GEOLOGICAL SURVEY CIRCULAR 896–A

Earthquakes in the United States, January–March 1982

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By C. W. Stover, J. H. Minsch,
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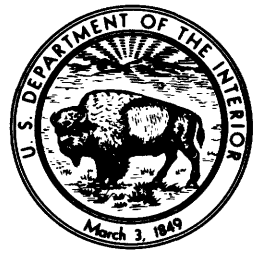
1983

United States Department of the Interior

JAMES G. WATT, *Secretary*



Geological Survey

Dallas L. Peck, *Director*

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INTRODUCTION

The earthquake information in this publication supplements that published by the U. S. Geological Survey (USGS) in the National Earthquake Information Service (NEIS) publications, PDE ("Preliminary Determination of Epicenters") and "Preliminary Determination of Epicenters Monthly Listing," by providing detailed felt and intensity data for U.S. earthquakes. The purpose of this circular is to provide a complete listing of macroseismic effects of earthquakes, which can be used in risk studies, nuclear power plant site evaluations, seismicity studies, and to answer inquiries by the public.

This publication contains two major sections. The first part (table 1), which is mainly concerned with data obtained by seismographs, is a tabular listing of earthquakes in chronological order by State, consisting of the following basic information: date, origin time, hypocenter, magnitude, maximum intensity, and computational source of the hypocenter. The second section, which concerns intensity information, consists of isoseismal or intensity maps and table 2. This section may contain information on events that were felt but were not listed in the PDE because there was not enough instrumental data to obtain a solution. The list of earthquakes in table 1 was compiled from those located in the United States or nearby offshore areas that were published in the PDE; from aftershock studies carried out by the U.S. Geological Survey and other organizations; from hypocenters in California above magnitude 3.0 supplied by the California Institute of Technology, Pasadena, the University of California, Berkeley, and other offices of the U.S. Geological Survey; from hypocenters in Hawaii supplied by the Hawaiian Volcano Observatory; and from other institutions as listed in the acknowledgments. Known or suspected explosions are also listed in table 1 and table 2.

The intensities and macroseismic data were compiled from information obtained from postal questionnaires, from newspaper articles, and from other Government agencies, State institutions, local organizations, and individuals. (See "Acknowledgments" for a list of collaborators.) Figure 1 is the questionnaire in use by the USGS. Other types of questionnaires are used by State agencies, engineering firms, and other Government agencies to collect intensity data. Anyone wishing to submit felt or damage information on earthquakes for inclusion in future reports should send it to the U. S. Geological Survey, United States Earthquakes Project, Stop 967, Box 25046, Denver Federal Center, Denver, CO 80225. Copies of the current "Earthquake Report" questionnaire can be obtained at this address.

The USGS uses the postal questionnaire as the primary source of macroseismic data to carry out an intensity survey; however, on-site field investigations are made following earthquakes that do significant damage. The "Earthquake Report" forms are mailed to postmasters within the area affected by the earthquake. The completed forms are returned to the USGS, where they are evaluated and intensity values are assigned to individual locations. In the case of large or significant earthquakes, the intensity observations are plotted and isoseismal maps are prepared. It should be pointed out that the isoseismals represent a general intensity level and that they do not necessarily agree with every individual observation.

DISCUSSION OF TABLES

The parameters for the earthquakes in table 1 and table 2 include the date, origin time, hypocenter (epicenter and focal depth), magnitude, intensity, and source of the computed solution. The origin time and date are listed in Universal Coordinated Time (UTC) and local standard time based on the time-zone maps in figures 2 and 3. The epicenters, which were taken from those published in the PDE, or from other sources as noted, are listed here to two

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

EARTHQUAKE REPORT

Form Approved
OMB No. 42-R1700

Please answer this questionnaire and return as soon as possible

1. Was an earthquake felt by anyone in your town near the date and time indicated on the opposite page?
   ☐ No: Please refold and tape for return mail.
   ☐ Yes: Date_____ Time_____ ☐ AM ☐ PM ☐ Standard time ☐ Daylight time

Name of person filling out form _____

Address_____

City_____ County_____

State_____ Zip code_____

If you felt the earthquake, complete the following section. If others felt the earthquake but you did not, skip the personal report and complete the community report.

PERSONAL REPORT

2. Did you personally feel the earthquake? 1☐ Yes ☐ No
   Were you awakened by the earthquake? 2☐ Yes ☐ No
   Were you frightened by the earthquake? 3☐ Yes ☐ No
   Were you at 4☐ Home 5☐ Work 6☐ Other? _____
   Town and zip code of your location at time of earthquake _____
   Check your activity when the aarthquake occurred:
   7☐ Walking 8☐ Sleeping 9☐ Lying down 10☐ Standing
   11☐ Driving (car in motion) 12☐ Sitting 13☐ Other_____
   Were you 14☐ Inside or 15☐ Outside?
   If inside, on what floor were you? 16 _____
   Did you have difficulty in standing or walking 17☐ Yes 18☐ No
   Vibration could be described as 19☐ Light 20☐ Moderate 21☐ Strong
   Was there earth noise? ☐ No 22☐ Faint 23☐ Moderate 24☐ Loud
   Direction of noise ☐ North ☐ South ☐ East ☐ West
   Estimated duration of shaking 25☐ Suddan, sharp (less than 10 secs) 26☐ Long (30-60 secs) 27☐ Short (10-30 secs)

Continue on to next section which should include personal as well as reported observations.

COMMUNITY REPORT

Town and zip code _____
DO NOT INCLUDE EFFECTS FROM OTHER COMMUNITIES/TOWNS
Check one box for each question that is applicabla.

3a. The earthquake was felt by ☐ No one 28☐ Few 29☐ Several 30☐ Many 31☐ All?
b. This earthquake awakened ☐ No one 32☐ Few 33☐ Several 34☐ Many 35☐ All?
c. This earthquake frightened ☐ No one 36☐ Few 37☐ Several 38☐ Many 39☐ All?

4. What indoor physical effects were noted in your community?
   Windows, doors, dishes rattled 40☐ Yes ☐ No
   Walls creaked 41☐ Yes ☐ No
   Building trembled (shook) 42☐ Slightly 43☐ Strongly
   Hanging pictures (more than one) 44☐ Swung 45☐ Out of place 46☐ Fallen
   Windows 47☐ Few cracked 48☐ Some broken out 49☐ Many broken out
   Small objects overturned 50☐ Few 51☐ Many
   Small objects fallan 52☐ Few 53☐ Many
   Glassware/dishes broken 54☐ Few 55☐ Many
   Light furniture or small appliances 56☐ Overturned 57☐ Damaged seriously
   Heavy furniture or appliances 58☐ Overturned 59☐ Damaged seriously
   Did hanging objects ordoors swing? 60☐ Slightly 61☐ Moderately 62☐ Violently
   Can you astimate diraction? ☐ North/South ☐ East/West ☐ Other_____
   Items thrown from store shelves 63☐ Few 64☐ Many

Continued on the reverse side

FIGURE 1.--Example of the "Earthquake Report" form used for evaluating the intensities of earthquakes. A, front side.

5. Indicate effects of the following types to interior walls if any:

Plaster/stucco	65☐ Hairline cracks	66☐ Large cracks (many)	67☐ Fell in large amounts
Dry wall	68☐ Hairline cracks	69☐ Large cracks (many)	70☐ Fell in large amounts

6. What outdoor physical effects were noted in your community?

Trees and bushes shaken	71☐ Slightly	72☐ Moderately	73☐ Strongly
Standing vehicles rocked	74☐ Slightly	75☐ Moderately	
Moving vehicles rocked	76☐ Slightly	77☐ Moderately	
Water splashed onto sides of lakes, ponds, swimming pools	78☐ Yes	☐ No	
Elevated water tanks	79☐ Cracked	80☐ Twisted	81☐ Fallen (thrown down)
Tombstones	82☐ Displaced	83☐ Cracked	84☐ Rotated
	85☐ Fallen		
Chimneys	86☐ Cracked	87☐ Twisted	88☐ Fallen
	89☐ Broken at roof line	90☐ Bricks fallen	
Railroad tracks bent	91☐ Slightly	92☐ Greatly	
Stone or brick fences /walls	93☐ Open cracks	94☐ Fallen	95☐ Destroyed
Underground pipes	96☐ Broken	97☐ Out of service	
Highways or streets	98☐ Large cracks	99☐ Large displacements	
Sidewalks	100☐ Large cracks	101☐ Large displacements	

7a. Check below any structural damage to buildings.

Foundation	102☐ Cracked		103☐ Destroyed	
Interior walls	104☐ Split	105☐ Fallen	106☐ Separated from ceiling or floor	
Exterior walls	107☐ Large Cracks		108☐ Bulged outward	
	109☐ Partial collapse		110☐ Total collapse	

b. What type of construction was the building that showed this damage?

111☐ Wood	112☐ Stone	113☐ Brick veneer	114☐ Other _____	
115☐ Brick	116☐ Cinderblock	117☐ Reinforced concrete	118☐ Mobile home	

c. What was the type of ground under the building?

☐ Don't know	119☐ Sandy soil	120☐ Marshy	121☐ Fill	
122☐ Hard rock	123☐ Clay soil	124☐ Sandstone, limestone, shale		

d. Was the ground: 125☐ Level 126☐ Sloping 127☐ Steep?

e. Check the approximate age of the building:

128☐ Built before 1935 129☐ Built 1935-65 130☐ Built after 1965

8. Check below any structural damage to

Bridges/Overpasses	131☐ Concrete	132☐ Wood	133☐ Steel	134☐ Other
Damage was	135☐ Slight	136☐ Moderate		137☐ Severe
Dams	138☐ Concrete	139☐ Large earthen		
Damage was	140☐ Slight	141☐ Moderate		142☐ Severe

9. What geologic effects were noted in your community?

Ground cracks	143☐ Wet ground	144☐ Steep slopes	145☐ Dry and level ground	
Landslides	146☐ Small	147☐ Large		
Slumping	148☐ River bank	149☐ Road fill	150☐ Land fill	
Were springs or well water disturbed?	151 Level changed	152☐ Flow disturbed		
	153 Muddied	☐ Don't know		
Were rivers or lakes changed?	154 Yes	☐ No	☐ Don't know	

10a. What percentage of buildings were damaged?

Within 2 city blocks of your location	☐ None	155☐ Few (about 5%)	
	156☐ Many(about 50%)	157☐ Most (about 75%)	
b. In area covered by your zip code	☐ None	158☐ Few (about 5%)	
	159☐ Many (about 50%)	160☐ Most (about 75%)	

Thank you for your time and information. Refold this card and tape for return mail.

FIGURE 1.--Example of the "Earthquake Report" form used for evaluating the intensities of earthquakes. B, reverse side.

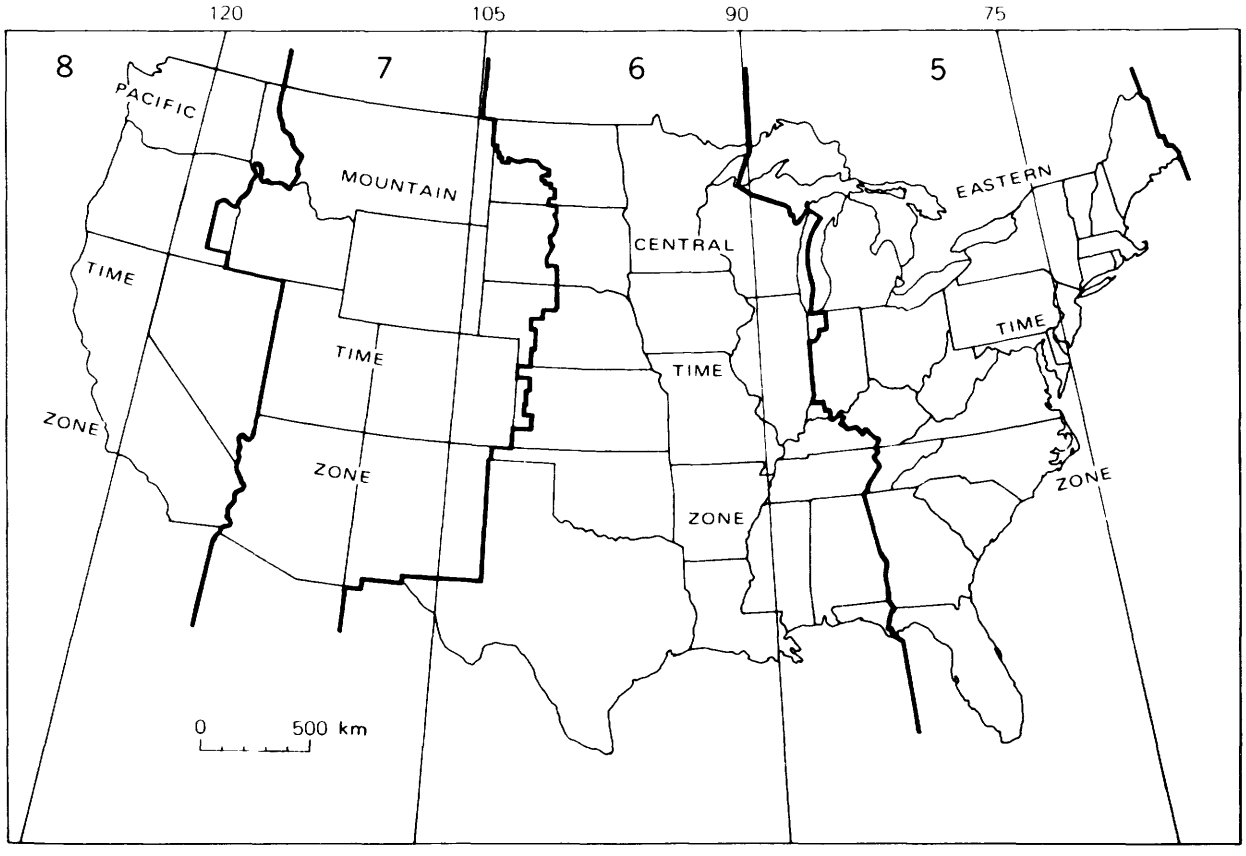

FIGURE 2.--Standard time zones of the conterminous United States. The number in each zone shows the number of hours to be subtracted from Universal Coordinated Time to convert to local standard time. (Subtract 1 hour less for local daylight-saving time.)

decimals. The accuracy of the epicenters is not necessarily indicated by the number of decimals listed. The epicenters located by the NEIS usually are accurate to two-tenths of a degree or less. In general, epicenters located offshore are less accurate than those on land, even though they are listed to two decimals. In regions covered by dense networks of seismographs such as California, epicenter accuracy is significantly better than the two-tenths of a degree listed. Depths are listed to the nearest whole kilometer.

Figures 4-6 are maps summarizing the earthquake activity for the conterminous United States, Alaska, and Hawaii for the period January-March 1982. The magnitudes represented in these figures are based on ML, Mn, or MD; if neither was computed, then on MS; and finally on mb, when it was the only magnitude computed.

The magnitude values listed in tables 1 and 2 were furnished by cooperating institutions or determined by USGS. The computational sources are labeled according to the assigned letter codes shown in headnotes to tables 1 and 2; the letter follows the value listed under the column heading "Magnitude." In table 1, the absence of a letter code indicates that the source is USGS. The magnitude values calculated by USGS are based on the following formulas:

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

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 vertical 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 depths less than 50 km.

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

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 $D \geq 5°$.

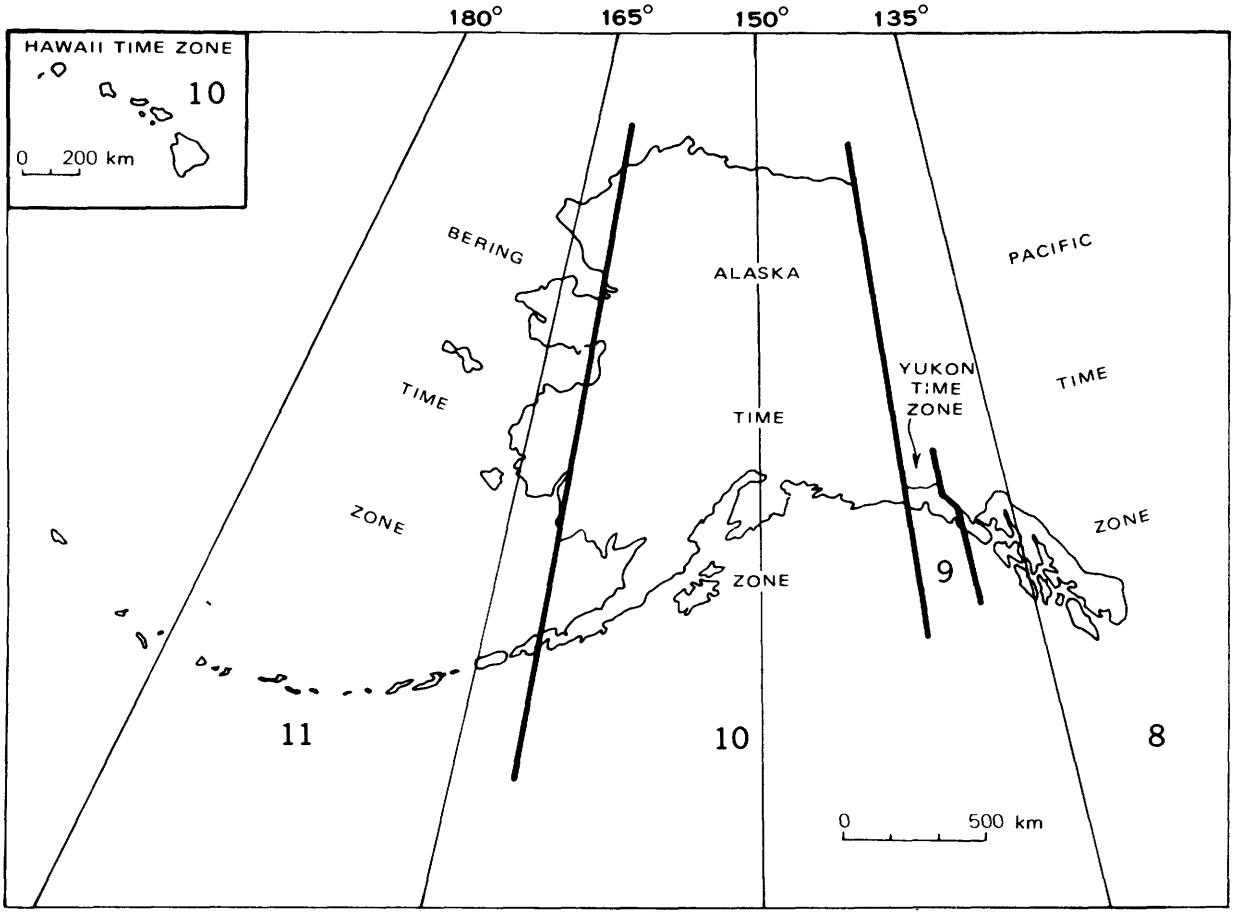

FIGURE 3.--Standard time zones of Alaska and Hawaii. The number in each zone shows the number of hours to be subtracted from Universal Coordinated Time to convert to local standard time. (Subtract 1 hour less for local daylight-saving time.)

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

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

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

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

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.

MD is used in this publication for the duration or coda length magnitude. MD is usually computed from the difference, in seconds, between Pn or Pg-wave arrival time and the time the final coda amplitude decreases to the background-noise amplitude. These magnitudes are normally correlated with ML or mbLg so that resulting magnitudes are compatible. Thus the formulas vary for different geographic regions and seismograph systems.

All of the intensity values (indicated by Roman numerals) listed in this summary were determined, using the Modified Mercalli Intensity Scale of 1931 (Wood and Neumann, 1931) shown below, from the evaluation of "Earthquake Report" forms; from field reports by U.S. Geological Survey personnel, engineering firms, or universities; and from detailed macroseismic data communicated to the USGS by people in the area affected by the earthquake. All earthquake reports received that contain minimal or sketchy

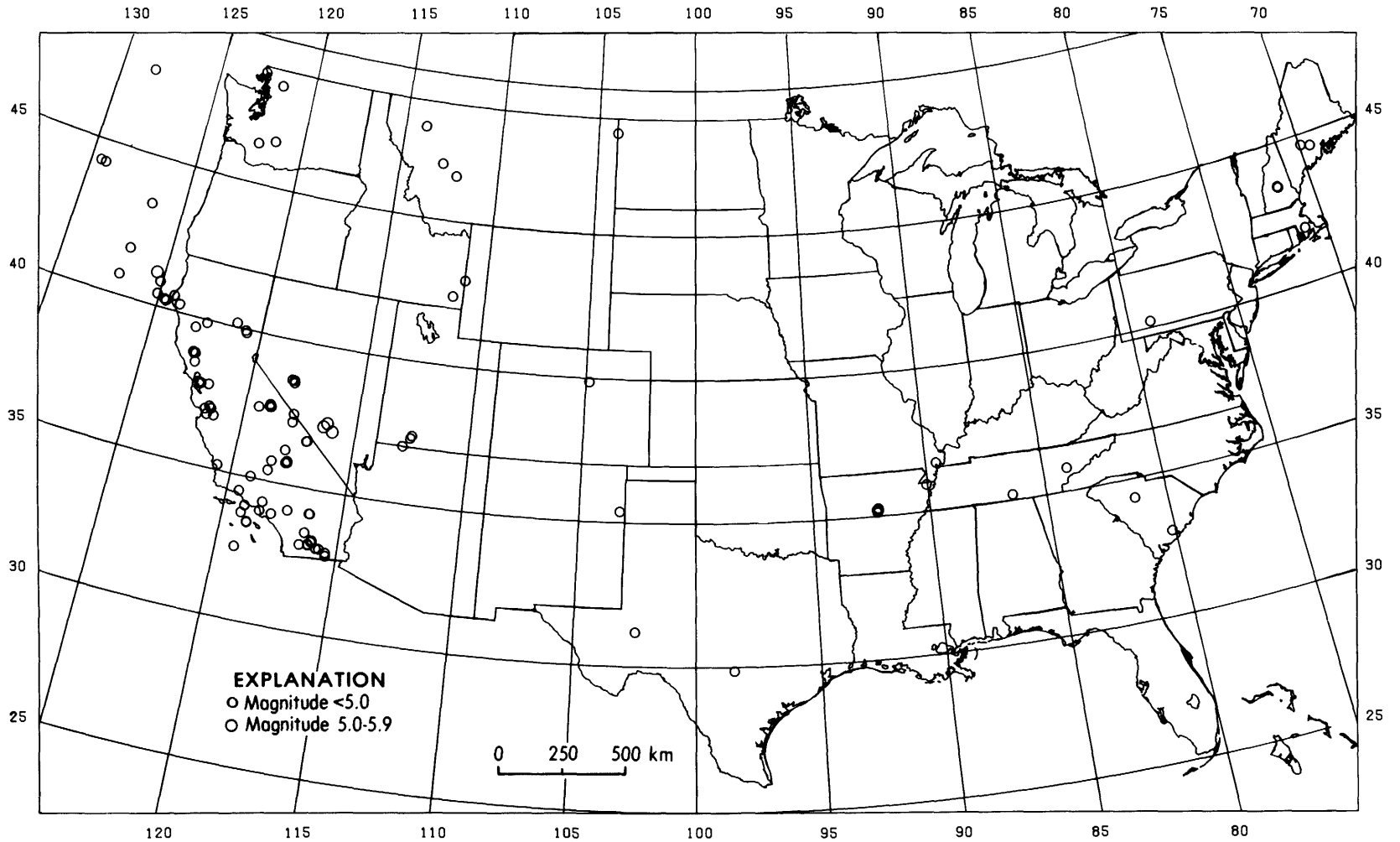

FIGURE 4.--Earthquake epicenters in the conterminous United States for January-March 1982, plotted from table 1.

