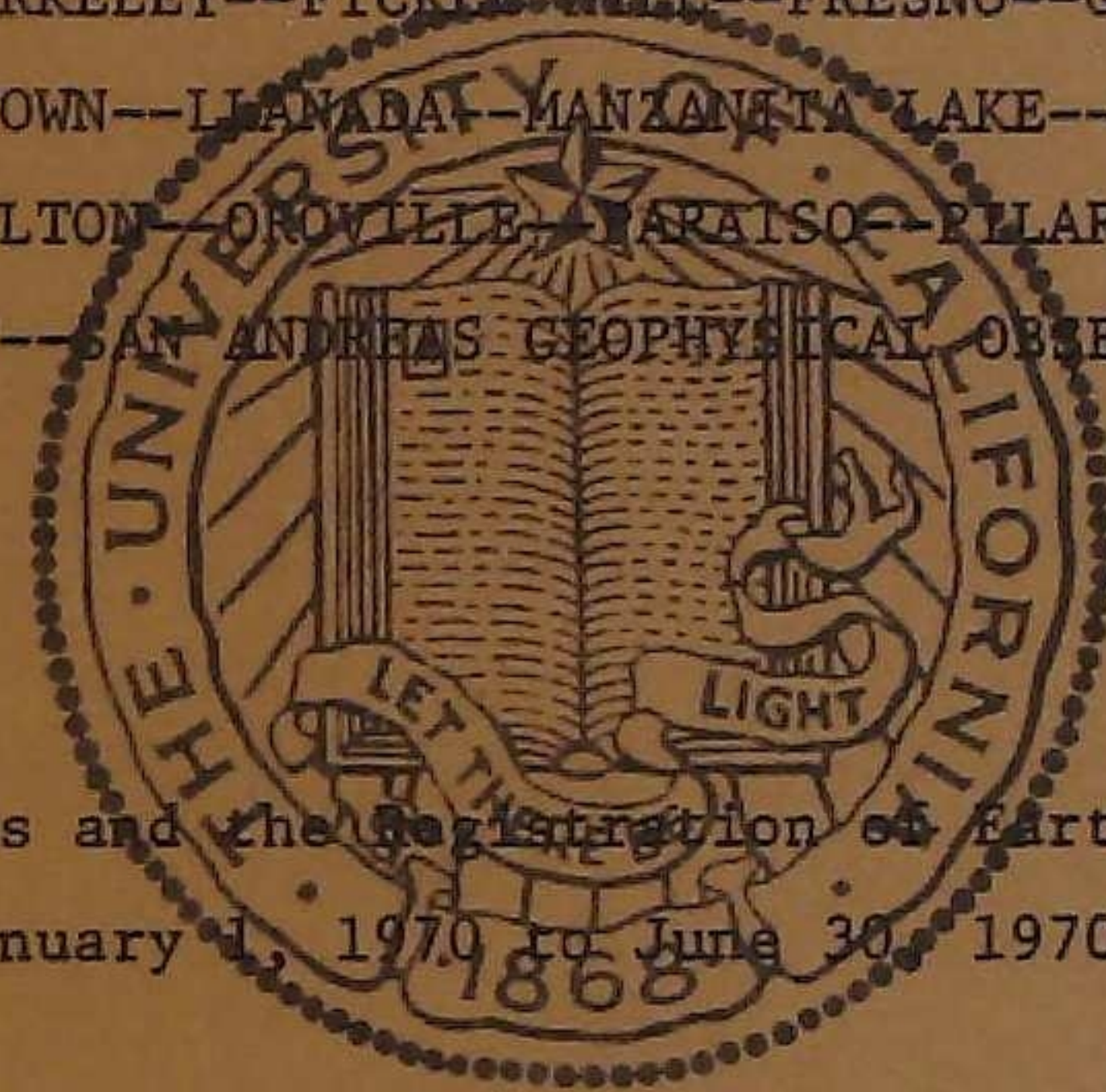




Bulletin of the Seismographic Stations

Vol. 40, No. 1, pp. 1-117

ARCATA--BERKELEY--FICKLE HILL--FRESNO--GRANITE
CREEK--JAMESTOWN--LIANABA--MANZANITA LAKE--MINA--MINERAL
MOUNT HAMILTON--OROVILLE--PARAISO--PELLARCITOS CREEK
PRIEST--SAN ANDREAS GEOPHYSICAL OBSERVATORY



Earthquakes and the Registration of Earthquakes
From January 1, 1970 to June 30, 1970

by
J. Zanetti
R. Miller

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University of California
Berkeley
1971



BULLETIN OF THE SEISMOGRAPHIC STATIONS
of the University of California
Volume 40, Number 1
January 1, 1970 to June 30, 1970

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INTRODUCTION

Each issue of the Bulletin includes determination of epicenters, origin times, magnitudes, and other information available at the time of writing, for earthquakes in Northern California and adjoining areas. Recorded arrival times of seismic waves are tabulated only for the major earthquakes in the local area and for teleseisms.

Information items regarding the seismographic stations which comprise the Berkeley network are repeated in each issue. Information of a general nature, such as the Modified Mercalli Intensity Scale, will be found only in the first number of each volume.

HISTORY OF THE UNIVERSITY OF CALIFORNIA STATIONS

"The Seismographic Stations at Mount Hamilton and Berkeley present several items of interest in the history of earthquake science, one of which is that according to the available records they were the first seismographic stations set up in America. Furthermore, they have functioned continuously from their founding to the present day, with improvements in instrumental equipment from time to time as the development of the science and opportunity have permitted.

"Several outstanding figures in the seismology of the 1880's were impressed with the importance of these stations, and Ewing, Milne, and Gray each took a personal interest in aiding one or both stations to obtain their own best and most modern types of instruments."

The quotation is from "History of the University of California Seismographic Stations and Related Activities" by Professor George D. Louderback, published in the Bulletin of the Seismological Society of America, Vol. 32, No. 3, pp. 205-229, 1942. In this paper may be found a detailed account of the development of the Berkeley stations from the installation of the instruments (the first earthquake known recorded at Mount Hamilton was on April 24, 1887) to 1942.

Since 1942, the number of seismographic stations associated with the University of California has increased from six to seventeen in 1970. In 1950, Professor Perry Byerly was appointed Director by the Regents; he had been in charge of instruction and research since 1925. Professor Bruce A. Bolt was appointed Director in 1963. Since 1960, the stations have entered into research and service contracts with the Air Force Office of Scientific Research, the National Science Foundation, and the California Department of Water Resources. A telemetry network of eleven stations in Central California, recording on film and magnetic tape, is now operated together with seismographs with broadband frequency response at Berkeley. Copies of records from instruments at the Berkeley observatory are available, together with response characteristics, on request to the Director.

Bruce A. Bolt

Director

Perry Byerly

Director Emeritus

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THE BYERLY SEISMOGRAPHIC STATION (BKS)

Equipment of a WWSS station began operating in a newly constructed tunnel east of the main campus on June 8, 1962. The closest buildings, part of the Lawrence Radiation Laboratory, are about 0.8 km away. The tunnel was cut into the upper part of the Claremont Formation. Of Miocene age, this formation consists of thin layers of cherty material alternating with shale.

A plan of the tunnel is shown in the diagram on page 7. Piers are constructed of reinforced concrete with no isolation from floor and walls. The temperature is stable. A ventilating and dehumidifying system is connected to all rooms.

The short-period world-wide standard instruments are operated with an approximate magnification of 25,000 at 1 sec and the long-period standard instruments with a peak magnification of 3,000 at about 15 sec.

On March 20, 1964, the Regents of the University of California named this station the "Byerly Seismographic Station" in recognition of the work of Professor Perry Byerly.

STATIONS IN OPERATION: JANUARY 1 - JUNE 30, 1970

Station (From N to S)	North Latitude	West Longitude	Elev. Meters	Foundation Material	Symbol	Present Auspices and Date Established
Arcata	40° 52!6	124° 04!5	59	Sandstone (loose)	ARC	Humboldt State Coll. 1948
Fickle Hill	40° 48!1	123° 59!1	610	Siltstone over graywacke	FHC	Humboldt Astrophysical Observatory
Manzanita Lake	40° 32!2	121° 33!7	1800	Volcanic tuff	MLC	Nat'l. Park Service, 1956 (Jun. to Sept. only)
Mineral	40° 20!7	121° 36!3	1495	Volcanic flow	MIN	Nat'l. Park Service, 1938
Oroville	39° 33!3	121° 30!0	360	Granite	ORV	Dept. of Water Resources, 1963
Mina (Nevada)	38° 26!0	118° 09!2	1524	Limestone	MNV	Livermore Radia- tion Lab., 1969
Jamestown	37° 56!8	120° 26!3	457	Metamorphic (serpentine)	JAS	Dept. of Water Resources, 1964
Berkeley (Strawberry)	37° 52!6	122° 14!1	276	Claremont shales	BKS	Univ. of California, 1962
Berkeley (Haviland)	37° 52!4	122° 15!6	81	Franciscan sandstone	BRK	Univ. of California, 1887
Pilarcitos Creek	37° 30!0	122° 22!9	91	Grano- diorite (weathered)	PCC	Sare Ranch, 1965
Mt. Hamilton	37° 20!5	121° 38!5	1282	Franciscan formation	MHC	Lick Observatory, 1887
Granite Creek	37° 01!8	121° 59!8	122	Granite	GCC	Richard E. Randolph Santa Cruz, 1965
Fresno	36° 46!0	119° 47!8	88	Alluvium	FRE	Fresno City Coll., 1935
San Andreas Geophysical Observatory	36° 45!9	121° 26!7	350	Granite	SAO	Univ. of California 1966
Llanada	36° 37!0	120° 56!6	475	Alluvium overlying sandstone	LLA	Charles McCullough Ranch, 1961
Paraiso	36° 19!9	121° 22!2	363	Grano- diorite	PRS	Paraiso Hot Springs, 1961
Priest	36° 08!5	120° 39!9	1187	Greenstone (basic metamorphic)	PRI	Federal Aviation Agency, 1961

STATION INSTRUMENTATION

January 1 - June 30, 1970

Station	Type of Instrument	T _o sec	T _g sec	Component
ARC	Wood-Anderson torsion	0.8	-	N, E
BKS	Benioff 100 kg Sprengnether	1.0 15	0.75 100	N, E, Z N, E, Z
	Wood-Anderson torsion Sprengnether ULP	0.8 100	- 300	S, W N45°E
BRK	Benioff 100 kg Benioff 100 kg 100X torsion 4X torsion	1.0 1.0 0.8 0.8	0.2 8.0 - -	Z Z N, W N, W
	Press-Ewing *Press-Ewing Press-Ewing, ULP	15 30 45	30 Broad band 300	Z N45°W, N45°E, Z N45°E
FHC	#Benioff 14 kg	1.0	0.2	Z
FRE	Sprengnether moving coil Benioff	2.0 1.0	2.0 0.7	N, E Z
GCC	#*Willmore	3.0	0.2	N45°E
JAS	Benioff 100 kg #*Benioff 14 kg	1.0 1.0	0.75 0.2	N, E, Z Z
LLA	#Benioff 14 kg	1.0	0.2	Z
MHC	#*Benioff 14 kg Wood-Anderson torsion *Willmore	1.0 0.8 3.0	0.2 - 0.2	Z S, E N45°E
MIN	#Benioff 14 kg	1.0	0.5	Z
	Benioff 100 kg Wood-Anderson torsion	1.0 0.8	0.4 -	Z S, E
MLC	Loucks-Omori	6.0	-	NE
MNV	#Broad band instrument filtered to give short-period response.			Z
ORV	#Geotech moving coil	20	100 Hz filter	Z
PCC	#Benioff 14 kg	1.0	0.2	Z
PRI	#*Benioff 14 kg	1.0	0.2	Z
PRS	#*Willmore	3.0	0.2	N45°E
SAO	#Benioff 14 kg +#Sprengnether 0.70 kg (microearthquake array-four instruments)filter #* Willmore	1.0 5.0 Hz 3.0	0.2 25 Hz 0.2	Z Z N45°E

Signals telemetered to Berkeley via leased telephone lines.
* Signals recorded on magnetic tape at Berkeley.
+ Signals recorded on magnetic tape at SAO.

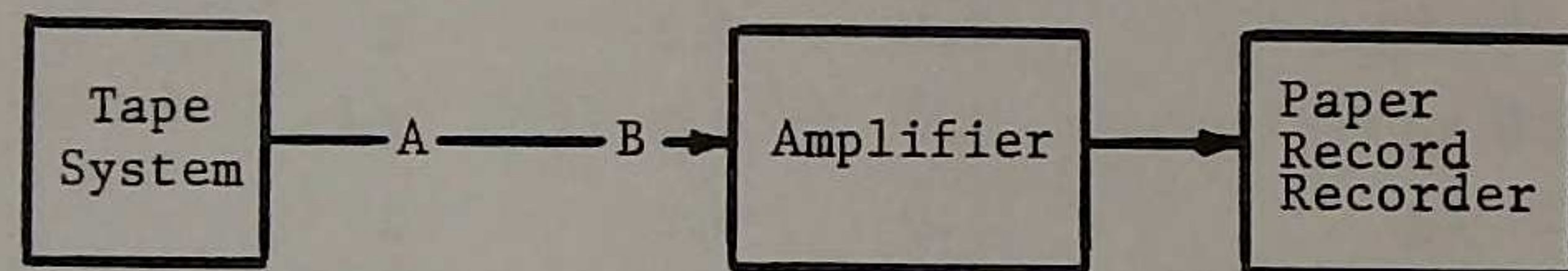
Direction of motion: In the "Component" column, each horizontal component seismograph is designated by the direction of ground motion corresponding to upward trace motion on the seismogram when it is oriented so that time increases from left to right. On all vertical component (Z) instruments, upward trace motion corresponds to upward ground motion.

Relative magnification curves of instruments recording through the tele-meter system are listed on the following pages.* Absolute magnification may be obtained by use of calibration pulses recorded daily from each telemetered station.

Tape-recorded long-period seismometers (BRK): On pages 8 and 9 are given the frequency response curves, amplitude and phase, for the Press-Ewing long-period seismometers which record on magnetic tape at BRK.

The ordinate of the first curve is the voltage at the terminals of the tape system (point A in diagram), per micron of earth displacement as sensed by 30-second seismometers; versus frequency of earth displacement.

All paper records requested will show known positive voltages applied at point B, in order to scale the paper records at the particular amplifier settings. The seismometers record motion in the vertical, N45°W, and N45°E, directions.

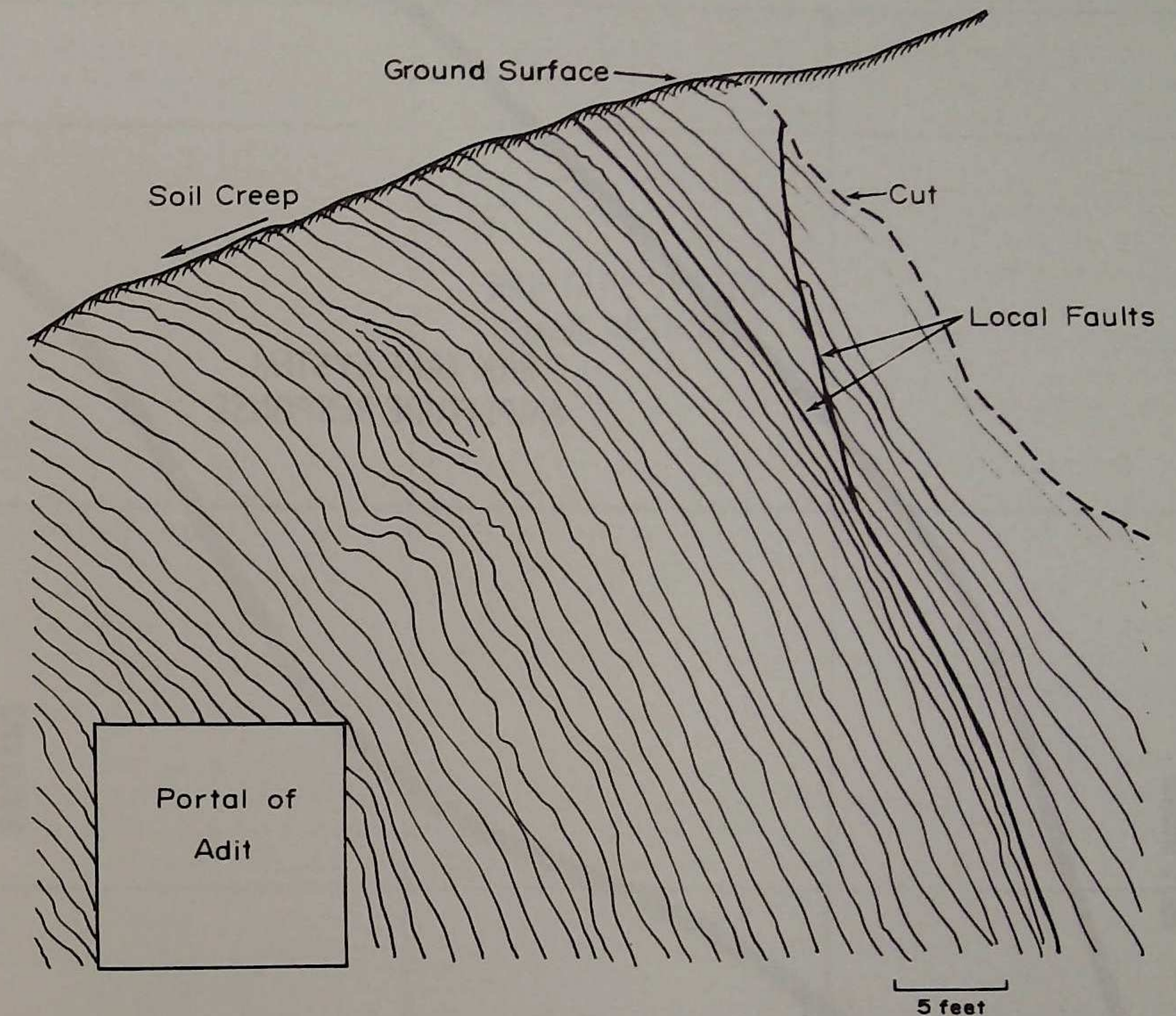


The phase curve on page 9 shows the phase of the voltage at the tape system terminals with respect to ground displacement, as a function of the frequency of earth displacement.

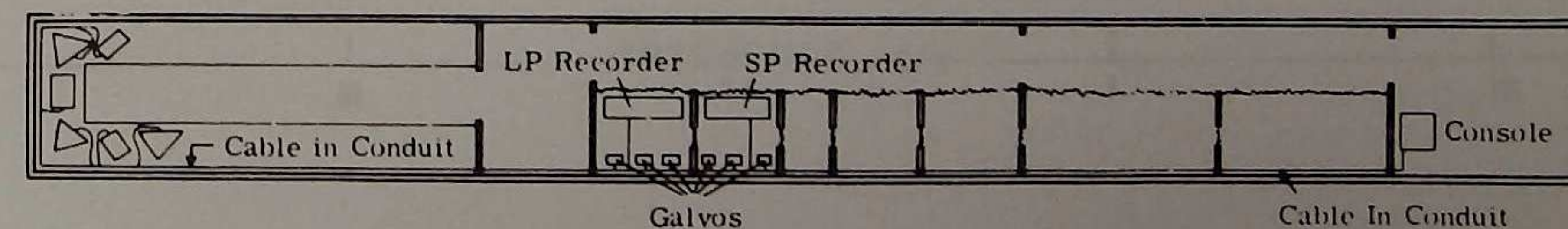
ACKNOWLEDGMENT. Maintenance of the Fickle Hill (FHC) and Mineral (MIN) telemetry stations was supported by the Office of Naval Research under grant N00014-69-A-0200-1042.

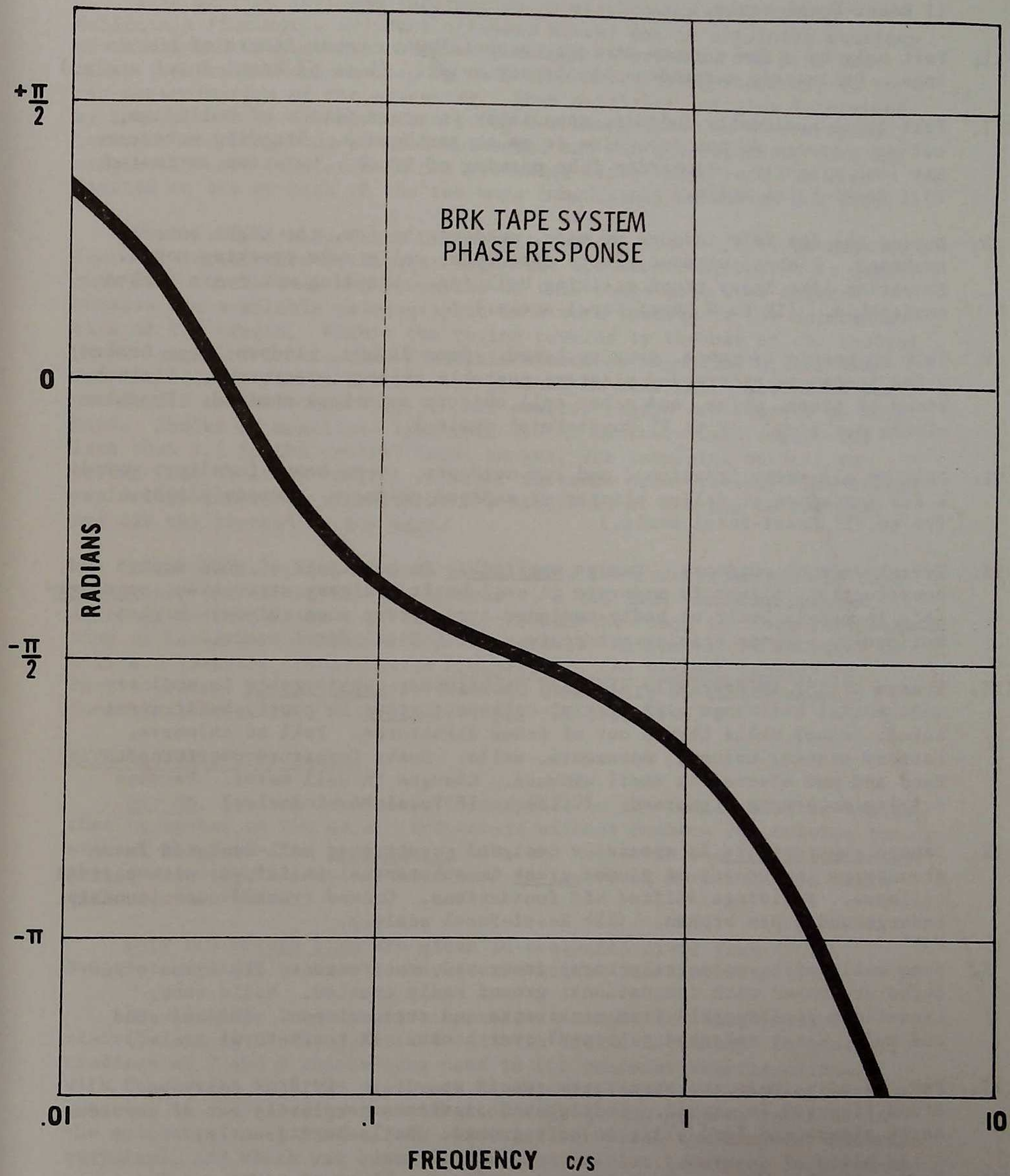
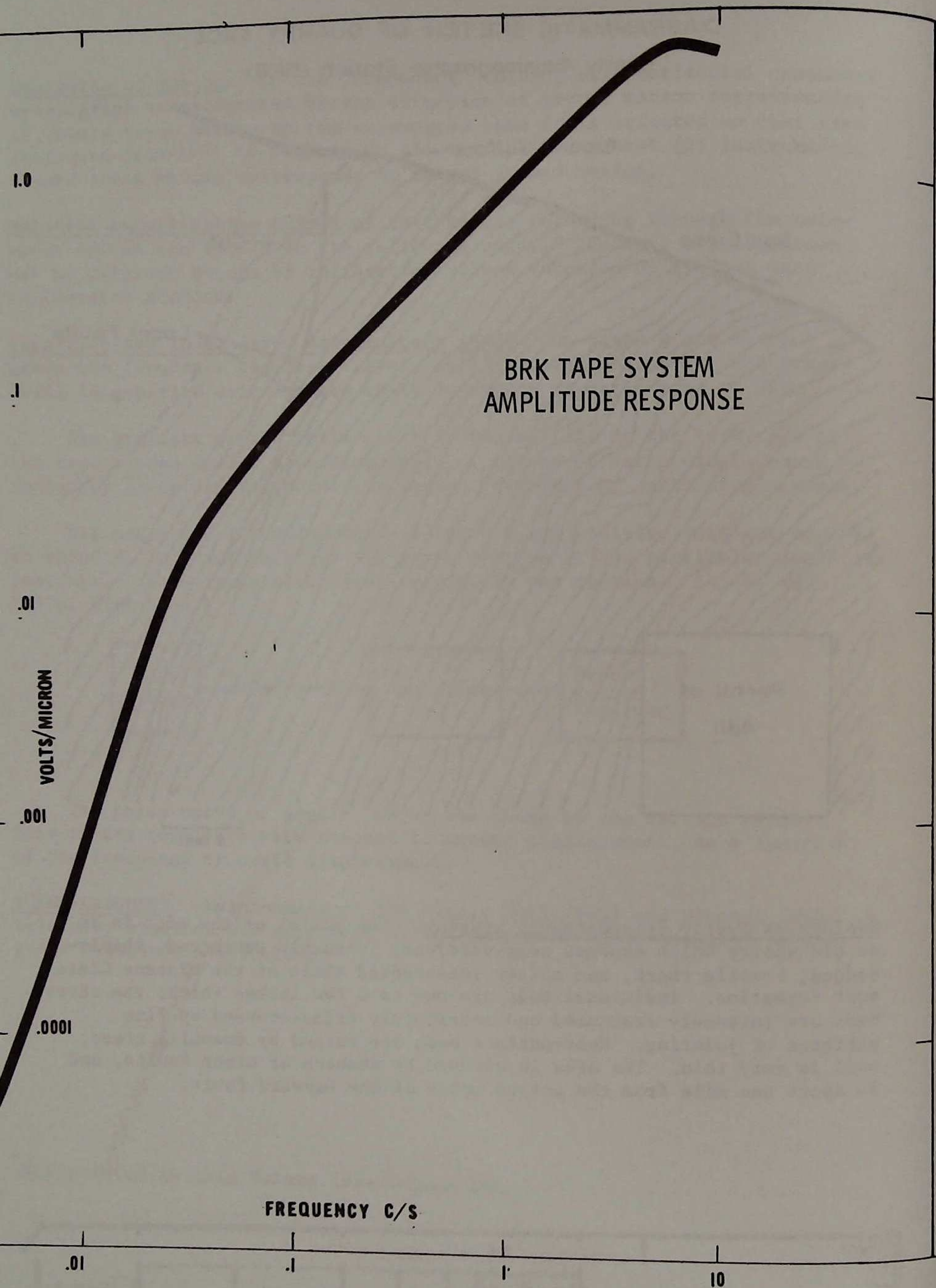
* Not printed in this Volume (see Volume 39).

DIAGRAMMATIC SKETCH OF QUARRY FACE
Byerly Seismographic Station (BKS)



Geology at Byerly Seismographic Station. The portal of the adit is in an old quarry which exposes near-vertical, intensely contorted, thinly-bedded, brittle chert, and softer interbedded shale of the Miocene Claremont Formation. Individual beds are one to a few inches thick; the chert beds are intensely fractured and intricately criss-crossed by fine patterns of jointing. Near-surface beds are warped by downhill creep; soil is very thin. The area is crossed by numbers of minor faults, and is about one mile from the active trace of the Hayward fault.





- I. Not felt except by a very few under specially favorable circumstances. (I Rossi-Forel scale.)
- II. Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing. (I to II Rossi-Forel scale.)
- III. Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motorcars may rock slightly. Vibration like passing of truck. Duration estimated. (III Rossi-Forel scale.)
- IV. During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make creaking sound. Sensation like heavy truck striking building. Standing motorcars rocked noticeably. (IV to V Rossi-Forel scale.)
- V. Felt by nearly everyone, many awakened. Some dishes, windows, etc. broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop. (V to VI Rossi-Forel scale.)
- VI. Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight. (VI to VII Rossi-Forel scale.)
- VII. Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motorcars. (VIII Rossi-Forel scale.)
- VIII. Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motorcars disturbed. (VIII+ to IX Rossi-Forel scale.)
- IX. Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken. (IX+ Rossi-Forel scale.)
- X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks. (X Rossi-Forel scale.)
- XI. Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
- XII. Damage total. Waves seen on ground surfaces. Lines of sight and level distorted. Objects thrown upward into air.



PART I. LOCAL EARTHQUAKES IN NORTHERN CALIFORNIA, NEVADA,
AND OREGON

This section includes information on earthquakes in Northern California (including adjacent offshore areas) and in adjoining sections of Nevada and Oregon which were well enough recorded at the U.C. stations (sometimes complemented by data from neighboring stations) to permit determination of the epicenter. When available, origins determined by the University of Nevada are given for earthquakes in their region. Latitude and longitude of each epicenter and the corresponding date and origin time are tabulated in the following list; epicenters are also plotted on one or both of the two maps immediately following the list.

For the entire Northern California region, every effort is made to list all earthquakes of Richter magnitude 3.0 or above, but it is likely that some shocks near the lower end of this range have been omitted because the available seismographic data were inadequate for determination of the origin. Within the region covered by the map of the central Coast Ranges of California, locatable shocks of magnitude 2.5 or over are included in the tabulation and plotted on this map. Shocks of magnitude 3.0 or over occurring in this smaller region are plotted on both maps. Shocks of magnitude less than 3.0 in Northern California, and less than 2.5 in the central Coast Ranges, are tabulated only if reported felt or if of special interest for some other reason. Identified explosions and their aftershocks are tabulated at the end of the list and are not plotted on the maps.

With the exception of some graphically located epicenters off Cape Mendocino, the epicenters are located by a CDC 6400 computer program. Information on Version I of this program may be found in "Computer Location of Local Earthquakes within the Berkeley Seismographic Network" by Bolt and Turcotte, published in Computers in the Mineral Industries, Part 2 (George Parks, Editor); Stanford University Publications, Geological Sciences, Vol. 9, No. 2, pp. 561-576, 1964.

EXPLANATION OF THE TABLE:

Map No. for each epicenter corresponds to the number plotted beside that epicenter on the maps. Epicenters without numbers lie outside the area of the map. The underlining of a map number in the table indicates that one point on a map has been used to represent more than one earthquake in the table.

Date and Origin Time are given in Greenwich Civil Time (GCT). Subtract eight (8) hours to convert to Pacific Standard Time (PST).

In epicenter location by computer, we sought the best possible distribution of stations, both in azimuth and in distance. In general, readings of P and S phases were used in the computer determinations, with S carrying half the weight of P. The estimated accuracy of each location is indicated by the number of significant figures retained in the epicentral coordinates. An epicenter for which the computer solution converged, and which was based on adequate station coverage, is given to

Earthquakes in Northern California, Nevada, and Oregon

Map No.	Date 1970	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
1	Jan 01	19 49 24	37° 36'	118° 40'	3.8	b(R)	13	35 km N of Bishop
<u>1</u>	Jan 01	19 50	37° 36'	118° 40'	3.2	b(R)	10	Aftershock of 19 49.
2	Jan 01	20 57 48	36° 44'	121° 25'	3.2	c	10	8 km SW of Hollister. Intensity V at Harris Ranch, S of Hollister.
3	Jan 03	02 51 58.4	37° 17.9'	122° 05.3'	3.7	b	25	Intensity VI at Cupertino, W of San Jose. Felt in San Francisco Peninsula area.
<u>3</u>	Jan 03	02 53 17.3	37° 17.9'	122° 05.3'	2.7	b	7	Aftershock of 02 51.
4	Jan 04	23 13 00.6	37° 07.5'	121° 31.2'	3.4	b	16	15 km N of Gilroy. Intensity IV in Gilroy area.
5	Jan 05	03 46 52.0	37° 50.9'	121° 57.6'	2.5	b	10	25 km E. of Berkeley.
6	Jan 05	17 31 12.2	37° 31.3'	121° 50.1'	3.3	b	12	15 km S. of Livermore. Press reported a small tremor shook eastern San Jose and Sunol areas. Felt at Fremont, Newark, & Pleasanton.
7	Jan 06	02 29 07.5	36° 31.8'	121° 06.9'	4.0	b	19	Intensity V at Bacon Ranch near the old Bear Valley School (Pinnacles - Bear Valley area). Felt in Hollister and Salinas.
<u>7</u>	Jan 06	02 56 06.5	36° 31.8'	121° 06.9'	2.8	b	12	Aftershock of 02 29.
8	Jan 06	08 34 55.0	37° 32.5'	121° 52.0'	2.8	c	12	15 km SW of Livermore.
9	Jan 06	10 55 16	40.9°	125.7°	4.0	b(R)	13	150 km W of Arcata.
10	Jan 14	15 42 20.5	38° 41.7'	122° 15.1'	3.1	b	10	50 km S of Williams.
11	Jan 14	18 44 21	37° 25'	118° 23'	3.3	a(R)	13	N of Bishop.
12	Jan 15	18 11 18	37° 32'	118° 22'	3.2	b(R)	11	N of Bishop.
13	Jan 17	08 39 16	39.4°	118.1°	3.7	a(R)	10	60 km E of Fallon, Nev.
14	Jan 21	17 13 30	39.1°	118.1°	3.2	b(R)	8	70 km SE of Fallon, Nev.
15	Jan 22	13 58 06.3	37° 59.5'	121° 59.1'	2.6	b	12	25 km NE of Berkeley.
16	Jan 25	20 21 24	37° 30'	118° 42'	3.6	a(R)	14	30 km NW of Bishop
17	Jan 25	20 39 59	39° 50'	120° 00'	3.0	a(R)	4	35 km N of Reno.
18	Jan 26	13 57 58.3	36° 32.7'	121° 11.3'	2.5	a	11	25 km W of LLA.
19	Jan 29	02 49 12.9	36° 06.5'	120° 59.6'	2.5	a	6	20 km SW of King City.
20	Jan 31	00 23 06.4	37° 48.1'	122° 06.4'	2.3	c	14	15 km SW of Berkeley. Felt at Oakland.
	Jan 31	11 31 25	42° 08'	126° 36'	4.7	b(R)	10	260 km NW of Arcata.

minutes or tenths of minute of arc. For events in the Sierra Nevada region, where the computer crustal model is apparently inappropriate, each epicenter is given to tenths of a degree, as is each poorly controlled epicenter, regardless of the behavior of the computer solution. For the events off the coast of Northern California, for which control is particularly poor, special weight was given the S minus P intervals recorded at Stations ARC, FHC, and MIN.

The Magnitude of the earthquake is determined on the Richter scale from the maximum trace amplitudes recorded for the shock by standard Wood-Anderson torsion seismographs. The magnitudes of earthquakes for which these maximum trace amplitudes are too small are determined from Benioff seismograph trace amplitudes.

The focal depth h is given by the following ranges: a, 0-5; b, 6-10; c, 11-15; d, 16-30 km. A letter R following the estimated depth implies that the depth has been restricted to the value given. Origins supplied by the University of Nevada do not have the depths specified; this is indicated by "-" in the depth column.

No. of Stas. is the number of stations used by the computer program or used for construction arcs in locating the epicenter.

Under Remarks will be found a short descriptive location of the epicenter, usually relative to a point named on the map. Information on small foreshocks and aftershocks is sometimes included under this section, but when numerous foreshocks or aftershocks accompany a large earthquake, a separate tabulation may be included following the main list of local shocks.

Information on felt effects of shocks is also included under Remarks. Reports on felt earthquakes may be obtained from the Seismological Field Survey of the National Oceanographic and Atmospheric Administration (NOAA), which publishes a more complete summary in "Abstracts of Earthquake Reports for the United States." This regular quarterly publication may be obtained from the District Officer, San Francisco District, NOAA, Federal Building, 450 Goldengate Avenue, Box 36114, San Francisco, California 94102; or from the Director, NOAA, Washington Science Center, Rockville, Maryland 20852. Intensities given in Roman numerals are assigned by the NOAA and based on the Modified Mercalli Scale of 1931.

ACKNOWLEDGMENTS:

We should like to thank the following institutions for their assistance in supplying readings for the epicenter locations: Seismological Laboratory, California Institute of Technology; Seismological Laboratory, University of Nevada; Lamont-Doherty Geological Observatory; Department of Oceanography, Oregon State University; California Department of Water Resources; National Center for Earthquake Research, United States Geological Survey; Earthquake Mechanism Laboratory, National Oceanographic and Atmospheric Administration.

Map No.	Date 1970	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
	Feb 01	19 33 31	40.5°	126.5°	3.5	c(R)	9	220 km W of Arcata.
21	Feb 01	21 19 45.7	36° 24.5'	121° 01.8'	2.6	b	12	30 km E of PRS.
22	Feb 04	16 22 32.3	36° 59.7'	121° 43.5'	2.5	b	14	10 km W of Gilroy.
23	Feb 08	00 14 13.3	36° 24.1	120° 57.9'	2.7	b	13	25 km S of LLA.
24	Feb 09	05 23 47.9	36° 47.6'	121° 33.3'	2.9	b	14	Intensity II at San Juan Bautista.
25	Feb 09	16 00 46.1	35° 46.0'	120° 20.8'	3.1	b	16	60 km S of PRI.
26	Feb 11	02 06 05.8	36° 37.8'	121° 18.2'	2.7	b	11	25 km S of Hollister.
27	Feb 14	00 31 59.1	36° 53.3'	121° 38.7'	3.0	b	14	Intensity IV at Harris Ranch, 20 km W of Hollister.
28	Feb 14	03 20 20	41.1°	125.4°	3.6	c(R)	12	120 km W of Arcata.
29	Feb 14	04 49 58	40.3°	125.0°	3.8	c(R)	13	100 km SW of Arcata. Intensity III at Ferndale.
30	Feb 14	15 44 58.0	36° 05.4'	120° 38.1'	2.8	b	14	5 km S of PRI.
31	Feb 14	19 49 19	38° 01'	118° 40'	3.0	a(R)	9	50 km N of Bishop.
32	Feb 15	07 32 10	40.2°	124.6°	3.5	d(R)	13	90 km SW of Arcata.
32	Feb 15	09 54 42	40° 22'	124° 52'	3.6	d(R)	13	90 km SW of Arcata.
33	Feb 19	17 46 32.4	37° 29.2'	121° 42.2'	2.4	b	10	15 km N of MHC.
34	Feb 26	08 36 50	37° 28'	118° 29'	3.2	a(R)	7	10 km N of Bishop.
35	Feb 27	04 01 32.1	36° 33.9'	121° 12.7'	3.0	a	14	35 km SE of Hollister.
35	Feb 27	04 02 41.5	36° 34.2'	121° 12.9'	2.6	b	11	Aftershock of 04 01.
36	Feb 28	02 05 00.1	37° 48.7'	121° 55.7'	2.9	a	14	20 km NW of Livermore. Felt in Danville.
37	Mar 01	07 16 38	40° 12'	124° 40'	3.2	b(R)	13	40 km W of Garberville.
38	Mar 01	16 40 13	40° 10'	124° 36'	3.9	b(R)	13	45 km W of Garberville.
39	Mar 06	11 55 52	39.0°	118.1°	3.1	b(R)	8	90 km E of Yerington.
40	Mar 07	14 12 16.5	37° 13.7'	121° 36.8'	2.8	a	15	25 km S of MHC.
41	Mar 12	11 45 14	37° 21'	118° 34'	3.0	b(R)	7	20 km W of Bishop.
42	Mar 12	13 12 34	40° 28'	123° 58'	3.8	c(R)	10	50 km S of Arcata. Intensity V at Carlotta, Ferndale, Miranda, Rio Dell, and Scotia. Slight shock felt in Ferndale at 12 17.
43	Mar 13	19 33 28	40° 07'	123° 08'	3.3	b(R)	9	60 km E of Garberville.
44	Mar 14	20 59 34	37° 25'	117° 51'	3.0	a(R)	7	50 km E of Bishop.
45	Mar 15	06 14 44.3	36° 32.0'	121° 08.5'	2.5	a	14	20 km W of LLA.

Map No.	Date 1970	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
46	Mar 18	16 38 48	36° 17'	118° 19'	3.7	a(R)	12	50 km SW of Lone Pine.
46	Mar 18	16 40 24	36° 18'	118° 18'	3.4	b(R)	10	50 km SW of Lone Pine.
47	Mar 18	17 00 44	36° 17'	118° 24'	3.5	a(R)	12	55 km SW of Lone Pine.
48	Mar 20	10 18 46	37° 01'	118° 10'	3.2	b(R)	6	45 km S of Bishop.
49	Mar 20	11 22 13	36° 56'	117° 59'	3.1	b(R)	4	35 km NE of Lone Pine.
	Mar 20	19 30 10	43.6°	127.3°	4.7	b(R)		USCGS location off Oregon Coast.
51	Mar 23	19 52 12	37° 45'	115° 59'	4.2	b(R)	18	220 km E of Bishop.
52	Mar 23	21 55 41	39° 36'	118° 09'	3.8	b(R)	11	55 km E of Fallon, Nev.
53	Mar 24	03 52 33	36° 16'	118° 20'	4.0	b(R)	19	50 km SW of Lone Pine. Intensity IV at Onyx. Intensity III at Olancha.
54	Mar 24	05 14 43	39° 35'	118° 04'	4.3	c(R)	14	60 km E of Fallon, Nev.
55	Mar 26	16 18 33	38° 37'	119° 18'	3.4	b(R)	13	45 km S of Yerington, Nev.
56	Mar 27	06 56 53.5	36° 48.6'	121° 35.9'	3.2	b	12	15 km W of Hollister.
56	Mar 27	16 08 12.4	36° 49.2'	121° 33.9'	3.1	a	11	Aftershock of 06 56.
56	Mar 27	17 27 25.0	36° 49.0'	121° 33.9'	2.7	a	11	Aftershock of 06 56.
57	Mar 28	06 48 58	37° 21'	118° 03'	3.0	a(R)	11	20 km E of Bishop.
58	Mar 28	09 38 44	38° 57'	116° 24'	4.5	a(R)	16	250 km E of Yerington, Nev.
59	Mar 29	17 35 11.8	36° 59.7'	121° 27.9'	2.5	b	11	15 km N of Hollister.
60	Mar 30	13 28 45.5	37° 18.7'	121° 40.9'	2.7	b	12	5 km S of MHC.
61	Mar 31	05 01 35.2	36° 52.1'	121° 38.0'	2.5	a	12	20 km W of Hollister.
62	Mar 31	07 02 28.6	36° 51.5'	121° 21.5'	4.7	b	18	5 km E of Hollister. Intensity V at Boulder Creek, Daly City, Cienega Rd. to 13 miles south of Hollister, Coyote, Fremont, Gilroy (plaster cracked, damage slight), Hollister (plaster cracked few jars fell from grocery store shelves), Morgan Hill, Paicines, Salinas, San Juan Bautista, and Watsonville.
63	Mar 31	08 23 36.5	36° 52.2'	121° 24.6'	2.1	b	13	Aftershock of 07 02.
64	Apr 01	13 48 41	40° 16'	124° 34'	3.3	c(R)	7	80 km SW of ARC.
65	Apr 05	03 18 01.3	36° 48.7'	121° 22.7'	2.4	b	12	5 km S of Hollister.

Map No.	Date 1970	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
	Apr 13	11 37 21	40° 17'	126° 36'	4.3	b(R)	12	220 km W of Arcata.
66	Apr 18	09 26 15.5	40° 36.7'	124° 32.0'	3.7	a	7	50 km SW of Arcata.
67	Apr 18	13 16 53.4	36° 29.5'	120° 00.7'	3.0	a	15	35 km SW of Fresno.
68	Apr 19	23 43 33.5	36° 34.5'	121° 12.7'	2.7	a	12	25 km W of LLA.
69	Apr 20	00 31 08.3	38° 30.2'	122° 46.7'	2.8	c	6	10 km NW of Santa Rosa.
70	Apr 21	22 29 25.9	35° 39.4'	120° 25.7'	3.0	a	8	65 km S of PRI.
32	Apr 22	22 32 22	40° 22'	124° 52'	4.0	a(R)	12	90 km SW of Arcata.
71	Apr 23	03 25 18.9	35° 58.4'	121° 27.1'	2.5	a	10	25 km SW of King City.
72	Apr 23	05 26 14	40° 14'	121° 23'	3.7	a(R)	12	15 km SE of MIN. Intensity IV at Mineral, III at Mill Creek. Felt at Chester and Mineral.
73	Apr 23	12 45 35.6	37° 55.6'	122° 19.2'	2.0	a	9	5 km N of Berkeley. Felt in San Pablo.
74	Apr 26	21 34 29	41.1°	121.9°	3.2	a(R)	5	30 km NW of Burney.
75	May 04	08 13 10	40.3°	125.2°	3.2	a(R)	4	120 km SW of Arcata.
76	May 05	02 18 27	36.2°	118.3°	3.4	a(R)	9	50 km SW of Lone Pine.
77	May 06	11 50 08	40° 10'	124° 35'	3.4	b(R)	6	90 km SW of Arcata. Intensity III at Ferndale and vicinity.
78	May 08	10 59 57.7	36° 35.4'	120° 24.5'	3.3	c(R)	12	30 km E of LLA.
79	May 13	04 24 22.6	36° 35.7'	121° 10.3'	2.6	b	14	15 km W of LLA.
80	May 14	07 57 02	37° 06'	121° 08'	2.5	a(R)	10	40 km NE of Hollister.
	May 16	19 18 02	40° 23'	126° 48'	3.5	c(R)	8	240 km W of Arcata.
81	May 18	15 08 25	41° 27'	122° 49'	4.0	c	13	50 km NW of Dunsmuir. Intensity V at Callahan (rocks rolled off cliff; sounded like many booms) Edgewood, Fort Jones (small objects shifted, overturned and fell; damage slight), Gazelle, Greenview, Sawyers Bar, Scott Bar. Felt in Eureka, Redding, and Yreka.
82	May 19	03 58 33	36° 33'	120° 20'	2.5	b	10	35 km E of LLA.
83	May 20	05 18 49.2	36° 35.2'	120° 21.7'	3.4	a	17	35 km E of LLA.
84	May 20	07 12 43	40° 14'	124° 11'	3.6	b(R)	12	70 km S of Arcata. Intensity V at Fortuna, Petrolia, Rio Dell, and Scotia—where many were awakened.

