRAL ALASKA		033				2.9PMR
FEB 24	06	28	38.2	51.66N	179.40W	ANDREANOF ISLANDS, ALEUTIAN IS.		059	4.4			
FEB 24	13	58	54.2	40.29N	127.30W	OFF COAST OF NORTHERN CALIFORNIA		033	4.5			
FEB 24	20	20	08.2	51.41N	179.23W	ANDREANOF ISLANDS, ALEUTIAN IS.		059	4.7			
FEB 25	03	31	14.8	62.04N	147.09W	CENTRAL ALASKA		063				
FEB 25	11	13	22.4	37.14N	117.85W	CALIFORNIA-NEVADA BORDER REGION		010	4.1			4.0BRK

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
FEB 27	04	26	35.3	56.39N	156.24W	ALASKA PENINSULA		057	3.9			
FEB 27	09	28	00.2	61.64N	150.65W	SOUTHERN ALASKA		035				2.9PMR
FEB 27	15	11	10.9	52.27N	178.97E	RAT ISLANDS, ALEUTIAN ISLANDS		143	4.7			
FEB 27	22	22	55.2	36.21N	121.65W	CENTRAL CALIFORNIA	II	007				3.4BRK
FEB 28	12	25	50.5	56.23N	156.25W	ALASKA PENINSULA		060				
FEB 28	15	15	00.0	37.11N	116.06W	SOUTHERN NEVADA		000	5.7			
MAR 01	06	12	00.3	55.16N	161.06W	ALASKA PENINSULA		068				
MAR 01	08	41	36.3	62.40N	148.76W	CENTRAL ALASKA		119				
MAR 01	11	50	00.2	33.55N	087.99W	ALABAMA	IV	018				3.2SLM
MAR 01	16	29	17.4	43.32N	126.22W	OFF COAST OF OREGON		033	4.4			
MAR 02	00	15	22.3	37.11N	121.52W	CENTRAL CALIFORNIA		008				3.3BRK
MAR 02	06	01	45.4	54.97N	162.81W	ALASKA PENINSULA		088				
MAR 02	11	32	30.5	40.22N	124.20W	NEAR COAST OF NORTHERN CALIF.		012				
MAR 03	01	33	24.0	65.76N	147.85W	ALASKA		037				3.3PMR
MAR 03	11	34	56.0	36.94N	121.48W	CENTRAL CALIFORNIA	IV	009	4.1			4.3BRK
MAR 03	15	34	45.1	33.93N	118.28W	SOUTHERN CALIFORNIA	DAMAGE VI	010				3.4PAS
MAR 03	16	42	19.2	34.33N	118.25W	SOUTHERN CALIFORNIA	II	004				3.1PAS
MAR 04	12	06	20.8	35.72N	116.92W	CENTRAL CALIFORNIA		008				3.6PAS
MAR 05	03	48	04.9	34.55N	107.05W	NEW MEXICO	II	005			2.7	
MAR 05	07	35	48.3	33.00N	116.27W	SOUTHERN CALIFORNIA		012				3.0PAS
MAR 05	19	13	47.6	65.66N	149.97W	ALASKA		043				
MAR 06	09	02	15.7	58.76N	154.94W	ALASKA PENINSULA		153	4.0			

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
MAR 07	12	45	13.5	37.32N	080.48W	VIRGINIA	II	005			3.0	
MAR 07	15	00	00.0	37.13N	116.08W	SOUTHERN NEVADA		000	5.5			5.2BRK
MAR 07	16	20	59.0	54.78N	159.86W	SOUTH OF ALASKA		016				
MAR 07	20	12	36.5	55.06N	159.17W	ALASKA PENINSULA		033				
MAR 07	20	46	02.0	55.87N	158.14W	ALASKA PENINSULA		055				
MAR 08	04	48	55.7	45.72N	111.56W	MONTANA		005				
MAR 09	14	19	42.1	65.84N	149.89W	ALASKA	II	035	4.1			4.6PMR
MAR 09	15	22	22.7	65.87N	149.75W	ALASKA		033				2.8PMR
MAR 10	00	26	40.9	56.29N	158.00W	ALASKA PENINSULA		055				
MAR 10	10	14	12.6	19.42N	155.47W	HAWAII	III	008			4.0	
MAR 11	13	30	59.9	44.94N	111.45W	HEBGEN LAKE REGION		005				
MAR 11	22	27	20.9	63.15N	148.86W	CENTRAL ALASKA		112				
MAR 12	10	43	33.1	51.53N	177.75W	ANDREANOF ISLANDS, ALEUTIAN IS.	IV	054	5.4			
MAR 12	14	05	31.5	61.92N	150.31W	SOUTHERN ALASKA	II	010	3.9			4.0PMR
MAR 15	20	59	43.2	36.93N	121.49W	CENTRAL CALIFORNIA	II	009				3.6BRK
MAR 16	10	25	22.8	55.69N	160.31W	ALASKA PENINSULA		092				
MAR 16	23	31	15.1	55.68N	159.78W	ALASKA PENINSULA		080				
MAR 17	00	13	44.7	34.15N	117.47W	SOUTHERN CALIFORNIA	III	012	4.6			3.4PAS
MAR 17	16	29	25.7	34.50N	118.88W	SOUTHERN CALIFORNIA		011				3.0PAS
MAR 17	17	39	29.2	51.85N	175.29W	ANDREANOF ISLANDS, ALEUTIAN IS.	IV	048	5.0	4.3		
MAR 17	20	51	17.7	57.25N	153.72W	KODIAK ISLAND REGION		065	4.5			
MAR 17	22	45	03.9	60.99N	147.27W	SOUTHERN ALASKA		033	3.6			3.5PMR

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H M S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. OEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
MAR 18	04 19 39.7	19.21N	069.86W	DOMINICAN REPUBLIC REGION	II	039	4.7	4.8		
MAR 19	05 16 53.4	33.00N	116.23W	SOUTHERN CALIFORNIA	II	016	3.6			3.2PAS
MAR 19	08 14 24.5	62.69N	150.63W	CENTRAL ALASKA		122	3.8			
MAR 19	16 36 25.1	51.02N	179.26W	ANDREANOF ISLANDS, ALEUTIAN IS.		063	4.3			
MAR 19	20 59 37.6	39.22N	122.48W	NORTHERN CALIFORNIA	II	006				3.3BRK
MAR 20	01 21 07.4	59.70N	153.00W	SOUTHERN ALASKA		118	4.0			
MAR 20	03 23 33.5	50.36N	176.00W	ANDREANOF ISLANDS, ALEUTIAN IS.		027	4.9			
MAR 20	03 27 21.6	50.18N	176.26W	ANDREANOF ISLANDS, ALEUTIAN IS.		033	4.7			
MAR 20	07 11 35.7	51.26N	179.63W	ANDREANOF ISLANDS, ALEUTIAN IS.	II	053	4.9			
MAR 20	07 30 38.8	51.32N	179.56W	ANDREANOF ISLANDS, ALEUTIAN IS.	II	057	5.4			
MAR 20	13 31 16.7	63.16N	150.76W	CENTRAL ALASKA		128	3.8			
MAR 20	21 06 46.6	63.20N	149.33W	CENTRAL ALASKA		086				
MAR 21	07 25 05.4	58.40N	154.38W	ALASKA PENINSULA		033				3.4PMR
MAR 21	12 02 31.3	32.98N	116.25W	SOUTHERN CALIFORNIA		025	4.1			3.2PAS
MAR 21	13 16 07.3	51.20N	179.68W	ANDREANOF ISLANDS, ALEUTIAN IS.		056	4.1			
MAR 22	03 55 06.2	64.02N	146.95W	CENTRAL ALASKA		023	4.3			4.3PMR
MAR 22	03 58 06.3	64.08N	147.14W	CENTRAL ALASKA		033				3.8PMR
MAR 24	04 18 43.3	63.16N	150.79W	CENTRAL ALASKA		143	3.5			
MAR 25	00 35 12.7	33.03N	116.23W	SOUTHERN CALIFORNIA		008	3.4			3.4PAS
MAR 25	12 16 49.9	59.65N	153.65W	SOUTHERN ALASKA		095	4.0			
MAR 25	14 03 42.6	59.27N	152.45W	SOUTHERN ALASKA		107				
MAR 25	14 59 58.0	42.67N	108.10W	WYOMING	III	010	4.8			

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
MAR 26	03	27	48.2	63.01N	150.61W	CENTRAL ALASKA		132				
MAR 26	04	30	54.7	36.10N	115.70W	CALIFORNIA-NEVADA BORDER REGION		011				3.4PAS
MAR 26	20	06	03.0	19.47N	155.60W	HAWAII	III	005			4.3	
MAR 27	04	48	51.6	42.07N	112.55W	EASTERN IDAHO	V	006	4.4			4.2SLC
MAR 27	18	50	21.7	51.48N	177.84E	RAT ISLANDS, ALEUTIAN ISLANDS		033	4.5			
MAR 27	21	34	25.8	53.72N	163.16W	UNIMAK ISLAND REGION		026				
MAR 27	22	40	28.2	33.50N	116.43W	SOUTHERN CALIFORNIA		008				3.5PAS
MAR 28	02	31	05.7	42.06N	112.55W	EASTERN IDAHO	DAMAGE VIII	005	6.1	6.0		6.2PAS
MAR 28	09	29	49.3	32.67N	116.32W	CALIFORNIA-MEXICO BORDER REGION		006	3.7			3.8PAS
MAR 28	13	11	16.6	42.05N	112.48W	EASTERN IDAHO	IV	002	4.3			3.0SLC
MAR 28	14	06	50.4	33.93N	115.75W	SOUTHERN CALIFORNIA		003				3.0PAS
MAR 28	16	15	06.9	42.03N	112.53W	EASTERN IDAHO	III	007	4.1			3.8SLC
MAR 29	01	00	23.0	55.82N	156.82W	SOUTH OF ALASKA		032				
MAR 29	05	44	32.6	42.08N	112.45W	EASTERN IDAHO	IV	003	4.3			3.2SLC
MAR 29	13	01	19.8	42.02N	112.52W	EASTERN IDAHO	V	004	4.7			4.7SLC
MAR 29	18	16	52.2	55.12N	160.41W	ALASKA PENINSULA		063				
MAR 30	05	26	26.7	55.65N	158.87W	ALASKA PENINSULA		052				
MAR 30	06	56	28.6	42.02N	112.58W	EASTERN IDAHO		005	4.3			4.1SLC
MAR 30	07	22	00.6	42.03N	112.62W	EASTERN IDAHO		002	4.0			2.9SLC
MAR 30	07	32	12.7	42.02N	112.61W	EASTERN IDAHO		001	4.3			3.4SLC
MAR 30	10	06	48.2	42.10N	112.64W	EASTERN IDAHO		005	3.9			2.8SLC
MAR 30	12	04	48.4	55.05N	161.07W	ALASKA PENINSULA		087				

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
MAR 30	12	17	59.7	42.04N	112.54W	EASTERN IDAHO		003	4.0			2.6SLC
MAR 30	12	56	33.4	42.01N	112.59W	EASTERN IDAHO		006	4.0			3.2SLC
MAR 30	13	39	29.3	55.41N	160.20W	ALASKA PENINSULA		070				
APR 01	04	16	24.6	62.62N	148.11W	CENTRAL ALASKA		077	3.3			
APR 02	12	55	04.3	55.62N	160.57W	ALASKA PENINSULA		091				
APR 02	14	43	21.9	51.62N	178.29W	ANDREANOF ISLANDS, ALEUTIAN IS.	III	062	4.9			
APR 02	21	06	45.9	42.09N	112.44W	EASTERN IDAHO		007	4.7			3.2SLC
APR 03	06	23	58.8	55.37N	160.63W	ALASKA PENINSULA		080				
APR 04	04	50	46.3	44.81N	112.99W	EASTERN IDAHO		005	3.8		4.0	
APR 04	13	46	03.4	42.01N	112.48W	EASTERN IDAHO		005				2.8SLC
APR 04	16	11	30.0	54.60N	161.92W	ALASKA PENINSULA		055				
APR 04	18	53	31.3	32.98N	116.39W	SOUTHERN CALIFORNIA	III	008				2.6PAS
APR 04	23	09	55.8	19.33N	155.23W	HAWAII	III	009			3.9	
APR 04	23	35	17.3	19.32N	155.23W	HAWAII	III	009			3.5	
APR 05	03	34	40.2	56.22N	153.83W	KODIAK ISLAND REGION		059	4.3			
APR 05	19	45	00.0	37.19N	116.21W	SOUTHERN NEVADA		000	4.8			4.5BRK
APR 05	20	24	09.6	19.28N	155.38W	HAWAII	III	007			3.5	
APR 05	21	56	57.9	19.29N	155.37W	HAWAII	III	006			3.8	
APR 06	14	05	26.3	61.93N	150.92W	SOUTHERN ALASKA		033				3.0PMR
APR 06	15	18	35.6	51.95N	178.54E	RAT ISLANDS, ALEUTIAN ISLANDS		113	4.7			
APR 06	19	33	23.1	62.76N	149.72W	CENTRAL ALASKA		031				3.2PMR
APR 06	21	05	34.0	42.02N	112.49W	EASTERN IDAHO		004				3.2SLC

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
APR 06	22	15	55.3	19.32N	155.22W	HAWAII	III	008			3.8	
APR 07	13	42	34.5	42.04N	112.49W	EASTERN IDAHO		004	4.6			3.1SLC
APR 07	14	01	42.2	42.15N	112.59W	EASTERN IDAHO		002				3.1SLC
APR 07	14	43	54.3	42.04N	112.50W	EASTERN IDAHO		003	4.4			3.0SLC
APR 07	14	59	27.6	54.83N	160.31W	ALASKA PENINSULA		023				
APR 07	22	13	46.1	61.56N	150.57W	SOUTHERN ALASKA	II	011	3.6			3.0PMR
APR 08	03	48	03.7	41.88N	112.37W	UTAH		005	4.0			2.9SLC
APR 08	20	32	24.9	51.90N	166.21W	ALEUTIAN ISLANDS REGION		033	5.4			
APR 09	23	03	29.1	33.47N	116.43W	SOUTHERN CALIFORNIA		006				3.3PAS
APR 10	10	21	00.5	42.01N	112.55W	EASTERN IDAHO		005				3.2SLC
APR 10	10	57	16.7	46.93N	121.59W	WASHINGTON		002	3.7		3.5	
APR 10	11	09	22.0	47.06N	121.81W	WASHINGTON		004			2.8	
APR 10	15	27	16.6	35.56N	118.40W	CENTRAL CALIFORNIA	IV	007				2.9PAS
APR 11	00	12	56.4	54.77N	158.08W	SOUTH OF ALASKA		035				
APR 11	00	18	40.1	19.35N	155.14W	HAWAII	II	008			3.4	
APR 11	10	47	15.3	54.10N	163.25W	UNIMAK ISLAND REGION	IV	020	5.5	5.2		5.7BRK
APR 11	16	22	24.7	19.35N	155.15W	HAWAII	II	008			3.3	
APR 11	21	06	06.2	34.08N	118.94W	SOUTHERN CALIFORNIA	IV	015				3.3PAS
APR 13	14	16	43.4	65.34N	150.09W	ALASKA	IV	037				3.7PMR
APR 13	19	32	48.8	63.40N	149.79W	CENTRAL ALASKA		114	4.0			
APR 14	16	42	32.8	57.95N	156.94W	ALASKA PENINSULA	IV	155	4.3			
APR 14	20	53	41.2	62.20N	148.63W	CENTRAL ALASKA		065				

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
APR 15	20	40	22.5	52.01N	177.86E	RAT ISLANDS, ALEUTIAN ISLANDS		140	4.4			
APR 16	09	01	39.7	64.93N	148.71W	CENTRAL ALASKA	IV	029				3.8PMR
APR 16	19	09	29.0	47.57N	122.91W	WASHINGTON	V	047			3.3	4.0SEA
APR 17	08	05	08.5	61.91N	151.94W	SOUTHERN ALASKA		033				3.2PMR
APR 17	09	18	33.8	35.77N	118.54W	CENTRAL CALIFORNIA	V	010	3.6			4.0PAS
APR 17	12	20	24.0	52.26N	171.30W	FOX ISLANDS, ALEUTIAN ISLANDS		035	4.3			
APR 18	01	41	32.4	37.94N	122.32W	CENTRAL CALIFORNIA	V	009				3.3BRK
APR 18	04	57	56.6	46.94N	121.64W	WASHINGTON	III	005	3.9		3.5	3.9SEA
APR 18	08	52	32.6	61.81N	150.56W	SOUTHERN ALASKA	III	041	3.5			3.0PMR
APR 18	09	30	14.6	19.31N	155.22W	HAWAII	III	008			3.6	
APR 18	13	22	28.9	19.31N	155.22W	HAWAII	III	008			3.7	
APR 18	15	58	41.4	60.04N	152.91W	SOUTHERN ALASKA		119				
APR 18	22	47	08.9	52.93N	173.34E	NEAR ISLANDS, ALEUTIAN ISLANDS	III	033	4.6			
APR 19	00	25	58.9	58.71N	154.05W	ALASKA PENINSULA		124				
APR 19	15	45	16.0	61.68N	146.67W	SOUTHERN ALASKA		053				
APR 19	18	46	13.0	33.02N	116.25W	SOUTHERN CALIFORNIA		016	3.8			3.6PAS
APR 19	19	17	52.5	54.20N	163.19W	UNIMAK ISLAND REGION		049	4.7			
APR 20	04	11	18.3	35.57N	118.38W	CENTRAL CALIFORNIA	II	002				3.0PAS
APR 21	07	25	18.3	62.92N	151.29W	CENTRAL ALASKA		119	3.7			
APR 23	01	03	42.4	47.08N	122.65W	WASHINGTON	DAMAGE VI	046	4.0		3.8	
APR 24	14	10	00.0	37.12N	116.09W	SOUTHERN NEVADA		000	4.6			4.4BRK
APR 25	00	46	55.7	19.27N	155.39W	HAWAII	II	007			3.1	

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME (UT) H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
APR 26	17	16	22.2	35.57N	118.90W	CENTRAL CALIFORNIA		004				3.0PAS
APR 26	18	32	32.2	33.47N	116.60W	SOUTHERN CALIFORNIA		005				3.3PAS
APR 28	00	17	49.7	32.00N	114.79W	W. ARIZ. - MEXICO BORDER REGION		010	4.8			
APR 28	05	46	51.9	32.97N	080.23W	SOUTH CAROLINA	IV	005				3.0SLM
APR 28	13	47	36.0	35.55N	118.40W	CENTRAL CALIFORNIA		002				3.3PAS
APR 29	11	14	20.7	19.43N	155.59W	HAWAII	II	004			3.3	
APR 29	11	48	07.5	19.40N	155.28W	HAWAII	II	014			3.3	
APR 30	05	23	09.9	19.39N	155.48W	HAWAII	III	008			3.4	
APR 30	07	08	00.1	51.40N	179.70E	RAT ISLANDS, ALEUTIAN ISLANDS		048	5.2	4.9		
APR 30	15	00	00.0	37.11N	116.03W	SOUTHERN NEVADA		000	5.2			
MAY 01	12	03	40.3	35.92N	120.45W	CENTRAL CALIFORNIA		012	3.4			3.3PAS
MAY 01	18	47	56.0	52.71N	167.03W	FOX ISLANDS, ALEUTIAN ISLANDS		017	5.1			
MAY 01	19	01	40.7	53.29N	167.42W	FOX ISLANDS, ALEUTIAN ISLANDS		033	4.8			
MAY 01	19	21	02.8	52.88N	167.01W	FOX ISLANDS, ALEUTIAN ISLANDS		008	4.5			
MAY 02	07	17	40.6	46.15N	111.66W	MONTANA		005				
MAY 02	08	56	58.8	46.18N	111.44W	MONTANA	V	005	3.9		4.0	
MAY 02	09	22	56.5	46.16N	111.64W	MONTANA	II	005				
MAY 02	10	49	34.0	34.92N	116.93W	SOUTHERN CALIFORNIA		005				3.3PAS
MAY 02	11	27	55.8	46.13N	111.70W	MONTANA	II	005				
MAY 02	14	09	03.2	51.90N	168.15W	FOX ISLANDS, ALEUTIAN ISLANDS		033	4.9			
MAY 02	16	22	58.7	35.92N	084.45W	TENNESSEE	III	015				2.6SLM
MAY 02	18	03	23.1	35.22N	117.63W	CENTRAL CALIFORNIA	III	010				4.2PAS

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
MAY 02	21	25	57.2	51.58N	174.93E	NEAR ISLANDS, ALEUTIAN ISLANDS		033	4.7			
MAY 03	03	23	08.6	46.21N	111.59W	MONTANA		005				
MAY 03	03	28	52.6	46.26N	111.53W	MONTANA		005			3.7	
MAY 03	10	26	11.7	54.06N	163.25W	UNIMAK ISLAND REGION		034	4.4			
MAY 04	07	56	10.6	60.13N	153.35W	SOUTHERN ALASKA		143	4.0			
MAY 05	01	30	14.5	38.55N	119.71W	CALIFORNIA-NEVADA BORDER REGION		002				3.2BRK
MAY 05	01	55	40.7	38.55N	119.72W	CALIFORNIA-NEVADA BORDER REGION		002				3.2BRK
MAY 05	06	29	55.1	38.64N	119.69W	CALIFORNIA-NEVADA BORDER REGION	II	005				3.7BRK
MAY 06	21	34	29.9	54.02N	163.43W	UNIMAK ISLAND REGION		049	4.6			
MAY 07	02	35	28.6	40.38N	124.81W	NEAR COAST OF NORTHERN CALIF.	II	024	4.5			4.2BRK
MAY 07	09	35	44.5	38.64N	119.69W	CALIFORNIA-NEVADA BORDER REGION		005				3.6BRK
MAY 07	18	16	15.0	50.97N	178.45W	ANDREANOF ISLANDS, ALEUTIAN IS.		033	4.2			
MAY 08	00	59	56.0	56.51N	152.87W	KODIAK ISLAND REGION		033	4.7			
MAY 08	10	26	55.0	50.30N	179.81W	ANDREANOF ISLANDS, ALEUTIAN IS.		033	4.8			
MAY 10	04	27	15.6	50.60N	177.02E	RAT ISLANDS, ALEUTIAN ISLANDS		033	4.5			
MAY 11	05	32	51.7	19.35N	155.13W	HAWAII	IV	008			3.9	
MAY 11	15	44	22.0	58.55N	153.44W	KODIAK ISLAND REGION		047	3.8			
MAY 12	23	51	25.0	51.57N	176.22W	ANDREANOF ISLANDS, ALEUTIAN IS.	IV	055	4.3			
MAY 13	00	21	35.6	35.00N	119.10W	CENTRAL CALIFORNIA	V	019	4.6			4.5PAS
MAY 13	07	53	38.5	42.12N	098.45W	NEBRASKA	DAMAGE VI	010	4.3			3.5SLM
MAY 14	00	17	59.5	33.05N	115.63W	SOUTHERN CALIFORNIA		008				3.0PAS