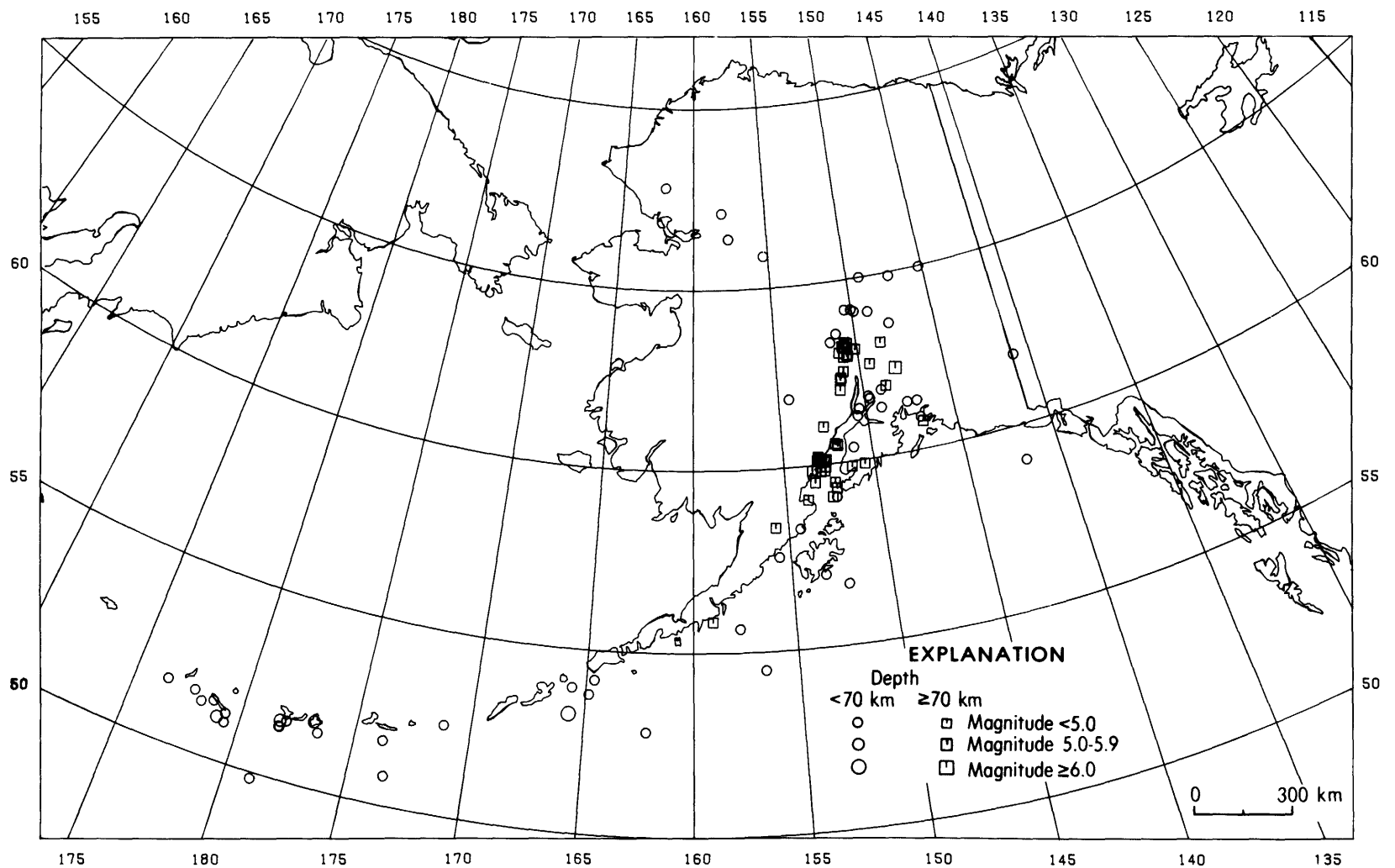

FIGURE 5.--Earthquake epicenters in Alaska for January-March 1982, plotted from table 1.

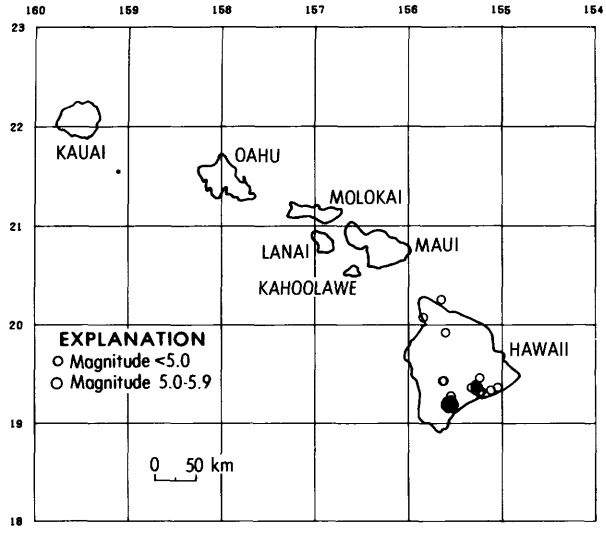

FIGURE 6.--Earthquake epicenters in Hawaii for January-March 1982, plotted from table 1.

information are listed only as "FELT." This does not imply that the earthquake was felt at a low intensity level, but indicates that the available data is not sufficient for assigning a valid intensity value. These reports are filed in the offices of the NEIS or in government archives and are available for detailed study.

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 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 chimneys in some instances. Broke dishes, glassware, in considerable quantity, also some windows. Fall of knick-knacks, 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 roof-line (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, pipe lines 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 pipe lines 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 modified 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.

Table 1.--*Summary of U.S. earthquakes for January-March 1982*

[Sources of the hypocenters and magnitudes: (B) University of California, Berkeley; (E) U.S. Department of Energy, Las Vegas, Nev.; (F) Georgia Institute of Technology, Atlanta; (G) U.S. Geological Survey, National Earthquake Information Service, Golden, Colo.; (H) U.S. Geological Survey, Hawaiian Volcano Observatory; (J) Weston Observatory, Mass.; (K) Tennessee Earthquake Information Center, Memphis; (M) National Oceanic and Atmospheric Administration, Alaska Tsunami Warning Center, Palmer; (P) California Institute of Technology, Pasadena; (Q) Pacific Geoscience Centre, Sydney, British Columbia, Canada; (S) St. Louis University, St. Louis, Mo.; (T) Oklahoma Geological Survey, Leonard; (U) University of Utah, Salt Lake City; (V) Virginia Polytechnic Institute and State University, Blacksburg; (W) University of Washington, Seattle; (Z) Pennsylvania State University, University Park. N, Normal depth; UTC, Universal Coordinated Time. For names of local time zones, see figures 2 and 3. Leaders (...) indicate no information available]

Date (1982)	Origin time (UTC) hr	min	sec	Lat (°)	Long (°)	Depth (km)	Magnitude mb	MS	ML, Mn or MD	Maximum intensity	Hypocenter source	Local time Date	Hour
ALABAMA													
FEB. 5	10	59	06.9	32.68 N.	86.62 W.	0	...	...	2.5F	...	F	FEB. 5	04 A.M. CST
ALASKA													
JAN. 1	02	35	26.0	64.00 N.	149.00 W.	33	...	...	3.0M	...	G	DEC. 31	04 P.M. AST
JAN. 2	03	59	42.5	59.84 N.	153.45 W.	137	...	...	...	...	G	JAN. 1	05 P.M. AST
JAN. 2	12	07	38.2	61.34 N.	149.08 W.	50	...	...	3.0M	...	G	JAN. 2	02 A.M. AST
JAN. 2	20	27	16.3	55.65 N.	157.73 W.	33	4.4	...	4.3M	...	G	JAN. 2	10 A.M. AST
JAN. 3	18	06	26.0	62.86 N.	150.63 W.	123	...	...	...	...	G	JAN. 3	08 A.M. AST
JAN. 3	22	36	03.6	64.06 N.	149.86 W.	33	...	...	3.2M	...	G	JAN. 3	12 P.M. AST
JAN. 4	00	40	00.2	50.79 N.	173.45 W.	33	4.8	...	...	...	G	JAN. 3	01 P.M. BST
JAN. 4	01	24	50.3	62.47 N.	151.01 W.	100	...	...	...	...	G	JAN. 3	03 P.M. AST
JAN. 4	23	37	30.6	51.41 N.	178.32 W.	60	4.7	...	...	...	G	JAN. 4	12 P.M. BST
JAN. 6	12	23	40.0	51.50 N.	176.59 W.	53	5.0	...	4.3M	II	G	JAN. 6	01 A.M. BST
JAN. 8	12	00	17.0	61.34 N.	147.03 W.	64	...	...	...	...	G	JAN. 8	02 A.M. AST
JAN. 8	13	03	52.1	62.90 N.	150.66 W.	121	3.9	...	...	...	G	JAN. 8	03 A.M. AST
JAN. 9	07	50	42.1	58.36 N.	155.69 W.	211	...	...	...	...	G	JAN. 8	09 P.M. AST
JAN. 10	13	15	42.6	65.86 N.	155.29 W.	21	...	...	3.7M	...	G	JAN. 10	03 A.M. AST
JAN. 11	21	08	36.2	63.03 N.	150.14 W.	98	...	...	...	...	G	JAN. 11	11 A.M. AST
JAN. 12	15	22	55.2	59.07 N.	152.26 W.	68	4.8	...	...	IV	G	JAN. 12	05 A.M. AST
JAN. 16	03	37	54.5	51.67 N.	176.44 E.	48	4.6	...	4.5M	...	G	JAN. 15	04 P.M. BST
JAN. 16	15	58	53.3	51.39 N.	178.27 W.	55	4.6	...	...	...	G	JAN. 16	04 A.M. BST
JAN. 17	19	58	40.7	51.73 N.	173.77 W.	51	4.4	...	4.1M	...	G	JAN. 17	08 A.M. BST
JAN. 18	22	36	44.7	53.93 N.	165.66 W.	66	4.6	...	...	...	G	JAN. 18	11 A.M. BST
JAN. 19	17	47	31.4	60.11 N.	152.65 W.	124	4.3	...	...	...	G	JAN. 19	07 A.M. AST
JAN. 19	22	20	23.0	63.58 N.	147.81 W.	22	...	...	3.4M	...	G	JAN. 19	12 P.M. AST
JAN. 22	09	00	39.2	55.83 N.	159.05 W.	90	4.4	...	...	...	G	JAN. 21	11 P.M. AST
JAN. 23	00	28	35.0	61.70 N.	149.78 W.	57	...	...	...	...	G	JAN. 22	02 P.M. AST
JAN. 23	18	20	24.8	62.30 N.	151.19 W.	81	...	...	...	...	G	JAN. 23	08 A.M. AST
JAN. 23	20	56	02.1	59.45 N.	152.27 W.	127	...	...	...	...	G	JAN. 23	10 A.M. AST
JAN. 25	00	50	04.5	60.19 N.	153.08 W.	119	3.9	...	...	...	G	JAN. 24	02 P.M. AST
JAN. 25	01	32	15.1	63.12 N.	150.77 W.	112	...	...	...	...	G	JAN. 24	03 P.M. AST
JAN. 25	05	29	33.5	53.22 N.	165.72 W.	60	6.1	...	...	IV	G	JAN. 24	06 P.M. BST
JAN. 29	14	02	57.6	53.79 N.	164.85 W.	33	4.7	...	4.2M	...	G	JAN. 29	03 A.M. BST
JAN. 29	21	03	36.5	59.51 N.	153.36 W.	130	...	...	...	...	G	JAN. 29	11 A.M. AST
JAN. 30	10	24	18.0	57.55 N.	155.59 W.	33	...	...	3.7M	...	G	JAN. 30	00 A.M. AST
JAN. 31	04	24	37.1	51.42 N.	178.15 E.	68	4.5	...	...	...	G	JAN. 30	05 P.M. BST
JAN. 31	05	54	21.8	56.96 N.	153.30 W.	33	4.6	...	4.3M	...	G	JAN. 30	07 P.M. AST
JAN. 31	11	23	33.1	59.06 N.	153.84 W.	100	4.3	...	...	...	G	JAN. 31	01 A.M. AST
FEB. 1	05	21	40.5	51.59 N.	178.03 W.	29	4.6	...	...	...	G	JAN. 31	06 P.M. BST
FEB. 1	17	19	08.1	67.81 N.	161.98 W.	15	...	...	3.3M	...	G	FEB. 1	06 A.M. BST
FEB. 2	11	30	12.4	61.36 N.	147.59 W.	33	...	...	3.0M	...	G	FEB. 2	01 A.M. AST
FEB. 3	10	42	56.5	61.63 N.	149.69 W.	41	...	...	3.4M	III	G	FEB. 3	00 A.M. AST
FEB. 3	16	25	09.6	61.82 N.	148.97 W.	30	...	...	2.7M	II	G	FEB. 3	06 A.M. AST
FEB. 4	00	04	58.4	51.30 N.	179.30 E.	53	4.5	...	...	...	G	FEB. 3	01 P.M. BST
FEB. 4	11	15	59.1	59.08 N.	152.51 W.	72	4.2	...	...	...	G	FEB. 4	01 A.M. AST
FEB. 6	01	43	12.5	51.05 N.	179.35 E.	33	4.5	...	...	...	G	FEB. 5	02 P.M. BST
FEB. 6	11	50	48.4	59.91 N.	152.70 W.	127	...	...	...	...	G	FEB. 6	01 A.M. AST
FEB. 7	06	07	13.2	51.78 N.	176.87 W.	60	5.3	...	...	FELT	G	FEB. 6	07 P.M. BST
FEB. 7	09	28	57.5	51.14 N.	178.99 E.	43	5.1	4.4	5.6M	...	G	FEB. 6	10 P.M. BST
FEB. 7	23	38	32.1	61.20 N.	150.52 W.	50	...	...	3.3M	...	G	FEB. 7	01 P.M. AST
FEB. 9	17	54	15.0	59.02 N.	141.93 W.	15	4.2	...	3.8M	...	G	FEB. 9	07 A.M. AST
FEB. 13	12	21	19.5	62.98 N.	151.14 W.	144	...	...	...	...	G	FEB. 13	02 A.M. AST
FEB. 14	05	29	20.1	61.91 N.	148.66 W.	74	...	...	...	...	G	FEB. 13	07 P.M. AST
FEB. 15	06	07	39.1	59.83 N.	151.27 W.	102	...	...	...	...	G	FEB. 14	08 P.M. AST
FEB. 16	18	02	04.1	54.50 N.	156.60 W.	33	4.7	...	...	...	G	FEB. 16	08 A.M. AST
FEB. 17	22	31	15.2	51.63 N.	177.71 E.	65	4.7	...	...	...	G	FEB. 17	11 A.M. BST

Table 1.--*Summary of U. S. earthquakes for January-March 1982*--Continued

Date (1982)	Origin time (UTC) hr	min	sec	Lat (°)	Long (°)	Depth (km)	Magnitude mb	MS	ML, Mn or MD	Maximum intensity	Hypocenter source	Local time Date	Hour
ALASKA--Continued													
FEB. 18	20	37	10.3	63.31 N.	151.57 W.	17	...	...	4.1M	...	G	FEB. 18	10 A.M. AST
FEB. 19	02	29	31.0	62.56 N.	149.35 W.	89	3.7	...	...	...	G	FEB. 18	04 P.M. AST
FEB. 19	02	50	57.3	54.19 N.	164.65 W.	33	4.6	...	...	...	G	FEB. 18	03 P.M. BST
FEB. 19	18	57	50.8	59.80 N.	152.76 W.	114	3.9	...	...	...	G	FEB. 19	08 A.M. AST
FEB. 20	06	18	00.8	60.74 N.	146.93 W.	95	...	...	...	...	G	FEB. 19	08 P.M. AST
FEB. 21	15	17	14.8	67.11 N.	158.03 W.	33	...	...	3.5M	...	G	FEB. 21	05 A.M. AST
FEB. 25	17	59	49.5	60.47 N.	151.90 W.	103	...	...	...	...	G	FEB. 25	07 A.M. AST
FEB. 25	18	07	25.2	60.48 N.	151.88 W.	99	3.9	...	...	...	G	FEB. 25	08 A.M. AST
FEB. 25	21	54	44.7	61.85 N.	154.37 W.	25	...	...	3.6M	...	G	FEB. 25	11 A.M. AST
FEB. 26	07	16	58.0	60.15 N.	153.06 W.	125	4.9	...	...	IV	G	FEB. 25	09 P.M. AST
FEB. 27	12	18	07.1	62.34 N.	147.92 W.	71	5.0	...	...	III	G	FEB. 27	02 A.M. AST
FEB. 27	13	07	10.5	64.87 N.	147.29 W.	21	...	...	3.0M	III	G	FEB. 27	03 A.M. AST
FEB. 28	06	57	30.8	59.79 N.	152.97 W.	91	4.4	...	...	...	G	FEB. 27	08 P.M. AST
FEB. 28	08	55	43.6	51.56 N.	178.32 W.	55	5.2	...	...	...	G	FEB. 27	09 P.M. BST
FEB. 28	09	28	27.8	63.22 N.	150.54 W.	147	...	...	...	...	G	FEB. 27	11 P.M. AST
MAR. 3	08	04	42.8	58.29 N.	154.41 W.	33	4.0	...	3.1M	...	G	MAR. 2	10 P.M. AST
MAR. 5	14	55	27.6	60.12 N.	153.12 W.	159	4.2	...	...	...	G	MAR. 5	04 A.M. AST
MAR. 6	00	11	15.4	60.36 N.	151.03 W.	32	...	...	3.7M	...	G	MAR. 5	02 P.M. AST
MAR. 6	08	15	45.7	60.51 N.	152.00 W.	88	...	...	...	...	G	MAR. 5	10 P.M. AST
MAR. 7	03	08	03.7	62.86 N.	150.89 W.	122	...	...	...	...	G	MAR. 6	05 P.M. AST
MAR. 7	07	20	36.8	66.39 N.	157.63 W.	33	3.7	...	3.8M	...	G	MAR. 6	09 P.M. AST
MAR. 7	15	28	55.4	62.25 N.	151.26 W.	114	...	...	...	...	G	MAR. 7	05 A.M. AST
MAR. 8	13	34	29.1	61.01 N.	152.58 W.	153	...	...	...	...	G	MAR. 8	03 A.M. AST
MAR. 9	16	25	18.6	60.15 N.	152.94 W.	127	4.4	...	...	II	G	MAR. 9	06 A.M. AST
MAR. 10	10	07	34.5	61.39 N.	150.39 W.	25	...	...	3.1M	...	G	MAR. 10	00 A.M. AST
MAR. 11	03	31	57.7	63.11 N.	148.51 W.	103	...	...	...	...	G	MAR. 10	05 P.M. AST
MAR. 11	03	34	07.6	60.87 N.	147.00 W.	33	...	...	3.1M	...	G	MAR. 10	05 P.M. AST
MAR. 13	00	54	02.4	63.52 N.	151.16 W.	33	...	...	3.3M	...	G	MAR. 12	02 P.M. AST
MAR. 15	14	53	15.4	52.82 N.	162.19 W.	33	5.0	4.3	4.6M	...	G	MAR. 15	03 A.M. BST
MAR. 17	13	17	59.0	64.15 N.	150.47 W.	33	...	...	3.2M	...	G	MAR. 17	03 A.M. AST
MAR. 18	06	13	53.4	51.53 N.	178.66 E.	43	4.5	...	4.4M	...	G	MAR. 17	07 P.M. BST
MAR. 18	14	19	23.8	60.07 N.	152.76 W.	127	...	...	...	...	G	MAR. 18	04 A.M. AST
MAR. 18	18	05	11.8	64.98 N.	149.18 W.	16	...	...	3.2M	...	G	MAR. 18	08 A.M. AST
MAR. 19	20	53	27.0	52.46 N.	171.22 W.	33	4.7	...	...	...	G	MAR. 19	09 A.M. BST
MAR. 20	08	09	04.3	56.66 N.	152.21 W.	33	...	...	3.0M	...	G	MAR. 19	10 P.M. AST
MAR. 20	18	21	45.2	63.24 N.	150.70 W.	150	...	...	...	...	G	MAR. 20	08 A.M. AST
MAR. 21	08	43	01.4	61.97 N.	151.32 W.	83	4.4	...	...	...	G	MAR. 20	10 P.M. AST
MAR. 22	06	42	22.4	59.87 N.	150.54 W.	88	...	...	...	...	G	MAR. 21	08 P.M. AST
MAR. 23	09	00	19.3	63.14 N.	150.86 W.	140	...	...	...	...	G	MAR. 22	11 P.M. AST
MAR. 23	18	30	41.3	49.83 N.	178.88 W.	33	4.4	...	...	...	G	MAR. 23	07 A.M. BST
MAR. 25	04	50	38.7	64.12 N.	150.06 W.	14	...	...	3.6M	...	G	MAR. 24	06 P.M. AST
MAR. 30	03	44	23.0	64.96 N.	145.21 W.	10	...	...	4.1M	IV	G	MAR. 29	05 P.M. AST
MAR. 31	11	24	15.8	59.30 N.	152.22 W.	82	...	...	...	...	G	MAR. 31	01 A.M. AST
ARKANSAS													
JAN. 18	01	23	07.9	35.19 N.	92.20 W.	3	...	...	3.0T	FELT	K	JAN. 17	07 P.M. CST
JAN. 18	02	32	13.1	35.19 N.	92.23 W.	3	...	...	3.1T	IV	K	JAN. 17	08 P.M. CST
JAN. 19	04	39	49.2	35.21 N.	92.27 W.	1	...	...	3.5T	IV	K	JAN. 18	10 P.M. CST
JAN. 20	14	01	30.6	35.22 N.	92.20 W.	0	...	...	3.5T	IV	K	JAN. 20	08 A.M. CST
JAN. 21	00	33	54.8	35.17 N.	92.21 W.	4	4.5	...	4.7T	V	K	JAN. 20	06 P.M. CST
JAN. 21	01	13	39.1	35.13 N.	92.24 W.	9	...	...	3.1T	FELT	K	JAN. 20	07 P.M. CST
JAN. 21	15	45	38.6	35.19 N.	92.20 W.	4	...	...	4.1T	III	K	JAN. 21	09 A.M. CST
JAN. 22	23	54	22.4	35.25 N.	92.22 W.	1	...	...	3.9T	FELT	K	JAN. 22	05 P.M. CST
JAN. 24	03	22	44.7	35.20 N.	92.22 W.	5	...	...	4.0T	V	K	JAN. 23	09 P.M. CST
JAN. 27	23	29	42.5	35.21 N.	92.24 W.	2	...	...	3.2T	FELT	K	JAN. 27	05 P.M. CST
JAN. 28	21	55	09.1	35.20 N.	92.22 W.	3	...	...	2.3T	FELT	K	JAN. 28	03 P.M. CST
FEB. 1	05	55	08.1	35.18 N.	92.22 W.	5	...	...	3.3T	IV	K	JAN. 31	11 P.M. CST
FEB. 1	07	25	02.9	35.20 N.	92.21 W.	4	...	...	3.4T	FELT	K	FEB. 1	01 A.M. CST
FEB. 2	09	26	46.3	35.92 N.	90.06 W.	10	...	...	3.5T	IV	S	FEB. 2	03 A.M. CST
FEB. 12	05	32	12.6	35.18 N.	92.22 W.	2	...	...	3.0T	FELT	K	FEB. 11	11 P.M. CST
FEB. 24	19	27	14.6	35.19 N.	92.23 W.	2	...	...	4.0T	V	K	FEB. 24	01 P.M. CST
MAR. 1	00	12	10.3	35.19 N.	92.22 W.	3	...	...	3.9T	V	K	FEB. 28	06 P.M. CST