Map No.	Date 1970	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
85	May 22	10 39 58.0	37° 50.1'	121° 55.7'	2.7	a	12	20 km W of Berkeley. Felt in Danville.
86	May 24	19 04 53	40.5°	125.6°	3.1	a(R)	4	140 km W of Arcata.
87	May 24	23 09 03.6	38° 27.4'	122° 09.6'	2.6	b	8	20 km NW of Napa.
87	May 24	23 10 41.5	38° 27.4'	122° 09.6'	2.6	b	8	Aftershock of 23 09.
88	May 27	10 42 19.3	35° 59.6'	120° 54.8'	3.4	a	8	40 km SW of Priest.
61	May 27	19 43 29.8	36° 51.2'	121° 38.0'	3.0	b	9	20 km W of Hollister.
75	May 30	18 42 29.0	40.3°	125.4°	3.5	c(R)		USCGS location 120 km SW of Arcata.
	Jun 04	05 03 15	40.4°	128.0°	3.5	c(R)	9	350 km W of Arcata.
	Jun 07	04 12 10	40° 20'	126° 27'	4.7	c(R)	10	210 km W of Arcata. Intensity IV at Ferndale.
89	Jun 08	08 01 32.8	36° 52.3'	122° 34.8'	2.7	a	10	55 km W of GCC.
	Jun 10	07 58 09	40° 22'	126° 27'	3.7	c(R)	7	210 km W of Arcata.
85	Jun 12	03 30 04.0	37° 48.1'	121° 56.0'	4.3	b	8	Intensity VI at Danville where slight damage occurred. Press reported damage occurred to several windows, a fence, a chimney, several outside brick facades, and to hundreds of items shaken from store shelves. C.F. separate list of Danville earthquakes over magnitude 2.5.
4	Jun 12	10 37 19.2	37° 07.6'	121° 31.3'	3.0	b	11	15 km N of Gilroy.
90	Jun 13	08 55 01	40° 55'	121° 38'	4.0	a(R)	9	Intensity V at the McArthur-Burney State Park (north of Burney), Pit River Powerhouse No. 3 (near Burney), and Fall River Mills. No damage reported.
91	Jun 18	06 36 01.8	37° 06.6'	121° 31.7'	2.4	b	11	10 km N of Gilroy.
4	Jun 20	09 19 08.3	37° 07.1'	121° 32.0'	2.9	b	10	15 km N of Gilroy.
92	Jun 27	07 03 59.5	36° 45.7'	121° 22.7'	3.2	c	14	8 km S of Hollister.

List of Magnitude ≥ 2.5 Earthquakes in the Area of
Danville, California, May - June 1970

Date	Origin Time	Location		Depth (km)	Magnitude
May 22	10 39 58.0	37° 50.1'N	121° 55.7'W	h=3.9	M=2.7
May 25	00 42 41.7	37° 48.8'N	121° 56.8'W	h=7.8	M=2.8
May 25	08 13 33.2	37° 48.0'N	121° 56.9'W	h=5.3	M=2.7
May 25	18 42 29.6	37° 48.7'N	121° 56.6'W	h=7.6	M=2.7
May 25	18 43 00.7	37° 48.3'N	121° 56.8'W	h=6.4	M=2.9
May 26	22 10 24.2	37° 48.0'N	121° 56.4'W	h=4.1	M=3.0
May 26	22 10 35.2	37° 48.0'N	121° 56.4'W	h=4.1	M=3.5
May 26	22 19 55.6	37° 47.9'N	121° 56.6'W	h=4.3	M=2.5
May 26	23 06 44.1	37° 49.3'N	121° 55.8'W	h=9.1	M=2.8
May 26	23 33 39.9	37° 47.9'N	121° 56.9'W	h=3.9	M=3.8
May 28	02 47 05.6	37° 48.8'N	121° 56.7'W	h=6.6	M=2.6
May 29	02 53 08.3	37° 49.2'N	121° 56.7'W	h=8.7	M=3.4
May 29	02 55 49.5	37° 48.1'N	121° 56.5'W	h=6.7	M=3.5
May 29	03 13 15.8	37° 49.2'N	121° 55.8'W	h=8.7	M=3.1
Jun 11	23 32 56.2	37° 47.5'N	121° 56.5'W	h=7.2	M=3.4
Jun 11	23 39 49.7	37° 47.9'N	121° 56.5'W	h=8.8	M=3.0
Jun 11	23 48 35.7	37° 46.6'N	121° 56.6'W	h=8.5	M=2.6
Jun 12	00 39 25.0	37° 48.9'N	121° 56.6'W	h=8.6	M=3.3
Jun 12	03 30 04.0	37° 48.1'N	121° 56.0'W	h=9.1	M=4.3
Jun 12	03 30 55.0	37° 48.1'N	121° 56.0'W	h=9.1	M=3.9
Jun 12	03 33 48.8	37° 46.9'N	121° 56.3'W	h=5.4	M=2.6
Jun 12	03 57 49.6	37° 47.6'N	121° 55.8'W	h=9.1	M=2.7
Jun 12	04 06 00.2	37° 48.5'N	121° 55.3'W	h=3.6	M=2.8
Jun 12	06 34 01.4	37° 47.7'N	121° 55.9'W	h=9.6	M=3.1
Jun 12	16 03 32.1	37° 48.3'N	121° 56.3'W	h=8.7	M=4.2
Jun 12	16 10 51.4	37° 48.0'N	121° 55.7'W	h=9.6	M=3.2
Jun 12	17 10 50.7	37° 48.6'N	121° 56.9'W	h=8.4	M=2.6
Jun 12	18 00 49.6	37° 47.8'N	121° 55.9'W	h=9.0	M=2.6
Jun 12	22 54 39.3	37° 51.0'N	121° 56.8'W	h=14.1	M=3.1
Jun 14	09 11 09.8	37° 48.6'N	121° 57.0'W	h=10.9	M=2.7
Jun 14	09 18 10.2	37° 48.7'N	121° 56.1'W	h=9.0	M=3.0
Jun 28	21 19 21.3	37° 48.4'N	121° 56.7'W	h=2.0R	M=2.5

Date	Origin Time	Location		Depth (km)	Magnitude
Jul 05	05 27 54.0	37° 48.3'N	121° 56.0'N	h=7.0	M=2.6
Jul 05	05 28 47.1	37° 48.5'N	121° 56.3'N	h=7.6	M=2.9

All the above solutions were obtained using well-recorded data from the same 8 stations which provided good distance and azimuthal coverage and internally consistent locations. A complete study of the Danville swarm is found in preliminary report, "Danville, California Earthquakes of May, June 1970" by W.H.K. Lee, *et al.*, National Center for Earthquake Research, U.S. Geological Survey, Menlo Park, California 94025 (June 19, 1970). Felt information may be found in "Abstracts of Earthquake Reports for the United States."

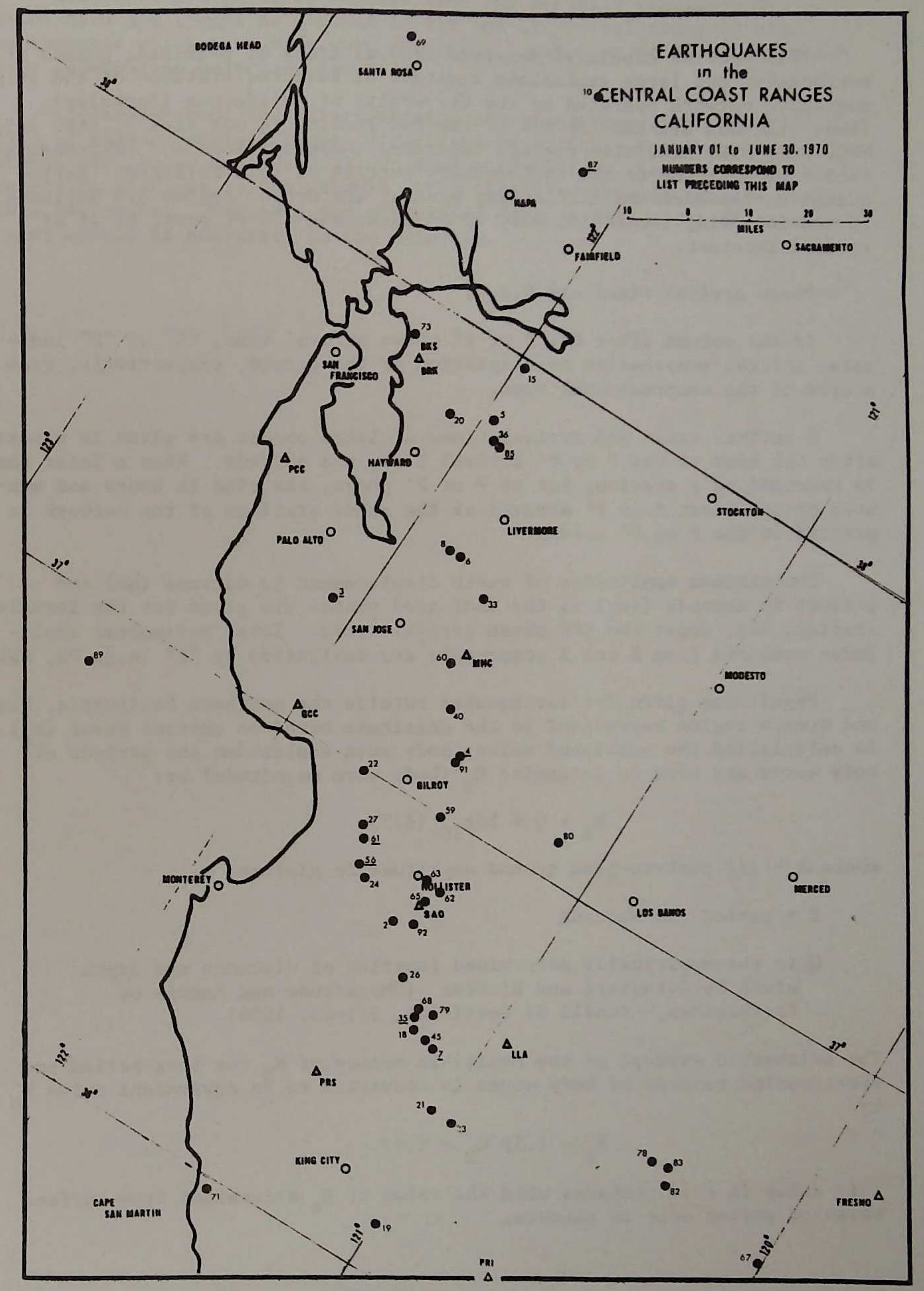
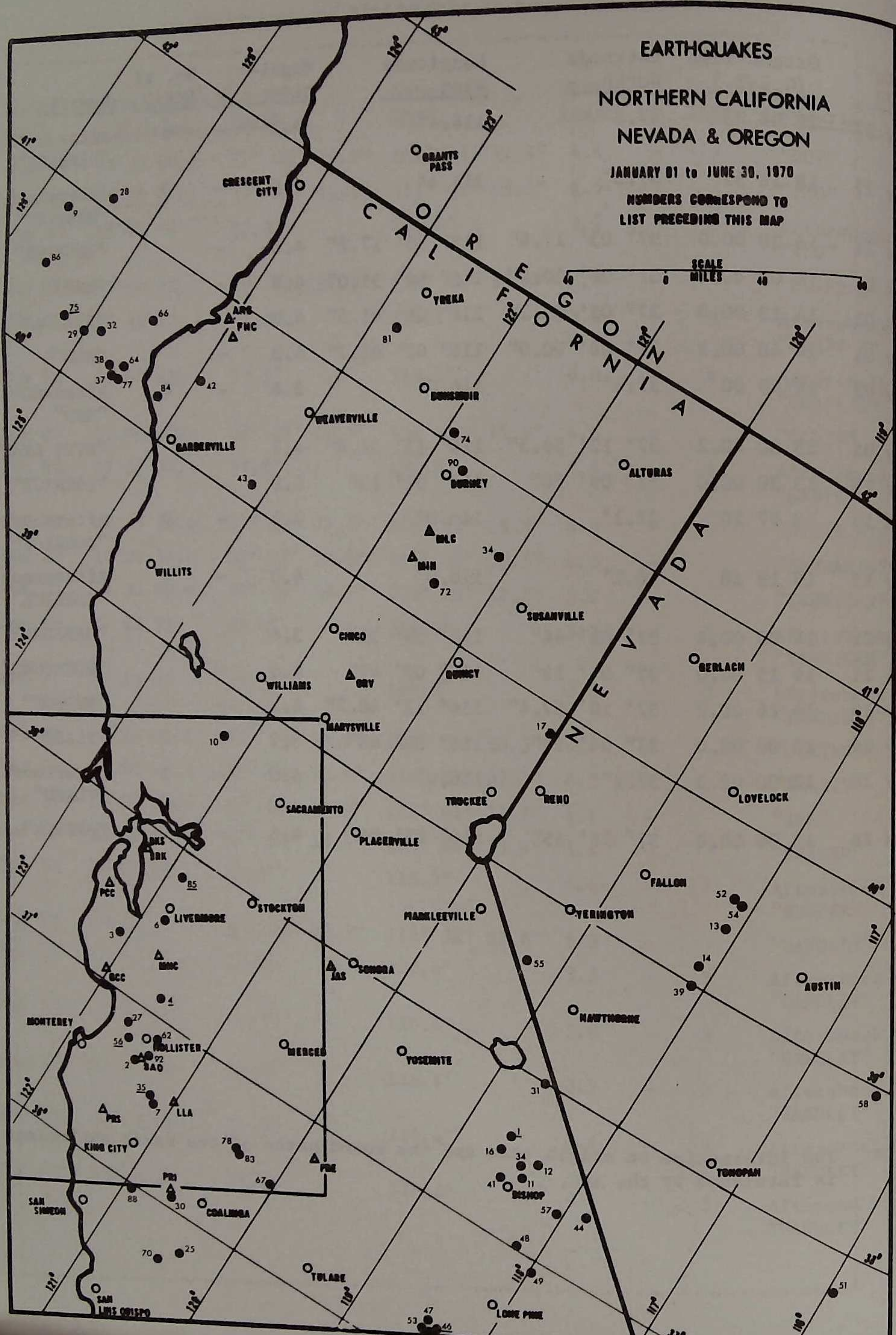
Explosions and Aftershocks at Nevada Test Site



Date 1970	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
Jan 23	16 30 00.0	37° 08' 20.6"	116° 02' 12.4"	4.4	-		"FOB"
Jan 30	17 00 00.1	37° 01' 50.9"	116° 02' 05.1"	4.6	-		"IJO"
Jan 30	17 09 56	37.0°	116.0°	3.7	-	4	Aftershock of "IJO"
Feb 04	17 00 00.0	37° 05' 51.3"	116° 01' 35.4"	5.5	-		"GRAPE B"
Feb 04	17 30 43	37.0°	116.1°	3.9	-	4	Aftershock of "GRAPE B"
Feb 04	18 07 15	37.1°	116.5°	4.4	-	4	Aftershock of "GRAPE B"
Feb 05	15 00 00.0	37° 09' 50.3"	116° 02' 19.8"	4.5	-		"LABIS"
Feb 05	19 37 04.0	37.2°	116.0°	4.4	-	4	Aftershock of "LABIS"
Feb 11	19 15 00.0	37° 12' 04.6"	116° 12' 18.8"	4.5	-		"DIANA MIST"
Feb 25	14 28 38.0	37° 02' 12.0"	115° 59' 58.5"	4.6	-		"CUMMARIN"
Feb 26	15 30 00.0	37° 06' 58.9"	116° 03' 59.2"	5.0	-		"YANNIGAN"
Feb 26	17 42 55	37.0°	116.0°	3.9	-	3	Aftershock of "YANNIGAN"
Feb 27	00 13 55	37.0°	116.0°	3.5	-	3	Aftershock of "YANNIGAN"
Mar 06	14 24 00.9	37° 10' 23.2"	116° 05' 30.3"	4.4	-		"CYATHUS"
Mar 06	15 00 00.2	37° 08' 22.5"	116° 02' 07.0"	4.2	-		"ARABIS"
Mar 19	14 03 30.0	37° 00' 03.9"	116° 01' 22.2"	4.1	-		"JAL"
Mar 23	23 05 00.0	37° 05' 10.5"	116° 01' 15.9"	5.4	-		"SHAPER"
Mar 24	01 15 28	37.1°	115.9°	4.4	-	7	Aftershock of "SHAPER"
Mar 26	19 00 00.2	37° 18' 01.7"	116° 32' 02.8"	6.3	-		"HANDLEY"
Mar 27	00 14 38	37.3°	116.4°	3.3	-	3	Aftershock of "HANDLEY"
Mar 27	05 51 08	37.3°	116.4°	3.8	-	3	Aftershock of "HANDLEY"
Mar 27	15 45 03	37.3°	116.4°	3.5	-	3	Aftershock of "HANDLEY"
Mar 27	16 14 40	37.3°	116.4°	3.4	-	3	Aftershock of "HANDLEY"
Mar 27	16 42 17	37.3°	116.4°	4.1	-	3	Aftershock of "HANDLEY"

Date 1970	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
Mar 27	18 08 23	37.3°	116.4°	4.2	-	6	Aftershock of "HANDLEY"
Mar 27	18 18 37	37.3°	116.4°	4.9	-	7	Aftershock of "HANDLEY"
Apr 21	14 30 00.0	37° 03' 17.6"	115° 59' 17.2"	4.6	-		"SNUBBER"
Apr 21	15 00 00.0	37° 06' 50.0"	116° 04' 51.0"	4.8	-		"CAN"
May 01	14 13 00.0	37° 03' 33.2"	116° 01' 41.5"	4.0	-		"BEEBALM"
May 01	14 40 00.2	37° 08' 00.0"	116° 02' 02.7"	4.3	-		"HOD"
May 01	14 49 00	37.1°	116.0°	3.8	-	4	Aftershock of "HOD"
May 05	15 30 00.2	37° 12' 59.5"	116° 11' 02.6"	4.7	-		"MINT LEAF"
May 15	13 30 00.0	37° 09' 50"	116° 02' 13"	5.0	-		"CORNICE"
May 15	13 57 20	37.1°	116.0°	3.5	-	7	Aftershock of "CORNICE"
May 15	15 19 38	36.1°	116.0°	4.0	-	4	Aftershock of "CORNICE"
May 21	14 00 00.4	37° 01' 44"	115° 59' 31"	3.6	-		"MANZANAS"
May 21	14 15 00.0	37° 04' 15"	116° 00' 47"	4.8	-		"MORRONES"
May 26	14 16 00.2	37° 10' 57.4"	116° 12' 48.2"	4.2	-		"HUDSON"
May 26	15 00 00.0	37° 06' 50"	116° 03' 48"	5.2	-		"FLASK"
May 28	12 00 03.3	37.2°	116.0°	4.0	-	5	Aftershock of "FLASK"
Jun 26	13 00 00.0	37° 06' 55"	116° 05' 06"	4.6	-		"ARNICA"

Note: The information on origin time and the coordinates of the named explosions is furnished by the AEC.



This section tabulates measured arrival times of prominent phases of earthquakes and large explosions recorded at selected stations of the seismographic network operated by the University of California (Berkeley). These stations are BKS (or BRK if the BKS reading is not clear), SAO, JAS, MHC, PRI, MIN, ARC. Information regarding these stations and instrumentation will be found in the introductory section of this Bulletin. Earthquakes in the northern California, Nevada, and Oregon region are included in the following tabulation only if of magnitude 4.0 or over, or if of special interest.

Phase arrival times are G.C.T.

In the column after the P or P' phase arrival time, "C" or "D" indicates initial compression or dilatation of the ground, respectively, from a wave of the compressional type.

S arrival times and arrival times of later phases are given in minutes after the hour of the P or P' arrival time, and seconds. When a later phase is recorded at a station, but no P or P' phase, the time in hours and minutes of the first P or P' arrival at the other stations of the network is printed in the P or P' column.

The maximum amplitudes of earth displacement in microns (μ) and periods in seconds (sec) in the indicated phases are given for the Berkeley station, BKS, under the BKS phase arrival times. Total horizontal amplitudes combined from N and E components are designated by "H" (e.g. PH, PPH).

Magnitudes given for earthquakes outside the northern California, Nevada, and Oregon region correspond to the magnitude based on surface waves (M_s). In calculating the published value, body wave amplitudes and periods of body waves are used to determine M_B (body wave magnitude) by:

$$M_B = Q + \log_{10} (A/T),$$

where A = 1/2 peak-to-peak ground amplitude in microns,

T = period in seconds

Q is the empirically determined function of distance and depth given by Gutenberg and Richter ("Magnitude and Energy of Earthquakes," *Annali di Geofisica*, 9:1-15, 1956).

The arithmetic average of the available values of M_B for long-period and short-period records of body waves is converted to an equivalent value M_s by

$$M_s = 1.59 M_B - 3.97.$$

This value is then compared with the value of M_s determined from surface waves of period near 20 seconds.

Distances are given in degrees from the Berkeley station, BRK. USCGS data are listed as a guide at the end of arrival times of the earthquakes which have body wave magnitude 5 and over or those for which some core phases have been recorded.

All measurement and interpretation of seismograms (i.e. identification of phases, arrival times, directions of initial ground motion, and ground amplitudes and periods) are done at Berkeley. Readings from the remaining stations in the network other than the seven listed are available on request. Requests for additional data or for copies of seismograms should be addressed to the Director.

MHC 17 15 USCGS 17 00 40.2, 24.1N, 102.5E, H= 31 KM, M=5.9
 YUNNAN PROVINCE, CHINA. PROBABLE HEAVY DAMAGE
 FELT AT HANOI.

*E 19 24

JAS JAN 05 09 19 37.5 D *E 23 28
 MHC 09 19 44.4 *E 23 34
 MIN 09 19 44.8 D *E 23 35
 FHC 09 19 58.4 *E 23 48

USCGS 09 09 47.8, 16.1N, 59.6W, H= 20 KM, M=5.3
 LEEWARD ISLANDS.

JAS JAN 05 09 35 27.1 D
 MHC 09 35 34.3
 MIN 09 35 35.0
 FHC 09 35 48.5

USCGS 09 25 39.7, 16.1N, 59.6W, H= N KM, M=5.0
 LEEWARD ISLANDS.

JAS JAN 05 21 15 32.1 C

BKS JAN 06 02 29 34.2 C
 SAO 02 29 14.3 C
 PRI 02 29 18.2 C
 MHC 02 29 24.7 C
 JAS 02 29 32.8 C
 MIN 02 30 10.4 C
 FHC 02 30 21.0 C

MAG 4.0, BEAR VALLEY
 FELT AT HOLLISTER AND SALINAS.

BKS JAN 06 05 49 08.0 C 61 28 SS 66 36 L 72 48 LR 77 48

MICRON PERIOD
 PZ 0.16 1.2
 PH 0.05 0.9
 MAXR(Z) 14.3 20
 MAXH(N) 2.5 20
 MAXH(E) 11.5 20

SAO 05 49 09.2
 MHC 05 49 09.6 C
 MIN 05 49 11.2 C
 PRI 05 49 12.8 C
 JAS 05 49 14.0 C

*E 53 05
 MAG 5.7, DIST(DEG) 90
 USCGS 05 35 51.8, 9.6S, 151.5E, H= 8 KM, M=5.7
 DENTRECASTEAUX ISLANDS REGION. FELT.

JAS JAN 06 06 08 57.3 C
 MIN 06 08 42.0 C

JAS JAN 06 07 23 26.6 C

BKS JAN 06 10 56 20.9 C
 MIN 10 56 07.4 C *E 57 08
 MHC 10 56 31.4 C 56 43
 JAS 10 56 35.5 D 57 27
 57 33 *E 56 46



SAO 10 56 37.1 C
 MAG 4.0, OFF CAPE MENDOCINO, CALIFORNIA.

PRI JAN 06 13 05 54.5 C
 JAS 13 05 54.7 C *E 06 10
 MHC 13 06 01.7 C
 MIN 13 06 02.1 C
 BKS 13 06 06.7 C *E 21 00 *E 28 00

MICRON PERIOD
 PZ 0.07 1.5

FHC 13 06 15.8 C
 USCGS 12 56 05.9, 15.8N, 59.7W, H= N KM, M=5.3
 LEEWARD ISLANDS.

JAS JAN 06 15 37 48.3 D
 JAS JAN 06 17 39 33.4 C
 JAS JAN 07 00 15 48.8 C
 JAS JAN 07 03 57 05.5 D
 BKS JAN 07 05 05 54.7 D

MICRON PERIOD
 PZ 0.05 1.0

SAO 05 05 54.5
 MHC 05 05 55.6 C
 PRI 05 05 56.6
 JAS 05 06 00.5 C
 MIN 05 06 01.7

NEW HEBRIDES REGION

BKS JAN 07 08 06 11.5 14 30 L 20 36 LR 30 06

MICRON PERIOD
 PZ 0.04 0.8
 SH 1.9 22
 MAXR(Z) 9.0 21
 MAXH(N) 7.1 21
 MAXH(E) 7.9 20

PRI 08 06 00.6
 JAS 08 06 00.2 D
 SAO 08 06 05.0
 MHC 08 06 06.7 D
 MIN 08 06 07.2 D
 FHC 08 06 21.6 D

DISTANCE(DEG) 60
 USCGS 07 56 11.1, 15.9N, 59.7W, H= 25 KM, M=5.7
 LEEWARD ISLANDS.

JAS JAN 07 09 08 08.0 C
 MIN 09 08 04.9
 USCGS 08 55 04.7, 5.4S, 147.0E, H=190 KM, M=5.0
 EAST NEW GUINEA REGION.

BKS JAN 07 09 52 25.8 D
 MICRON PERIOD



SAO 20 09 38.4
 MHC 20 09 39.8 C
 PRI 20 09 40.0 C
 JAS 20 09 45.6 C
 MIN 20 09 48.3 C
 FHC 20 09 42.4 C
 USCGS 19 58 42.7, 15.2S, 178.7W, H=435 KM, M=5.1
 FIJI ISLANDS REGION.

JAS JAN 09 23 35 04.8
 USCGS 23 16 21.7, 9.3S, 117.3E, H= 64 KM, M=5.7
 SUMBAWA ISLAND REGION. MINOR DAMAGE ON BALI.

BKS JAN 10 04 27 16.9 D
 MIN 04 26 57.4 D
 FHC 04 26 44.8
 JAS 04 27 20.3 D
 PRI 04 27 32.6

BKS JAN 10 ✓ 12 20 58 31 46 PP 25 20 *E 32 06 *E 32 36
 SS 39 10 *E 43 12 *E 46 54
 P* 48 56 LR 53 28

MICRON PERIOD
 MAXR(Z) 52 20
 MAXH(N) 32 20
 MAXH(E) 54 20
 FHC 12 20 42.2
 MIN 12 20 58.0 *E 25 20
 MHC 12 21 05.1
 JAS 12 21 05.5 D *E 25 30 *E 37 01
 PRI 12 21 08.5
 MAG 7.5-7.75, DIST(DEG) 101
 USCGS 12 07 08.6, 6.8N, 126.7E, H= 73 KM, M=6.1
 MINDANAO, PHILIPPINE ISLANDS.
 FELT ON MINDANAO, SAMAR AND CEBU.

JAS JAN 11 01 28 05.7 D

BKS JAN 11 03 34 08.9 *I 34 18
 MICRON PERIOD
 PZ 0.11 1.0

MIN 03 33 56.6 C
 JAS 03 34 04.2

BKS JAN 11 05 32 17.9 D
 MICRON PERIOD
 MAXR(Z) 1.8 20
 MAXH(N) 0.9 20
 MAXH(E) 1.9 20

MHC 05 32 18.9
 PRI 05 32 19.2
 JAS 05 32 23.9
 MIN 05 32 24.9 C
 USCGS 05 19 37.0, 22.6S, 171.5E, H= 43 KM, M=5.2
 LOYALTY ISLANDS REGION.

JAS JAN 12 10 45 55.8 D

*E 51 40

BKS JAN 13 04 25
JAS 04 25 25.6
USCGS

04 12 46.0, 14.6S, 166.3E, H= 20 KM, M=5.0
NEW HEBRIDES ISLANDS.

JAS JAN 13 22 44 24.9 D

BKS JAN 14 08 37 35.7 C
SAO 08 37 25.8 C
MHC 08 37 26.5 D
PRI 08 37 27.8 D
JAS 08 37 31.6 D
FHC 08 37 32.6 C
MIN 08 37 32.7 C

JAS JAN 15 10 46 22.6 D

PRI JAN 15 13 03 13.2
JAS 13 03 06.7

BKS JAN 15 17 00 25.2 D

PCP 02 23 *E 12 32 *E 15 32

MICRON PERIOD

MAXR(Z) 2.5 20
MAXH(N) 1.1 20
MAXH(E) 2.9 20

PRI 17 00 08.9 D
JAS 17 00 14.9 D

PCP 02 17 *E 02 24
*E 00 22 PCP 02 20 *E 02 26
*E 07 28

MHC 17 00 19.9 D
MIN 17 00 30.6 C
FHC 17 00
SAO 17 00

PCP 02 22
PCP 02 25
PCP 02 34
PCP 02 21

USCGS 16 52 42.9, 11.5N, 86.7W, H= 70 KM, M=5.1
NEAR COAST OF NICARAGUA.
FELT AT SAN SALVADOR.

JAS JAN 15 19 16 33.3 D
MHC 19 16 46.2 D

BKS JAN 16 08 11 37.8 D

17 05 *PP 11 58 SCP 18 13
MICRON PERIOD

PZ 0.13 0.7
SH 7.8 8

FHC 08 11 09.4 D
MHC 08 11 43.8 D
JAS 08 11 43.9 D
PRI 08 11 57.5 D
MIN 08 11

*E 11 30 *E 11 44 SCP 18 01
*E 12 04 SCP 18 16
*I 12 05 SCP 18 15 *E 18 55
*E 12 08 SCP 18 21
SCP 18 07

MAG 5 3/4, DIST(DEG) 33
USCGS 08 05 39.6, 60.3N, 152.7W, H= 91 KM, M=5.6
SOUTHERN ALASKA. FELT STRONGLY IN COOK
INLET AND KENAI PENINSULA AREAS.

BKS JAN 18 00 30 20.7 D

*E 30 32 *E 53 15 *E 53 32



		PZ		MICRON	PERIOD					
				0.07	1.0					
FHC		00	30	09.3	D					
MIN		00	30	18.6	D					
MHC		00	30	24.2	D					
JAS		00	30	27.9	D					
PRI		00	30	30.8	D					
		USCGS		00 18 23.9, 21.4N, 146.7E, H= 39 KM, M=5.7 MARIANA ISLANDS REGION.						
PRI	JAN 18	04	22	36.7	D					
MHC		04	22	36.5	D					
JAS		04	22	42.4	D					
MIN		04	22	45.2	D					
		USCGS		04 10 42.0, 15.6S, 179.9W, H= 20 KM, M=5.1 FIJI ISLANDS REGION.						
PRI	JAN 18	19	00	46.4	C					
JAS		19	00	52.0	C	01 04				
MHC		19	00	54.0	C					
		USCGS		18 48 41.2, 28.5S, 70.9W, H= 41 KM, M=5.1 CENTRAL CHILE.						
BKS	JAN 19	07	18	23.9		*E	20	13		
PRI		07	17	51.7		*E	17	56	*E	19 34
SAO		07	18	03.2						
JAS		07	18	11.0		*E	18	13	*E	18 17 *E 20 07
MHC		07	18	14.2		*E	18	18		
		USCGS		07 16 23.2, 31.5N, 116.0W, H= N KM, M=4.2 BAJA CALIFORNIA.						
JAS	JAN 20	00	45	10.1		*E	45	24		
BKS		00	45			*E	54	00		
		USCGS		00 38 24.3, 53.8N, 163.5W, H= N KM, M=5.1 UNIMAK ISLAND REGION.						
BKS	JAN 20	03	25	35.9						
MHC		03	25	37.0	C					
PRI		03	25	38.8	C					
MIN		03	25	41.8						
JAS		03	25	42.1	C	*E	26	37		
		USCGS		03 13 35.0, 12.5S, 167.0E, H=234 KM, M=5.1 SANTA CRUZ ISLANDS.						
BKS	JAN 20	07	32	03.0		42	15	*E	32	12 PP 35 11 *E 36 20
						*E	43	15 SS 48 52 *E 55 14		
						LR	56	48 P** 58 39		
				MICRON	PERIOD					
				PZ	0.66					
				MAXR(Z)	50					
				MAXH(N)	50					
				MAXH(E)	50					
SAO		07	32	00.9		42	10			
PRI		07	32	02.2	D	42	16	P**	58	39
MHC		07	32	03.1	D			P**	58	39
FHC		07	32	08.1	D			P**	58	44

JAS 07 32 08.3 D 42 28 *E 50 32 P*P* 58 45
 MIN 07 32 12.4 D P*P* 58 48
 MAGNITUDE 7.0
 USCGS 07 19 51.2, 25.8S, 177.3W, H= 80 KM, M=6.5
 SOUTH OF FIJI ISLANDS. FELT AT APIA.

BKS JAN 20 08 35 34.0 PCP 37 31
 MICRON PERIOD
 PZ 0.02 1.0
 PRI 08 35 17.6 D PCP 37 26
 JAS 08 35 23.9 D PCP 37 27
 MHC 08 35 28.7 D PCP 37 29
 MIN 08 35 40.3 D PCP 37 33
 FHC 08 35 55.4 D PCP 37 41
 USCGS 08 27 48.0, 11.5N, 86.4W, H= 46 KM, M=5.4
 NEAR COAST OF NICARAGUA.

BKS JAN 20 08 49 48.5 MICRON PERIOD
 PZ 0.1 1.5
 PRI 08 49 48.1 D
 MHC 08 49 48.7 D
 JAS 08 49 54.2 D
 MIN 08 49 58.7 D
 USCGS 08 37 37.6, 26.0S, 177.4W, H=100 KM, M=5.1
 SOUTH OF FIJI ISLANDS.

BKS JAN 20 15 25 22.2 MICRON PERIOD
 PZ 0.02 0.5
 MHC 15 25 24.2
 PRI 15 25 27.7 D
 JAS 15 25 28.5 D
 USCGS 15 12 51.0, 5.4S, 154.3E, H=196 KM, M=5.4
 SOLOMON ISLANDS. FELT ON SHORTLAND ISLANDS,
 WESTERN SOLOMONS.

BKS JAN 20 17 19 44.2 *E 19 54
 MICRON PERIOD
 PZ 0.04 1.0
 PRI 17 19 39.4 C *I 19 43
 SAO 17 19 40.9 C
 MHC 17 19 44.2 C
 JAS 17 19 46.2 C
 USCGS 17 07 31.2, 26.0S, 177.2W, H=105 KM, M=5.4
 SOUTH OF FIJI ISLANDS.

BKS JAN 20 17 44 06.8 D 53 05 *E 44 17 *E 45 00 SS 57 30
 MICRON PERIOD LR 63 44
 PZ 0.81 1.4
 MAXR(Z) 14.7 20
 MAXH(N) 7.1 20
 MAXH(E) 11.8 20
 FHC 17 43 50.2 C
 MIN 17 43 59.1 C
 *I 44 11

MHC 17 44 10.7 C
 JAS 17 44 13.0 C
 SAO 17 44 14.1 C
 PRI 17 44 19.8 C

MAG 6 1/4, DIST(DEG) 70

USCGS 17 33 05.4, 42.5N, 143.0E, H= 46 KM, M=6.3
 HOKKAIDO, JAPAN, REGION. 1 DEAD, 38 INJURED
 AND SLIGHT PROPERTY DAMAGE ON HOKKAIDO.
 ALSO FELT ON HONSHU AND KYUSHU.

BKS JAN 21 17 58 29.0 C *E 61 03 *E 62 45 *E 63 56
 MICRON PERIOD
 PZ 0.43 1.5
 MAXR(Z) 23 20
 MAXH(N) 19 20
 MAXH(E) 41 20

PRI 17 58 10.5 C
 SAO 17 58 17.3 C
 JAS 17 58 23.1 C
 MHC 17 58 23.1 C
 MIN 17 58 44.0 C
 FHC 17 58 56.7 C

MAG 6.0, DIST(DEG) 34

USCGS 17 51 38.5, 7.0N, 104.3W, H= N KM, M=6.2
 OFF COAST OF MEXICO.

BKS JAN 22 04 03 46.5 LR 15 40
 MICRON PERIOD
 PZ 0.04 1.0
 MAXR(Z) 4.6 20
 MAXH(N) 3.9 20
 MAXH(E) 5.0 20

FHC 04 03 22.7
 MIN 04 03 29.8 D
 MHC 04 03 47.3
 JAS 04 03 50.5 D *E 04 02
 PRI 04 03 58.5

USCGS 03 55 32.6, 51.2N, 177.3E, H= 38 KM, M=5.3
 RAT ISLANDS, ALEUTIAN ISLANDS.

BKS JAN 22 15 21 18 L 30 35 LR 33 00
 MICRON PERIOD
 MAXR(Z) 6.4 20
 MAXH(N) 14.7 20
 MAXH(E) 13.6 20

PRI 15 21 04.2 C
 JAS 15 21 11.5 C *E 23 48
 MHC 15 21 15.7
 FHC 15 21 44.9

USCGS 15 14 28.8, 14.3N, 92.4W, H= 58 KM, M=5.5
 NEAR COAST OF CHIAPAS, MEXICO.
 FELT AT SAN SALVADOR, EL SALVADOR.

BKS JAN 23 03 38 LR 56 35
 PRI 03 38 *E 38 33
 JAS 03 38 21.2 C

USCGS 03 31 29.0, 53.8N, 163.6W, H= N
UNIMAK ISLAND REGION.



JAS JAN 23 09 43 59.0 C *I 44 24
BKS JAN 23 16 31 23.1 *E 31 09
16 30 57.8 D 31 56
JAS 16 31 02.5 C 32 08
PRI 16 31 10.5 32 26 *E 31 24
MHC 16 31 10.5 *E 31 23
SAO 16 31 10.6

MAG 4.4, SOUTHERN NEVADA. NUCLEAR TEST 'FOB'.
AEC 16 30 00.0, 37 08 20.6N, 116 02 12.4W.

JAS JAN 25 11 29 24.5 C
USCGS 11 16 39.6, 5.9S, 154.8E, H=133 KM, M=5.1
SOLOMON ISLANDS. FELT AT PIVA, BOUGANVILLE
ISLANDS AND ON SHORTLAND ISLANDS.

BKS JAN 26 10 13 46.7 24 36 LQ 35 41 LR 39 54
MICRON PERIOD
PZ 3.62 14
MAXR(Z) 2.8 20
MAXH(N) 2.8 20
MAXH(E) 2.8 20

MHC 10 13 47.5
PRI 10 13 48.8 C
JAS 10 13 50.8 C
MAG 6.5, DIST(DEG) 85
USCGS 10 01 20.5, 12.6S, 166.4E, H= 50 KM, M=5.7
SANTA CRUZ ISLANDS.

JAS JAN 26 23 24 16.1

BKS JAN 27 09 15 12.5 *E 37 42 LR 40 47
MICRON PERIOD
PZ 0.07 1
MAXR(Z) 2.14 20
MAXH(N) 1.07 20
MAXH(E) 1.79 20

FHC 09 15 11.7 C
SAO 09 15 13.2
MHC 09 15 14.1 C
PRI 09 15 16.2 C
MIN 09 15 18.7 C
JAS 09 15 19.1 C

MAG 5.5, DIST(DEG) 85
USCGS 09 02 51.8, 10.9S, 165.9E, H= 50 KM, M=5.5
SANTA CRUZ ISLANDS.

BKS JAN 27 09 39 10.5

PRI 09 38 56.9 C MICRON PERIOD
JAS 09 39 00.6 C 0.14 1
SAO 09 39 02.4 C

MHC 09 39 06.1 C *E 39 29 PCP 40 09



PRI 13 08 54.5
 MHC 13 08 54.9
 JAS 13 09 00.5 D *E 09 21
 MIN 13 09 04.5

TONGA ISLANDS REGION

BKS JAN 30 08 40 36.4 50 43 *E 41 18 *E 41 41 *E 42 22
 PP 43 42 *E 45 00 *E 47 00
 MICRON PERIOD
 PZ 0.08 0.8
 FHC 08 40 36.7 C *PP 41 16
 SAD 08 40 36.9 C
 MHC 08 40 37.0 C *PP 41 19
 PRI 08 40 38.4 C *PP 41 21
 JAS 08 40 41.8 C *PP 41 24 *I 44 42 *E 66 38
 MIN 08 40 42.0 C *PP 41 24 *E 44 45 *E 56 38

DISTANCE(DEG) 80

USCGS 08 28 22.7, 14.6S, 167.3E, H=172 KM, M=5.7
 NEW HEBRIDES ISLANDS. FELT AT LUGANVILLE.

BKS JAN 30 17 01 35
 JAS 17 00 58.2 D *I 01 09
 PRI 17 01 01.4 *E 01 11
 SAD 17 01 08.5
 MHC 17 01 09.0
 MIN 17 01 24.3

MAG 4.6, SOUTHERN NEVADA. NUCLEAR TEST 'IJO'.
 AEC 17 00 00.1, 37 01 50.9N, 116 02 05.1W.

BKS JAN 31 11 32 49 34 12
 FHC 11 32 05.6 32 49
 MIN 11 32 32.3
 MHC 11 32 58.8
 JAS 11 33 01.5
 PRI 11 33 20.6 34 22

MAG 4.7, OFF COAST OF OREGON.
 USCGS 11 31 29.3, 42.2N, 126.5W, H= N KM, M=4.5
 OFF COAST OF OREGON.

BKS JAN 31 12 00 50
 MIN 12 00 47.0 D
 JAS 12 00 51.7

USCGS 11 41 53.6, 4.1N, 96.1E, H= 56 KM, M=5.3
 NORTHERN SUMATRA.

PRI JAN 31 16 45 04.9
 MHC 16 44 01.7
 MIN 16 44 45.3
 JAS 16 44 54.0

USCGS 16 35 03.9, 53.9N, 35.5W, H= N KM, M=5.1
 NORTH ATLANTIC OCEAN.

BKS JAN 31 20 48 43
 JAS 20 49 31.0
 MIN 20 49 35.5

MAXH(N) 63 20
 MAXH(E) 63 20
 DIST(DEG) 31, MAG 6.1
 USCGS 05 08 48.0, 15.5N, 99.5W, H= 21 KM, M=6.0
 OFF COAST OF GUERRERO, MEXICO.
 FELT AT ACAPULCC, AND MEXICO CITY.

JAS	FEB	04	05 46 08.5	D		*E	47 01	
PRI	FEB	04	05 52 17.1	C				
MHC			05 52 28.5	C				
JAS			05 52 28.8	C				
			USCGS		05 46 26.3, 15.7N, 99.4W, H= 22 KM, M=5.0			
					OFF COAST OF GUERRERO, MEXICO.			
MIN	FEB	04	13 17 50.8	C				
JAS			13 18 00.2	C		*I	18 14	
			USCGS		13 07 12.1, 43.5N, 147.8E, H= N KM, M=5.1			
					KURIL ISLANDS.			
JAS	FEB	04	17 00 57.5	C				
PRI			17 01 01.2	C		*E	01 13	
SAO			17 01 08.0			*E	01 17	
MHC			17 01 10.3	C		*E	01 19	
BKS			17 01 17.0	C		*I	01 30	*I 02 44
MIN			17 01 23.4	C				
					MAG 5.5, SOUTHERN NEVADA. NUCLEAR TEST 'GRAPE B'.			
					AEC 17 00 00.0, 37 05 51.3N, 116 01 35.4W.			
SAO	FEB	04	18 08			*E	08 33	
MHC			18 08			*E	08 33	
BKS			18 08			*E	08 44	*E 10 10
MIN			18 08			*E	08 55	
JAS			18 08 10.0			*E	08 20	
PRI			18 08 12.0			*E	08 24	
					MAG 4.4, SOUTHERN NEVADA.			
BKS	FEB	04	22 58 38.0	D		*E	58 42	LR 87 00
					MICRON	PERIOD		
					PZ 0.04	1.0		
					MAXR(Z) 1.6	20		
					MAXH(N) 1.4	20		
					MAXH(E) 1.8	20		
SAO			22 58 38.2	D				
MHC			22 58 39.1	D				
PRI			22 58 39.5	D				
JAS			22 58 44.0	D				
MIN			22 58 46.1	D		*E	58 55	*E 59 11
					MAG 5.5, DIST(DEG) 85			
					USCGS 22 45 58.2, 22.8S, 171.4E, H= 57 KM, M=5.2			
					LOYALTY ISLANDS REGION.			
BKS	FEB	05	12 56					
MIN			12 56 33.2					
MHC			12 56 46.1					
JAS			12 56 48.5					
					65 00	LQ	71 50	
						*E	57 01	

PRI 12 56 54.4
USCGS 12 46 38.2, 47.0N, 154.2E, H= N KM, M=5.5
KURIL ISLANDS.