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
MAY 14	14	00	00.4	37.22N	116.47W	SOUTHERN NEVADA		000	6.0			5.8BRK
MAY 14	16	11	01.9	53.64N	164.72W	UNIMAK ISLAND REGION		009	4.0			
MAY 14	23	03	05.9	35.95N	085.25W	TENNESSEE	II	005				2.7SLM
MAY 15	10	55	58.3	50.70N	172.89W	ANDREANOF ISLANDS, ALEUTIAN IS.		033	4.4			
MAY 15	12	05	38.5	51.72N	175.42W	ANDREANOF ISLANDS, ALEUTIAN IS.	II	065	4.0			
MAY 15	20	16	26.1	63.08N	150.44W	CENTRAL ALASKA		137				
MAY 16	04	46	30.1	62.87N	149.96W	CENTRAL ALASKA		107	3.4			
MAY 16	05	57	01.5	43.24N	103.68W	SOUTH DAKOTA	IV	005				2.9SLM
MAY 16	07	57	47.5	54.09N	163.09W	UNIMAK ISLAND REGION	V	009	5.4	5.1		
MAY 18	15	42	59.1	63.17N	150.26W	CENTRAL ALASKA	V	106	5.4			
MAY 18	17	39	07.9	60.87N	149.84W	KENAI PENINSULA, ALASKA		050	3.7			
MAY 18	18	53	25.1	60.14N	152.55W	SOUTHERN ALASKA		129	3.7			
MAY 20	16	29	50.0	63.03N	150.00W	CENTRAL ALASKA		125	4.2			
MAY 21	00	15	09.0	61.81N	146.86W	SOUTHERN ALASKA		014				3.0PMR
MAY 21	06	34	54.9	60.18N	147.58W	SOUTHERN ALASKA	II	035	4.8	4.7		4.7PMR
MAY 21	10	35	26.0	60.43N	152.03W	SOUTHERN ALASKA		092	3.4			
MAY 21	11	14	50.6	59.96N	147.65W	SOUTHERN ALASKA		105				
MAY 21	21	54	44.6	32.93N	115.53W	CALIFORNIA-MEXICO BORDER REGION		008				3.2PAS
MAY 21	22	57	03.8	59.56N	154.11W	SOUTHERN ALASKA		100	4.6			
MAY 22	08	32	58.6	20.30N	155.65W	HAWAII	V	022			4.7	
MAY 22	14	46	05.3	19.37N	155.46W	HAWAII	II	008			3.2	
MAY 23	02	35	26.7	61.67N	150.07W	SOUTHERN ALASKA		052				

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
MAY 23	08	13	23.1	67.10N	157.43W	ALASKA		033	3.6			
MAY 24	06	51	04.9	57.96N	151.75W	KODIAK ISLAND REGION		044				
MAY 24	19	43	24.4	53.74N	164.37W	UNIMAK ISLAND REGION		075	3.9			
MAY 25	15	47	30.4	57.50N	150.12W	GULF OF ALASKA		033	4.6	4.8		4.4PMR
MAY 25	19	04	34.4	57.38N	150.12W	GULF OF ALASKA		033	5.6	5.4		5.7PMR
MAY 26	00	02	22.6	57.47N	150.23W	GULF OF ALASKA		001	4.5			
MAY 28	02	15	34.9	19.47N	155.58W	HAWAII	II	003			3.0	
MAY 28	12	01	54.6	18.07N	153.74W	HAWAII REGION		033	4.6		4.7	
MAY 29	06	46	54.6	60.96N	146.82W	SOUTHERN ALASKA		053				3.5PMR
MAY 29	08	56	21.5	62.73N	149.72W	CENTRAL ALASKA		061	3.5			
MAY 30	03	25	49.2	41.83N	108.77W	WYOMING		010	3.2			
MAY 31	00	40	07.5	62.34N	150.37W	CENTRAL ALASKA		033				3.1PMR
MAY 31	23	35	21.8	58.24N	155.88W	ALASKA PENINSULA		129	4.6			
JUN 01	01	21	22.3	34.50N	116.50W	SOUTHERN CALIFORNIA		007				3.3PAS
JUN 01	01	35	54.5	34.50N	116.50W	SOUTHERN CALIFORNIA		004				3.4PAS
JUN 01	01	38	49.2	34.52N	116.50W	SOUTHERN CALIFORNIA	IX	004	5.1			5.2PAS
JUN 01	01	48	31.8	34.48N	116.53W	SOUTHERN CALIFORNIA		002				3.3PAS
JUN 01	02	01	15.2	34.45N	116.52W	SOUTHERN CALIFORNIA		008				3.1PAS
JUN 01	02	51	52.9	34.45N	116.50W	SOUTHERN CALIFORNIA		008				3.0PAS
JUN 01	03	58	22.6	34.47N	116.50W	SOUTHERN CALIFORNIA		008				3.1PAS
JUN 01	04	26	48.4	34.48N	116.50W	SOUTHERN CALIFORNIA		005				3.1PAS
JUN 01	04	57	45.9	34.45N	116.50W	SOUTHERN CALIFORNIA		011				3.2PAS

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY		DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JUN 01	05	01	00.2	34.48N	116.50W	SOUTHERN CALIFORNIA			008				3.2PAS
JUN 01	13	10	56.1	59.79N	153.75W	SOUTHERN ALASKA			141	4.2			
JUN 03	09	43	54.5	44.90N	115.30W	WESTERN IDAHO			005	3.3			
JUN 03	14	20	00.2	37.34N	116.52W	SOUTHERN NEVADA			000	5.9			6.0BRK
JUN 03	14	40	00.1	37.10N	116.04W	SOUTHERN NEVADA			000	5.7	3.9		5.6BRK
JUN 03	21	53	47.8	34.52N	116.42W	SOUTHERN CALIFORNIA			008				3.3PAS
JUN 04	20	35	56.8	51.94N	179.58W	ANDREANOF ISLANDS, ALEUTIAN IS.		II	075	4.5			
JUN 05	14	46	45.3	35.05N	119.00W	CENTRAL CALIFORNIA		V	005	4.5			4.1BRK
JUN 06	00	15	36.6	45.91N	111.55W	MONTANA			005				
JUN 06	01	00	25.6	34.52N	116.50W	SOUTHERN CALIFORNIA			008				3.5PAS
JUN 06	12	05	48.1	34.47N	116.50W	SOUTHERN CALIFORNIA			008				3.0PAS
JUN 07	04	36	21.7	41.91N	108.80W	WYOMING			005	3.7			
JUN 07	08	46	22.4	40.57N	124.14W	NEAR COAST OF NORTHERN CALIF.	DAMAGE	VIII	021	5.4	5.7		5.2BRK
JUN 07	11	01	33.2	40.31N	124.07W	NEAR COAST OF NORTHERN CALIF.			033	4.3			3.6BRK
JUN 07	16	13	52.0	33.92N	115.52W	SOUTHERN CALIFORNIA			008				3.1PAS
JUN 08	10	15	05.5	35.72N	120.20W	CENTRAL CALIFORNIA			008	3.7			3.2PAS
JUN 09	18	39	23.3	44.90N	073.57W	NEW YORK	DAMAGE	VI	010				4.2PAL
JUN 10	13	14	59.9	58.36N	153.95W	ALASKA PENINSULA			092	4.0			
JUN 10	18	14	05.7	61.00N	146.81W	SOUTHERN ALASKA			023				3.3PMR
JUN 11	05	14	08.2	62.17N	149.64W	CENTRAL ALASKA		II	059	4.3			
JUN 13	22	40	27.2	36.54N	089.68W	NEW MADRID, MISSOURI REGION	DAMAGE	VI	002	4.3			4.3SLM
JUN 14	20	50	25.7	71.91N	132.94W	BEAUFORT SEA			033	5.3			

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY		DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JUN 14	21	24	39.6	53.84N	170.25E	NEAR ISLANDS, ALEUTIAN ISLANDS			060	4.8			
JUN 15	07	53	57.0	51.58N	179.59E	RAT ISLANDS, ALEUTIAN ISLANDS			080	5.1			
JUN 16	23	30	54.9	40.87N	114.80W	NEVADA			005	4.3			
JUN 17	05	01	13.5	18.50N	066.34W	PUERTO RICO REGION	DAMAGE	VI	111	5.1			
JUN 17	05	27	08.0	38.07N	121.88W	NORTHERN CALIFORNIA		II	022				3.5BRK
JUN 17	08	53	56.7	60.72N	151.78W	KENAI PENINSULA, ALASKA			115	3.5			
JUN 17	11	49	56.2	32.78N	115.45W	CALIFORNIA-MEXICO BORDER REGION		II	017	3.4			3.4PAS
JUN 17	14	48	10.6	59.97N	152.13W	SOUTHERN ALASKA			096	3.8			
JUN 18	05	42	28.2	43.37N	110.96W	EASTERN IDAHO			005	3.3			
JUN 18	08	30	37.8	56.50N	152.44W	KODIAK ISLAND REGION			013	4.8	4.0		
JUN 18	17	50	19.7	37.19N	120.95W	CENTRAL CALIFORNIA		IV	002				4.1BRK
JUN 18	19	15	41.4	56.87N	151.85W	KODIAK ISLAND REGION			030	4.5			
JUN 19	13	00	00.1	37.35N	116.32W	SOUTHERN NEVADA			000	6.1			5.9BRK
JUN 19	15	23	52.2	34.43N	118.47W	SOUTHERN CALIFORNIA		II	015				2.8PAS
JUN 19	16	17	53.1	37.35N	122.31W	CENTRAL CALIFORNIA		IV	011				3.5BRK
JUN 19	19	01	53.1	32.82N	115.43W	CALIFORNIA-MEXICO BORDER REGION		II	010				3.5PAS
JUN 20	04	13	15.9	32.75N	115.41W	CALIFORNIA-MEXICO BORDER REGION			010	4.3			3.9PAS
JUN 20	05	34	00.6	37.34N	122.33W	CENTRAL CALIFORNIA		II	011				3.3BRK
JUN 20	05	48	21.8	32.76N	115.41W	CALIFORNIA-MEXICO BORDER REGION	DAMAGE	VI	010	4.3			4.2PAS
JUN 20	08	16	17.7	37.33N	122.35W	CENTRAL CALIFORNIA		II	014				3.3BRK
JUN 20	10	54	44.0	45.00N	111.22W	MONTANA		IV	005				
JUN 20	22	15	38.8	32.76N	115.40W	CALIFORNIA-MEXICO BORDER REGION		IV	010	4.3			4.1PAS

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JUN 20	22	50	31.2	32.72N	115.40W	CALIFORNIA-MEXICO BORDER REGION		010	4.0			3.2PAS
JUN 21	02	55	28.6	32.77N	115.44W	CALIFORNIA-MEXICO BORDER REGION	II	008	3.9			3.6PAS
JUN 21	21	22	04.2	34.42N	116.88W	SOUTHERN CALIFORNIA		005				3.1PAS
JUN 22	00	12	35.4	37.34N	122.33W	CENTRAL CALIFORNIA		012				3.5BRK
JUN 22	18	07	11.3	62.88N	149.81W	CENTRAL ALASKA		118				
JUN 22	21	39	58.0	63.73N	147.69W	CENTRAL ALASKA		033				
JUN 23	00	51	46.0	65.63N	149.93W	ALASKA		039				4.0PMR
JUN 23	05	41	34.7	35.05N	119.05W	CENTRAL CALIFORNIA		011	3.7			3.5PAS
JUN 23	19	23	13.7	44.93N	111.08W	HEBGEN LAKE REGION		033				
JUN 24	07	15	03.2	60.16N	153.52W	SOUTHERN ALASKA		139				
JUN 24	11	11	36.0	33.72N	087.84W	ALABAMA	IV	010	4.5			3.8SLM
JUN 24	12	15	31.3	63.10N	150.95W	CENTRAL ALASKA		133	4.0			
JUN 26	07	59	27.2	52.37N	168.73W	FOX ISLANDS, ALEUTIAN ISLANDS		037	5.1	4.5		5.2BRK
JUN 26	11	54	37.9	55.72N	154.25W	SOUTH OF ALASKA		001	4.5			4.2PMR
JUN 26	12	30	00.2	37.28N	116.37W	SOUTHERN NEVADA		000	6.2	5.0		6.1BRK
JUN 27	00	43	14.9	46.60N	116.19W	WESTERN IDAHO		005				
JUN 27	07	26	43.8	37.22N	116.40W	SOUTHERN NEVADA		005	4.6			4.1BRK
JUN 27	13	40	08.9	44.92N	111.46W	HEBGEN LAKE REGION		005				
JUN 28	04	19	53.1	39.49N	121.61W	NORTHERN CALIFORNIA	II	006	4.1			3.6BRK
JUN 28	07	20	30.4	34.76N	106.90W	NEW MEXICO		005				
JUN 28	09	47	33.8	37.29N	116.46W	SOUTHERN NEVADA		005	4.4			4.2BRK
JUN 28	10	04	30.1	35.84N	120.39W	CENTRAL CALIFORNIA		011	3.1			3.5BRK

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY		DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JUN 28	22	17	52.1	46.24N	119.71W	WASHINGTON			001	3.7			3.6SEA
JUN 29	17	52	52.0	61.98N	151.06W	CENTRAL ALASKA			055				
JUN 29	18	04	24.1	62.38N	151.25W	CENTRAL ALASKA			096				
JUN 30	03	26	47.2	42.11N	112.47W	EASTERN IDAHO		II	005				3.0SLC
JUN 30	13	25	51.6	59.85N	148.57W	KENAI PENINSULA, ALASKA			033				3.3PMR
JUN 30	15	55	40.8	61.75N	150.04W	SOUTHERN ALASKA			053				
JUN 30	18	24	11.9	44.79N	110.54W	YELLOWSTONE NATIONAL PARK, WYO.			005			3.5	
JUN 30	18	47	57.7	44.80N	110.54W	YELLOWSTONE NATIONAL PARK, WYD.			005	4.6		4.8	
JUN 30	18	54	13.4	44.75N	110.61W	YELLOWSTONE NATIONAL PARK, WYD.	DAMAGE	VII	007	5.6	5.9	6.4	6.1BRK
JUN 30	19	00	27.4	44.77N	110.72W	YELLOWSTONE NATIONAL PARK, WYO.			005	5.1		5.3	
JUN 30	19	17	04.8	44.92N	110.65W	YELLOWSTONE NATIONAL PARK, WYO.		II	005			4.2	
JUN 30	19	56	33.7	44.71N	110.52W	YELLOWSTONE NATIONAL PARK, WYO.			005	4.7		4.5	
JUN 30	20	20	56.6	44.69N	110.59W	YELLOWSTONE NATIONAL PARK, WYO.		III	005	4.9		4.6	
JUN 30	20	46	43.5	45.03N	110.75W	MONTANA			005			3.4	
JUN 30	21	15	26.8	45.04N	110.57W	MONTANA			005			3.1	
JUL 01	04	16	22.5	44.79N	110.74W	YELLOWSTONE NATIONAL PARK, WYO.		II	005	4.8		4.4	
JUL 01	04	50	31.9	37.28N	116.36W	SOUTHERN NEVADA			005	4.5			4.2BRK
JUL 01	05	29	02.0	45.63N	120.00W	WASHINGTON-OREGON BORDER REGION			005				3.5SEA
JUL 01	15	57	47.8	44.79N	110.74W	YELLOWSTONE NATIONAL PARK, WYO.		II	005			3.4	
JUL 01	18	14	08.8	37.22N	116.43W	SOUTHERN NEVADA			005	4.7			4.8BRK
JUL 01	19	47	59.2	35.53N	118.40W	CENTRAL CALIFORNIA			004				3.0PAS
JUL 01	22	46	53.8	35.55N	118.38W	CENTRAL CALIFORNIA			003				3.1PAS

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JUL 02	06	16	09.1	52.72N	167.36W	FOX ISLANDS, ALEUTIAN ISLANDS		065	4.4			
JUL 02	08	29	29.6	44.79N	110.76W	YELLOWSTONE NATIONAL PARK, WYO.	II	005	4.6		3.3	
JUL 02	19	54	56.7	44.72N	110.57W	YELLOWSTONE NATIONAL PARK, WYO.		005	4.2		3.9	
JUL 03	03	21	34.0	44.75N	110.46W	YELLOWSTONE NATIONAL PARK, WYO.		005	4.5		3.8	
JUL 04	00	52	25.4	34.40N	116.92W	SOUTHERN CALIFORNIA		006				3.1PAS
JUL 04	00	56	06.2	34.42N	116.90W	SOUTHERN CALIFORNIA		005				3.0PAS
JUL 04	11	01	43.5	33.20N	116.08W	SOUTHERN CALIFORNIA		026	4.2			3.7PAS
JUL 05	03	40	55.1	19.35N	155.32W	HAWAII	IV	028			4.2	
JUL 05	19	17	39.0	44.71N	110.62W	YELLOWSTONE NATIONAL PARK, WYO.	IV	005	4.5		4.3	
JUL 05	20	08	29.7	44.76N	110.64W	YELLOWSTONE NATIONAL PARK, WYO.	III	005	3.5		3.5	
JUL 06	05	12	17.7	44.72N	110.68W	YELLOWSTONE NATIONAL PARK, WYO.		005				
JUL 06	08	48	13.9	36.19N	089.49W	NEW MADRID, MISSOURI REGION	II	005				2.9SLM
JUL 06	09	18	18.3	19.45N	155.60W	HAWAII	IV	001			4.3	
JUL 06	09	25	45.9	19.43N	155.64W	HAWAII	IV	004			4.4	
JUL 07	00	51	27.9	44.76N	110.57W	YELLOWSTONE NATIONAL PARK, WYO.	II	005	4.3		3.6	
JUL 07	13	59	08.7	33.96N	118.38W	SOUTHERN CALIFORNIA	II	013				3.2PAS
JUL 07	15	39	48.6	19.51N	155.45W	HAWAII	III	007			3.6	
JUL 07	18	28	22.0	19.51N	155.46W	HAWAII		008			3.5	
JUL 07	20	41	14.2	45.96N	118.25W	WASHINGTON		005				3.0SEA
JUL 08	00	47	41.9	19.51N	155.48W	HAWAII	IV	001	3.9		4.3	
JUL 08	02	31	38.7	59.92N	151.96W	SOUTHERN ALASKA		106				
JUL 08	04	39	52.2	19.51N	155.45W	HAWAII	IV	007			4.3	

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JUL 08	09	37	27.3	29.46N	113.35W	W. ARIZ. - MEXICO BORDER REGION	II	033	5.8	5.0	5.8	
JUL 08	11	09	07.5	19.52N	155.47W	HAWAII	III	007			3.9	
JUL 08	20	57	22.7	51.55N	178.29W	ANDREANOF ISLANDS, ALEUTIAN IS.	III	057	5.0			
JUL 09	06	07	02.6	19.51N	155.46W	HAWAII	IV	006			4.1	
JUL 09	13	49	27.5	19.51N	155.46W	HAWAII		007			3.6	
JUL 09	14	54	15.1	45.67N	096.04W	MINNESOTA	DAMAGE VI	010	5.0			4.8SLM
JUL 09	15	47	42.7	19.52N	155.46W	HAWAII	IV	007			4.3	
JUL 09	18	40	03.4	19.51N	155.47W	HAWAII	IV	007			4.5	
JUL 11	05	37	41.2	44.71N	110.74W	YELLOWSTONE NATIONAL PARK, WYO.		005	3.7		3.3	
JUL 11	09	24	50.6	63.19N	150.82W	CENTRAL ALASKA		146				
JUL 11	16	39	22.1	41.98N	106.73W	WYOMING	II	005				
JUL 12	12	37	15.4	46.51N	076.14W	SOUTHERN QUEBEC	IV	033	4.2			4.6OTT
JUL 13	01	16	30.6	39.55N	117.68W	NEVADA		005				4.0BRK
JUL 13	01	36	54.0	39.56N	117.64W	NEVADA		005				4.2BRK
JUL 13	10	01	07.2	44.71N	110.67W	YELLOWSTONE NATIONAL PARK, WYO.	IV	005	4.4		3.8	
JUL 14	05	50	34.6	47.33N	122.41W	WASHINGTON	V	007			3.0	3.4SEA
JUL 14	18	09	31.7	60.70N	151.28W	KENAI PENINSULA, ALASKA	II	109				
JUL 15	02	56	52.8	60.17N	153.27W	SOUTHERN ALASKA		148				
JUL 15	04	36	23.9	44.25N	129.35W	OFF COAST OF OREGON		033	4.2			
JUL 16	04	03	21.8	63.79N	149.43W	CENTRAL ALASKA		136				
JUL 16	11	57	20.4	33.22N	116.58W	SOUTHERN CALIFORNIA		016				3.2PAS
JUL 17	07	33	56.9	43.80N	126.77W	OFF COAST OF OREGON		033	3.9			