Table 1.--*Summary of U. S. earthquakes for January-March 1982*--Continued

Date (1982)	Origin time (UTC) hr	min	sec	Lat (°)	Long (°)	Depth (km)	Magnitude mb	MS	ML, Mn or MD	Maximum intensity	Hypocenter source	Local time Date	Hour
CALIFORNIA													
JAN. 3	00	37	32.1	33.90 N.	117.97 W.	13	...	...	2.6P	FELT	P	JAN. 2	04 P.M. PST
JAN. 5	03	26	57.2	39.88 N.	120.68 W.	5	...	...	3.9B	IV	B	JAN. 4	07 P.M. PST
JAN. 7	07	19	00.8	37.54 N.	118.93 W.	5	...	...	3.4B	...	G	JAN. 6	11 P.M. PST
JAN. 15	12	25	54.9	34.00 N.	119.13 W.	3	...	...	3.0P	...	P	JAN. 15	04 A.M. PST
JAN. 19	05	35	38.0	33.92 N.	118.48 W.	5	...	...	2.5P	FELT	P	JAN. 18	09 P.M. PST
JAN. 19	07	13	09.3	37.83 N.	122.23 W.	10	...	...	3.3B	V	B	JAN. 18	11 P.M. PST
JAN. 23	11	04	29.6	37.47 N.	119.40 W.	6	...	...	3.0P	...	P	JAN. 23	03 A.M. PST
JAN. 24	15	44	07.6	37.45 N.	117.82 W.	5	...	...	4.3B	III	B	JAN. 24	07 A.M. PST
JAN. 25	23	47	03.5	33.23 N.	116.10 W.	10	...	...	3.1P	...	P	JAN. 25	03 P.M. PST
JAN. 27	23	42	01.7	37.00 N.	121.71 W.	1	...	...	3.0B	II	B	JAN. 27	03 P.M. PST
FEB. 2	05	40	56.6	33.45 N.	116.45 W.	7	...	...	3.2P	...	P	FEB. 1	09 P.M. PST
FEB. 2	18	00	04.9	33.75 N.	119.23 W.	10	...	...	3.4P	FELT	P	FEB. 2	10 A.M. PST
FEB. 4	00	07	21.2	32.98 N.	115.77 W.	5	...	...	3.2P	...	P	FEB. 3	04 P.M. PST
FEB. 7	08	10	20.8	35.37 N.	118.48 W.	11	...	...	3.8P	IV	P	FEB. 7	00 A.M. PST
FEB. 7	12	27	15.4	38.77 N.	122.71 W.	4	...	...	2.8B	...	B	FEB. 7	04 A.M. PST
FEB. 8	23	53	28.6	34.25 N.	118.42 W.	7	...	...	2.6P	FELT	P	FEB. 8	03 P.M. PST
FEB. 9	15	24	05.8	40.51 N.	124.32 W.	27	...	...	3.6B	...	G	FEB. 9	07 A.M. PST
FEB. 10	14	35	13.3	35.03 N.	119.12 W.	12	...	...	3.0P	...	P	FEB. 10	06 A.M. PST
FEB. 11	08	16	33.2	36.81 N.	121.29 W.	5	...	...	3.2B	...	B	FEB. 11	00 A.M. PST
FEB. 14	00	33	00.5	37.17 N.	117.82 W.	6	...	...	3.2P	...	P	FEB. 13	04 P.M. PST
FEB. 16	01	42	17.1	36.82 N.	121.60 W.	5	...	...	3.0B	II	B	FEB. 15	05 P.M. PST
FEB. 16	04	18	59.3	37.55 N.	118.87 W.	5	...	...	3.3B	...	B	FEB. 15	08 P.M. PST
FEB. 16	19	10	51.1	34.12 N.	117.33 W.	19	...	...	3.1P	II	P	FEB. 16	11 A.M. PST
FEB. 17	16	27	40.7	37.63 N.	118.92 W.	7	...	...	3.2B	...	B	FEB. 17	08 A.M. PST
FEB. 18	05	06	06.8	35.80 N.	117.73 W.	6	...	...	3.4P	FELT	P	FEB. 17	09 P.M. PST
FEB. 19	01	24	58.3	35.77 N.	117.73 W.	6	...	...	3.2P	...	P	FEB. 18	05 P.M. PST
FEB. 19	04	53	15.7	39.94 N.	120.72 W.	5	...	...	4.0B	V	B	FEB. 18	08 P.M. PST
FEB. 20	17	52	06.7	35.78 N.	117.72 W.	6	...	...	3.6P	III	P	FEB. 20	09 A.M. PST
FEB. 21	15	56	13.9	33.43 N.	118.92 W.	10	...	...	3.2P	...	P	FEB. 21	07 A.M. PST
FEB. 22	09	03	03.5	34.12 N.	116.38 W.	4	...	...	3.0P	FELT	P	FEB. 22	01 A.M. PST
FEB. 22	14	06	08.2	34.12 N.	116.38 W.	5	...	...	3.2P	FELT	P	FEB. 22	06 A.M. PST
FEB. 24	16	46	50.6	36.20 N.	117.90 W.	3	...	...	3.0P	...	P	FEB. 24	08 A.M. PST
FEB. 25	05	19	42.2	34.12 N.	116.40 W.	4	...	...	3.8P	V	P	FEB. 24	09 P.M. PST
FEB. 26	13	30	15.8	33.45 N.	118.93 W.	6	...	...	3.5P	...	P	FEB. 26	05 A.M. PST
FEB. 28	20	17	51.6	38.78 N.	122.77 W.	4	...	...	3.3B	FELT	B	FEB. 28	12 P.M. PST
FEB. 28	23	18	20.0	34.47 N.	119.50 W.	3	...	...	3.2P	FELT	P	FEB. 28	03 P.M. PST
MAR. 1	03	03	33.0	35.78 N.	117.73 W.	9	...	...	3.0P	...	P	FEB. 28	07 P.M. PST
MAR. 1	03	10	22.3	35.78 N.	117.75 W.	4	4.1	...	4.1P	V	P	FEB. 28	07 P.M. PST
MAR. 1	06	09	23.6	35.77 N.	117.75 W.	6	...	...	3.4P	...	P	FEB. 28	10 P.M. PST
MAR. 1	13	43	36.8	35.77 N.	117.73 W.	5	...	...	3.1P	...	P	MAR. 1	05 A.M. PST
MAR. 4	04	36	24.0	33.18 N.	116.12 W.	10	...	...	3.0P	...	P	MAR. 3	08 P.M. PST
MAR. 4	20	58	35.4	40.13 N.	121.19 W.	5	...	...	3.2B	...	G	MAR. 4	12 P.M. PST
MAR. 5	15	22	40.4	33.03 N.	116.57 W.	15	...	...	3.0P	...	P	MAR. 5	07 A.M. PST
MAR. 6	13	11	14.0	37.03 N.	121.43 W.	10	...	...	3.0B	FELT	B	MAR. 6	05 A.M. PST
MAR. 7	19	13	38.2	35.77 N.	117.73 W.	4	...	...	3.0P	FELT	P	MAR. 7	11 A.M. PST
MAR. 7	20	50	12.8	35.77 N.	117.75 W.	2	4.3	...	4.3P	V	P	MAR. 7	12 P.M. PST
MAR. 7	20	51	00.0	35.75 N.	117.77 W.	2	4.7	...	4.5P	V	P	MAR. 7	12 P.M. PST
MAR. 7	22	20	34.2	35.77 N.	117.75 W.	2	...	...	3.1P	FELT	P	MAR. 7	02 P.M. PST
MAR. 8	05	10	22.2	35.78 N.	117.75 W.	1	...	...	3.1P	FELT	P	MAR. 7	09 P.M. PST
MAR. 8	08	45	24.8	35.77 N.	117.77 W.	3	...	...	3.0P	FELT	P	MAR. 8	00 A.M. PST
MAR. 8	12	15	05.1	35.78 N.	117.75 W.	4	...	...	3.4P	FELT	P	MAR. 8	04 A.M. PST
MAR. 8	14	42	46.0	35.75 N.	117.73 W.	4	...	...	3.9P	IV	P	MAR. 8	06 A.M. PST
MAR. 11	12	29	24.0	32.90 N.	115.48 W.	10	...	...	2.3P	FELT	P	MAR. 11	04 A.M. PST
MAR. 12	12	45	33.3	33.43 N.	118.92 W.	6	...	...	3.4P	...	P	MAR. 12	04 A.M. PST
MAR. 12	23	07	44.9	37.11 N.	121.53 W.	3	...	...	2.8B	FELT	B	MAR. 12	03 P.M. PST
MAR. 14	09	58	52.3	35.19 N.	120.62 W.	11	...	...	3.4B	V	B	MAR. 14	01 A.M. PST
MAR. 16	07	08	13.1	36.60 N.	117.07 W.	7	...	...	3.5P	FELT	P	MAR. 15	11 P.M. PST
MAR. 16	08	47	00.8	36.60 N.	117.03 W.	6	...	...	3.7P	FELT	P	MAR. 16	00 A.M. PST
MAR. 16	11	52	46.1	39.66 N.	123.00 W.	5	...	...	3.2B	IV	G	MAR. 16	03 A.M. PST
MAR. 16	12	06	10.1	39.65 N.	123.01 W.	5	...	...	2.8B	III	G	MAR. 16	04 A.M. PST
MAR. 16	22	55	05.6	32.78 N.	115.45 W.	11	...	...	3.1P	FELT	P	MAR. 16	02 P.M. PST
MAR. 17	09	32	02.4	40.28 N.	123.99 W.	5	...	...	3.6B	IV	B	MAR. 17	01 A.M. PST
MAR. 18	12	11	28.2	37.59 N.	118.92 W.	5	...	...	3.2B	...	G	MAR. 18	04 A.M. PST
MAR. 20	18	39	44.1	38.82 N.	122.83 W.	5	...	...	2.8B	FELT	B	MAR. 20	10 A.M. PST
MAR. 22	08	53	28.6	33.05 N.	116.22 W.	5	4.4	...	4.5P	IV	P	MAR. 22	00 A.M. PST

Table 1.--*Summary of U. S. earthquakes for January-March 1982*--Continued

Date (1982)	Origin time (UTC) hr	min	sec	Lat (°)	Long (°)	Depth (km)	Magnitude mb	MS	ML, Mn or MD	Maximum intensity	Hypocenter source	Local time Date	Hour
CALIFORNIA--Continued													
MAR. 22	09	02	02.4	33.07 N.	116.22 W.	9	...	...	3.1P	...	P	MAR. 22	01 A.M. PST
MAR. 22	12	10	02.9	39.88 N.	122.54 W.	1	...	...	3.3B	...	B	MAR. 22	04 A.M. PST
MAR. 22	23	26	23.9	33.07 N.	116.22 W.	5	...	...	3.2P	...	P	MAR. 22	03 P.M. PST
MAR. 24	04	20	31.3	38.48 N.	122.65 W.	5	...	...	3.0B	IV	B	MAR. 23	08 P.M. PST
MAR. 25	02	27	32.5	38.80 N.	122.80 W.	2	...	...	3.4B	IV	B	MAR. 24	06 P.M. PST
MAR. 26	13	24	00.2	37.80 N.	122.21 W.	4	...	...	3.1B	IV	B	MAR. 26	05 A.M. PST
MAR. 28	13	50	30.4	37.83 N.	122.14 W.	5	...	...	2.8B	III	G	MAR. 28	05 A.M. PST
MAR. 29	20	08	27.0	32.98 N.	115.90 W.	5	...	...	3.7P	...	P	MAR. 29	12 P.M. PST
MAR. 29	23	29	41.6	34.12 N.	116.38 W.	4	...	...	3.4P	III	P	MAR. 29	03 P.M. PST
MAR. 30	01	24	46.1	37.85 N.	121.79 W.	16	...	...	3.1B	...	B	MAR. 29	05 P.M. PST
MAR. 31	20	02	23.9	35.72 N.	118.40 W.	9	...	...	2.9P	FELT	P	MAR. 31	12 P.M. PST
CALIFORNIA--OFF THE COAST													
JAN. 8	20	41	10.5	40.30 N.	124.71 W.	5	...	...	3.9B	III	B	JAN. 8	12 P.M. PST
JAN. 8	22	23	01.5	40.26 N.	124.63 W.	4	...	...	3.7B	...	B	JAN. 8	02 P.M. PST
JAN. 13	12	26	25.8	40.42 N.	125.10 W.	10	4.9	5.1	4.9B	V	G	JAN. 13	04 A.M. PST
JAN. 28	01	44	13.4	32.55 N.	119.22 W.	16	...	...	3.8P	...	P	JAN. 27	05 P.M. PST
FEB. 6	12	01	58.5	41.13 N.	125.36 W.	5	5.1	5.1	5.3B	IV	B	FEB. 6	04 A.M. PST
FEB. 24	05	22	38.4	40.84 N.	125.10 W.	13	4.4	...	4.4B	IV	B	FEB. 23	09 P.M. PST
MAR. 4	20	17	53.9	40.71 N.	127.03 W.	5	4.2	...	3.9B	...	B	MAR. 4	12 P.M. PST
MAR. 13	03	01	42.7	41.67 N.	126.92 W.	10	3.8	...	...	...	G	MAR. 12	07 P.M. PST
COLORADO													
MAR. 11	23	55	28.8	39.86 N.	104.85 W.	5	...	...	2.8G	III	G	MAR. 11	04 P.M. MST
GEORGIA													
FEB. 23	09	19	07.9	34.61 N.	85.46 W.	0	...	...	2.5F	...	F	FEB. 23	04 A.M. EST
HAWAII													
JAN. 1	03	35	25.1	19.38 N.	155.28 W.	28	...	...	3.0H	...	H	DEC. 31	05 P.M. HST
JAN. 9	14	32	07.3	19.17 N.	155.54 W.	34	...	...	3.1H	II	H	JAN. 9	04 A.M. HST
JAN. 9	23	24	59.5	20.25 N.	155.65 W.	43	...	...	3.6H	...	H	JAN. 9	01 P.M. HST
JAN. 15	10	07	52.6	20.08 N.	155.84 W.	28	...	...	3.6H	IV	H	JAN. 15	00 A.M. HST
JAN. 15	11	04	42.1	19.31 N.	155.23 W.	10	...	...	3.7H	III	H	JAN. 15	01 A.M. HST
JAN. 16	19	57	09.9	19.36 N.	155.25 W.	10	...	...	3.1H	...	H	JAN. 16	09 A.M. HST
JAN. 21	21	52	41.2	19.23 N.	155.59 W.	10	5.4	4.9	5.4H	VI	H	JAN. 21	11 A.M. HST
JAN. 21	22	29	13.9	19.22 N.	155.55 W.	14	5.6	4.8	5.4H	VI	H	JAN. 21	12 P.M. HST
JAN. 21	22	42	05.9	19.17 N.	155.53 W.	8	...	...	3.0H	III	H	JAN. 21	12 P.M. HST
JAN. 21	22	45	12.7	19.19 N.	155.56 W.	7	...	...	3.0H	II	H	JAN. 21	12 P.M. HST
JAN. 21	22	48	09.6	19.23 N.	155.54 W.	12	...	...	3.4H	III	H	JAN. 21	12 P.M. HST
JAN. 21	22	51	56.4	19.16 N.	155.53 W.	12	...	...	3.0H	II	H	JAN. 21	12 P.M. HST
JAN. 21	23	01	09.7	19.20 N.	155.54 W.	10	...	...	4.1H	IV	H	JAN. 21	01 P.M. HST
JAN. 21	23	35	10.9	19.18 N.	155.52 W.	6	...	...	3.1H	III	H	JAN. 21	01 P.M. HST
JAN. 21	23	37	17.4	19.23 N.	155.55 W.	12	...	...	4.2H	V	H	JAN. 21	01 P.M. HST
JAN. 22	01	19	41.0	19.22 N.	155.53 W.	8	...	...	3.1H	III	H	JAN. 21	03 P.M. HST
JAN. 22	01	35	12.5	19.20 N.	155.52 W.	9	...	...	3.2H	III	H	JAN. 21	03 P.M. HST
JAN. 22	02	23	36.0	19.17 N.	155.53 W.	12	...	...	3.1H	III	H	JAN. 21	04 P.M. HST
JAN. 22	12	25	05.2	19.20 N.	155.60 W.	10	...	...	3.6H	III	H	JAN. 22	02 A.M. HST
JAN. 23	03	45	08.1	19.23 N.	155.57 W.	10	...	...	4.3H	IV	H	JAN. 22	05 P.M. HST
JAN. 24	00	06	45.7	19.16 N.	155.57 W.	9	...	...	3.0H	...	H	JAN. 23	02 P.M. HST
JAN. 24	08	40	44.1	19.39 N.	155.28 W.	3	...	...	3.1H	...	H	JAN. 23	10 P.M. HST
JAN. 26	03	03	51.1	19.20 N.	155.59 W.	9	...	...	3.4H	III	H	JAN. 25	05 P.M. HST
JAN. 26	23	45	17.1	19.21 N.	155.59 W.	9	...	...	3.6H	...	H	JAN. 26	01 P.M. HST
JAN. 27	14	00	14.8	19.43 N.	155.62 W.	3	...	...	3.3H	...	H	JAN. 27	04 A.M. HST
JAN. 29	13	43	02.3	19.28 N.	155.55 W.	5	...	...	3.0H	...	H	JAN. 29	03 A.M. HST
JAN. 30	03	13	25.9	19.92 N.	155.60 W.	13	...	...	3.6H	IV	H	JAN. 29	05 P.M. HST
JAN. 30	03	16	49.4	19.92 N.	155.60 W.	11	...	...	3.0H	II	H	JAN. 29	05 P.M. HST
JAN. 31	05	40	39.3	19.36 N.	155.26 W.	27	...	...	3.0H	...	H	JAN. 30	07 P.M. HST
FEB. 2	14	58	14.3	19.18 N.	155.59 W.	8	...	...	3.0H	III	H	FEB. 2	04 A.M. HST
FEB. 2	16	29	49.9	19.22 N.	155.58 W.	11	...	...	4.3H	IV	H	FEB. 2	06 A.M. HST