JAS FEB 05 15 00 57.2 C *E 01 06
PRI 15 01 01.0 C *E 01 10
SAO 15 01 08.5 C *E 01 18
MHC 15 01 09.9 C *E 01 23
BKS 15 01 17.5 *E 01 26 *E 02 41
MIN 15 01 23.2 D
MAG 4.5, SOUTHERN NEVADA. NUCLEAR TEST 'LABIS'.
AEC 15 00 00.0, 37 09 50.3N, 116 02 19.8W.

PRI FEB 05 19 38 *E 38 06
MHC 19 38 *E 38 08 *E 38 17 *E 39 10
SAO 19 38 *E 38 21
BKS 19 38 *E 38 32
MIN 19 38 *E 38 34
JAS 19 38 00.2 D *I 38 10
MAG 4.4, SOUTHERN NEVADA.

PRI FEB 05 22 20 01.5
BKS 22 20 02.0 PP 23 50 *E 33 10 SS 39 00
*E 48 08 LR 52 28

MICRON PERIOD

MAXR(Z) 15.3 20
MAXH(N) 9.0 20
MAXH(E) 16.0 20

MIN 22 19 53.4
MHC 22 19 55
JAS 22 19 57.4 PP 24 15 *E 36 05

MAG 6.4, DIST(DEG) 101
USCGS 22 05 58.3, 12.6N, 122.1E, H= 11 KM, M=6.0
LUZON, PHILIPPINE ISLANDS. 3 KILLED,
SEVERAL INJURED, MODERATE DAMAGE ON ROMBLON.

FHC FEB 06 00 20 30.6 D *E 20 44
MIN 00 20 42.6 D *PP 20 55
BKS 00 20 52.5 27 28 *PP 21 05 *E 24 10 LR 35 00

MICRON PERIOD

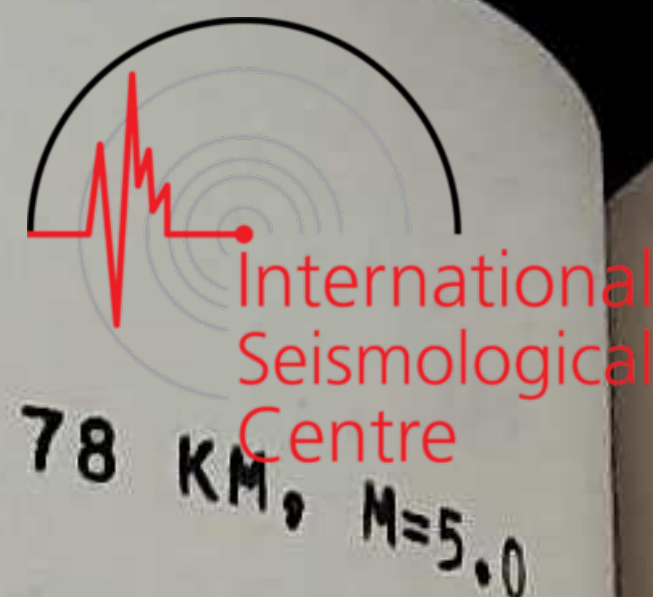
PZ 0.04 1.0
MAXR(Z) 2.1 20
MAXH(N) 1.8 20
MAXH(E) 2.1 20

MHC 00 20 58.5 D *PP 21 08
JAS 00 21 00.6 D *PP 21 13
PRI 00 21 09.4 D *PP 21 20

MAG 5.2, DIST(DEG) 47
USCGS 00 11 49.6, 54.6N, 163.6E, H= 43 KM, M=5.6
OFF EAST COAST OF KAMCHATKA.

JAS FEB 06 08 52 56.2 D
MHC 08 52 50.9 D
MIN 08 53 00.7 D

MIN FEB 06 14 07 40.3 C



JAS 14 07 54.4 C *E 08 06
 USCGS 13 57 14.3, 43.9N, 147.9E, H= 78 KM, M=5.0
 KURIL ISLANDS.

MIN FEB 07 00 31 17.8 D
 JAS 00 31 35.7

BKS FEB 07 03 33 LR 45 30
 JAS 03 33 06.2 D *E 33 24

BKS FEB 07 10 11 *E 19 26 L 26 12 LR 32 00
 MIN 10 11 02.7
 MHC 10 11 15.2
 JAS 10 11 18.2 C
 PRI 10 11 22.8
 USCGS 10 01 05.4, 47.2N, 154.1E, H= N KM, M=5.4
 KURIL ISLANDS.

MIN FEB 07 12 17 31.1 D
 BKS 12 17 46.5
 JAS 12 17 46.5 D
 SH 1.8
 MICRCN 25 52 SS 29 52 L 32 42 LR 35 00
 PERIOD 20
 *E 18 34 *E 25 27
 MAG 5.5, DIST(DEG) 61
 USCGS 12 07 35.8, 47.3N, 154.0E, H= N KM, M=5.5
 KURIL ISLANDS.

JAS FEB 07 21 26 05.8
 USCGS 21 15 58.9, 47.1N, 154.1E, H= N KM, M=5.0
 KURIL ISLANDS.

JAS FEB 08 03 38 25.5
 FHC FEB 08 08 07 25.8 C
 MIN 08 07 35.2 C
 BKS 08 07 42

MHC 08 07 48.0
 JAS 08 07 48.9 C
 PRI 08 07 59.0 C
 USCGS 07 56 25.2, 42.0N, 140.6E, H= 8 KM, M=5.1
 HOKKAIDO, JAPAN REGION.
 FELT AT KAKODATE AND HACHINOHE.

JAS FEB 08 15 53 54.0

BKS FEB 08 16 47
 PRI 16 47 06.3 C
 JAS 16 47 18.3 C
 MHC 16 47 19.1
 MIN 16 47 40.4

*E 52 11 *E 54 40
 *E 47 37 *E 48 33 *E 50 15

MIN FEB 08 19 24 16.0
 MHC 19 24 31.4
 JAS 19 24 35.2 D

USCGS 19 17 11.0, 50.6N, 172.4W, H= 15 KM, M=5.0
ANDREANOF ISLANDS, ALEUTIAN ISLANDS.

JAS FEB 09 00 15 13.9

JAS FEB 09 11 36 08.0 C *E 37 08
MHC 11 36 15.2 C
MIN 11 36 16.0 C
BKS 11 36 19.5 C

FHC 11 36 29.8
MICRON 0.02 PERIOD 1.0

USCGS 11 26 33.7, 16.7N, 61.1W, H= 50 KM, M=5.1
LEEWARD ISLANDS. FELT ON ANTIGUA.

JAS FEB 10 02 40 47.6 C *E 44 08
MIN 02 40 48.2 D

USCGS 02 28 22.7, 15.3S, 167.6E, H=141 KM, M=5.0
NEW HEBRIDES ISLANDS.

JAS FEB 10 06 39 03.6 C

SAO FEB 10 17 56 22.3 C
BKS 17 56 22.5 D

MHC 17 56 23.4 D
PRI 17 56 23.9 C
FHC 17 56 26.5 C
JAS 17 56 29.4 C
MIN 17 56 32.5 C

MICRON 0.04 PERIOD 1.0

FIJI ISLANDS REGION

BKS FEB 10 21 48 20
JAS 21 48 26.5 C

BKS FEB 11 02 11 40 *E 39 40
MICRON 0.02 PERIOD 1.0

PRI 02 11 40.0
MHC 02 11 40.5
JAS 02 11 46.2

USCGS 01 59 53.5, 20.9S, 174.3W, H= N KM, M=5.1
TONGA ISLANDS.

PRI FEB 11 02 29 46.0
JAS 02 29 53.7
MHC 02 29 57.3

JAS FEB 11 19 15 55.3 C *E 16 04
PRI 19 16 00.5 C 17 07 *E 16 09
SAO 19 16 06.1 17 18 *E 16 15
MHC 19 16 08.3 C 17 23 *E 16 18
BKS 19 16 15.5 C *E 16 25
MIN 19 16 20.8 *E 16 27 *E 16 40

MAG 4.5, SOUTHERN NEVADA. NUCLEAR TEST 'DIANA MIST'.

JAS			03 24 47.3	D		*E 25 26	*E 25 43	
MHC			03 24 49.5	D				
BKS			03 24 53.2	D				
					MICRON	PERIOD		
					0.02	0.7		
			PZ					
MIN			03 24 59.2					
			USCGS					
					03 12 57.7,	23.4S,	70.2W, H= 56 KM, M=5.4	
					NEAR COAST OF NORTHERN CHILE.			
					FELT AT ANTO FAGASTA.			
MIN	FEB	15	04 12 52.1	C		*E 13 08		
BKS			04 12 58.0			*E 13 14		
JAS			04 13 04.5	C		*E 13 21		
PRI			04 13 10.2			*E 13 26		
PRI	FEB	15	07 07 52.4	D				
JAS			07 07 59.1	D				
MHC			07 08 03.8	D				
FHC	FEB	15	09 04 38.5	C				
MIN			09 04 48.6	C				
BKS			09 04 56.5	C				
					MICRON	PERIOD		
					0.02	0.8		
			PZ					
MHC			09 05 01.3	C				
JAS			09 05 03.5	C		*E 05 13		
SAO			09 05 04.0					
PRI			09 05 10.5	C				
					SEA OF OKHOTSK			
FHC	FEB	15	12 51			P* 54 45		
MIN			12 51			P* 54 51		
MHC			12 51			P* 54 53		
PRI			12 51			P* 54 56		
JAS			12 51 07.3			P* 54 54	*E 65 54	
			USCGS					
					12 36 36.7,	0.0S,	122.9E, H=154 KM, M=5.7	
					NORTHERN CELEBES.			
JAS	FEB	15	15 33 01.0			*E 33 17		
JAS	FEB	15	16 59 10.7	C				
MIN			16 59 13.7					
PRI	FEB	15	17 40 36.4					
JAS			17 40 41.6	D				
MHC			17 40 43.7					
BKS			17 40 47.6					
					MICRON	PERIOD		
					0.01	0.6		
			PZ					
MIN			17 40 58.7					
SAO	FEB	16	21 47 53.0					
PRI			21 47 53.5	D				
BKS			21 47 53.9					
MHC			21 47 54.0	D				
FHC			21 47 57.8					



*PP 50 05 PP 51 25

JAS 21 47 58.9 D
 MIN 21 48 02.4 D
 USCGS 21 36 22.5, 25.2S, 178.3E, H=582 KM, M=5.3
 SOUTH OF FIJI ISLANDS.

MHC FEB 17 05 59 49.4
 JAS 05 59 50.8
 PRI 05 59 58.5

JAS FEB 17 06 15 55.7 C

BKS FEB 18 02 11 *E 13 31
 MIN 02 10 24.5
 JAS 02 10 57.3
 PRI 02 11 23.5

BKS FEB 18 09 26 53
 MIN 09 26 22.6
 JAS 09 26 54.8
 PRI 09 27 15.6

JAS FEB 18 13 04 24.6
 MIN 13 04 08.9 D
 USCGS 12 56 00.0, 52.1N, 175.5E, H= 59 KM, M=5.0
 RAT ISLANDS, ALEUTIAN ISLANDS.

SAO FEB 18 15 35 02.7 D
 BKS 15 35 03.7 D 44 36 *PP 36 06 SP 45 43 L 56 00
 PRI PZ MICRCN PERIOD
 MHC 15 35 04.0 D 0.33 C.8
 FHC 15 35 04.4 D *PP 36 04
 JAS 15 35 08.3 D *PP 36 06
 MIN 15 35 10.0 D
 15 35 13.3 PCP 35 30 *PP 36 12 PP 38 11
 *E 36 13
 MAG 5.7, DIST(DEG) 78
 USCGS 15 23 33.7, 20.8S, 176.9W, H=259 KM, M=5.8
 FIJI ISLANDS REGION.

PRI FEB 18 16 35 30.8
 MHC 16 35 31.5 D *E 35 59
 BKS 16 35 31.6 C *E 35 59
 JAS 16 35 37.0 D
 MIN 16 35 41.1 *E 36 05
 USCGS

16 23 36.2, 22.9S, 176.2W, H=100 KM, M=5.2
 SOUTH OF FIJI ISLANDS.

MIN FEB 19 05 14 55.5
 BKS 05 14 58.3 C
 JAS 05 15 05.2 C

MIN FEB 19 08 12 51.9 D
 JAS 08 13 20.5 D

PRI FEB 19 11 00 12.6
 MHC 11 00 13.6
 *E 00 28
 *E 00 29

MIN FEB 23 12 55 14.0
 FHC 12 54 59.6
 JAS 12 55 35.0 D
 PRI 12 55 44.7
 USCGS 12 49 29.1, 55.0N, 156.9W, H= N KM, M=5.1
 SOUTH OF ALASKA.

SAO FEB 23 17 52 08.1 C
 BKS 17 52 09.0 C *E 52 11
 MICRON PERIOD
 0.02 0.8
 PZ
 MHC 17 52 09.7 C
 PRI 17 52 09.7 C *PP 54 11
 FHC 17 52 12.7 C
 JAS 17 52 15.3 C *PP 54 17 PP 55 20
 MIN 17 52 18.4 C
 USCGS 17 41 16.7, 17.6S, 178.5W, H=579 KM, M=5.1
 FIJI ISLANDS REGION.

MIN FEB 23 22 31 17.3
 JAS 22 31 31.4

JAS FEB 24 00 48 22.5
 MIN 00 48 27.6
 USCGS 00 36 24.3, 22.5S, 174.4W, H=506 KM, M=5.3
 TONGA ISLANDS REGION.

PRI FEB 24 02 21 *E 25 32
 BKS 02 21 PP 25 27
 MIN 02 21 11.7 PP 25 12
 JAS 02 21 23.5 PP 25 22 PKKP 37 37
 USCGS 02 07 36.8, 30.6N, 103.0E, H= N KM, M=5.9
 SZECHWAN PROVINCE, CHINA.

JAS FEB 24 06 04 47.3

FHC FEB 24 08 10 40.4
 MIN 08 10 53.0
 BKS 08 11 14.3 D 15 48 *E 11 22 *E 12 22 *E 12 45
 *E 13 30 L 18 00
 MICRON PERIOD
 PZ 0.05 1.3
 JAS 08 11 16.0
 PRI 08 11 31.1
 MAG 4.0, DIST(DEG) 28
 USCGS 08 05 39.6, 59.6N, 143.9W, H= 15 KM, M=5.0
 GULF OF ALASKA.

PRI FEB 24 23 30 40.7 *E 30 49
 JAS 23 30 46.8 D *E 30 55
 MIN 23 31 06.5 D
 USCGS 23 18 12.1, 34.7S, 72.3W, H= 25 KM, M=5.1
 NEAR COAST OF CENTRAL CHILE.
 FELT AT SANTIAGO.

MHC FEB 25 10 34 09.1

MIN			10 34 08.1	D				
JAS			10 34 17.7	C		*E 34 36	*E 43 51	
			USCGS 10 20 59.4, 24.1N, 122.2E, H= 49 KM, M=5.2					
			TAIWAN REGION.					
JAS	FEB	25	14 29 36.0	C		*E 29 43		
PRI			14 29 39.5	C		*E 29 47		
MHC			14 29 48.8	C				
BKS			14 29 58.0	C				
MIN			14 30 02.2					
			MAG 4.6, SOUTHERN NEVADA. NUCLEAR TEST 'CUMMARIN'.					
			AEC 14 28 38.0, 37 02 12.0N, 115 59 58.5W.					
JAS	FEB	25	23 21 31.0	C		*E 21 47		
MIN			23 21 30.8					
PRI	FEB	26	03 14 21.7			*E 14 47		
JAS			03 14 27.8	D		*E 14 53		
MHC			03 14 30.7					
BKS			03 14 34.9	C				
					MICRON	PERIOD		
					PZ	0.05	1.0	
MIN			03 14 44.1	C				
FHC			03 14 52.6	D				
			USCGS 03 03 40.7, 13.6S, 74.0W, H= 95 KM, M=5.4					
			PERU.					
JAS	FEB	26	06 05 27.9	C				
JAS	FEB	26	15 30 57.2	C		*E 31 04		
PRI			15 31 01.0	C		*E 31 11		
SAO			15 31 07.3			*E 31 18		
MHC			15 31 10.0	C		*E 31 22		
BKS			15 31 16.8	D				
MIN			15 31 23.1					
			MAG 5.0, SOUTHERN NEVADA. NUCLEAR TEST 'YANNIGAN'.					
			AEC 15 30 00.0, 37 06 58.9N, 116 03 59.2W.					
FHC	FEB	26	23 16 24.2	C				
MIN			23 16 32.8	C		*E 16 40		
JAS			23 16 46.5	C				
MHC			23 16 52.0	C				
			USCGS 23 06 00.0, 43.5N, 147.7E, H= 36 KM, M=5.4					
			KURIL ISLANDS. FELT AT NEMURO AND URAKAWA.					
MHC	FEB	26	23 37 17.6	C				
FHC			23 37 18.3	C				
PRI			23 37 18.4	C				
JAS			23 37 23.0	C				
MIN			23 37 24.5	C				
			USCGS 23 25 00.8, 16.7S, 173.6E, H= 18 KM, M=5.5					
			FIJI ISLANDS REGION.					
MHC	FEB	26	23 39			*E 39 51		
PRI			23 39			*E 40 12		
FHC			23 39 32.5	C				



MIN JAS 23 39 38.8 C
 23 39 52.2 C
 USCGS *I 40 08
 23 29 02.7, 43.6N, 147.8E, H= 15 KM, M=5.6
 KURIL ISLANDS. FELT AT NEMURO.

MIN FEB 27 01 55 47.3
 MHC 01 55 58.9
 JAS 01 56 01.6 D
 PRI 01 56 08.0
 USCGS 01 45 10.8, 43.4N, 147.7E, H= 15 KM, M=5.2
 KURIL ISLANDS.

JAS FEB 27 02 11 13.7 C
 PRI 02 11 20.6
 PRI FEB 27 03 01 50.8
 MIN 03 01 31.0
 JAS 03 01 43.5
 USCGS 02 50 55.6, 43.4N, 147.7E, H= 38 KM, M=5.0
 KURIL ISLANDS.

SAD FEB 27 03 19 57.5
 BKS 03 19 58.6 C
 PRI 03 19 58.9
 MHC 03 19 59.3 C
 FHC 03 20 03.2 C
 JAS 03 20 04.3 C *E 20 38
 MIN 03 20 08.0 C
 MICRCN 0.03 PERIOD 0.8
 PZ
 FIJI ISLANDS REGION

MIN FEB 27 05 31 49.8
 MHC 05 31 54.8
 JAS 05 31 58.4
 FHC FEB 27 07 15 28.9 D *I 15 33
 MIN 07 15 42.1 C
 BKS 07 15 50.0 C 22 21 *PP 16 05 PCP 17 48 *PPCP 17 57
 *E 21 30 *E 22 12 *E 22 48
 *E 23 24 *E 25 30

MHC 07 15 55.9 D
 JAS 07 15 59.5 D
 PRI 07 16 07.1 D
 USCGS *I 16 11
 MAG 5.7, DIST(DEG) 43
 07 07 58.1, 50.1N, 179.6W, H= 20 KM, M=6.0
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS.
 FELT ON AMCHITKA.

FHC FEB 27 07 25 22.3
 MIN 07 25 35.6
 BKS 07 25 44.0 C
 MICRCN 0.03 PERIOD 0.8
 PZ *PP 25 54

MHC		07 25 48.7				
JAS		07 25 53.4	D			
PRI		07 26 00.7				
		USCGS		07 17 51.7, 50.1N, 179.8W, H= 25 KM, M=5.0		
				ANDREANOF ISLANDS, ALEUTIAN ISLANDS.		
MIN	FEB 27	08 25 46.7				
BKS		C8 25 54.5	C		*PP 26 04	
				MICRON	PERIOD	
		PZ		0.02	0.5	
MHC		08 26 00.7				
JAS		08 26 01.6				
PRI		08 26 11.6				
				ANDREANOFF ISLANDS REGION		
MIN	FEB 27	09 02 08.0				
BKS		09 02 16.9			*E 02 26	*E 02 33
				MICRON	PERIOD	
		PZ		0.01	0.6	
MHC		09 02 22.1				
JAS		09 02 25.7				
				ANDREANOFF ISLANDS REGION		
FHC	FEB 27	09 49 16.4				
MIN		09 49 27.2				
BKS		09 49 36.4				
				MICRON	PERIOD	
		PZ		0.01	0.6	
MHC		09 49 41.0				
JAS		09 49 43.5	C			
PRI		09 49 51.1				
		USCGS		09 40 00.8, 51.0N, 155.5E, H=130 KM, M=5.2		
				NORTHWEST OF KURIL ISLANDS.		
MIN	FEB 27	10 13 30.8				
BKS		10 13 39.0				
				MICRON	PERIOD	
		PZ		0.01	0.6	
JAS		10 13 48.3				
MHC		10 13 54.7				
				ANDREANOFF ISLANDS REGION		
FHC	FEB 27	10 25 09.9				
MIN		10 25 18.8				
BKS		10 25 25.4	D			
				MICRON	PERIOD	
		PZ		0.02	0.8	
MHC		10 25 26.9				
JAS		10 25 31.4				
PRI		10 25 37.1				
		USCGS		10 13 42.0, 37.0N, 137.5E, H= 25 KM, M=5.1		
				NEAR WEST COAST OF HONSHU, JAPAN. FELT AT		
				TUYAMA AND WAJIMA, AT KANAZA, NAGOYA AND		
				MITO.		
FHC	FEB 27	11 06 15.3				



MIN 11 06 17.7
 MHC 11 06 18.9
 BKS 11 06 19.0 C PS 16 56 SS 23 34 L 37 00
 MICRON PERIOD
 PZ 0.13 1.6
 JAS 11 06 20.8
 PRI 11 06 22.3
 DISTANCE(DEG) 114
 USCGS 10 47 52.2, 7.9S, 119.8E, H=170 KM, M=5.6
 FLORES SEA.

MIN FEB 27 13 11 38.8
 BKS 13 11 42.7 C
 MICRON PERIOD
 PZ 0.01 0.8
 PRI 13 11 44.4
 JAS 13 11 50.3
 USCGS 12 59 57.1, 31.8N, 141.6E, H= 13 KM, M=5.1
 SOUTH OF HONSHU, JAPAN.

PRI FEB 28 05 09 28.5
 MHC 05 09 29.4 D
 BKS 05 09 30.8
 JAS 05 09 35.0 D
 USCGS *E 09 46 *E 09 53
 04 58 10.4, 16.3S, 171.9W, H= N KM, M=5.5
 SAMOA ISLANDS REGION.

BKS FEB 28 10 59 45.0 C 65 24 *SS 66 10 *E 69 00 SCS 69 41
 MICRON PERIOD *E 84 32 *E 85 24
 PZ 0.23 0.7
 PH 25.9 16
 MIN 10 59 35.2 *E 69 32
 MHC 10 59 51.7 *E 65 26
 JAS 10 59 54.1 *E 65 29
 PRI 11 00 02.9 *E 05 34
 MAG 6 3/4, DIST(DEG) 37
 USCGS 10 52 31.2, 52.7N, 175.1W, H=162 KM, M=6.1
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS.
 FELT ADAK AND AMCHITKA.

BKS MAR 01 05 33 45.4
 MICRON PERIOD
 PZ 0.05 1.0
 SAO 05 33 45.8
 MHC 05 33 46.5 C
 PRI 05 33 48.2 C
 JAS 05 33 51.6 C
 MIN 05 33 51.8 C
 NEW HEBRIDES REGION

JAS MAR 01 10 16 13.5 C *E 16 28 *E 19 35
 MHC 10 16 15.4
 USCGS 10 04 03.5, 28.6S, 71.0W, H= 51 KM, M=5.0
 NEAR COAST OF CENTRAL CHILE.



FHC MAR 01 16 40 27 C
 BKS 16 41 01 C *E 41 39
 MHC 16 41 11 C
 JAS 16 41 16 C
 SAO 16 41 17 C

MAG 4.0, OFF COAST, SOUTHWEST OF ARCATA.

JAS MAR 02 01 09 36.5 C *E 10 13

PRI MAR 03 09 25 57.5
 JAS 09 26 03.4 D *E 26 26
 MHC 09 26 06.1
 BKS 09 26 10.4 C

MICRON PERIOD
 PZ 0.05 1.0

MIN 09 26 16.1
 FHC 09 26 27.8
 USCGS 09 15 06.8, 14.7S, 72.5W, H=106 KM, M=5.0
 PERU.

JAS MAR 04 00 58 17.8 C
 MIN 00 58 23.1

FHC MAR 04 03 43 05.4 D
 MIN 03 43 13.3 D
 BKS 03 43 14.2 D 53 45 *E 54 46 *E 02 52 L 05 44
 *E 05 56 *E 08 54 *E 09 22

MICRON PERIOD
 PZ 0.25 1.4
 SH 7.76 14
 MAXR(Z) 5.35 20
 MAXH(E) 5.2 20

MHC 03 43 17.4
 SAO 03 43 18.6 C
 JAS 03 43 20.4 D
 PRI 03 43 22.5 D
 MAG 6.5, DIST(DEG) 88
 USCGS 03 30 35.4, 12.1N, 143.7E, H= N KM, M=6.2
 SOUTH OF MARIANA ISLANDS. FELT ON GUAM.

SAO MAR 04 06 42 53.3 C
 BKS 06 42 54.2 C 52 03 *PP 45 06 *SP 46 10 SKS 52 24
 *SS 55 48 *E 56 24 *E 57 24
 L 05 16

MICRON PERIOD
 PZ 0.15 0.8
 SH 8.45 10

MHC 06 42 54.5 C
 PRI 06 42 54.8 C *E 45 07
 JAS 06 43 00.4 C *E 45 08 PP 46 11
 MIN 06 43 03.3 C *E 45 12 PP 46 15
 DISTANCE(DEG) 81
 USCGS 06 31 56.2, 19.8S, 178.6W, H=624 KM, M=5.5
 FIJI ISLANDS REGION.

SAO MAR 04 08 35 34.8 D



MHC 08 35 36.2 C
 PRI 08 35 35.9 C
 JAS 08 35 41.4 C
 MIN 08 35 45.0 C

BRK MAR 05 04 57 49.0
 MHC 04 57 49.8 C
 JAS 04 57 55.5 C

PRI MAR 05 17 12 31.5 D *E 13 15
 JAS 17 12 36.9 D *E 12 50 *I 13 09 *I 13 20
 MHC 17 13 *E 13 13 *E 13 31
 MIN 17 13 *E 13 20 *E 13 30
 FHC 17 13 *E 13 45

USCGS 17 01 11.4, 18.8S, 69.2W, H=127 KM, M=5.2
 NORTHERN CHILE.

JAS MAR 06 12 07 36.3 C
 MHC 12 07

*E 07 50

JAS MAR 06 14 24 56.8 C
 PRI 14 25 00.6 C
 SAO 14 25 07.7 C
 MHC 14 25 09.6 C
 BKS 14 25 15.5
 MIN 14 25 23.0 C

*I 25 06

*E 25 27

MAG 4.4, SOUTHERN NEVADA. NUCLEAR TEST 'CYATHUS'.
 AEC 14 24 00.9, 37 10 23.2N, 116 05 30.3W.

JAS MAR 06 15 00 57.5 C
 PRI 15 01 02.4 C
 SAO 15 01 08.0
 MHC 15 01 10.7 C
 BKS 15 01 15.0
 MIN 15 01 23.5

*E 01 09

*E 01 15

*E 01 21

*E 01 22

*E 01 25

MAG 4.2, SOUTHERN NEVADA. NUCLEAR TEST 'ARABIS'.
 AEC 15 00 00.2, 37 08 22.5N, 116 02 07.0W.

JAS MAR 06 17 56 57.6

MHC MAR 06 19 24 13.6
 PRI 19 24 13.8
 JAS 19 24 19.0
 MIN 19 24 23.0

PRI MAR 06 20 18 32.3
 JAS 20 18 37.9
 MHC 20 18 42.7

BCLIVIA

JAS MAR 07 01 12 57.5
 PRI 01 13 07.5

MIN MAR 07 09 05 19.7
 BKS 09 05 10.7

MICRON

PERIOD

USCGS 00 50 03.2, 39.6N, 143.4E, H= 14 KM,
 OFF EAST COAST OF HONSHU, JAPAN.
 FELT ON NORTH HONSHU.



PRI MAR 09 14 03 16.3
 JAS 14 03 21.5
 MHC 14 03 24.5
 BKS 14 03 27.9 D
 MIN 14 03 33.6
 PERU

BKS MAR 09 16 13 48.8 D 24 25 L 35 40 *E 10 00
 MICRON PERIOD
 PZ 0.28 1.2
 PH 0.08 1.0
 SH 21.6 26
 MHC 16 13 50.4 D P*P* 39 44
 SAO 16 13 50.2 D
 FHC 16 13 50.6
 PRI 16 13 51.5
 JAS 16 13 55.4 D P*P* 39 59
 *E 14 55 PP 17 23 PKKP 31 49
 MIN 16 13 56.5 P*P* 39 49 SKPP* 43 14

MAG 6.4, DIST(DEG) 85
 USCGS 16 01 10.5, 19.0S, 168.6E, H= 41 KM, M=6.1
 NEW HEBRIDES ISLANDS. FELT AT PORT VILA.

MHC MAR 09 18 43 36.7 C
 PRI 18 43 37.7 C
 BKS 18 43 38.8 D

JAS 18 43 41.8 C
 MICRON PERIOD
 PZ 0.03 1.0
 USCGS 18 30 55.7, 19.1S, 168.5E, H= 33 KM, M=5.3
 NEW HEBRIDES ISLANDS. FELT AT PORT VILA.
 *E 10 32

FHC MAR 10 05 08 38.6
 MIN 05 08 49.0
 BKS 05 08 56.3
 PZ 17 26 L 25 04 LR 27 28
 MICRON PERIOD
 PH 0.3 1.0
 MHC 05 09 01.0 1.0
 SAO 05 09 03.4
 JAS 05 09 03.5

PRI 05 09 10.1 *E 09 18
 P*P* 37 42 *E 10 46 PP 11 26
 MAG 6.1, DIST(DEG) 68
 USCGS 04 58 26.2, 44.8N, 148.9E, H= 40 KM, M=6.0
 KURIL ISLANDS. FELT ON HOKKAIDO.

PRI MAR 10 06 12 19.2 C
 BKS 06 12 19.6 D

MHC 06 12 20.2 C
 MICRON PERIOD
 PZ 0.03 1.0



MHC 10 34 36.1 D
 MIN 10 34 45.8
 PRI MAR 13 15 32 49.3
 JAS 15 33 01.8 C
 JAS MAR 13 17 36 48.2
 MHC MAR 13 18 23 13.3
 JAS 18 23 18.0
 MIN 18 23 20.9
 FHC MAR 13 21 08 03.7
 MIN 21 08 27.3
 JAS 21 08 49.8
 JAS MAR 14 07 44 11.3 D
 MIN 07 44 12.0 D
 PRI 07 44 16.0
 MHC 07 44 19.4
 BKS 07 44 21

MICRON PERIOD
 PZ 0.04 1.0
 USCGS 07 33 43.2, 28.3N, 43.8W, H= N KM, M=5.2
 NORTH ATLANTIC RIDGE.

JAS MAR 14 08 25 42.5
 MIN 08 25 43.3
 MHC 08 25 50.7

MIN MAR 14 13 01 37.5
 JAS 13 01 54.5
 MHC 13 01 53.5
 PRI 13 02 01.9

USCGS 12 51 26.5, 45.5N, 150.9E, H= N KM, M=5.3
 KURIL ISLANDS.

PRI MAR 15 12 51 22.2 C
 JAS 12 51 27.8 C
 MHC 12 51 29.6 C
 BKS 12 51 32.7 D

*PP 51 54
 *PP 52 00

*E 52 06
 PERIOD 2.0

MIN 12 51 38.7 C
 FHC 12 51 48.4 C
 USCGS

MICRON 0.48
 12 39 17.8, 29.7S, 69.5W, H=119 KM, M=6.0
 CHILE ARGENTINA BORDER REGION.
 TRIGGERED SNOW AVALANCHES WHICH BLOCKED
 ROAD AND ISOLATED SEVERAL VILLAGES IN THE
 ANDES MOUNTAINS. FELT AT SAN JUAN ARGENTINA.

MIN MAR 15 13 04 34.5 C
 JAS 13 04 56.3 C
 PRI 13 05 04.3 C

PRI MAR 15 15 38 51.9 D
MHC 15 39 00.8
JAS 15 39 03.5 D
BKS 15 39 05.5 D

MICRON
0.10

PERIOD
1.3

MIN 15 39 18.8
USCGS

15 28 26.1, 26.8S, 113.7W, H= N KM, M=5.4
EASTER ISLAND REGION.

JAS MAR 16 07 52 54.6
PRI 07 53 03.0

MHC MAR 16 08 18 06.0
JAS 08 18 19.3
MIN 08 18 28.6

JAS MAR 16 16 38 15.1 C

JAS MAR 17 01 30 04.7

JAS MAR 17 17 19 33.7 C

USCGS 17 07 14.1, 31.4N, 130.6E, H=129 KM, M=5.1
KYUSHU, JAPAN. FELT AT KAGO SHIMA AND
YAKU SHIMA.

JAS MAR 17 17 40 16.0 C

MHC 17 40 17.3 D

USCGS 17 21 21.0, 57.4S, 25.8W, H= N KM, M=5.2
SOUTH SANDWICH ISLANDS REGION.

JAS MAR 17 19 14 17.7 C

MHC 19 14

*E 14 25

FHC MAR 17 22 05 24.1 C

MIN 22 05 35.6 C

BKS 22 05 52

*I 05 45

MICRON
0.04

PERIOD
1.0

JAS 22 05 57.8 C

MHC 22 05 58.3 C

PRI 22 06 12.8 C

*I 06 11

USCGS 22 00 12.4, 59.2N, 147.9W, H= 47 KM, M=5.1
GULF OF ALASKA. FELT ON MIDDLETON ISLANDS.

PRI MAR 18 23 25 29.7

JAS 23 25 36.5

MHC 23 25 40.5

BKS 23 25 46.5

PCP 27 37

PCP 27 40

*E 27 42

MICRON
0.03

PERIOD
0.8

FHC 23 26 08.0

JAS MAR 19 14 04 28.2

PRI 14 04 31.4

MHC 14 04 41.9

*E 04 40

*E 04 42

*E 04 52



14 04 54.9
MAG 4.1, SOUTHERN NEVADA. NUCLEAR TEST 'JAL'
AEC 14 03 30.0, 37 00 03.9N, 116 01 22.2W.

*E 28 35

MIN

FHC MAR 19
MIN
BKS

15 28 26.1 D
15 28 39.7
15 28 47.7 D

MICRON
0.06

PERIOD
0.8

MHC
JAS
PRI

15 28 53.7 D
15 28 57.4 D
15 29 05.0 D

PZ

*E 29 03
*E 29 06 *E 29 25
*E 29 30

USCGS

15 20 54.6, 50.0N, 179.6W, H= 15 KM, M=5.4
ANDREANOF ISLANDS, ALEUTIAN ISLANDS.

JAS MAR 19
PRI
MHC

16 30 21 C
16 30
16 30

*E 30 26
*E 30 35

JAS MAR 19
MIN
MHC

19 25 53.4 C
19 25 20.6 C
19 25

*E 25 53

FHC MAR 19
MIN
BKS

23 41 33.2 C
23 41 45.4 D
23 41 54 C 48 55

*PP 41 39 *I 41 53
*PP 41 51 *I 42 05
*PP 42 00 *E 52 20

MICRON

PERIOD

PZ

0.07

1.0

MAXR(Z) 22

21

MAXH(N) 14

17

MAXH(E) 19

20

MHC
JAS
SAO
PRI

23 42 00.2 C
23 42 02.9 D
23 42 07.5 C
23 42 10.8 D

*PP 42 05
*PP 42 06 *I 42 21
*PP 42 13 *SP 42 24
*PP 42 16

MAG 6.1, DIST(DEG) 49
USCGS

23 33 29.1, 51.3N, 173.8E, H= 16 KM, M=5.8
NEAR ISLANDS, ALEUTIAN ISLANDS. FELT ON
SHEMYA.

FHC MAR 20
MHC
JAS
MIN

11 21 27.1
11 21 38.6
11 21 41.5 C
11 21 34.2 C

P* 25 54 PKKP 37 09
PKKP 37 41

USCGS

11 07 35.6, 5.0N, 125.2E, H= 65 KM, M=5.7
MINDANAO, PHILIPPINE ISLANDS.

MHC MAR 20
PRI
JAS
MIN

11 30 35.5
11 30 36.5
11 30 40.6
11 30 41.5

FHC MAR 20
MIN
BKS
MHC

19 30 27.6
19 30 51.7
19 31 10.0
19 31 20.6

30 41

JAS 19 31 24.4 C *E 32 16
 PRI 19 31 40.3
 MAG 4.7, OFF OREGON COAST.

BKS MAR 20 22 47 *E 59 40 *E 17 15
 PRI 22 47 12.0
 JAS 22 47 15.0 *E 49 15
 MHC 22 47 15.0
 USCGS 22 34 16.9, 45.0S, 80.3W, H= N KM, M=5.1
 OFF COAST OF SOUTHERN CHILE.

PRI MAR 21 02 43 09.9
 JAS 02 43 26.3 *E 43 51 *E 44 39 *E 48 33
 MHC 02 43 28.3
 BKS 02 43 40 LR 48 55
 MIN 02 43 58.1
 USCGS 02 39 46.6, 25.6N, 109.7W, H= 5 KM, M=5.0
 GULF OF CALIFORNIA.

SAO MAR 21 04 24 11.0
 BRK 04 24 12.5
 PRI 04 24 12.5
 MHC 04 24 13.0
 JAS 04 24 18.5 D
 MIN 04 24 22.5
 TONGA ISLANDS REGION

MIN MAR 21 05 59 02.0 C
 JAS 05 59 24.2 C

JAS MAR 21 06 20 47.0
 USCGS 06 08 20.8, 12.6S, 167.4E, H= 34 KM, M=5.2
 SANTA CRUZ ISLANDS.

MIN MAR 21 10 21 56.9
 BKS 10 22 01.0
 MHC 10 22 03.5
 JAS 10 22 06.3 *E 22 13 *E 22 18
 SAO 10 22 06.9
 PRI 10 22 10.0
 USCGS 10 09 55.4, 24.0N, 142.7E, H= N KM, M=5.4
 VOLCANO ISLANDS REGION.

SAO MAR 21 22 44 08.6 D
 PRI 22 44 09.9
 MHC 22 44 10.7 D
 BKS 22 44 10.5
 MICRON PERIOD
 PZ 0.03 0.8
 JAS 22 44 16.5 *E 44 24
 MIN 22 44 21.0 D
 USCGS 22 32 23.7, 21.0S, 174.0W, H= N KM, M=5.0
 TONGA ISLANDS.

PRI MAR 22 09 44 09.7
 JAS 09 44 14.0

BKS 09 44 23.0

MHC MAR 22 22 43 46.4
 PRI 22 43 49.4
 JAS 22 43 51.1 C *E 44 06 *E 48 20
 USCGS 22 31 16.5, 11.3S, 164.8E, H=21 KM, M=5.1
 SANTA CRUZ ISLANDS REGION.

FHC MAR 23 00 31 47.0 C
 MIN 00 31 56.4 C
 BKS 00 32 03.5 C *E 32 08
 MICRON PERIOD
 0.31 1.2
 PZ
 MHC 00 32 07.4 C
 JAS 00 32 09.7 C *E 32 34 PP 34 52
 SAO 00 32 09.7
 PRI 00 32 15.8 C
 USCGS 00 20 54.7, 40.1N, 140.2E, H=146 KM, M=5.7
 HONSHU, JAPAN. FELT ON NORTHERN HONSHU AND
 SOUTHERN HOKKAIDO.

JAS MAR 23 12 12 44.3 D

FHC MAR 23 12 27 01.4 C
 MIN 12 27 09.2 C
 BKS 12 27 14.5 C *E 27 56
 MICRON PERIOD
 0.12 1.0
 PZ
 MHC 12 27 18.1 C
 JAS 12 27 20.0 C *E 27 31 PP 30 41
 SAO 12 27 19.5
 PRI 12 27 25.0 C
 USCGS 12 14 53.5, 29.8N, 129.3E, H=148 KM, M=5.8
 RYUKYU ISLANDS. FELT AT YAKU SHIMA AND AT
 KAGO SHIMA.

JAS MAR 23 19 53 07.2 C 54 05 *E 53 15
 PRI 19 53 18.0 *E 53 26
 SAO 19 53 21.3 54 33 *E 53 32
 MHC 19 53 22.5 54 35 *E 53 32
 BKS 19 53 36.0
 MAG 4.2, EAST OF MINA, NEV.

JAS MAR 23 23 05 57.5 C *E 06 04
 PRI 23 06 01.2 C *E 06 10
 SAO 23 06 07.8
 MHC 23 06 10.3 C *E 06 19
 BKS 23 06 17.0 *E 06 30 *E 07 08 *E 09 00
 MIN 23 06 23.3 C
 FHC 23 06 50.1 C *E 07 19
 MAG 5.4, SOUTHERN NEVADA. NUCLEAR TEST 'SHAPER'.
 AEC 23 05 00.0, 37 05 10.5N, 116 01 15.9W.

JAS MAR 24 01 16 25.2 C *E 16 36
 PRI 01 16 29.6 C *E 16 41
 SAO 01 16 *E 16 42 *E 16 50

MHC			01 16 46.3						
MIN			01 16			*E	16 50		
BKS			01 16 56.0			*E	18 25		
			MAG 4.4, SOUTHERN NEVADA.						
PRI	MAR	24	02 26			*E	26 56		
JAS			02 26 47.2	C		*E	28 40		
PRI	MAR	24	03 53 06.0	D	53 31				
JAS			03 53 13.6	D	53 42				
SAO			03 53 15.2	D					
MHC			03 53 19.9	C					
BKS			03 53 28.0			*E	54 14		
MIN			03 53 58.1			*E	54 55		
			MAG 4.0, NORTH OF SIRRETTA PEAK.						
MHC	MAR	24	04 31 58.0	C					
JAS			04 32 03.0	C					
MIN			04 32 03.6	C					
			USCGS 04 19 24.1, 17.1S, 167.9E, H= 64 KM, M=5.0 NEW HEBRIDES ISLANDS.						
JAS	MAR	24	04 50 46.1	D					
JAS	MAR	24	05 15 22.2	D		*I	15 57		
MIN			05 15 28.3	C		*I	15 31	*I	16 11
MHC			05 15 38.7	C		*E	15 46	*E	16 43
SAO			05 15 42.2	D					
BKS			05 15 49.0	D					
PRI			05 15 53.7	C		*I	16 13	*I	16 48
			MAG 4.3, CENTRAL NEVADA.						
FHC	MAR	24	10 54 10.5	D					
BKS			10 54 10.5			*E	54 14	*E	16 45
						PKKP	04 25	LR	31 00
					MICRCN	PERICD			
			PKPZ	0.08		1.4			
			MAXR(Z)	1.95		20			
MIN			10 54 11.5	D		PKKP	04 21		
MHC			10 54 11.5	C		PKKP	04 23		
PRI			10 54 13.1	D		PKKP	04 22		
JAS			10 54 12.8	D		*E	54 31	PKKP	04 19
			USCGS 10 35 22.1, 22.0S, 126.7E, H= N KM, M=6.2 WESTERN AUSTRALIA. FELT AT FITZROY CROSSING AND AT PERTH. APPEARS TO BE THE FIRST EPICENTER LOCATED IN THIS AREA.						
MHC	MAR	24	13 16 46.4	C					
BKS			13 16 47.0						
JAS			13 16 52.6	C					
MIN			13 16 56.0	C					
MHC	MAR	25	04 13 42.6						
JAS			04 13 48.8						
JAS	MAR	25	12 27 05.9						

MHC MAR 25 15 19 07.7
 PRI 15 19 10.0
 JAS 15 19 16.0

*E 19 43
 USCGS 15 07 01.3, 30.4S, 69.9W, H=100 KM, M=5.2
 CHILE ARGENTINA BORDER REGION.

JAS MAR 26 15 28 33.1 C

PRI MAR 26 17 36 53.0
 JAS 17 37 09.2 D

JAS MAR 26 19 00 51.5 C
 PRI 19 00 56.3 C
 SAO 19 01 02.2 C
 MHC 19 01 04.5 C
 BKS 19 01 11.0 C
 MIN 19 01 17.2 C
 FHC 19 01 41.8 C

MAG 6.3, SOUTHERN NEVADA. NUCLEAR TEST 'HANDLEY'.
 AEC 19 00 00.2, 37 18 01.7N, 116 32 02.8W.

JAS MAR 26 19 39 14.5 C
 PRI 19 39 27.7

JAS MAR 27 04 35 41.0
 USCGS

04 26 42.3, 5.6N, 77.6W, H= 28 KM, M=5.2
 NEAR WEST COAST OF COLOMBIA.

MHC MAR 27 16 43
 MIN 16 43
 PRI 16 43
 JAS 16 43 09.1 C
 BKS 16 43 45.0

*E 43 30
 *E 43 51
 *E 43 23
 *E 43 16
 *E 44 55

MAG 4.1, SOUTHERN NEVADA.

SAO MAR 27 18 09
 MIN 18 09 46.5
 PRI 18 09 28.5
 JAS 18 09 14.3
 MHC 18 09 31.0
 BKS 18 09 52.5

*E 09 38
 *E 10 00
 *E 09 38
 *E 09 24
 *E 09 40
 *E 11 00

MAG 4.2, SOUTHERN NEVADA.

SAO MAR 27 18 19
 JAS 18 19 29.0
 PRI 18 19 37.0
 MHC 18 19 45.1
 BKS 18 19 54.9
 MIN 18 19 58.9

*E 19 49
 *E 19 39
 *E 19 46
 *E 19 56
 LR 21 12
 *E 20 13

MAG 4.9, SOUTHERN NEVADA.