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JUL 17	18	24	46.1	31.88N	115.81W	BAJA CALIFORNIA	IV		4.9			4.9PAS
JUL 17	19	04	54.3	43.51N	110.59W	WYOMING		005	3.3			3.3ERD
JUL 18	15	06	22.5	46.72N	112.12W	MONTANA	IV	005			3.9	
JUL 18	18	39	02.6	46.69N	112.13W	MONTANA	II	005			3.1	
JUL 19	07	19	58.1	19.24N	155.01W	HAWAII	III	008			3.4	
JUL 19	12	00	22.8	46.69N	112.10W	MONTANA	II	005			3.5	
JUL 19	17	28	03.3	34.32N	116.83W	SOUTHERN CALIFORNIA		008				3.0PAS
JUL 19	20	59	32.2	41.43N	073.79W	NEW YORK	III	003				2.3PAL
JUL 20	14	24	56.3	59.87N	152.54W	SOUTHERN ALASKA		114				
JUL 21	23	35	08.3	56.82N	153.07W	KODIAK ISLAND REGION		021	3.9			
JUL 23	01	12	32.7	19.78N	156.20W	HAWAII	III	041			4.4	
JUL 24	01	39	27.4	64.04N	148.34W	CENTRAL ALASKA		120				
JUL 24	05	39	57.1	43.20N	126.21W	OFF COAST OF OREGON		033	4.9			
JUL 24	05	47	11.5	51.35N	175.19W	ANDREANOF ISLANDS, ALEUTIAN IS.		033	4.4			
JUL 24	11	42	11.8	47.32N	122.41W	WASHINGTON	V	006				3.4SEA
JUL 25	04	13	21.5	43.62N	127.02W	OFF COAST OF OREGON		033	4.5	3.8		
JUL 25	10	40	25.0	55.06N	160.38W	ALASKA PENINSULA	IV	017	5.8	5.2		
JUL 27	04	15	41.0	43.68N	127.16W	OFF COAST OF OREGON		031	4.7	4.2		
JUL 27	11	46	54.9	37.21N	117.92W	CALIFORNIA-NEVADA BORDER REGION		005				
JUL 27	12	48	37.9	37.25N	117.97W	CALIFORNIA-NEVADA BORDER REGION		005				
JUL 27	18	41	46.2	33.78N	119.35W	SOUTHERN CALIFORNIA		005				3.0PAS
JUL 28	11	46	09.3	35.00N	118.70W	CENTRAL CALIFORNIA		008				3.0PAS

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JUL 29	01	48	16.2	43.69N	126.10W	OFF COAST OF OREGON		033	5.2	3.8		
JUL 29	22	01	53.8	60.20N	153.40W	SOUTHERN ALASKA		154	4.4			
JUL 30	23	31	22.4	19.52N	155.60W	HAWAII	III	011			3.9	
AUG 01	07	04	33.0	61.92N	150.76W	SOUTHERN ALASKA		079	4.6			
AUG 01	07	27	57.3	31.43N	104.01W	WEST TEXAS	II	005	4.8			3.0TUL
AUG 01	11	42	12.6	33.65N	116.75W	SOUTHERN CALIFORNIA		005	4.9			3.1PAS
AUG 01	15	45	37.8	39.45N	121.53W	NORTHERN CALIFORNIA	V	007				3.8BRK
AUG 01	16	27	17.8	39.44N	121.54W	NORTHERN CALIFORNIA	IV	005	4.8	3.2		4.7BRK
AUG 01	17	26	50.1	39.46N	121.54W	NORTHERN CALIFORNIA		009				3.0BRK
AUG 01	20	20	04.8	39.44N	121.53W	NORTHERN CALIFORNIA		008	4.4	5.7		4.5BRK
AUG 01	20	20	12.9	39.44N	121.53W	NORTHERN CALIFORNIA	DAMAGE IX	015	5.8	5.6		5.7BRK
AUG 01	20	25	.	39.44N	121.53W	NORTHERN CALIFORNIA	III					4.7BRK
AUG 01	20	29	.	39.44N	121.53W	NORTHERN CALIFORNIA	III					4.6BRK
AUG 01	20	32	39.8	39.45N	121.51W	NORTHERN CALIFORNIA		005				3.0BRK
AUG 01	20	46	18.4	39.47N	121.50W	NORTHERN CALIFORNIA		006				3.8BRK
AUG 01	21	05	39.8	39.43N	121.49W	NORTHERN CALIFORNIA		007				3.0BRK
AUG 01	21	21	50.7	39.44N	121.53W	NORTHERN CALIFORNIA	IV	008	5.3			4.1BRK
AUG 01	21	25	59.0	39.47N	121.52W	NORTHERN CALIFORNIA		007				3.3BRK
AUG 01	21	29	24.1	39.45N	121.55W	NORTHERN CALIFORNIA		007				3.6BRK
AUG 01	23	34	26.8	62.75N	149.86W	CENTRAL ALASKA		034				3.2PMR
AUG 01	23	44	41.0	39.49N	121.52W	NORTHERN CALIFORNIA		007				3.2BRK
AUG 02	00	14	07.7	33.52N	116.55W	SOUTHERN CALIFORNIA	III	013	4.6			4.7PAS

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
AUG 02	00	52	48.5	39.48N	121.51W	NORTHERN CALIFORNIA		007	4.1	2.8		3.8BRK
AUG 02	06	31	57.2	39.45N	121.48W	NORTHERN CALIFORNIA		006				3.2BRK
AUG 02	10	11	53.7	39.49N	121.51W	NORTHERN CALIFORNIA		007				3.1BRK
AUG 02	10	18	17.9	53.39N	161.49W	SOUTH OF ALASKA	V	033	6.2	6.0		5.7BRK
AUG 02	10	49	00.1	39.43N	121.47W	NORTHERN CALIFORNIA		006				3.3BRK
AUG 02	11	51	50.7	39.47N	121.49W	NORTHERN CALIFORNIA		002				3.4BRK
AUG 02	14	44	38.7	39.42N	121.49W	NORTHERN CALIFORNIA		005				3.1BRK
AUG 02	15	01	35.3	56.63N	152.20W	KODIAK ISLAND REGION		033	4.9			
AUG 02	16	51	45.1	39.42N	121.49W	NORTHERN CALIFORNIA		006	4.3			3.7BRK
AUG 02	17	24	29.2	39.47N	121.47W	NORTHERN CALIFORNIA	III	006	4.6			4.3BRK
AUG 02	17	43	24.1	39.48N	121.47W	NORTHERN CALIFORNIA	III	006	3.9			4.0BRK
AUG 02	19	58	36.9	39.45N	121.54W	NORTHERN CALIFORNIA		007				3.1BRK
AUG 02	20	22	16.3	39.45N	121.46W	NORTHERN CALIFORNIA	III	004	5.3	4.5		5.1BRK
AUG 02	20	35	48.6	39.47N	121.48W	NORTHERN CALIFORNIA		006	4.3			3.9BRK
AUG 02	20	58	55.7	39.43N	121.47W	NORTHERN CALIFORNIA		006				3.8BRK
AUG 02	20	59	02.7	39.41N	121.71W	NORTHERN CALIFORNIA	DAMAGE VI	005	5.2	4.7		5.1BRK
AUG 02	21	40	01.3	39.43N	121.47W	NORTHERN CALIFORNIA		006	4.3			3.9BRK
AUG 03	00	29	08.8	33.52N	116.57W	SOUTHERN CALIFORNIA		011				3.0PAS
AUG 03	01	03	05.8	39.49N	121.52W	NORTHERN CALIFORNIA	III	008	5.0			4.6BRK
AUG 03	01	03	22.0	42.67N	070.85W	SOUTHERN NEW ENGLAND	III	005				2.4WES
AUG 03	02	47	08.8	39.48N	121.50W	NORTHERN CALIFORNIA	III	007	4.5	3.3		4.1BRK
AUG 03	05	57	17.3	36.47N	120.35W	CENTRAL CALIFORNIA	III	004	4.6			4.0BRK

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
AUG 03	06	04	47.7	36.44N	120.35W	CENTRAL CALIFORNIA		004	3.6			3.9BRK
AUG 03	06	35	16.5	36.46N	120.35W	CENTRAL CALIFORNIA	DAMAGE VI	005	5.1	4.0		4.9BRK
AUG 03	06	37	52.0	36.47N	120.35W	CENTRAL CALIFORNIA	II	005	4.1			4.4BRK
AUG 03	08	38	00.2	36.48N	120.35W	CENTRAL CALIFORNIA		004				3.6BRK
AUG 03	09	00	30.2	36.47N	120.36W	CENTRAL CALIFORNIA		005				3.5BRK
AUG 03	12	44	25.8	32.07N	116.05W	CALIFORNIA-MEXICO BORDER REGION		017				3.4PAS
AUG 04	09	47	45.0	39.42N	121.52W	NORTHERN CALIFORNIA		008				3.5BRK
AUG 04	12	08	20.6	62.06N	149.62W	CENTRAL ALASKA		069				
AUG 05	02	28	57.4	39.42N	121.49W	NORTHERN CALIFORNIA		007				3.3BRK
AUG 05	17	36	38.6	19.25N	155.39W	HAWAII	III	001			3.3	
AUG 05	20	44	24.5	39.42N	121.52W	NORTHERN CALIFORNIA		007				3.2BRK
AUG 06	03	50	29.9	39.48N	121.52W	NORTHERN CALIFORNIA	V	007	5.1	4.0		4.7BRK
AUG 06	06	03	26.9	61.50N	146.34W	SOUTHERN ALASKA		038				3.4PMR
AUG 06	16	25	47.9	39.45N	121.46W	NORTHERN CALIFORNIA		008				3.1BRK
AUG 06	16	41	52.1	39.50N	121.53W	NORTHERN CALIFORNIA		008	5.2			3.6BRK
AUG 06	21	00	33.5	39.44N	121.49W	NORTHERN CALIFORNIA		009				3.0BRK
AUG 06	21	07	27.0	33.37N	116.30W	SOUTHERN CALIFORNIA		008				3.2PAS
AUG 06	21	38	07.8	43.09N	126.20W	OFF COAST OF OREGON		033	4.9			
AUG 07	20	31	20.4	39.52N	121.53W	NORTHERN CALIFORNIA		009				3.1BRK
AUG 08	07	00	50.1	39.50N	121.51W	NORTHERN CALIFORNIA	IV	008	5.0			4.9BRK
AUG 08	11	44	38.8	68.96N	145.15W	ALASKA		033	4.5			
AUG 08	12	00	22.9	63.24N	150.53W	CENTRAL ALASKA		145				

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY		DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
AUG 08	13	37	53.9	39.50N	121.49W	NORTHERN CALIFORNIA			006				3.2BRK
AUG 08	19	03	27.2	39.39N	121.49W	NORTHERN CALIFORNIA			006				3.1BRK
AUG 09	07	38	47.5	39.41N	121.48W	NORTHERN CALIFORNIA			007				3.0BRK
AUG 10	03	12	46.2	51.20N	174.16E	NEAR ISLANDS, ALEUTIAN ISLANDS			017	5.1	4.5		
AUG 10	05	16	40.5	37.37N	119.99W	CENTRAL CALIFORNIA	DAMAGE	VI	007	4.0			3.8BRK
AUG 10	14	35	41.7	63.19N	150.51W	CENTRAL ALASKA			150				
AUG 11	02	40	16.7	39.46N	121.44W	NORTHERN CALIFORNIA			002				3.0BRK
AUG 11	06	11	36.3	39.45N	121.48W	NORTHERN CALIFORNIA	DAMAGE	VI	004	4.8	3.8		4.3BRK
AUG 11	15	59	05.3	39.47N	121.55W	NORTHERN CALIFORNIA			006	4.0			3.6BRK
AUG 12	23	20	27.0	53.31N	170.75W	FOX ISLANDS, ALEUTIAN ISLANDS			167	4.5			
AUG 13	13	57	46.9	35.32N	118.53W	CENTRAL CALIFORNIA			006				3.1PAS
AUG 14	04	29	58.5	35.08N	119.17W	CENTRAL CALIFORNIA			015	3.9			3.7PAS
AUG 14	08	08	49.8	34.02N	116.43W	SOUTHERN CALIFORNIA	DAMAGE	VI	011	4.2			4.0PAS
AUG 14	08	10	36.7	34.03N	116.43W	SOUTHERN CALIFORNIA		III	010				3.8PAS
AUG 14	08	59	19.8	34.03N	116.43W	SOUTHERN CALIFORNIA			001				3.0PAS
AUG 15	22	27	51.8	36.49N	120.39W	CENTRAL CALIFORNIA		V	006	4.5			4.5BRK
AUG 16	05	48	09.4	39.47N	121.52W	NORTHERN CALIFORNIA		III	009	4.3			4.0BRK
AUG 16	21	20	53.6	42.12N	112.45W	EASTERN IDAHO			010				3.6SLC
AUG 17	00	24	26.0	37.61N	118.81W	CALIFORNIA-NEVADA BORDER REGION		II	005				4.0BRK
AUG 17	08	26	59.3	58.41N	152.38W	KODIAK ISLAND REGION			072				
AUG 17	10	24	14.3	44.67N	111.11W	HEBGEN LAKE REGION			005				
AUG 18	01	25	22.9	32.82N	115.63W	CALIFORNIA-MEXICO BORDER REGION			017				3.1PAS

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
AUG 18	11	35	50.8	62.33N	150.69W	CENTRAL ALASKA		005				3.3PMR
AUG 18	14	56	42.1	57.36N	150.20W	GULF OF ALASKA		025	5.2	4.3		4.7PMR
AUG 18	17	08	55.9	19.62N	156.09W	HAWAII	III	049			3.9	
AUG 18	21	07	23.3	63.38N	149.15W	CENTRAL ALASKA		111				
AUG 20	01	35	20.9	51.96N	166.08W	FOX ISLANDS, ALEUTIAN ISLANDS		033	4.6			
AUG 20	09	14	16.6	36.56N	089.80W	NEW MADRID, MISSOURI REGION		005				2.9SLM
AUG 21	07	24	19.8	51.11N	177.83E	RAT ISLANDS, ALEUTIAN ISLANDS		033	5.0	4.3		
AUG 21	22	19	21.1	60.36N	151.19W	KENAI PENINSULA, ALASKA	V	067	4.9			
AUG 22	15	50	14.3	60.12N	153.44W	SOUTHERN ALASKA		160	4.7			
AUG 23	06	40	27.3	59.01N	154.26W	SOUTHERN ALASKA		167	4.5			
AUG 23	16	14	23.4	64.82N	149.27W	CENTRAL ALASKA		030				3.5PMR
AUG 23	16	56	37.7	58.15N	154.09W	ALASKA PENINSULA		056	4.3			
AUG 24	04	39	55.7	59.73N	153.44W	SOUTHERN ALASKA		134	4.4			
AUG 24	15	45	35.4	19.35N	155.28W	HAWAII	III	033			3.6	
AUG 24	16	05	16.0	53.07N	171.00E	NEAR ISLANDS, ALEUTIAN ISLANDS		024	5.1	3.9		
AUG 25	00	44	14.5	37.23N	090.89W	EASTERN MISSOURI		005				2.7SLM
AUG 25	03	01	28.4	37.23N	090.88W	EASTERN MISSOURI		005				2.8SLM
AUG 25	07	11	08.0	36.05N	089.84W	NEW MADRID, MISSOURI REGION		011				3.0SLM
AUG 25	10	00	17.0	44.25N	100.45W	SOUTH DAKOTA		005				
AUG 25	14	29	58.6	51.59N	176.17E	RAT ISLANDS, ALEUTIAN ISLANDS		037	4.7	4.4		
AUG 26	08	39	27.3	34.97N	119.12W	CENTRAL CALIFORNIA		004				3.4PAS
AUG 27	17	34	44.2	19.44N	155.47W	HAWAII	IV	008			4.1	

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY		DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
AUG 28	17	46	01.8	58.18N	151.64W	KODIAK ISLAND REGION			076				
AUG 29	04	22	51.9	33.82N	086.60W	ALABAMA	DAMAGE	VI	005	3.5			4.4SLM
AUG 29	07	52	42.6	36.52N	120.39W	CENTRAL CALIFORNIA		V	005	4.0			3.8BRK
AUG 29	23	18	55.7	61.48N	149.30W	SOUTHERN ALASKA			037				2.6PMR
AUG 31	11	10	04.2	62.12N	150.47W	CENTRAL ALASKA			033				3.0PMR
AUG 31	11	27	39.7	40.95N	119.11W	NEVADA			033				4.2BRK
AUG 31	12	02	10.0	57.25N	151.06W	KODIAK ISLAND REGION			012	5.1	4.4		4.9PMR
SEP 04	02	26	12.0	65.47N	148.82W	ALASKA			006				3.6PMR
SEP 04	03	24	42.2	61.12N	147.20W	SOUTHERN ALASKA			037				3.2PMR
SEP 05	20	47	40.7	48.37N	104.38W	MONTANA			005				3.8LAO
SEP 06	17	00	00.1	37.02N	116.03W	SOUTHERN NEVADA			000	4.6			4.3BRK
SEP 06	18	04	59.5	56.63N	152.30W	KODIAK ISLAND REGION			033	5.1			4.4PMR
SEP 06	20	35	02.0	56.52N	152.28W	KODIAK ISLAND REGION			033	4.8			4.2PMR
SEP 08	11	56	44.9	44.20N	111.28W	HEBGEN LAKE REGION			019				2.5ERD
SEP 08	23	19	02.2	61.53N	146.24W	SOUTHERN ALASKA		II	033				4.3PMR
SEP 09	02	43	42.5	40.92N	124.40W	NEAR COAST OF NORTHERN CALIF.		IV	027	4.9			4.6BRK
SEP 09	11	52	44.1	30.66N	089.25W	MISSISSIPPI		IV	005				2.9TUL
SEP 10	06	39	42.5	38.48N	112.56W	UTAH		II	005				3.3SLC
SEP 10	17	39	05.2	39.52N	121.54W	NORTHERN CALIFORNIA		II	001				3.4BRK
SEP 10	18	34	11.0	19.35N	155.19W	HAWAII		III	002			3.5	
SEP 11	08	44	45.0	33.00N	115.82W	SOUTHERN CALIFORNIA			008				3.0PAS
SEP 11	10	56	43.2	60.18N	148.18W	KENAI PENINSULA, ALASKA			033				3.3PMR

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
SEP 11	21	43	49.9	62.82N	149.71W	CENTRAL ALASKA		092				
SEP 12	01	25	02.8	34.14N	097.37W	OKLAHOMA	IV	005				3.4TUL
SEP 12	18	26	06.4	42.07N	112.57W	EASTERN IDAHO	III	005				4.0SLC
SEP 12	18	57	22.7	42.09N	112.49W	EASTERN IDAHO		005				
SEP 12	23	40	13.7	59.74N	152.55W	SOUTHERN ALASKA		117				
SEP 13	01	25	02.8	34.14N	097.37W	OKLAHOMA	IV	005				3.4TUL
SEP 13	21	20	59.8	36.00N	120.56W	CENTRAL CALIFORNIA	DAMAGE VI	013	4.9	4.3		4.8BRK
SEP 14	04	13	24.2	41.87N	112.43W	UTAH	III	005				
SEP 14	14	31	02.8	60.23N	151.16W	KENAI PENINSULA, ALASKA		092				
SEP 15	12	31	16.4	37.81N	121.97W	CENTRAL CALIFORNIA	IV	010				2.8BRK
SEP 16	12	41	11.8	32.73N	117.90W	CALIFORNIA-MEXICO BORDER REGION		008				3.2PAS
SEP 17	08	17	31.8	59.43N	152.62W	SOUTHERN ALASKA		115				
SEP 17	13	18	14.2	63.42N	149.83W	CENTRAL ALASKA		133	4.6			
SEP 18	07	27	24.4	59.87N	153.38W	SOUTHERN ALASKA		147				
SEP 18	12	19	27.1	47.85N	118.16W	WASHINGTON		001				3.5SEA
SEP 19	21	45	59.6	59.83N	153.48W	SOUTHERN ALASKA		139				
SEP 22	05	46	01.5	19.33N	155.21W	HAWAII	III	007			3.2	
SEP 22	10	42	36.2	42.08N	112.45W	EASTERN IDAHO	IV	003	4.2			3.6SLC
SEP 24	08	40	01.8	59.87N	152.88W	SOUTHERN ALASKA		124				
SEP 24	14	17	53.6	59.88N	141.85W	SOUTHEASTERN ALASKA		052	4.2			
SEP 25	06	26	40.2	43.40N	126.87W	OFF COAST OF OREGON		033	4.2	3.4		
SEP 25	15	43	38.0	54.20N	159.35W	SOUTH OF ALASKA		040				