Date (1982)	Origin time (UTC) hr	min	sec	Lat (°)	Long (°)	Depth (km)	Magnitude mb	MS	ML, Mn or MD	Maximum intensity	Hypocenter source	Local time Date	Hour
HAWAII--Continued													
FEB. 6	13	23	01.3	19.46 N.	155.24 W.	32	...	...	3.1H	...	H	FEB. 6	03 A.M. HST
FEB. 8	15	29	42.8	19.24 N.	155.55 W.	9	...	...	3.2H	...	H	FEB. 8	05 A.M. HST
FEB. 9	10	43	18.7	19.18 N.	155.60 W.	9	...	...	3.0H	...	H	FEB. 9	00 A.M. HST
FEB. 9	15	42	22.9	19.33 N.	155.12 W.	9	...	...	3.8H	III	H	FEB. 9	05 A.M. HST
FEB. 13	02	06	30.9	19.36 N.	155.05 W.	9	...	...	3.4H	II	H	FEB. 12	04 P.M. HST
FEB. 15	02	24	28.4	19.36 N.	155.05 W.	8	...	...	3.3H	...	H	FEB. 14	04 P.M. HST
FEB. 16	03	36	28.2	19.36 N.	155.33 W.	32	...	...	4.2H	IV	H	FEB. 15	05 P.M. HST
FEB. 18	18	04	09.1	19.17 N.	155.58 W.	10	...	...	3.6H	...	H	FEB. 18	08 A.M. HST
FEB. 21	12	56	48.2	19.20 N.	155.59 W.	3	...	...	3.1H	...	H	FEB. 21	02 A.M. HST
FEB. 22	16	27	48.6	19.43 N.	155.63 W.	3	...	...	3.2H	...	H	FEB. 22	06 A.M. HST
MAR. 7	22	31	36.1	19.37 N.	155.05 W.	9	...	...	3.2H	II	H	MAR. 7	12 P.M. HST
MAR. 11	11	30	01.6	19.31 N.	155.23 W.	9	...	...	3.0H	...	H	MAR. 11	01 A.M. HST
MAR. 16	07	41	35.6	19.32 N.	155.22 W.	11	...	...	3.5H	III	H	MAR. 15	09 P.M. HST
MAR. 20	23	10	22.3	19.34 N.	155.28 W.	36	...	...	3.9H	III	H	MAR. 20	01 P.M. HST
MAR. 26	11	04	34.0	19.92 N.	155.60 W.	11	...	...	3.6H	IV	H	MAR. 26	01 A.M. HST
IDAHO													
JAN. 28	08	00	40.5	42.42 N.	111.52 W.	5	...	...	3.2G	III	G	JAN. 28	01 A.M. MST
MAINE													
MAR. 3	02	45	12.6	44.22 N.	68.67 W.	0	...	...	2.1J	...	J	MAR. 2	09 P.M. EST
MAR. 26	14	57	39.4	44.52 N.	69.51 W.	0	...	...	2.3J	FELT	J	MAR. 26	09 A.M. EST
MAR. 28	06	28	37.8	44.63 N.	69.93 W.	0	...	...	2.3J	...	J	MAR. 28	01 A.M. EST
MASSACHUSETTS													
JAN. 27	18	50	05.1	41.87 N.	70.97 W.	2	...	...	3.0J	IV	J	JAN. 27	01 P.M. EST
MISSOURI													
FEB. 11	02	54	23.9	36.64 N.	89.56 W.	4	...	...	2.8K	FELT	K	FEB. 10	08 P.M. CST
MONTANA													
FEB. 20	09	08	49.6	46.56 N.	112.09 W.	5	...	...	2.6G	FELT	G	FEB. 20	02 A.M. MST
FEB. 22	10	43	52.5	48.10 N.	113.96 W.	5	...	...	3.1G	IV	G	FEB. 22	03 A.M. MST
MAR. 12	07	39	13.2	46.92 N.	112.86 W.	5	...	...	3.6G	...	G	MAR. 12	00 A.M. MST
NEVADA													
JAN. 28	16	00	00.1	37.09 N.	116.05 W.	0	5.9	4.5	5.6B	...	E	JAN. 28	08 A.M. PST
JAN. 28	22	48	44.6	38.62 N.	118.21 W.	5	...	...	3.8B	...	G	JAN. 28	02 P.M. PST
JAN. 28	22	50	43.6	38.62 N.	118.09 W.	5	...	...	4.3B	V	G	JAN. 28	02 P.M. PST
JAN. 28	22	51	02.1	38.54 N.	118.07 W.	5	...	...	4.5B	V	G	JAN. 28	02 P.M. PST
JAN. 28	22	59	03.6	38.61 N.	118.18 W.	5	...	...	3.7B	FELT	G	JAN. 28	02 P.M. PST
FEB. 12	14	55	00.1	37.22 N.	116.46 W.	0	5.4	...	5.4B	...	E	FEB. 12	06 A.M. PST
FEB. 12	15	25	00.1	37.35 N.	116.32 W.	0	5.6	...	5.5B	...	E	FEB. 12	07 A.M. PST
NEW HAMPSHIRE													
JAN. 19	00	14	42.0	43.50 N.	71.60 W.	8	4.5	...	4.5V	VI	J	JAN. 18	07 P.M. EST
JAN. 27	16	43	14.5	43.53 N.	71.61 W.	2	...	...	2.8J	V	J	JAN. 27	11 A.M. EST
NEW MEXICO													
MAR. 16	11	03	02.7	35.36 N.	103.27 W.	5	...	...	3.1T	III	G	MAR. 16	04 A.M. MST
NORTH DAKOTA													
MAR. 9	13	10	50.1	48.51 N.	104.03 W.	18	...	...	3.3Q	III	Q	MAR. 9	06 A.M. MST

Table 1.--*Summary of U. S. earthquakes for January-March 1982*--Continued

Date (1982)	Origin time (UTC) hr	min	sec	Lat (°)	Long (°)	Depth (km)	Magnitude mb	MS	ML, Mn or MD	Maximum intensity	Hypocenter source	Local time Date	Hour
OREGON--OFF THE COAST													
FEB. 17	05	37	57.4	43.37 N.	126.51 W.	10	4.1	...	...	...	G	FEB. 16	09 P.M. PST
MAR. 23	11	32	10.6	44.26 N.	129.29 W.	10	4.3	4.2	...	...	G	MAR. 23	03 A.M. PST
MAR. 23	11	47	21.5	44.26 N.	129.54 W.	10	4.1	...	...	...	G	MAR. 23	03 A.M. PST
PENNSYLVANIA													
FEB. 3	04	28	20.6	40.21 N.	79.05 W.	2	...	...	2.6Z	III	Z	FEB. 2	11 P.M. EST
SOUTH CAROLINA													
MAR. 1	03	33	13.6	32.94 N.	80.14 W.	7	...	...	3.0G	IV	G	FEB. 28	10 P.M. EST
MAR. 2	16	48	08.0	34.32 N.	81.38 W.	5	...	...	2.5G	III	G	MAR. 2	11 A.M. EST
TENNESSEE													
JAN. 2	02	00	25.8	35.19 N.	86.44 W.	7	...	...	2.9G	V	K	JAN. 1	08 P.M. CST
JAN. 30	12	39	13.3	35.79 N.	84.00 W.	14	...	...	2.6K	...	K	JAN. 30	07 A.M. EST
TEXAS													
JAN. 4	16	56	08.1	31.18 N.	102.49 W.	5	...	...	3.9T	III	G	JAN. 4	10 A.M. CST
MAR. 28	23	24	32.9	29.85 N.	98.46 W.	5	...	...	3.0G	...	G	MAR. 28	05 P.M. CST
UTAH													
JAN. 7	16	21	46.6	37.01 N.	112.88 W.	9	...	...	2.9G	FELT	U	JAN. 7	09 A.M. MST
FEB. 12	10	44	13.7	37.40 N.	112.54 W.	7	...	...	3.6U	IV	U	FEB. 12	03 A.M. MST
MAR. 5	05	50	23.6	37.32 N.	112.60 W.	7	...	...	3.6G	IV	U	MAR. 4	10 P.M. MST
VERMONT													
MAR. 12	22	04	18.4	43.51 N.	71.64 W.	0	...	...	2.4J	...	J	MAR. 12	05 P.M. EST
WASHINGTON													
JAN. 21	16	05	45.3	48.47 N.	121.70 W.	0	...	...	2.5G	FELT	W	JAN. 21	08 A.M. PST
JAN. 21	17	12	57.5	48.48 N.	121.71 W.	2	...	...	2.0G	FELT	W	JAN. 21	09 A.M. PST
JAN. 23	15	31	37.5	46.55 N.	121.41 W.	10	...	...	3.5G	...	W	JAN. 23	07 A.M. PST
JAN. 30	02	37	54.3	48.78 N.	122.70 W.	18	...	...	2.9G	FELT	W	JAN. 29	06 P.M. PST
MAR. 1	17	40	04.5	46.35 N.	122.25 W.	12	4.1	...	4.1G	V	W	MAR. 1	09 A.M. PST
WASHINGTON--OFF THE COAST													
FEB. 5	03	53	09.7	47.78 N.	128.35 W.	10	4.2	...	...	...	G	FEB. 4	07 P.M. PST
WYOMING													
MAR. 1	10	43	06.2	42.99 N.	111.04 W.	5	...	...	3.6G	V	G	MAR. 1	03 A.M. MST

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*

[Sources of the hypocenters, magnitudes, and macroseismic data: (B) University of California, Berkeley; (D) University of Montana, Missoula; (E) U.S. Department of Energy, Las Vegas, Nev.; (G) U.S. Geological Survey, National Earthquake Information Service, Golden, Colo.; (H) U.S. Geological Survey, Hawaiian Volcano Observatory; (J) Weston Observatory, Mass.; (K) Tennessee Earthquake Information Center, Memphis; (M) National Oceanic and Atmospheric Administration, Alaska Tsunami Warning Center, Palmer; (O) Earth Physics Branch, Seismological Service of Canada, Ottawa; (P) California Institute of Technology, Pasadena; (Q) Pacific Geoscience Centre, Sydney, British Columbia, Canada; (S) St. Louis University, St. Louis, Mo.; (T) Oklahoma Geological Survey, Leonard; (U) University of Utah, Salt Lake City; (V) Virginia Polytechnic Institute and State University, Blacksburg; (W) University of Washington, Seattle; (Z) Pennsylvania State University, University Park. Dates and origin times are listed in Universal Coordinated Time (UTC) giving the hour, minute, and second. Epicenters are shown in decimal degrees. Only earthquakes with intensity data and explosions are listed]

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

ALASKA

6 January (G) Andreanof Islands, Aleutian Islands
Origin time: 12 23 40.0
Epicenter: 51.50 N., 176.59 W.
Depth: 53 km
Magnitude: 5.0mb(G), 4.3ML(M)
Intensity II: Adak (M).

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

ALASKA--Continued

12 January (G) Southern Alaska
Origin time: 15 22 55.2
Epicenter: 59.07 N., 152.26 W.
Depth: 68 km
Magnitude: 4.8mb(G)
Intensity IV: Homer

25 January (G) Fox Islands, Aleutian Islands
Origin time: 05 29 33.5
Epicenter: 53.22 N., 165.72 W.
Depth: 60 km
Magnitude: 6.1mb(G), 6.5mb(B), 5.8MS(B), 6.4mb(P).
Intensity IV: Cold Bay.
Felt: Dutch Harbor and Unalaska (M).

3 February (G) Southern Alaska
Origin time: 10 42 56.5
Epicenter: 61.63 N., 149.69 W.
Depth: 41 km
Magnitude: 3.4ML(M)
Intensity III: Palmer (M).
Intensity II: Thunderbird Falls (M).

3 February (G) Southern Alaska
Origin time: 16 25 09.6
Epicenter: 61.82 N., 148.97 W.
Depth: 30 km
Magnitude: 2.7ML(M)
Intensity II: Palmer (M).

7 February (G) Andreanof Islands, Aleutian Islands
Origin time: 06 07 13.2
Epicenter: 51.78 N., 176.87 W.
Depth: 60 km
Magnitude: 5.3mb(G)

Felt on Adak (M).

26 February (G) Southern Alaska
Origin time: 07 16 58.0
Epicenter: 60.15 N., 153.06 W.
Depth: 125 km
Magnitude: 4.9mb(G)
Intensity IV: Clam Gulch, English Bay, Homer (M), Kenai, Nanilchik, Tyonek.
Intensity III: Anchorage (M), Anchor Point, Cooper Landing, Palmer (M), Seldovia, Soldotna.
Intensity II: Seward.

27 February (G) Southern Alaska
Origin time: 12 18 07.1
Epicenter: 62.34 N., 147.92 W.
Depth: 71 km
Magnitude: 5.0mb(G)
Intensity III: Fairbanks.
Felt: Anchorage (M), Palmer (M).

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

ALASKA--Continued

27 February (G) Central Alaska
Origin time: 13 07 10.5
Epicenter: 64.87 N., 147.29 W.
Depth: 21 km
Magnitude: 3.0ML(M)
Intensity III: Fairbanks.

9 March (G) Southern Alaska
Origin time: 16 25 18.6
Epicenter: 60.15 N., 152.94 W.
Depth: 127 km
Magnitude: 4.4mb(G)
Intensity II: Homer (M).

30 March (G) Central Alaska
Origin time: 03 44 23.0
Epicenter: 64.96 N., 145.21 W.
Depth: 10 km
Magnitude: 4.1ML(M)
Intensity IV: Fairbanks.
Felt: Chena Hot Springs (M), Delta (M).

ARIZONA

7 January (U) Southern Utah
Origin time: 16 21 46.6

See Utah listing.

5 March (U) Southern Utah
Origin time: 05 50 23.6

See Utah listing.

ARKANSAS

18 January (K) Central Arkansas
Origin time: 01 23 07.9
Epicenter: 35.19 N., 92.20 W.
Depth: 3 km
Magnitude: 3.0Mn(T), 3.0MD(K)

This event and the ones listed below are part of a swarm of earthquakes which began on January 12 near Naylor.

Felt at Enola, Holland, Mount Vernon, and Naylor (press report).

18 January (K) Central Arkansas
Origin time: 02 32 13.1
Epicenter: 35.19 N., 92.23 W.
Depth: 3 km
Magnitude: 3.1Mn(T), 3.2Mn(V), 3.2MD(K)
Intensity IV: Mount Vernon (press report),

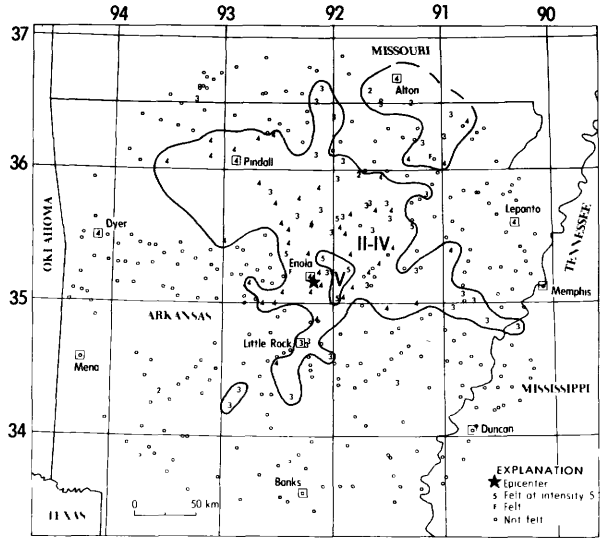

FIGURE 7.--Isoseismal map for the central Arkansas earthquake of 21 January 1982, 00 33 54.8 UTC. Roman numerals represent Modified Mercalli intensities between isoseismals; Arabic numerals are used to represent these intensities at specific sites.

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

ARKANSAS--Continued

Naylor (press report), Vilonia.
Intensity III: Conway, Enola, Holland (press report).

19 January (K) Central Arkansas
Origin time: 04 39 49.2
Epicenter: 35.21 N., 92.27 W.
Depth: 1 km
Magnitude: 3.5Mn(T), 3.4Mn(V), 3.3MD(K)
Intensity IV: Naylor and Mount Vernon (press report).
Felt: Enola, Holland, and Vilonia (press report).

20 January (K) Central Arkansas
Origin time: 14 01 30.6
Epicenter: 35.22 N., 92.20 W.
Depth: 0 km
Magnitude: 3.5Mn(T), 3.4Mn(V), 3.4MD(K)
Intensity IV: Beebe, Vilonia.
Intensity II: Mount Vernon.
Felt: Enola, Holland, and Naylor (press report).

21 January (K) Central Arkansas
Origin time: 00 33 54.8
Epicenter: 35.17 N., 92.21 W.
Depth: 4 km
Magnitude: 4.7Mn(T), 4.5Mn(K), 4.5mb(G)

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

ARKANSAS--Continued

This earthquake was felt over an area of approximately 31,000 square kilometers of Arkansas, Mississippi, and Missouri (fig. 7).

Intensity V: The most common effects at the places listed below were that few small objects overturned and fell and windows, doors, or dishes were rattled.
Arkansas--Damascus, Drasco, Newport, Pangburn, Rosebud, Ward (few cracked windows).
Intensity IV:
Arkansas--Bauxite, Beebe, Bee Branch, Bigelow, Bradford, Cabot, Cave City, Choctaw, Clinton, Concord, Conway, Cotter, Cotton Plant, Des Arc, Dogpatch, Dyer, Edgemont, El Paso, Enola, Everton, Fox, Harriet, Harrison, Heber Springs, Hector, Hickory Ridge, Higden, Huntsville (press report), Kensett, Kingston, Lepanto, Leslie, Litona, Marshall, McRae, Morrilton, Mount Vernon, Mountain View, Naylor (press report), Newark, Pindall, Quitman, Reyno, Rosie, Searcy, Smithville, Vilonia, Walnut Ridge, Wilburn, Yellville.
Missouri--Alton.
Intensity III:
Arkansas--Almyra, Austin, Batesville, Brady, Brickeys, Caldwell, Calico Rock, College Station, Conway (Hendrix College), Desha, Donaldson, Guion, Imboden, Keo, Little Rock, Madison, Malvern, Mammoth Spring, Mayflower (press report), Maynard, Melbourne, Oil Trough, Palestine, Patterson, Pleasant Plains, Pocahontas, Prim, Pruitt, Ridgedale, Romance, Sheridan, Shirley, Sulphur Rock, Sweet Home, Tumbling Shoals, Swifton, Viola, Wolf Bayou.
Mississippi--Robinsonville.
Missouri--Bakersfield, Caufield.
Intensity II:
Arkansas--Glenwood, Mount Pleasant.
Missouri--Koshkonong, Myrtle.
Felt:
Arkansas--Black Rock, Durham (press report), Greenbrier, Holland (press report), Newport (press report).

21 January (K) Central Arkansas
Origin time: 01 13 39.1
Epicenter: 35.13 N., 92.24 W.
Depth: 9 km
Magnitude: 3.1Mn(T), 3.2MD(K).

Felt at Enola, Holland, and Naylor (press report).

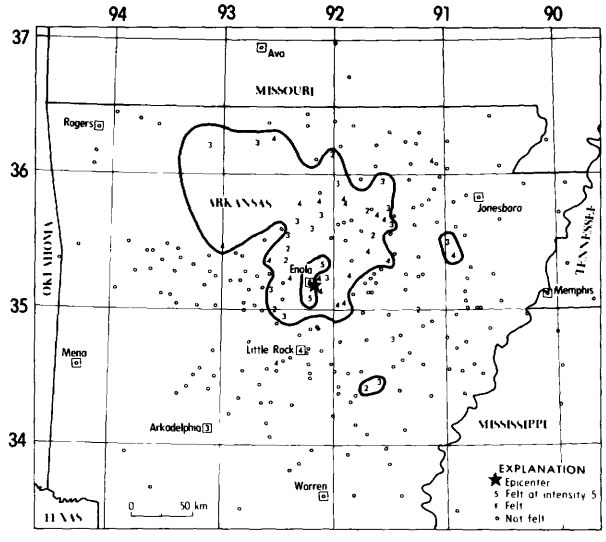

FIGURE 8.--Isoseismal map for the central Arkansas earthquake of 24 January 1982, 03 22 44.7 UTC. Arabic numerals represent Modified Mercalli intensities at specific sities.

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

ARKANSAS-Continued

21 January (K) Central Arkansas
Origin time: 15 45 38.6
Epicenter: 35.19 N., 92.20 W.
Depth: 4 km
Magnitude: 4.1Mn(T), 3.3MD(K)
Intensity III: Palestine (press report).
Intensity II: Enola.

22 January (K) Central Arkansas
Origin time: 23 54 22.4
Epicenter: 35.25 N, 92.22 W.
Depth: 1 km
Magnitude: 3.9Mn(T), 3.7Mn(V), 3.4MD(K).

Felt at Enola and Naylor (K).

24 January (K) Central Arkansas
Origin time: 03 22 44.7
Epicenter: 35.20 N., 92.22 W.
Depth: 5 km
Magnitude: 4.0Mn(T), 4.0Mn(V), 4.3Mn(K)

This earthquake was felt over an area of approximately 17,000 square kilometers of northern Arkansas (fig. 8).

Intensity V:
Enola--hairline cracks in plaster walls, one report of cracked ceiling.

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

ARKANSAS--Continued

Rosebud--hairline cracks in plaster walls.
Vilonia--few cracked windows, hairline cracks in plaster walls.
Intensity IV: Beebe, Black Rock, Bryant, Center Ridge, Conway (Lakeview Acres Subdivision--press report), Cotter, El Paso, Fox, Greenbrier, Hanover, Hector, Hickory Ridge, Little Rock, Marcella, Mount Vernon, Pangburn, Pleasant Grove, Rosie, Russell, Salado, Steprock, Sweet Home (press report), Ward.
Intensity III: Arkadelphia, Austin, Cave City, Choctaw, DeValls Bluff, Edgemont, Fisher, Guion, Harrison, Hazen, Higden, Huntsville (press report), Mayflower, Menifee, Oil Trough, Prim, Pruitt, Romance, Shirley, Sulphur Rock, Valley Springs, Yellville.
Intensity II: Bee Branch, Cotton Plant, Damascus, Desha, Harriet, Humphrey, Pleasant Plains.
Felt: Kingston, Malvern, and Wesley (press report).

27 January (K) Central Arkansas
Origin time: 23 29 42.5
Epicenter: 35.21 N., 92.24 W.
Depth: 2 km
Magnitude: 3.2Mn(T)

Felt at Naylor (press report).

28 January (K) Central Arkansas
Origin time: 21 55 09.1
Epicenter: 35.20 N., 92.22 W.
Depth: 3 km
Magnitude: 2.3Mn(T), 2.6MD(K)

Felt at Naylor (K).

1 February (K) Central Arkansas
Origin time: 05 55 08.1
Epicenter: 35.18 N., 92.22 W.
Depth: 5 km
Magnitude: 3.3Mn(T)
Intensity IV: Beebe, Mount Vernon, Vilonia.
Intensity III: Greenbrier.
Felt: Enola and Naylor (K).