BKS MAR 27 18 51

PPZ MICRON 2.1 *I 55 48 *E 56 06 *E 02 12
 PS 05 37 SS 11 42 L 22 30
 PERIOD 10

MAXR(Z) 13.0 20
MAXH(E) 15.0 20
MAXH(N) 3.6 20

MHC 18 51 P* 55 28 PP 56 11
PRI 18 51 P* 55 29 PP 56 11
MIN 18 51 P* 55 31 PP 56 11
JAS 18 51 28.0 P* 55 27 PP 56 16 PKKP 06 25

MAG 6.5-6.7, DIST(DEG) 106

USCGS 18 36 45.8, 0.4N, 119.3E, H= 8 KM, M=6.2
NORTHERN CELEBES.

BKS MAR 28 C7 58 47.6 C 09 10 L 22 16 LR 26 22

MICRON PERIOD

PZ 0.09 1.0

MAXR(Z) 7.8 20

MAXH(N) 3.4 20

MAXH(E) 7.1 20

SAO 07 58 49.8
MHC 07 58 50.1 C
MIN 07 58 51.1 C
PRI 07 58 53.6 C
JAS 07 58 54.4 C PP 02 27

MAG 5 3/4, DIST(DEG) 86

USCGS 07 45 59.9, 6.3S, 154.6E, H= 64 KM, M=5.9
SOLOMON ISLANDS. FELT AT PIVA.

JAS MAR 28 09 39 37.1 D 40 18 *E 39 46
MIN 09 39 51.2 D *E 40 00
PRI 09 39 54.9 D *E 40 04
MHC 09 39 55.7 *E 40 05
SAO 09 39 56.2
BKS 09 39 57.8 *I 41 06

MAG 4.5, CENTRAL NEVADA.

MIN MAR 28 09 57 00.2 C
JAS 09 57 14.5 C *E 58 33
PRI 09 57 23.6 C
USCGS 09 44 57.8, 52.2N, 105.8E, H= N KM, M=5.2
LAKE BAIKAL REGION. FELT AT IRKUTSK.

PRI MAR 28 11 36 35.5
JAS 11 36 36.6 C
BKS 11 36 38.8 *I 36 53 *I 36 58
MIN 11 36 41.0 C
USCGS 11 17 40.3, 57.0S, 24.7W, H= 31 KM, M=5.3
SOUTH SANDWICH ISLANDS REGION.

MIN MAR 28 21 15 54.7 PP 19 49 P*P* 41 28
JAS 21 16 02.0 D *E 16 53 PP 20 03 PS 29 04
BKS 21 16 04 D 26 54 PKKP 32 28 P*P* 41 30
PP 20 04 PS 29 12 SS 34 00
LQ 44 14 LR 48 56

MICRON PERIOD

PPZ 8.9 4

MAXR(Z) 71.5 20

MAXH(E) 71.5 20

MAXH(N) 71.5 20

SAO
PRI

21 16 05.6 D

21 16 07.2

PP 20 19 PKKP 32 31 P*P* 41 40

MAG 7 1/2, DIST(DEG) 98

USCGS 21 02 23.4, 39.2N, 29.5E, H= 20 KM, M=6.0
TURKEY. 1086 DEAD, 1174 INJURED, 8229
BUILDINGS DESTROYED, 5586 BUILDINGS DAMAGED
AT GEDIZ AND SURROUNDING AREA BY THIS
EARTHQUAKE AND MAJOR AFTERSHOCKS. FELT THRO
OUT ANATOLIA, AT ISTANBUL AND ON CHIOS AND
LESBOS ISLANDS. MAX INTENSITY X. FAULTING
EXTENDS FROM 39 DEGREES 06 MINUTES NORTH -
29 DEGREES 21 MINUTES EAST TO 38 DEGREES
58 MINUTES NORTH - 29 DEGREES 24 MINUTES
EAST AND FROM THIS POINT TO 38 DEGREES 59
MINUTES NORTH - 29 DEGREES 33 MINUTES EAST.
THROWS IN ROCK 350 CENTIMETERS.

JAS MAR 29 06 25 33.5 D

MIN MAR 29 07 09 53.0 C

JAS 07 10 02.5 C

USCGS 06 56 21.5, 39.0N, 29.7E, H= 15 KM, M=5.3
TURKEY.

BKS MAR 29 10 20 31.0 C 30 30 *PP 21 29 *I 42 54 *E 46 32
MICRON PERIOD
PZ 1.15 1.1
SH 9.0 20

SAO 10 20 31.5

FHC 10 20 32.2 C

MHC 10 20 32.6 C

PRI 10 20 33.9 C

JAS 10 20 37.3 C

*I 21 35

*I 21 32

PP 23 51

*I 20 55

PP 24 01

*I 21 06

PP 23 52

*I 21 19

*I 21 39

*I 21 39

*I 21 39

MIN 10 20 38.2 C

MAG 6 1/2, DIST(DEG) 83
USCGS 10 08 20.3, 17.1S, 168.5E, H=232 KM, M=6.0
NEW HEBRIDES ISLANDS. FELT AT PORT VILA.

BKS MAR 29 12 18 21.0

MIN 12 18 23.1 C

MHC 12 18 23.4 D

JAS 12 18 24.3 D

PRI 12 18 26.0

USCGS 12 00 32.6, 7.2S, 120.6E, H=480 KM, M=5.3
FLORES SEA.

MHC MAR 29 12 42

MIN 12 42 16.3

JAS 12 42 16.5 D 44 00

PRI 12 43 06.4 C

*E 42 34

*E 42 36

*E 42 40

*E 43 58

*E 43 25

*E 43 31

*E 43 50

MAG 4.6, NORTHWESTERN UTAH.

MIN MAR 29 19 43 23.5 D

BKS 19 43 28.0

JAS 15 38 25.0 D
MIN 15 38 28.5 D

USCGS 15 27 09.5, 21.2S, 178.6W, H=550
FIJI ISLANDS REGION.



JAS MAR 31 18 38 00.5 C *E 41 18
MHC 18 38 01.6 D
PRI 18 38 06.4 D *E 41 23

JAS MAR 31 22 48 04.7 D

JAS MAR 31 23 15 17.9 D

PRI APR 01 11 01 31.8
MHC 11 01 41.8
JAS 11 01 43.1 D
MIN 11 01 54.5

USCGS 10 50 41.3, 15.5S, 75.0W, H= 36 KM, M=5.2
NEAR COAST OF PERU.

FHC APR 01 14 34 19.4 C
MIN 14 34 29.2 C
BKS 14 34 35.5

*E 44 11 *E 52 30 LR 55 30

MICRCN PERIOD
PZ 0.23 1.0

MHC 14 34 40.1
SAD 14 34 42.3
JAS 14 34 42.6 C
PRI 14 34 48.5

*E 35 07

MAG 6, DIST(DEG) 70
USCGS 14 23 25.1, 39.8N, 141.8E, H= 81 KM, M=5.8
HONSHU, JAPAN. FELT IN NORTHERN JAPAN.

PRI APR 02 11 23 25.2 C
BKS 11 23 25.5
MHC 11 23 25.9 C
JAS 11 23 31.7 C
MIN 11 23 36.1 C

*E 33 10 *E 42 48 *E 46 00

*E 23 47

USCGS 11 11 42.0, 20.4S, 173.9W, H= N KM, M=5.7
TONGA ISLANDS.

SAD APR 03 07 04 18.7
BKS 07 04 18.7

14 00 LQ 23 48 LR 28 30
MICRCN PERIOD

SH 2.3 16
MAXR(Z) 2.7 20
MAXH(N) 2.0 20
MAXH(E) 2.3 20

PRI 07 04 19.2 C
MHC 07 04 19.6 C
JAS 07 04 24.2 C
MIN 07 04 30.1 C

MAG 5.6, DIST(DEG) 77
USCGS 06 52 33.8, 20.5S, 174.0W, H= 39 KM, M=5.7
TONGA ISLANDS.

JAS APR 03 07 28 33.7 C
 USCGS 07 07 51.1, 20.5S, 67.9E, H= N KM, M=5.1
 MID-INDIAN RISE.

MIN APR 03 14 06 17.7
 BKS 14 06 33.3 C LR 17 00
 JAS 14 06 39.7 C
 USCGS 13 59 02.3, 51.8N, 175.3W, H= 57 KM, M=5.0
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS.

JAS APR 03 14 54 50.5 C

JAS APR 03 19 40 45.7 C

JAS APR 03 23 54 12.5

FHC APR 04 00 22 05.5 C 22 33
 MIN 00 22 31.3 C
 BKS 00 22 35.0 23 27 *E 22 43
 MHC 00 22 44.7 C
 SAO 00 22 51.5
 JAS 00 22 54.5 D 23 58
 MAG 4.0, WEST OF ARCATA.

SAO APR 04 22 57 51.7 D
 BKS 22 57 52.8 D

MICRCN PERIOD
 PZ 0.11 1.0

MHC 22 57 53.3 D
 PRI 22 57 53.5 D
 FHC 22 57 56.5 D
 JAS 22 57 59.1 D *E 58 09
 MIN 22 58 02.2 D
 DISTANCE(DEG) 78
 USCGS 22 46 51.8, 16.6S, 177.3W, H=394 KM, M=5.2
 FIJI ISLANDS REGION.

JAS APR 05 05 10 57.5 C

BKS APR 05 11 23 *E 23 12 *E 34 52 LR 49 44

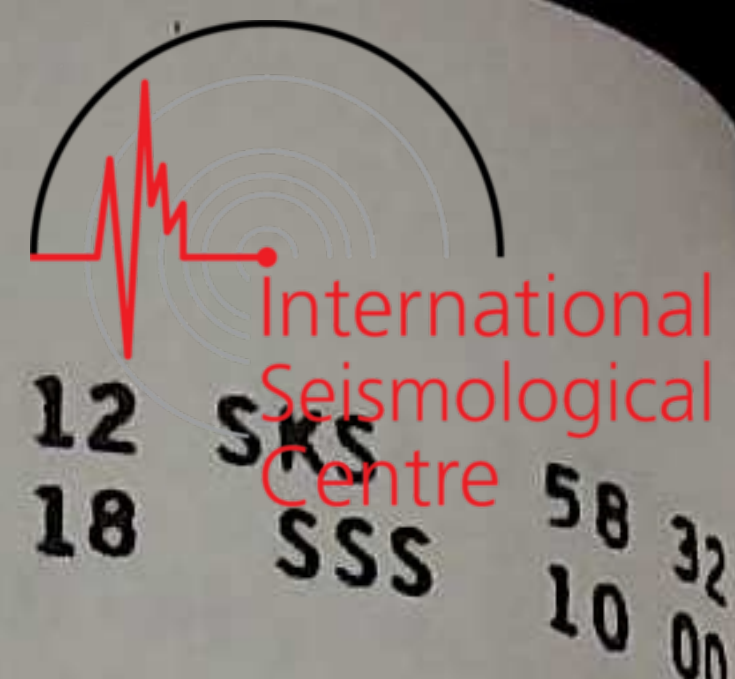
MICRCN PERIOD
 MAXR(Z) 0.54 20
 MAXH(N) 0.36 20
 MAXH(E) 0.54 20

JAS 11 23 16.0 C
 MIN 11 23 16.1
 USCGS 11 10 31.2, 17.7S, 167.8E, H= 27 KM, M=5.0
 NEW HEBRIDES ISLANDS.

JAS APR 06 05 25 49.0 D *E 26 05

BKS APR 06 12 35 LR 02 10
 JAS 12 35 43.6 C

FHC APR 07 05 47 38.2 D
 MIN 05 47 45.2 D



BKS 05 47 51.9 D 59 25 *E 51 52 PP 52 12 SXS 58 32
 *E 05 00 SS 06 18 SSS 10 00
 *E 13 16

MICRON PERIOD
 PZ 0.21 1.5
 MAXR(Z) 74 20
 MAXH(N) 48 20
 MAXH(E) 82 20

MHC 05 47 52.5 D *E 49 58 *E 51 18 PP 52 10
 JAS 05 47 54.5 D PKKP 03 57 P*P* 11 44

PRI 05 47 58.7 D
 MAG 7.3, DIST(DEG) 97
 USCGS 05 34 05.6, 15.8N, 121.7E, H= 37 KM, M=6.4
 LUZON, PHILIPPINE ISLANDS. 7 KILLED, MORE
 THAN 175 INJURED, AND MAJOR DAMAGE
 THROUGHOUT LUZON (MAX INT VII).

JAS APR 08 00 51 28.4 C
 MIN 00 51 20.3

MIN APR 08 14 03 50.9 C
 BKS 14 04 *E 12 52 LR 32 40

MICRON PERIOD
 MAXR(Z) 8.6 20
 MAXH(N) 7.5 20
 MAXH(E) 7.5 20

JAS 14 04 02.0 C *E 20 47
 USCGS 13 50 27.2, 34.7N, 22.7E, H= 17 KM, M=5.8
 GREECE. 4 INJURED AND MINOR DAMAGE IN
 DELPHI AREA.

BKS APR 08 14 53 LR 15 24

MICRON PERIOD
 MAXR(Z) 3.6 20
 MAXH(N) 2.2 20
 MAXH(E) 3.2 20

PRI 14 53 36.1 C
 JAS 14 53 40.5 D
 MIN 14 53 40.7 D
 USCGS 14 41 08.4, 13.8S, 166.8E, H= 64 KM, M=5.5
 NEW HEBRIDES ISLANDS.

MIN APR 08 19 57 20.2
 JAS 19 57 41.8 D *E 57 58
 USCGS 19 51 31.1, 56.2N, 156.6W, H= 23 KM, M=5.0
 ALASKA PENINSULA.

FHC APR 08 21 37 29.6
 MIN 21 37 36.6
 MHC 21 37 44.2
 BKS 21 37 44.5 *E 48 30 *E 09 45

MICRON PERIOD
 MAXR(Z) 8.9 20
 MAXH(N) 3.2 20
 MAXH(E) 7.5 20

JAS 21 37 46.2 *E 41 05 PP 41 50 *E 02 10
 PRI 21 37 50.6
 MAG 6.1, DIST (DEG) 100
 USCGS 21 23 56.6, 15.4N, 121.8E, H= N KM, M=5.7
 LUZON, PHILIPPINE ISLANDS.

PRI APR 09 05 31 26.3
 JAS 05 31 31.8
 MHC 05 31 33.4
 BKS 05 31 37.9 C
 MICRON PERIOD
 PZ 0.05 1.0
 MIN 05 31 43.0
 USCGS 05 19 06.5, 34.0S, 70.1W, H=120 KM, M=5.2
 CHILE-ARGENTINA BORDER REGION.

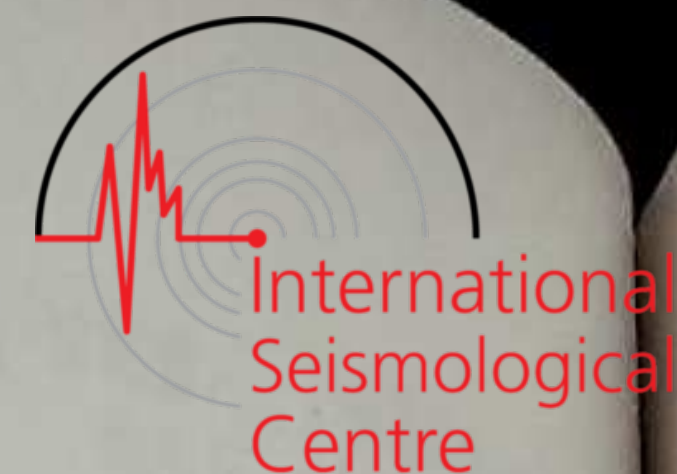
MIN APR 09 12 29 30.2
 JAS 12 29 52.3
 PRI 12 30 05.1

PRI APR 09 16 31 15.6 C *E 31 19
 JAS 16 31 22.5 D *I 31 26 *I 31 32 PCP 33 54
 MHC 16 31 27.0 D *E 31 30
 BKS 16 31 35.6
 MICRON PERIOD
 PZ 0.06 1.0
 MAXR(Z) 1.4 20
 MAXH(N) 1.1 20
 MAXH(E) 1.1 20
 MIN 16 31 41.5 D *E 31 44 *E 31 54
 FHC 16 31 55.0 C *I 32 00
 USCGS 16 24 31.0, 13.2N, 92.3W, H= 41 KM, M=5.3
 OFF COAST OF CHIAPAS, MEXICO.
 FELT AT SAN SALVADOR, EL SALVADOR.

JAS APR 09 22 01 56.0 C *E 02 04 *E 03 01 *E 06 50
 PRI 22 02 07.7 D
 USCGS 21 41 52.3, 40.9S, 43.3E, H= N KM, M=5.3
 ATLANTIC-INDIAN RISE.

SAO APR 10 14 21 25.8 C
 PRI 14 21 26.5 D
 BKS 14 21 27 *E 22 09
 MICRON PERIOD
 PZ 0.17 1.0
 MHC 14 21 27.3 D
 JAS 14 21 32.3 D *I 21 48 *PP 22 13
 FHC 14 21 32.7 D
 MIN 14 21 36.5 D *PP 22 19
 USCGS 14 09 16.0, 27.5S, 177.9W, H=158 KM, M=5.5
 KERMADEC ISLANDS REGION.

FHC APR 11 04 10 39.5 D
 MIN 04 10 51.8 D
 BKS 04 11 10.3 15 50 *E 11 27 *E 11 50 *E 13 54
 *E 15 45 LR 16 10



JAS MHC PRI
 04 11 13.5 PZ
 04 11 16.9
 04 11 30.2
 MAG 6
 USCGS

MICRON 7.6
 PERIOD 9
 *E 11 44

- 6 1/2, DIST(DEG) 28
 04 05 41.1, 59.7N, 142.7W, H= 7 KM, M=5.2
 GULF OF ALASKA. FELT AT YAKUTAT AND YAKATAGA.

BKS APR 11 06 32
 PRI 06 32 52.0
 JAS 06 33 03.5
 USCGS

LR 57 33

06 21 16.3, 19.3S, 173.6W, H= N KM, M=5.3
 TONGA ISLANDS.

MIN APR 11 10 04 51.2
 JAS 10 05 16.2

MIN APR 11 13 00 44.8
 JAS 13 01 08.2

MIN APR 12 02 18 09.8
 BKS 02 18 19.7

MHC JAS 02 18 24.3
 02 18 27.7
 USCGS

MICRON 0.04
 PERIOD 0.8

LR 30 13

02 10 36.0, 51.5N, 178.5W, H= 47 KM, M=5.2
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS.

MIN APR 12 04 15 29.3 D
 BKS 04 15 33.9

MHC JAS PRI 04 15 35.7 D
 04 15 38.3 D
 04 15 42.3 D
 USCGS

MICRON 0.05
 PERIOD 1.0
 MAXR(Z) 46
 MAXH(N) 11.4
 MAXH(E) 38

*E 19 37 *E 23 34 *E 26 00
 *E 26 14 *E 33 08 LR 43 20

*E 18 48 PP 19 42 *E 32 27

04 01 44.0, 15.1N, 122.1E, H= 24 KM, M=5.9
 PHILIPPINE ISLANDS REGION. FELT WIDELY ON LUZON (MAX INT V).

JAS APR 12 20 13 21.3

FHC APR 13 11 37 55.1 C
 MIN 11 38 21.1 C 38 18
 BKS 11 38 26.6 C 39 04
 MHC 11 38 36.4 C 39 16
 SAO 11 38 42.4 C 39 31
 JAS 11 38 44.7 D
 MAG 4.3, OFF COAST, WEST OF ARCATA.

*E 38 35

BKS APR 18 23 36 *E 45 12 *E 53 00 *E 57 00
 MIN 23 36 09.8
 MHC 23 36 21.8
 JAS 23 36 24.1
 PRI 23 36 30.0
 USCGS 23 25 35.5, 43.3N, 147.2E, H= 38 KM, M=5.2
 KURIL ISLANDS. FELT AT NEMURO (I).

FHC APR 19 01 20 43.5 D *E 20 59
 MIN 01 20 56.0 D
 BKS 01 21 17 25 44 *E 21 34 LR 27 44
 MICRON PERIOD
 PZ 0.36 2.0
 JAS 01 21 19.3 D *E 21 32 *E 23 10
 MHC 01 21 20.8
 PRI 01 21 34.3
 USCGS 01 15 46.8, 59.6N, 142.8W, H= 20 KM, M=5.8
 GULF OF ALASKA. FELT AT YAKUTAT.

MHC APR 19 01 56 21.4 C
 PRI 01 56 22.0 C
 JAS 01 56 32.3 C
 MIN 01 56 43.6

MIN APR 19 04 50 58.4 C
 JAS 04 51 14.8 C *E 51 40
 USCGS 04 41 37.8, 51.8N, 157.2E, H=105 KM, M=5.1
 NEAR EAST COAST OF KAMCHATKA.

MIN APR 19 13 43 06.7 C
 JAS 13 43 16.0 C PKKP 59 08
 USCGS 13 29 36.4, 39.1N, 29.8E, H= 20 KM, M=5.4
 TURKEY. FELT WIDELY.

MIN APR 19 14 01 03.9
 JAS 14 01 12.8 *E 01 45 *E 02 13 PKKP 17 40
 BKS 14 01 40 *E 09 00
 USCGS 13 47 35.2, 39.1N, 29.8E, H= 26 KM, M=5.5
 TURKEY. TWO INJURED AND 41 HOUSES AND A
 MOSQUE DESTROYED AT CAVDARHISAR.

SAO APR 19 17 13 54.2 C
 BKS 17 13 54.5 D
 MICRON PERIOD
 PZ 0.13 1.2
 PRI 17 13 55.0 C
 MHC 17 13 55.3 C
 JAS 17 14 00.7 C PP 17 08
 MIN 17 14 04.3 C
 USCGS 17 02 59.4, 19.6S, 177.7W, H=609 KM, M=5.0
 FIJI ISLANDS REGION.

PRI APR 20 02 21 05.3
 MHC 02 21 06.3
 BKS 02 21 08.5 31 44 *E 21 13 *E 44 00
 MICRON PERIOD

JAS MIN 02 21 10.9 C SH 4.27 14 *E 21 49 *E 22 26 *E 24 51
 02 21 15.5
 MAG 6.2, DIST(DEG) 84
 USCGS 02 08 34.5, 32.0S, 179.4W, H=144 KM, M=5.4
 SOUTH OF KERMADEC ISLANDS.

JAS APR 20 03 52 40.4 D
 MIN 03 52 43.9

BKS APR 20 10 51 25.1 C 01 46 *PP 52 46 *E 54 21 PP 54 48
 MICRON PERIOD
 PZ 2.12 1.2
 SAO 10 51 25.2 C
 MHC 10 51 26.5 C
 FHC 10 51 26.8 C *E 54 46
 PRI 10 51 27.3 C *E 54 48
 JAS 10 51 31.2 C *E 54 43
 MIN 10 51 32.2 C *E 51 53 *PP 52 35 PP 54 55
 P*P* 17 32

MAG 7.2, DIST(DEG) 86
 USCGS 10 39 12.5, 18.8S, 169.3E, H=246 KM, M=6.3
 NEW HEBRIDES ISLANDS.

JAS APR 20 22 01 56.5
 USCGS 21 43 00.5, 9.8S, 119.3E, H= N KM, M=5.6
 SUMBA ISLAND REGION.

PRI APR 21 05 44 18.1
 JAS 05 44 22.0 D PCP 46 34
 MHC 05 44 27.9 PCP 46 37
 MIN 05 44 39.8
 FHC 05 44 55.3 C

USCGS 05 37 08.8, 12.5N, 87.9W, H= 79 KM, M=5.2
 NEAR COAST OF NICARAGUA.

FHC APR 21 06 49 23.7 C
 MIN 06 49 36.7 C
 JAS 06 50 00.2 C
 MHC 06 50 01.6 C *E 50 18
 PRI 06 50 16.8 C
 GULF OF ALASKA

JAS APR 21 07 16 11.3 C

MHC APR 21 10 49 18.4
 PRI 10 49 18.9
 JAS 10 49 23.3 D
 MIN 10 49 25.3

NEW HEBRIDES REGION

JAS APR 21 11 24 29.3 C

JAS APR 21 12 06 02.8

JAS APR 21 14 30 58.2 C

PRI 14 31 02.4 C
SAO 14 31 08.5 D
MHC 14 31 10.8 C
MIN 14 31 24.3 C

MAG 4.6, SOUTHERN NEVADA. NUCLEAR TEST 'SNUBBER'.
AEC 14 30 00.0, 37 03 17.6N, 115 59 17.2W.

JAS APR 21 15 00 57.0 C
PRI 15 01 01.4 C
SAO 15 01 08.1 C
MHC 15 01 10.7 C
BKS 15 01 22.5 *E 01 32 *E 02 44 *E 02 59
MIN 15 01 23.0 C

MAG 4.8, SOUTHERN NEVADA. NUCLEAR TEST 'CAN'.
AEC 15 00 00.0, 37 06 50.0N, 116 04 51.0W.

MIN APR 21 19 34 33.0 C

JAS APR 22 10 03 39.0
MIN 10 03 38.8

PRI APR 22 12 22 44.1 C
MHC 12 22 44.5 C
JAS 12 22 49.6 C
MIN 12 22 53.4

SOUTH OF FIJI ISLANDS

BKS APR 22 19 41 *E 44 00 *E 46 00
MIN 19 41 31.4
JAS 19 42 00

FHC APR 22 22 32 38.1 C *E 32 45
MIN 22 33 03.1 D
BKS 22 33 14.5
MHC 22 33 24.7 C
JAS 22 33 29.4 D
SAO 22 33 31.8

MAG 4.0, PETROLIA.

MIN APR 23 01 05 14.1 *E 05 23
JAS 01 05 33.0 C *E 05 42
MHC 01 05 36.0
PRI 01 05 45.9 *E 05 55
USCGS 00 55 48.2, 80.7N, 122.0E, H= N KM, M=5.1
EAST OF SEVERNAYA ZEMLYA.

JAS APR 23 15 53 28.4 D

JAS APR 23 19 58 59.1
USCGS 19 45 09.0, 5.4S, 153.7E, H= 58 KM, M=5.0
NEW IRELAND REGION.

JAS APR 24 01 31 07.6

MIN APR 24 01 32 53.0 C
FHC 01 33 00.2 C



JAS BKS 01 33 02.4 C
 01 33 09.5 C 41 20
 MICRON PERIOD
 PZ 0.24 2.0
 MAXR(Z) 4.3 20
 MAXH(N) 5.0 20
 MAXH(E) 2.0 20
 *E 33 19
 *E 47 30 LR 51 00
 MHC 01 33 10.8 C
 SAO 01 33 12.5
 PRI 01 33 13.4 C
 MAG 5.3, DIST(DEG) 62
 USCGS 01 23 12.0, 55.7N, 35.0W, H= 10 KM, M=5.4
 NORTH ATLANTIC OCEAN.

MIN APR 24 01 56 55.8 C
 JAS 01 57 04.8 C
 MHC 01 57 13.2 C
 PRI 01 57 17.5 C

JAS APR 24 02 01 06.1 D
 MIN 02 00 57.2

BKS APR 24 07 28 22
 MHC 07 28 23.6 C
 JAS 07 28 28.6 C
 MIN 07 28 30.0 D

JAS APR 24 08 00 30.0 D
 MIN 08 00 33.9

JAS APR 24 22 16 19.9 D

JAS APR 25 04 03 12.2 C
 PRI 04 03 18.0 D
 USCGS 03 43 30.3, 6.4S, 69.8E, H= N KM, M=5.1
 CHAGOS ARCHIPELAGO REGION.

JAS APR 25 12 31 38.4 D

JAS APR 25 14 49 45.1

BKS APR 25 15 53 09.4 D

PRI 15 52 58.8
 JAS 15 53 03.2 C
 MHC 15 53 06.0 C
 MIN 15 53 13.8
 MICRON PERIOD
 0.05 1.0

PRI APR 25 19 34 13.5 C
 JAS 19 34 20.8 C
 MHC 19 34 22.7 C
 MIN 19 34 43.4
 *E 35 27

USCGS 19 24 57.0, 2.7S, 82.0W, H= 20 KM, M=5.1
 OFF COAST OF ECUADOR.



PRI 00 42 20.5 C
 JAS 00 42 22.4 C
 USCGS 00 29 21.0, 8.1S, 156.4E, H= 3 KM, M=5.2
 SOLOMON ISLANDS.

PRI APR 28 01 25 07.2
 MHC 01 25 08.6
 BKS 01 25 10
 MIN 01 25 13.2
 JAS 01 25 15.3
 USCGS 01 12 14.4, 8.1S, 156.4E, H= 5 KM, M=5.6
 SOLOMON ISLANDS.

JAS APR 28 18 49 07.7 C
 JAS APR 28 20 59 45.8 D

BKS APR 29 00 42 03.5
 MIN 00 42 04.3 C
 MHC 00 42 20.1 D
 SAO 00 42 23.9 C
 JAS 00 42 24.1 C
 PRI 00 42 31.7 C
 USCGS 00 35 01.9, 52.5N, 173.4W, H= 91 KM, M=5.1
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS.

MIN APR 29 06 05 38.1
 JAS 06 05 53.0
 USCGS 05 55 02.4, 43.4N, 146.4E, H= 50 KM, M=5.3
 KURIL ISLANDS. FELT AT NEMURO AND KUSHIRO.

PRI APR 29 11 29 09.1 C
 JAS 11 29 16.5 C
 SAO 11 29 19.3 C
 MHC 11 29 20.5 D
 BKS 11 29 28.6
 MICRON 35 11
 SH 14
 MAXH(N) 14
 MAXH(E) 9
 MIN 11 29 34.9 C
 FHC 11 29 50.0 D
 PCP 31 58
 PCP 32 01
 PCP 32 05
 PCP 32 04
 PCP 32 07

DISTANCE(DEG) 38
 USCGS 11 22 36.4, 14.6N, 92.7W, H= 41 KM, M=5.6
 NEAR COAST OF CHIAPAS, MEXICO. FELT AT
 SAN SALVADOR, EL SALVADOR (IV) AND MEXICO
 CITY (III).

JAS APR 29 11 49 21.0
 MIN 11 49 37.8
 USCGS 11 42 38.4, 14.4N, 92.6W, H= N KM, M=5.0
 NEAR COAST OF CHIAPAS, MEXICO.
 BKS APR 29 12 08 45.0

MIN			12 08 34.8						
MHC			12 08 49.3						
JAS			12 08 52.5	C					
PRI			12 09 00.6						
			USCGS		12 00 39.5,	51.8N,	177.0E,	H= 52 KM,	M=5.0
					RAT ISLANDS, ALEUTIAN ISLANDS.				
PRI	APR	29	14 07 52.6	C		*E 07 58	*I 08 09	PCP	10 57
JAS			14 08 00.2	C		*I 08 17	PCP	10 56	
MHC			14 08 04.3	C		*E 08 20	PCP	10 58	
SAO			14 08 05.8	D		*E 08 14			
BKS			14 08 12			PCP	10 56		
MIN			14 08 18.7	C					
FHC			14 08 33.8	C		*I 08 49	PCP	11 21	
			USCGS		14 01 32.8,	14.5N,	92.6W,	H= N KM,	M=5.8
					NEAR COAST OF CHIAPAS, MEXICO. SLIGHT DAMAGE IN TAPACHULA. FELT IN SOUTHERN MEXICO (VI).				
PRI	APR	29	14 58 26.2						
JAS			14 58 37.3						
			USCGS		14 51 54.9,	14.4N,	93.1W,	H= N KM,	M=5.1
					NEAR COAST OF CHIAPAS, MEXICO.				
PRI	APR	29	15 54 51.9						
JAS			15 54 59.3						
PRI	APR	29	16 14 32.2						
JAS			16 14 34.4			*E 17 36			
PRI	APR	29	17 03 01.0						
JAS			17 03 07.5						
MHC			17 03 10.7						
MIN			17 03 30.5						
			USCGS		16 56 26.4,	14.6N,	92.7W,	H= N KM,	M=5.1
					NEAR COAST OF CHIAPAS, MEXICO.				
PRI	APR	29	17 23 45.0						
JAS			17 23 52.5			PCP	26 33		
MHC			17 23 56.7						
MIN			17 24 11.1						
FHC			17 24 26.6						
			USCGS		17 17 15.1,	14.6N,	92.9W,	H= 57 KM,	M=5.1
					NEAR COAST OF CHIAPAS, MEXICO.				
PRI	APR	29	18 14 34.0	D					
MHC			18 14 39.1						
JAS			18 14 41.5	D		*E 18 24			
BKS			18 14 41.8			LR	44 30		
					MICRON	PERIOD			
					C.C9	1.3			
			PZ						
MIN			18 14 51.5						
			USCGS		18 01 29.6,	55.5S,	124.4W,	H= N KM,	M=5.6
					EASTER ISLAND CCRDILLERA.				
BKS	APR	29	18 48			LR	01 00		

PRI 18 48 02.8
JAS 18 48 09.1

*E 46 00 LR 49 42

BKS APR 29 19 36
PRI 19 36 21.4
JAS 19 36 29.2
MHC 19 36 33.1
MIN 19 36 47.9
FHC 19 37 03.4

PCP 39 10

USCGS 19 29 52.3, 14.7N, 93.5W, H= 29 KM, M=5.2
NEAR COAST OF CHIAPAS, MEXICO.

BKS APR 29 20 40
PRI 20 40 16.7
JAS 20 40 23.5
MHC 20 40 28.1

*E 50 00 LR 53 00

BKS APR 29 21 26
PRI 21 26 52.4
JAS 21 27 00.1
MHC 21 27 03.7
MIN 21 27 19.0
FHC 21 27 34.3

LQ 37 00 LR 40 12
PCP 29 49

USCGS 21 20 24.1, 14.6N, 93.6W, H= 35 KM, M=5.3
NEAR COAST OF CHIAPAS, MEXICO.

BKS APR 29 21 55
PRI 21 55 32.9
JAS 21 55 40.3 C
MHC 21 55 44.5 C
MIN 21 55 59.1 C
FHC 21 56 13.2

*E 05 30 LR 09 00

PCP 58 22

USCGS 21 49 00.7, 14.2N, 93.4W, H= N KM, M=5.1
NEAR COAST OF CHIAPAS, MEXICO.

BKS APR 30 01 00
PRI 01 00 44.0
JAS 01 00 51.9
MIN 01 01 12.1
FHC 01 01 25.3

LQ 11 00 LR 14 00

BKS APR 30 04 06
PRI 04 06 22.0 C
JAS 04 06 29.3 C
MIN 04 06 47.7 C

*E 16 36 LR 18 18

PCP 09 10

USCGS 03 59 50.2, 14.7N, 93.0W, H= N KM, M=5.1
NEAR COAST OF CHIAPAS, MEXICO.

BKS APR 30 05 52
PRI 05 52 52.5
JAS 05 52 59.9 D
MIN 05 53 19.2

*E 03 00 LR 06 00

PCP 55 41

JAS APR 30 06 51 09.0 C

PRI APR 30 08 39 31.4 C

JAS		08 39 39.1	C		PCP	42 21			
MHC		08 39 43.2	C						
BKS		08 39 49		45 25	*E	49 00	LR	51 00	
				MICRON		PERIOD			
		PZ		10		15			
		MAXH(N)		14		16			
		MAXH(E)		12		20			
MIN		08 39 57.8	C						
FHC		08 40 13.0	C						
		MAG 6.0, SOUTHERN MEXICO							
		USCGS 08 32 59.1, 14.7N, 93.2W, H= 19 KM, M=5.6							
		NEAR COAST OF CHIAPAS, MEXICO.							
PRI	APR	30	09 06 41.5						
JAS			09 06 48.5	C					
MHC			09 06 55.6						
FHC			09 07 22.3						
			USCGS 08 59 07.6, 14.5N, 93.4W, H= N KM, M=5.2						
			NEAR COAST OF CHIAPAS, MEXICO.						
PRI	APR	30	12 58 08.6	C					
JAS			12 58 16.3	C		PCP	00 56		
MHC			12 58 20.4	C					
BKS			12 58 30		04 00	*E	08 00	LR	11 30
					MICRON		PERIOD		
			PZ		0.6		11		
			MAXH(N)		3.1		13		
			MAXH(E)		2.2		11		
MIN			12 58 35.1	C					
FHC			12 58 50.3	C					
			USCGS 12 51 36.3, 14.4N, 93.4W, H= 24 KM, M=5.3						
			NEAR COAST OF CHIAPAS, MEXICO.						
BKS	APR	30	13 27			LR	38 00	LR	41 00
PRI			13 27 35.4	C					
JAS			13 27 42.8	C		PCP	30 23		
MHC			13 27 47.0	C					
MIN			13 28 01.8	C					
FHC			13 28 17.1	C					
			USCGS 13 21 03.2, 14.5N, 93.5W, H= 22 KM, M=5.4						
			NEAR COAST OF CHIAPAS, MEXICO.						
MIN	APR	30	18 23 17.8	C					
JAS			18 23 27.3	C					
			USCGS 18 10 08.7, 24.1N, 121.7E, H= 59 KM, M=5.1						
			TAIWAN.						
BKS	APR	30	18 28			LQ	38 00	LR	41 36
PRI			18 28 13.3	C		*E	28 24		
JAS			18 28 26.0	C					
MHC			18 28 30.0						
BKS	APR	30	19 36			LQ	46 00	LR	49 18
PRI			19 36 55.7	C					
JAS			19 37 02.2	C					
MHC			19 37 05.6	C					



MIN 19 37 19.6
 USCGS 19 30 28.7, 15.0N, 94.0W, H= 23 KM, M=5.1
 NEAR COAST OF OAXACA, MEXICO.

BKS APR 30 21 59 LQ 10 00 LR 13 00
 PRI 21 59 42.3 D
 JAS 21 59 45.8 D

JAS MAY 01 01 42 00.6 C

PRI MAY 01 04 14 36.5 D
 JAS 04 14 43.5 C
 MHC 04 14 47.9 C
 MIN 04 15 01.9 C
 FHC 04 15 10.0 D

USCGS 04 08 07.2, 14.6N, 93.6W, H= 35 KM, M=5.1
 NEAR COAST OF CHIAPAS, MEXICO.

PRI MAY 01 04 17 23.7 C
 JAS 04 17 25.3
 MIN 04 17 30.0

BKS MAY 01 06 40 LQ 51 00 LR 54 00
 PRI 06 40 27.6 D
 JAS 06 40 28.0 D
 MIN 06 40 42.7 D

BKS MAY 01 08 29 LQ 39 00 LR 42 00
 JAS 08 29 37.6 C
 MHC 08 29 42.1
 MIN 08 29 56.7 C

USCGS 08 23 03.4, 14.6N, 93.6W, H= 49 KM, M=5.0
 NEAR COAST OF CHIAPAS, MEXICO.

BKS MAY 01 08 41 47 50 LQ 51 00 LR 55 00
 PRI 08 41 54.1 C
 JAS 08 42 01.3 C
 SAO 08 42 02.3
 MHC 08 42 05.4 C
 MIN 08 42 20.1 C
 FHC 08 42 35.4 C

USCGS 08 35 24.2, 14.6N, 93.2W, H= 44 KM, M=5.4
 NEAR COAST OF CHIAPAS, MEXICO.

JAS MAY 01 14 13 57.7 C
 PRI 14 14 01.8
 SAO 14 14 08.2
 MHC 14 14 11.0
 BKS 14 14 20.2
 MIN 14 14 23
 *E 14 24
 *E 14 29
 *E 14 31

MAG 4.0, SOUTHERN NEVADA. NUCLEAR TEST 'BEEBALM'.
 AEC 14 13 00.0, 37 03 33.2N, 116 01 41.5W.

JAS MAY 01 14 40 57.4 C
 PRI 14 41 02.4 C
 SAO 14 41 08.7
 *E 41 06
 *E 41 11
 *E 41 20

MHC 14 41 10.7 *E 41 19
 MIN 14 41 23.7
 MAG 4.3, SOUTHERN NEVADA. NUCLEAR TEST 'HOD'.
 AEC 14 40 00.2, 37 08 00.0N, 116 02 02.7W.

JAS MAY 01 17 31 00.5 C
 MIN 17 31 01.5

PRI MAY 01 20 09 56.0
 JAS 20 10 04.0 C PCP 12 47
 MHC 20 10 07.6 C
 BKS 20 10 20 D 15 44 *E 11 40 L 19 20 LR 23 30
 MICRON PERIOD
 PZ 0.9 6
 SH 1.4 12

MIN 20 10 22.5
 FHC 20 10 37.5 C
 MAG 5.3, DIST(DEG) 35
 USCGS 20 03 27.9, 14.6N, 93.6W, H= 38 KM, M=5.0
 NEAR COAST OF CHIAPAS, MEXICO.

JAS MAY 01 20 46 33.2 C
 USCGS 20 35 38.4, 42.9N, 147.3E, H= 15 KM, M=5.1
 OFF COAST OF HOKKAIDO, JAPAN. FELT NEMURO.

MHC MAY 01 23 45 13.8
 PRI 23 45 16.6 D
 MIN 23 45 16.8
 JAS 23 45 18.5 D
 USCGS 23 32 37.8, 8.5S, 159.8E, H= 67 KM, M=5.3
 SOLOMON ISLANDS. FELT.

PRI MAY 02 02 13 23.0
 JAS 02 13 31.3 C *E 14 51 PCP 16 10
 MHC 02 13 34.5
 BKS 02 13 44 D 19 13 PP 15 05 L 19 23
 MICRON PERIOD
 PZ 0.9 7
 SH 1.7 12

MIN 02 13 49.7
 FHC 02 14 05.0
 MAG 5.3, DIST(DEG) 35
 USCGS 02 06 56.3, 14.7N, 93.7W, H= 32 KM, M=5.4
 NEAR COAST OF CHIAPAS, MEXICO.

PRI MAY 02 05 22 15.9
 JAS 05 22 23.1 PCP 25 02
 MHC 05 22 26.9
 MIN 05 22 41.4
 USCGS 05 15 43.7, 14.5N, 93.0W, H= N KM, M=5.1
 NEAR COAST OF CHIAPAS, MEXICO.

JAS MAY 02 09 38 48.8 C
 MIN 09 38 52.0

PRI MAY 02 19 06 41.7 D

JAS 19 06 46.9 D
 MHC 19 06 49.5 D
 BKS 19 06 53.0 D

MICRON
0.04

PERIOD
0.6

MIN 19 06 58.7 D
 FHC 19 07 09.0 D

USCGS

18 55 07.4, 21.6S, 68.3W, H=130 KM, M=5.1
 CHILE-BOLIVIA BORDER REGION.

JAS MAY 02 19 55 03.5

JAS MAY 03 04 30 29.5 C
 MIN 04 30 15.1 C

JAS MAY 03 06 42 36.7
 MIN 06 42 41.4 D

*E 43 02 *E 46 19

PRI MAY 03 07 15 40.7
 JAS 07 15 48.8
 MHC 07 15 52.8
 MIN 07 16 03.7

PCP 18 32

PRI MAY 03 07 45 57.5
 JAS 07 46 03.8
 MIN 07 46 23.5

PCP 49 44

FHC MAY 03 09 07 25.0 C
 MIN 09 07 34.1 C
 BKS 09 07 38.8 C

*E 08 22

MICRON
0.03

PERIOD
0.7

MHC 09 07 42.7 C
 JAS 09 07 45.6 C
 PRI 09 07 50.2 C

*PP 08 08 PP 10 45

NEAR KYUSHU, JAPAN

PRI MAY 03 09 13 35.4
 JAS 09 13 43.7
 MHC 09 13 46.2
 MIN 09 14 02.3

JAS MAY 04 05 57 49.3 D

JAS MAY 04 06 26 57.0 D
 MIN 06 27 00.1

JAS MAY 04 07 06 16.6 D
 MIN 07 06 37.4

JAS MAY 04 07 08 56.9 D
 MIN 07 09 03.8

BKS MAY 04 07 14
 MIN 07 14 45.7
 MHC 07 15 00

*E 19 40 *E 29 30

JAS 07 15 03.7 C
 PRI 07 15 12.1 C
 USCGS 07 07 08.0, 51.4N, 179.2W, H= 44 KM, M=5.2
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS.

BKS MAY 04 07 53 22.0 C 03 44 SKS 04 40 L 15 20 LR 19 20
 MICRCN PERIOD
 PZ 0.05 1.2
 SH 0.46 10

MHC 07 53 24.1
 PRI 07 53 24.6
 JAS 07 53 29.3 C *E 53 56
 MIN 07 53 31.5
 MAG 5.3, DIST(DEG) 84
 USCGS 07 40 52.3, 20.7S, 173.5E, H= 14 KM, M=5.2
 NEW HEBRIDES ISLANDS REGION.

BKS MAY 04 11 37 47.0 D *E 38 12
 MICRCN PERIOD
 PZ 0.04 1.0

MHC 11 37 47.3
 PRI 11 37 47.8 C
 FHC 11 37 48.3
 JAS 11 37 52.2 C PP 41 11
 MIN 11 37 53.9
 USCGS 11 24 42.6, 21.5S, 170.5E, H=135 KM, M=5.2
 LOYALTY ISLANDS REGION.

JAS MAY 04 19 13 28.7 C *E 14 20 *E 18 17
 BKS 19 14 16.0 C *E 28 30 *E 31 30 *E 39 00
 *E 44 00 LR 09 00
 MICRCN PERIOD
 MAXR(Z) 7.1 20
 MAXH(N) 3.2 20
 MAXH(E) 7.1 20

MHC 19 14 17.3
 PRI 19 14 19.0
 MIN 19 14 19.7
 USCGS 18 53 19.7, 41.6S, 80.1E, H= N KM, M=5.3
 MID-INDIAN RISE.