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME (UT) H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
SEP 26	02	31	07.1	39.50N	121.50W	NORTHERN CALIFORNIA	II	011	4.1			4.0BRK
SEP 26	09	23	59.1	55.82N	159.05W	ALASKA PENINSULA		070				
SEP 26	09	57	15.2	39.44N	121.61W	NORTHERN CALIFORNIA	IV	010				2.9BRK
SEP 26	13	29	40.3	54.86N	160.24W	ALASKA PENINSULA		040				
SEP 27	05	09	42.6	61.02N	147.62W	SOUTHERN ALASKA		033				3.0PMR
SEP 27	22	34	38.1	39.51N	121.54W	NORTHERN CALIFORNIA	V	008	5.3	3.5		4.6BRK
SEP 27	23	04	30.4	39.52N	121.53W	NORTHERN CALIFORNIA		011			3.1	2.9BRK
SEP 27	23	28	04.7	39.53N	121.54W	NORTHERN CALIFORNIA		010				3.1BRK
SEP 28	12	11	18.5	54.73N	160.52W	ALASKA PENINSULA		028				
SEP 29	07	46	33.4	51.55N	177.87W	ANDREANOF ISLANDS, ALEUTIAN IS.	III	049	4.2			
SEP 29	09	21	19.5	55.40N	161.65W	ALASKA PENINSULA		099				
SEP 29	11	09	42.9	35.96N	106.79W	NEW MEXICO		005				
SEP 29	20	09	05.8	54.90N	160.29W	ALASKA PENINSULA		041				
SEP 30	08	28	12.2	51.71N	179.45W	ANDREANOF ISLANDS, ALEUTIAN IS.	II	033	4.6			
SEP 30	11	31	10.9	54.63N	161.45W	ALASKA PENINSULA		040				
SEP 30	14	14	00.5	63.18N	150.50W	CENTRAL ALASKA		145				
SEP 30	16	41	46.4	54.80N	161.42W	ALASKA PENINSULA		070				
SEP 30	20	44	49.2	54.35N	157.25W	SOUTH OF ALASKA		020				
OCT 01	01	13	35.0	55.13N	161.71W	ALASKA PENINSULA		075				
OCT 01	01	54	57.4	54.88N	158.99W	SOUTH OF ALASKA		020				
OCT 01	03	00	11.3	55.23N	162.18W	ALASKA PENINSULA		100				
OCT 01	08	36	55.6	55.30N	159.25W	ALASKA PENINSULA		026				

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
OCT 01	20	10	17.4	55.77N	159.24W	ALASKA PENINSULA		016				
OCT 02	07	34	39.5	19.32N	155.23W	HAWAII	IV	008			3.6	
OCT 02	14	58	29.0	40.69N	114.71W	NEVADA		005				
OCT 03	06	07	36.1	54.84N	160.30W	ALASKA PENINSULA		030				
OCT 03	09	53	22.6	51.54N	174.95E	RAT ISLANDS, ALEUTIAN ISLANDS		013	5.2	5.2		
OCT 05	11	58	00.2	60.26N	153.21W	SOUTHERN ALASKA		151				
OCT 05	19	08	57.2	36.72N	118.30W	CENTRAL CALIFORNIA		005				3.5BRK
OCT 06	00	41	58.1	40.91N	114.93W	NEVADA		005				
OCT 06	01	38	19.3	54.11N	161.86W	ALASKA PENINSULA		025				
OCT 06	15	38	22.5	55.26N	160.42W	ALASKA PENINSULA		065				
OCT 06	15	50	46.9	39.07N	111.45W	UTAH	II	005	4.2			3.2SLC
OCT 07	21	12	44.4	37.56N	118.75W	CALIFORNIA-NEVADA BORDER REGION	IV	002				3.7BRK
OCT 08	00	39	43.9	54.96N	160.30W	ALASKA PENINSULA		018				
OCT 08	06	27	47.2	54.76N	160.48W	ALASKA PENINSULA		035				
OCT 08	06	27	47.4	59.65N	151.19W	KENAI PENINSULA, ALASKA		078	3.7			
OCT 08	12	21	03.0	62.18N	153.40W	CENTRAL ALASKA		056				
OCT 08	12	24	40.4	56.30N	158.11W	ALASKA PENINSULA		085				
OCT 08	23	32	17.3	55.17N	160.10W	ALASKA PENINSULA		009				
OCT 09	00	43	10.2	55.04N	161.97W	ALASKA PENINSULA		004				
OCT 09	11	48	52.3	53.36N	158.63W	SOUTH OF ALASKA		020				
OCT 09	12	58	26.3	54.61N	161.49W	ALASKA PENINSULA		048				
OCT 09	13	26	41.6	60.15N	148.18W	KENAI PENINSULA, ALASKA		033				3.3PMR

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
OCT 10	03	35	37.7	38.70N	119.85W	CALIFORNIA-NEVADA BORDER REGION		005				3.1BRK
OCT 10	07	44	47.4	39.47N	121.50W	NORTHERN CALIFORNIA	IV	006	3.9			3.5BRK
OCT 10	10	36	42.6	54.84N	161.37W	ALASKA PENINSULA		075				
OCT 10	16	17	17.0	54.84N	160.33W	ALASKA PENINSULA		036				
OCT 11	16	55	01.2	34.10N	118.08W	SOUTHERN CALIFORNIA	III	005				3.0PAS
OCT 12	02	58	11.2	34.82N	097.41W	OKLAHOMA		020				3.2TUL
OCT 12	09	47	03.9	40.88N	114.90W	NEVADA		005				3.7ERD
OCT 13	01	34	45.3	54.46N	159.72W	SOUTH OF ALASKA		044				
OCT 13	02	30	03.7	55.49N	160.45W	ALASKA PENINSULA		078				
OCT 13	04	59	36.9	55.54N	159.58W	ALASKA PENINSULA		065				
OCT 13	06	59	25.2	42.00N	112.56W	EASTERN IDAHO		005				
OCT 13	16	06	50.7	39.54N	121.57W	NORTHERN CALIFORNIA		010				3.0BRK
OCT 14	05	54	06.0	54.74N	160.57W	ALASKA PENINSULA		021				
OCT 14	06	08	55.7	61.93N	147.92W	SOUTHERN ALASKA		045				
OCT 14	06	11	38.1	41.90N	126.70W	OFF COAST OF NORTHERN CALIFORNIA		010	4.1			
OCT 14	10	13	07.6	33.06N	116.44W	SOUTHERN CALIFORNIA	IV	013	4.0			3.1PAS
OCT 14	11	11	19.4	33.06N	116.47W	SOUTHERN CALIFORNIA	IV	016	4.0			3.0PAS
OCT 16	13	12	06.8	60.20N	153.18W	SOUTHERN ALASKA		099	5.3			
OCT 16	13	13	15.6	55.90N	159.11W	ALASKA PENINSULA		048				
OCT 16	20	55	12.9	62.62N	150.99W	CENTRAL ALASKA		119				
OCT 17	11	48	19.2	54.61N	159.79W	SOUTH OF ALASKA		015				
OCT 17	19	39	12.5	57.45N	149.01W	GULF OF ALASKA		033	5.7	5.5		

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
OCT 17	23	45	17.4	55.16N	160.91W	ALASKA PENINSULA		043				
OCT 18	06	06	45.0	54.42N	159.67W	SOUTH OF ALASKA		010				
OCT 18	19	59	20.8	60.12N	148.68W	KENAI PENINSULA, ALASKA		066				
OCT 18	23	18	29.4	60.11N	148.72W	KENAI PENINSULA, ALASKA		036				
OCT 19	17	50	36.1	54.82N	161.67W	ALASKA PENINSULA		070				
OCT 19	20	53	45.4	56.14N	157.52W	ALASKA PENINSULA		056				
OCT 20	14	17	54.8	48.20N	114.28W	MONTANA	IV	025	4.3		3.6	
OCT 21	01	16	28.7	61.31N	147.37W	SOUTHERN ALASKA		033	4.6			
OCT 21	04	46	22.8	51.27N	174.23E	NEAR ISLANDS, ALEUTIAN ISLANDS		033	4.4			
OCT 21	09	15	51.9	33.96N	116.41W	SOUTHERN CALIFORNIA	IV	015	4.8			3.7PAS
OCT 21	18	13	33.0	56.17N	158.78W	ALASKA PENINSULA		050				
OCT 22	15	27	04.0	61.69N	149.88W	SOUTHERN ALASKA	IV	061				
OCT 22	19	22	16.4	51.53N	179.33W	ANDREANOF ISLANDS, ALEUTIAN IS.		033	3.8			
OCT 22	19	35	37.7	59.78N	153.17W	SOUTHERN ALASKA		144				
OCT 23	21	14	37.4	41.13N	130.41W	OFF COAST OF NORTHERN CALIFORNIA		010				
OCT 23	22	14	02.4	34.43N	118.42W	SOUTHERN CALIFORNIA	III	009				3.2PAS
OCT 23	23	11	31.6	61.73N	150.12W	SOUTHERN ALASKA	III	033				3.2PMR
OCT 24	07	43	12.4	41.59N	073.93W	NEW YORK	II	003				2.2PAL
OCT 24	17	11	26.1	37.22N	116.18W	SOUTHERN NEVADA		000	4.7			4.7BRK
OCT 27	09	37	40.2	19.31N	155.46W	HAWAII	III	008			3.3	
OCT 27	09	49	09.8	54.62N	161.81W	ALASKA PENINSULA		010				
OCT 28	03	41	15.0	39.52N	121.56W	NORTHERN CALIFORNIA	IV	010				3.4BRK

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
OCT 28	05	03	41.3	54.98N	160.28W	ALASKA PENINSULA		019				
OCT 28	05	35	52.8	19.32N	155.23W	HAWAII	IV	008			3.6	
OCT 28	06	40	59.0	61.42N	152.42W	SOUTHERN ALASKA	III	132	4.5			
OCT 28	06	42	20.8	56.17N	158.70W	ALASKA PENINSULA		057				
OCT 28	10	14	38.5	44.57N	129.45W	OFF COAST OF OREGON		033	4.0			
OCT 28	11	36	34.3	55.67N	159.70W	ALASKA PENINSULA		077				
OCT 28	14	30	00.2	37.29N	116.41W	SOUTHERN NEVADA		000	6.4	5.4		6.3PAS
OCT 28	16	12	43.5	54.87N	160.30W	ALASKA PENINSULA		038				
OCT 28	20	19	19.4	55.15N	159.71W	ALASKA PENINSULA		003				
OCT 29	03	19	04.0	58.18N	150.78W	GULF OF ALASKA		033				4.2PMR
OCT 29	05	28	02.9	54.83N	161.97W	ALASKA PENINSULA		090				
OCT 29	16	35	48.4	55.13N	159.22W	ALASKA PENINSULA		039				
OCT 30	05	23	32.8	55.05N	160.80W	ALASKA PENINSULA		085				
OCT 30	12	31	44.2	51.07N	179.42W	ANOREANOF ISLANOS, ALEUTIAN IS.		052	4.6			
OCT 30	12	36	11.5	51.36N	179.35W	ANOREANOF ISLANDS, ALEUTIAN IS.	II	050	5.0	5.0		
OCT 31	03	03	47.4	56.28N	158.00W	ALASKA PENINSULA		050				
OCT 31	14	50	53.6	19.18N	155.64W	HAWAII	IV	008			3.8	
NOV 01	00	00	08.5	52.97N	163.41W	SOUTH OF ALASKA		080				
NOV 01	00	48	23.4	53.66N	163.37W	UNIMAK ISLAND REGION		025	5.7	5.7		
NOV 01	01	32	14.4	55.53N	158.33W	ALASKA PENINSULA		020				
NOV 01	01	59	52.1	54.52N	161.09W	ALASKA PENINSULA		036				

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
NOV 01	04	48	50.1	60.01N	153.28W	SOUTHERN ALASKA		144				
NOV 01	13	34	20.3	55.13N	159.76W	ALASKA PENINSULA		052				
NOV 01	14	33	15.6	56.19N	158.47W	ALASKA PENINSULA		060				
NOV 01	17	04	00.2	60.70N	148.03W	KENAI PENINSULA, ALASKA		054				
NOV 02	10	12	07.0	55.02N	159.45W	ALASKA PENINSULA		028				
NOV 02	11	02	08.2	53.19N	161.85W	SOUTH OF ALASKA		010				
NOV 02	14	32	20.4	59.36N	153.55W	SOUTHERN ALASKA		112	4.8			
NOV 03	02	19	47.0	37.29N	116.41W	SOUTHERN NEVADA		000	4.5			4.7BRK
NOV 03	04	56	39.7	45.81N	111.50W	MONTANA		019				3.4ERD
NOV 03	20	54	55.9	43.89N	074.64W	NEW YORK	IV	003	4.0			3.9PAL
NOV 04	04	10	56.8	61.00N	152.90W	SOUTHERN ALASKA		160				
NOV 05	02	37	19.8	34.16N	117.38W	SOUTHERN CALIFORNIA	II	007	3.9			3.2PAS
NOV 05	04	03	05.3	55.14N	160.07W	ALASKA PENINSULA		012				
NOV 05	05	37	45.9	39.40N	121.59W	NORTHERN CALIFORNIA	II	009				3.3BRK
NOV 05	05	45	21.1	55.56N	161.15W	ALASKA PENINSULA		097				
NOV 05	08	45	01.6	53.29N	162.70W	SOUTH OF ALASKA		005				
NOV 05	11	53	19.3	58.35N	151.02W	KODIAK ISLAND REGION		033				4.2PMR
NOV 06	01	06	42.1	51.87N	176.23E	RAT ISLANDS, ALEUTIAN ISLANDS	V	061	5.4			
NOV 06	01	09	30.7	54.78N	163.47W	UNIMAK ISLAND REGION		070				
NOV 06	12	05	28.4	19.32N	155.31W	HAWAII	V	028	4.4		4.1	
NOV 06	13	21	18.7	19.31N	155.31W	HAWAII	IV	028			4.1	
NOV 06	14	02	56.5	19.32N	155.31W	HAWAII	IV	027			3.8	

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
NOV 07	06	53	57.8	50.67N	175.49E	RAT ISLANDS, ALEUTIAN ISLANDS		022	4.6			
NOV 07	17	07	17.4	59.05N	154.03W	SOUTHERN ALASKA		131				
NOV 07	22	10	46.0	34.43N	116.45W	SOUTHERN CALIFORNIA		008				3.2PAS
NOV 07	23	39	32.7	33.55N	087.36W	ALABAMA	II	005				3.5SLM
NOV 08	04	11	06.8	59.45N	153.07W	SOUTHERN ALASKA		131				
NOV 08	20	51	29.9	44.59N	129.43W	OFF COAST OF OREGON		033	4.8	4.4		
NOV 08	21	23	02.4	44.70N	129.29W	OFF COAST OF OREGON		033	4.6	4.1		
NOV 08	21	43	13.6	44.65N	129.60W	OFF COAST OF OREGON		034	4.5	4.4		
NOV 09	06	16	53.3	54.17N	162.78W	ALASKA PENINSULA		045				
NOV 09	08	55	46.9	41.99N	112.52W	EASTERN IDAHO		005				
NOV 09	17	30	05.0	53.38N	163.13W	UNIMAK ISLAND REGION		040				
NOV 10	11	02	43.5	51.38N	179.15W	ANDREANOF ISLANDS, ALEUTIAN IS.		057	4.5			
NOV 10	11	26	29.8	19.35N	155.04W	HAWAII	IV	008			4.1	
NOV 11	00	19	16.3	41.82N	110.60W	WYOMING		010				
NOV 11	02	47	40.9	52.47N	163.76W	SOUTH OF ALASKA		090				
NOV 11	08	10	39.3	37.19N	080.84W	VIRGINIA	DAMAGE VI	015				3.2SLM
NOV 11	08	38	06.7	51.60N	176.00E	RAT ISLANDS, ALEUTIAN ISLANDS		063	4.6			
NOV 12	07	00	22.9	40.37N	125.27W	OFF COAST OF NORTHERN CALIFORNIA		033	4.3			3.6BRK
NOV 12	17	38	52.5	58.51N	153.47W	KODIAK ISLAND REGION		085				
NOV 13	02	53	57.7	53.77N	162.64W	SOUTH OF ALASKA		060				
NOV 13	02	54	01.2	54.37N	162.66W	ALASKA PENINSULA	V	033	5.3			
NOV 13	04	43	18.1	55.17N	159.31W	ALASKA PENINSULA		062				

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
NOV 13	23	26	07.1	51.72N	173.31W	ANDREANOF ISLANDS, ALEUTIAN IS.		037	4.2			
NOV 13	23	31	13.3	51.67N	173.34W	ANDREANOF ISLANDS, ALEUTIAN IS.		027	4.2			
NOV 14	09	02	04.8	19.36N	155.07W	HAWAII	IV	007			3.6	
NOV 14	09	29	48.5	40.62N	124.31W	NEAR COAST OF NORTHERN CALIF.	DAMAGE VI	023	4.9	4.5		4.8BRK
NOV 14	11	23	25.8	19.32N	155.34W	HAWAII	IV	031			3.8	
NOV 14	11	51	45.3	18.97N	155.48W	HAWAII	III	039			3.3	
NOV 15	03	35	01.6	39.42N	121.57W	NORTHERN CALIFORNIA	IV	005	4.7	3.3		4.0BRK
NOV 15	06	13	27.6	34.30N	116.34W	SOUTHERN CALIFORNIA	IV	006	4.6			4.7PAS
NOV 15	06	20	46.8	34.30N	116.35W	SOUTHERN CALIFORNIA		008				3.4PAS
NOV 15	07	43	48.3	34.30N	116.33W	SOUTHERN CALIFORNIA		005	4.9			3.3PAS
NOV 15	22	05	51.3	34.25N	116.36W	SOUTHERN CALIFORNIA	II	008	3.5			3.2PAS
NOV 15	22	55	21.2	19.32N	155.22W	HAWAII	IV	008			4.3	
NOV 16	01	01	03.5	34.26N	080.57W	SOUTH CAROLINA	II	007				
NOV 16	17	29	32.4	40.43N	126.11W	OFF COAST OF NORTHERN CALIFORNIA		033	4.9	4.0		4.9BRK
NOV 16	18	36	47.1	62.48N	147.59W	CENTRAL ALASKA		215				
NOV 17	08	21	11.1	41.96N	112.53W	EASTERN IDAHO		007				3.0SLC
NOV 18	11	50	30.8	36.93N	121.45W	CENTRAL CALIFORNIA	II	011				3.0BRK
NOV 18	13	00	42.4	64.57N	150.84W	CENTRAL ALASKA		033				3.6PMR
NOV 18	15	30	00.3	36.99N	116.03W	SOUTHERN NEVADA		005	4.4			3.8BRK
NOV 18	16	04	45.0	34.03N	117.58W	SOUTHERN CALIFORNIA	II	005				3.0PAS
NOV 18	18	22	30.4	34.28N	116.37W	SOUTHERN CALIFORNIA		008				3.1PAS
NOV 18	23	10	01.9	19.37N	155.07W	HAWAII	III	007			3.1	

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY		DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
NOV 20	15	00	00.1	37.23N	116.37W	SOUTHERN NEVADA			000	6.0			6.0PAS
NOV 21	10	51	23.7	63.21N	150.48W	CENTRAL ALASKA			132				
NOV 22	02	36	15.8	57.26N	149.45W	GULF OF ALASKA			033	4.3			
NOV 22	08	50	09.1	51.72N	173.43W	ANDREANOF ISLANDS, ALEUTIAN IS.			054	5.2			
NOV 22	12	13	50.0	59.17N	153.38W	SOUTHERN ALASKA			224				
NOV 22	16	45	12.6	59.57N	146.69W	GULF OF ALASKA			121				
NOV 22	22	54	03.1	43.42N	126.75W	OFF COAST OF OREGON			033	4.3	4.0		
NOV 23	13	55	12.3	52.57N	171.76W	FOX ISLANDS, ALEUTIAN ISLANDS			133	4.2			
NOV 23	21	10	11.3	63.90N	147.45W	CENTRAL ALASKA			056				
NOV 25	15	17	33.7	34.87N	082.96W	SOUTH CAROLINA		IV	005				3.2SLM
NOV 26	15	30	00.2	37.12N	116.02W	SOUTHERN NEVADA			000	5.0			4.4BRK
NOV 26	22	50	08.4	61.69N	150.73W	SOUTHERN ALASKA			064				
NOV 29	13	35	41.0	19.35N	155.06W	HAWAII		VI	005	5.8	5.1	5.7	
NOV 29	14	29	40.9	34.52N	097.35W	OKLAHOMA	DAMAGE	VI	005				3.5SLM
NOV 29	14	47	40.3	19.34N	155.03W	HAWAII	DAMAGE	VIII	005	6.0	7.1		7.2PAS
NOV 29	18	43	59.8	19.19N	155.29W	HAWAII			002	4.9		4.6	
NOV 30	05	31	25.7	52.30N	176.27W	ANDREANOF ISLANDS, ALEUTIAN IS.		III	099	4.8			
NOV 30	10	42	00.0	64.28N	148.15W	CENTRAL ALASKA			033				
NOV 30	20	30	17.0	52.60N	167.18W	FOX ISLANDS, ALEUTIAN ISLANDS			024	5.7	6.3		6.6PAS
NOV 30	21	06	49.3	52.78N	167.30W	FOX ISLANDS, ALEUTIAN ISLANDS			033	4.3			
DEC 01	02	05	23.4	53.30N	167.44W	FOX ISLANDS, ALEUTIAN ISLANDS			053	4.7			
DEC 01	05	52	22.8	52.76N	166.94W	FOX ISLANDS, ALEUTIAN ISLANDS			030	4.3			

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
DEC 01	21	32	43.7	52.70N	168.38W	FOX ISLANDS, ALEUTIAN ISLANDS		061	4.2			
DEC 01	22	15	21.2	61.47N	149.14W	SOUTHERN ALASKA	IV	042	3.7			
DEC 01	22	19	03.0	19.36N	155.01W	HAWAII	III	008			3.4	
DEC 02	10	15	47.9	19.36N	155.25W	HAWAII	IV	008			3.6	
DEC 03	00	21	25.7	19.31N	155.38W	HAWAII	III	007			3.2	
DEC 03	03	00	33.3	36.54N	089.57W	NEW MADRID, MISSOURI REGION	DAMAGE VI	005				2.8SLM
DEC 03	04	56	24.9	19.38N	155.11W	HAWAII	IV	004			3.9	
DEC 03	05	00	07.7	19.38N	154.98W	HAWAII		001			4.1	
DEC 03	06	27	56.6	19.34N	155.09W	HAWAII		005			3.6	
DEC 03	06	43	53.8	19.31N	155.34W	HAWAII		008			3.1	
DEC 03	07	38	10.2	61.67N	150.83W	SOUTHERN ALASKA	II	078				
DEC 03	10	12	22.8	32.83N	108.66W	NEW MEXICO	V	027			3.9	
DEC 04	06	27	56.6	19.34N	155.09W	HAWAII	III	005			3.6	
DEC 04	06	43	53.8	19.31N	155.34W	HAWAII	III	008			3.1	
DEC 04	09	4	19.8	65.37N	150.12W	ALASKA		033				3.4PMR
DEC 04	11	09	07.7	19.38N	154.98W	HAWAII	IV	001			4.1	
DEC 04	21	39	09.8	19.36N	154.98W	HAWAII	III	004			3.5	
DEC 05	11	06	40.5	44.42N	111.44W	HEBGEN LAKE REGION		010				2.4ERD
DEC 05	17	54	39.6	54.36N	162.94W	ALASKA PENINSULA		045	4.7			
DEC 06	01	22	11.0	33.06N	115.54W	SOUTHERN CALIFORNIA	II	013				3.1PAS
DEC 06	04	11	55.0	19.29N	155.35W	HAWAII	IV	008			3.9	
DEC 07	18	59	10.1	37.97N	122.36W	NORTHERN CALIFORNIA	IV	006	3.1			3.0BRK