1 February (K) Central Arkansas
Origin time: 07 25 02.9
Epicenter: 35.20 N., 92.21 W.
Depth: 4 km
Magnitude: 3.4Mn(T), 3.1MD(K)

Felt at Enola and Naylor (K).

2 February (S) Northeastern Arkansas
Origin time: 09 26 46.3

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

ARKANSAS--Continued

Epicenter: 35.92 N., 90.06 W.
Depth: 10 km
Magnitude: 3.4Mn(G), 3.5Mn(T)
Intensity IV:
Arkansas--Dell.
Missouri--Cardwell, Hornersville.
Intensity III:
Arkansas--Burdette, Luxora, Manila.

12 February (K) Central Arkansas
Origin time: 05 32 12.6
Epicenter: 35.18 N., 92.22 W
Depth: 2 km
Magnitude: 3.0Mn(T)

Felt in the epicentral area (K).

24 February (K) Central Arkansas
Origin time: 19 27 14.6
Epicenter: 35.19 N., 92.23 W
Depth: 2 km
Magnitude: 4.0Mn(T), 3.9Mn(K)
Intensity V: Enola--few small objects overturned, felt by many.
Intensity IV: Mount Vernon.
Intensity III: Conway.
Intensity II: Greenbrier.
Felt: Heber Springs (press report).

1 March (K) Central Arkansas
Origin time: 00 12 10.3
Epicenter: 35.19 N., 92.22 W.
Depth: 3 km
Magnitude: 3.9Mn(T), 4.3Mn(G), 4.1MD(K)
Intensity V: Jacksonport and Vilonia (hairline cracks in plaster and dry wall).
Intensity IV: Enola, Mount Vernon, Rosebud, Weldon.
Intensity III: Alco, Conway, Fox, Greenbrier.
Intensity II: El Paso, Locust Grove, Oil Trough, Salado.
Felt: Heber Springs, Holland and Vilonia (press report).

CALIFORNIA

3 January (P) Southern California
Origin time: 00 37 32.1
Epicenter: 33.90 N., 117.97 W.
Depth: 13 km
Magnitude: 2.6ML(P)

Felt at Fullerton (P).

5 January (B) Northern California
Origin time: 03 26 57.2

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

CALIFORNIA--Continued

Epicenter: 39.88 N., 120.68 W.
Depth: 5 km
Magnitude: 3.9ML(B)
Intensity IV: Quincy (press report).
Intensity III: Genesee, Greenville, Graeagle, and Portola (press report).

19 January (P) Southern California
Origin time: 05 35 38.0
Epicenter: 33.92 N., 118.48 W.
Depth: 5 km
Magnitude: 2.5ML(P)

Felt at Hollywood and Mar Vista (P).

19 January (B) Central California
Origin time: 07 13 09.3
Epicenter: 37.83 N., 122.23 W.
Depth: 10 km
Magnitude: 3.3ML(B)

Felt in Alameda, Contra Costa, and San Francisco Counties (press report).

Intensity V: Piedmont (few small objects overturned and fell, hairline cracks in plaster and dry wall, small landslides, felt by many).
Intensity IV: Berkeley (press report).
Felt: Lafayette, Livermore, Martinez, and Walnut Creek (press report).

24 January (B) California-Nevada border region
Origin time: 15 44 07.6
Epicenter: 37.45 N., 117.82 W.
Depth: 5 km
Magnitude: 4.3ML(B), 4.1ML(P)
Intensity III:
California--Bishop, Keeler
Nevada--Dyer.
Intensity II:
California--Shaver Lake.

27 January (B) Central California
Origin time: 23 42 01.7
Epicenter: 37.00 N., 121.71 W.
Depth: 1 km
Magnitude: 3.0ML(B)
Intensity II: Watsonville.

2 February (P) Southern California
Origin time: 18 00 04.9
Epicenter: 33.75 N., 119.23 W.
Depth: 10 km
Magnitude: 3.4ML(P)

Felt at North Hollywood (P).

7 February (P) Southern California

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

CALIFORNIA--Continued

Origin time: 08 10 20.8
Epicenter: 35.37 N., 118.48 W.
Depth: 11 km
Magnitude: 3.8ML(P), 3.8ML(B).
Intensity IV: Edison, Keene, Lake Isabella.

8 February (P) Southern California
Origin time: 23 53 28.6
Epicenter: 34.25 N., 118.42 W.
Depth: 7 km
Magnitude: 2.6ML(P)

Felt at San Fernando and Van Nuys (press report).

16 February (B) Central California
Origin time: 01 42 17.1
Epicenter: 36.82 N., 121.60 W.
Depth: 5 km
Magnitude: 3.0ML(B)
Intensity II: Salinas.

16 February (P) Southern California
Origin time: 19 10 51.1
Epicenter: 34.12 N., 117.33 W.
Depth: 19 km
Magnitude: 3.1ML(P)
Intensity II: Fontana (press report), San Bernardino.

18 February (P) California
Origin time: 05 06 06.8
Epicenter: 35.80 N., 117.73 W.
Depth: 6 km
Magnitude: 3.4ML(P)

Felt at Inyokern (P).

19 February (B) Northern California
Origin time: 04 53 15.7
Epicenter: 39.94 N., 120.72 W.
Depth: 5 km
Magnitude: 4.0ML(B)
Intensity V:
Quincy--few cracked windows, few small objects overturned and fell, felt by all.
Spring Garden--few small objects overturned and fell, felt by many.
Intensity IV: Alleghany, Chilcoot, Cromberg, Greenville, Keddie, La Porte, Portola, Taylorsville, Vinton.
Intensity III: Blairsden, Calpine, Clio, Downieville, Goodyears Bar, Janesville, Oroville (press report), Sierra City, Twain.
Intensity II: Beckwourth (press report), Grass Valley (press report).

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

CALIFORNIA--Continued

20 February (P) Southern California
Origin time: 17 52 06.7
Epicenter: 35.78 N., 117.72 W.
Depth: 6 km
Magnitude: 3.6ML(P), 3.8ML(B)
Intensity III: Inyokern, Ridgecrest.

22 February (P) Southern California
Origin time: 09 03 03.5
Epicenter: 34.12 N., 116.38 W.
Depth: 4 km
Magnitude: 3.0ML(P)

Felt at Joshua Tree and Yucca Valley.

22 February (P) Southern California
Origin time: 14 06 08.2
Epicenter: 34.12 N., 116.38 W.
Depth: 5 km
Magnitude: 3.2ML(P)

Felt at Joshua Tree and Yucca Valley.

25 February (P) Southern California
Origin time: 05 19 42.2
Epicenter: 34.12 N., 116.40 W.
Depth: 4 km
Magnitude: 3.8ML(P)
Intensity V:
Landers--few small objects overturned and fell.
Yucca Valley--hairline cracks in plaster walls, few glassware broken, few small objects overturned and fell, felt by many.
Intensity IV: Anza, Cathedral City, Joshua Tree, Morongo Valley, North Palm Springs, Palm Springs, Thousand Palms.
Intensity III: Palomar Mountain, San Bernardino, Twentynine Palms.

28 February (B) Central California
Origin time: 20 17 51.6
Epicenter: 38.78 N., 122.77 W.
Depth: 4 km
Magnitude: 3.3ML(B)

Felt at Cobb Mountain and in Lake and Sonoma Counties (B).

28 February (P) Southern California
Origin time: 23 18 20.0
Epicenter: 34.47 N., 119.50 W.
Depth: 3 km
Magnitude: 3.2ML(P)

Felt at Oxnard (P).

1 March (P) Southern California

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

CALIFORNIA--Continued

Origin time: 03 10 22.3
Epicenter: 35.78 N., 117.75 W.
Depth: 4 km
Magnitude: 4.1mb(G), 4.1ML(P), 4.4ML(B)
Intensity V: Ridgecrest--few items of merchandise thrown from store shelves, few glassware broken, few cracked windows, few small objects overturned and fell, felt by many.
Intensity IV: Inyokern, Little Lake.

6 March (B) Central California
Origin time: 13 11 14.0
Epicenter: 37.03 N., 121.43 W.
Depth: 10 km
Magnitude: 3.0ML(B)

Felt at Gilroy and Morgan Hill (B).

7 March (P) Southern California
Origin time: 19 13 38.2
Epicenter: 35.77 N., 117.73 W.
Depth: 4 km
Magnitude: 3.0ML(P)

Felt at the China Lake Naval Weapons Station (telegraphic report).

7 March (P) Southern California
Origin time: 20 50 12.8
Epicenter: 35.77 N., 117.75 W.
Depth: 2 km
Magnitude: 4.3mb(G), 4.9ML(B), 4.3ML(P)

This earthquake is one of a swarm of events in this area. Roads were reported cracked about 4 miles north of highway. There was some minor damage to buildings and glass at Charlie Range on the China Lake Naval Weapons Center. Many of the aftershocks were felt on the Weapons Center.

Intensity V: China Lake Naval Weapons Center--few cracked windows, felt by many.
Intensity IV: Argus, Caliente, Inyokern, Lake Isabella, Mountain Mesa, Ridgecrest.
Intensity III: California City, Onyx, Trona.
Intensity II: Cantil, Delkern.

7 March (P) Southern California
Origin time: 20 51 00.0
Epicenter: 35.75 N., 117.77 W.
Depth: 2 km
Magnitude: 4.7mb(G), 5.0ML(B), 4.5ML(P)

This event followed the one at 20 50 12.8 UTC so closely that the effects of the two earthquakes are inseparable. The maximum intensity is V for both events.

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

CALIFORNIA--Continued

Felt at Inyokern and Ridgecrest (P).

8 March (P) Southern California
Origin time: 14 42 46.0
Epicenter: 35.75 N., 117.73 W.
Depth: 4 km
Magnitude: 4.2ML(B), 3.9ML(P)
Intensity IV: China Lake Naval Weapons Center (telegraphic report), Earlimart.

11 March (P) Imperial Valley
Origin time: 12 29 24.0
Epicenter: 32.90 N., 115.48 W.
Depth: 10 km
Magnitude: 2.3ML(P)

Felt at Brawley (P).

12 March (B) Central California
Origin time: 23 07 44.9
Epicenter: 37.11 N., 121.53 W.
Depth: 3 km
Magnitude: 2.8ML(B)

Felt in the Coyote Lake area (B).

14 March (B) Central California
Origin time: 09 58 52.3
Epicenter: 35.19 N., 120.62 W.
Depth: 11 km
Magnitude: 3.4ML(B), 3.4ML(P)
Intensity V: Arroyo Grande--few merchandise items thrown from store shelves, few glassware broken, few small objects overturned and fell, awakened few.
Intensity IV: Avila Beach, San Luis Obispo.
Intensity III: Halcyon.

16 March (P) Southern California
Origin time: 07 08 13.1
Epicenter: 36.60 N., 117.07 W.
Depth: 7 km
Magnitude: 3.5ML(P)

Felt at Death Valley (P).

16 March (P) Southern California
Origin time: 08 47 00.8
Epicenter: 36.60 N., 117.03 W
Depth: 6 km
Magnitude: 3.7ML(P)

Felt at Death Valley (P).

16 March (B) Northern California
Origin time: 11 52 46.1
Epicenter: 39.66 N., 123.00 W.
Depth: 5 km
Magnitude: 3.2ML(B)

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

CALIFORNIA--Continued

Intensity IV: Willits.
Intensity II: Eck.

16 March (B) Northern California
Origin time: 12 06 10.1
Epicenter: 39.65 N., 123.01 W.
Depth: 5 km
Magnitude: 2.8ML(B)
Intensity III: Willits.

16 March (P) Imperial Valley
Origin time: 22 55 05.6
Epicenter: 32.78 N., 115.45 W
Depth: 11 km
Magnitude: 3.1ML(P)

Felt at Brawley (P).

17 March (B) Northern California
Origin time: 09 32 02.4
Epicenter: 40.28 N., 123.99 W.
Depth: 5 km
Magnitude: 3.6ML(B)
Intensity IV: Rio Dell, Scotia.
Intensity III: Honeydew, Miranda.

20 March (B) Central California
Origin time: 18 39 44.1
Epicenter: 38.82 N., 122.83 W.
Depth: 5 km
Magnitude: 2.8ML(B)

Felt in the Clear Lake area (B).

22 March (P) Southern California
Origin time: 08 53 28.6
Epicenter: 33.05 N., 116.22 W.
Depth: 5 km
Magnitude: 4.4mb(G), 4.5ML(P).

Felt from Palm Springs south to the Mexican border.

Intensity IV: Alpine, Borrego Springs, Boulevard, Campo, Descanso, Jacumba, Lake Cuyamaca, Mount Laguna, North Shore, Palomar Mountain, Pine Valley, Ramona, Ranchita, Salton City, Seeley, Warner Springs, Westmorland.
Intensity III: Anza, Brawley (press report), El Centro, Guatay, Palm Springs.
Intensity II: Plaster City, Tecate.
Felt: Imperial, Santa Ysabel.

24 March (B) Central California
Origin time: 04 20 31.3
Epicenter: 38.48 N., 122.65 W.
Depth: 5 km
Magnitude: 3.0ML(B)

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

CALIFORNIA--Continued

Intensity IV: Santa Rosa.

25 March (B) Central California
Origin time: 02 27 32.5
Epicenter: 38.80 N., 122.80 W.
Depth: 2 km
Magnitude: 3.4ML(B)
Intensity IV: Cobb, Finley, Geyserville, Loch Lomond.
Intensity III: Anderson Springs, Middletown.
Felt: Healdsburg (B).

26 March (B) Central California
Origin time: 13 24 00.2
Epicenter: 37.80 N., 122.21 W.
Depth: 4 km
Magnitude: 3.1ML(B)
Intensity IV: Alameda, Oakland, San Francisco, Woodacre.
Intensity III: Half Moon Bay, San Leandro.
Intensity II: San Mateo.
Felt: Berkeley, Lafayette (press report), Orinda (press report), Palo Alto, Piedmont (press report), San Lorenzo.

28 March (G) Central California
Origin time: 13 50 30.4
Epicenter: 37.83 N., 122.14 W.
Depth: 5 km
Magnitude: 2.8ML(B)
Intensity III: Alameda.
Felt: Oakland.

29 March (P) Southern California
Origin time: 23 29 41.6
Epicenter: 34.12 N., 116.38 W.
Depth: 4 km
Magnitude: 3.4ML(P)
Intensity III: Morongo Valley.
Felt: Yucca Valley (P).

31 March (P) Southern California
Origin time: 20 02 23.9
Epicenter: 35.72 N., 118.40 W.
Depth: 9 km
Magnitude: 2.9ML(D)

Felt at Lake Isabella Dam (P).

CALIFORNIA--Off the Coast

8 January (B) Northern California
Origin time: 20 41 10.5
Epicenter: 40.30 N., 124.71 W.
Depth: 5 km
Magnitude: 3.9ML(B)
Intensity III: Rio Dell

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

CALIFORNIA--Off the coast--Continued

13 January (G) Northern California
Origin time: 12 26 25.8
Epicenter: 40.42 N., 125.10 W.
Depth: 10 km
Magnitude: 4.9mb(G), 5.1MS(G), 4.9ML(B)

Felt in the coastal areas of Humboldt County (B).

Intensity V: Eureka.

6 February (B) Northern California
Origin time: 12 01 58.5
Epicenter: 41.13 N., 125.36 W.
Depth: 5 km
Magnitude: 5.1mb(G), 5.1MS(G), 5.3ML(B)

Felt in the coastal areas of Humboldt and Del Norte Counties (B).

Intensity IV: Crescent City, Eureka, Ferndale, Westhaven (2 miles south of Trinidad).
Intensity III: Miranda, Rio Dell.

24 February (B) Northern California
Origin time: 05 22 38.4
Epicenter: 40.84 N., 125.10 W.
Depth: 13 km
Magnitude: 4.4mb(G), 4.4ML(B)

Felt in the coastal areas of Humboldt County (B).

Intensity IV: Eureka.
Felt: McKinleyville (B).

COLORADO

11 March (G) Northeastern Colorado
Origin time: 23 55 28.8
Epicenter: 39.86 N., 104.85 W.
Depth: 5 km
Magnitude: 2.8ML(G), 2.8MN(T)
Intensity III: Thornton, Western Hills (Adams County).
Felt: Commerce City and Northglenn (telephone report).

CONNECTICUT

9 January (G) New Brunswick, Canada
Origin time: 12 53 51.9

See Maine listing.

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

CONNECTICUT--Continued

11 January (G) New Brunswick, Canada
Origin time: 21 41 08.0

See Maine listing.

19 January (J) Central New Hampshire
Origin time: 00 14 42.0

See New Hampshire listing.

HAWAII

9 January (H) Island of Hawaii
Origin time: 14 32 07.3
Epicenter: 19.17 N., 155.54 W.
Depth: 34 km
Magnitude: 3.1ML(H)
Intensity II: Pahala.

15 January (H) Island of Hawaii
Origin time: 10 07 52.6
Epicenter: 20.08 N., 155.84 W.
Depth: 28 km
Magnitude: 3.6ML(H)
Intensity IV: Kohala.
Intensity III: Ahualoa.
Intensity II: Volcano.

15 January (H) Island of Hawaii
Origin time: 11 04 42.1
Epicenter: 19.31 W., 155.23 W.
Depth: 10 km
Magnitude: 3.7ML(H)
Intensity III: Hilo, Papaikou.

21 January (H) Island of Hawaii
Origin time: 21 52 41.2
Epicenter: 19.23 N., 155.59 W.
Depth: 10 km
Magnitude: 5.4mb(G), 4.9MS(G), 5.4MS(B), 5.4ML(H)

This event caused two small landslides onto a road in Laupahoehoe Gulch and widespread minor damage in the Kau area: many items were knocked from shelves and in some cases, shelves were broken. Several rock walls were also knocked down (press report). Most descriptions of the effects from this earthquake were combined with the aftershock at 22 29 13.9 UTC; these data are listed below. The shaking from the second event was described as not as strong as the first one.

HAWAII--Continued

Intensity VI:
Hawaii Island--
Hawaiian Ocean View Estates.
Naalehu.
Pahala--light furniture overturned, many small objects overturned and fell, many dishes broken, many items thrown from store shelves, trees and bushes strongly shaken, chimneys cracked, fallen rock walls, felt by all.

Intensity V:
The most common effects at the places listed below were that few small objects overturned and fell, few glassware were broken, few items were thrown from store shelves, it was felt by all.
Hawaii Island--Hawi, Hilo, Honaunau, Honomu, Naalehu, Ninole, Ookala, Pepeekeo, Pohakuloa AAF Training Area, Volcano.

Intensity IV:
Hawaii Island--Captain Cook, Hakalau, Holualoa, Keaau, Honokaa, Kapaau, Kealakekua, Laupahoehoe, Mountain View, Paauhau, Paauilo, Pahoa, Papaaloa, Papaikou.
Maui Island--Haiku, Kaunakakai.
Oahu Island--Honolulu, Laie.

Intensity III:
Hawaii Island--Kohala District.
Maui Island--Kahului, Kihei, Kualapuu, Wailuku.

Intensity II: Kauai, Maui, and Oahu Islands.

21 January (H) Island of Hawaii
Origin time: 22 29 13.9
Epicenter: 19.22 N., 155.55 W.
Depth: 14 km
Magnitude: 5.6mb(G), 4.8MS(G), 5.4MS(B) 5.4ML(H)

This earthquake caused one personal injury from a falling rock in Kaawali Gulch. It was not as strongly felt as the previous event (press reports). Most of the effects are combined with the description of the event at 21 52 41.2 UTC and could not be separated. Both earthquakes were felt on the islands of Hawaii, Maui, and Oahu and caused intensity VI effects in the southern area of Hawaii.

21 January (H) Island of Hawaii
Origin time: 22 42 05.9
Epicenter: 19.17 N., 155.53 W.
Depth: 8 km
Magnitude: 3.0ML(H)
Intensity III: Pahala.
Intensity II: Hawaiian Ocean View Estates.

Table 2.-*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

HAWAII--Continued

21 January (H) Island of Hawaii
Origin time: 22 45 12.7
Epicenter: 19.19 N., 155.56 W.
Depth: 7 km
Magnitude: 3.0ML(H)
Intensity II: Pahala.

21 January (H) Island of Hawaii
Origin time: 22 48 09.6
Epicenter: 19.23 N., 155.54 W.
Depth: 12 km
Magnitude: 3.4ML(H)
Intensity III: Hawaiian Ocean View Estates, Pahala.
Intensity II: Naalehu.

21 January (H) Island of Hawaii
Origin time: 22 51 56.4
Epicenter: 19.16 N., 155.53 W.
Depth: 12 km
Magnitude: 3.0ML(H)
Intensity II: Pahala.

21 January (H) Island of Hawaii
Origin time: 23 01 09.7
Epicenter: 19.20 N., 155.54 W.
Depth: 10 km
Magnitude: 4.1ML(H)
Intensity IV: Pahala.
Intensity III: Hawaiian Ocean View Estates, Naalehu, Volcano.
Intensity II: Hilo.

21 January (H) Island of Hawaii
Origin time: 23 35 10.9
Epicenter: 19.18 N., 155.52 W.
Depth: 6 km
Magnitude: 3.1ML(H)
Intensity III: Hawaiian Ocean View Estates, Pahala.
Intensity II: Naalehu.

21 January (H) Island of Hawaii
Origin time: 23 37 17.4
Epicenter: 19.23 N., 155.55 W.
Depth: 12 km
Magnitude: 4.2ML(H)
Intensity V: Pahala
Intensity III: Hawaiian Ocean View Estates, Naalehu, Volcano.
Intensity II: Hilo.

22 January (H) Island of Hawaii
Origin time: 01 19 41.0
Epicenter: 19.22 N., 155.53 W.
Depth: 8 km
Magnitude: 3.1ML(H)
Intensity III: Hawaiian Ocean View Estates, Pahala.

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

HAWAII--Continued

22 January (H) Island of Hawaii
Origin time: 01 35 12.5
Epicenter: 19.20 N., 155.52 W.
Depth: 9 km
Magnitude: 3.2ML(H)
Intensity III: Pahala.
Intensity II: Hawaiian Ocean View Estates.