JAS MAY 05 04 00 17.5 C
 MIN 04 00 38.6 C

JAS MAY 05 15 30 55.6 C
 PRI 15 30 58.8 C
 SAO 15 31 06.4 D *I 31 15
 MHC 15 31 08.5 C *I 31 16
 BKS 15 31 15.5 C *E 31 24
 MIN 15 31 21.0 C *I 31 25
 FHC 15 31 47.2 C
 MAG 4.7, SOUTHERN NEVADA. NUCLEAR TEST 'MINT LEAF'.
 AEC 15 30 00.2, 37 12 59.5N, 116 11 02.6W.

PRI MAY 05 18 28 14.9 C
 JAS 18 28 22.3 C

MHC 18 28 26.7 C

JAS MAY 05 20 18 53.0 C *I 19 03
 USCGS 20 06 08.4, 20.2S, 170.2E, H= 36 KM, M=5.3
 NEW HEBRIDES ISLANDS.

JAS MAY 07 18 50 50.9 *E 51 02
 MIN 18 51 13.0

JAS MAY 08 01 14 02.2 D *E 14 07 *E 14 12

MHC MAY 08 12 53 11.5
 JAS 12 53 15.6 D *E 53 31 *E 53 38 *E 53 49
 MIN 12 53 19.5
 USCGS 12 39 53.4, 9.6S, 151.2E, H= 16 KM, M=5.0
 DENTRECASTEAUX ISLANDS REGION. FELT AT
 GANAWE AND SEHULEA (IV).

JAS MAY 08 13 20 17.2 D *E 20 23 *E 20 34

MHC MAY 09 11 41 04.0
 PRI 11 41 06.8
 JAS 11 41 09.0
 MIN 11 41 18.6
 USCGS 11 28 26.2, 10.5S, 161.6E, H= 33 KM, M=5.0
 SOLOMON ISLANDS.

FHC MAY 09 18 13 21.4 C
 BKS 18 13 26
 23 38 *E 25 03
 MICRCN PERIOD
 PZ 0.08 0.8
 MAXH 2.4 11
 MAXR(Z) 0.57 20
 MAXH(N) 0.57 20
 MAXH(E) 0.37 16
 MHC 18 13 27.8 C
 MIN 18 13 28.7 C
 JAS 18 13 32.5 C
 *E 13 53 PP 17 07 *E 23 47
 PRI 18 13 33.2 C *E 30 59 *E 31 39
 MAG 5.5, DIST(DEG) 83
 USCGS 18 00 50.0, 4.4S, 151.7E, H=203 KM, M=5.9
 NEW BRITAIN REGION. FELT AT RABAU (III).

JAS MAY 10 04 13 59.4 *E 14 10
 MIN 04 14 05.8

JAS MAY 10 04 34 50.4 *E 35 01

SAD MAY 10 10 50 25.0
 BKS 10 50 26.5 C

MHC 10 50 26.7 D
 JAS 10 50 32.2 D
 MIN 10 50 35.9 D
 MICRCN PERIOD
 PZ 0.03 0.8

TONGA ISLANDS REGION

PRI MAY 10 19 46 41.6 D
 JAS 19 46 46.7 D
 MHC 19 46 49.0
 MIN 19 46 57.8
 USCGS 19 34 57.4, 24.0S, 66.7W, H=178 KM, M=5.0
 SALTA PROVINCE, ARGENTINA.

FHC MAY 10 20 16 19.2 D
 MIN 20 16 27.6 D
 BKS 20 16 29.0 D 25 48
 MICRCN PERIOD
 PZ 0.24 0.7
 MAXH 2.3 11
 MHC 20 16 32.5 D
 SAC 20 16 33.5
 JAS 20 16 36.0 D *E 16 46 *E 18 48 *E 26 05
 PRI 20 16 38.4 D
 DISTANCE(DEG) 74
 USCGS 20 05 15.9, 18.6N, 145.2E, H=602 KM, M=5.6
 MARIANA ISLANDS.

MIN MAY 11 12 01 33.8
 MHC 12 01 39.2
 JAS 12 01 42.6
 MARIANA ISLANDS

JAS MAY 11 13 30 23.5 C
 BKS MAY 11 15 17 20.5 C
 MICRCN PERIOD
 PZ 0.04 1.0
 SAO 15 17 20.6 C
 PRI 15 17 21.0 C
 MHC 15 17 21.2 C
 JAS 15 17 26.8 C *E 17 44 *E 19 09
 TONGA ISLANDS REGION

SAO MAY 12 01 14 05.7 C
 BKS 01 14 05.9 D
 MICRCN PERIOD
 PZ 0.06 1.0
 PRI 01 14 06.3 C
 MHC 01 14 06.7 C
 FHC 01 14 10.5 C
 JAS 01 14 11.7 C
 MIN 01 14 15.4 C

FIJI ISLANDS REGION

JAS MAY 12 04 20 45.3 D
 MHC MAY 12 17 09 40.8 C
 PRI 17 09 41.2 C
 JAS 17 09 45.0 C
 MIN 17 09 49.3 C



USCGS 16 58 01.4, 20.6S, 174.4W, H= 95 KM, M=5.3
TONGA ISLANDS.

MIN MAY 13 07 27 12.2
JAS 07 27 15.9 C *E 31 08
USCGS 07 14 00.9, 5.9S, 146.7E, H=118 KM, M=5.2
EAST NEW GUINEA REGION.

FHC MAY 14 03 36 31.1 C *E 37 10
MIN 03 36 56.7
BKS 03 37 16.1 C 38 30

MICRON PERIOD
PZ 0.03 0.8

MHC 03 37 25.2
JAS 03 37 31.3 C
OFF OREGON COAST

FHC MAY 14 08 19 25.5 C
MIN 08 19 51.3
JAS 08 20 26.0

BKS MAY 14 08 45 *E 49 40 *E 50 30 *E 54 28
FHC 08 45 55.1 *E 57 46 *E 05 10
JAS 08 46 04.5 C *E 46 43 PP 50 05
MIN 08 46 07.4 C

USCGS 08 32 42.2, 3.4S, 145.2E, H= 29 KM, M=5.6
NEAR NORTH COAST OF NEW GUINEA.

JAS MAY 14 09 34 02.0 C
FHC 09 33 51.2
MIN 09 33 51.5 C

USCGS 09 20 22.0, 43.0N, 47.1E, H= 17 KM, M=5.6
EASTERN CAUCASUS.

JAS MAY 14 10 54 43.3 C

JAS MAY 14 18 26 05.1 C
MIN 18 25 57.4 C
FHC 18 25 57.4 C
BKS 18 26 11.7 C

*E 30 09 *E 36 49 *E 44 28
*E 50 53

MICRON PERIOD
PZ 0.05 1.1
MAXR(Z) 11.4 20
MAXH(N) 15.2 20
MAXH(E) 7.9 19

MHC 18 26 13.6 C
PRI 18 26 15.0 C

MAG 6.5, DIST(DEG) 99
USCGS 18 12 28.0, 43.0N, 47.1E, H= 44 KM, M=5.6
EASTERN CAUCASUS. THIS EARTHQUAKE AND
FORESHOCK AT 092022 GMT CAUSED HEAVY
CASUALTIES AND EXTENSIVE DAMAGE IN DAGESTAN.

MIN MAY 14 18 51 12.0 D 52 04

JAS 18 51 20.9 D 52 23
 MAG 4.2, NORTHERN NEVADA.

PRI MAY 15 00 21 18.5 D
 MHC 00 21 26.9 D
 JAS 00 21 27.7 D *I 21 34
 BKS 00 21 31 D

MICRON PERIOD
 PZ 0.03 0.8
 USCGS 00 09 43.7, 35.5S, 100.3W, H= N KM, M=5.0
 SOUTHERN PACIFIC OCEAN.

PRI MAY 15 07 50 46.4 D
 JAS 07 50 56.8 C *I 53 36

PRI MAY 15 09 51 18.9 C *E 51 23
 JAS 09 51 25.2 C *I 51 40 *I 54 05
 MHC 09 51 30.8 C
 BKS 09 51 36 *E 52 59 *E 57 11

MICRON PERIOD
 MAXR(Z) 4.66 19
 MAXH(N) 5.89 20
 MAXH(E) 5.89 20

MIN 09 51 45.2 C
 FHC 09 52 00.9 D *E 52 09
 MAG 5.4, DIST(DEG) 37
 USCGS 09 44 45.2, 14.5N, 92.8W, H= N KM, M=5.4
 NEAR COAST OF CHIAPAS, MEXICO.

SAO MAY 15 10 51 46.8 C
 BKS 10 51 47.5 D

MICRON PERIOD
 PZ 0.05 1.0

PRI 10 51 47.8
 MHC 10 51 48.2 D
 FHC 10 51 52.9 C
 JAS 10 51 53.8 D
 MIN 10 51 57.7 D

USCGS 10 40 14.0, 21.5S, 176.7W, H=251 KM, M=5.3
 FIJI ISLANDS REGION.

JAS MAY 15 13 30 57.3
 PRI 13 31 01.3
 SAO 13 31 07.9 *E 31 17
 MHC 13 31 10.1 *E 31 18
 BKS 13 31 16.8
 MIN 13 31 22.6

MAG 5.0, SOUTHERN NEVADA. NUCLEAR TEST 'CORNICE'.
 AEC 13 30 00.0, 37 09 50N, 116 02 13W.

JAS MAY 15 15 20 30.7 C *E 20 43
 PRI 15 20 34.5
 MHC 15 20 46
 MAG 4.0, SOUTHERN NEVADA.

JAS MAY 15 15 30 44.5 C *E 30 56

FHC MAY 15 17 25 45.9 C
 MIN 17 25 50.4 C
 BKS 17 26 02.0 36 25 PP 29 33 *E 33 52
 SS 42 12 L 48 00 *E 36 14
 LR 55 48

MICRON PERIOD
 PZ 0.04 1.2
 PH 1.24 7
 PPH 1.2 10
 SH 7.6 16

JAS 17 26 03.5 C *E 26 42 *E 27 06
 MHC 17 26 04.9
 PRI 17 26 12.1 C

MAG 6.5, DIST(DEG) 90
 USCGS 17 13 15.1, 50.2N, 91.3E, H= N KM, M=5.9
 USSR-MONGOLIA BORDER REGION.

FHC MAY 15 18 10 56.2
 MIN 18 11 01.0
 JAS 18 11 15.6
 USCGS 17 58 28.3, 50.2N, 91.3E, H= N KM, M=5.1
 USSR-MONGOLIA BORDER REGION.

MIN MAY 15 20 24 45.7
 JAS 20 25 01.8
 USCGS 20 12 16.9, 50.2N, 91.3E, H= N KM, M=5.0
 USSR-MONGOLIA BORDER REGION.

MIN MAY 15 21 01 29.1
 JAS 21 01 44.7 C
 MHC 21 01 45.5
 PRI 21 01 54.0

BKS MAY 16 01 59
 JAS 01 59 33.5
 MICRON 2.4
 LQ 09 36 LR 12 36
 PERIOD 20

SAD MAY 17 03 46 13.3 C
 PRI 03 46 14.3 C
 MHC 03 46 14.4 C
 JAS 03 46 19.7 C
 MIN 03 46 23.1
 TONGA ISLANDS REGION

PRI MAY 17 09 25 15.5
 JAS 09 25 21.0 C
 MHC 09 25 22.5
 BKS 09 25 31.2 C
 MICRON PERIOD
 PZ 0.03 1.0
 USCGS 09 12 40.0, 33.7S, 68.4W, H= 16 KM, M=5.3
 MENDOZA PROVINCE, ARGENTINA. FELT.

JAS MAY 17 15 03 34.4 C *E 04 01
 USCGS 14 51 55.6, 34.8N, 140.9E, H= 72 KM, M=5.0

ULAMONA (III).



JAS MAY 20 17 39 46.1 D
 MHC 17 39 53.2 D
 MIN 17 39 53.6 D
 FHC 17 40 07.0 D
 USCGS 17 29 58.7, 16.2N, 59.6W, H= N KM, M=5.0
 LEEWARD ISLANDS.

PRI MAY 20 20 22 26.8 D PKKP 33 33
 SAO 20 22 27.5
 JAS 20 22 28.5 D *PP* 22 51 PP 24 17
 MHC 20 22 29.4 D PKKP 32 30 SKKP 36 26 *E 25 56
 BKS 20 22 30.2 D *PP* 22 52 PP 24 23 PKKP 32 27
 SP 33 48 PPS 35 48 SS 41 06
 MICRON PERIOD
 PPZ 2.1 10
 PPT 0.76 20
 MIN 20 22 32.7 PKKP 32 21
 FHC 20 22 36.3 D PKKP 32 26
 MAG 6.1, DIST(DEG) 123
 USCGS 20 03 42.2, 55.9S, 28.3W, H= 70 KM, M=6.0
 SOUTH SANDWICH ISLANDS REGION.

FHC MAY 20 20 38 15.0 D
 MIN 20 38 28.5 D
 BKS 20 38 37.2 C *E 44 48 L 48 00 LR 50 06
 MICRON PERIOD
 PZ 0.04 1.0
 MHC 20 38 43.2 D
 JAS 20 38 46.7 D *E 39 35 PCP 40 43
 PRI 20 38 54.2 D
 USCGS 20 30 54.7, 51.5N, 178.5W, H= 48 KM, M=5.7
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS.

JAS MAY 21 14 00 58.8 C
 PRI 14 01 03.1 *E C1 09
 MAG 3.6, SOUTHERN NEVADA. NUCLEAR TEST 'MANZANAS'.
 AEC 14 00 00.4, 37 01 44N, 115 59 31W.

JAS MAY 21 14 15 57.7 C
 PRI 14 16 01.3 C
 SAO 14 16 08.2 C *E 16 16
 MHC 14 16 10.4 C *E 16 23
 BKS 14 16 19.6 *E 16 21
 MIN 14 16 24.0 *E 16 28
 MAG 4.8, SOUTHERN NEVADA. NUCLEAR TEST 'MORRONES'.
 AEC 14 15 00.0, 37 04 15N, 116 00 47W.

BKS MAY 21 15 53
 JAS 15 53 08 57 48 *E 00 48 SS 03 06 LR 06 42

MIN MAY 22 10 50 33.4 C
 JAS 10 50 35.4 C
 USCGS 10 37 39.8, 6.2S, 154.6E, H= 52 KM, M=5.3

SOLOMON ISLANDS.

BKS	MAY	23	07 44			*E	08 00	*E	11 00
JAS			07 44	25.2	C				
BKS	MAY	23	16 23			*E	32 00	*E	35 00
JAS			16 23	26.4	D	*E	24 55	*E	25 58
MIN	MAY	23	22 57			*E	57 19		
PRI			22 57			*E	57 30		
MHC			22 57			*E	57 37		
JAS			22 57	01.7	C		58 42	*E	57 21
BKS	MAY	23	23 17			*E	29 00		
JAS			23 17	37.4		*E	20 16	*E	20 46 *E 21 50
MIN	MAY	24	01 16			*E	16 43		
MHC			01 16			*E	16 44		
PRI			01 16			*E	16 45		
BKS			01 16	39.1		*E	48 42		
JAS			01 16	45.1					
					USCGS		01 03 49.2,		6.2S, 154.5E, H= 50 KM, M=5.3
									SOLOMON ISLANDS. FELT AT PIVA (II).
PRI	MAY	25	17 00	04.2	C				
BKS			17 00	05.0		LR	26 00		
MHC			17 00	05.1	C				
JAS			17 00	10.0	C	*E	00 27		
MIN			17 00	14.4	C				
					USCGS		16 47 36.0,		29.4S, 177.8W, H= 63 KM, M=5.5
									KERMADEC ISLANDS.
PRI	MAY	25	23 04	25.6	C				
SAD			23 04	26.8	D				
JAS			23 04	27.6	C	*I	04 41		
MHC			23 04	28.2	C				
BKS			23 04	29.2		*E	04 45		
MIN			23 04	30.4	C				
					USCGS		22 45 35.2,		57.4S, 25.8W, H= 61 KM, M=5.6
									SOUTH SANDWICH ISLANDS REGION.
MIN	MAY	26	09 59	54.1					
BKS			10 00	05.0		*E	08 30		
MHC			10 00	11.7					
JAS			10 00	14.6	D				
PRI			10 00	24.4					
					USCGS		09 53 31.0,		54.2N, 164.7W, H= 36 KM, M=5.2
									UNIMAK ISLAND REGION.
JAS	MAY	26	10 25	59.1					
JAS	MAY	26	14 16	55.5	C	*E	17 03		
PRI			14 17	00.4	C	*E	17 10		
SAD			14 17	06.8		*E	17 15		
MHC			14 17	08.2	C	*E	17 20		
BKS			14 17	15.4		*E	17 26		

JAS MAY 26 15 00 57.0 C
 PRI 15 01 00.9 C
 SAD 15 01 07.3 C *E 01 24
 MHC 15 01 09.9 C
 MIN 15 01 *E 01 18 *E 01 24
 FHC 15 01 49.2

MAG 5.2, SOUTHERN NEVADA. NUCLEAR TEST 'FLASK'.
 AEC 15 00 00.0, 37 06 50N, 116 03 48W.

JAS MAY 27 04 11 16.5 C
 FHC MAY 27 12 16 20.2 D 26 17 *E 46 20
 MIN 12 16 28.2 D
 BKS 12 16 31.9 25 58 *PP 16 58 *E 18 05 PP 19 38
 *E 28 29 SSS 33 20 LQ 37 16
 MICRON PERIOD
 PZ 1.67 0.8
 SH 38.5 22
 MAXR(Z) 9.6 20
 MAXH(N) 10.7 21
 MAXH(E) 13.6 20
 MHC 12 16 35.5 D
 SAD 12 16 37.9 D 26 04
 JAS 12 16 38.5 D 26 12 *PP 17 09 PP 19 49 P*P* 43 17
 PRI 12 16 42.5 D *E 46 11 *E 03 17

MAG 7.0, DIST(DEG) 77
 USCGS 12 05 06.0, 27.2N, 140.1E, H=382 KM, M=6.2
 BONIN ISLANDS REGION.

JAS MAY 27 16 05 35.5 *E 07 13
 FHC MAY 27 19 16 33.3 C
 MIN 19 16 43.2 C
 BRK 19 16 49.6
 MHC 19 16 54.0 C
 BKS 19 16 55.5 25 58 *E 17 21 *E 29 45 SS 30 07
 JAS 19 16 56.7 C LQ 33 37 LR 37 16
 PRI 19 17 02.5 C *E 17 41

USCGS 19 05 39.0, 40.3N, 143.0E, H= 33 KM, M=5.7
 OFF EAST COAST OF HONSHU, JAPAN. FELT
 CENTRAL AND NORTHERN HONSHU.

PRI MAY 27 20 08 30.5 C
 JAS 20 08 38.8 C
 MHC 20 08 43.2
 SOUTHERN MEXICO

MIN MAY 27 22 47 52.5 D *E 47 02
 FHC 22 47 *E 47 51
 BKS 22 47 LQ 04 00 LR 07 54
 JAS 22 47 06.2 D *I 47 13



MHC		22 47			*E 47 09	*E 47 16						
			USCGS	22 35 46.4,	40.2N,	143.2E,	H= 16 KM,	M=5.5				
				OFF EAST COAST CF HONSHU, JAPAN.								
FHC	MAY	28	00 07		*E	07 43						
MHC			00 07		*E	08 02						
BKS			00 07		LQ	24 18	LR	28 24				
PRI			00 07		*E	08 13						
MIN			00 07	43.0	*E	07 47						
JAS			00 07	56.6	D							
			USCGS	23 56 40.0,	40.3N,	143.0E,	H= 38 KM,	M=5.4				
				OFF EAST COAST CF HONSHU, JAPAN.								
JAS	MAY	28	04 31	07.6	C							
BKS	MAY	28	08 16			*E	21 36	*E	25 00			
JAS			08 16	19.1	C							
MHC			08 16	22.6	D							
BKS	MAY	28	11 46	09.9								
MHC			11 46	10.7	D							
PRI			11 46	11.3	D							
JAS			11 46	15.5	D							
MIN			11 46	16.7	D							
				NEW HEBRIDES ISLANDS REGION.								
MHC	MAY	28	12 00			*E	01 11	*I	01 23			
JAS			12 00	57.0	C	*I	01 05					
PRI			12 01	02.5	C							
SAC			12 01	09.2	C	*I	01 24					
				MAG 4.0, SOUTHERN NEVADA.								
JAS	MAY	28	14 25	37.4	D							
MHC	MAY	28	15 26	18.2								
JAS			15 26	20.9	D							
MIN	MAY	28	17 40	44.0	D							
BKS			17 41	12.2								
JAS			17 41	20.1								
MHC			17 41	23.9								
PRI			17 41	42.1								
MIN	MAY	29	04 41	33.9	C							
JAS			04 41	48.5	C	*PP	41 52					
			USCGS	04 31 03.7,	44.2N,	146.7E,	H= 73 KM,	M=5.3				
				KURIL ISLANDS.								
PRI	MAY	29	05 25	55.0								
BKS			05 25	59.5		35 16	SS	39 20	LQ	44 00	LR	46 14
						MICRON	PERIOD					
						MAXR(Z)	5	20				
						MAXH(N)	3.3	20				
						MAXH(E)	4.4	20				
JAS			05 26	03.8	C	*E	26 09	*E	26 17			
MIN			05 26	05.6								

USCGS 05 14 38.0, 15.0S, 173.5W,
 TONGA ISLANDS. FELT AT APIA (III).
 International Seismological Centre

JAS MAY 29 10 53 06.0 C *E 53 24
 JAS MAY 29 13 41 24.2 C
 BKS MAY 29 19 14 39.5 25 00 *I 14 43 LQ 36 08 LR 39
 MICRON PERIOD
 MAXR(Z) 11.0 20
 MAXH(N) 4.5 20
 MAXH(E) 8.4 20

MHC 19 14 42.4
 PRI 19 14 43.8 C
 JAS 19 14 46.6 C
 *E 14 50 PP 18 16
 MAG 6.0, DIST(DEG) 85
 USCGS 19 02 19.0, 11.6S, 166.3E, H= 50 KM, M=5.9
 SANTA CRUZ ISLANDS.

FHC MAY 29 19 43 29.6 C
 MIN 19 43 40.0 C
 MHC 19 43 52.3 C
 JAS 19 43 55.0 C
 USCGS 19 33 24.4, 45.4N, 150.0E, H= 45 KM, M=5.0
 KURIL ISLANDS.

SAC MAY 29 20 41 45.9 C
 BKS 20 41 46.6 D
 PRI 20 41 47.5
 MHC 20 41 47.7 C
 FHC 20 41 51.2 C
 JAS 20 41 53.0 C
 MIN 20 41 56.6 C
 *E 45 07
 USCGS 20 30 45.1, 20.6S, 178.7W, H=610 KM, M=5.1
 FIJI ISLANDS REGION.

PRI MAY 30 11 05 02.2 D
 MHC 11 05 02.3
 JAS 11 05 08.5 D
 TONGA ISLANDS REGION

JAS MAY 30 13 30 36.5 PP 34 39
 USCGS 13 16 27.1, 12.2N, 124.5E, H= 93 KM, M=5.8
 SAMAR, PHILIPPINE ISLANDS. FELT IN CENTRAL
 PHILIPPINE ISLANDS.

JAS MAY 30 18 10 25.2 C *E 17 53
 BKS MAY 30 23 26 31 38 LQ 33 40 LR 34 36
 MICRON PERIOD
 MAXH(E) 0.9 20
 MAXH(N) 0.7 20
 MHC 23 26 14.0
 JAS 23 26 17.2 C
 *E 26 32
 DISTANCE(DEG) 35

PRI	MAY	31	20	33	31.0	D		P**	03	04
SAO			20	33	36.0		42 20			
JAS			20	33	37.7	D		P**	03	03
MHC			20	33	40.8	D		P**	03	03
BKS			20	33	45.0	D	42 22	P**	03	01
							MICRON		PERIOD	
						PZ	3.1		1.2	
MIN			20	33	52.5	D				
FHC			20	34	04.9	D		P**	02	50
						MAG 7	1/4-7 1/2,	DIST(DEG)	64	
						USCGS	20 23 27.3,	9.2S,	78.8W,	H= 43 KM, M=6.6
										NEAR COAST OF NORTHERN PERU.
										ESTIMATED 50,000 KILLED, 800,000 HOMELESS
										AND \$230 MILLION DAMAGE. CARAS, HUARAS AND
										YUNGAY ALMOST TOTALLY DESTROYED. CHIMBOTE
										SUFFERED HEAVY DAMAGE. HUAYLAS CANYON TOWNS
										FLOODED BY BURST DAMS AND BURIED UNDER
										LANDSLIDES AND MUDSLIDES. FELT ALONG 600
										MILE LENGTH OF PERU.
PRI	MAY	31	20	55	59.4	C		*PP	56	14 P** 26 18
JAS			20	56	06.1	C		*PP	56	21 P** 26 26
MHC			20	56	09.0	C		*PP	56	24
BKS			20	56	14.0	D		*PP	56	27 *I 57 10
							MICRON		PERIOD	
						PZ	0.10		1.1	
MIN			20	56	20.5	C		*PP	56	36
FHC			20	56	32.7	C		*PP	56	47 P** 26 48
						MAG 5	1/4,	DIST(DEG)	64	
						USCGS	20 45 52.7,	9.8S,	78.6W,	H= 55 KM, M=6.0
										NEAR COAST OF NORTHERN PERU.
PRI	MAY	31	21	58	13.5			*PP	58	28
JAS			21	58	20.2			*PP	58	35
MHC			21	58	23.0					
BKS			21	58	28.0	C		*PP	58	39
							MICRON		PERIOD	
						PZ	0.04		1.0	
MIN			21	58	34.5					
FHC			21	58	47.0	C		*PP	59	02
						MAG 4	3/4,	DIST(DEG)	64	
						USCGS	21 48 04.4,	10.2S,	78.6W,	H= 51 KM, M=5.6
										NEAR COAST OF NORTHERN PERU.
JAS	MAY	31	23	29	56.9					
JAS	JUN	01	01	06	54.7	C				
FHC			01	07	21.3	C				
						USCGS	00 56 40.8,	9.8S,	78.9W,	H= 45 KM, M=5.1
										NEAR COAST OF NORTHERN PERU.
PRI	JUN	01	01	22	39.4	C				
JAS			01	22	46.4	C				
MHC			01	22	49.0	C				
FHC			01	23	12.9	C				
						USCGS	01 12 29.8,	10.2S,	78.7W,	H= 45 KM, M=5.1

NEAR COAST OF NORTHERN PERU.



PRI JUN 01 01 46 13.2 D
 SAO 01 46 18.5 D
 JAS 01 46 20.1 D *PP 46 37 P*P* 15 40
 MHC 01 46 23.0 D
 BKS 01 46 27.2 *I 46 40

MICRON PERIOD
 PZ 0.12 1.0

MIN 01 46 34.8 D
 FHC 01 46 47.0 D *PP 47 04 P*P* 15 31

MAG 5.4, DIST(DEG) 64
 USCGS 01 36 10.2, 9.3S, 79.0W, H= 49 KM, M=6.0
 OFF COAST OF NORTHERN PERU.

PRI JUN 01 02 32 47.3 C
 JAS 02 32 54.0 C
 FHC 02 33 20.5 C

USCGS 02 21 38.9, 10.2S, 78.7W, H= 55 KM, M=5.0
 NEAR COAST OF PERU.

PRI JUN 01 02 55 28.4 C *PP 55 46
 JAS 02 55 35.2 C *PP 55 53 P*P* 24 53
 MHC 02 55 38.0 C
 BKS 02 55 42.5 *PP 55 57

MICRON PERIOD
 PZ 0.10 1.0

MIN 02 55 49.7 C
 FHC 02 56 01.7 *PP 56 20

MAG 5 1/4, DIST(DEG) 64
 USCGS 02 45 21.5, 10.2S, 78.7W, H= 66 KM, M=5.8
 NEAR COAST OF PERU. FELT.

JAS JUN 01 03 29 03.5 D
 JAS JUN 01 04 20 04.5 C

PRI JUN 01 04 54 56.0 C
 JAS 04 55 02.7 C
 MHC 04 55 05.5 C *PP 55 18 *E 24 20
 BKS 04 55 10.2 C *PP 55 24
 *PP 55 23 *I 55 57

MICRON PERIOD
 PZ 0.08 1.0

MIN 04 55 17.2 C
 FHC 04 55 29.4 C *PP 55 46

MAG 5.1, DIST(DEG) 64
 USCGS 04 44 46.1, 10.2S, 78.7W, H= 46 KM, M=5.6
 NEAR COAST OF PERU. FELT.

PRI JUN 01 05 25 39.3 C
 JAS 05 25 45.8 C
 MHC 05 25 48.8 C *PP 26 01
 BKS 05 25 53.2

MICRON PERIOD
 PZ 0.04 1.0

FHC 05 26 12.7 C *PP 26 25

USCGS 05 15 29.2, 10.2S, 78.6W, H= 45 KM, M=5.2
NEAR COAST OF PERU.

JAS JUN 01 06 16 02.5 C

JAS JUN 01 06 29 32.8

BKS JUN 01 06 45 38.2

MICRON PERIOD
0.03 0.8

PZ
PRI 06 45 38.7 C
JAS 06 45 44.3 C
MIN 06 45 47.7 C

JAS JUN 01 09 55 49.7 C
FHC 09 56 16.3

PRI JUN 01 16 10 *E 10 16
MHC 16 10 12.8 D
JAS 16 10 17.8 D

SAO JUN 01 17 52 *E 52 51
MIN 17 52 *E 53 06
PRI 17 52 40.8 C
JAS 17 52 47.2 C *E 54 23
MHC 17 52 52.8 C
BKS 17 52 56.5 D 59 53 PP 54 56 L 06 00 LR 08 16

MICRON PERIOD

MAXR(Z) 5.0 20
MAXH(N) 3.2 20
MAXH(E) 8.0 20

FHC 17 53 18.2 C

MAG 5 1/2, DIST(DEG) 49

USCGS 17 44 15.0, 5.9N, 82.5W, H= 9 KM, M=5.6
SOUTH OF PANAMA.

PRI JUN 01 18 09 35.2 C *E 09 49
JAS 18 09 41.8 C
MHC 18 09 44.6 C
BKS 18 09 49.4
MIN 18 09 58.0 C
FHC 18 10 08.5 C

USCGS 17 59 27.1, 10.0S, 78.7W, H= 49 KM, M=5.1
NEAR COAST OF PERU.

PRI JUN 01 19 25 11.6 C
JAS 19 25 18.4 C
MHC 19 25 21.4 C
BKS 19 25 25.6

MICRON PERIOD
0.04 1.0

PZ
MIN 19 25 34.0 C
FHC 19 25 45.4 C

MAG 4 3/4, DIST(DEG) 64

USCGS 19 15 05.9, 9.8S, 78.7W, H= 55 KM, M=5.2
NEAR COAST OF NORTHERN PERU.



PRI JUN 02 01 47 28.2 C *E 47 44
 JAS 01 47 34.8 C *PP 47 51 *I 48 12 P*P* 16 55
 MHC 01 47 37.8 C *E 48 07
 BKS 01 47 41.2 D 56 08 *E 47 58 L 03 44 LR 08 14
 P*P* 16 54

MICRON PERIOD
 PZ 0.06 0.8
 SH 1.4 12
 MIN FHC 01 47 49.3 C *E 48 05 P*P* 16 49
 01 48 02.4 D *I 48 17
 MAG 5 1/4-5 1/2, DIST(DEG) 64
 USCGS 01 37 22.7, 9.8S, 78.8W, H= 58 KM, M=5.7
 NEAR COAST OF NORTHERN PERU. FELT.

BKS JUN 02 02 53 05.9 C
 MICRON PERIOD
 PZ 0.06 1.0
 PRI 02 53 06.2 C
 MHC 02 53 06.4 C
 JAS 02 53 12.2 C *I 53 27
 MIN 02 53 16.2 C

FHC JUN 02 03 05 04.7 D *PP 05 27 SCP 11 56
 MIN 03 05 15.4 D *PP 05 37 SCP 11 59
 BKS 03 05 32.3 *PP 05 55 *I 06 36 PCP 08 32
 *E 11 09 *I 12 04 *E 12 51
 *E 14 57

MICRON PERIOD
 PZ 0.07 0.7
 JAS 03 05 37.7 D *PP 05 59 PCP 08 33 *PPCP 08 58
 MHC 03 05 38.4 D SCP 12 07
 PRI 03 05 52.0 D *PP 06 14 SCP 12 13
 MAG 4 3/4 DIST(DEG) 29
 USCGS 02 59 31.3, 61.6N, 151.7W, H= 95 KM, M=5.5
 SOUTHERN ALASKA.

JAS JUN 02 04 50 11.6 C
 JAS JUN 02 10 46 01.3 C
 FHC 10 46 28.5
 USCGS 10 35 46.0, 10.2S, 78.7W, H= 58 KM, M=5.0
 NEAR COAST OF PERU.

JAS JUN 02 17 01 11.3 C
 PRI JUN 02 18 12 48.9 C
 JAS 18 12 55.5 C *PP 13 11
 MHC 18 12 58.3 C
 BKS 18 13 03.2 C *PP 13 16
 MICRON PERIOD
 PZ 0.04 1.0
 MIN FHC 18 13 10.0 C
 18 13 22.2 C
 USCGS 18 02 38.4, 10.2S, 78.7W, H= 44 KM, M=5.3

NEAR COAST OF PERU.

JAS JUN 02 19 02 22.2 C *E 02 37

BKS JUN 02 21 13 44.0 C
MICRON PERIOD
PZ 0.04 0.8

MHC 21 13 44.9 C
FHC 21 13 45.1
PRI 21 13 45.9 C
JAS 21 13 49.9 C *E 13 58

NEW HEBRIDES REGION

SAO JUN 02 21 41 49.1 C
BKS 21 41 50.0 C 51 15
MICRON PERIOD
PZ 0.07 1.0

PRI 21 41 50.5 C
MHC 21 41 50.7 C
FHC 21 41 54.2 C
JAS 21 41 56.3 C
MIN 21 41 59.9 C

MAG 5.0, DIST(DEG) 75

USCGS 21 30 32.2, 20.3S, 177.4W, H=388 KM, M=5.2
FIJI ISLANDS REGION.

BKS JUN 02 23 43 52.3 C
MICRON PERIOD
PZ 0.03 0.8

JAS 23 43 59.6 C
USCGS 23 33 30.2, 45.7N, 150.9E, H= 20 KM, M=5.4
KURIL ISLANDS.

JAS JUN 03 02 12 14.0 C
FHC 02 13 01.0
USCGS 02 02 17.5, 10.2S, 78.7W, H= 45 KM, M=5.0
NEAR COAST OF PERU.

JAS JUN 03 18 13 22.0 C *E 13 58

BKS JUN 03 21 02 07 33 LR 10 00
PRI 21 02 34.5
JAS 21 02 44.5

PRI JUN 04 04 19 33.0 C *PP 19 49
JAS 04 19 39.8 C 27 45 *PP 19 56 P*P* 49 03 *E 54 30
MHC 04 19 42.5 C *PP 19 59
BKS 04 19 48.1 C 28 20 *PP 20 03 L 35 40 LR 40 00
*E 49 11

MICRON PERIOD

PZ 0.11 1.0
SH 7.7 16
MAXR(Z) 6 20
MAXH(N) 3.6 20
MAXH(E) 3.0 20

MIN 04 19 54.0 C P*P* 49 54

MAG 5 3/4, DIST(DEG) 64
 USCGS 04 09 26.3, 9.8S, 78.6W, H= 57 KM, M=5.8
 NEAR COAST OF NORTHERN PERU. FELT.

PRI JUN 04 16 58 29.8 C
 JAS 16 58 36.5 C
 MHC 16 58 39.7 C
 FHC 16 59 03.2 C

USCGS 16 48 22.6, 9.8S, 78.8W, H= 48 KM, M=5.2
 NEAR COAST OF NORTHERN PERU.

MIN JUN 05 05 06 32.0
 BKS 05 06 43

SKS 17 25 *E 18 00 PS 19 28
 SS 24 56

MICRON PERIOD

MAXR(Z) 11.0 20
 MAXH(N) 8.0 20
 MAXH(E) 7 20

JAS 05 06 43.9 D
 MHC 05 06 45.9
 PRI 05 06 52.6

PP 09 57 *E 23 17

MAG 6 1/4, DIST(DEG) 97
 USCGS 04 53 06.4, 42.5N, 78.8E, H= 20 KM, M=6.0
 ALMA-ATA REGION. 20,000 HOMELESS, 5,000
 BUILDINGS DESTROYED. NO CASUALTY REPORT.

JAS JUN 05 06 06 51.1

PRI JUN 05 07 09 45.9
 JAS 07 09 51.0

USCGS 06 57 27.5, 31.8S, 67.3W, H=127 KM, M=5.0
 *E 10 24 *E 21 41 *E 25 36
 SAN JUAN PROVINCE, ARGENTINA.

JAS JUN 05 07 32 24.3 *E 36 18
 PRI JUN 05 10 22 54.6
 JAS 10 23 01.0
 MHC 10 23 03.0
 USCGS 10 13 02.7, 5.7S, 77.1W, H= 43 KM, M=5.1
 NORTHERN PERU.

JAS JUN 05 10 29 26.7 D
 FHC JUN 05 10 41 21.1 C
 MIN 10 41 30.2 C
 BKS 10 41 43.8 C *I 42 08 *E 04 00
 MICRON PERIOD
 PZ 0.7
 MHC 10 41 47.6 C
 JAS 10 41 48.8 C *E 41 04
 SAO 10 41 52.1
 PRI 10 41 59.4 C
 USCGS 10 31 54.3, 63.4N, 146.2E, H= N KM, M=5.5
 EASTERN SIBERIA.

JAS JUN 05 14 02 01.3 C
 BKS JUN 05 16 39 22.0 *E 39 29
 JAS 16 39 34.2 D *E 40 06
 BKS JUN 05 22 49 *E 57 30 LR 06 30
 JAS 22 49 57.1 C
 USCGS 22 40 23.1, 52.2N, 159.6E, H= N KM, M=5.5
 OFF EAST COAST OF KAMCHATKA.

MIN JUN 06 13 11 06.1 D
 BKS 13 11 08.0 C
 MICRON PERIOD
 PZ 0.06 1.0
 MHC 13 11 11.1 D
 JAS 13 11 14.5 D
 PRI 13 11 17.0 D
 USCGS 12 59 53.8, 18.6N, 145.2E, H=599 KM, M=5.1
 MARIANA ISLANDS.

JAS JUN 06 14 48 40.5 C
 FHC JUN 07 04 12 35.8 *E 13 07
 MIN 04 13 01.2 C
 BKS 04 13 06.5 13 54 *E 17 42
 MHC 04 13 16.3 14 07
 SAO 04 13 22.8 D
 JAS 04 13 25.0 C 14 28
 PRI 04 13 35.3 C *E 14 42
 MAG 4.7, WEST OF ARCATA.

JAS JUN 07 06 02 08.0 C

JAS JUN 07 09 10 15.6 C

*E 46 18

PRI JUN 07 11 46
 JAS 11 46 18.5
 MHC 11 46 21.5

FHC JUN 07 13 39 02.8 C
 MIN 13 39 13.1 C
 MHC 13 39 27.6 C
 JAS 13 39 29.5 C

*E 39 31
 *E 39 58 *E 41 03

JAS JUN 07 19 08 31.7
 MHC 19 08 34.8
 FHC 19 08 58.5

FHC JUN 08 04 07 03.1
 MIN 04 07 13.7 C
 BKS 04 07 17.5

*E 07 35
 *E 07 38

MHC 04 07 20.2 C
 JAS 04 07 23.5 C
 PRI 04 07 26.9 C

MICRCN PERIOD
 PZ 0.07 1.0

*E 07 42
 *E 07 45
 *E 07 48

USCGS 03 55 14.9, 23.7N, 142.3E, H= 80 KM, M=5.2
 VOLCANO ISLANDS REGION.

JAS JUN 08 11 41 21.0 C

*E 41 37

PRI JUN 08 21 31 03.8
 JAS 21 31 22.7 C

*E 31 38 *E 33 25

MHC JUN 09 11 06 20.0
 BKS 11 06 21.5

*E 15 48 *E 16 24 SSS 24 40
 LR 27 40

PRI 11 06 21.8 C
 JAS 11 06 29.2 C

USCGS 10 55 01.1, 15.7S, 172.9W, H= N KM, M=5.3
 SAMOA ISLANDS REGION.

FHC JUN 10 16 27 56.0 D
 MIN 16 28 06.6
 BKS 16 28 14.0

36 44 *E 28 31 *E 28 47 LQ 44 14
 LR 47 00

MHC 16 28 18.5 D
 JAS 16 28 21.2 D
 PRI 16 28 26.0

MICRCN PERIOD
 MAXR(Z) 1.6 20
 MAXH(E) 1.8 20
 MAXH(N) 1.1 20

*E 28 39 *E 57 10

USCGS 16 17 48.7, 44.9N, 149.5E, H= 57 KM, M=5.7
 KURIL ISLANDS.

PRI JUN 11 06 14 42.7 D
 SAO 06 14 47.0 D

*PP 15 12 P**P* 41 46

JAS 06 14 48.1 D *PP 15 15 L 33 38 P*P* 41 43
 *E 01 40
 MHC 06 14 50.5 D *PP 15 18
 BKS 06 14 53.8 D 25 56 *E 15 24 *E 18 00 *E 18 40
 SS 26 40 *E 30 24 L 34 24
 LR 42 00
 MICRON PERIOD
 PZ 0.78 1.0
 MIN 06 14 59.2 D
 FHC 06 15 09.2 D *PP 15 39
 USCGS 06 02 54.9, 24.5S, 68.5W, H=112 KM, M=6.3
 CHILE-ARGENTINA BORDER REGION.

PRI JUN 11 07 41 00.1 C
 JAS 07 41 07.2 C *PP 41 26 P*P* 09 12
 FHC 07 41 33.5
 USCGS 07 30 51.4, 10.1S, 78.7W, H= 50 KM, M=5.3
 NEAR COAST OF PERU.

BKS JUN 11 11 34 46.0 C LR 00 00
 MHC 11 34 48.4 C
 JAS 11 34 53.5 C *E 35 08
 PRI 11 34 50.7 *E 35 08

BKS JUN 12 03 30 09.7 C
 MHC 03 30 14.3 C
 SAO 03 30 23.5 D *E 30 29
 JAS 03 30 25.0
 PRI 03 30 37.0
 MIN 03 30 45.8
 FHC 03 31 10.0
 MAG 4.3, DANVILLE.

FHC JUN 12 04 59 46.1
 MIN 04 59 59.5
 BKS 05 00 12.5 05 20 SS 06 22 LR 07 28 *E 09 50
 *E 13 50
 MICRON PERIOD
 MAXR(Z) 3.5 20
 MAXH(N) 2.8 20
 MAXH(E) 4.5 20
 MHC 05 00 20.1
 JAS 05 00 21.5 *E 01 55
 PRI 05 00 34.0
 MAG 4.9, DIST (DEG) 30
 USCGS 04 54 31.4, 56.6N, 152.1W, H= N KM, M=5.2
 KODIAK ISLAND REGION.

BKS JUN 12 08 19 *E 32 36 LR 51 28
 MICRON PERIOD
 MAXR(Z) 4.5 20
 MAXH(N) 2.8 20
 MAXH(E) 5.4 20
 JAS 08 19 59.5 PP 24 07 PKKP 36 38 P*P* 44 33
 USCGS 08 06 16.6, 2.9S, 139.1E, H= 32 KM, M=5.7
 NEAR NORTH COAST OF WEST NEW GUINEA.

BKS JUN 12 16 03 42.5
 MHC 16 03 47.7
 SAO 16 03 56.5
 JAS 16 03 58.4
 MAG 4.2, DANVILLE.

JAS JUN 12 21 49 22.5 D

MIN JUN 13 05 35 26.6 C
 BKS 05 35 35.2

MHC 05 35 41.1 C
 JAS 05 35 44.6 C
 PRI 05 35 52.7 C

MICRON 0.05 PERIOD 0.8
 PZ
 *E 35 54

USCGS 05 27 54.4, 51.6N, 178.3W, H= 55 KM, M=5.5
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS.

MIN JUN 13 08 55 12.8 C
 FHC 08 55 32.7 C
 BKS 08 55 51.0 56 30
 JAS 08 55 52.7 D 56 32
 MHC 08 55 59.0 C

MAG 4.0, BURNEY AREA

JAS JUN 13 12 49 00.5 D

PRI JUN 14 00 13 41.4
 MHC 00 13 47.9
 JAS 00 13 48.0
 BKS 00 13 50.0

25 26 PP 17 48 PKKP 30 51
 PP 17 52 SKS 24 26 L 41 52
 *E 46 00

MICRON PERIOD
 MAXR(Z) 21.4 20
 MAXH(N) 11.8 20
 MAXH(E) 7.9 20

USCGS 00 00 11.3, 52.0S, 73.8W, H= N KM, M=6.0
 NEAR COAST OF SOUTHERN CHILE. FELT AT PUNTA
 ARENAS AND PUERTO NATALES.

PRI JUN 14 09 49 25.2 C
 JAS 09 49 29.6 C
 MHC 09 49 32.4 C

*E 49 53
 *E 49 59
 *E 50 02

USCGS 09 38 02.1, 19.4S, 69.2W, H=125 KM, M=5.0
 NORTHERN CHILE.

JAS JUN 14 15 44 17.0

JAS JUN 14 21 15 36.6 C

*E 15 42 *E 15 49 *E 16 01
 *E 17 16

BKS JUN 14 21 45 21.4

MICRON PERIOD
 PZ 0.04 0.8
 MAXR(Z) 2.1 20
 LR 24 40



MAXH(N) 1.8 20
 MAXH(E) 0.7 20
 MHC 21 45 23.3
 MIN 21 45 25.1 C
 JAS 21 45 27.8 C 55 09
 USCGS 21 32 44.2, 5.9S, 154.8E, H=142 KM, M=5.1
 SOLOMON ISLANDS. FELT AT BAGANA (II).