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
DEC 08	21	19	47.8	52.76N	166.86W	FOX ISLANDS, ALEUTIAN ISLANDS		019	4.9			
DEC 09	11	01	43.3	34.03N	117.59W	SOUTHERN CALIFORNIA	III	005				3.0PAS
DEC 09	23	55	54.4	19.36N	155.13W	HAWAII	IV	008			3.9	
DEC 10	19	19	26.8	37.50N	118.62W	CALIFORNIA-NEVADA BORDER REGION		010				
DEC 11	01	43	16.7	19.34N	155.20W	HAWAII	IV	008			3.8	
DEC 11	03	40	38.0	51.43N	178.13W	ANDREANOF ISLANDS, ALEUTIAN IS.		066	4.5			
DEC 11	07	35	37.3	40.33N	125.65W	OFF COAST OF NORTHERN CALIFORNIA		033	3.8			3.7BRK
DEC 11	11	50	36.6	47.35N	113.15W	MONTANA		010				2.7MSO
DEC 11	14	42	31.0	53.51N	166.61W	FOX ISLANDS, ALEUTIAN ISLANDS		053	4.1			
DEC 11	15	41	18.9	19.37N	155.12W	HAWAII	III	007			3.0	
DEC 11	16	01	07.0	47.39N	113.13W	MONTANA		010				2.8MSO
DEC 12	89	57	59.0	32.97N	115.49W	SOUTHERN CALIFORNIA	V	014	3.4			3.8PAS
DEC 13	01	36	54.5	19.36N	155.14W	HAWAII	IV	007			4.3	
DEC 13	10	53	36.0	19.37N	155.05W	HAWAII	IV	008			4.4	
DEC 14	03	48	50.9	59.77N	153.43W	SOUTHERN ALASKA		136	4.3			
DEC 14	11	56	27.0	34.28N	117.00W	SOUTHERN CALIFORNIA		008	3.3			3.3PAS
DEC 14	18	16	20.1	34.29N	116.32W	SOUTHERN CALIFORNIA	DAMAGE VI	002	4.5			4.7PAS
DEC 15	22	54	48.1	56.20N	157.73W	ALASKA PENINSULA		077	4.5			
DEC 17	04	37	39.0	34.25N	116.33W	SOUTHERN CALIFORNIA		008				3.1PAS
DEC 19	05	02	00.4	36.00N	117.62W	CALIFORNIA-NEVADA BORDER REGION		008				3.9PAS
DEC 19	23	26	19.5	42.85N	107.65W	WYOMING		000				3.5ERD
DEC 20	01	44	12.9	42.00N	112.53W	EASTERN IDAHO		005			2.7	2.7ERD

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
DEC 20	08	14	10.8	61.36N	146.61W	SOUTHERN ALASKA		037				3.1PMR
DEC 20	13	11	11.2	57.48N	149.20W	GULF OF ALASKA		033				
DEC 20	14	00	01.6	61.47N	146.66W	SOUTHERN ALASKA		024				3.2PMR
DEC 20	20	00	00.2	37.13N	116.06W	SOUTHERN NEVADA		000	5.7	4.0		5.6BRK
DEC 21	01	41	51.4	33.82N	119.97W	OFF COAST OF CALIFORNIA		008				3.4PAS
DEC 21	13	24	05.1	53.16N	168.97W	FOX ISLANDS, ALEUTIAN ISLANDS	IV	072	4.3			
DEC 21	19	09	47.5	60.66N	148.17W	KENAI PENINSULA, ALASKA		033				3.6PMR
DEC 22	03	33	19.8	35.01N	119.01W	CENTRAL CALIFORNIA	IV	012	4.0			3.5PAS
DEC 22	14	54	33.3	59.93N	147.28W	GULF OF ALASKA		033				3.7PMR
DEC 24	01	32	26.9	63.19N	150.81W	CENTRAL ALASKA		135				
DEC 24	14	25	21.6	62.57N	148.19W	CENTRAL ALASKA		072	4.1			
DEC 24	23	32	39.6	52.43N	168.68W	FOX ISLANDS, ALEUTIAN ISLANDS		033	5.0			
DEC 25	04	45	07.0	37.30N	121.68W	CENTRAL CALIFORNIA		006				3.3BRK
DEC 25	09	20	39.1	32.88N	116.25W	CALIFORNIA-MEXICO BORDER REGION		008	4.4			3.7PAS
DEC 25	14	35	19.7	34.07N	119.10W	SOUTHERN CALIFORNIA		004	3.5			3.5PAS
DEC 25	16	50	42.0	61.82N	148.68W	SOUTHERN ALASKA	II	025				2.8PMR
DEC 25	19	59	32.5	54.29N	163.09W	UNIMAK ISLAND REGION		033	4.4			
DEC 26	04	44	09.5	44.60N	115.15W	WESTERN IDAHO		005	3.5		2.9	3.3ERD
DEC 26	04	46	47.2	44.55N	115.22W	WESTERN IDAHO		005			3.1	3.8ERD
DEC 26	13	40	07.8	62.47N	150.04W	CENTRAL ALASKA	IV	058				
DEC 27	00	36	32.8	61.95N	147.13W	CENTRAL ALASKA		032				3.2PMR
DEC 27	01	31	50.5	62.05N	147.70W	CENTRAL ALASKA		063				

*SEE FOOTNOTES AT END OF TABLE

TABLE 1 - LOCATIONS OF EARTHQUAKES AND RELATED PHENOMENA THAT OCCURRED IN THE UNITED STATES DURING 1975 - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT. DEG.	LONG. DEG.	REGION	REMARKS/MM-INTENSITY	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
DEC 27	08	55	24.0	20.00N	156.00W	HAWAII	II	030			4.1	
DEC 27	21	53	09.8	43.15N	110.75W	WYOMING		005				3.1ERD
DEC 27	23	20	04.6	32.90N	116.27W	CALIFORNIA-MEXICO BORDER REGION		002				3.0PAS
DEC 28	15	06	35.1	52.31N	168.30W	FOX ISLANDS, ALEUTIAN ISLANDS		029	4.6			
DEC 28	15	07	48.8	54.66N	160.31W	ALASKA PENINSULA		045				
DEC 28	15	20	50.8	52.39N	168.59W	FOX ISLANDS, ALEUTIAN ISLANDS		038	4.3			
DEC 28	15	22	01.9	54.59N	160.22W	ALASKA PENINSULA		050				
DEC 28	18	06	16.7	58.30N	154.96W	ALASKA PENINSULA		094				
DEC 29	00	36	18.0	63.50N	148.98W	CENTRAL ALASKA		104				3.3PMR
DEC 29	15	07	32.3	36.82N	121.13W	CENTRAL CALIFORNIA		009				3.4BRK
DEC 29	17	52	33.5	62.30N	148.63W	CENTRAL ALASKA	IV	073				3.9PMR
DEC 30	02	22	02.9	63.03N	150.96W	CENTRAL ALASKA		136	3.8			3.3PMR
DEC 30	23	12	48.0	42.98N	107.86W	WYOMING		005				

*USGS MAGNITUDES ARE AS FOLLOWS (SEE P. 2 FOR DESCRIPTION):
MB -- COMPUTED FROM BODY WAVE ON SEISMOGRAM
MS -- COMPUTED FROM SURFACE WAVE ON SEISMOGRAM
ML -- COMPUTED ONLY FOR LOCAL EARTHQUAKES.

**ABBREVIATIONS FOLLOWING MAGNITUDES ARE AS FOLLOWS.
BRK -- UNIVERSITY OF CALIFORNIA, BERKELEY
ERD -- U.S. ENERGY RESEARCH AND DEVELOPMENT ADMIN., NUCLEAR REACTOR COMMISSION, WASHINGTON, D.C.
LAO -- LASA ARRAY, PHILCO CORPORATION, MONT.
MSO -- UNIVERSITY OF MONTANA, MISSOULA
PAL -- COLUMBIA UNIVERSITY, LAMONT-DOHERTY GEOLOGICAL OBSERVATORY, PALISADES, N.Y.
PAS -- CALIFORNIA INSTITUTE OF TECHNOLOGY, PASADENA, CA
PMR -- NOAA, PALMER OBSERVATORY, PALMER, ALASKA
SEA -- UNIVERSITY OF WASHINGTON, SEATTLE, WASH.
SLC -- UNIVERSITY OF UTAH, SALT LAKE CITY
SLM -- DEPT.OF EARTH AND ATMOSPHERIC SCIENCES, SAINT LOUIS UNIVERSITY, SAINT LOUIS, MO.
TUL -- UNIVERSITY OF OKLAHOMA, TULSA
WES -- WESTON OBSERVATORY, WESTON, MASS.

Page 113

Principal Earthquakes of the World

Table 2 lists and describes briefly the principal earthquakes of the world during 1975. This list is included in the *United States Earthquakes* series because it is not available in this format in other earthquake reports. It includes earthquakes of magnitude 6.8 or greater; shocks of smaller magnitude that were locally destructive and/or caused fatalities; and tremors of unusual interest.

During 1975, 12 earthquakes of magnitude 7 and above occurred worldwide. One of these was of magnitude 8.1, the only "great" earthquake to occur during the year. The most damaging earthquake in 1975, which occurred on September 6 in Turkey, killed over 2,300 people.

TABLE 2 - PRINCIPAL EARTHQUAKES OF THE WORLD DURING 1975

(SOURCE. PRELIMINARY DETERMINATION OF EPICENTERS MONTHLY LISTING, PUBLISHED BY U.S. GEOLOGICAL SURVEY.)

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT DEG.	LONG DEG.	REGION	REMARKS	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JAN 14	19	48	59.2	05.0S	130.0E	BANDA SEA	NOT FELT	033	6.3	6.5		6.9PAS
JAN 19	08	02	02.5	32.5N	078.4E	KASHMIR-TIBET BORDER REGION	47 REPORTED KILLED	033	6.2	6.8		6.8PAS
FEB 02	08	43	39.1	53.1N	173.5E	NEAR ISLANDS, ALEUTIAN ISLANDS	DAMAGE ON SHEMYA, 15 INJURED	010	6.1	7.6		7.5PAS
FEB 04	11	36	07.5	40.6N	122.6E	NORTHEASTERN CHINA	HEAVY DAMAGE AND CASUALTIES REPORTED IN YINGKOU-HAICHENG AREA	033	6.4	7.4		7.0BRK
FEB 09	04	45	24.5	06.7S	106.7E	JAVA	1 KILLED, CONSIDERABLE DAMAGE	027	5.2	5.6		
MAR 05	00	22	19.7	02.4S	126.1E	CERAM SEA	FELT	033	6.4	6.6		6.9PAS
MAR 07	07	04	42.6	27.5N	056.0E	SOUTHERN IRAN	7 KILLED, 2 VILLAGES DESTROYED	027	5.8	6.1		
MAR 13	15	26	42.5	29.9S	071.3W	NEAR COAST OF CENTRAL CHILE	2 KILLED, 25 INJURED. DAMAGE IN COQUIMBO-LA SERENA AREA	004	6.2	6.9		6.5PAS
MAR 28	02	31	05.7	42.1N	112.6W	EASTERN IDAHO	$1 MILLON DAMAGE	005	6.1	6.0		6.2PAS
APR 05	09	34	36.6	10.0N	069.8W	VENEZUELA	3 KILLED, 20 INJURED, AND DAMAGE IN BARQUISIMETO-CARORA AREA	033	5.6	6.1		6.3PAS
MAY 10	14	27	38.7	38.2S	073.2W	NEAR COAST OF CENTRAL CHILE	MODERATE DAMAGE	006	6.5	7.7		7.8PAS
MAY 26	09	11	51.5	36.0N	017.6W	NORTH ATLANTIC OCEAN	SLIGHT DAMAGE ON MADEIRA ISLAND. APPROX. 7-FT (2.1-M) TSUNAMI IN THE AZORES	033	6.7	7.9		8.1PAS

TABLE 2 - PRINCIPAL EARTHQUAKES OF THE WORLD DURING 1975 - CONTINUED

DATE	ORIGIN TIME (UT) H	M	S	GEOGRAPHIC COORDINATES LAT DEG.	LONG DEG.	REGION	REMARKS	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JUN 10	13	47	14.5	43.0N	147.7E	KURIL ISLANDS	SMALL TSUNAMI	015	5.8	7.0		6.9PAS
JUL 10	18	29	16.0	06.5N	126.6E	MINDANAO, PHILIPPINE ISLANDS	FELT	086	6.2			7.0PAS
JUL 20	14	37	39.9	06.6S	155.1E	SOLOMON ISLANDS	DAMAGE AT BOUGAINVILLE LOCAL TSUNAMI	049	6.6	7.9		7.4PAS
JUL 20	19	54	27.7	07.1S	155.2E	SOLOMON ISLANDS	FELT	044	6.1	7.7		7.4PAS
AUG 01	20	20	12.9	39.4N	121.5W	NORTHERN CALIFORNIA	DAMAGE IN OROVILLE AREA	015	5.8	5.6		
SEP 06	09	20	10.9	38.5N	040.7E	TURKEY	OVER 2,300 KILLED, MAJOR DAMAGE	026	6.1	6.7		6.7PAS
OCT 01	03	29	58.9	04.9S	102.2E	SOUTHERN SUMATRA	NOT FELT	033	6.2	7.0		7.0PAS
OCT 06	22	24	16.2	12.5S	166.5E	SANTA CRUZ ISLANDS	NOT FELT	054	6.6	7.0		6.9PAS
OCT 11	14	35	15.0	24.9S	175.1W	SOUTH OF TONGA ISLANDS	FELT	009	7.0	7.8		7.2PAS
OCT 31	08	28	02.6	12.5N	126.0E	PHILIPPINE ISLANDS REGION	1 KILLED	050	6.4	7.2		7.6PAS
NOV 01	01	17	33.9	13.8N	144.8E	MARIANA ISLANDS	DAMAGE ON GUAM	113	6.1			7.1PAS
NOV 29	14	47	40.4	19.3N	155.0W	HAWAII	2 KILLED, TSUNAMI DAMAGE OF $4 MILLION	005	6.0	7.1		7.2PAS
DEC 25	23	22	21.7	04.1S	142.0E	NEW GUINEA	FELT	115	6.6			6.8PAS
DEC 26	15	56	38.7	16.3S	172.5W	SAMOA ISLANDS REGION	LOCAL TSUNAMI AT PAGO PAGO	033	6.4	7.8		7.3PAS

*USGS MAGNITUDES ARE AS FOLLOWS (SEE P. 2 FOR DESCRIPTION):
MB -- COMPUTED FROM BODY WAVE ON SEISMOGRAM
MS -- COMPUTED FROM SURFACE WAVE ON SEISMOGRAM
ML -- COMPUTED ONLY FOR LOCAL EARTHQUAKES.

**ABBREVIATIONS FOLLOWING MAGNITUDES ARE AS FOLLOWS
BRK -- UNIVERSITY OF CALIFORNIA, BERKLEY
PAS -- CALIFORNIA INSTITUTE OF TECHNOLOGY, PASADENA
MOX -- MOXA, GERMAN DEMOCRATIC REPUBLIC

Miscellaneous Activities

HORIZONTAL CONTROL SURVEYS FOR CRUSTAL MOVEMENTS STUDIES [1]

In 1975, surveys for the study of horizontal movements in the Earth's crust were made in California by NOAA's National Geodetic Survey.

Aqueduct Surveys - The cooperative project with the State of California Department of Water Resources was continued during 1975. Resurveys were accomplished at the combined net RANCH-TEJON that spans the Garlock fault zone and site MEADE.

Both surveys were made using trilateration methods and oriented by observed astronomic azimuths. The only horizontal directions were those secured at the stations where the astronomic azimuths were observed.

The results of the horizontal surveys at the RANCH-TEJON site indicate that the left-lateral movement of about 8 mm annually continues. The results of leveling surveys show that uplift at the RANCH net ranged between 4.8 mm and 14.6 mm, relative to the TEJON net, during the interval 1972 to 1975. Vertical movement since 1971 has accumulated to 22.9 mm at TUNNEL 3 PT 3, and 17.3 mm at RANCH F. Monuments located at the TEJON net have not exhibited significant movement during the same time interval.

At the MEADE site, no clear pattern of horizontal movement has been established because some stations have been damaged (stations MEADE A, MEADE, B, RON RM 2). The fact that all lines to MEADE E show contraction may have some significance. MEADE E is located near the center of a grassy knoll more than 100 m higher in elevation than all other stations at the site. Leveling survey results show that MEADE B subsided about 0.6 m between 1972 and 1975, because of disturbance by farm machinery. MEADE A and MEADE A RM 1 have subsided 35 mm from 1969 to 1975. RON RM 2, which was hit by farm machinery between 1970 and 1972, has remained comparatively stable. With the exception of RON RM 3, which subsided 11.6 mm, the remaining monuments at MEADE site also have been stable.

TSUNAMIS [2]

Six tsunamis were reported to the National Oceanic and Atmospheric Administration during 1975, including five that were recorded on National Ocean Survey tide gages.

On May 26, an earthquake in the North Atlantic (36.0°N, 17.6°W) generated a tsunami that reached a reported amplitude of 2.13 m in the port of Ponta Delgada, Azores.

An earthquake that occurred in the Kuril Islands (43.0°N, 147.7°E) on June 10 caused a tsunami that was recorded with an 81-cm amplitude at Hanasaki, Japan. Reports indicate that tsunami inundation on Shikotan and Kunashir reached heights of 3 to 5 m. On Iturup, wave heights did not exceed 1 m. This tsunami was also recorded at Kahului, Hawaii, with an amplitude of 12 cm; at Wake Island and Truk with an amplitude of 9 cm; possibly at Kwajalein with an amplitude of 12 cm; and possibly at Sitka and Adak, Alaska, with an amplitude of 6 cm.

The earthquake of July 20 near Bougainville (6.6°S, 155.1°E) caused a tsunami with an amplitude of up to 2 m along the southwestern and southern coasts of the island. Minor damage occurred at Torokina. This tsunami was also recorded at Kwajalein with a maximum amplitude of 6 cm.

---

[1] Prepared by B.K. Meade, NOAA, National Ocean Survey, National Geodetic Survey, Rockville, Md.

---

[2] Prepared by Mark G. Spaeth, NOAA, National Weather Service, Office of Meteorology and Oceanography, Silver Spring, Md.

An earthquake on October 31 in the Philippine Islands (12.5°N, 126.0°E) generated a tsunami that killed one person and swept away about 30 houses on the east coast of Samar Island. The tsunami was recorded with an amplitude of 6 cm at Wake Island and 3 cm at Truk.

The November 29 Hawaiian earthquake (preliminary epicenter 19.3°N, 155.0°W) generated the most widely recorded tsunami of the year. Two people were killed and damage estimated at $4.1 million was caused on Hawaii Island. Runup heights reached 6.58 m at Honuapo, 7.91 m at Halape, 3.75 m at Napoopoo, and 2.59 m at Hilo. Heavy damage occurred at Punaluu and Honuapo. Approximately $2,000 in damage was caused to two docks on Santa Catalina Island, Calif., the only damage reported outside Hawaii. Maximum wave heights recorded at tide gages were: Hilo, Hawaii, 174 cm; Kahului, Hawaii, 88 cm; Mokuoloe, Hawaii, 3 cm; Honolulu, Hawaii, 18 cm; Kwajalein, 6 cm; Wake Island, 3 cm, Nawiliwili, Hawaii, 27 cm; Johnston Island, 9 cm; Yakutat, Alaska, 9 cm; Sitka, Alaska, 21 cm; San Francisco, Calif., 12 cm; Imperial Beach, Calif., 37 cm; Port San Luis, Calif., 79 cm; Los Angeles, Calif., 30 cm; La Jolla, Calif., 30 cm; Bodega, Calif., 43 cm; Long Beach, Calif., 15 cm; San Diego, Calif, 12 cm; Baltra Island, Galapagos Islands, 46 cm; Talara, Peru, 48 cm; La Punta, Peru, 36 cm; Matarani, Peru, 35 cm; Arica, Chile, 43 cm; Antofagasta, Chile, 27 cm; Caldera, Chile, 46 cm; Talcahuano, Chile, 24 cm.

The Tonga Trench earthquake of December 26 (preliminary epicenter 16.0°S, 172.7°W) caused a tsunami that was reported to have a maximum amplitude of 75 cm at Pago Pago; 15 cm at Apia, Western Samoa; and 8 cm at Suva, Fiji. An incomplete record from the Pago Pago tide gage shows a maximum amplitude of 61 cm.

FLUCTUATIONS IN WELL-WATER LEVELS[3]

In 1943, the Coast and Geodetic Survey (now the National Ocean Survey) first published the section on well-water fluctuations in its annual United States Earthquakes series. Data for the years 1944-49 appeared in the 1949 issue. From 1950 to the present, the material has been published annually in this series.

Table 3 lists fluctuations in well-water caused principally by earthquakes. Table 4 lists the date and location of specific events that may have caused fluctuations noted in table 3. Also included are the states in which fluctuations were recorded.