22 January (H) Island of Hawaii
Origin time: 02 23 36.0
Epicenter: 19.17 N., 155.53 W.
Depth: 12 km
Magnitude: 3.1ML(H)
Intensity III: Pahala.
Intensity II: Hawaiian Ocean View Estates.

22 January (H) Island of Hawaii
Origin time: 12 25 05.2
Epicenter: 19.20 N., 155.60 W.
Depth: 10 km
Magnitude: 3.6ML(H)
Intensity III: Pahala.

23 January (H) Island of Hawaii
Origin time: 03 45 08.1
Epicenter: 19.23 N., 155.57 W.
Depth: 10 km
Magnitude: 4.3ML(H)
Intensity IV: Pahala.
Intensity III: Hawaiian Ocean View Estates, Naalehu, Volcano.

26 January (H) Island of Hawaii
Origin time: 03 03 51.1
Epicenter: 19.20 N., 155.59 W.
Depth: 9 km
Magnitude: 3.4ML(H)
Intensity III: Pahala.

30 January (H) Island of Hawaii
Origin time: 03 13 25.9
Epicenter: 19.92 N., 155.60 W.
Depth: 13 km
Magnitude: 3.6ML(H)
Intensity IV: Pohakuloa Training Area.
Intensity III: Kukuihaele, Waikii.

30 January (H) Island of Hawaii
Origin time: 03 16 49.4
Epicenter: 19.92 N., 155.60 W.
Depth: 11 km
Magnitude: 3.0ML(H)
Intensity II: Kukuihaele, Waikii.

2 February (H) Island of Hawaii
Origin time: 14 58 14.3
Epicenter: 19.18 N., 155.59 W.
Depth: 8 km
Magnitude: 3.0ML(H)

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

HAWAII--Continued

Intensity III: Hilea, Pahala.

2 February (H) Island of Hawaii
Origin time: 16 29 49.9
Epicenter: 19.22 N., 155.58 W.
Depth: 11 km
Magnitude: 4.3ML(H)
Intensity IV: Hilea, Pahala.
Intensity III: Hawaiian Ocean View Estates, Naalehu, Captain Cook.
Intensity II: Mountain View.

9 February (H) Island of Hawaii
Origin time: 15 42 22.9
Epicenter: 19.33 N., 155.12 W.
Depth: 9 km
Magnitude: 3.8ML(H)
Intensity III: Hawaii Volcanoes National Park, Hilo, Volcano.
Intenstiy II: Ahualoa

13 February (H) Island of Hawaii
Origin time: 02 06 30.9
Epicenter: 19.36 N., 155.05 W
Depth: 9 km
Magnitude: 3.4ML(H)
Intensity II: Hilo.

16 February (H) Island of Hawaii
Origin time: 03 36 28.2
Epicenter: 19.36 N., 155.33 W
Depth: 32 km
Magnitude: 4.2ML(H)
Intensity IV: Ahualoa.
Intensity III: Kamuela, Mountain View, Hawaii Ocean View Estates, Kona.
Intensity II: Glenwood.

7 March (H) Island of Hawaii
Origin time: 22 31 36.1
Epicenter: 19.37 N., 155.05 W.
Depth: 9 km
Magnitude: 3.2ML(H)
Intensity II: Hilo.

16 March (H) Island of Hawaii
Origin time: 07 41 35.6
Epicenter: 19.32 N., 155.22 W.
Depth: 11 km
Magnitude: 3.5ML(H)
Intensity III: Hilo.

20 March (H) Island of Hawaii
Origin time: 23 10 22.3
Epicenter: 19.34 N., 155.28 W.
Depth: 36 km
Magnitude: 3.9ML(H)
Intensity III: Hawaii Volcanoes National Park, Pahala, Waimea.

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

HAWAII--Continued

26 March (H) Island of Hawaii
Origin time: 11 04 34.0
Epicenter: 19.92 N., 155.60 W.
Depth: 11 km
Magnitude: 3.6ML(H)
Intensity IV: Ahualda.
Intensity III: Ookala, Kamuela.

IDAHO

28 January (G) Eastern Idaho
Origin time: 08 00 40.5
Epicenter: 42.42 N., 111.52 W.
Depth: 5 km
Magnitude: 3.2ML(G)
Intensity III: Georgetown.

1 March (G) Southwestern Wyoming
Origin time: 10 43 06.2

See Wyoming listing.

MAINE

9 January (G) New Brunswick, Canada
Origin time: 12 53 51.9
Epicenter: 46.98 N., 66.66 W
Depth: 10 km
Magnitude: 5.1mb(G), 5.2MS(G), 5.8Mn(V)

This earthquake was felt in Canada from the Gaspe Peninsula in the north to Prince Edward Island in the east, and west to Montreal. In the United States it was felt in the States of Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. It was felt over an area of approximately 161,000 square kilometers of the United States (fig. 9).

Intensity VI: The most common damage at the places listed below were cracked chimneys or foundations.
Maine--
Ashland--hairline cracks in plaster and drywall, felt by and awakened many.
Bridgewater--cracked streets, many awakened.
Caribou--crackes in streets and sidewalks, stone fences cracked, hairline cracks in plaster walls, few merchandise items thrown from store shelves, light furniture overturned, some windows broken out, many awakened.

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

MAINE--Continued

Easton--one resident reported a 6-foot crack in a bedroom wall (press report). Few merchandise items thrown from store shelves, some windows broken out, felt by and awakened all.
Fort Kent--few glassware broken, felt by all.
Haynesville--large cracks in streets, felt by all. One large farmhouse moved two inches, which cracked floor stringers, broke water pipes and sustained considerable damage.
Lille--large cracks in streets, felt by all.
Loring AFB (northwest of Limestone)--Control tower walls cracked and conduits pulled loose from wall. Damage to two hospital rooms in the form of cracked walls and floor, room closed permanently.
Lubec--tombstones displaced, hairline cracks in plaster and dry wall, few merchandise items thrown from store shelves, few cracked windows, few broken glassware, felt by and awakened many.
Monticello--hairline cracks in plaster and dry wall, few cracked windows, felt by all.
Oakfield--few large cracks in plaster walls, few cracked windows, hanging pictures fell, felt by many.
Presque Isle--large cracks in streets and sidewalks, cracked stone walls, large cracks in plaster walls, few merchandise items thrown from store shelves, light and heavy furniture overturned, few windows cracked. A donut shop sustained a cracked floor and back wall.
Stockholm--underground pipes out of service, felt by all.
Woodland--hairline cracks in dry wall, felt by many.

Intensity V: The most common effects at the places listed below were that few small objects overturned and fell, few glassware were broken, few windows were cracked, several or many were awakened , it was felt by many.
Maine--
Anson.
Benedicta.
Bradley.
Brooks.
Brownville Junction--few merchandise items thrown from store shelves, a report of cracked streets.
Burlington.

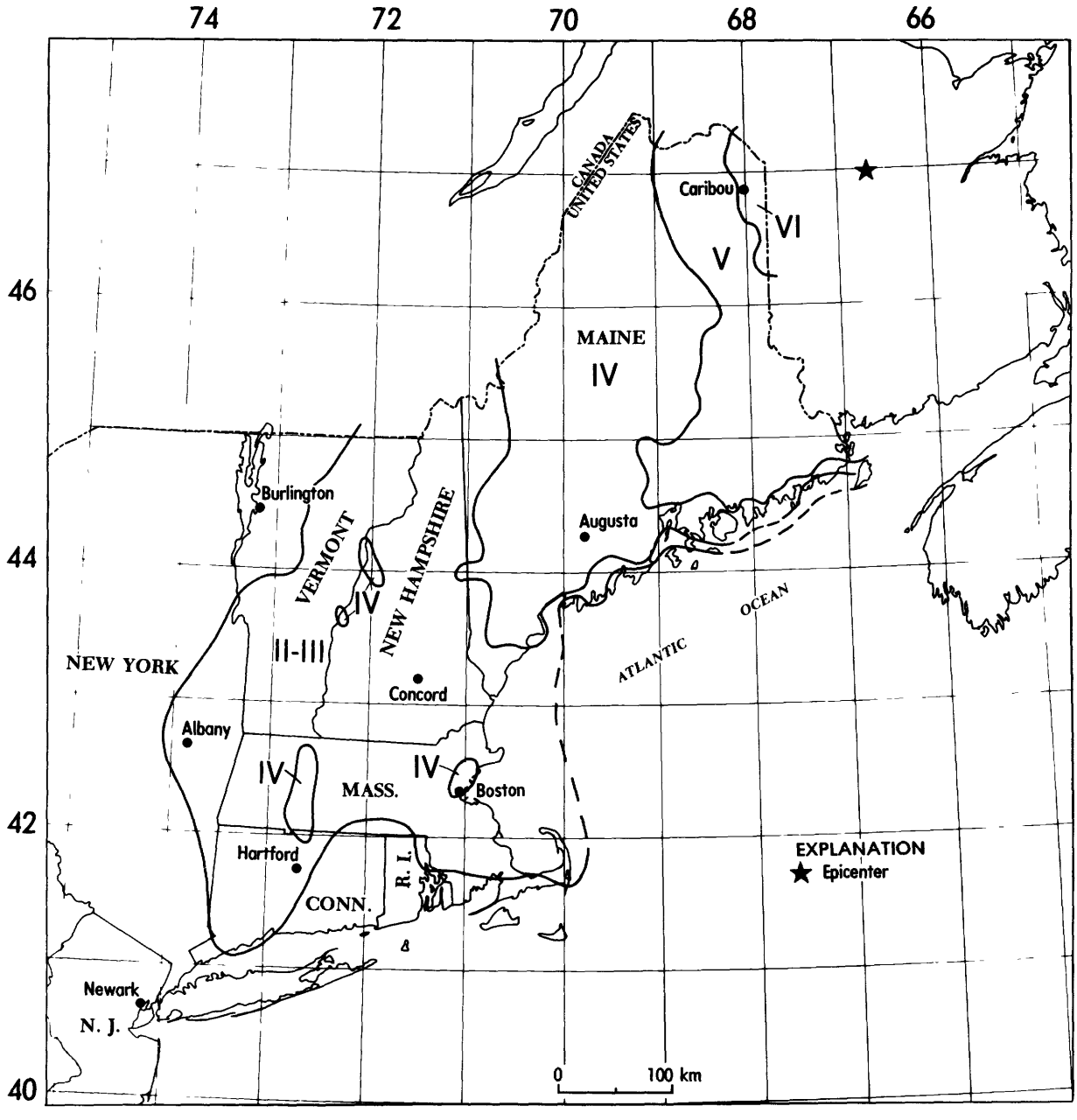

FIGURE 9.-- Isoseismal map of the United States for the New Brunswick, Canada earthquake of 9 January 1982, 12 53 51.9 UTC. Roman numerals represent Modified Mercalli intensities between isoseismals.

Table 2.-*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

MAINE--Continued

Calais.
Cardville--few merchandise items thrown from store shelves.
Carmel.
Cooper.
Danforth--few merchandise items thrown from store shelves, hairline cracks in dry wall.
Dedham.
Denmark.
Dennysville--hairline cracks in dry wall.
Dixfield--few merchandise items thrown from store shelves.
East Machias.
East Orland.
East Sebago--a report of cracked chimneys.
Etna--hairline cracks in interior walls, a report of a cracked foundation.
Exeter.
Frankfort.
Fryeburg--light furniture overturned.
Hollis Center--hairline cracks in plaster walls.
Houlton--hairline cracks in plaster walls.
Hudson--few merchandise items thrown from store shelves.
Kenduskeag.
Limestone--few merchandise items thrown from store shelves.
Lincoln.
Milbridge--hairline cracks in plaster walls.
Milford.
Monson--hairline cracks in plaster walls.
Newagen.
Northeast Harbor--hairline cracks in plaster walls.
Olamon.
Orono.
Orrington.
Oxbow.
Perry.
Phillips--hairline cracks in dry wall.
Poland Spring.
Princeton--light furniture overturned.
Quimby.
Robbinston--hairline cracks in interior walls.
Saco--light furniture overturned, hairline cracks in interior walls, water splashed onto sides of lakes.
Saint David--few merchandise items thrown from store shelves.
Saint Francis.
Scarborough--hairline cracks in dry wall.
Sheridan.
Sorrento.
Stetson--ground cracks in wet ground.
Topsfield--few merchandise items thrown from stove shelves.
Upper Frenchville.
Van Buren--hairline cracks in plaster walls.
Washburn.
Westfield.
West Peru.
West Sullivan--few merchandise items thrown from store shelves.
Whitefield.
Winn.
Winterport--hairline cracks in dry wall.
Winterville--few merchandise items thrown from store shelves.
Wytopitlock--few merchandise items thrown from store shelves.

Massachusetts--
Boston--few cracked windows, few merchandise items thrown from store shelves.
Cambridge--An end table moved six inches, house shook violently (press report).

New Hampshire--
Alton--light furniture overturned.
Bartlett.
Groveton--few merchandise items thrown from store shelves.
Laconia.
Lebanon.

Vermont--
East Ryegate.
Northfield.
Saint Johnsbury.
White River Junction.

Intensity IV:

Connecticut--Bridgeport, Endfield, Hartford, South Windsor (all press reports).
Maine--Addison, Alfred, Andover, Ashville, Augusta, Bass Harbor, Beals, Bingham, Birch Harbor, Blaine, Bowdoinham, Brewer, Brookton, Brooklin, Brownville, Brunswick, Buckfield, Camden, Cape Elizabeth, Castine, Charleston, Cherryfield, Clayton Lake, Columbia Falls, Coopers Mills, Costigan, Crouseville, Cumberland Center, Danville, Dixmont, Dover-Foxcroft, Eagle Lake, East Baldwin, East Eddington, East Newport, East Millinocket, Eastport, Enfield, Estcourt Station, Fairfield, Fort Kent Mills, Franklin, Freedom, Frenchville, Garland, Gorham, Grand Isle, Grand Lake Stream, Greenville, Guilford, Hancock,

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

MAINE--Continued

Harrington, Harrison, Howland, Jay, Jefferson, Jonesboro, Jonesport, Kingman, Lee, Levant, Lincolnville Center, Lisbon, Lisbon Center, Lisbon Falls, Livermore, Machias, Machiasport, Madawaska, Madison, Manchester, Mattawamkeag, Meddybemps, Medway, Mexico, Millinocket, Milo, Minot, Monmouth, Morrill, Naples, New Limerick, Newport, New Sharon, New Sweden, New Vineyard, Norridgewock, North Amity, North Leeds, North Monmouth, North New Portland, North Turner, North Waterboro, North Waterford, North Whitefield, Olamon, Old Orchard Beach, Old Town, Orient, Orland, Oxford, Palermo, Passadumkeag, Patten, Pembroke, Penobscot, Perham, Plaisted, Portland, Red Beach, Sabattus, Saint Agatha, Salsbury Cove, Sargentville, Seal Harbor, Searsmont, Sebago Lake, Seboeis, Sherman Mills, Sherman Station, Sinclair, Skowhegan, Smithfield, Soldier Pond, Solon, South China, South Freeport, South Gouldsboro, South Paris, Southwest Harbor, Stacyville, Standish, Steep Falls, Stillwater, Stratton, Strong, Sullivan, Surry, Temple, Thomaston, Topsham, Union, Vanceboro, Waite, Warren, Washington, Waterville, West Bethel, Westbrook, West Enfield, West Farmington, West Forks, West Rockport, Whiting, Wilton, Winter Harbor, Woolwich.

Massachusetts--Beverly, Brookline (press report), Chatham, Chelmsford, Easthampton, Greenfield, Lowell, Northampton, Peabody, Raynham, Rockport, Rowley, Springfield (press report), Swampscott (press report), Wakefield, Westfield (press report).

New Hampshire--Alton Bay, Center Conway, Dover, Epping, Haverhill, Hill, Littleton, Milan, Milford, New Durham, Newport, North Haverhill, North Stratford, Orford, Pike, Pittsburg, Rollinsford, Silver Lake, Stinson Lake, Warren, West Lebanon, West Ossipee, Whitefield, Wilmot Flat, Woodsville.

New York--Schenectady.

Rhode Island--Providence.

Vermont--Canaan, East Calais, East Thetford, Forest Dale, Hardwick, Island Pond, Lower Waterford, Newbury, South Barre, Wells River, Wilder.

Intensity III:

Maine--Auburn, Bath, Belgrade, Bethel, Blue Hill, Bradford, Brooksville, Bucks Harbor, Burnham, Casco, China, Clinton, Cornish, Cutler, Damariscotta, Deer Isle, East Yarmouth (press report), East Poland, Gray, Greenville Junction, Hampden, Hancock, Hinckley, Hiram, Kents Hill, Kingfield, Lewiston, Liberty, Locke Mills, Long Island, Lovell, Mechanic Falls, Monroe, Moody, North Windham, Otter Creek, Paris, Pittsfield, Poland, Rangeley, Readfield, Rockland, Rumford, Shawmut, Shirley Mills, South Gardiner, South Windham, Springfield, Steuben, Weeks Mills, Weld, West Kennebunk, West Paris, Windsor, Yarmouth.

Massachusetts--Amesbury, Byfield, Essex, Haverhill, Sandwich (press report), Westford.

New Hampshire--Belmont, Campton, Canaan, Center Ossipee, Concord, Errol, Exeter, Grafton, Hancock, Jackson, Keene, Lisbon, Lyme, Melvin Village, Monroe, North Woodstock, Tamworth, Twin Mountain, Underhill Center.

New York--Albany (press report), Fishers Islands, Hudson, Hudson Falls.

Rhode Island--East Providence (press report).

Vermont--Barnet, Barre, Barton, Beecher Falls, Brattleboro (press report), Burlington (press report), Derby Line, Fairfield, Guildhall, Hyde Park, Middlesex (press report), Montgomery Center, Montpelier, Newport, North Hartland, Norton, Perkinsville, Plainfield (press report), Rochester, Saint Johnsbury (press report), Salisbury, South Ryegate, Strafford, West Barnet.

Intensity II:

Connecticut--New London, Windsor Lock.

Maine--Abbot Village, Albion, Brewer, Dresden, East Boothbay, Gouldsboro, Round Pont, Sangerville, South Berwick, Sunset, York Beach.

Massachusetts--Merrimac, West Newbury.

New Hampshire--Center Harbor, Durham, Francestown, Greenfield, Greenland, Hanover, Lincoln, Madison, Mont Vernon, Piermont, Rutland, Thetford Center.

Vermont--Hartford, Irasburg, Lyndon Center, Orleans, Plainfield, Wolcott.

Felt:

Connecticut--Bethel, Cheshire, Milford, Newtown, Redding, Wilton.

Maine--LaGrange.

Massachusetts--Lawrence, Sunderland, Taunton.

9 January (G) New Brunswick, Canada

Origin time:	16 36 42.9
Epicenter:	47.02 N., 66.65 W.
Depth:	6 km

Magnitude: 5.1mb(G), 3.9MS(G), 5.0Mn(V)

This event is an aftershock of the earthquake at 12 53 51.9 UTC listed above. It was felt over much of the same area but was not canvassed for detailed intensity data and could not be mapped. Most newspaper articles included the effects of this earthquake with those of the earlier event. The maximum intensity is about V in the United States.

11 January (G) New Brunswick, Canada
Origin time: 21 41 08.0
Epicenter: 46.97 N., 66.66 W.
Depth: 7 km
Magnitude: 5.4mb(G), 4.5MS(G), 5.5Mn(V)

This event is an aftershock of the earthquake of January 9, 12 53 51.9 UTC, listed above. It was felt over an area of approximately 125,000 square kilometers of Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont (fig. 10).

Intensity VI:
Maine--
Caribou--one report of a cracked foundation, slight damage to concrete bridges, hairline cracks in interior walls, few merchandise items thrown from store shelves, few glassware broken, felt by many.
Haynesville--large cracks in plaster walls, broken underground pipes, large cracks in streets, felt by many.
Loring AFB--minor cracks in control tower walls, cracked dry wall.
Presque Isle--one report of cracked foundation and cinderblock walls, large cracks in streets and sidewalks, cracked chimneys, felt by many.
Saint Francis--one report of a cracked reinforced concrete foundation, hairline cracks in interior walls, few glassware broken, few cracked windows, felt by all.

Intensity V: The most common effects at the places listed below were that few small objects overturned and fell and a few merchandise items were thrown from store shelves.
Maine--
Ashland--hairline cracks in plaster walls.
Bridgewater.
Brownville Junction--ground cracks on dry and level ground.

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

MAINE--Continued

Dennyville--hairline cracks in dry wall.
East Sebago.
Exeter.
Fryeburg--hairline cracks in plaster walls.
Hollis Center.
Limestone.
Monticello--hairline cracks in plaster walls.
Quimby.
Saco--few cracked windows, hairline cracks in interior walls, water splashed onto sides of lakes.
Saint David.
Stockholm--moving vehicles rocked slightly.
Veazie--furniture moved.
Waterville--hanging pictures fell, few glassware broken.
West Sullivan.
Whitefield--few windows cracked.
Winterville--few cracked windows, few glassware broken, hairline cracks in dry wall.
Massachusetts--
Boston--few cracked windows, few glassware broken.

Intensity IV:
Maine--Andover, Augusta, Bass Harbor, Beals, Bingham, Blaine, Brooklin, Brookton, Brunswick, Buckfield, Burlington, Canaan, Castine, Cherryfield, Clinton, Columbia Falls, Costigan, Crouseville, Cumberland Center, Danville, Eagle Lake, East Baldwin, East Machias, Easton, Estcourt Station, Fairfield, Falmouth, Fort Kent Mills, Frankfort, Freedom, Gardiner, Gorham, Grand Lake Stream, Grand Isle, Greenville, Hancock, Harrington, Houlton, Hulls Cove, Jonesboro, Kenduskeag, Kents Hill, Kingman, Lewiston, Lille, Lincoln, Lisbon Falls, Machias, Machiasport, Madawaska, Mapleton, Meddybemps, Millinocket, Minot, New Sweden, New Vineyard, Norridgewock, North Amity, Northeast Harbor, North Leeds, North Monmouth, North New Portland, Olamon, Orono, Oxbow, Pembroke, Penobscot, Perham, Phillips, Plaisted, Prospect Harbor, Robbinston, Roque Bluffs (press report), Sabattus, Scarborough, Seal Harbor, Searsmont, Sheridan, Sherman Station, Sinclair, Smyrna Mills, South Freeport, South Paris, Stacyville, Stillwater, Stratton, Temple, Topsfield, Upper Frenchville, Van Buren, Vanceboro, Washburn, Weld, Westbrook, West Farmington, Westfield, Whitneyville, Wilton, Wytopitlock.