PRI JUN 15 00 52 56.8 C
 JAS 00 53 03.5 C *PP 53 20
 MHC 00 53 06.3 C *PP 53 23
 FHC 00 53 30.2 C
 USCGS 00 42 50.6, 9.7S, 78.8W, H= 51 KM, M=5.4
 NEAR COAST OF NORTHERN PERU.

JAS JUN 15 06 09 04.2 *E 09 16

JAS JUN 15 11 28 55.7 D *E 33 12 *E 45 04
 BKS 11 28 56 PP 33 10 SKS 39 36 PS 42 27
 *E 52 30 L 58 30 LR 03 56

MICRON PERIOD
 MAXR(Z) 79 20
 MAXH(N) 80 20
 MAXH(E) 43 20
 MAG 7.2, DIST(DEG) 103
 USCGS 11 14 52.4, 54.3S, 63.6W, H= N KM, M=5.6
 FALKLAND ISLANDS REGION. FELT THROUGHOUT
 T'IERRA DEL FUEGO. THIS EPICENTER, BEING THE
 FIRST TO BE INSTRUMENTALLY LOCATED BETWEEN
 THE BURDWOOD PLATEAU AND T'ERRA DEL FUEGO,
 SERVES TO FURTHER DELINEATE THE SEISMICITY
 OF THIS REGION. IT IS INTERESTING TO NOTE
 THAT THIS SHOCK OCCURRED ONLY 35 HOURS AFTER
 THE SOUTHERN CHILE QUAKE 750 KM DISTANT.

JAS JUN 16 02 03 28.2 C
 MHC 02 03 32.6 C

SAO JUN 16 02 44 10.7
 BKS 02 44 11.8
 MICRON PERIOD
 PZ 0.07 1.0

PRI 02 44 12.1 D
 MHC 02 44 12.4 D
 FHC 02 44 16.0
 JAS 02 44 17.5 D *E 46 21 *E 03 26
 MIN 02 44 21.0
 USCGS 02 32 50.5, 23.1S, 179.1E, H=581 KM, M=5.0
 SOUTH OF FIJI ISLANDS.

PRI JUN 16 05 19 01.4 C
 JAS 05 19 07.9 C *E 20 46
 MHC 05 19 11.9 C
 BKS 05 19 17.3 26 17 PCP 20 32 PPP 22 00 SS 30 04
 LR 35 34
 MICRON PERIOD



PZ 0.16 1.2
 MAXR(Z) 5 20
 MAXH(N) 2.5 20
 MAXH(E) 6.8 20

MIN
 FHC

05 19 23.3 C
 05 19 37.7 C

MAG 5.5, DIST(DEG) 50

USCGS 05 10 33.0, 5.4N, 82.5W, H= 17 KM, M=5.6
 SOUTH OF PANAMA.

JAS JUN 16 09 07 01.8 D

JAS JUN 16 22 35 07.3 C

PRI JUN 17 04 55 20.6 C

JAS 04 55 26.6 C

MHC 04 55 29.4 C

BKS 04 55 35.2

*I 55 24 *I 55 50
 *I 55 29 *I 55 56 *E 04 31
 04 48 PPP 56 03 PS 05 36 SS 09 31
 SSS 13 48 *E 16 30

MICRON PERIOD
 PZ 0.08 0.8

MIN
 FHC

04 55 39.2

04 55 49.2 C

USCGS 04 44 20.9, 15.8S, 71.8W, H= 91 KM, M=5.9
 SOUTHERN PERU. FELT AT AREQUIPA (IV).

JAS JUN 17 18 56 23.0

PRI 18 56 27.9

USCGS 18 43 48.2, 30.2N, 131.1E, H= 24 KM, M=5.1
 KYUSHU, JAPAN.

PRI JUN 17 21 41 56.4

MHC 21 42 04.4

JAS 21 42 05.0

BKS 21 42 13.2

*E 42 42 *E 42 50
 *E 43 00 *E 53 00 *E 57 00
 L 03 00 *E 06 15

MICRON PERIOD

MAXR(Z) 1.8 20
 MAXH(N) 3.4 20
 MAXH(E) 0.7 20

FHC

21 42 25.4

USCGS 21 30 14.6, 36.3S, 97.6W, H= N KM, M=5.2
 WEST CHILE RISE.

BKS JUN 18 06 59

JAS 06 59 02

*E 15 00 *E 15 44 *E 26 44
 LR 32 20

USCGS 06 39 03.3, 61.3S, 160.0E, H= N KM, M=5.0
 BALLENY ISLANDS REGION.

JAS JUN 18 11 07 44.2

JAS JUN 19 08 59 14.5 C

BKS JUN 19 09 54

JAS 09 54 12.5 C

*E 12 00

JAS 19 01 23.3 D
USCGS 18 49 46.6, 15.2S, 176.3W, H= N KM, M=5.4
FIJI ISLANDS REGION.

JAS JUN 20 04 14 57.8 C

PRI JUN 20 11 51 04.2
MHC 11 51 12.5
JAS 11 51 14.0
USCGS 11 40 39.2, 26.6S, 114.4W, H= N KM, M=5.0
EASTER ISLAND REGION.

PRI JUN 21 15 23 45.6 *E 24 02
JAS 15 23 51.6 *E 24 07
MHC 15 23 55.0
BKS 15 23 59.6 *E 25 10

FHC 15 24 19.0
USCGS 15 13 37.8, 9.8S, 78.7W, H= 51 KM, M=5.4
NEAR COAST OF NORTHERN PERU.

JAS JUN 22 09 33 35.8 C

FHC JUN 22 14 45 01.5
MIN 14 45 14.6 D
BKS 14 45 28.8

MHC 14 45 33.9
JAS 14 45 36.1 D
PRI 14 45 47.3 D

MICRON 50 23 *E 46 20 *E 52 12 LR 53 23
PERIOD
PZ 1.95 6
MAXR(Z) 5.4 20
MAXH(N) 2.5 20
MAXH(E) 4.6 20

MAG 5.1, DIST (DEG) 32
USCGS 14 39 30.6, 55.2N, 156.5W, H= N KM, M=5.5
SOUTH OF ALASKA.

JAS JUN 22 18 13 10.2 D *E 13 29 *E 13 36

JAS JUN 22 21 44 21.3
USCGS 21 33 32.6, 43.5N, 147.6E, H= N KM, M=5.6
KURIL ISLANDS. FELT AT NEMURO (I) AND
URAKAWA (I).

MIN JUN 23 02 37
JAS 02 37 13.0 C *E 37 22
BKS 02 37 19.6 *E 37 37

JAS JUN 23 03 57 36.5 C
USCGS 03 38 35.1, 60.7S, 25.4W, H= N KM, M=5.3
SOUTH SANDWICH ISLANDS REGION.

MHC JUN 23 08 26 10.2 C
PRI 08 26 10.6 C



JAS 08 26 15.2 C
 MIN 08 26 18.6 C
 PRI JUN 23 16 21 37.0 C
 MHC 16 21 38.5 D
 JAS 16 21 42.6 C
 PRI JUN 23 17 53 47.8 C
 MHC 17 53 48.4 C
 JAS 17 53 54.4 C
 BKS JUN 23 19 34 06.7
 MHC 19 34 07.6 D
 JAS 19 34 11.4 D
 PRI 19 34 13.4 D

MARIANA ISLANDS

PRI JUN 23 20 18 21.7 D *E 18 51
 JAS 20 18 26.9 D *I 18 57
 MHC 20 18 29.9 D *E 18 58
 BKS 20 18 31.5 *E 21 11
 FHC 20 18 49.3 D

USCGS 20 06 57.5, 19.4S, 69.1W, H=118 KM, M=5.3
 NORTHERN CHILE.

FHC JUN 24 07 33 23.0 D
 MIN 07 33 37.3 C
 SAC 07 34 *E 34 25
 BKS 07 34 05.8 *E 34 52 *E 35 48 *E 36 36
 LR 36 57

MICRCN

PERIOD

PZ 4.4 5.0
 MAXR(Z) 13.2 20
 MAXH(N) 13.6 20
 MAXH(E) 19.2 20

JAS 07 34 11.4 D *I 34 15
 MHC 07 34 13.2
 PRI 07 34 30.2

MAG 5, DIST(DEG) 16
 QUEEN CHARLOTTE ISLANDS

MIN JUN 24 07 39 02.5 C
 JAS 07 39 33.6 C

JAS JUN 24 10 27 09
 MHC 10 27 11.8

FHC JUN 24 13 12 02.8 D *E 12 08 *E 12 11
 MIN 13 12 17.1 D *E 12 26
 BKS 13 12 43.4 D 15 18 *E 12 58 *E 13 10 *E 14 52

MICRCN

PERIOD

PZ 0.57 1.0

JAS 13 12 50.6 D *E 12 54 *E 12 56



MHC 13 12 53.1 D
 SAO 13 13 01.2 *E 13 05
 PRI 13 13 11.0 D *E 13 14
 MAG 6.25-6.5, DIST(DEG) 15
 USCGS 13 09 08.3, 51.8N, 131.0W, H= 12 KM, M=5.6
 QUEEN CHARLOTTE ISLANDS REGION. FELT IN
 QUEEN CHARLOTTE ISLANDS AND WESTERN BRITISH
 COLUMBIA.

FHC JUN 24 13 19 51.5
 MIN 13 20 10.5
 BKS 13 20 38.5
 JAS 13 20 42.8 D
 MHC 13 20 45.5 D
 SAO 13 20 51.7
 PRI 13 21 03.5
 USCGS 13 17 01.2, 51.9N, 131.1W, H= N KM, M=5.5
 QUEEN CHARLOTTE ISLANDS REGION.

MIN JUN 24 13 28 13.5
 BKS 13 28 36.2
 JAS 13 28 41.5
 MHC 13 28 43.5

JAS JUN 24 15 22 40 D
 JAS JUN 24 17 20 33.6 C
 JAS JUN 24 19 13 58.0 D *E 14 09 *E 14 18
 JAS JUN 24 20 26 15.3 C

FHC JUN 25 05 26 32.4
 BKS 05 26 34.5 37 05 *E 27 50 *E 30 10 *E 43 07
 L 49 21 LR 52 58

MICRCN PERICD
 PZ 0.39 1.0
 MAXR(Z) 3.4 20
 MAXH(N) 2.7 20
 MAXH(E) 3.9 20

MHC 05 26 37.0
 SAO 05 26 37.2
 MIN 05 26 39.5
 PRI 05 26 40.0
 JAS 05 26 41.6 D *E 27 56
 MAG 5.7, DIST (DEG) 88.

USCGS 05 13 58.6, 7.9S, 158.7E, H= 69 KM, M=6.1
 SOLOMON ISLANDS. FELT ON SANTA YSABEL (IV),
 AND ON HONIARA (III).

FHC JUN 25 05 37 07.4 D
 BKS 05 37 09.8
 MHC 05 37 11.9 D
 PRI 05 37 14.9 D
 JAS 05 37 16.5 D
 USCGS 05 24 32.8, 7.8S, 158.7E, H= 59 KM, M=5.2

SOLOMON ISLANDS.

BKS	JUN	25	13	19	18.4			
MHC			13	19	20.5			
JAS			13	19	25.0	C		
							USCGS	13 06 40.3, 7.8S, 158.7E, H= 57 KM, M=5.3
								SOLOMON ISLANDS. FELT AT SANTA YSABEL.
JAS	JUN	25	13	48	16.8	D		
PRI	JUN	25	16	16			*E	16 25
MIN			16	16	07.1	C		
JAS			16	16	18.6	C	*I	16 26
MHC			16	16	28.6	C		
BKS			16	16	30.6			
							USCGS	16 08 54.6, 39.6N, 71.0W, H= 0 KM, M=5.0
								OFF EAST COAST OF UNITED STATES. APPROXIMATE
								DEPTH OF DETONATION 540 FEET.
MIN	JUN	25	19	22	53.5	C		
BKS			19	23	18.6			
JAS			19	23	22.1	C		
PRI	JUN	26	02	07	25.6	D	*E	07 54
JAS			02	07	31.0	D	*E	08 00
MHC			02	07	33.6	D		
BKS			02	07	37.2			
MIN			02	07	42.8	D		
FHC			02	07	53.6	C		
JAS	JUN	26	13	00	57.0			
PRI			13	01	01.7			
SAO			13	01	08.0			
MHC			13	01	10.2		02 24	
BKS			13	01	18.5		02 38	
MIN			13	01	23.8		02 45	
								MAG 4.6, SOUTHERN NEVADA. NUCLEAR TEST 'ARNICA'.
								AEC 13 00 00.0, 37 06 55N, 116 05 06W.
BKS	JUN	27	09	55			*E	56 05
PRI			09	55	35.4	C	*E	55 51
JAS			09	55	43.7	C	*E	55 58
MHC			09	55	43.9	C	*E	55 59
MIN			09	55	56.7		*E	56 12
FHC			09	56	08.7		*E	56 25
							USCGS	09 45 28.5, 9.8S, 78.6W, H= 62 KM, M=5.6
								NEAR COAST OF NORTHERN PERU.
PRI	JUN	27	21	17	55.4			
JAS			21	18	00.6	C		
MHC			21	18	03.0			
BKS	JUN	27	22	59			LQ	10 00 LR 13 00
							MICRON	PERIOD
							MAXH(N)	5 21
							MAXH(E)	4.5 22



PRI 22 59 58.5 *E 02 43
 JAS 23 00 06.0 C
 MHC 23 00 10.2
 MIN 23 00 24.6
 FHC 23 00 40.0 C
 USCGS 22 53 27.0, 14.7N, 92.8W, H= 41 KM, M=5.3
 NEAR COAST OF CHIAPAS, MEXICO.

FHC JUN 28 01 48 46.2
 MHC 01 48 50.7
 PRI 01 48 52.9
 JAS 01 48 53.0 C
 BKS 01 48 55.8 C
 PKKP 59 28
 *E 49 17 *E 57 23 *E 59 10
 *E 05 26
 USCGS 01 30 12.6, 8.7S, 124.2E, H= 41 KM, M=6.0
 TIMOR. FELT AT DARWIN AND BATCHELOR,
 NORTHERN TERRITORY AND ALONG THE KIMBERLY
 COAST, WESTERN AUSTRALIA, AUSTRALIA, AND
 AT WAINGAPU.

FHC JUN 28 02 10 50.7 C
 MIN 02 10 53.8 C
 BKS 02 11 05.6
 MICRON PERIOD
 PZ 0.07 0.9
 JAS 02 11 06.2 C
 MHC 02 11 08.3 C
 SAO 02 11 10.7
 PRI 02 11 15.1 C
 USCGS 01 57 57.7, 49.8N, 78.2E, H= 0 KM, M=5.9
 EASTERN KAZAKH, SSR.

BKS JUN 28 11 11 *E 18 49
 MIN 11 11 05.5 C
 MHC 11 11 20.7 C
 JAS 11 11 23.0 C
 *E 11 47
 NEAR ISLANDS, ALEUTIANS

SAO JUN 28 11 21 00.8
 BKS 11 21 02.1 C
 SCS 30 20
 *PP 23 12 *SP 24 14 *E 25 16
 SCS 30 21 SP 31 07 *SS 34 05
 *E 39 04 *E 42 18
 MICRON PERIOD
 PZ 0.11 1.0
 PRI 11 21 02.4 C
 MHC 11 21 02.6 C
 FHC 11 21 06.0 C
 JAS 11 21 07.9 C
 *PP 23 17 P*P* 47 46
 *PP 23 16 PP 24 22 SCS 30 33
 P*P* 47 43 *E 50 06
 USCGS 11 09 54.2, 21.6S, 179.5W, H=623 KM, M=5.8
 FIJI ISLANDS REGION.

PRI JUN 28 22 50 24.8 C
 BKS 22 50 25.5
 MICRON LR 15 00
 PERIOD

					MAXR(Z)	1.1		18
					MAXH(N)	0.7		18
					MAXH(E)	0.7		18
MHC			22 50	25.6	C			
JAS			22 50	31.1	C			
					MAG 5.1, DIST (DEG)	77.		
					USCGS	22 38 37.3, 21.1S, 174.5W, H= 34 KM, M=5.4		
						TONGA ISLANDS.		
JAS	JUN	29	02 30	22.2	D			
SAD	JUN	29	06 00	32.5				
PRI			06 00	33.7	D			
BKS			06 00	34.6	D			
						MICRON		PERIOD
					PZ	0.06		0.9
MHC			06 00	34.6	D			
FHC			06 00	38.5	D			
JAS			06 00	39.2	D		*E	00 46
MIN			06 00	43.3	D			
					USCGS	05 48 23.4, 31.1S, 179.9W, H=335 KM, M=5.2		
						KERMADEC ISLANDS REGION.		
JAS	JUN	29	12 59	23.3	D			
PRI	JUN	30	06 31	05.7				
JAS			06 31	12.5	D		*E	31 55
MHC			06 31	15.4	D			
BKS			06 31	20.0				
MIN			06 31	27.2	D			
FHC			06 31	39.5	D			
					USCGS	06 21 03.9, 9.2S, 79.0W, H= 56 KM, M=5.4		
						OFF COAST OF NORTHERN PERU.		
PRI	JUN	30	14 57	44.5	C			
JAS			14 57	49.0	C			
MHC			14 57	51.8				
BKS			14 58	05.5				
						MICRON		PERIOD
					PZ	0.12		1.4
FHC			14 58	22.5				
JAS	JUN	30	16 25	03.4	C			
BKS	JUN	30	21 47	18.3	C			
MHC			21 47	18.8	C		*E	47 30
JAS			21 47	24.4	C		*E	47 34
PRI	JUN	30	22 57	53.8	D			
JAS			22 57	56.3	D		*E	58 04
					USCGS	22 46 20.6, 35.3S, 105.9W, H= N KM, M=5.0		
						EASTER ISLAND CORDILLERA.		



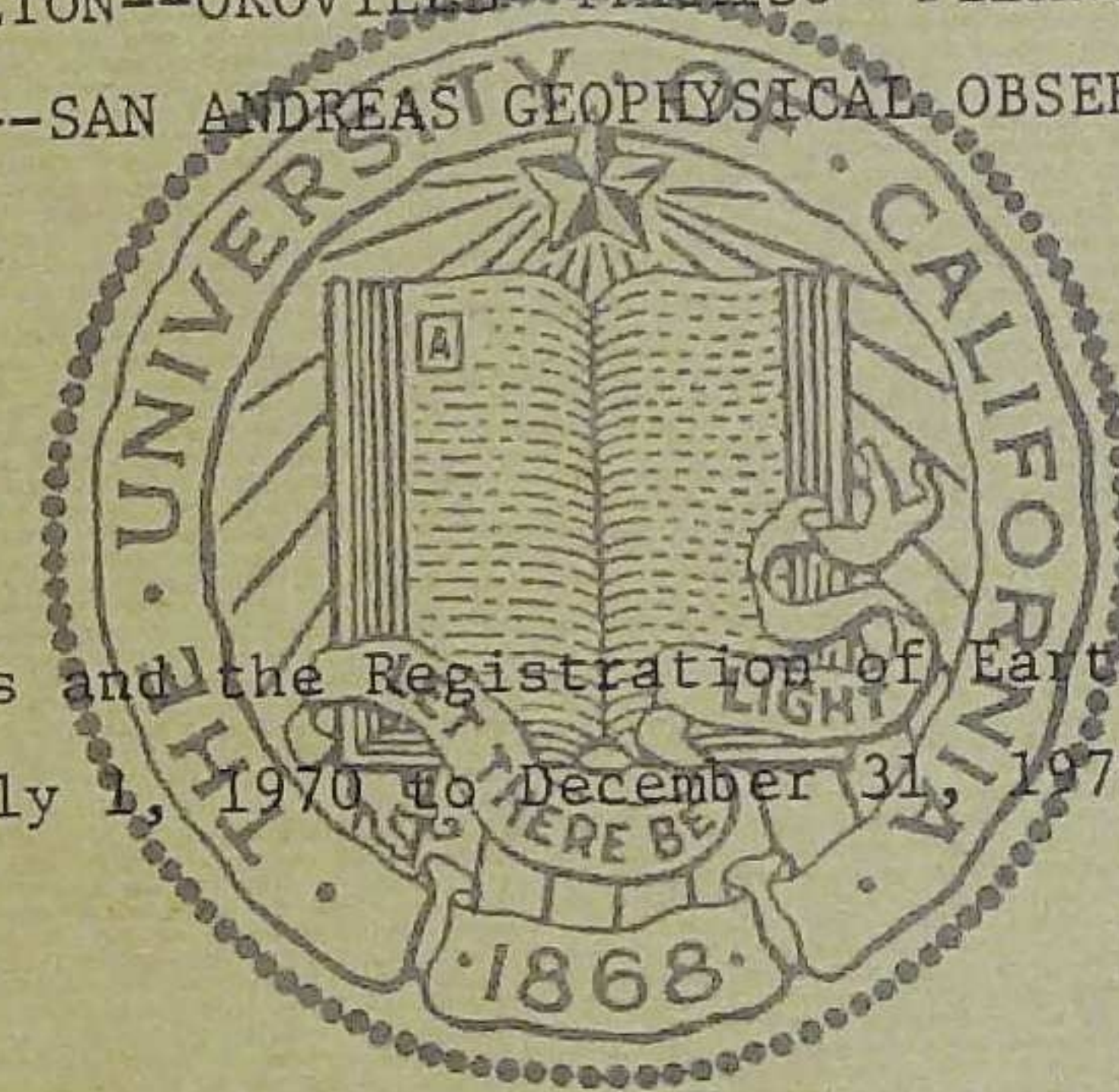
Bulletin of the Seismographic



Vol. 40, No. 2, pp. 119 - 234

ARCATA--BERKELEY--FICKLE HILL--FRESNO--GRANITE
CREEK--JAMESTOWN--LLANADA--MANZANITA LAKE--MINA--MINERAL
MOUNT HAMILTON--OROVILLE--PARAISO--PILARCITOS CREEK
PRIEST--SAN ANDREAS GEOPHYSICAL OBSERVATORY

Earthquakes and the Registration of Earthquakes
From July 1, 1970 to December 31, 1970



by
R.D. Adams
B.S. Gopalakrishnan

University of California
Berkeley

1971

This book was donated to the ISC
from the collection of the
British Geological Survey (BGS)



BULLETIN OF THE SEISMOGRAPHIC STATIONS
of the University of California
Volume 40, Number 2

July 1, 1970 to December 31, 1970

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INTRODUCTION

Each issue of the Bulletin includes determination of epicenters, origin times, magnitudes, and other information available at the time of writing, for earthquakes in Northern California and adjoining areas. Recorded arrival times of seismic waves are tabulated only for the major earthquakes in the local area and for teleseisms.

Information items regarding the seismographic stations which comprise the Berkeley network are repeated in each issue. Information of a general nature, such as the Modified Mercalli Intensity Scale, will be found only in the first number of each volume.

Director	Bruce A. Bolt
Director Emeritus	Perry Byerly
Assistant Director	Thomas V. McEvilly
Associate Research Seismologist	R.D. Adams
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THE BYERLY SEISMOGRAPHIC STATION (BKS)

Equipment of a WWSS station began operating in a newly constructed tunnel east of the main campus on June 8, 1962. The closest buildings, part of the Lawrence Radiation Laboratory, are about 0.8 km away. The tunnel was cut into the upper part of the Claremont Formation. Of Miocene age, this formation consists of thin layers of cherty material alternating with shale.

A plan of the tunnel is shown in the diagram on page 7. Piers are constructed of reinforced concrete with no isolation from floor and walls. The temperature is stable. A ventilating and dehumidifying system is connected to all rooms.

The short-period world-wide standard instruments are operated with an approximate magnification of 25,000 at 1 sec and the long-period standard instruments with a peak magnification of 3,000 at about 15 sec.

On March 20, 1964, the Regents of the University of California named this station the "Byerly Seismographic Station" in recognition of the work of Professor Perry Byerly.

HISTORY OF THE UNIVERSITY OF CALIFORNIA STATIONS

"The Seismographic Stations at Mount Hamilton and Berkeley present several items of interest in the history of earthquake science, one of which is that according to the available records they were the first seismographic stations set up in America. Furthermore, they have functioned continuously from their founding to the present day, with improvements in instrumental equipment from time to time as the development of the science and opportunity have permitted.

"Several outstanding figures in the seismology of the 1880's were impressed with the importance of these stations, and Ewing, Milne, and Gray each took a personal interest in aiding one or both stations to obtain their own best and most modern types of instruments."

The quotation is from "History of the University of California Seismographic Stations and Related Activities" by Professor George D. Louderback, published in the Bulletin of the Seismological Society of America, Vol. 32, No. 3, pp. 205-229, 1942. In this paper may be found a detailed account of the development of the Berkeley stations from the installation of the instruments (the first earthquake known recorded at Mount Hamilton was on April 24, 1887) to 1942.

Since 1942, the number of seismographic stations associated with the University of California has increased from six to seventeen in 1970. In 1950, Professor Perry Byerly was appointed Director by the Regents; he had been in charge of instruction and research since 1925. Professor Bruce A. Bolt was appointed Director in 1963. Since 1960, the stations have entered into research and service contracts with the Air Force Office of Scientific Research, the National Science Foundation, and the California Department of Water Resources. A telemetry network of eleven stations in Central California, recording on film and magnetic tape, is now operated together with seismographs with broad-band frequency response at Berkeley. Copies of records from instruments at the Berkeley observatory are available, together with response characteristics, on request to the Director.

STATIONS IN OPERATION: July 1 - December 31, 1971

Station (From N to S)	North Latitude	West Longitude	Elev. Meters	Foundation Material	Symbol	Present Auspices and Date Established
Arcata	40° 52!6	124° 04!5	59	Sandstone (loose)	ARC	Humboldt State Coll. 1948
Fickle Hill	40° 48!1	123° 59!1	610	Siltstone over graywacke	FHC	Humboldt Astrophysical Observatory
Manzanita Lake	40° 32!2	121° 33!7	1800	Volcanic tuff	MLC	Nat'l. Park Service, 1956 (Jun. to Sept. only)
Mineral	40° 20!7	121° 36!3	1495	Volcanic flow	MIN	Nat'l. Park Service, 1938
Oroville	39° 33!3	121° 30!0	360	Granite	ORV	Dept. of Water Resources, 1963
Mina (Nevada)	38° 26!0	118° 09!2	1524	Limestone	MNV	Livermore Radia- tion Lab., 1969
Jamestown	37° 56!8	120° 26!3	457	Metamorphic (serpentine)	JAS	Dept. of Water Resources, 1964
Berkeley (Strawberry)	37° 52!6	122° 14!1	276	Claremont shales	BKS	Univ. of California, 1962
Berkeley (Haviland)	37° 52!4	122° 15!6	81	Franciscan sandstone	BRK	Univ. of California, 1887
Pilarcitos Creek	37° 30!0	122° 22!9	91	Grano- diorite (weathered)	PCC	Sare Ranch, 1965
Mt. Hamilton	37° 20!5	121° 38!5	1282	Franciscan formation	MHC	Lick Observatory, 1887
Granite Creek	37° 01!8	121° 59!8	122	Granite	GCC	Richard E. Randolph Santa Cruz, 1965
Fresno	36° 46!0	119° 47!8	88	Alluvium	FRE	Fresno City Coll., 1935
San Andreas Geophysical Observatory	36° 45!9	121° 26!7	350	Granite	SAO	Univ. of California 1966
Llanada	36° 37!0	120° 56!6	475	Alluvium overlying sandstone	LLA	Charles McCullough Ranch, 1961
Paraiso	36° 19!9	121° 22!2	363	Grano- diorite	PRS	Paraiso Hot Springs, 1961
Priest	36° 08!5	120° 39!9	1187	Greenstone (basic metamorphic)	PRI	Federal Aviation Agency, 1961

Station	Type of Instrument	T _o sec	T _g sec	Component	Mean Magnification
ARC	Wood-Anderson torsion	0.8	-	N, E	2,800 (0.8s)
BKS	Benioff 100 kg Sprengnether Wood-Anderson torsion Sprengnether ULP	1.0 15 0.8 100	0.75 100 -	N, E, Z N, E, Z S, W N45°E	25,000 3,000 (15s) 2,800 (0.8s) ---
BRK	Benioff 100 kg Benioff 100 kg 100X torsion 4X torsion Press-Ewing *Press-Ewing Press-Ewing, ULP	1.0 1.0 0.8 0.8 15 30 45	0.2 8.0 -	Z Z N, W N, W Z Broad band N45°W, N45°E, Z N45°E	25,000 Visual 100 (0.8s) 4 (0.8s) 1,000 (15s) --- 700 (30s)
FHC	#Benioff 14 kg	1.0	0.2	Z	90,000
FRE	Sprengnether moving coil Benioff	2.0 1.0	2.0 0.7	N, E Z	2,700 2,000
GCC	#*Willmore	3.0	0.2	N45°E	---
JAS	Benioff 100 kg #*Benioff 14 kg #*Willmore (from Dec. 16)	1.0 1.0 3.0	0.75 0.2 0.2	N, E, Z Z N45°E	250,000 760,000 ---
LLA	#Benioff 14 kg	1.0	0.2	Z	75,000
MHC	#*Benioff 14 kg Wood-Anderson torsion *Willmore	1.0 0.8 3.0	0.2 -	Z S, E N45°E	85,000 2,800 (0.8s) ---
MIN	#Benioff 14 kg Benioff 100 kg Wood-Anderson torsion	1.0 1.0 0.8	0.5 0.4 -	Z Z S, E	90,000 30,000 2,800 (0.8s)
MLC	Loucks-Omori	6.0	-	NE	250 (6s)
MNV	#Broad band instrument filtered to give short-period response.			Z	600,000
ORV	#Geotech moving coil (to Jul. 22) #Benioff 100 kg (from Jul. 22)	20 1.0	100 Hz filter 4.5 Hz filter	Z Z	--- 220,000
PCC	#Benioff 14 kg	1.0	0.2	Z	50,000
PRI	#*Benioff 14 kg	1.0	0.2	Z	80,000
PRS	#*Willmore (to Dec. 3) #*Benioff 14 kg (from Dec. 3)	3.0 1.0	0.2 0.2	N45°E Z	--- 75,000
SAO	#Benioff 14 kg + #Sprengnether 0.70 kg (microearthquake array-four instruments) #*Willmore (to Nov. 14)	1.0 5.0 3.0	0.2 25 Hz 0.2	Z Z N45°E	--- --- ---

Signals telemetered to Berkeley. Magnifications on 20X viewer.
* Signals recorded on magnetic tape at Berkeley.
+ Signals recorded on magnetic tape at SAO.
Magnifications at 1 sec unless specified.

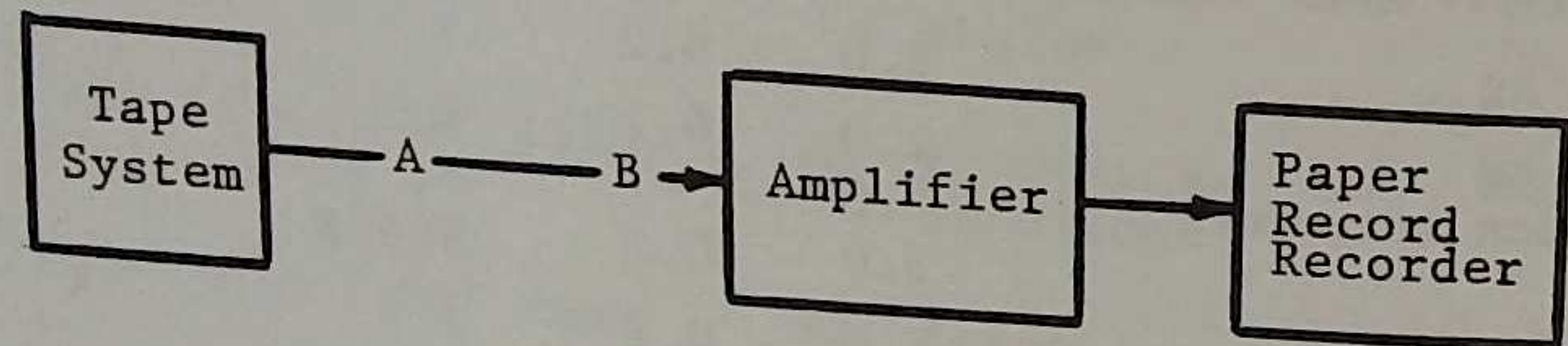
Direction of motion: In the "Component" column, each horizontal component seismograph is designated by the direction of ground motion corresponding to upward trace motion on the seismogram when it is oriented so that time increases from left to right. On all vertical component (Z) instruments, upward trace motion corresponds to upward ground motion.

Relative magnification curves of instruments recording through the tele-meter system are listed on the following pages. Absolute magnification may be obtained by use of calibration pulses recorded daily from each telemetered station.

Tape-recorded long-period seismometers (BRK): On pages 126 and 127 are given the frequency response curves, amplitude and phase, for the Press-Ewing long-period seismometers which record on magnetic tape at BRK.

The ordinate of the first curve is the voltage at the terminals of the tape system (point A in diagram), per micron of earth displacement as sensed by 30-second seismometers; versus frequency of earth displacement.

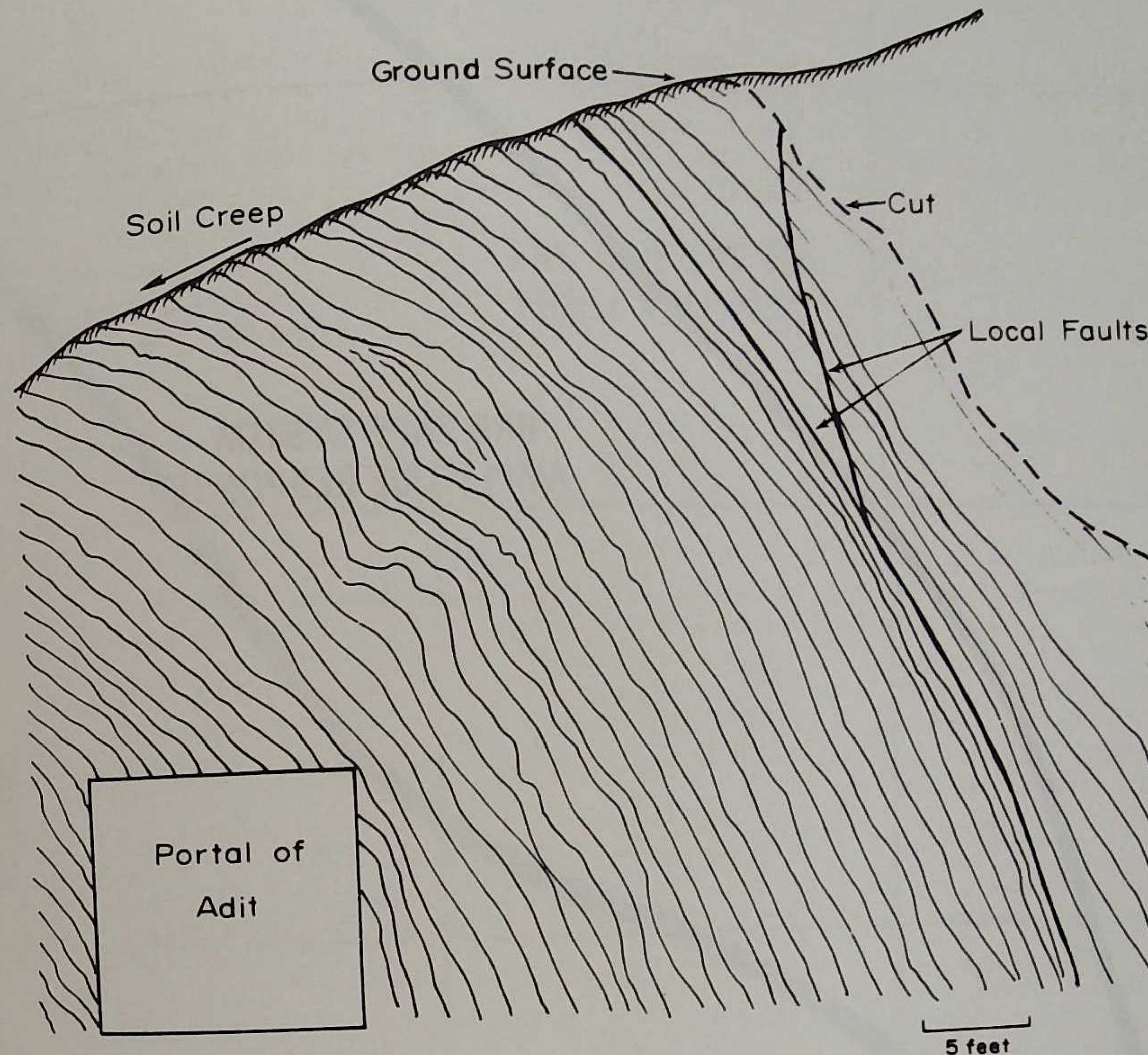
All paper records requested will show known positive voltages applied at point B, in order to scale the paper records at the particular amplifier settings. The seismometers record motion in the vertical, N45°W, and N45°E, directions.



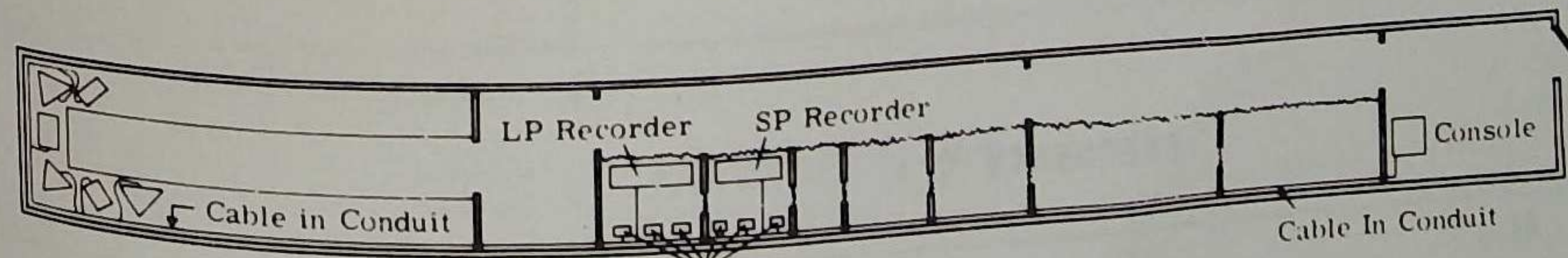
The phase curve on page 127 shows the phase of the voltage at the tape system terminals with respect to ground displacement, as a function of the frequency of earth displacement.

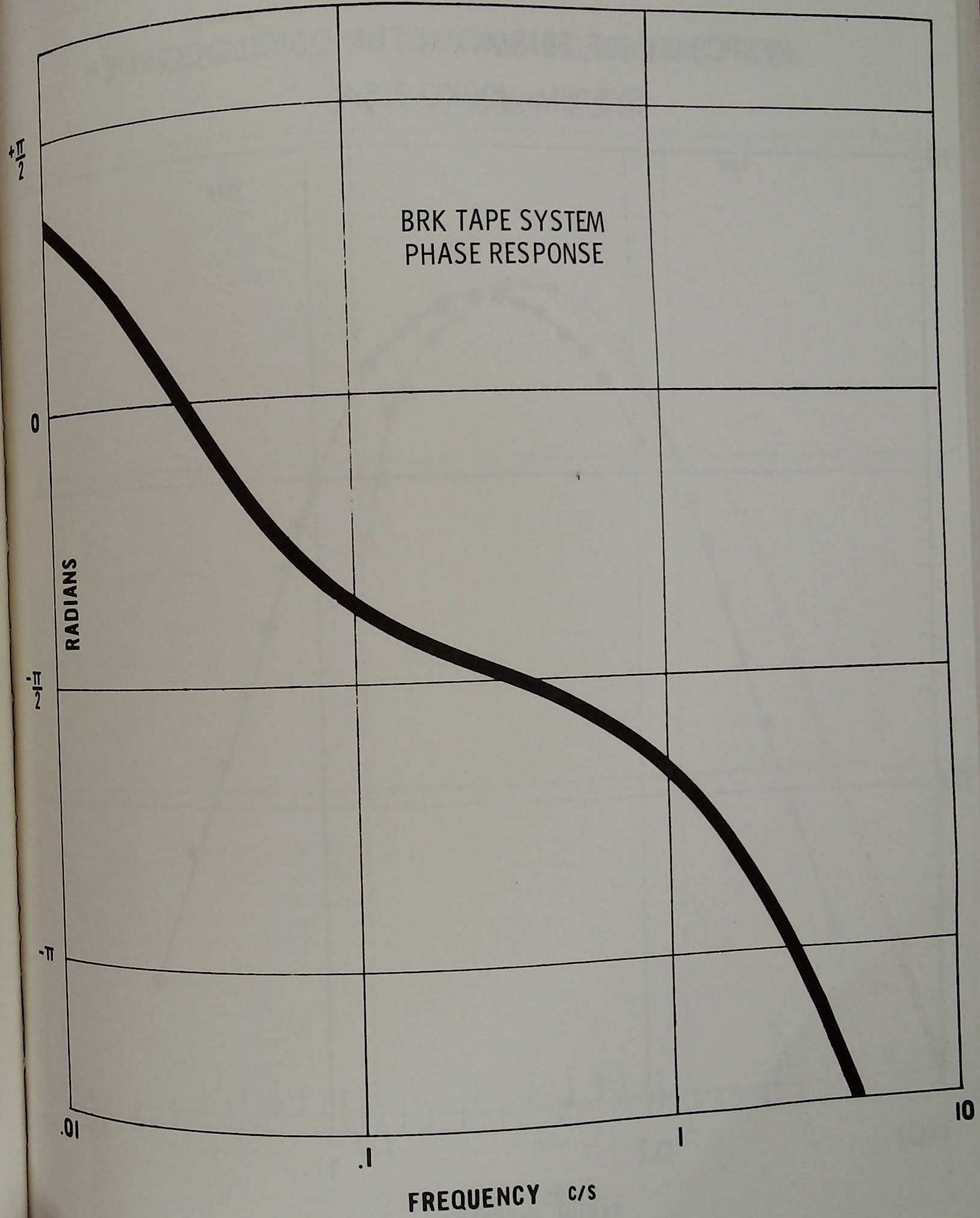
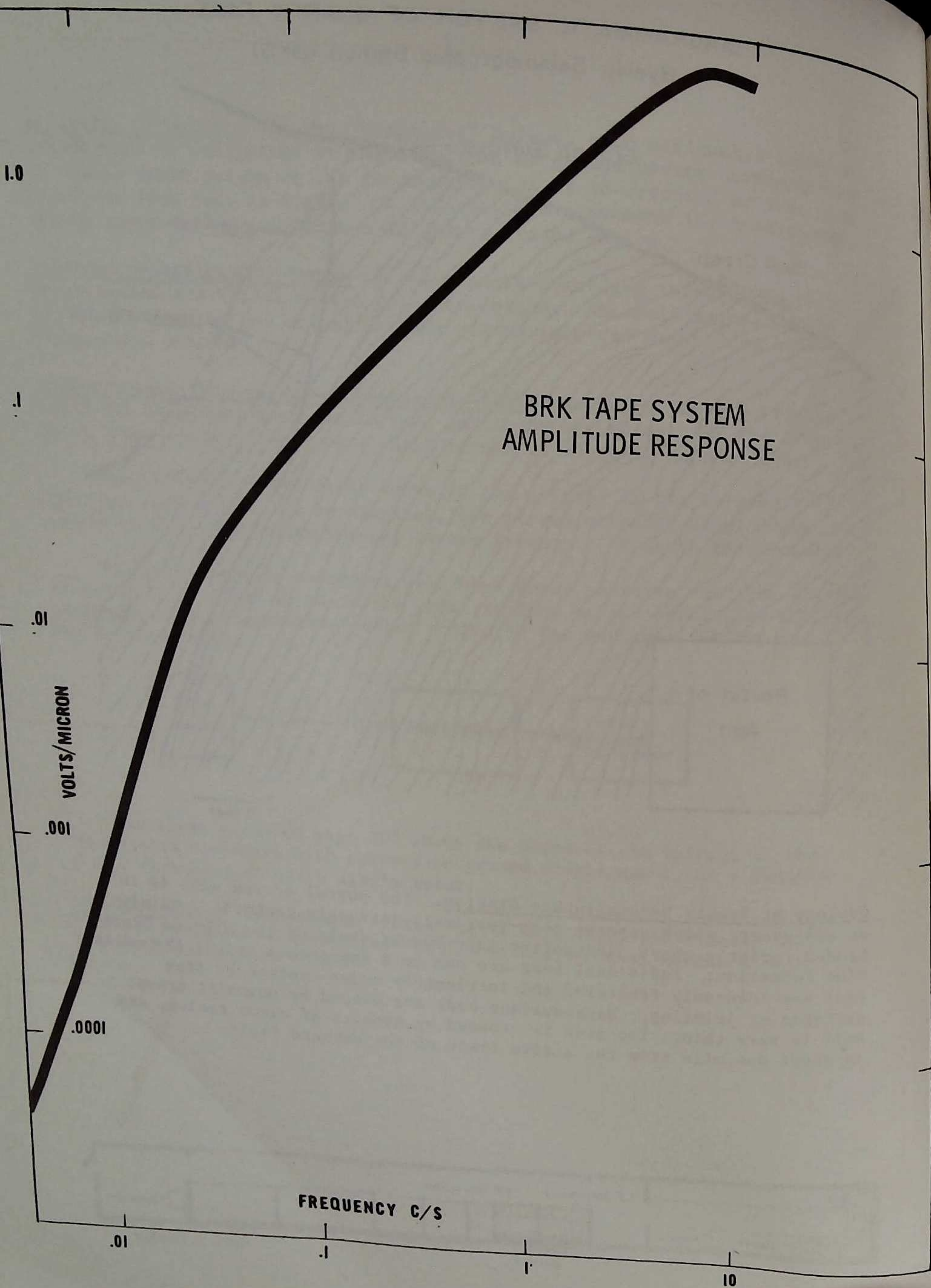
ACKNOWLEDGMENT. Maintenance of the Fickle Hill (FHC) and Mineral (MIN) telemetry stations was supported by the Office of Naval Research under grant N00014-69-A-0200-1042.