Complete information on earthquakes possibly associated with the fluctuations tabulated in table 3 may be obtained from the biweekly Preliminary Determination of Epicenters listings, published by the USGS.

---

[3]Prepared by Kenneth L. Rennick, U.S. Geological Survey, Denver, Colo.

TABLE 3 - EARTHQUAKE FLUCTUATIONS IN WELL-WATER LEVELS, JANUARY 1 THROUGH DECEMBER 31, 1975

COUNTY AND/OR WELL NUMBER	DATE/TIME AT RECORDER U T		DEPTH TO WATER BEFORE DISTURBANCE (M)	WATER-LEVEL FLUCTUATIONS FROM PREQUAKE LEVEL UPWARD (CM)	DOWNWARD (CM)	DOUBLE AMPLITUDE (CM)
			ALASKA			
AK 67	JAN 01,	0400	8.77	0.30	0.30	0.61
AK 2049	JAN 01,	0430	9.89	3.66	2.13	5.79
AK 1430	JAN 01,	0500	18.69	1.83	1.52	3.35
AK 2127	FEB 02,	0600	22.67	3.05	1.83	4.88
AK 1430	FEB 02,	0830	18.42	0.30	0.91	1.22
AK 17	FEB 02,	1000	17.39	0.91	1.52	2.44
AK 2049	FEB 02,	1000	10.60	3.66	5.18	8.84
AK 2049	FEB 04,	1300	10.61	0.30	0.61	0.91
			GEORGIA			
CHARLTON 27E2	FEB 02,	0820	19.94	3.66	0.91	4.57
DOUGHERTY 13L3	FEB 02,	0845	7.10	2.44	2.44	4.88
LONG 33M4	FEB 02,	0850	13.84	1.22	1.22	2.44
THOMAS 14E15	FEB 02,	0900	59.46	6.10	5.49	11.58
MCINTOSH 35M13	FEB 02,	0905	4.30	1.52	1.52	3.05
CHARLTON 27E2	MAY 26,	0925	19.40	8.23	6.40	14.63
DOUGHERTY 13L3	MAY 26,	0925	7.07	5.79	5.79	11.58
MCINTOSH 35M13	MAY 26,	0930	3.94	3.96	3.05	7.01
LONG 33M4	MAY 26,	0945	13.20	3.96	5.18	9.14
THOMAS 14E15	JUL 20,	1455	58.93	3.05	2.13	5.18
DOUGHERTY 13L3	JUL 20,	1530	7.91	1.22	0.91	2.13
LONG 33M4	JUL 20,	1530	12.58	0.30	0.30	0.61
MCINTOSH 35M13	JUL 20,	1600	4.06	0.61	0.91	1.52
THOMAS 14E15	JUL 20,	2005	58.89	0.91	1.52	2.44
LONG 33M4	DEC 26,	1600	13.58	0.61	0.91	1.52
MCINTOSH 35M13	DEC 26,	1650	4.12	0.61	0.61	1.22
DOUGHERTY 13L3	DEC 26,	1715	10.80	0.61	0.61	1.22
			IDAHO			
CASSIA 13S-21E-18BBC1	FEB 02,	1000	172.90	0.91	0.61	1.52
BUTTE 3N-29E-14ADB1	FEB 02,	1000	137.59	0.61	0.61	1.22
BUTTE 5N-31E-28CCC1	FEB 02,	1000	79.68	3.66	3.66	7.32
BUTTE 5N-31E-28CCC1	FEB 04,	1330	80.54	0.91	0.30	1.22
BUTTE 5N-31E-28CCC1	FEB 22,	0930	79.72	0.91	0.30	1.22
LINCOLN 5S-17E-26ACA1	MAR 28,	0200	58.77	12.19	12.80	24.99
BUTTE 3N-29E-14ADB1	MAR 28,	0220	137.61	5.79	4.88	10.67
BUTTE 5N-31E-28CCC1	MAR 28,	0220	79.60	2.74	3.66	6.40
BUTTE 7N-31E-34BDC1	MAR 28,	0230	80.72	1.22	0.61	1.83

TABLE 3 - EARTHQUAKE FLUCTUATIONS IN WELL-WATER LEVELS, JANUARY 1 THROUGH DECEMBER 31, 1975 - CONTINUED

COUNTY AND/OR WELL NUMBER	DATE/TIME AT RECORDER U T		DEPTH TO WATER BEFORE DISTURBANCE (M)	WATER-LEVEL FLUCTUATIONS FROM PREQUAKE LEVEL UPWARD (CM)	DOWNWARD (CM)	DOUBLE AMPLITUDE (CM)
			IDAHO			
			(CONTINUED)			
BLAINE 1S-19E-3CCB2	MAR 28,	0230	5.28	2.74	2.13	4.88
JEFFERSON 5N-34E-9BDA1	MAR 28,	0230	77.07	2.74	3.35	6.10
CASSIA 13S-21E-18BBC1	MAR 28,	0230	172.67	3.05	3.35	6.40
MINIDOKA 4S-24E-6BBC1	MAR 28,	0230	126.17	0.61	1.52	2.13
BUTTE 4N-30E-7ADB1	MAR 28,	0240	97.01	3.05	4.57	7.62
BUTTE 2N-28E-35ADD1	MAR 28,	0240	183.74	1.52	2.13	3.66
BUTTE 4N-30E-7ADB1	APR 23,	1130	96.98	0.61	0.91	1.52
BUTTE 3N-29E-14ADB1	APR 23,	1130	137.61	0.91	0.61	1.52
BUTTE 3N-29E-14ADB1	MAY 10,	1530	137.67	0.30	0.91	1.22
BUTTE 5N-31E-28CCC1	MAY 10,	1600	79.65	2.74	3.35	6.10
JEFFERSON 5N-34E-9BDA1	MAY 26,	1000	77.44	0.30	0.91	1.22
BUTTE 4N-30E-7ADB1	MAY 26,	1000	96.76	5.79	5.79	11.58
BLAINE 1S-19E-3CCB2	MAY 26,	1000	4.55	0.91	0.61	1.52
BUTTE 5N-31E-28CCC1	MAY 26,	1030	79.64	8.23	7.92	16.15
BUTTE 3N-29E-14ADB1	MAY 26,	1030	137.66	1.83	1.52	3.35
BUTTE 5N-31E-28CCC1	JUN 10,	1400	79.79	0.61	0.91	1.52
JEFFERSON 5N-34E-9BDA1	JUN 30,	1900	77.78	1.22	0.61	1.83
LINCOLN 5S-17E-26ACA1	JUN 30,	1900	57.67	0.61	0.61	1.22
BUTTE 4N-30E-7ADB1	JUN 30,	1900	96.83	2.44	2.74	5.18
BUTTE 3N-29E-14ADB1	JUN 30,	1900	137.76	8.23	4.88	13.11
BUTTE 2N-28E-35ADD1	JUN 30,	1900	183.84	1.22	0.30	1.52
JEFFERSON 5N-32E-36ADD1	JUN 30,	1900	99.46	1.52	0.30	1.83
BLAINE 1S-19E-3CCB2	JUN 30,	1900	1.82	0.30	0.61	0.91
BUTTE 5N-31E-28CCC1	JUN 30,	1945	79.93	2.44	0.91	3.35
BUTTE 5N-31E-28CCC1	JUL 08,	0945	80.00	3.35	2.74	6.10
BUTTE 4N-30E-7ADB1	JUL 08,	1000	96.89	3.66	3.96	7.62
BUTTE 3N-29E-14ADB1	JUL 08,	1000	137.70	7.01	6.40	13.41
JEFFERSON 5N-32E-36ADD1	JUL 08,	1000	99.52	0.61	1.52	2.13
LINCOLN 5S-17E-26ACA1	JUL 08,	1000	57.42	1.83	1.83	3.66
BLAINE 1S-19E-3CCB2	JUL 08,	1005	1.31	0.91	0.91	1.83
BUTTE 5N-31E-28CCC1	JUL 10,	1930	80.03	0.91	0.61	1.52
BUTTE 4N-30E-7ADB1	JUL 20,	1545	96.95	2.13	2.13	4.27
BUTTE 5N-31E-28CCC1	JUL 20,	1730	79.94	5.49	5.49	10.97
BUTTE 4N-30E-7ADB1	JUL 20,	2100	96.94	1.52	0.91	2.44
BUTTE 4N-30E-7ADB1	AUG 01,	2100	97.01	0.61	0.30	0.91
BUTTE 3N-29E-14ADB1	AUG 01,	2100	137.70	1.52	1.22	2.74
BUTTE 5N-31E-28CCC1	AUG 01,	2200	80.13	0.61	0.30	0.91
BUTTE 3N-29E-14ADB1	OCT 28,	1430	137.68	0.91	1.83	2.74
BUTTE 3N-29E-14ADB1	NOV 29,	1430	137.55	0.30	0.91	1.22
BUTTE 4N-30E-7ADB1	NOV 29,	1500	96.80	0.91	1.52	2.44
BUTTE 4N-30E-7ADB1	DEC 26,	1700	96.73	0.61	1.52	2.13

TABLE 3 - EARTHQUAKE FLUCTUATIONS IN WELL-WATER LEVELS, JANUARY 1 THROUGH DECEMBER 31, 1975 - CONTINUED

COUNTY AND/OR WELL NUMBER	DATE/TIME AT RECORDER U T	DEPTH TO WATER BEFORE DISTURBANCE (M)	WATER-LEVEL FLUCTUATIONS FROM PREQUAKE LEVEL UPWARD (CM)	DOWNWARD (CM)	DOUBLE AMPLITUDE (CM)
		INDIANA			
MA 32	JAN 25, 0225-0235	2.95	0.30	0.61	0.91
SH 2	FEB 02, 0840-0920	5.04	0.91	2.44	3.35
PU 6	FEB 02, 0900-0935	2.67	7.01	2.44	9.45
MA 32	FEB 04, 1215-1250	2.86	0.30	0.61	0.91
MA 32	MAY 10, 1500-1535	3.06	1.22	0.30	1.52
PU 6	MAY 26, 0925-1130	2.86	1.22	4.88	6.10
MA 32	MAY 26, 1000-1125	3.34	7.01	9.75	16.76
SH 2	MAY 26, 1610-1640	5.72	1.52	1.22	2.74
MA 32	OCT 11, 1030-1120	3.21	1.22	0.61	1.83
PU 6	DEC 26, 1530-1550	2.70	0.30	0.61	0.91
MA 32	DEC 26, 1630-1740	3.02	3.05	1.22	4.27
		NEVADA			
S17/50-36DC1	JAN 23, 1720	0.91	0.30	0.61	0.91
S17/50-36DC1	JAN 25, 0310	0.91	0.30	0.91	1.22
S17/50-36DC1	FEB 02, 0930	0.90	3.05	3.05	6.10
S17/50-36DC1	FEB 28, 1630	0.84	4.57	4.57	9.14
S17/50-36DC1	MAR 07, 1645	0.86	4.88	5.18	10.06
S17/50-36DC1	MAR 23, 1630	0.87	0.61	0.91	1.52
S17/50-36DC1	MAR 28, 0345	0.84	2.44	2.44	4.88
S17/50-36DC1	MAY 10, 1430	0.98	4.88	4.57	9.45
S17/50-36DC1	MAY 14, 1400	0.95	3.35	3.96	7.32
S17/50-36DC1	MAY 26, 0900	0.98	10.67	10.67	21.34
S17/50-36DC1	JUN 01, 0105	0.97	0.91	0.30	1.22
S17/50-36DC1	JUN 03, 1430	0.98	2.13	2.44	4.57
S17/50-36DC1	JUN 03, 1450	0.98	2.44	2.44	4.88
S17/50-36DC1	JUN 07, 0830	0.95	1.83	0.91	2.74
S17/50-36DC1	JUN 19, 1330	1.00	3.35	4.27	7.62
S17/50-36DC1	JUN 25, 2240	1.06	0.61	0.61	1.22
S17/50-36DC1	JUN 26, 1250	0.98	5.49	7.32	12.80
S17/50-36DC1	JUL 20, 1450	1.01	1.52	2.74	4.27
S17/50-36DC1	JUL 20, 2010	1.00	1.83	1.22	3.05
S17/50-36DC1	AUG 01, 2015	1.01	4.57	4.27	8.84
S17/50-36DC1	AUG 02, 1015	1.00	0.30	0.91	1.22
S17/50-36DC1	AUG 03, 0615	0.98	0.61	0.61	1.22
S17/50-36DC1	SEP 13, 2055	0.98	0.61	0.00	0.61
S17/50-36DC1	SEP 21, 1330	0.98	0.61	0.61	1.22
S17/50-36DC1	SEP 24, 1720	1.00	1.22	1.83	3.05
S17/50-36DC1	OCT 11, 1520	0.97	2.13	1.83	3.96
S17/50-36DC1	NOV 20, 1420	0.94	2.13	3.05	5.18

TABLE 3 - EARTHQUAKE FLUCTUATIONS IN WELL-WATER LEVELS, JANUARY 1 THROUGH DECEMBER 31, 1975 - CONTINUED

COUNTY AND/OR WELL NUMBER	DATE/TIME AT RECORDER U T	DEPTH TO WATER BEFORE DISTURBANCE (M)	WATER-LEVEL FLUCTUATIONS FROM PREQUAKE LEVEL UPWARD (CM)	DOWNWARD (CM)	DOUBLE AMPLITUDE (CM)
		NEVADA			
		(CONTINUED)			
S17/50-36DC1	NOV 29, 1430	0.97	5.49	5.79	11.28
S17/50-36DC1	DEC 20, 2000	0.94	2.44	3.35	5.79
		WISCONSIN			
ML-120	JAN 25, 0300	23.401	0.244	0.549	0.792
LF-57	JAN 25, 0300	29.18	1.22	0.61	1.83
LF-57	FEB 02, 0900	29.46	11.28	14.02	25.30
DR-265	FEB 02, 0900	6.07	8.53	8.53	17.07
ML-120	FEB 02, 0915	23.544	3.018	3.780	6.797
LF-57	FEB 04, 1215	29.39	0.91	0.91	1.83
DR-265	FEB 04, 1215	6.39	1.22	1.52	2.74
ML-120	FEB 04, 1235	23.48	0.61	0.366	0.975
ML-120	FEB 22, 0910	23.258	0.183	0.000	0.183
LF-57	FEB 22, 0910	29.48	1.52	0.61	2.13
ML-120	MAR 28, 0145	23.264	0.122	0.366	0.488
ML-120	MAY 10, 1400	23.096	0.305	1.128	1.433
LF-57	MAY 10, 1400	29.59	1.22	0.61	1.83
ML-120	MAY 26, 0910	22.982	4.724	7.620	12.344
LF-57	MAY 26, 0910	29.53	13.41	14.63	28.04
DR-265	MAY 26, 0930	2.30	12.50	14.02	26.52
WP-63	MAY 26, 0930	6.18	0.30	0.61	0.91
ML-120	JUN 10, 1400	23.111	0.183	0.305	0.488
LF-57	JUN 10, 1400	29.61	0.91	0.91	1.83
LF-57	JUL 08, 0940	29.54	3.96	4.27	8.23
ML-120	JUL 08, 0950	23.043	1.554	1.036	2.591
ML-120	JUL 10, 1930	23.111	0.091	0.091	0.183
LF-57	JUL 10, 1930	29.57	0.30	0.30	0.61
ML-120	JUL 20, 1510	23.124	1.829	2.865	4.694
LF-57	JUL 20, 1515	29.56	2.74	3.66	6.40
DR-265	JUL 20, 1530	3.92	0.00	3.96	3.96
LF-57	JUL 20, 2100	29.56	2.44	3.05	5.49
ML-120	JUL 20, 2140	23.089	1.402	1.006	2.408
LF-57	AUG 02, 1100	29.57	0.91	0.30	1.22
LF-57	AUG 15, 0815	29.65	0.61	0.30	0.91
ML-120	SEP 24, 1720	23.073	0.000	0.518	0.518
LF-57	SEP 24, 1730	29.78	2.74	1.52	4.27
ML-120	OCT 06, 2245	22.933	0.305	0.000	0.305
ML-120	OCT 06, 2305	22.932	0.274	0.244	0.518
ML-120	OCT 11, 1500	22.904	1.341	1.433	2.774
DR-265	OCT 11, 1545	4.95	8.53	1.52	10.06

TABLE 3 - EARTHQUAKE FLUCTUATIONS IN WELL-WATER LEVELS, JANUARY 1 THROUGH DECEMBER 31, 1975 - CONTINUED

COUNTY AND/OR WELL NUMBER	DATE/TIME AT RECORDER U T	DEPTH TO WATER BEFORE DISTURBANCE (M)	WATER-LEVEL FLUCTUATIONS FROM PREQUAKE LEVEL UPWARD (CM)	DOWNWARD (CM)	DOUBLE AMPLITUDE (CM)
		WISCONSIN (CONTINUED)			
LF-57	OCT 11, 1630	29.75	4.27	4.27	8.53
LF-57	OCT 31, 0900	29.74	2.13	1.22	3.35
ML-120	OCT 31, 0955	22.853	1.554	0.792	2.347
LF-57	NOV 29, 1500	29.76	2.13	1.52	3.66
ML-120	NOV 29, 1515	22.640	0.579	0.274	0.853
LF-57	DEC 26, 1640	29.89	1.83	1.52	3.35

TABLE 4 - EARTHQUAKES IN 1975 BELIEVED TO HAVE CAUSED FLUCTUATIONS IN WELL-WATER LEVELS

(SOURCE. PRELIMINARY DETERMINATION OF EPICENTERS MONTHLY LISTING, PUBLISHED BY U.S. GEOLOGICAL SURVEY.)

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT DEG.	LONG DEG.	REGION	STATES RECORDING FLUCTUATIONS	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JAN 01	03	55	12.0	61.9N	149.7W	SOUTHERN ALASKA	ALASKA	066	5.9			
JAN 23	17	02	29.7	32.9N	115.4W	SOUTHERN CALIFORNIA	NEVADA	008	4.9	4.6	4.8	
JAN 25	02	08	41.5	07.2N	077.7W	PANAMA-COLOMBIA BORDER REGION	INDIANA, NEVADA, WISCONSIN	036	6.1	6.5		
FEB 02	07	24	53.3	53.0N	173.4E	NEAR ISLANDS, ALEUTIAN ISLANDS	ALASKA	025	5.9	5.5		
FEB 02	08	43	39.1	53.1N	173.4E	NEAR ISLANDS, ALEUTIAN ISLANDS	ALASKA, GEORGIA, IDAHO, INDIANA, NEVADA, WISCONSIN	010	6.1	7.6		7.5PAS
FEB 04	11	36	07.5	40.6N	122.5E	NORTHEASTERN CHINA	ALASKA, IDAHO, INDIANA, WISCONSIN	033	6.4	7.4		7.0BRK
FEB 22	08	36	07.4	51.3N	179.4W	ANDREANOF ISLANDS, ALEUTIAN IS.	IDAHO, WISCONSIN	048	6.3	6.5		
FEB 28	15	15	00.0	37.1N	116.0W	SOUTHERN NEVADA	NEVADA	000	5.7			
MAR 07	15	00	00.0	37.1N	116.0W	SOUTHERN NEVADA	NEVADA	000	5.5		5.2	
MAR 28	02	31	05.7	42.0N	112.5W	EASTERN IDAHO	IDAHO, NEVADA, WISCONSIN	005	6.1	6.0	6.2	
APR 23	11	14	48.0	16.4N	098.9W	NEAR COAST OF GUERRERO, MEXICO	IDAHO	011	6.0	6.2		6.5PAS
MAY 10	14	27	38.7	38.1S	073.2W	NEAR COAST OF CENTRAL CHILE	IDAHO, INDIANA, NEVADA, WISCONSIN	006	6.5	7.7		7.8PAS
MAY 14	14	00	00.4	37.2N	116.4W	SOUTHERN NEVADA	NEVADA	000	6.0			5.8BRK
MAY 26	09	11	51.5	35.9N	017.6W	NORTH ATLANTIC OCEAN	GEORGIA, IDAHO, INDIANA, NEVADA, WISCONSIN	033	6.7	7.9		8.1PAS
JUN 01	01	38	49.2	34.5N	116.5W	SOUTHERN CALIFORNIA	NEVADA	006	5.1		5.2	5.4BRK
JUN 03	14	40	00.1	37.0N	116.0W	SOUTHERN NEVADA	NEVADA	000	5.7	3.9	5.6	
JUN 07	08	46	22.4	40.5N	124.1W	NEAR COAST OF NORTHERN CALIF.	NEVADA	021	5.4	5.7	5.2	