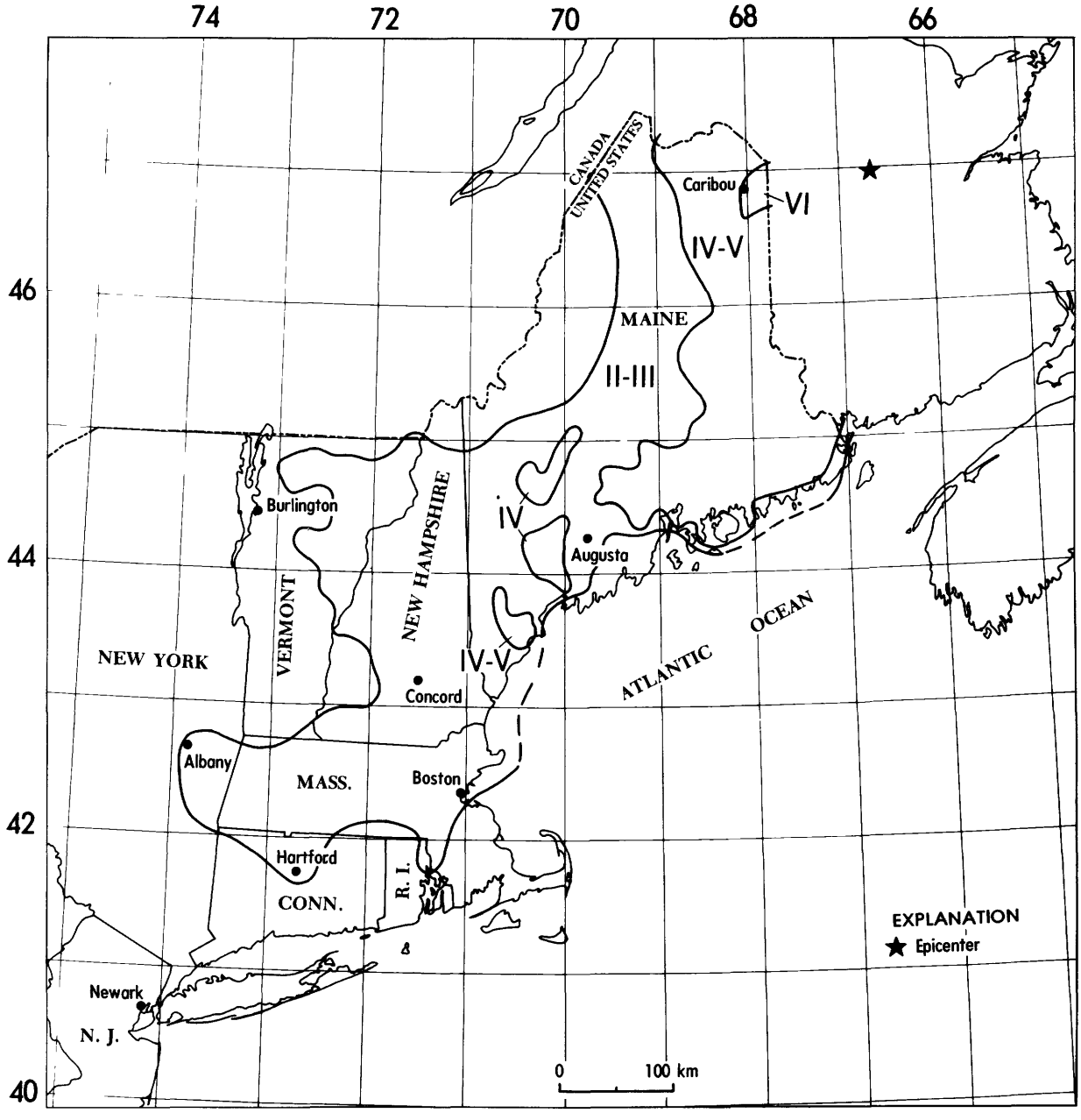

FIGURE 10.-- Isosoeismal map of the United States for the New Brunswick, Canada earthquake of 11 January 1982, 21 41 08.0 UTC. Roman numerals represent Modified Mercalli intensities between isoseismals.

Massachusetts--Beverly Farms, East Lynn (press report), East Boston (press report), Logan International Airport, North Andover, Rockport, Winthrop (press report).
New Hampshire--Alton, Colebrook, Danbury, Francestown, Hanover, Madison, New Durham, North Haverhill, North Stratford, Orford, Silver Lake.
New York--Hudson.
Vermont--Bakersfield, Greensboro, Plainfield, Rutland, Saint Johnsbury, South Barre, Wilder.

Intensity III:
Connecticut--East Hartford (press report), New Haven (press report), Stafford Springs.
Maine--Auburn, Bangor, Bath, Belgrade, Belgrade Lakes, Benedicta, Bethel, Brownville, Bucksport, China, Cutler, East Millinocket, Enfield. Fort Kent, Freeport, Frenchville, Friendship, Hinckley, Hudson, Jonesport, Kingfield, Lincoln Center, Lisbon Center, Livermore, Locke Mills, Lovell, Madison, Milbridge, Milford, Newport, North Waterboro, North Windham, Norway, Orland, Oxford, Paris, Passadumkeag, Patten, Perry, Portland, Princeton, Rangeley, Rumford, Saint Agatha, Salsbury Cove, Sargentville, Seboeis, Smithfield, Soldier Pond, South China, South Gardiner, Southwest Harbor, South Windham, Springfield, Standish, Steuben, Strong, Waite, Weeks Mills, West Bethel, Wilder, Woodland, Yarmouth, York Beach.
Massachusetts--Chatham, Greenfield, Malden (press report), Peabody.
New Hampshire--Chocorua, Concord, Errol, Exeter, Glen, Henniker, Hill, Keene, Monroe, Pike, Twin Mountain, Warren, West Ossipee, Wilmot Flat, Woodsville.
Rhode Island--East Providence (press report), Providence.
Vermont--Barre, Beecher Falls, Burlington, East Thetford, Ely, Hardwick, Island Pond, Jeffersonville, Lyndonville (press report), Middlesex (press report), Montgomery Center, Moretown, Newbury, Strafford.

Intensity II:
Maine--Alfred, Biddeford, Brooksville, Dixfield, Dresden, Franklin, Howland, Lisbon, Manchester, Orrington, Palermo, Sherman Mills, Solon, West Enfield.
Massachusetts--Hathorne, Haverhill.
New Hampshire--Alton Bay, Center Barnstead, Durham, Enfield, Greenland, Tamworth.

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

MAINE--Continued

New York--Albany (press report).
Vermont--Fairfield, North Hartland, Orleans, Tunbridge, Wells River, Windsor.

Felt:
Maine--Brewer (press report), Bucks Harbor, Dedham, Hampden (press report), Winter Harbor, Winterport (press report).
Massachusetts--Arlington, Chesire, Lynn, Lynnfield, Revere, Salem, Saugus, Wellesley (all from press reports).

19 January (J) Central New Hampshire
Origin time: 00 14 42.0

See New Hampshire listing.

26 March (J) Southern Maine
Origin time: 14 57 39.4
Epicenter: 44.52 N., 69.51 W.
Depth: 0 km
Magnitude: 2.3Mn(J)

Felt at Albion and China (press report).

31 March (O) New Brunswick, Canada
Origin time: 21 02 20.0
Epicenter: 47.00 N., 66.60 W.
Depth: 5 km
Magnitude: 5.0mb(G), 4.5Mn(J)

Intensity V:
Maine--
Easton--few small objects overturned and fell, felt by many.
Mapleton--few small objects overturned and fell, felt by many.
Saint David--few merchandise items thrown from store shelves, few small objects overturned and fell, felt by many.
Saint Francis--few cracked windows, few small objects fell, a report of a cracked chimney, felt by many.

Intensity IV:
Maine--Bridgewater, Crouseville, Grand Isle, Mars Hill, Monticello, New Limerick, Oakfield, Stockholm, Van Buren.

Intensity III:
Maine--Blaine, Brookton, Lille, Limestone, Lubec, Perham, Presque Isle, Sheridan, Upper Frenchville, Waite, Washburn.
Vermont--Bethel.

Intensity II:
Maine--New Sweden, Sherman Mills, Vanceboro, Waterville, Westfield.
Massachusetts--Beverly.

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

MASSACHUSETTS

9 January (G) New Brunswick, Canada
Origin time: 12 53 51.9

See Maine listing.

11 January (G) New Brunswick, Canada
Origin time: 21 41 08.0

See Maine listing.

19 January (J) Central New Hampshire
Origin time: 00 14 42.0

See New Hampshire listing.

27 January (J) Southeast Massachusetts
Origin time: 18 50 05.1
Epicenter: 41.87 N., 70.97 W.
Depth: 2 km
Magnitude: 3.0Mn(J)
Intensity IV: Lakeview (press report), Middleboro.
Intensity III: Brant Rock, Cataumet, Taunton.
Intensity II: Raynham.

31 March (O) New Brunswick, Canada
Origin time: 21 02 20.0

See Maine listing.

MISSISSIPPI

21 January (K) Central Arkansas
Origin time: 00 33 54.8

See Arkansas listing.

MISSOURI

21 January (K) Central Arkansas
Origin time: 00 33 54.8

See Arkansas listing.

11 February (K) New Madrid area
Origin time: 02 54 23.9
Epicenter: 36.64 N., 89.56 W.
Depth: 4 km
Magnitude: 2.8MD(K)

Felt at Ristine (K).

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

MONTANA

20 February (G) Western Montana
Origin time: 09 08 49.6
Epicenter: 46.56 N., 112.09 W.
Depth: 5 km
Magnitude: 2.6ML(G), 2.7ML(D)

Felt at Helena (Montana Bureau of Mines and Geology).

22 February (G) Northwestern Montana
Origin time: 10 43 52.5
Epicenter: 48.10 N., 113.96 W.
Depth: 5 km
Magnitude: 3.1ML(G)
Intensity IV: Big Fork.
Intensity III: Big Arm.
Intensity II: Creston.

9 March (Q) Northwestern North Dakota
Origin time: 13 10 50.1

See North Dakota listing.

NEVADA

28 January (E) Southern Nevada
Origin time: 16 00 00.104
Epicenter: 37.09 N., 116.05 W.
Depth: 0 km
Magnitude: 5.9mb(G), 4.5MS(G), 5.6ML(B), 5.8ML(P)

Nevada Test Site Explosion "JORNADA" at 37° 05'28.82" N., 116° 03'04.43" W., surface elevation 1260 m, depth of burial 640 m.

28 January (G) Western Nevada
Origin time: 22 50 43.6
Epicenter: 38.62 N., 118.09 W.
Depth: 5 km
Magnitude: 4.3ML(B)

The effects from this event and the magnitude 4.5 one at 22 51 02.1 UTC are indistinguishable and a maximum intensity V is assigned to both; however, most of the felt data is listed below. It is one of a swarm of earthquakes.

Intensity V:
Luning--few small objects overturned and fell.
Intensity IV: Hawthorne, Mina.
Intensity III: Gabbs, Minden, Schurz, Silver Springs.

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

NEVADA--Continued

28 January (G) Western Nevada
Origin time: 22 51 02.1
Epicenter: 38.54 N., 118.07 W.
Depth: 5km
Magnitude: 4.5ML(B)
Intensity V: Luning (see previous earthquake).

28 January (G) Western Nevada
Origin time: 22 59 03.6
Epicenter: 38.61 N., 118.18 W.
Depth: 5 km
Magnitude: 3.7ML(B)

Felt at Luning.

12 February (E) Southern Nevada
Origin time: 14 55 00.083
Epicenter: 37.22 N., 116.46 W.
Depth: 0 km
Magnitude: 5.4mb(G), 5.4ML(B)

Nevada Test Site explosion "MOLBO" at 37°13'27.59" N., 116°27'45.54" W., surface elevation 1900 m., depth of burial 651 m.

12 February (E) Southern Nevada
Origin time: 15 25 00.089
Epicenter: 37.35 N., 116.32 W.
Depth: 0 km
Magnitude: 5.6mb(G), 5.5ML(B)

Nevada Test Site explosion "HOSTA" at 37°20'52.71" N., 116°18'57.97" W., surface elevation 2103 m, depth of burial 640 m.

NEW HAMPSHIRE

9 January (G) New Brunswick, Canada
Origin time: 12 53 51.9

See Maine listing.

11 January (G) New Brunswick, Canada
Origin time: 21 41 08.0

See Maine listing.

19 January (J) Central New Hampshire
Origin time: 00 14 42.0
Epicenter: 43.50 N., 71.60 W.
Depth: 8 km
Magnitude: 4.5mb(G), 4.5Mn(V), 4.7MD(J)

This earthquake was felt over an area of approximately 127,000 square kilometers of Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont (fig. 11). It was also felt in Canada.

Intensity VI:
Massachusetts--
Drury--cracked chimneys.
Westford--bricks fell from chimneys, cracked concrete floor, few glassware broken, felt by many.
New Hampshire--
Ashland--cracked chimneys, few merchandise items thrown from store shelves, few glassware broken, felt by many.
Bristol--split interior walls, some building damage, cracked plaster walls, few merchandise items thrown from store shelves, few glassware broken, few small objects overturned and fell, felt by all.
Danbury--few chimneys cracked, interior walls had hairline cracks, few merchandise items thrown from store shelves, few glassware broken, few small objects overturned and fell, felt by all.
Laconia--large cracks in plaster walls, one report of a cracked foundation, few merchandise items thrown from store shelves, few glassware broken, few small objects overturned and fell, some windows broken out, felt by all.
North Stratford--slight damage to fireplaces, cracked chimneys, hairline cracks in plaster walls, few small objects fell, felt by many.
Vermont--
Bomoseen--cracked chimneys, few glassware broken, few small objects overturned and fell, hanging picture out of place.
Chelsea--large cracks in interior walls, building shook strongly, felt by all.
Shaftsbury--cracked chimneys, hairline cracks in dry wall, felt by many.
West Rupert--cracked chimneys, interior walls separated from ceiling or floor, few merchandise items thrown from store shelves, hanging pictures fell, felt by many.
Intensity V: The most common effects at the places listed below were that few small objects overturned or fell, few glassware or dishes were broken, few merchandise items were thrown from store shelves, few windows were cracked, and hairline cracks appeared in walls of plaster or dry wall.
Connecticut--Old Saybrook, Somers, Stafford Springs, Vernon, West Suffield.

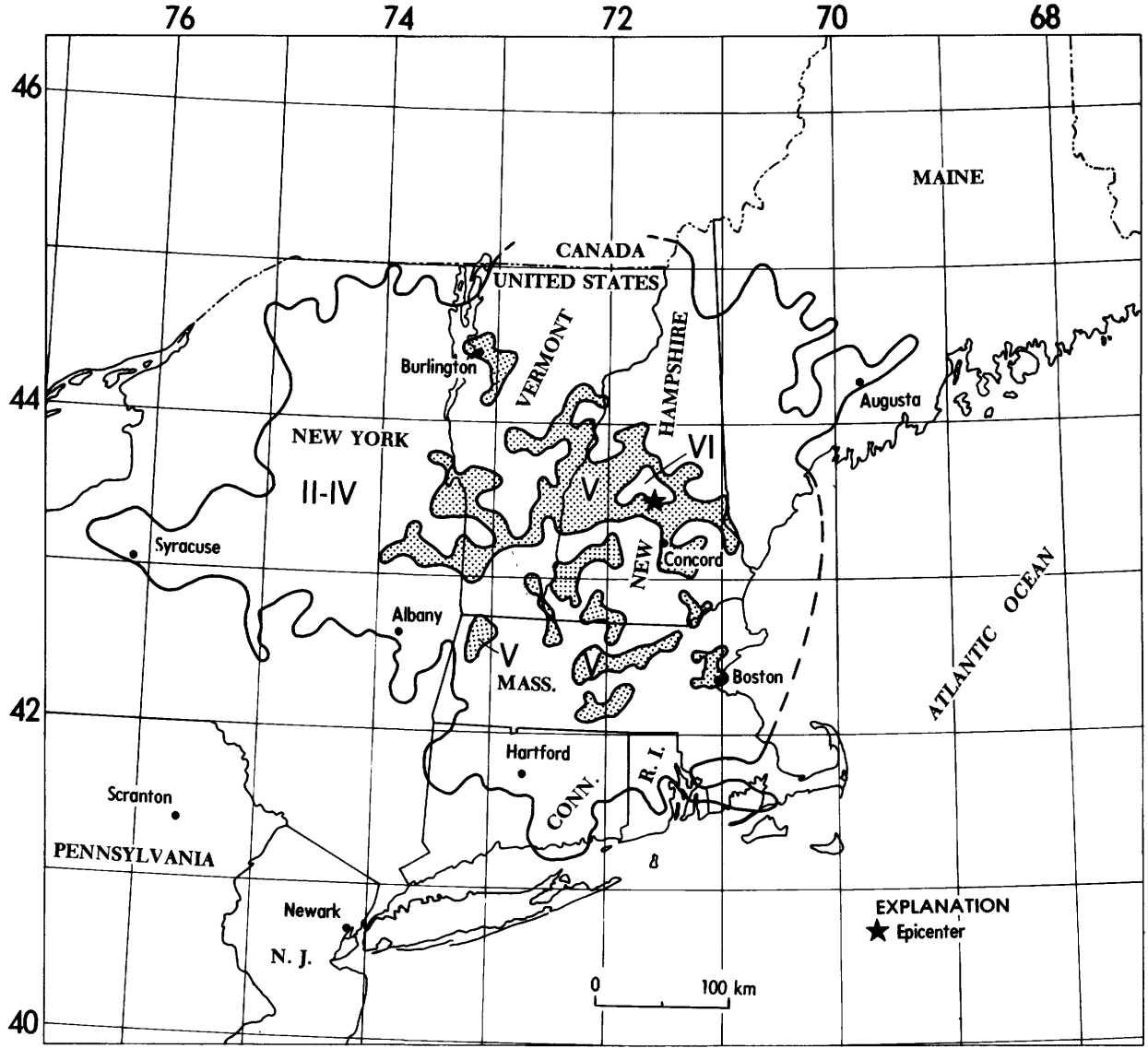

FIGURE 11.--Isoseismal map for the central New Hampshire earthquake of 19 January 1982, 00 14 42.0 UTC. Roman numerals represent Modified Mercalli intensities between isoseismals.

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

NEW HAMPSHIRE--Continued

Maine--Berwick, Denmark, East Peru, Harrison, Limington, South Paris, West Poland.
Massachusetts--Adams, Amherst, Ashburnham, Ashland, Auburn, Ayer, Brimfield, Brookfield, Burlington, Charlton City, Chartley, Cherry Valley, Cheshire, Cummington, Dalton, East Douglas, East Princeton, Erving, Goshen (press report), Hardwick, Hubbardston, Leicester, Leominster, Linwood, Medford, Melrose, Mendon, Methuen, Millers Falls, Mount Saint James, Newtonville, North Adams, North Chelmsford (light furniture overturned), North Hatfield, North Oxford, Northfield, Otis, Peabody, Petersham, Princeton, Reading, Revere, Roslindale, Shelburne Falls (hanging pictures fell), Shirley, South Ashburnham, South Barre, South Lancaster, Sturbridge, Templeton, West Brookfield, West Somerville, Westford, Westwood, Wilkinsonville, Worcester.
New Hampshire--Andover, Belmont, Bradford, Canaan, Center Tuftonboro, Claremont, Deerfield, Derry, Dover, Dublin, East Andover, East Candia, East Swanzey, Elkins (moving vehicles rocked slightly), Enfield, Enfield Center (difficulty in standing), Etna, Fitzwilliam Depot, Franklin, Gilford (press report), Gilmanton, Gilmanton Iron Works, Gilsum, Grafton (standing vehicles rocked moderately, trees and bushes strongly shaken), Groveton, Hampton, Hebron, Hill, Hillsboro, Hinsdale (light furniture overturned), Holderness, Hooksett (difficulty in standing), Jaffrey, Keene (difficulty in standing), Lakeport (press report), Lebanon, Lochmere (difficulty in standing), Loudon (hanging pictures fell), Madison, Melvin Village, Milford, Milton, Milton Mills (moving vehicles rocked slightly), Monroe, New Boston, New Durham, New Ipswich (moving vehicles rocked slightly), North Salem, Orford, Plaistow, Portsmouth Naval Base, Rindge, Rumney, Salem, Sanbornton (difficulty in standing), Spofford, Strafford, Sunapee, Suncook, Tilton, Walpole (moving vehicles rocked moderately), Warren, Washington, Weirs Beach (moving vehicles rocked slightly), Wendell, Westmoreland, Wilmot Flat, Winnisquam, Woodstock (moving vehicles rocked moderately), Woodsville.
New York--Athens (moving vehicles rocked slightly), Au Sable Forks, Diamond Point, Fort Ann, Fort Hunter, Gansevoort, Glens Falls, Gloversville, Granville, Greenwich, Hague, Hartwick, Jay (light furniture overturned), Johnstown (moving vehicles rocked slightly), Lake Placid, Middle Grove, North River, Porter Corners, Potsdam, Putnam Station, Richfield Springs, Schuylerville (disturbed flow of spring water), Shushan, Tupper Lake, Wadhams, Whitehall.
Rhode Island--Coventry.
Vermont--Arlington (light furniture overturned), Ascutney, Bethel, Bolton Valley, Bradford (hanging pictures fell), Brattleboro (hanging pictures fell), Bristol (moving vehicles rocked slightly), Brownsville, Burlington, Cabot, Cavendish, Center Rutland, Chester, Danby, East Montpelier, East Poultney, East Thetford, Ely, Essex, Fairfield, Glover, Groton, Hancock, Hartford, Hartland (moving vehicles rocked moderately), Hartland Four Corners, Huntington Center, Hydeville, Jonesville, Londonderry, Lyman, Lyndon Center, Manchester Center, Newfane, Newport, Northfield, Northfield Falls (difficulty in standing), North Hartland (a cracked foundation reported), North Thetford, Peru, Proctor, Proctorsville, Reading, Rochester, Rutland (hanging pictures fell), Saint Johnsbury, South Ryegate, South Woodstock, Thetford, Thetford Center (one cracked foundation reported), Tunbridge (difficulty in standing), Vershire, Wells, Wells River, West Dummerston, West Fairlee, West Hartford, West Rutland, West Topsham, Wilder, Wilmington, Windsor, Woodstock.