International Seismological Centre
 DIAGRAMMATIC SKETCH OF QUARRY FACE
 Byerly Seismographic Station (BKS)

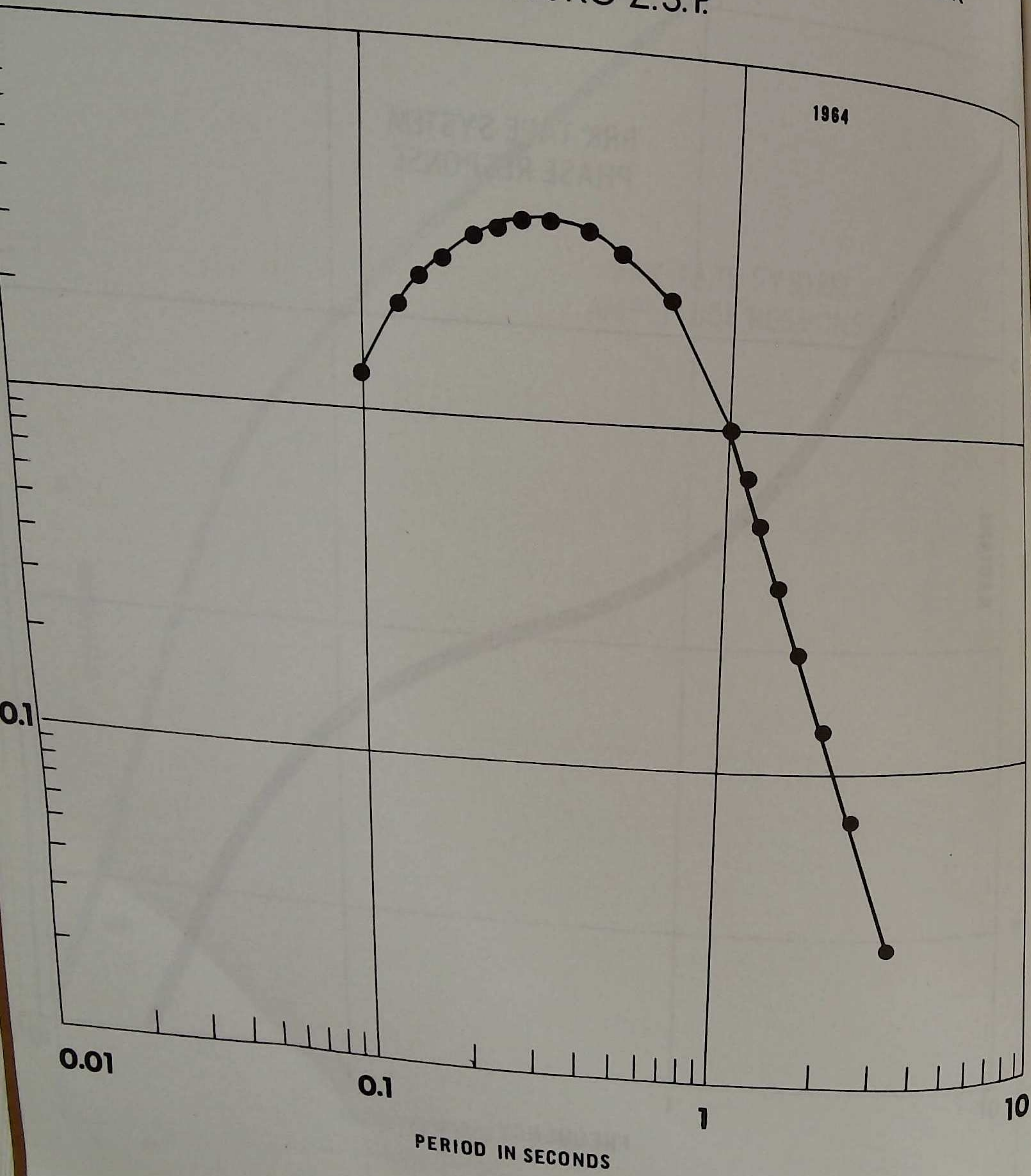


Geology at Byerly Seismographic Station. The portal of the adit is in an old quarry which exposes near-vertical, intensely contorted, thinly-bedded, brittle chert, and softer interbedded shale of the Miocene Claremont Formation. Individual beds are one to a few inches thick; the chert beds are intensely fractured and intricately criss-crossed by fine patterns of jointing. Near-surface beds are warped by downhill creep; soil is very thin. The area is crossed by numbers of minor faults, and is about one mile from the active trace of the Hayward fault.

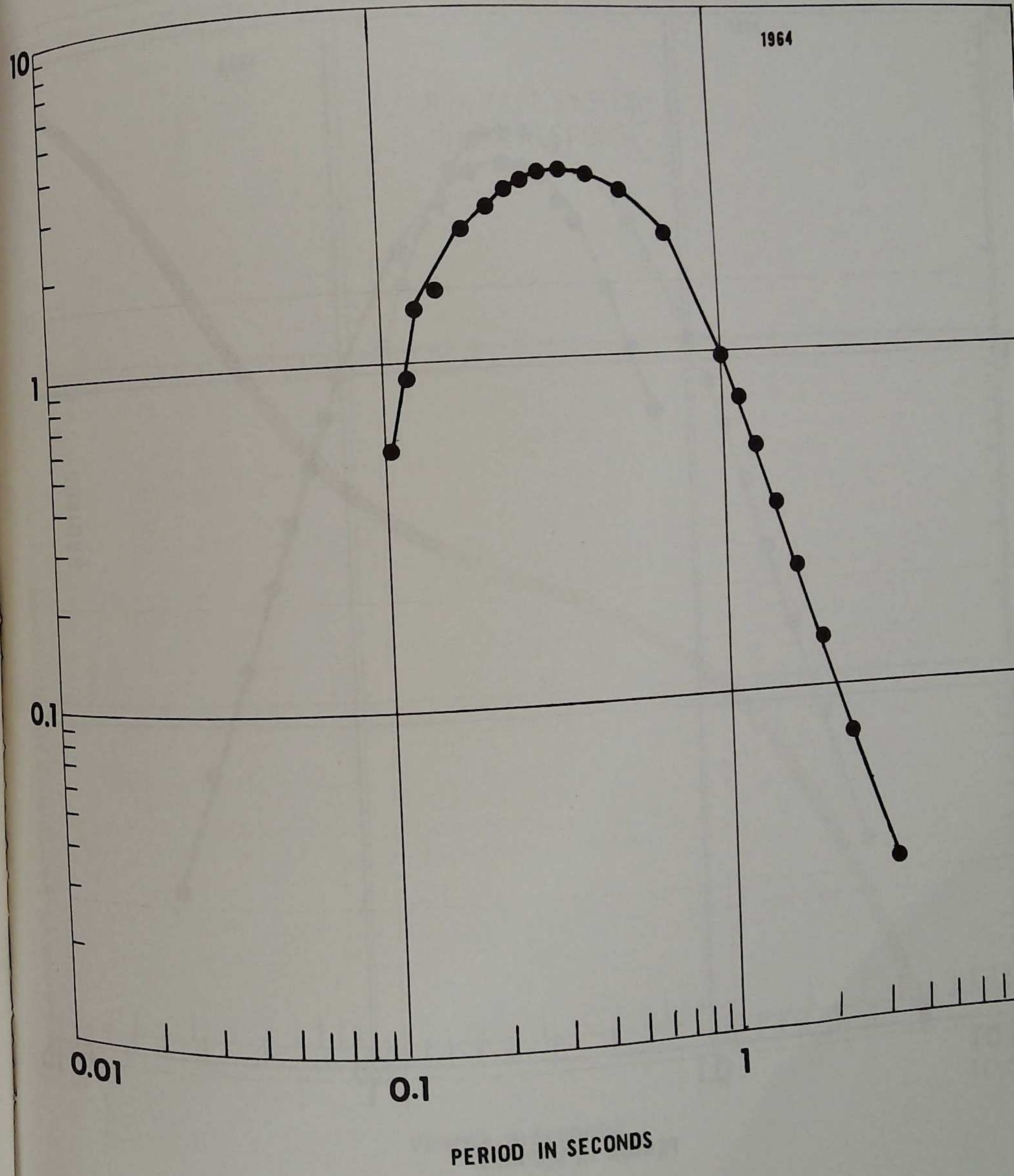




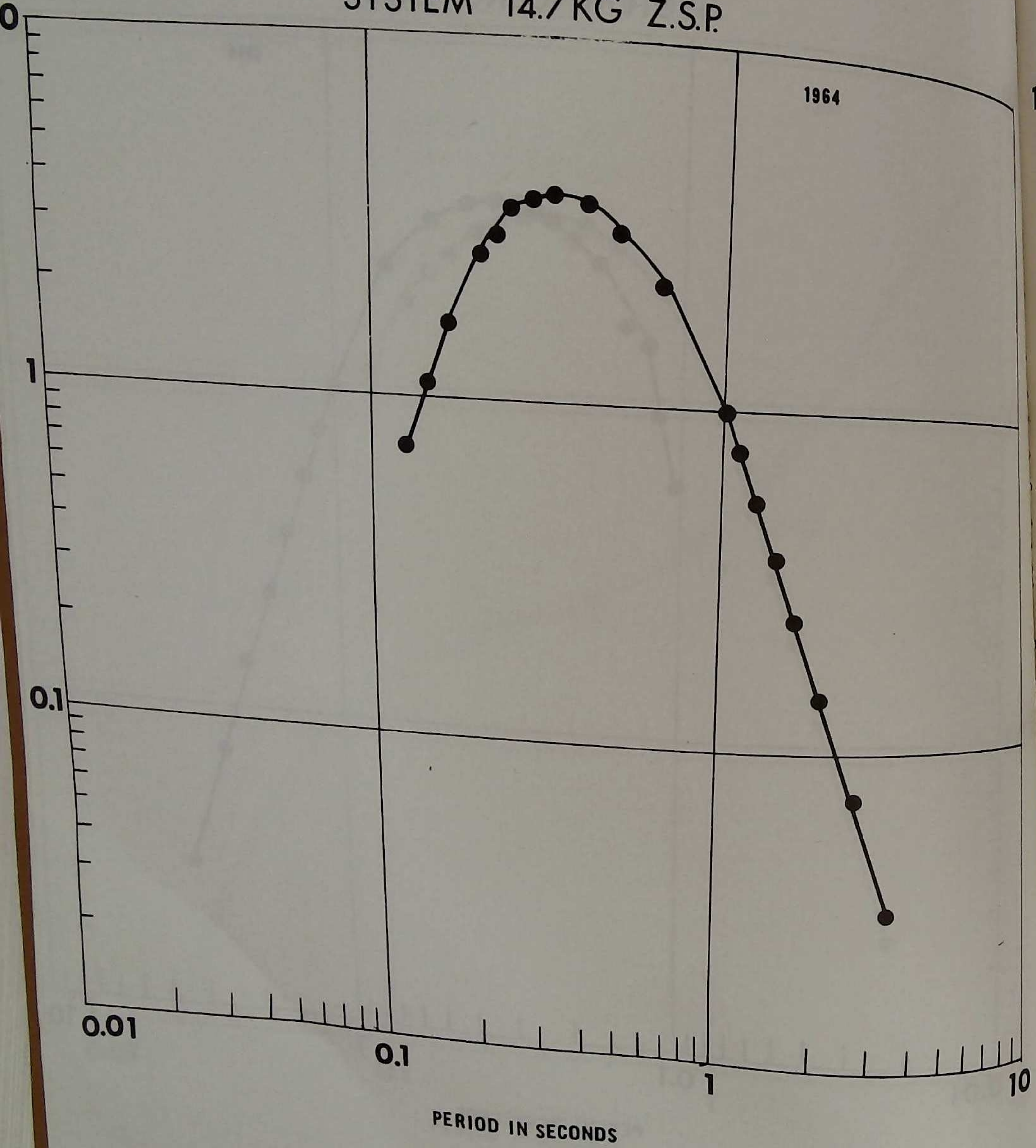
RESPONSE OF SEISMOMETER-DEVELOCORDER SYSTEM 100KG Z.S.P.



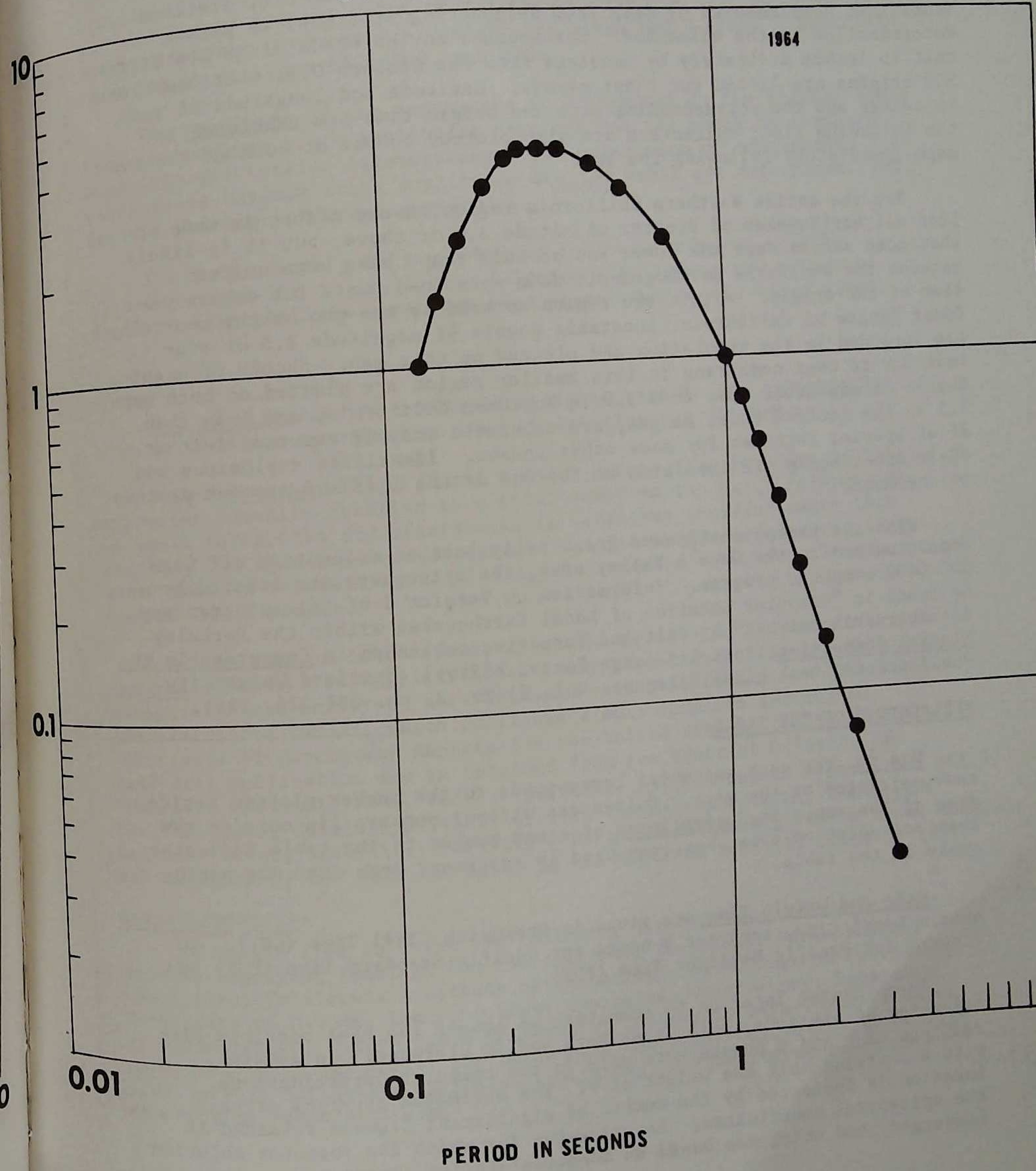
RESPONSE OF SEISMOMETER-HELICORDER SYSTEM 100KG Z.S.P.



RESPONSE OF SEISMOMETER-HELICORDER SYSTEM 14.7KG Z.S.P.



RESPONSE OF SEISMOMETER-DEVELOCORDER SYSTEM 14.7KG Z.S.P.



PART I. LOCAL EARTHQUAKES IN NORTHERN CALIFORNIA AND OREGON

This section includes information on earthquakes in Northern California (including adjacent offshore areas) and in the adjoining section of Oregon which were well enough recorded at the U.C. stations (sometimes complemented by data from neighboring stations) to permit determination of the epicenter. Earthquakes on the Gorda Ridge are difficult to locate accurately by readings from the western U.S. stations alone; NOS origins are listed for these events. Latitude and longitude of each epicenter and the corresponding date and origin time are tabulated in the following list; epicenters are also plotted on one or both of the two maps immediately following the list.

For the entire Northern California region, every effort is made to list all earthquakes of Richter magnitude 3.0 or above, but it is likely that some shocks near the lower end of this range have been omitted because the available seismographic data were inadequate for determination of the origin. Within the region covered by the map of the central Coast Ranges of California, locatable shocks of magnitude 2.5 or over are included in the tabulation and plotted on this map. Shocks of magnitude 3.0 or over occurring in this smaller region are plotted on both maps. Shocks of magnitude less than 3.0 in Northern California, and less than 2.5 in the central Coast Ranges, are tabulated only if reported felt or if of special interest for some other reason. Identified explosions and their aftershocks are tabulated at the end of the list and are not plotted on the maps.

With the exception of some graphically located epicenters off Cape Mendocino and in the Owen's Valley area, the epicenters are located by a CDC 6400 computer program. Information on Version I of this program may be found in "Computer Location of Local Earthquakes within the Berkeley Seismographic Network" by Bolt and Turcotte, published in Computers in the Mineral Industries, Part 2 (George Parks, Editor); Stanford University Publications, Geological Sciences, Vol. 9, No. 2, pp. 561-576, 1964.

EXPLANATION OF THE TABLE:

Map No. for each epicenter corresponds to the number plotted beside that epicenter on the maps. Epicenters without numbers lie outside the area of the map. The underlining of a map number in the table indicates that one point on a map has been used to represent more than one earthquake in the table.

Date and Origin Time are given in Greenwich Civil Time (GCT). To obtain local time, subtract 8 hours for Pacific Standard Time (PST) and 7 hours for Pacific Daylight Time (PDT).

In epicenter location by computer, we sought the best possible distribution of stations, both in azimuth and in distance. In general, readings of P and S phases were used in the computer determinations, with S carrying half the weight of P. The estimated accuracy of each location is indicated by the number of significant figures retained in the epicentral coordinates. An epicenter for which the computer solution converged, and which was based on adequate station coverage, is given to

minutes or tenths of minute of arc. For events in the Sierra Nevada region, where the computer crustal model is apparently inappropriate, each epicenter is given to tenths of a degree, as is each poorly controlled epicenter, regardless of the behavior of the computer solution. For the events off the coast of Northern California, for which control is particularly poor, special weight was given the S minus P intervals recorded at Stations ARC, FHC, and MIN.

The Magnitude of the earthquake is determined on the Richter scale from the maximum trace amplitudes recorded for the shock by standard Wood-Anderson torsion seismographs. The magnitudes of earthquakes for which these maximum trace amplitudes are too small are determined from Benioff seismograph trace amplitudes.

The focal depth h is given by the following ranges: a, 0-5; b, 6-10; c, 11-15; d, 16-30 km. A letter R following the estimated depth implies that the depth has been restricted to the value given.

No. of Stas. is the number of stations used by the computer program or used for construction arcs in locating the epicenter.

Under Remarks will be found a short descriptive location of the epicenter, usually relative to a point named on the map. Information on small foreshocks and aftershocks is sometimes included under this section, but when numerous foreshocks or aftershocks accompany a large earthquake, a separate tabulation may be included following the main list of local shocks.

Information on felt effects of shocks is also included under Remarks. Reports on felt earthquakes may be obtained from the Seismological Field Survey of the National Oceanographic and Atmospheric Administration (NOAA), which publishes a more complete summary in "Abstracts of Earthquake Reports for the United States." This regular quarterly publication may be obtained from the District Officer, San Francisco District, NOAA, Federal Building, 450 Goldengate Avenue, Box 36114, San Francisco, California 94102; or from the Director, NOAA, Washington Science Center, Rockville, Maryland 20852. Intensities given in Roman numerals are assigned by the NOAA and based on the Modified Mercalli Scale of 1931.

ACKNOWLEDGMENTS:

We should like to thank the following institutions for their assistance in supplying readings for the epicenter locations: Seismological Laboratory, California Institute of Technology; Seismological Laboratory, University of Nevada; Lamont-Doherty Geological Observatory; Department of Oceanography, Oregon State University; California Department of Water Resources; National Center for Earthquake Research, United States Geological Survey; Earthquake Mechanism Laboratory, National Oceanographic and Atmospheric Administration.

Earthquakes in Northern California and Oregon

Map No.	Date 1970	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
1	Jul 01	07 55 26	39° 29'	122° 04'	3.6	c(R)	7	15 km SE of Willows. Reported felt in Willows area. Plaster and dishes broken.
1	Jul 01	18 56 59.4	39° 28.6'	122° 05.1'	3.5	a	8	20 km SE of Willows. Intensity IV at Artois, Glenn, Durham, Elk Creek, Ordland, Princeton, Richvale, and Willows.
2	Jul 04	11 31 55.0	36° 58.2'	121° 37.8'	2.7	a	10	Near Gilroy.
3	Jul 05	05 27 54.1	37° 49.8'	121° 56.2'	2.6	b	14	Near Danville. Felt in Danville.
4	Jul 05	05 28 47.4	37° 48.6'	121° 55.6'	2.9	a	14	Near Danville. Felt in Danville.
5	Jul 06	10 10 02	37° 22'	120° 02'	2.7	a(R)	7	45 km ENE Merced.
6	Jul 06	11 52 29.2	39° 22.6'	122° 01.9'	3.0	a	6	20 km SE of Willows.
7	Jul 11	19 01 04.2	37° 07.7'	122° 01.8'	3.4	b	10	8 km SW of Los Gatos. Felt in San Francisco and Capitola. Intensity II at Capitola.
8	Jul 14	18 08 42.4	36° 30.9'	120° 24.5'	3.0	a	7	East of Pinnacles National Monument.
9	Jul 17	12 47 41	37.5°	117.7°	3.9	a(R)	6	50 km ENE of Bishop.
10	Jul 20	23 24 55	35° 57'	121° 34'	2.5	a(R)	5	8 km south of Lopez Point, offshore.
11	Jul 21	05 24 16.1	35° 59.1'	121° 34.3'	2.5	b	5	5 km SE of Lopez Point.
12	Jul 22	19 28 59.2	36° 51.2'	121° 36.7'	2.8	a	9	Near San Juan Bautista.
4	Jul 24	18 50 29.9	37° 49.3'	121° 55.7'	2.7	a	10	Near Danville.
13	Jul 25	14 37 15	40° 12'	124° 39'	3.1	b(R)	10	30 km SE of Cape Mendocino.
14	Jul 30	09 57 14	37.6°	118.9°	3.3	a(R)	7	Near Mammoth Lakes.
15	Jul 30	14 30 20.9	36° 34.6'	121° 20.1'	3.1	b	9	25 km SW of Hollister.
16	Jul 31	15 04 04.5	38° 17.4'	122° 07.3'	2.8	b	9	8 km NW of Fairfield.
17	Aug 03	10 04 47	38.9°	122.5°	2.7	c(R)	6	Near Clear Lake. Felt at Lakeport.

Map No.	Date 1970	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
18	Aug 04	04 14 21.4	36° 38.8'	122° 11.1'	4.7	b	11	Monterey Bay. Intensity VI. Felt strongly in Fort Ord. Felt in the San Francisco Bay Area. Water mains broken. Some telephone lines knocked down. At Carmel Valley, swimming pool cracked, redwood beams in buildings twisted.
19	Aug 04	04 44 06.7	36° 42.5'	122° 04.3'	3.2	a	10	Monterey Bay.
20	Aug 05	04 10 18	39° 12'	122° 37'	3.3	a(R)	9	East of Clear Lake.
21	Aug 05	06 47 36.4	35° 49.1'	119° 56.1'	2.9	b	8	Kettleman Hills.
22	Aug 05	16 51 45.7	36° 13.7'	121° 41.4'	3.0	b	11	25 km SW of Paraiso.
23	Aug 05	19 09 04	40.3°	125.8°	3.4	a(R)	8	Mendocino escarpment.
24	Aug 08	01 01 50.1	37° 28.7'	118° 33.8'	3.1	a	6	NW of Bishop.
25	Aug 09	02 53 45	40.2°	125.2°	3.6	a(R)	5	Mendocino escarpment.
26	Aug 11	09 56 30.5	37° 54.3'	122° 14.5'	2.4	b	10	Berkeley. Felt at Berkeley.
27	Aug 13	05 06 19.8	36° 10.4'	121° 42.2'	3.7	b	11	20 km W of Lopez Point.
28	Aug 14	06 28 47.5	40° 09.3'	123° 53.7'	4.0	a	7	Near Garberville. Intensity V at Bridgeville, Carlotta, Eureka, Ferndale, Fields Landing, Fort Seward, Loleta, Redway, and Rio Dell. No damage.
29	Aug 16	16 29 05.2	36° 38.0'	121° 18.1'	3.5	b	9	16 km SE of Hollister. Intensity IV at Carmel and Spreckels.
30	Aug 19	06 54 25	40° 12'	122° 45'	4.1	b(R)	10	15 km SW of Redding. Intensity IV at Igo, Ono, Platina, and Redding.
31	Aug 19	09 41 41	40.1°	122.7°	3.3	a(R)	4	SW of Redding.
32	Aug 19	09 43 39	40.1°	122.6°	3.4	a(R)	5	SW of Redding.
33	Aug 21	03 22 38.6	37° 52.9'	122° 15.4'	2.5	b	14	Berkeley. Felt in Berkeley.
34	Aug 22	20 45 04	40.3°	124.1°	3.9	a(R)	6	Near Petrolia. Intensity IV at Ferndale.

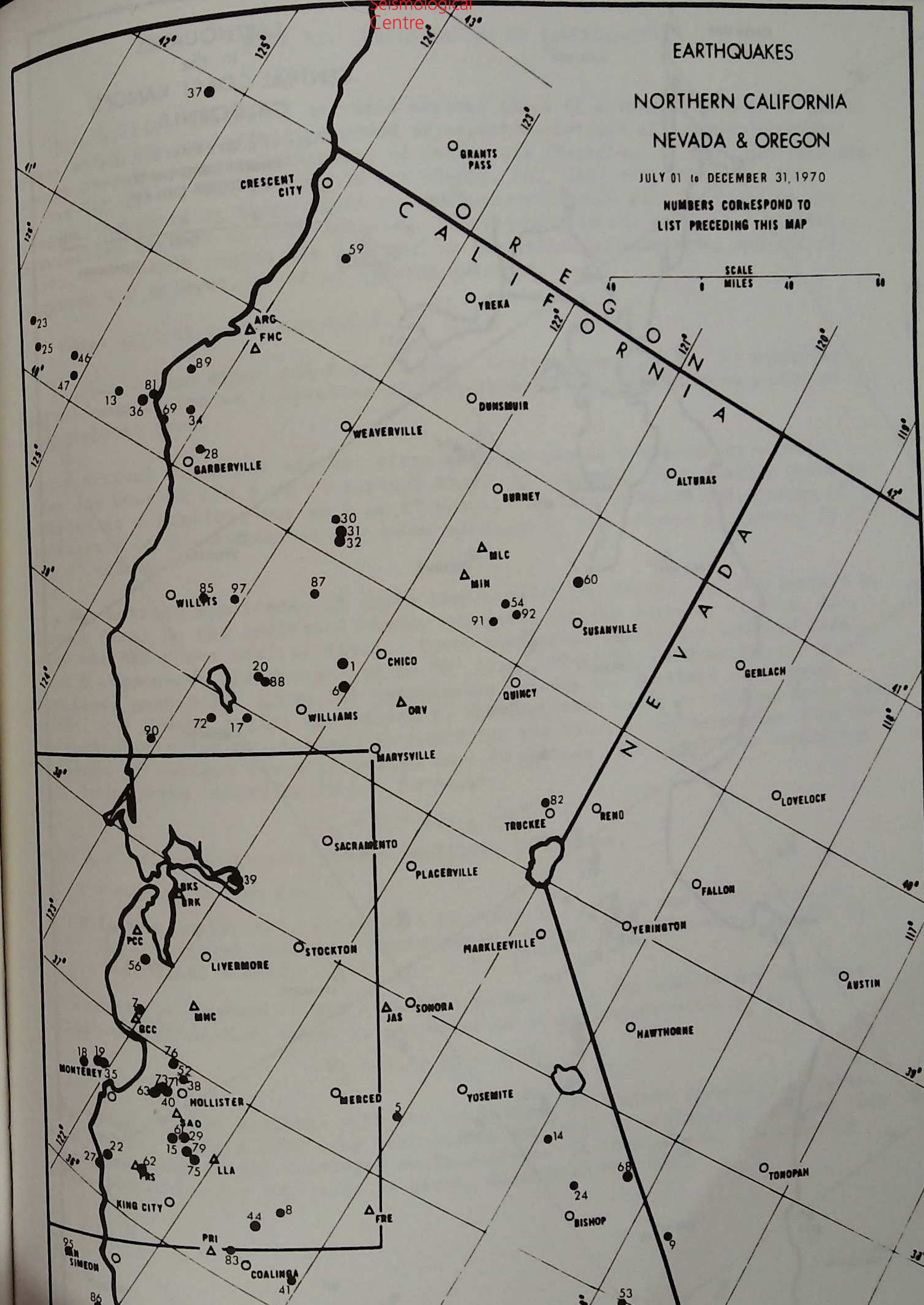
Map No.	Date 1970	Origin Time (G.C.T.)	Latitude		Longitude West	Magnitude	h	No. of Stas.	Remarks
			North	West					
35	Aug 23	17 53 47.4	36° 42.3'	122° 06.2'	3.4	a	9	Monterey Bay. Intensity IV at Capitola and Monterey.	
36	Aug 24	19 40 49	40.2°	124.5°	3.1	a(R)	3	Near Petrolia.	
37	Aug 28	10 37 54	41.9°	125.4°	3.7	a(R)	5	90 km W of Crescent City.	
38	Aug 30	13 16 50.9	36° 54.6	121° 29.4'	3.6	b	11	8 km NW of Hollister. Intensity V at Hollister and San Juan Bautista. No damage.	
39	Aug 31	12 12 58.7	38° 06.4'	121° 56.8'	3.6	b	9	4 km N of Pittsburg. Intensity IV at Martinez and Port Costa. Felt in Pittsburg and Concord.	
40	Sep 02	02 25 35.6	36° 48.0'	121° 33.4'	3.3	a	11	6 km S of San Juan Bautista.	
41	Sep 05	11 29 11	36.2°	120.1°	3.1	b(R)	4	ENE of Coalinga.	
42	Sep 05	22 15 56.1	37° 13.4'	121° 39.0'	2.5	b	9	5 km E of Coyote.	
43	Sep 08	08 09 06.8	36° 48.5'	121° 37.2'	2.7	a	12	5 km SW of San Juan Bautista.	
44	Sep 10	23 45 59	36° 24'	120° 30'	3.2	a(R)	11	30 km NW of Coalinga.	
45	Sep 11	15 20 08	35° 59'	120° 03'	3.3	a(R)	9	8 km E of Avenal.	
46	Sep 12	02 53 18	40.2°	125.1°	3.3	c(R)	5	Mendocino escarpment.	
47	Sep 13	21 10 21	40° 08'	125° 05'	5.4	a(R)	9	Mendocino escarpment. Intensity V at Ferndale, Fort Seward, Rio Dell area, and Scotia.	
48	Sep 16	04 24 12.8	37° 05.2'	121° 05.3'	2.5	a	11	20 km W of Los Banos.	
49	Sep 16	18 22 10.7	35° 57.8'	121° 16.1'	2.6	a	7	Near Milpitas.	
50	Sep 18	00 36 56.3	37° 38.8'	122° 02.4'	2.7	b	12	5 km SE of Hayward. Intensity IV. Felt in Hayward and San Leandro.	
51	Sep 18	02 29 49.9	37° 42.9'	122° 32.1'	2.5	a	8	3 km W of San Francisco. Intensity IV at Mt. Davidson. Felt throughout San Francisco.	
52	Sep 18	09 34 12.9	36° 56.3'	121° 35.9'	3.1	b	13	15 km E of Watsonville.	
53	Sep 19	16 27 27	37.0°	117.8°	3.8	a(R)	6	40 km SE of Tinemaha.	

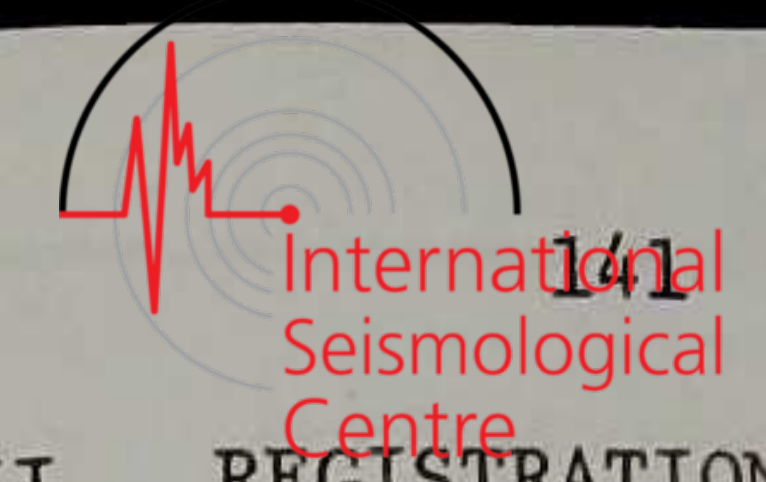
Map No.	Date 1970	Origin Time (G.C.T.)	Latitude		Longitude West	Magnitude	h	No. of Stas.	Remarks
			North	West					
54	Sep 20	08 37 21.4	40° 16.0'	121° 17.9'	3.5	a	12	Near Lake Alamanor.	
55	Sep 22	23 59 47.6	37° 26.0'	121° 47.5'	2.7	a	10	7 km S of Calaveras Reservoir.	
56	Sep 23	04 51 27.9	37° 23.9'	122° 13.1'	3.5	a	9	6 km S of Palo Alto. Felt from San Francisco to Palo Alto (Intensity IV?)	
57	Sep 23	08 38 04.1	37° 52.3'	121° 54.4'	2.7	b	9	Near Mt. Diablo. Felt in Danville.	
4	Sep 25	19 58 30.2	37° 48.5'	121° 55.3'	2.9	a	9	Danville.	
58	Sep 26	00 44 26.6	37° 50.4'	121° 54.7'	2.8	b	8	Near Danville.	
59	Sep 27	03 37 04	41.5°	123.7°	4.3	a(R)	5	50 km SE of Crescent City.	
60	Sep 27	18 24 32	40° 37'	120° 55'	3.7	a(R)	7	NW of Susanville.	
61	Oct 01	07 37 44.1	36° 37.7'	121° 17.3'	3.2	b	11	16 km SE of Hollister.	
62	Oct 07	17 57 06.3	36° 18.0'	121° 24.0'	2.5	a	9	30 km NW of King City.	
63	Oct 08	17 29 18.5	36° 46.6'	121° 36.6'	3.0	a	8	8 km N of Salinas. Felt at Harris Ranch, 7 miles S of Hollister.	
64	Oct 10	10 31 41.6	36° 46.5'	121° 33.2'	2.5	a	11	10 km NE of Salinas.	
65	Oct 12	02 15 46.8	36° 46.8'	121° 28.5'	2.4	b	10	17 km NE of Salinas. Felt at Harris Ranch, 7 miles S of Hollister.	
66	Oct 17	08 17 01.6	36° 39.1'	121° 20.0'	2.8	b	11	20 km S of Hollister.	
67	Oct 17	11 41 25	36° 48'	121° 35'	2.8	a(R)	9	6 km SW of San Juan Bautista.	
68	Oct 25	09 20 55	37.7°	118.2°	3.1	a(R)	3	Near White Mountains.	
69	Oct 26	14 46 15	40.2°	124.2°	3.4	c(R)	5	Near Petrolia. Intensity IV at Eureka, Ferndale, Fortuna, Mattole Valley and Rio Dell.	
	Oct 27	00 33 42	36° 08'	118° 29'	3.1	a(R)	8	Near Sirretta Peak.	
	Oct 27	00 34 02	36° 07'	118° 30'	3.4	b(R)	8	Near Sirretta Peak.	
	Oct 27	02 37 58	40.4°	127.0°	5.1	d	-	Gorda Ridge (National Ocean Survey)	
	Oct 27	04 23 38	40.3°	127.2°	4.2	d	-	Gorda Ridge (National Ocean Survey)	

Explosions and Aftershocks at Nevada Test Site

Date 1970	Origin Time (G.C.T.)	Latitude North	Longitude West	Magni- tude	Remarks
Oct 14	14 30 00.0	37° 04' 14.4"	116° 00' 18.5"	5.3	"TIJERAS"
Oct 14	15 22 20	37.1°	116.0°	4.4	Aftershock of "TIJERAS"
Nov 05	15 00 00.0	37° 01' 46.06"	116° 00' 42.54"	4.7	"ABFYTAS"
Nov 05	16 01	37.0°	116.0°	4.5	Aftershock of "ABFYTAS"
Nov 19	15 00 00	37.0°	116.0°	4.7	Event looks like an explosion.
Nov 19	15 23 50	37.0°	116.0°	3.5	Aftershock of 1500
Dec 16	16 00 00.1	37° 06' 00.6"	116° 00' 28.6"		"ARTESIA." Yield 20-200 KT.
Dec 16	16 00 00.2	37° 08' 34.4"	116° 02' 02.4"	-	"CREAM." Yield < 20 KT
Dec 16	16 13	37.1°	116.0°	4.6	Aftershock
Dec 16	16 32	37.1°	116.0°	4.3	Aftershock
Dec 17	16 05 00.2	37° 07' 44.9"	116° 04' 58.8"	5.7	"CARPET BAG"
Dec 17	16 20 37	37.1°	116.0°	4.5	Aftershock of "CARPET BAG"
Dec 18	15 30 00.2	37° 10' 23.3"	116° 05' 55.9"	4.9	"BANE BERRY"

Note: The information on origin time and the coordinates of the named explosions is furnished by the AEC. The magnitude is the average Wood-Anderson Magnitude at the Berkeley network.





PART II. REGISTRATION OF EARTHQUAKES

This section tabulates measured arrival times of prominent phases of earthquakes and large explosions recorded at selected stations of the seismographic network operated by the University of California (Berkeley). These stations are BKS (or BRK if the BKS reading is not clear), SAO, JAS, MHC, PRI, MIN, ARC. Information regarding these stations and instrumentation will be found in the introductory section of this Bulletin. Earthquakes in the Northern California, Nevada, and Oregon region are included in the following tabulation only if of magnitude 4.0 or over, or if of special interest.

Phase arrival times are G.C.T.

In the column after the P or P' phase arrival time, "C" or "D" indicates initial compression or dilatation of the ground, respectively, from a wave of the compressional type.

S arrival times and arrival times of later phases are given in minutes after the hour of the P or P' arrival time, and seconds. When a later phase is recorded at a station, but no P or P' phase, the time in hours and minutes of the first P or P' arrival at the other stations of the network is printed in the P or P' column.

The maximum amplitudes of earth displacement in microns (μ) and periods in seconds (sec) in the indicated phases are given for the Berkeley station, BKS, under the BKS phase arrival times. Total horizontal amplitudes combined from N and E components are designated by "H" (e.g., PH, PPH). Unless otherwise specified, magnitudes given for earthquakes outside the Northern California, Nevada, and Oregon region correspond to the magnitude based on surface waves (M_s). The published value is obtained by combining the value of M_s determined from the amplitude of surface waves of period near 20 seconds with magnitudes determined from body waves according to the formula:

$$M_B = Q + \log_{10} (A/T),$$

where A = 1/2 peak-to-peak ground amplitude in microns,

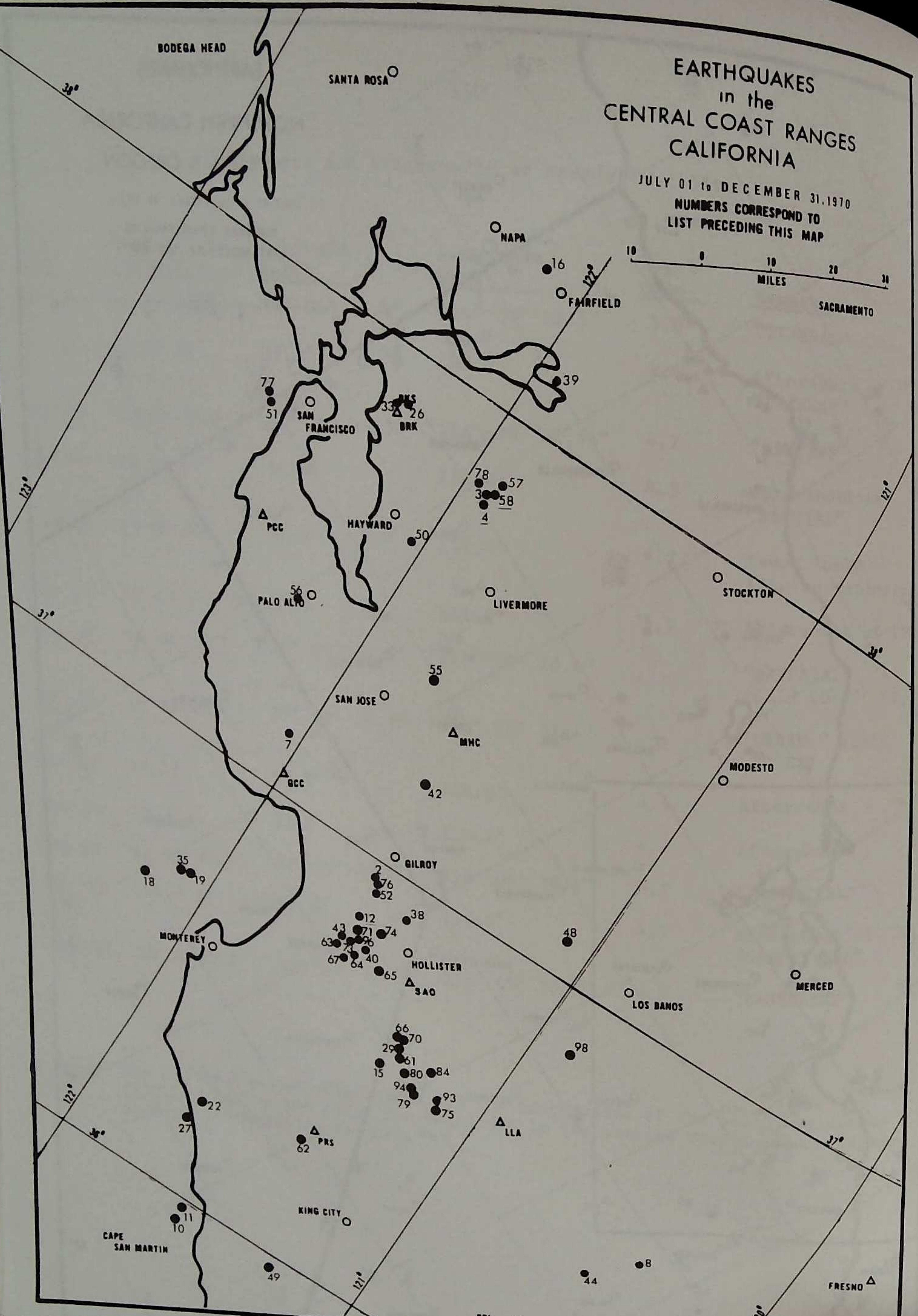
T = period in seconds

Q is the empirically determined function of distance and depth given by Gutenberg and Richter ("Magnitude and Energy of Earthquakes," *Annali di Geofisica*, 9:1-15, 1956).

The arithmetic average of the available values of M_B for long-period and short-period records of body waves is converted to an equivalent value M_s by

$$M_s = 1.59 M_B - 3.97.$$

This value is then compared with the value of M_s determined from surface waves. Some events, particularly deep earthquakes and large explosions, give clear body waves, but only weakly developed surface waves. In these cases, the directly determined body-wave magnitude is given, designated MAG (MB).



Distances are given in degrees from the Berkeley station, BRK. USNOS origins are listed as a guide at the end of arrival times of the earthquakes which have body-wave magnitudes 5 and over, or those for which some phases of special interest have been recorded.

All measurement and interpretation of seismograms (i.e., identification of phases, arrival times, directions of initial ground motion, and ground amplitudes and periods) are done at Berkeley. Readings from the remaining stations in the network other than the seven listed are available on request. Requests for additional data or for copies of seismograms should be addressed to the Director.

UNIVERSITY OF CALIFORNIA
SEISMOGRAPHIC STATIONS
BERKELEY, CALIFORNIA 94720
JUL 01 THROUGH DEC 31 1970

* PRECEDING ALPHABET INDICATES LOWER CASE
P IS TO BE READ AS PKP
N IN THE USNOS SOLUTION INDICATES FOCAL
DEPTH RESTRICTED TO 33 KM.