*SEE FOOTNOTES AT END OF TABLE

TABLE 4 - EARTHQUAKES IN 1975 BELIEVED TO HAVE CAUSED FLUCTUATIONS IN WELL-WATER LEVELS - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT DEG.	LONG DEG.	REGION	STATES RECORDING FLUCTUATIONS	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
JUN 10	13	47	14.5	43.0N	147.7E	KURIL ISLANDS	IDAHO, WISCONSIN	015	5.8	7.0		6.9PAS
JUN 19	13	00	00.1	37.3N	116.3W	SOUTHERN NEVADA	NEVADA	000	6.1		5.9	
JUN 26	12	30	00.2	37.2N	116.3W	SOUTHERN NEVADA	NEVADA	000	6.2	5.0	6.1	
JUN 30	18	54	13.4	44.7N	110.6W	YELLOWSTONE NATIONAL PARK, WYO.	IDAHO	007	5.6	5.9	6.1	6.1BRK
JUL 08	09	37	27.3	29.4N	113.3W	GULF OF CALIFORNIA	IDAHO, NEVADA, WISCONSIN	033	5.8	6.5		
JUL 10	18	29	16.0	06.5N	126.6E	MINDANAO, PHILIPPINE ISLANDS	IDAHO, WISCONSIN	086	6.2			7.0PAS
JUL 20	14	37	39.9	06.5S	155.0E	SOLOMON ISLANDS	GEORGIA, IDAHO, NEVADA, WISCONSIN	049	6.6	7.9		7.8PAS
JUL 20	19	54	27.7	07.1S	155.1E	SOLOMON ISLANDS	IDAHO, NEVADA, WISCONSIN	044	6.1	7.7		7.4PAS
AUG 01	20	20	12.9	39.4N	121.5W	NORTHERN CALIFORNIA	IDAHO, NEVADA	015	5.8	5.6	5.7	
AUG 02	10	18	17.9	53.3N	161.4W	SOUTH OF ALASKA	NEVADA, WISCONSIN	033	6.2	6.0		5.7BRK
AUG 03	06	35	16.5	36.4N	120.3W	CENTRAL CALIFORNIA	NEVADA	005	5.1	4.0	4.9	
AUG 15	07	28	18.9	54.8N	167.8E	KOMANDORSKY ISLANDS REGION	WISCONSIN	004	6.0	6.6		6.2BRK
SEP 13	21	20	59.8	36.0N	120.5W	CENTRAL CALIFORNIA	NEVADA	013	4.9	4.3	4.8	
SEP 21	13	13	02.1	14.6N	093.8W	NEAR COAST OF CHIAPAS, MEXICO	NEVADA	033	5.4	5.4		
SEP 24	17	19	37.2	25.1N	109.2W	GULF OF CALIFORNIA	NEVADA, WISCONSIN.	033	5.5	5.7		
OCT 06	22	24	16.2	12.5S	166.4E	SANTA CRUZ ISLANDS	WISCONSIN	054	6.6	7.0		6.9PAS
OCT 11	14	35	15.0	24.8S	175.1W	SOUTH OF TONGA ISLANDS	NEVADA, WISCONSIN.	009	7.0	7.8		7.2PAS
OCT 28	14	30	00.2	37.2N	116.4W	SOUTHERN NEVADA	IDAHO	000	6.4	5.4	6.3	6.2BRK
OCT 31	08	28	02.6	12.5N	125.9E	PHILIPPINE ISLANDS REGION	WISCONSIN	050	6.4	7.2		7.6PAS
NOV 20	15	00	00.1	37.2N	116.3W	SOUTHERN NEVADA	NEVADA	000	6.0		6.0	5.8BRK
NOV 29	14	47	40.4	19.3N	155.0W	HAWAII	IDAHO, NEVADA, WISCONSIN	005	6.0	7.1		7.2PAS
DEC 20	20	00	00.2	37.1N	116.0W	SOUTHERN NEVADA	NEVADA	000	5.7	4.0	5.6	

*SEE FOOTNOTES AT END OF TABLE

TABLE 4 - EARTHQUAKES IN 1975 BELIEVED TO HAVE CAUSED FLUCTUATIONS IN WELL-WATER LEVELS - CONTINUED

DATE	ORIGIN TIME UT H	M	S	GEOGRAPHIC COORDINATES LAT DEG.	LONG DEG.	REGION	STATES RECORDING FLUCTUATIONS	DEPTH KM	USGS MAGNITUDE* MB	MS	ML	OTHER MAGNITUDE**
DEC 26	15	56	38.7	16.2S	172.4W	SAMOA ISLANDS REGION	GEORGIA, IDAHO, INDIANA, WISCONSIN	033	6.4	7.8		7.3PAS

*USGS MAGNITUDES ARE AS FOLLOWS (SEE P. 2 FOR DESCRIPTION):
MB -- COMPUTED FROM BODY WAVE ON SEISMOGRAM
MS -- COMPUTED FROM SURFACE WAVE ON SEISMOGRAM
ML -- COMPUTED ONLY FOR LOCAL EARTHQUAKES.

**ABBREVIATIONS FOLLOWING MAGNITUDES ARE AS FOLLOWS;
BRK -- UNIVERSITY OF CALIFORNIA, BERKLEY
PAS -- CALIFORNIA INSTITUTE OF TECHNOLOGY, PASADENA

Strong-Motion Seismograph Data[1]

INTRODUCTION

The U.S. Geological Survey Seismic Engineering Branch has conducted an engineering seismology program in the United States and Latin America since 1932. The Survey, with cooperation of state and municipal governments, private industry, and state and private educational institutions, has installed and maintained strong-motion seismographs and analyzed the records. Results of these analyses have been published in Government bulletins and scientific journals, and the records, either originals or copies, have been made available to research scientists.

A list of strong-motion stations in the United States and Central and South America is available from the Seismic Engineering Branch (address in footnote). This list, which gives the geographic locations of each station and instrumental constants, has been cataloged through 1975.

Notes pertinent to this engineering seismology program may be found in preceding issues of the United States Earthquakes series; Geological Survey Circulars 717-B, 717-C, and 717-D, Seismic Engineering Program Report, Apr.-Dec. 1975; and in Publication 41-2, Earthquake Investigations in the Western United States, 1931-1964, U.S. Department of Commerce, Coast and Geodetic Survey, Washington, D.C., 1965. The latter is much broader in scope and contains data on structural and ground vibrations and detailed descriptions of the many activities that constitute the seismological program as a whole.

ACCELEROGRAPH RECORDS

More than 140 accelerograph records were obtained during 1975 from the national strong-motion instrumentation network operated by the U.S. Geological Survey. The recordings are largely from California, although Alaska, Hawaii, Missouri, Montana, and Puerto Rico also are represented (see figs. 23-29). The Oroville, Calif., earthquake on Aug. 1, 1975, and its aftershocks produced 40 records, 13 of which were recorded during the main shock. The first known strong-motion accelerograph record from an earthquake in the Central United States was recorded during a mag. 3.8 earthquake in southeastern Missouri on June 13. Maximum accelerations of 0.07g and 0.06g were registered by the horizontal components.

Table 5 is a list of earthquakes recorded in 1975 and the maximum accelerations of those records considered to be significant. The earthquakes are listed in chronological order and include date and time (local), epicenter, and magnitude. The recording stations for each earthquake are listed with their geographic coordinates. Maximum accelerations are listed for those events where ground accelerations were $\geq$ 0.05g or where amplitudes recorded in structures (other than at the basement or ground level) were $\geq$0.10g. These criteria were arbitrarily adopted to reduce the amount of insignificant data reported. Although the maximum recorded acceleration poorly defines the nature of motion at a site, it is the most easily and quickly obtained quantity. It should be pointed out that these measurements have no relation to frequency or duration of shaking, and, in many instances, the amplitudes recorded as maximum accelerations are observed as only one or two prominent peaks.

---

[1] Prepared by U.S. Geological Survey, Seismic Engineering Branch, 345 Middlefield Rd., Mail Stop 78, Menlo Park, Calif. 94025.

TABLE 5 - SUMMARY OF ACCELEROGRAPH RECORDS OBTAINED FROM EARTHQUAKES IN 1975

Event[1]	Station location		S-t time[2]	Comp	Max accl[3]	Duration[4]
	Name	Coord	(sec)		(g)	(sec)
2 January 2155 PST S. California 33.55N, 117.65W Magnitude 3.8; and 2200 PST S. California 33.53N, 117.63W Magnitude 3.3	Small-amplitude records were obtained at San Juan Capistrano, City Hall.					
6 January 0317 PST Parkfield 35.93N, 120.53W Magnitude 4.4	Parkfield Grade	35.98N 120.48W	1.1	S67W Down S23E	0.08 0.02 0.04	-
	Vineyard Canyon	35.92N 120.53W	-	N64W Down S26W	0.09 0.04 0.09	
	Small-amplitude records were also obtained at Slacks Canyon: Hidden Valley Ranch and Parkfield, CDF Fire Station.					
11 January 1737 PST Cape Mendocino 40.22N, 124.26W Magnitude 4.4	Petrolia General Store	40.32N 124.29W	-	N75E Down N15W	0.19 0.04 0.13	1 peak - 1 peak
	Petrolia Cape Mendocino	40.35N 124.35W	-	S60E Down N30E	0.10 0.04 0.09	1 peak - -
	Small-amplitude records were also obtained at Ferndale: City Hall.					
12 January 1431 AST Anchorage 61.4N, 150.5W Magnitude 4.8	Small-amplitude records were obtained from Anchorage: Westward Hotel; and Post Office, 605 W. Fourth St.					
12 January 1322 PST N. California 32.80N, 117.97W Magnitude 4.5	A small-amplitude record was obtained at San Juan Capistrano: City Hall.					
13 January 0321 PST Lakewood 33.82N, 118.08W Magnitude 3.5	Long Beach VA Hospital	33.78N 118.12W	2.0	South Down East	0.06 0.03 0.02	-
	Small-amplitude records were also obtained at Long Beach State University and at Norwalk Fire Station.					
23 January 0902 PST Brawley 32.96N, 115.49W Magnitude 4.8	El Centro Imp. Val. Irr. Dist. 302 Commercial St.	32.79N 115.55W	-	Up South West	0.02 0.05 0.07	-
	El Centro Imp. Val. Irr. Dist. 302 Commercial St.	32.79N 115.55W	-	S52W Down S38E	- 0.03 0.06	-

See footnotes at end of table.

TABLE 5 - SUMMARY OF ACCELEROGRAPH RECORDS OBTAINED FROM EARTHQUAKES IN 1975 - Continued

Event[1]	Station location		S-t time[2] (sec)	Comp	Max accl[3] (g)	Duration[4] (sec)
	Name	Coord				
23 Jan. (cont.)	El Centro Meadows Union School 2059 Bowker St.	32.80N 115.47W	-	S52W Down S38E	0.09 0.02 0.08	-
	Imperial Imp. Valley College Administration Bldg	32.83N 115.50W	-	S52W Down S38E	0.11 0.04 0.05	1 peak - -
	Small-amplitude records were also obtained at El Centro, Community Hospital, and at Niland, Fire Station.					
January-May Gilroy	A small-amplitude record was obtained at Gilroy, Gavilan College, from an earthquake of unknown location and magnitude.					
3 February 1832 MST Northern Montana 48.2N, 114.1W Magnitude 4.6	A small-amplitude record was obtained at Hungry Horse Dam: Abutment.					
12 February 0403 PST Hollister 35.97N, 120.14W Magnitude 3.4	A small-amplitude record was obtained at San Juan Bautista, Fire Station.					
18 Feb-6 Mar Bear Valley	A small-amplitude record was obtained at Bear Valley, Fire Station, from an earthquake of unknown location and magnitude.					
21 February 2236 AST Aleutian Islands 51.4N, 179.4W Magnitude 6.4	A small-amplitude record was obtained at Adak, Naval Base.					
23 February 0924 PST Hollister 36.56N, 121.19W Magnitude 3.3	Small-amplitude records were obtained at Bear Valley, Melendy Ranch West, and Melendy Ranch Northwest.					
3 March 0842 PST Inglewood 34.33N, 118.25W Magnitude 3.1	Small-amplitude records were obtained at Inglewood, 600 Prairie.					
6 March 1444 PST Hollister 36.56N, 121.21W Magnitude 2.9	Bear Valley Melendy Ranch East	36.59N 121.19W	1.1	S50E Down N40E	0.12 0.07 0.18	0.5 - 0.3
	Bear Valley Melendy Ranch Northwest	36.59N 121.19W	1.0	S50E Down N40E	0.04 0.02 0.05	-

See footnotes at end of table.

TABLE 5 - SUMMARY OF ACCELEROGRAPH RECORDS OBTAINED FROM EARTHQUAKES IN 1975 - Continued

Event[1]	Station location		S-t time[2]	Comp	Max accl[3]	Duration[4]
	Name	Coord	(sec)		(g)	(sec)
6 Mar. (cont.)	Bear Valley	36.59N	1.1	S50E	0.04	-
	Melendy Ranch West	121.19W		Down	0.03	
				N40E	0.06	
	Bear Valley	36.64N	—	S50E	0.05	-
	Stone Canyon East	121.24W		Down	0.09	
				N40E	0.04	
	A small-amplitude record was also obtained at Bear Valley, Fire Station.					
6 May 1835 PST Cape Mendocino 40.25N, 124.67W Magnitude 4.0	Shelter Cove: Sta 1	40.04N	5.6	N70W	0.06	
		124.06W		Down	0.03	
				S20W	0.06	
	Shelter Cove: Sta 2	40.03N	5.6	S20E	0.09	
	Power Plant Yard	124.06W		Down	0.08	
				N70E	0.18	0.4
12 May 1621 PST Maricopa 35.00N, 119.06W Magnitude 4.5	Mount Able	34.83N	2.7	S04W	0.03	
	Kern County Park	119.28W		Down	0.02	
				S86E	0.07	
	Small-amplitude records were also obtained at Mettler Ranch, Elkhorn Scarp, Rudnick Ranch, and Buena Vista Pumping Plant.					
18 May 0542 AST So cent Alaska 63.2N, 151.3W Magnitude 6.0	A small-amplitude record was obtained at Talkeetna.[5]					
31 May 1738 PST Mojave Desert 34.51N, 116.46W Magnitude 5.2	A small-amplitude record was obtained at Amboy.					
7 June 0046 PST Humboldt County 40.54N, 124.29W Magnitude 5.5	Ferndale	40.58N		Up	0.19	
	Old City Hall	124.26W		S44W	0.05	
				N46W	0.24	
	Cape Mendocino	40.35N		S60E	0.22	1.1
	Petrolia	124.35W		Down	0.03	
				N30E	0.14	1.8
	Petrolia	40.32N		N75E	0.19	1.7
	General Store	124.29W		Down	0.03	
				N15W	0.13	1.9
	Shelter Cove: Sta 2	40.03N		S20E	0.10	1 peak
	Power Plant Yard	124.06W		Down	-	
				N70E	0.07	
	Small-amplitude records were also obtained at Butler Valley: Sta 1, Shelter Cove: Sta 1, Rockport, and a partial record at Eureka: Federal Building.					

See footnotes at end of table.

TABLE 5 - SUMMARY OF ACCELEROGRAPH RECORDS OBTAINED FROM EARTHQUAKES IN 1975 - Continued

Event[1]	Station location		S-t time[2] (sec)	Comp	Max accl[3] (g)	Duration[4] (sec)
	Name	Coord				
10 June 1914 AST So cent Alaska 62.1N, 149.9W Magnitude 4.4	A small-amplitude record was obtained at Summit.[5]					
13 June 1640 CST SE Missouri 36.54 N, 89.68W Magnitude 4.3	New Madrid Noranda Aluminum Plant	36.51N 89.57W	0.3	West Down South	0.06 0.04 0.07	
17 June 0001 EST Puerto Rico 18.50N, 66.34N Magnitude 4.9	Small-amplitude records obtained from San Juan, VA Hospital and the Capacete-Martin Building.					
19 June 2013 PST Imperial Valley 32.77N, 115.44W Magnitude 4.2	El Centro Array: Sta 6 551 Huston	32.84N 115.49W	2.7	S52W Down S38E	0.06 0.02 0.10	1 peak
	El Centro Meadows Union School 2059 Bowker	32.80N 115.47W	0.7	S52W Down S38E	0.06 0.02 0.04	
	Small-amplitude records were also obtained from El Centro: Imperial Valley Irrigation District Substation, and El Centro Array: Sta 11.					
20 June 1415 PST Imperial Valley 32.78N, 115.43W Magnitude 4.1	El Centro Array: Sta 6 551 Huston	32.84N 115.49W	3.1	S52W Down S38E	0.10 0.05 0.13	.1 .3
	A small-amplitude record was also obtained at El Centro: Imperial Valley Irrigation District Substation.					
20 June 1855 PST Imperial Valley 32.77N, 115.43W Magnitude 3.6	A small-amplitude record was obtained at El Centro Array: Sta 6.					
19 July 0600 MST Helena, Montana 47.0N, 111.9W Magnitude 3.5	A small-amplitude record was obtained at Fort Harrison.					
25 July 0040 AST Cold Bay 55.06N, 160.38W Magnitude 5.8	A small-amplitude record was obtained at Cold Bay.					

See footnotes at end of table.

TABLE 5 - SUMMARY OF ACCELEROGRAPH RECORDS OBTAINED FROM EARTHQUAKES IN 1975 - Continued

Event[1]	Station location		S-t time[2]	Comp	Max accl[3]	Duration[4]
	Name	Coord	(sec)		(g)	(sec)
1 August 1220 PST Oroville 39.44N, 121.53W Magnitude 5.7	Chico	39.70N 121.72W	-	S33W Down S57E	0.08 0.03 0.06	
	Marysville	39.15N 121.58W	-	S85W Down S05E	0.07 0.04 0.06	
	Oroville Dam Crest	39.54N 121.48W	-	N46E Down N44W	0.12 0.13 0.09	1.6 0.3 -
	Oroville Seismo- graph Station	39.55N 121.50W	-	N53W Up N37E	0.10 0.12 0.11	1 peak 1 peak 1 peak
	A small-amplitude record, presumed to be a foreshock, preceded the main record at the Oroville Dam, crest station.					
	Small-amplitude records were also obtained from stations at Almanor, Black Butte Dam, Garnier Ranch, Martis Creek Dam, Peripheral Canal, Rancho Seco, Stempede Dam, and Sutter Buttes in California and at Reno, Nevada.					
	Numerous aftershock records were obtained from the Oroville earthquake[6].					
1 August 1614 PST So California 33.54N, 116.58W Magnitude 4.8	Palm Springs	33.83N 116.51W	4.3	South Down East	0.04 0.04 0.05	
	Puerta LaCruz	33.32N 116.68W	-	N20W Down S70W	0.08 0.07 0.06	
	Sage	33.58N 116.93W	2.1	S14E Down N76E	0.06 0.04 0.06	
	Small-amplitude records were also obtained at Indio, Hemet Fire Station and Borrego Springs.					
2 August 2235 PST Cent California 36.46N, 120.33W Magnitude 4.8	Pleasant Valley Pumping Plant Basement	36.31N 120.25W	-	N44W Down S46W	0.08 0.02 0.05	
	Pleasant Valley Pumping Plant Ground Level	36.31N 120.25W	-	N44W Down S46W	0.08 0.02 0.05	
	Pleasant Valley Pumping Plant Roof	36.31N 120.25W	-	N45E Down N45W	0.13 0.04 0.16	1.2 - 2 peaks
	Pleasant Valley Switchyard	36.31N 120.25W	-	N45E Down N45W	0.08 0.03 0.13	- - 1 peak

See footnotes at end of table.

TABLE 5 - SUMMARY OF ACCELEROGRAPH RECORDS OBTAINED FROM EARTHQUAKES IN 1975 - Continued

Event[1]	Station location		S-t time[2] (sec)	Comp	Max accl[3] (g)	Duration[4] (sec)
	Name	Coord				
2 Aug -19 Aug No California Location and Magnitude unknown	Mariposa	37.53N 119.99W		S49W Down S41E	0.08 0.03 0.06	
16 August 1724 PST No California 37.53N, 118.74W Magnitude 3.7	A small-amplitude record was obtained at Convict Creek.					
13 September 1420 PST Cent California 36.00N, 120.56W Magnitude 4.9	Cholame-Shandon Array Station No 5	35.70N 120.33W	-	N51E Down N39W	0.03 0.02 0.07	
	Cholame-Shandon Array Station No 8	35.67N 120.36W	-	N51E Down N39W	0.02 0.02 0.05	
	Parkfield	35.90N 120.43W	2.6	North Down West	0.07 0.03 0.06	
	Parkfield Grade	35.98N 120.48W	2.0	S67W Down S23E	0.14 0.04 0.08	1.2 - -
	Vineyard Canyon	35.92N 120.53W	1.3	N64W Down S26W	0.29 0.20 0.21	1.7 - 1.2
	Small-amplitude records were also obtained from Bitterwater Valley, Gold Hill, Greenfield, and San Antonio Reservoir.					
14 November 0130 PST No California 40.57N, 124.45W Magnitude 5.1	Ferndale	40.58N 124.26W	-	Up S44W N46W	0.03 0.18 0.09	- 0.5 -
	Cape Mendocino	40.35N 124.35W	-	S60E Down N30E	0.10 0.01 0.13	0.1 - 0.2
	Petrolia	40.32N 124.29W	-	N75E Down N15W	0.10 0.02 0.08	1 peak - -
	Shelter Cove, Station 2	40.03N 124.06W	-	S20E Down N70E	0.05 0.02 0.07	
	A small-amplitude record was also obtained at Rockport.					

See footnotes at end of table.

TABLE 5 - SUMMARY OF ACCELEROGRAPH RECORDS OBTAINED FROM EARTHQUAKES IN 1975 - Continued

Event[1]	Station location		S-t time[2] (sec)	Comp	Max accl[3] (g)	Duration[4] (sec)
	Name	Coord				
29 November 0335 HST Island of Hawaii 19.35N, 155.06W Magnitude 5.7	Honokaa, Hawaii	20.07N 155.06W	-	N15W Down S75W	0.04 0.02 0.06	
	Hilo, Hawaii	19.70N 155.08W	-	N74E Down N16W	0.05 0.05 0.15	- - 0.15
	A small-amplitude record was also obtained at Punaluu.					
29 November 0447 HST Island of Hawaii 19.33N, 155.02W Magnitude 7.2	Honokaa, Hawaii	20.07N 155.06W	-	N15W Down S75W	0.09 0.04 0.11	- - 0.3
	Hilo, Hawaii	19.70N 155.08W	-	N74E Down N16W	0.11 0.10 0.22	1 peak 1 peak 2.1
	Punaluu, Hawaii	19.16N 155.52W	-	S54E Down N36E	0.12 0.05 0.10	1 peak - 1 peak
	The duration of 2.1 sec for the N16W component of the Hilo record is for the first part of the record only.					

[1] Magnitude and epicentral coordinates were largely obtained from Preliminary Determination of Epicenters (PDE) as reported by NEIS, Golden, CO. The final values may be somewhat different from these values.

[2] S-wave minus trigger time.

[3] Unless otherwise noted, maximum acceleration recorded at ground or basement level. Data from the records are summarized only if the maximum acceleration is greater than 0.05 g at ground stations or greater than 0.10 g at upper floors of buildings.