Intensity IV:

Connecticut--Avon, Bloomfield, Bristol, Clinton, Danielson, Derby, East Hampton, East Woodstock, Enfield, Fabyan, Hanover, Kensington, Litchfield, Melrose, Middlebury, New Hardford, Pequabuck, Plainville, Staffordville, Tolland, Torrington, Washington, Wauregan, Winsted, Woodstock.
Maine--Andover, Brownfield, Buckfield, Buxton (press report), Cape Neddick, Center Lovell, Cornish, East Parsonfield, East Sebago, Fryeburg, Gorham, Hiram, Kennebunkport, Kents Hill, Kezar Falls, Kittery, Limerick, Lisbon Center, Litchfield, Long Island, Lovell, Naples, Newfield, Newry, North Berwick, North Leeds, North Shapeleigh, North Waterboro, Ogunquit, Oxford, Peaks Island, Porter, Portland (press report), Rumford Center, Sanford, South Portland (press

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

NEW HAMPSHIRE--Continued

Table 2.-*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

NEW HAMPSHIRE--Continued

report), Standish, Weld, West Baldwin, Westbrook, West Buxton, West Kennebunk, West Sumner, Wilton, York.

Massachusetts--Acton, Amesbury, Ashby, Ashfield, Athol, Baldwinville, Barre, Berlin, Bernardston, Beverly, Billerica, Blackstone, Bolton, Bradford, Brockton (press report), Bridgewater, Buckland, Cambridge, Carlisle, Charlemont, Charlestown, Charlton, Chelmsford, Chester, Chicopee, Clinton, Conway, Danvers, Dartmouth, Dedham (press report), Dover, Dracut, Dunstable, East Arlington, East Boston, East Bridgewater, East Brookfield, East Longmeadow, East Otis, East Taunton, East Templeton, Easton (press report), Fitchburg, Gardner, Grafton, Groton, Grove Hall, Harvard, Haverhill, Heath, Hingham, Holden, Holliston, Holyoke (press report), Hudson, Jefferson, Kearney Square, Lake Pleasant, Lawrence, Leeds, Lincoln Littleton, Longmeadow (press report), Lowell, Lynn (press report), Lynnfield, Manchaug, Marlborough, Millville, Montague, Natick, New Bedford (press report), New Braintree, North Amherst, Northampton, North Andover, Northborough, North Easton, North Marshfield, North Quincy (press report), North Reading, North Waltham, Oakham, Orange, Orleans, Oxford, Palmer, Pembroke, Pepperell, Plainfield, Quincy (press report), Revere (press report), Rockport, Rowe, Royalston, Russell, Saugus, Saxonville, Shawsheen Village, Shervorn, Shutesbury, South Berlin, South Boston, South Chelmsford, South Deerfield, South Dennis, South Framingham, South Grafton, South Hadley (press report), South Hamilton, South Lee, Spencer, Springfield (press report), Sterling Junction, Stoughton, Stow, Sudbury, Taunton, Tewksbury, Townsend, Tyngsboro, Upton, Wakefield, Wales, Ward Hill, Ware, Webster, Wanham, Westborough, West Boylston, West Groton, Westminster, West Roxbury, West Townsend, West Upton, Whately, Wheelwright, Williamsburg, Winchendon Springs, Windsor, Winthrop (press report), Woburn, Worthington.

New Hampshire--Acworth, Alstead, Alton, Alton Bay, Aschuelot, Atkinson, Auburn, Barnstead, Bartlett, Bath, Bennington, Bethlehem, Campton, Candia, Canterbury, Center Barnstead, Center Ossipee, Center Harbor, Center Sandwich, Charlestown, Chester, Chesterfield, Chocorua, Colebrook, Concord, Contoocook, Conway, Cornish Flat, Drewsville, East Derry, East Hampstead, East Hebron, East Lempster, East Sullivan, East Wakefield, Eaton Center, Francestown, Freedom, Georges Mills, Glencliff, Goffstown, Gorham, Goshen, Grantham, Greenfield, Greenland, Guild, Hampstead, Hanover, Harrisville, Haverhill, Henniker, Hudson, Intervale, Jackson, Jefferson, Kearsarge, Kensington (press report), Kingston, Lancaster, Lempster, Lincoln, Lisbon, Littleton, Londonderry, Lyme, Lyme Center, Manchester, Meadows, Meriden, Merrimack, Mirror Lake, Mont Vernon, Moultonboro, Mount Sunapee, Munsonville, Nashua, Newbury, New Castle, Newfields, New Hampton, New London, Newton, North Chichester, North Hampton, North Haverhill, North Sandwich, North Sutton, Nottingham, Ossipee, Pembroke (press report), Peterborough, Piermont, Pike, Pittsfield, Raymond, Rochester, Rye, Salisbury, Sanbornville, Sandown, South Acworth, South Lyndeboro, South Newbury, South Sutton, Stoddard, Tamworth, Temple, Troy, Twin Mountain, Warner, Weare, West Nottingham, West Ossipee, West Peterborough, West Springfield, West Swanzey, Windham, Wolfeboro, Wonalancet.

New York--Albany, Altona, Argyle, Bakers Mills, Berlin, Bolton Landing, Brant Lake, Clifton Park (press report), Caroga Lake, Central Bridge, Central Square (press report), Chestertown, Clemons, Cleverdale, Clinton, Cold Brook, Colton, Cossayuna, Crown Point, Dannemora, Dolgeville, East Chatham, Elizabethtown, Elnora, Forestport, Guilderland, Hadley, Hoosick, Hoosick Falls, Hudson Falls, Ilion, Inlet, Johnsburg, Johnsonville, Keene, Keene Valley, Keeseville, Lake George, Lake Luzerne, Maplecrest, Mayfield, Middle Falls, Middle Granville, Minerva, Mineville, Moriah Center, Newport, North Hudson, North Syracuse, Northville, Parishville, Plattsburgh, Prospect, Raquette Lake, Redford, Remsen, Rensselaer (press report), Richmondville, Riparius, Rock City Falls, Rome, Saranac, Saranac Lake, South Colton, South Schroon, Springfield Center, Stony Creek, Ticonderoga, Tribes Hill, Troy, Upper Jay, Voorheesville, Warrensburg, Wells, West Camp, Whallonsburg, White River Junction (a cracked foundation reported), Wilmington, Witherbee.

Rhode Island--Burrillville (press report), Cranston (press report), Foster (press

Table 2.-*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

NEW HAMPSHIRE--Continued

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

NEW HAMPSHIRE--Continued

report), Harrisville, Hope, North Scituate, Oakland, Providence, Slocum.

Vermont--Bakersfield, Barnard, Barnet, Bellows Falls, Belmont, Benson, Bondville, Brandon, Bridgewater, Bridgewater Corn, Bridport, Calais, Cambridgeport, Castleton, Charlotte, Chittenden, Concord, Corinth, Cuttingsville, Danville, Derby Line, Dorset, East Arlington, East Barre, East Corinth, East Dorset, East Ryegate, East Saint Johns, East Wallingford, Eden, Fair Haven, Fairfax, Florence, Forest Dale, Gaysville, Grafton, Grand Isle, Granville, Guildhall, Highgate Springs, Hyde Park, Island Pond, Jacksonville, Jamaica, Jericho, Killington, Lake Elmore, Lower Waterford, Ludlow, Lyndon, Marshfield, McIndoe Falls, Middlebury, Middletown Springs, Milton, Monkton, Morgan, Mount Holly, Newbury, New Haven, Newport Center, North Bennington, North Concord, North Montpelier, North Pomfret, North Troy, Norwich, Orleans, Orwell, Pasumpsic, Pawlet, Perkinsville, Pittsford, Plymouth, Post Mills, Pownal, Putney, Randolph Center, Ripton, Roxbury, Saint Albans Bay, Salisbury, Saxtons River, Sharon, Shelburne, Sheldon, Shoreham, South Barre, South Dorset, South Londonderry, South Newbury, South Pomfret, South Royalton, South Strafford, Springfield, Starksboro, Stockbridge, Stowe, Strafford, Taftsville, Topsham, Tunbridge, Underhill Center, Vergennes, Vernon, Waitsfield, Wallingford, Wardsboro, Warren, Washington, Waterbury Center, Waterville, Websterville, West Barnet, West Brattleboro, West Charleston, West Danville, Westfield, West Halifax, Westminster, Westminister Station, West Townshend, Weston, Williamstown, Woodbury, Worcester.

Intensity III:

Connecticut--Abington, Barrington (press report), Colchester, Colebrook, East Canaan, East Lyme, Eastford, Glastonbury, Granby, Grosvenor Dale, Hartford (press report), Higganum, Huntington (press report), Jewett City, Manchester, Mechanicsville, Moodus, North Granby, North Grosvenordale, North Smithfield (press report), Pomfret Center, Rocky Hill, Sharon, Somersville, South Kent, South Lyme, South Woodstock, Stamford (press report), Sterling, Suffield, Thompson, Uncasville, Westbrook, West Cornwall, West Willington, Willimantic, Windsor, Windsor Locks, Yantic.

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

NEW HAMPSHIRE--Continued

Maine--Alfred, Belgrade, Bethel, Biddeford, Bryant Pond, Cape Elizabeth, Cape Porpoise, Danville, East Poland, East Stoneham, Eliot, Emery Mills, Freedom, Gray, Hallowell, Hanover, Kittery Point, Lisbon Falls, Locke Mills, Lovell, Maplewood, Milford, Monmouth, Moody, New Sharon, North Fryeburg, Ocean Park, Palermo, Paris, Rangeley, Rumford, Rumford Point, Sabattus, Scarborough, Sebago Lake, Shapleigh, South Berwick, South Hiram, South Waterford, Waterboro, Wells, West Bethel, West Bowdoin, West Newfield, West Paris, Woodfords, York Harbor.

Massachusetts--Agawam, Astor, Becket, Bedford, Beverly Farms, Blandford, Boston, Boylston, Brant Rock, Brighton, Brookline, Cathedral, Chesterfield, Colrain, Concord, Cushman, Dedham, Deerfield, East Dedham, Easthampton, East Lynn, Elmwood, Feeding Hills, Fiskdale, Framingham, Gilbertville, Gloucester, Granby, Granville, Greenfield, Griswoldville, Hadley, Hampden, Hatfield, Hathorne, Highlands, Hollis Center, Hopedale, Huntington, Hyde Park, Leverett, Ludlow, Lunenburg, Marblehead, Merimac, Middlefield, Milford, Morningdale, Needham, New Salem, Newton Upper Falls, North Adams (press report), Northbridge, North Brookfield, North Grafton, Oakdale, Pittsfield (press report), Plymouth, Rowley, Rutland, Sandisfield, Sharon, Shattuckville, Somerville, Southbridge, South Carver, South Easton, Sterling, Thorndike, Three Rivers, Topsfield, Turners Falls, Uxbridge, Walpole, Washington (press report), Watertown, Wendell, Wendell Depot, West Boxford, West Bridgewater, Westfield, West Lynn (press report), West Millbury, West Newton, West Springfield, West Sullivan, Whitinsville, Williamstown, Winchendon, Woodville, Woronoco.

New Hampshire--Brookline, Center Conway, Center Strafford, Center Tuftonboro, Danville, Epping, Exeter, Fitzwilliam, Fremont, Greenville, Hancock, Marlborough, Milan, Newton Junction, Northwood, North Woodstock, Pelham, Sandwich, Somersworth, South Effingham, Waterville Valley, Wentworth, West Chesterfield, Whitefield, Winchester.

New York--Adirondack, Ausabale Chasm, Averill park, Ballston Lake, Berne, Boonville, Broadalbin, Cambridge, Canajoharie, Churubusco, Claverack, Colonie

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

NEW HAMPSHIRE--Continued

(press report), Comstock, Corinth, Cropseyville, Delmar, East Syracuse (press report), East Worcester, Esperance, Fort Johnson, Frankfort, Gallupville, Glenmont, Hannawa Falls, Hudson, Huletts Landing, Indian Lake, Lake Pleasant, Lewis, Little Falls, Liverpool (press report), Lyon Mountain, Malone, Mattituck, Mellenville, Melrose, Mohawk, Moriah, Morrisonville, Newcomb, New Scotland, Newtonville, Nicholville, North Hoosick, Old Forge, Peru, Poland, Port Henry, Ravena, Saratoga Springs, Schachticoke, Schroon Lake, Silver Bay, Sloansville, Stottville, Stratford, Syracuse (press report), West Davenport, Westport, Wevertown, Whippleville, Willsboro.

Rhode Island--Chepachet, Exeter, Fiskeville, Mapleville, Slatersville, Warwick, Woonsocket.

Vermont--Barre, Barton, Beecher Falls, Brookfield, Cambridge, Craftsbury, East Burke, East Dover, East Haven, East Middlebury, Gilman, Graniteville, Greensboro, Greensboro Bend, Hardwick, Hinesburg, Irasburg, Jeffersonville, Leicester Junction, Marlboro, Montgomery Center, Moretown, Morrisville, Moscow, Mount Snow, Peacham, Plainfield, Readsboro, Richford, South Hero, Waterbury, West Burke, West Dover, West Glover, West Newbury, West Wardsboro, Whitingham, Whiting, Wolcott.

Intensity II:

Connecticut--Canterbury, Morris, Putnam, Quinbaug, South Glastonbury, Waterford.

Maine--Brooksville, Brownville, East Waterford, New Gloucester, Weeks Mills.

Massachusetts--Auburndale, East Falmouth, Essex, Hanson, Hinsdale, Raynham, Southfield, Tyringham, West Hatfield.

New Hampshire--Pittsburg, Rollinsford.

New York--Bloomingdale, Earlville, Fultonville, Glenford, Manlius, North Bangor, Onieda, Schyler Lake, Speculator, Spraker, West Lebanon,.

Rhode Island--Ashaway, Tiverton.

Vermont--East Charleston, Rupert, Sutton, West Pawlet.

Felt:

Connecticut--Columbia, Mansfield Center, Montville (press report).

Maine--Casco, East Waterboro, Strong.

Massachusetts--Millbury, Waltham (press report).

New Hampshire--Antrim, Durham, Northfield (press report).

New York--Canastota, Cazenovia, Lysander, Palermo (press report).

Vermont--Bethel (press report), Burlington (press report), Craftsbury, Common, Lunenburg, Rutland (press report).

27 January (J) Central New Hampshire
Origin time: 16 43 14.5
Epicenter: 43.53 N., 71.61 W.
Depth: 2 km
Magnitude: 2.8Mn(J)
Intensity V:
Laconia--hairline cracks in plaster walls, felt by many.
Lochmere--few glassware broken, few small objects overturned and fell.
Weare--few glassware broken, few small objects overturned and fell.
Intensity IV: Bristol, Center Harbor, Danbury, Hill, Sanbornton.
Intensiy III: Alton, Belmont (press report), Contoocook, Franklin, Guild, Penacook, Wendell, West Ossipee.
Intensity II: Center Sandwich, New Durham.

NEW MEXICO

16 March (G) Eastern New Mexico
Origin time: 11 03 02.7
Epicenter: 35.36 N., 103.27 W.
Depth: 5 km
Magnitude: 3.1Mn(T)
Intensity III: Logan.

NEW YORK

9 January (G) New Brunswick, Canada
Origin time: 12 53 51.9

See Maine listing.

11 January (G) New Brunswick, Canada
Origin time: 21 41 08.0

See Maine listing.

19 January (J) Central New Hampshire
Origin time: 00 14 42.0

See New Hampshire listing.

NORTH DAKOTA

9 March (Q) Northwestern North Dakota

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

NORTH DAKOTA--Continued

Origin time: 13 10 50.1
Epicenter: 48.51 N., 104.03 W.
Depth: 18 km
Magnitude: 3.3Mn(Q)
Intensity III:
Montana--Antelope (telephone report).
North Dakota--Grenora (telephone report).

OREGON

1 March (W) Mount St. Helens area
Origin time: 17 40 04.5

See Washington listing.

PENNSYLVANIA

3 February (Z) Southwest Pennsylvania
Origin time: 04 28 20.6
Epicenter: 40.21 N., 79.05 W.
Depth: 2 km
Magnitude: 2.6Mn(Z)
Intensity III: Ferndale, Shanksville.
Intensity II: Jennerstown.

RHODE ISLAND

9 January (G) New Brunswick, Canada
Origin time: 12 53 51.9

See Maine listing.

11 January (G) New Brunswick, Canada
Origin time: 21 41 08.0

See Maine listing.

19 January (J) Central New Hampshire
Origin time: 00 14 42.0

See New Hampshire listing.

SOUTH CAROLINA

1 March (G) Southeastern South Carolina
Origin time: 03 33 13.6
Epicenter: 32.94 N., 80.14 W.
Depth: 7 km
Magnitude: 3.0Mn(G)

Felt strongest in an area between Middleton

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

SOUTH CAROLINA--Continued

Gardens and Kings Grant subdivision south of Summerville.

Intensity IV: 2 miles south of Summerville.
Intensity III: Bonneau, Ladsen, Lincolnville, Summerville.
Intensity II: Charleston Heights.

2 March (G) Central South Carolina
Origin time: 16 48 08.0
Epicenter: 34.32 N., 81.38 W.
Depth: 5 km
Magnitude: 2.5Mn(G)
Intensity III: Monticello.

TENNESSEE

2 January (K) Central Tennessee
Origin time: 02 00 25.8
Epicenter: 35.19 N., 86.44 W.
Depth: 7 km
Magnitude: 2.9Mn(G), 2.8MD(K)

Felt in Bedford, Coffee, Franklin, Lincoln, Marshall, and Moore Counties (press report).

Intensity V: Lynchburg (broken windows and dishes).
Intensity IV: Fayetteville, Flintville, Huntland, Mulberry, and Pleasant Grove.
Intensity III: Lewisburg.

TEXAS

4 January (G) Southwestern Texas
Origin time: 16 56 08.1
Epicenter: 31.18 N., 102.49 W.
Depth: 5 km
Magnitude: 3.9Mn(T)
Intensity III: Fort Stockton.

UTAH

7 January (U) Southern Utah
Origin time: 16 21 46.6
Epicenter: 37.01 N., 112.88 W.
Depth: 9 km
Magnitude: 2.9ML(G)

Felt at Colorado City, Arizona (U).

12 February (U) Southern Utah

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

UTAH--Continued

Origin time: 10 44 13.7
Epicenter: 37.40 N., 112.54 W.
Depth: 7 km
Magnitude: 3.6ML(U)
Intensity IV: Glendale (press report).

5 March (U) Southern Utah
Origin time: 05 50 23.6
Epicenter: 37.32 N., 112.60 W.
Depth: 7 km
Magnitude: 3.6ML(G)
Intensity IV:
Utah--Gendale, Kanab.
Intensity III:
Arizona--Fredonia.

VERMONT

9 January (G) New Brunswick, Canada
Origin time: 12 53 51.9

See Maine listing.

11 January (G) New Brunswick, Canada
Origin time: 21 41 08.0

See Maine listing.

19 January (J) Central New Hampshire
Origin time: 00 14 42.0

See New Hampshire listing.

31 March (O) New Brunswick, Canada
Origin time: 21 02 20.0

See Maine listing.

WASHINGTON

21 January (W) Northwest Washington
Origin time: 16 05 45.3
Epicenter: 48.47 N., 121.70 W.
Depth: 0 km
Magnitude: 2.5ML(G)

Felt at Van Horn (W).

21 January (W) Northwest Washington
Origin time: 17 12 57.5
Epicenter: 48.48 N., 121.71 W.
Depth: 2 km
Magnitude: 2.0ML(G)

Felt at Van Horn (W).

30 January (W) Northwestern Washington

Table 2.--*Summary of macroseismic data for U. S. earthquakes, January-March 1982*--Continued

WASHINGTON--Continued

Origin time: 02 37 54.3
Epicenter: 48.78 N., 122.70 W.
Depth: 18 km
Magnitude: 2.9ML(G)

Felt in the San Juan Islands.

1 March (W) Mount St. Helens area
Origin time: 17 40 04.5
Epicenter: 46.35 N., 122.25 W.
Depth: 12 km
Magnitude: 4.1mb(G), 4.1ML(G)

Felt in the Elk Lake area.

Intensity V:
Washington--
Glenoma--few small objects overturned, felt by all.
Silver Creek--few merchandise items were thrown from store shelves, few small objects overturned and fell, person had difficulty in walking, felt by many.
Intensity IV:
Washington--Ashford, Eatonville, Elbe, La Center, La Grande, Longmire, Littlerock, Mineral, Packwood, Randle, Salkum, Silverlake, Vader, Yacolt.
Intensity III:
Oregon--Bridal Veil, Clatskanie, Saint Helens, Westport.
Washington--Adna, Cathlamet, Cougar, Mossyrock, Naselle, Skamokawa, Snoqualmie, Toledo, Wauna.
Intensity II:
Washington--Amboy, Castle Rock, Dockton, Orting, Ryderwood, Tokeland, Vashon, Winlock, Woodland.
Felt:
Washington--Federal Way, Kelso, Longview (all press reports).

WYOMING

1 March (G) Southwestern Wyoming
Origin time: 10 43 06.2
Epicenter: 42.99 N., 111.04 W.
Depth: 5 km
Magnitude: 3.6ML(G)
Intensity V:
Wyoming--Freedom (few small objects fell, a report of stone fences fallen, felt by several).
Intensity IV:
Wyoming--Etna, Thayne.
Intensity III:
Idaho--Palisades.

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