[4] Duration for which peaks of acceleration exceed 0.10 g.

[5] These records could not be positively identified with the listed earthquakes.

[6] These aftershock records were obtained from the permanent strong-motion stations in the area and from temporary stations installed by CDMG and USGS. Contact the USGS for information about these records.

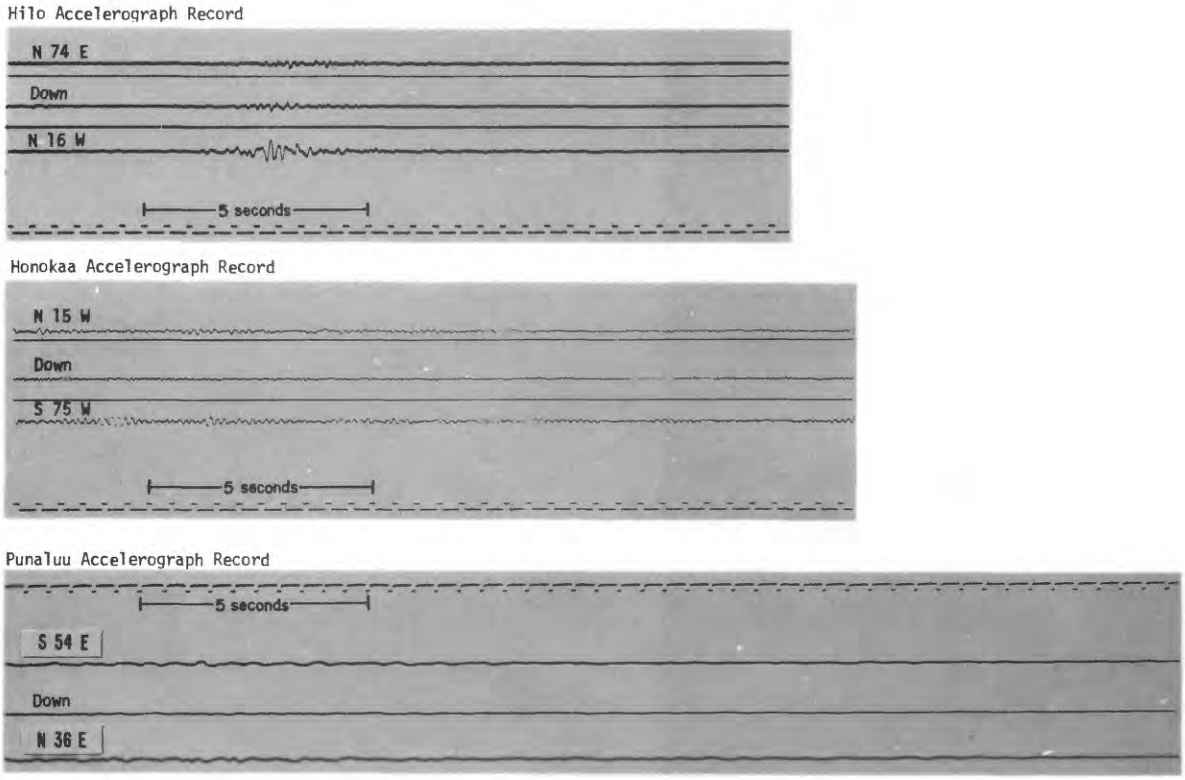


Figure 25. Accelerograph records obtained at Hilo, Honokaa, and Punaluu, Hawaii, on November 29 (03:35 Hst)

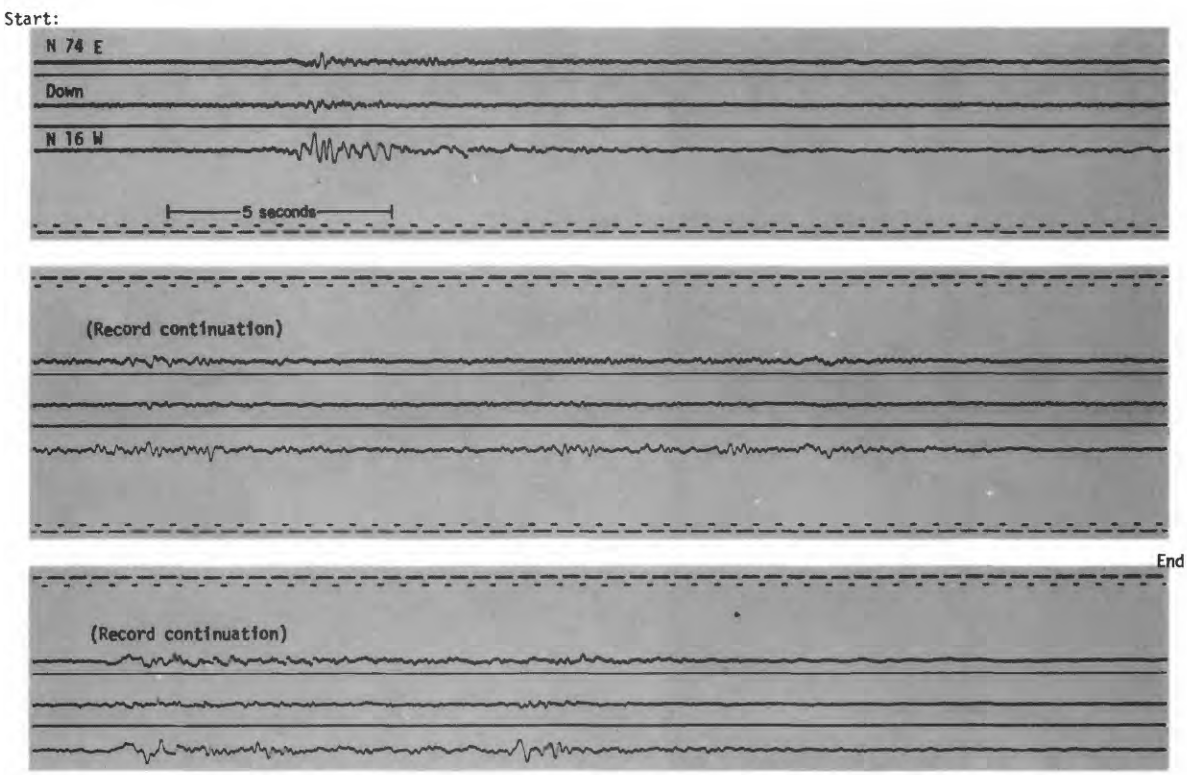


Figure 26. Accelerograph record obtained at Hilo, Hawaii, on November 29 (04:47 Hst--main earthquake)

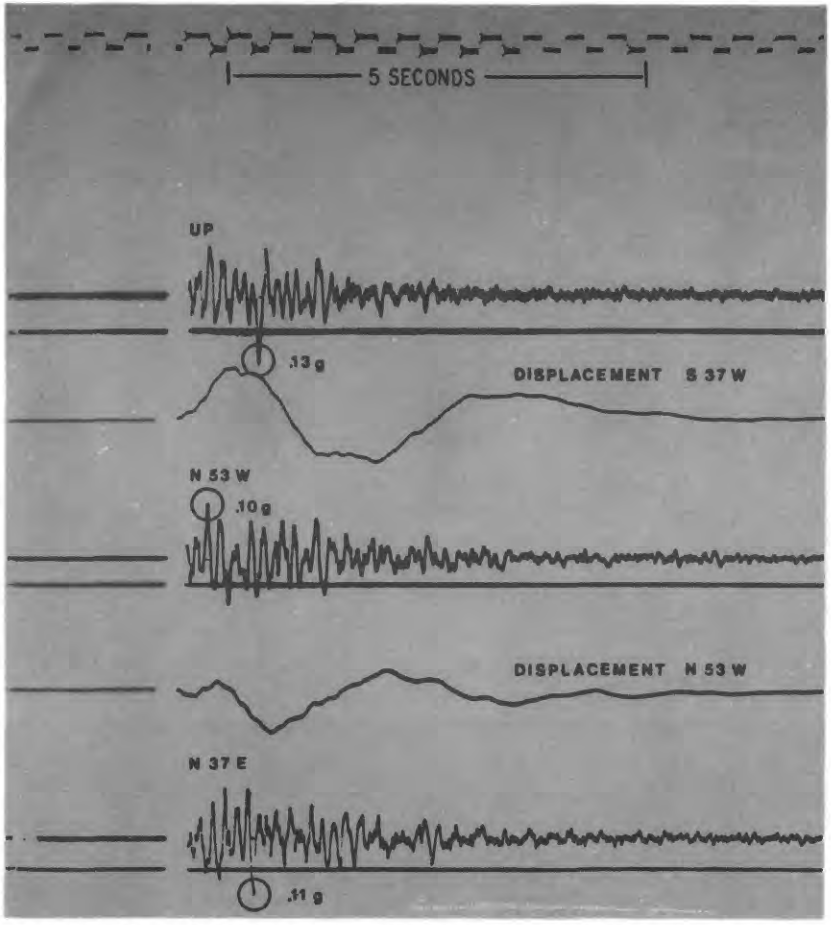


Figure 23. Accelerograph record obtained at Oroville Seismograph Station on August 1

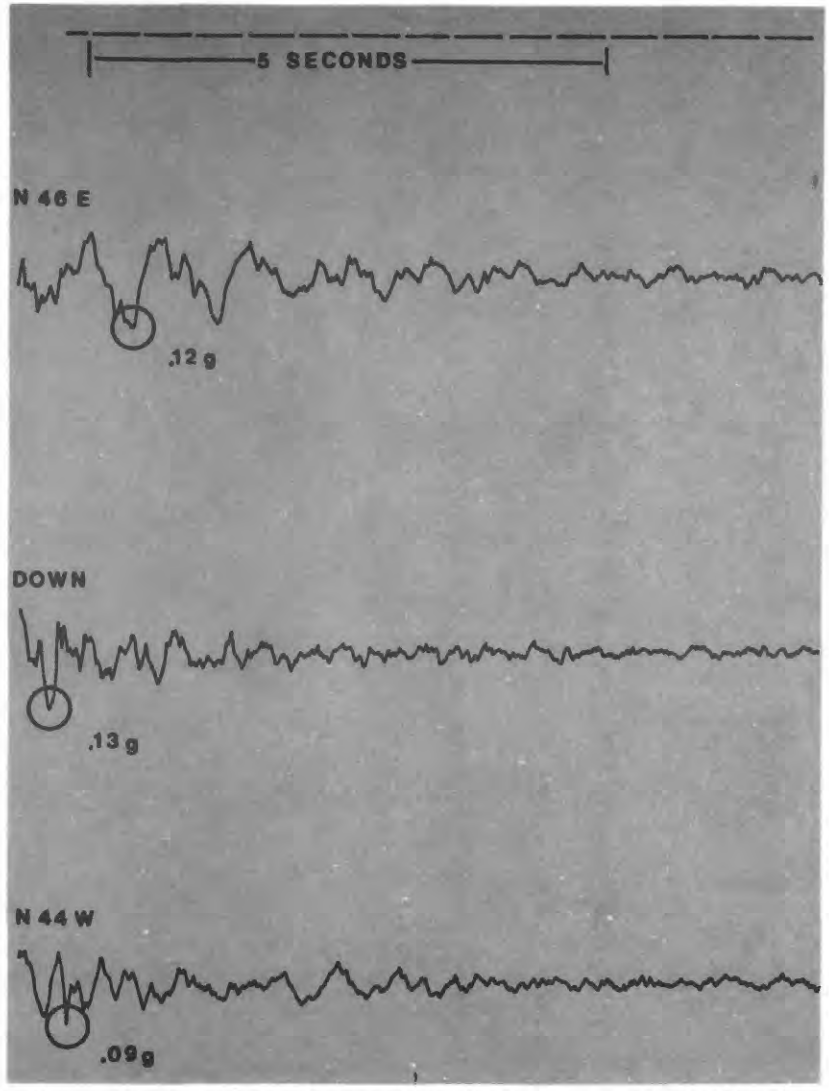


Figure 24. Accelerograph record obtained at crest of Oroville Dam on August 1

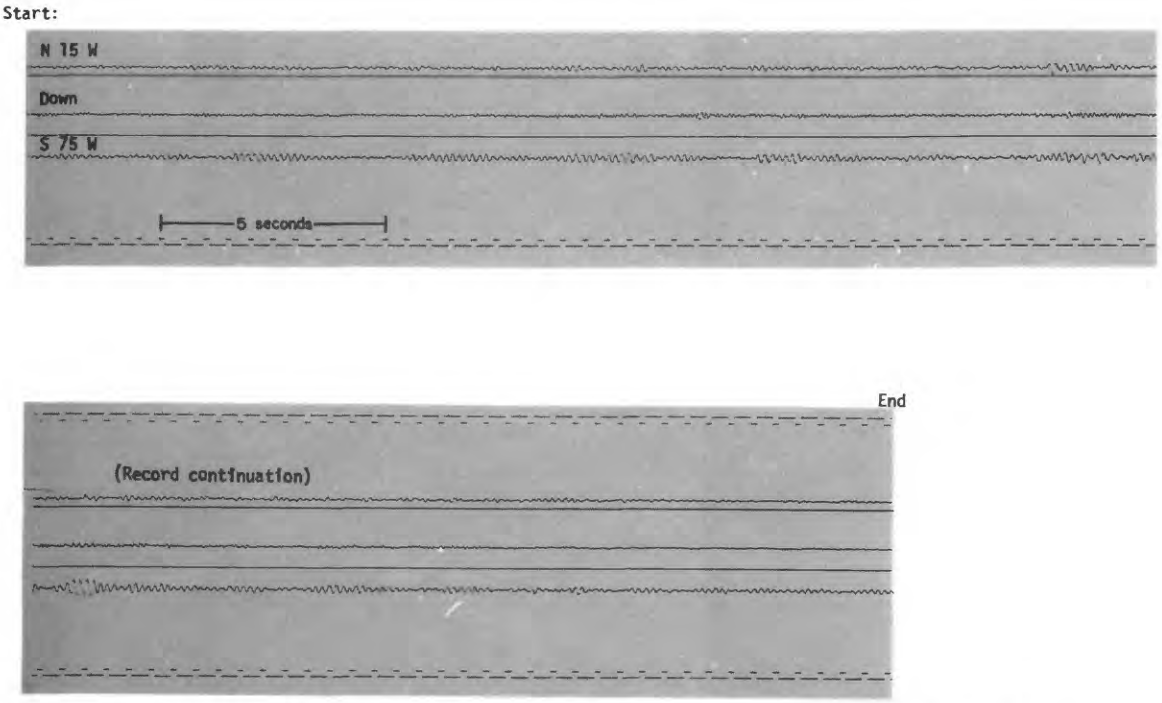


Figure 27. Accelerograph record obtained at Honokaa, Hawaii, on November 29 (04:47 Hst--main earthquake)

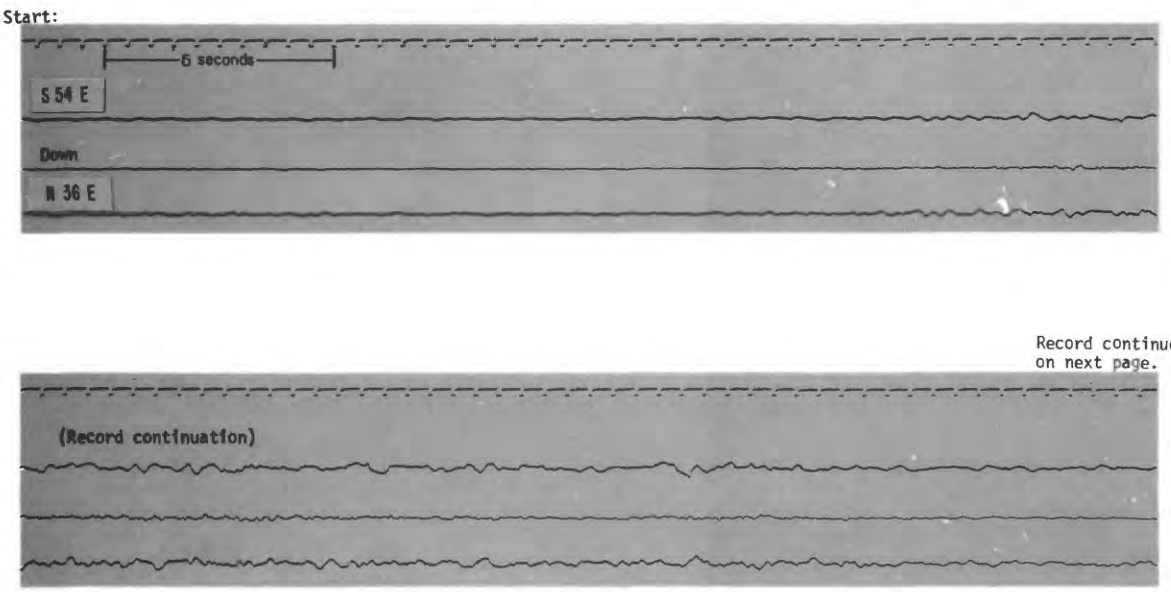
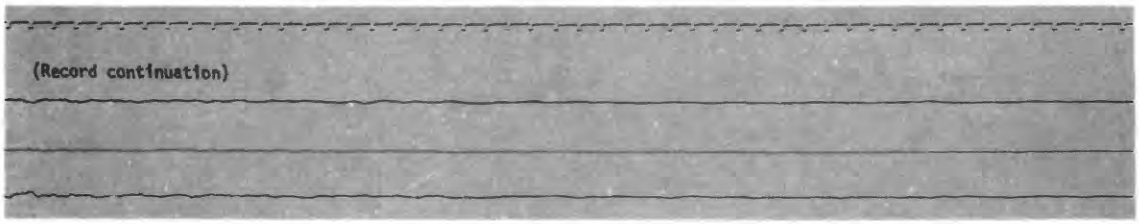


Figure 28. Accelerograph record obtained at Punaluu, Hawaii, on November 29 (04:47 Hst--main earthquake)



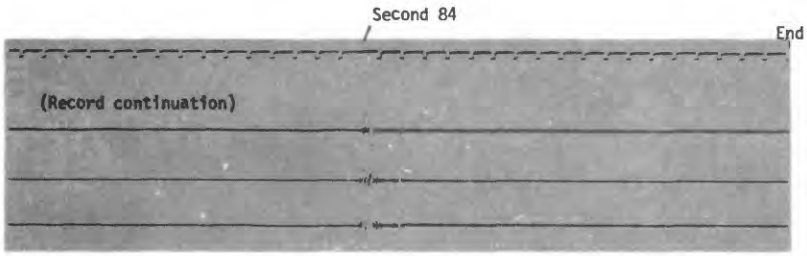
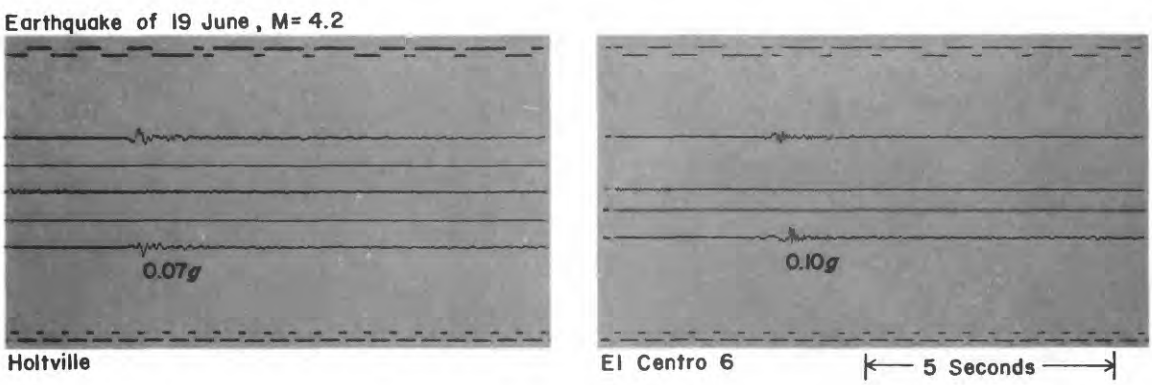


Figure 28 (cont.). Note: The high frequency pulse after "Second 84" is the postulated arrival of tsunami at accelerograph site. Length of time gap immediately preceding the pulse is not known.



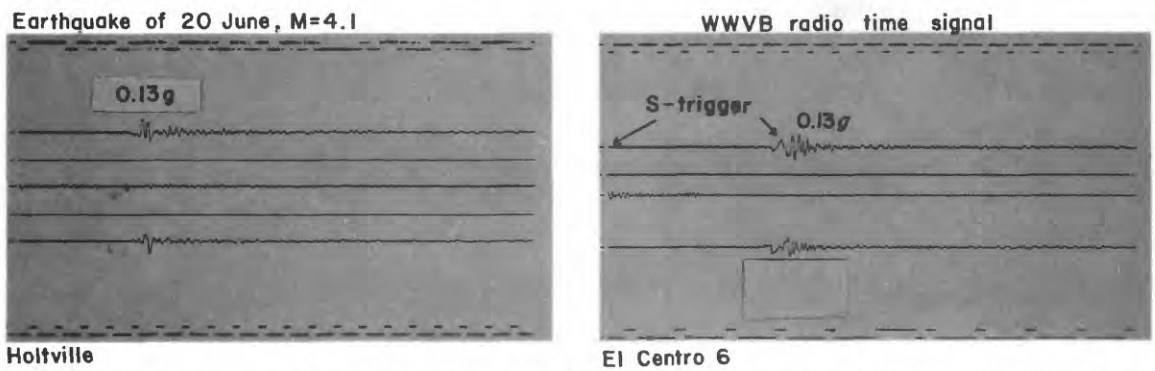


Figure 29. Accelerograph records obtained at El Centro and Holtville, Calif., on June 19 and 20

U.S. GOVERNMENT PRINTING OFFICE: 1977 — 777-067/1217 REGION NO. 8