			P OR PKP	S	OTHER PHASES
JAS	JUL	01	03 30 44.1	C	
JAS	JUL	01	06 17 04.0	D	*I 17 13
BKS			06 17 15.0	C	
			USNOS		05 58 05.3, 57.1S, 23.0W, H= N KM, M=5.0 SOUTH SANDWICH ISLANDS REGION
BKS	JUL	01	12 55 13.0		
PRI			12 55 13.4		
MHC			12 55 13.7	D	
JAS			12 55 19.6	D	
MIN			12 55 23.5		
BKS	JUL	01	16 29		LQ 47 00 LR 53 00 *PP 29 34 PCP 29 44
JAS			16 29 18.7	D	
MHC			16 29 26.3		
FHC			16 29 32.9		
			USNOS		16 18 42.8, 23.8N, 45.6W, H= N KM, M=5.1 NORTH ATLANTIC RIDGE
JAS	JUL	01	21 40 04.0		
PRI	JUL	02	00 55 10.2	D	*PP 55 33 PKKP 15 14 P*P* 24 34
JAS			00 55 17.0	D	
MHC			00 55 19.8	D	
BKS			00 55 24.2	D	*PP 55 37 SS 08 10 L 11 18
					03 54 MICRON PERIOD 1.0
			PZ		0.09
			MAXR(Z)		2.1
			MAXH(N)		1.4
			MAXH(E)		1.6
MIN			00 55 31.5	D	
FHC			00 55 43.5	D	
			USNOS		MAG 5.3, DIST(DEG) 63 00 45 02.0, 10.1S, 78.6W, H= 62 KM, M=5.8 NEAR COAST OF PERU
BKS	JUL	02	01 34		*E 34 14 L 47 10
BKS	JUL	02	07 29 33.5		
PRI			07 29 33.7	C	
MHC			07 29 33.8	C	

JAS MIN 07 29 39.1 C *PP 31 49
 07 29 42.3 C
 SOUTH OF FIJI ISLANDS

JAS JUL 02 12 57 23.3 C *PP 57 37
 BKS 12 57 27 *PP 57 42
 FHC 12 57 50.2 C *PP 58 02
 PERU

JAS JUL 02 19 33 *E 33 49 PP 34 53
 USNOS 19 14 01.5, 4.7N, 97.7E, H= N KM, M=5.2
 NORTHERN SUMATRA. FELT AT MEDAN

JAS JUL 02 20 17 35.5 C

JAS JUL 02 23 26 21.5 C *E 27 10

FHC JUL 03 09 59 50.0 C
 MIN 10 00 00.2 C
 BKS 10 00 08.9 C

MHC JAS PRI
 PZ 10 00 13.5 C
 10 00 15.7 C
 10 00 23.1 C
 MICRON 0.06 PERIOD 0.7

MAG 5.2, DIST(DEG) 60
 USNOS 09 50 33.5, 49.9N, 150.6E, H=360 KM, M=5.1
 NORTHWEST OF KURIL ISLANDS

PRI JUL 03 10 34 31.2
 MHC 10 34 32.2
 BKS 10 34 32.6 D

JAS
 PZ 10 34 36.8 C
 MICRON 0.02 PERIOD 0.6
 MAG 5.4, DIST(DEG) 88
 USNOS 10 21 42.5, 33.1S, 179.4W, H= N KM, M=5.4
 SOUTH OF KERMADEC ISLANDS

PRI JUL 03 15 18 23.4
 JAS 15 18 30.0
 MHC 15 18 32.8
 MIN 15 18 44.6
 FHC 15 18 56.9

USNOS 15 08 14.9, 9.8S, 78.9W, H= N KM, M=5.0
 NEAR COAST OF NORTHERN PERU

PRI JUL 03 18 40 13.2
 JAS 18 40 24.4 D

JAS JUL 04 08 53 49.0 C

PRI JUL 05 04 28 02.2
 JAS 04 28 19.4

JAS JUL 05 05 51 40.3 D

JAS JUL 05 07 05 57.6 C *PP 06 37
 07 05 58.4 *PP 06 31
 07 06 *PP 06 41
 07 07 *PP 07 01

PRI JUL 05
 MHC
 FHC PERU

JAS JUL 05 14 26 10.5 USNOS *E 30 22 PKKP 42 29 *E 44 26
 14 12 16.6, 7.4N, 126.9E, H= 59 KM, M=5.6
 MINDANAO, PHILIPPINE ISLANDS

PRI JUL 06 04 21 56.5
 MHC 04 21 58.1
 JAS 04 22 03.0

JAS JUL 06 05 53 25.5

JAS JUL 06 06 45 21.2 *E 45 33
 FHC 06 45 46.1 *E 45 58

JAS JUL 06 10 58 06.6 C

JAS JUL 06 14 04 54.4 C

FHC JUL 06 15 15 42.3 C
 MIN 15 15 50.8
 BKS 15 15 57.6 D

MICRON 0.07 PERIOD 0.9 *E 16 23

JAS
 PZ 15 16 03.0 C
 MAG 4.6, DIST(DEG) 78
 USNOS 15 04 40.7, 36.6N, 134.6E, H=374 KM, M=5.0
 SEA OF JAPAN

BKS JUL 06 23 49 36.2 D MICRON 0.03 PERIOD 0.8

JAS
 PZ 23 49 44.6

JAS JUL 07 02 05 20.0 D

JAS JUL 07 05 09 09.6

JAS JUL 07 06 30 51.5 USNOS 06 20 23.6, 45.6N, 149.4E, H= 80 KM, M=5.0
 KURIL ISLANDS

BKS JUL 07 08 10 LR 39 00
 MICRON 0.7 PERIOD 20

MIN 08 10 52.0 *PP 11 10
 JAS 08 10 57.6 D
 MHC 08 11 05.4
 NORTH ATLANTIC RIDGE

PRI JUL 08 04 58 08.3 D

JAS 04 58 08.8 D
 SAO 04 58 13.8 D 05 45
 MHC 04 58 16.1 D
 MIN 04 58 16.7 D
 BKS 04 58 19.5 D 05 45

*I 58 14 PCP 59 09
 PPP 01 09 SCP 03 02 PP 00 12
 *I 58 20 *E 59 23
 PP 00 17 SCP 03 06
 *I 58 25 PCP 59 06
 *E 02 30 *E 12 00 PPP 01 05
 PERIOD 0.8 *E 15 17

FHC 04 58 21.2 D
 MICRON 0.09
 PZ 0.09
 MAG 5.1, DIST(DEG) 53
 USNOS 04 49 10.6, 18.0N, 64.6W, H=150 KM, M=5.8
 VIRGIN ISLANDS. MINOR DAMAGE IN PUERTO RICO

JAS JUL 08 06 40 50.1 D
 USNOS 06 21 57.0, 55.8S, 26.8W, H= N KM, M=5.3
 SOUTH SANDWICH ISLAND REGION

MIN JUL 08 09 26
 PRI 09 26 10.4 C *E 27 05
 SAO 09 26 21.2 C *I 26 14 *I 26 46
 JAS 09 26 22.7 D *I 26 27
 MHC 09 26 27.1 C *I 26 36
 BKS 09 26 31 C *E 26 51 *E 27 20
 MAG 4.5, MOHAVE DESERT

MHC JUL 08 15 10 03.6
 JAS 15 10 04

MHC JUL 08 19 55
 BKS 19 55 10.8 *E 55 18
 JAS 19 55 *E 55 21

MIN JUL 09 08 21 36.7 C
 MHC 08 21 48.6 C
 JAS 08 21 51.3 C
 PRI 08 22 57.8 *E 23 20
 USNOS 08 11 09.7, 43.9N, 148.4E, H= 51 KM, M=5.4
 KURIL ISLANDS

MIN JUL 09 11 35 05.6
 MHC 11 35 18.4
 JAS 11 35 21.1
 PRI 11 35 28.4
 USNOS 11 24 39.5, 43.9N, 148.5E, H= 41 KM, M=5.4
 KURIL ISLANDS

FHC JUL 09 12 22 15.0
 MIN 12 22 26.2
 BKS 12 22 33.5 C *E 22 46
 MICRON 0.06 PERIOD 0.9
 MHC 12 22 38.0 PZ
 JAS 12 22 40.5 C *PP 22 53
 PRI 12 22 47.1
 USNOS 12 11 58.9, 43.8N, 148.4E, H= 48 KM, M=5.5

MIN JUL 10 07 35 34.8 C
 BKS 07 35 37.4 D
 MHC 07 35 39.0 C
 JAS 07 35 42.6 C
 PRI 07 35 44.8 C

MHC JUL 10 09 22 *E 22 41
 PRI 09 22 *E 22 54
 MIN 09 22 16.8 D
 JAS 09 22 39.8 D

FHC JUL 10 09 37 *PP 38 12
 MIN 09 37 *PP 38 16
 SAO 09 37 *PP 38 12
 BKS 09 37 37.4 D *PP 38 12
 PRI 09 37 38.8 C *PP 38 16
 MHC 09 37 39.2 C *PP 38 14
 JAS 09 37 42.0 C *PP 38 19
 USNOS 09 25 24.4, 12.0S, 166.6E, H=140 KM, M=5.3
 SANTA CRUZ ISLANDS

MIN JUL 10 10 45 *E 45 40
 JAS 10 45 50.5 C

JAS JUL 10 12 05 54.4 C

PRI JUL 10 13 20 16.7 C
 JAS 13 20 26.4 C
 MHC 13 20 29.5 C
 BKS 13 20 35 25 20 L 27 22
 MIN 13 20 48.0
 USNOS 13 14 50.9, 17.5N, 101.0W, H= 46 KM, M=5.1
 NEAR COAST OF GUERRERO, MEXICO. FELT IN MEXICO CITY

MHC JUL 10 16 29 35.4 D
 JAS 16 29 37.5 D
 PRI 16 29 42.3 D
 USNOS 16 16 57.3, 28.7N, 129.3E, H= 63 KM, M=5.2
 RYUKYU ISLANDS

JAS JUL 11 12 42 34

JAS JUL 11 13 09 43.0 C

JAS JUL 11 14 39 50.9
 USNOS 14 28 15.5, 36.5N, 140.5E, H= 67 KM, M=5.2
 HONSHU, JAPAN. FELT IN TOKYO AREA

MIN JUL 11 21 29 07.1
 MHC 21 29 15.8
 JAS 21 29 17.6 D
 PRI 21 29 22.3 D
 USNOS 21 16 33.8, 28.3N, 129.4E, H= 35 KM, M=5.2

SAO JUL 12 03 48 15.4
 MHC 03 48 16.5
 PRI 03 48 17.9
 BKS 03 48 20.7
 JAS 03 48 21.5
 MIN 03 48 21.8

USNOS 03 35 47.8, 14.6S, 168.0E, H= 33 KM, M=5.1
 NEW HEBRIDES ISLANDS

JAS JUL 12 04 30 10.2 C

PRI JUL 12 08 18 05.9 D
 SAO 08 18 10.0
 JAS 08 18 11.4 D
 MHC 08 18 13.6 D
 BKS 08 18 17.3 D

*PP 18 37
 *PP 18 42

MIN 08 18 22.7
 FHC 08 18 32.7 D

MICRON 0.06
 PERIOD 1.0
 PZ

MAG 5.0, DIST(DEG) 80
 USNOS 08 06 21.2, 23.4S, 68.3W, H=101 KM, M=5.5
 NORTHERN CHILE

JAS JUL 12 09 00 10.0

BKS JUL 12 09 31 46
 JAS 09 31 51.0

42 19 PPS 44 46 LR 03 48
 PP 35 43 PKKP 47 55
 USNOS 09 17 59.0, 10.8N, 125.4E, H= 35 KM, M=5.5
 LEYTE, PHILIPPINE ISLANDS. FELT

JAS JUL 12 15 31 03.5

PRI JUL 12 18 24
 MHC 18 24
 FHC 18 24
 JAS 18 24 51.5

*E 50 52
 *E 24 45
 *E 24 55
 *E 25 16

USNOS 18 13 54.8, 15.7S, 69.5W, H=252 KM, M=5.0
 PERU-BOLIVIA BORDER REGION

JAS JUL 13 06 23 36.8

MIN JUL 13 16 06 19.8
 BKS 16 06 36.1 C
 JAS 16 06 42.1 D

*E 23 47
 *PP 06 42

MHC JUL 13 19 12
 JAS 19 12 21.5

*E 12 23

JAS JUL 14 00 12 03.1 D

JAS JUL 14 18 57 02.0
 PRI 18 57 09.9



JAS JUL 14 22 15 04

MHC JUL 15 15 06 18.4
 PRI 15 06 19.4
 JAS 15 06 23.4 D

JAS JUL 15 15 45 43.3 D

JAS JUL 16 01 51 55.6

JAS JUL 16 07 32 41.0

SAO JUL 16 07 49 55.5
 PRI 07 49 55.7 C

MHC 07 49 56.4
 BKS 07 49 57.4 D 59 54 *E 51 11 *E 11 10

JAS 07 50 01.7 C
 FHC 07 50 02.0
 MIN 07 50 06.7 C

USNOS 07 38 00.8, 25.3S, 178.1W, H=225 KM, M=5.2
 SOUTH OF FIJI ISLANDS

PRI JUL 16 21 29 19.9
 BKS 21 29 20.0 D

38 54 LQ 48 30 *E 51 11 LR 53 00

MICRON PERIOD
 PZ 0.14 1.6
 MAXR(Z) 7.6 18
 MAXH(N) 4.8 18
 MAXH(E) 5.5 18

MHC 21 29 20.5
 JAS 21 29 26.3 D

*PP 29 37
 MAG 5.5, DIST(DEG) 74
 USNOS 21 17 44.2, 19.2S, 173.5W, H= N KM, M=5.8
 TONGA ISLANDS

JAS JUL 16 23 35 28.1 D

PRI JUL 17 00 07 16.9 D
 JAS 00 07 23.1 D
 MHC 00 07 26.0
 BKS 00 07 30.5 D

MICRON PERIOD
 0.03 0.8

BKS JUL 17 07 39
 MHC 07 39 21.6
 JAS 07 39 25.5

*E 49 30

PRI JUL 17 17 59 13.4
 JAS 17 59 21.7
 MHC 17 59 25.5
 BKS 17 59 31
 FHC 17 59 39.8

ECUADOR

SAO JUL 17 20 16 38.8

PRI 20 16 39.4 C
 BKS 20 16 40 26 32 L 36 22 LR 40 00
 MICRON PERIOD
 PZ 0.83 2.5
 MAXR(Z) 19.6 20
 MAXH(N) 12.5 20
 MAXH(E) 9.6 20
 MHC 20 16 40.8 C
 JAS 20 16 45.4
 FHC 20 16 45.7 C
 MIN 20 16 51.0 C
 *E 19 53
 MAG 6.1, DIST(DEG) 80
 USNOS 20 04 46.5, 22.1S, 174.7W, H= N KM, M=5.6
 TONGA ISLANDS

FHC JUL 18 01 56 01.2 C
 MIN 01 56 13.1 C
 BKS 01 56 22.8 02 38 *E 56 30 *E 57 19 PP 58 11
 L 05 56 LR 07 56
 MICRON PERIOD
 PZ 0.02 1
 MAXR(Z) 6.1 20
 MAXH(N) 6.1 20
 MAXH(E) 9.3 20
 MHC 01 56 27.4 C
 JAS 01 56 31.1 C 02 54
 PRI 01 56 40.0 C

MAG 5.9, DIST(DEG) 41
 USNOS 01 48 38.9, 51.4N, 178.5W, H= 46 KM, M=5.7
 ANDREANOF ISLANDS. FELT IN ADAK
 PRI JUL 18 20 08 01.5
 JAS 20 08 11.4
 MHC 20 08 14.4
 FHC 20 08 29.8

BKS JUL 19 09 35 42 46 36 *E 42 36 *E 45 12 *E 45 44
 SS 52 20 L 59 00 LR 03 00
 MICRON PERIOD
 MAXR(Z) 7.8 20
 MAXH(N) 3.2 20
 MAXH(E) 7.1 20
 JAS 09 35 45.3 *E 36 13 *E 39 22
 MAG 6, DIST(DEG) 90
 USNOS 09 22 40.1, 3.8S, 152.4E, H= 20 KM, M=5.5
 NEW IRELAND REGION. FELT AT RABAU

JAS JUL 19 18 59 18.6 C
 JAS JUL 20 03 14 13.4 D
 JAS JUL 20 09 21 10.2 C
 PRI JUL 20 17 53 55.3
 JAS 17 53 58.8 D
 MHC 17 54 04.5

*E 55 07 *E 58 50



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BKS 17 54 09.0 MICRON PERIOD
 PZ 0.05 0.8
 MIN 17 54 10.7
 FHC 17 54 25.2
 MAG 4.4, DIST(DEG) 53
 USNOS 17 44 57.6, 6.8S, 73.0W, H=163 KM, M=5.0
 NORTHERN COLUMBIA. FELT AT BOGOTA

MHC JUL 20 20 41 35.2 D
 JAS 20 41 40.2 D
 MIN JUL 21 03 15 53.1
 BKS 03 16 05.3
 MICRON PERIOD
 PZ 0.03 0.8
 JAS 03 16 05.7 C
 MHC 03 16 07.7
 PRI 03 16 14.4
 USNOS 03 02 57.1, 50.0N, 77.8E, H= 0 KM, M=5.4
 EASTERN KAZAKH SSR. NUCLEAR BLAST

PRI JUL 21 06 32 53.7
 MHC 06 32 54.1
 BKS 06 32 56.0 42 40 L 51 00 LR 54 00
 JAS 06 33 00.4 D *PP 33 12
 USNOS 06 21 33.5, 15.9S, 173.1W, H= N KM, M=5.0
 TONGA ISLANDS

JAS JUL 21 08 57 11.7 C
 USNOS 08 44 21.9, 9.9S, 160.0E, H= 22 KM, M=5.1
 SOLOMON ISLANDS. FELT AT HONIARA

MHC JUL 21 10 55 16.6 D
 JAS 10 55 20.0 D
 PRI 10 55 29.0 D

JAS JUL 21 18 56 05.5
 USNOS 18 44 30.1, 19.2S, 173.4W, H= 88 KM, M=5.1
 TONGA ISLANDS

JAS JUL 21 23 11 49.5
 JAS JUL 22 04 03 37.7 C
 USNOS 03 51 26.8, 17.0N, 148.1E, H= 45 KM, M=5.1
 MARIANA ISLANDS REGION

JAS JUL 23 03 02 37.8 C
 JAS JUL 23 05 34 00.0 C

PRI JUL 23 13 01 14.4
 SAO 13 01 23.3
 MHC 13 01 30.5
 JAS 13 01 31.5
 USNOS 12 59 47.9, 31.8N, 115.9W, H= N KM, M=4.6

BAJA CALIFORNIA

SAO JUL 23 15 56 27.9
 PRI 15 56 29.5
 MHC 15 56 29.9
 BKS 15 56 30.5 C

FHC 15 56 33.3
 JAS 15 56 35.9
 MIN 15 56 40.0

MICRON 0.09 PERIOD 0.8
 PZ

MAG 5.1, DIST(DEG) 72
 USNOS 15 45 14.6, 15.7S, 173.9W, H= 95 KM, M=5.4
 TONGA ISLANDS

MIN JUL 24 04 09 53.8
 JAS 04 10 06.3 C

USNOS 03 56 57.4, 49.8N, 78.2E, H= 0 KM, M=5.3
 EASTERN KAZAKH SSR. NUCLEAR BLAST

MIN JUL 24 08 10 47.1
 MHC 08 11 02.0
 JAS 08 11 04.9
 BKS 08 11 10.5

*PP 11 01
 *PP 11 16
 *PP 11 19
 *E 17 52 LR 24 40

PRI 08 11 12.7

MICRON 0.04 PERIOD 1.0
 PZ
 *PP 11 27
 MAG 4.7, DIST(DEG) 47
 USNOS 08 02 23.6, 52.1N, 171.5E, H= N KM, M=5.0
 NEAR ISLANDS, ALEUTIAN ISLANDS

JAS JUL 24 14 00 09.0

MIN JUL 25 11 15 56.6
 BKS 11 16 01.5
 MHC 11 16 04.6
 JAS 11 16 07.4 C
 PRI 11 16 11.6

*E 16 46
 *E 16 49
 *E 16 52 *PP 17 48

USNOS 11 04 43.7, 28.9N, 139.0E, H=462 KM, M=4.9
 BONIN ISLANDS REGION. FELT AT FUKUSHIMA

FHC JUL 25 22 53 16.0 C
 MIN 22 53 24.3 C
 BKS 22 53 29.5 C

*E 56 05
 03 42 PCP 53 37 *E 53 50 P E 53 57
 SS 09 20 SSS 12 32 L 15 10

MICRON 0.23 PERIOD 1.4
 PZ
 MAXR(Z) 34.8
 MAXH(N) 23.3
 MAXH(E) 34.8

MHC 22 53 33.5 C
 JAS 22 53 35.7 C
 PRI 22 53 40.8 C
 FRE 22 53 41.6

PP 56 22 *E 04 17 P'P' 19 52
 MAG 6.7, DIST(DEG) 82.5
 USNOS 22 41 10.7, 32.2N, 131.7E, H= 34 KM, M=6.1



INTERNATIONAL SEISMOLOGICAL CENTRE
 KYUSHU, JAPAN. SLIGHT DAMAGE NEAR MIYAZAKI.
 FELT EXTENSIVELY

PRI JUL 26 07 14 12.3 C
 JAS 07 14 18.1 C
 MHC 07 14 20.0

USNOS 07 02 17.8, 25.9S, 71.8W, H= 18 KM, M=5.1
 OFF COAST OF NORTHERN CHILE

FRE JUL 26 07 22
 FHC 07 22 40.8 C
 MIN 07 22 49.3 C
 BKS 07 22 54.5 C

*E 23 02
 33 08 *E 23 08 SS 38 30 SSS 43 24
 L 44 50 LR 48 00

MICRON 0.11 PERIOD 1.4
 PZ
 MAXR(Z) 4.8 20
 MAXH(N) 2.2 20
 MAXH(E) 4.8 20

MHC 07 22 58.5 C
 JAS 07 23 00.7 C
 PRI 07 23 05.9 C

MAG 5 3/4, DIST(DEG) 82.5
 USNOS 07 10 36.0, 32.2N, 131.8E, H= 35 KM, M=6.1
 KYUSHU, JAPAN. FELT THROUGHOUT KYUSHU AND
 SOUTHERN SHIKOKU

PRI JUL 27 12 44 26.5
 MHC 12 44 27.4
 JAS 12 44 31.8

USNOS 12 31 18.7, 37.8S, 177.6E, H= 87 KM, M=5.7
 OFF EAST COAST, NORTH ISLAND, NEW ZEALAND
 PP 48 20 *E 51 32

PRI JUL 28 00 53 00.8 C
 JAS 00 53 02.7 C
 MHC 00 53 03.5 C
 BKS 00 53 05.0 D

*PP' 53 35 SKP 56 26

MICRON 0.07 PERIOD 0.8
 PZ
 USNOS 00 34 23.8, 56.0S, 27.5W, H=140 KM, M=5.3
 SOUTH SANDWICH ISLAND REGION

SAO JUL 28 04 59 37.0
 BKS 04 59 37.0
 PRI 04 59 38.4 C
 MHC 04 59 39.3
 JAS 04 59 44.9 C
 MIN 04 59 49.5

LR 45 00
 USNOS 04 47 47.7, 21.7S, 174.6W, H= N KM, M=5.2
 TONGA ISLANDS

BKS JUL 28 09 11 24.0
 JAS 09 11 49.3 D

*E 12 47 *E 14 06
 *PP 12 17

JAS JUL 28 16 34 43.7 D

FHC JUL 28 19 34 24.3 C
 BKS 19 34 48.5
 MHC 19 34 55.0
 JAS 19 34 57.9 C
 PRI 19 35 09.2

*PP 35 07

BKS JUL 28 23 19
 JAS 23 19 24.4

*E 31 30
 LR 50 00 *E 40 20 *E 49 20

JAS JUL 29 05 18 10.3 C

FHC JUL 29 10 30 20.9
 MIN 10 30 25.3
 BKS 10 30 32.0

*E 34 30
 42 30 *PP 30 54 PP 34 30 PKKP 46 18
 SS 49 50 SSS 54 20 L 11 07

MAG 6.1, DIST(DEG) 107
 USNOS 10 16 19.3, 26.0N, 95.4E, H= 59 KM, M=6.5
 BURMA-INDIA BORDER. DAMAGE IN ASSAM

JAS JUL 29 11 13 25.5

BKS JUL 30 01 06 28.0

*E 07 24 PP 10 28 PPP 13 08
 SKS 17 12 SKKS 17 36 PS 20 04
 PPS 21 04 SS 25 40 *E 26 32

MICRON PERIOD
 MAXR(Z) 15.7 20
 MAXH(N) 12 20
 MAXH(E) 26 20

JAS 01 06 29.0
 PP 10 51 *E 26 12 *E 22 13
 MAG 6 3/4, DIST(DEG) 104
 USNOS 00 52 19.5, 37.8N, 55.9E, H= 19 KM, M=5.7
 IRAN-USSR BORDER. CASUALTIES AND DAMAGE

JAS JUL 30 02 22 07.3 D

MIN JUL 30 05 17 45.3
 JAS 05 17 49.9 C

*PP 18 05 PP 20 02 PPP 22 07
 SKKP 31 06
 *PP 18 07 *E 18 50 *E 19 28
 PP 20 00 PPP 22 12 *E 26 00
 SKKS 26 48 PS 30 00 PPS 31 40
 *E 34 00 *E 38 20 SSS 41 00
 L 57 00 LR 02 00

MICRON PERIOD
 MAXR(Z) 6.9 20
 MAXH(N) 10.7 20
 MAXH(E) 12.2 20

MHC 05 17 51.6
 FHC 05 17
 PRI 05 17 54.0 C
 *E 17 54
 MAG 6.6, DIST(DEG) 128
 USNOS 04 58 43.8, 14.3N, 51.8E, H= N KM, M=5.5
 EASTERN GULF OF ADEN



JAS JUL 30 05 54 37.5 C

FHC JUL 30 09 05 54.3
 BKS 09 05 56.5

*E 19 00 L 24 00 LR 36 00
 MICRON PERIOD
 PZ 0.05 1.0
 MAXH(N) 20
 MAXH(E) 0.7 20
 MAXR(Z) 0.7 20

MIN 09 05 58.5
 MHC 09 05 58.8
 PRI 09 06 01.0
 JAS 09 06 02.6

*E 10 00
 MAG 5 1/2, DIST(DEG) 94
 USNOS 08 52 40.7, 4.5S, 144.0E, H=106 KM, M=5.4
 NORTH COAST OF NEW GUINEA. FELT AT TARBELE

BKS JUL 30 18 55 30.5

*E 55 37
 MICRON PERIOD
 PZ 0.03 0.8

PRI 18 55 30.8
 MHC 18 55 31.2
 JAS 18 55 37.3 D

MAG 4.1, DIST(DEG) 72
 USNOS 18 44 17.9, 15.6S, 174.0W, H=122 KM, M=5.0
 TONGA ISLANDS

JAS JUL 30 20 17 27.2 C
 PRI 20 17 34.0
 MHC 20 17 46.6
 SAO 20 17 48.4
 BKS 20 18 00.5

*E 17 34 *E 18 07
 *E 19 00
 MAG 4.2, SOUTHERN NEVADA

JAS JUL 31 01 47 24.8 C

JAS JUL 31 03 37 09.3

PRI JUL 31 03 52 31
 BKS 03 52
 JAS 03 52 32.5

*E 02 00 *E 11 20 LR 15 00

JAS JUL 31 07 39 11.1

PRI JUL 31 15 26 47.7
 JAS 15 26 56.0
 MHC 15 26 56.1
 BKS 15 27 00

*E 29 17
 D 35 41 SS 39 51 LQ 43 32 LR 46 45
 MICRON PERIOD
 MAXR(Z) 10 20
 MAXH(N) 11 20
 MAXH(E) 1.8 20

MAG 6.0, DIST(DEG) 65
 USNOS 15 16 18.7, 27.0S, 113.3W, H= N KM, M=5.3
 EASTER ISLAND REGION

MHC JUL 31 17 10 12.9
 PRI 17 10 13.0 C
 JAS 17 10 18.5 C

FIJI ISLANDS REGION

PRI JUL 31 17 17 02.0 D
 JAS 17 17 06.9 D
 SAO 17 17 07.7 D
 MHC 17 17 11.4 D
 BKS 17 17 15.6

P'P' 45 57 PK4P 54 07

24 45 *E 25 26 L 29 44 *E 33 32

MICRON 4.7
 PZ
 MAXR(Z) 51
 MAXH(N) 41
 MAXH(E) 66

PERIOD 1.1
 20
 20
 20

MIN FHC 17 17 19.5
 17 17 32.5 D

MAG 6.6, DIST(DEG) 60
 USNOS 17 08 05.4, 1.5S, 72.6W, H=651 KM, M=7.1
 COLUMBIA. FELT FROM BUENOS AIRES TO MEXICO CITY. 1 DEATH, INJURIES AND DAMAGE IN PERU

BKS JUL 31 20 57 35.3
 MHC 20 57 37.7 C
 PRI 20 57 38.0 C
 JAS 20 57 43.9 C

USNOS 20 46 05.5, 15.0S, 177.0W, H= N KM, M=5.2
 FIJI ISLANDS REGION

FHC AUG 01 01 36
 MIN 01 36
 PRI 01 36
 JAS 01 36 49.0 D

*E 36 38
 *E 36 49
 *E 36 52

USNOS 01 17 56.3, 3.0S, 102.4E, H=125 KM, M=5.4
 SOUTHERN SUMATRA

JAS AUG 01 06 37 08.2 D

*PP 37 54

JAS AUG 01 06 59 10.0 D

JAS AUG 01 08 14 33.5 D

JAS AUG 01 09 17 14.2 D

JAS AUG 01 10 48 42.5 C

JAS AUG 01 10 55 42.5 C

BKS AUG 01 12 58

JAS 12 58 33.5 C

*E 01 54 *E 03 12

JAS AUG 01 17 25 02.5 D

BKS AUG 02 01 21

JAS 01 21 35.4 C

MHC 01 21 36.1

26 18 L 28 48



JAS AUG 02 01 46 25.1 C
 USNOS 01 36 10.6, 46.7N, 152.5E, H= 60 KM, M=5.0
 KURIL ISLANDS *PP 46 40

MIN AUG 02 02 11 59.8
 MHC 02 12 03.8 C
 JAS 02 12 07.3 C
 PRI 02 12 09.3

BKS AUG 02 07 23 27 12 *E 29 07
 PRI 07 23 53.5
 JAS 07 24 12.0
 USNOS 07 21 04.2, 27.4N, 111.3W, H= N KM, M=4.6
 GULF OF CALIFORNIA

BKS AUG 02 13 27 *E 52 00
 PRI 13 27 42.2
 JAS 13 27 48.5 C
 FRE 13 27 49

MHC AUG 02 19 35 *E 35 23
 PRI 19 35 *E 35 18
 BKS 19 35 18 44 40 LQ 53 44 LR 56 26
 JAS 19 35 25.2 C

BKS AUG 03 00 45 08.8 54 22 *PP 45 33 LR 06 00
 USNOS 00 33 54.3, 15.9S, 173.9W, H=120 KM, M=5.4
 TONGA ISLANDS

PRI AUG 03 03 45 01.1
 MHC 03 45 01.5
 JAS 03 45 07.5
 BKS 03 45 08.0 *E 04 00 L 06 26
 FRE 03 45 14.5 D

USNOS 03 33 34.7, 16.2S, 174.6W, H= N KM, M=5.2
 TONGA ISLANDS

FHC AUG 03 07 13 45.5 D *PP 14 04
 BKS 07 13 48.2 24 46 *PP 14 07 SS 30 21 L 36 22
 LR 39 52

MICRON PERIOD 1.1
 PZ 0.15 *PP 14 08
 MHC 07 13 50.2 D
 SAO 07 13 50.8 D *PP 14 11
 MIN 07 13 52.8 D *PP 14 11
 PRI 07 13 53.3 D *PP 14 13
 JAS 07 13 54.8 D
 FRE 07 13 56.5 D

MAG 5 3/4, DIST(DEG) 87
 USNOS 07 01 11.9, 7.9S, 158.7E, H= 67 KM, M=5.9
 SOLOMON ISLANDS. FELT AT HONIARA (MM III)

JAS AUG 03 15 18 08.7 C

FHC AUG 03 22 48 55.3 C *pp' 49 13



BKS 22 49 02.0 *PP: 49 18
 MHC 22 49 02.5 C *PP: 49 20
 JAS 22 49 02.6 C *PP: 49 21
 PRI 22 49 05.7 *PP: 49 24
 USNOS 22 30 02.5, 2.6N, 98.0E, H= 38 KM, M=5.9
 *E 02 03
 NORTHERN SUMATRA

SAD AUG 04 04 14 32.9 C
 MHC 04 14 36.9 C
 BKS 04 14 42.9 D 14 59
 PRI 04 14 45.3 C
 JAS 04 14 52.5 C
 FRE 04 14 52.9 C
 MIN 04 15 19.7 C
 FHC 04 15 28.2
 MAG 4.7
 MONTEREY BAY. FELT MONTEREY, FORT ORD, SAN FRANCISCO
 BERKELEY.

BKS AUG 04 11 36 *E 45 44
 JAS 11 36 51.9 C

JAS AUG 04 12 53 41.6 C

JAS AUG 04 19 45 51.7 C

PRI AUG 04 19 53 08.7 D
 JAS 19 53 13.9 D
 MHC 19 53 15.9 D
 FHC 19 53 34.1 D
 USNOS 19 41 03.0, 28.2S, 67.3W, H=118 KM, M=5.0
 LA RIOJA PROVINCE, ARGENTINA

JAS AUG 04 22 02 56.3 C

JAS AUG 04 23 28 03.0 D *PP 28 19

JAS AUG 05 01 12 04.2 D

FRE AUG 05 05 35 57 D
 PRI 05 35 58.3
 JAS 05 36 05.4 D *PP 36 24
 MHC 05 36 08.5
 BKS 05 36 12.9 *PP 36 31 *SP 36 52
 MIN 05 36 20.0
 FHC 05 36 32.3 D *PP 36 51
 USNOS 05 25 57.6, 9.2S, 78.9W, H= 69 KM, M=5.6
 NEAR COAST OF NORTHERN PERU

BKS AUG 05 09 20 *E 30 22 *E 44 00
 JAS 09 20 24 C
 MIN 09 20 29.5 C
 MHC 09 20 29.5 C
 FHC 09 20 40 C

USNOS 09 08 59.4, 11.9N, 43.7W, H= N KM, M=5.2
 NORTH ATLANTIC RIDGE

JAS AUG 05 16 06 13.7 D
 FHC 16 06 33.3

JAS AUG 06 11 12 04.0

MHC AUG 06 17 55 27.3 D
 JAS 17 55 32.3 D

JAS AUG 06 19 10 24.2 C

MHC AUG 06 21 33 42.4 C *PP 33 55
 JAS 21 33 47.8 C *PP 34 00
 BKS 21 33 58 43 43 LR 58 11
 USNOS 21 21 44.6, 23.0S, 175.4W, H= 50 KM, M=5.0
 TONGA ISLANDS REGION

JAS AUG 07 00 35 07.7 C

JAS AUG 07 01 54 03.5 C *I 54 15
 USNOS 01 43 19.0, 43.8N, 148.3E, H= N KM, M=5.0
 KURIL ISLANDS

SAD AUG 07 08 02 05.8 D *PP 04 03
 BKS 08 02 06.9 11 01 *PP 04 04 PP 05 00 *E 15 04
 SSS 19 48 L 22 28

MHC 08 02 07.4 D *PP 04 04
 PRI 08 02 07.5 D *PP 04 04
 FHC 08 02 10.5 *PP 04 08
 FRE 08 02 12
 JAS 08 02 13.0 D PCP 02 21 *PP 04 10
 MIN 08 02 15.8 D *PP 04 14
 MAG 5.3, DIST(DEG) 76
 USNOS 07 51 12.0, 17.7S, 178.3W, H=548 KM, M=5.5
 FIJI ISLANDS REGION

JAS AUG 07 08 45 57.0 C
 MIN 08 46 00.0 D

PRI AUG 07 09 30 12.7 C
 JAS 09 30 18.3 C
 MHC 09 30 20.7 C
 MIN 09 30 28.9 C
 FHC 09 30 39.3 C
 USNOS 09 18 26.9, 24.3S, 67.0W, H=169 KM, M=5.1
 CHILE-ARGENTINE BORDER

JAS AUG 07 13 12 47.7 C *E 12 54

JAS AUG 07 13 31 58.1 C *E 32 03

BKS AUG 07 13 41 *E 51 24
 MHC 13 41 21.8 *PP 43 20
 JAS 13 41 25.2

USNOS 13 29 26.3, 4.7S, 155.1E, H=500 KM, M=5.1
SOLOMON ISLANDS

FHC AUG 07 16 45 *E 45 21
MIN 16 45 *E 45 30
BKS 16 45 27.5 56 28 *E 45 33
MICRON PERIOD *E 07 40 *E 45 37 *PP 45 46
0.03 0.8 *E 09 00 *E 14 00

MHC 16 45 30.8
JAS 16 45 34.4 D
PRI 16 45 37.9
MAG 4 3/4, DIST (DEG) 78
USNOS 16 33 29.3, 27.3N, 141.7E, H=N KM, M=5.4
BONIN ISLANDS REGION

JAS AUG 08 06 35 53.8
PRI 06 35 54.6
MIN 06 35 55.5 C
MIN AUG 08 09 13 21.2 C *PP 13 51
JAS 09 13 33.3 C
USNOS 09 01 08.3, 30.6N, 130.0E, H=120 KM, M=5.1
KYUSHU, JAPAN

JAS AUG 08 10 09 37.0 C
MIN 10 09 37.7
BKS AUG 08 21 18 20.0 29 20 PP 22 40 SS 32 00 LQ 47 40
LR 52 20
MICRON PERIOD
MAXR(Z) 1.98 20
MAXH(N) 0.72 20
MAXH(E) 0.75 20
JAS PRI 21 18 25.8 C
PP 23 01 PKKP 33 51 PKKP 34 04
PKKP 33 50 PKKP 34 03
MAG 5.2, DIST(DEG) 105
USNOS 21 04 05.9, 1.2N, 126.1E, H= 24 KM, M=5.8
MOLUCCA PASSAGE

BKS AUG 09 10 28 21.0 PS 43 20 SS 49 40 LQ 59 50
L 04 20
USNOS 10 16 04.6, 62.8S, 160.5W, H= N KM, M=5.2
SOUTH PACIFIC CORDILLERA

SAO AUG 10 10 49
MHC 10 49 51 20 *E 50 17
PRI 10 49 51 26 *E 50 21
FRE 10 49 04.1 *E 50 10
JAS 10 49 51.9 *E 50 36
10 49 55.7 C 50 54 *E 50 05
MAG 4.4, EASTERN NEVADA
USNOS 10 48 56.4, 37.2N, 115.9W, H= 3 KM, M=4.1
SOUTHERN NEVADA. FELT
PRI AUG 10 11 45 20.0
MHC 11 45 20.4



BKS 11 45 21 L 55 52
JAS 11 45 26.4 C
MIN 11 45 30.5
USNOS 11 33 55.6, 16.5S, 174.1W, H= 60 KM, M=5.0
TONGA ISLANDS

FHC AUG 10 15 27 48.5
BKS 15 27 50.0
MICRON PERIOD
MAXR(Z) 17.5 20
MAXH(N) 10.0 20
MAXH(E) 12.6 20

MHC 15 27 50.5
PRI 15 27 51.1
JAS 15 27 54.3 D P'P' 54 05
MIN 15 27 54.3
FRE 15 28 00.9
MAG 6.2, DIST(DEG) 84
USNOS 15 15 19.7, 13.9S, 166.8E, H= 46 KM, M=6.0
NEW HEBRIDES ISLANDS. FELT AT LAMAP (III)
AND LUGANVILLE (III)

JAS AUG 11 04 03 18.0 PP 07 07
BKS 04 03 34 PP 07 22 SKS 13 44 PS 16 34
*E 17 26 SS 22 22 LQ 32 00
LR 38 32

MICRON PERIOD
MAXR(Z) 2.4 20
MAXH(N) 2.1 20
MAXH(E) 2.1 20
MAG 5.6, DIST(DEG) 105
USNOS 03 48 52.4, 1.1S, 13.9W, H= N KM, M=5.4
NORTH OF ASCENSION ISLAND

FHC AUG 11 04 52 22.9 C *E 52 37
MIN 04 52 31.6 C
BKS 04 52 32.0 *E 52 41
MHC 04 52 36.4 C *E 52 46
JAS 04 52 40.0 C
PRI 04 52 42.3 C
MARIANA ISLANDS

JAS AUG 11 06 11 43.5
JAS AUG 11 06 17 09.6
JAS AUG 11 07 00 37.2
BKS AUG 11 10 22 *E 21 48
MIN 10 22 03.9 C
JAS 10 22 04.9 C
USNOS 10 09 27.9, 14.2S, 166.6E, H= N KM, M=5.1
NEW HEBRIDES ISLANDS

BKS AUG 11 10 34 50.0 45 20 PP 38 16 PS 46 22 *E 46 02

MHC 10 34 51.7
 PRI 10 34 53.4
 FHC 10 34 54.0
 SAO 10 34 54.6
 JAS 10 34 56.5
 MIN 10 34 59.5
 FRE 10 35 00.8

MICRON 0.15
 SS PERIOD 1.0
 50 20 LQ 56 40 LR 00 21

MAG 6 3/4 DIST(DEG) 84
 USNOS 10 22 20.0, 14.1S, 166.7E, H= N KM, M=6.2
 NEW HEBRIDES ISLANDS. FELT AT BANKS ISLANDS
 (IV) AND LUGANVILLE (IV)

JAS AUG 11 12 44 11.5 C
 JAS AUG 11 16 28 58.2 C
 JAS AUG 11 20 06 33.2 D
 PRI 20 06 34.8 D
 MHC 20 06 37.2 C
 PRI AUG 11 20 29 49.0 D
 JAS 20 29 50.7 D
 MHC 20 29 51.5 D
 BKS 20 29 53.0
 MIN 20 29 54.6 D

*E 06 40
 *E 06 43
 *E 42 20 *E 00 19
 E 29 55 *E 42 00 SS 49 30
 L 05 00 LR 12 00

DIST(DEG) 125
 USNOS 20 10 52.4, 60.6S, 25.4W, H= N KM, M=6.0
 SOUTH SANDWICH ISLANDS REGION

PRI AUG 11 21 06 30.3 C
 JAS 21 06 34.5 C
 MIN AUG 12 00 53
 BKS 00 53 12.0

*I 53 21
 *PP 53 28 *E 04 40 LQ 15 00
 LR 18 28

MICRON PERIOD
 MAXR(Z) 7.9 20
 MAXH(N) 3.2 20
 MAXH(E) 5.7 20

JAS 00 53 18.5
 *PP 53 33
 MAG 5 3/4, DIST(DEG) 83
 USNOS 00 40 42.9, 13.9S, 166.5E, H= 39 KM, M=5.4
 NEW HEBRIDES ISLANDS

BKS AUG 12 01 51 56.0
 02 28 *E 52 08 *E 52 10 *E 52 20
 PP 55 48 *E 03 32 *E 04 08
 *E 11 39 LQ 14 52 LR 17 00

MICRON PERIOD
 MAXR(Z) 26.8 20
 MAXH(N) 10.7 20
 MAXH(E) 24.2 20

MHC 01 52 04.8 C
 *E 52 27



International
 Seismological
 Centre

PRI 01 52 10.0 C *E 52 30
 JAS 01 52 12.0 C *I 52 31 P'P' 18 13
 MIN 01 52 12.8 C
 MAG 6.5, DIST(DEG) 84
 USNOS 01 39 36.7, 13.9S, 166.5E, H= 43 KM, M=5.8
 NEW BRITAIN REGION

JAS AUG 12 03 22 20.8 C
 MIN AUG 12 06 40 47.7 C
 JAS 06 41 07.7
 JAS AUG 12 08 22 28.0 C
 MIN AUG 12 08 33 59.2 C
 BKS 08 34 00.0

*E 45 36 *E 56 00 LR 59 28

MICRON PERIOD
 MAXR(Z) 3.9 20
 MAXH(N) 2.0 20
 MAXH(E) 3.2 20

JAS 08 34 02.6
 MAG 5.6, DIST(DEG) 84
 USNOS 08 21 24.4, 13.9S, 166.7E, H= 42 KM, M=5.1
 NEW HEBRIDES ISLANDS

MIN AUG 12 09 18 22.9 C *E 18 43
 JAS 09 18 25.0
 MHC 09 18 29
 USNOS 09 05 48.5, 14.1S, 166.7E, H= 37 KM, M=5.2
 NEW HEBRIDES ISLANDS

FRE AUG 12 09 31 34.4 C
 PRI 09 31 36.8
 JAS 09 31 43.0 C
 SAO 09 31 45.0
 MHC 09 31 47.9
 BKS 09 31 53.0

PCP 33 48
 PCP 33 50 *E 34 00
 PCP 33 53 *E 34 03
 *PP 32 09 PCP 33 55 PPP 34 05
 LR 45 00

MIN 09 31 59.9
 FHC 09 32 15.0

MICRON PERIOD
 PZ 0.11 1.0
 MAXR(Z) 12.5 20
 MAXH(N) 25.0 20
 MAXH(E) 19.5 20

PCP 34 05
 MAG 6.0, DIST(DEG) 42
 USNOS 09 24 11.5, 12.0N, 86.5W, H= N KM, M=5.9
 NICARAGUA. FELT AT SAN SALVADOR

PRI AUG 12 10 31 50.0
 JAS 10 31 55.0 C
 SAO 10 31 58
 MHC 10 32 00.0 C
 BKS 10 32 06.0

PCP 34 06
 PCP 34 03
 PCP 34 03
 PCP 34 05
 *E 32 21 PCP 34 07 LR 45 11

MICRON PERIOD
 PZ 0.04 1.0

MAXR(Z) 9.3 20
 MAXH(N) 5.4 20
 MAXH(E) 6.3 20

MIN 10 32 11.8 C
 FHC 10 32 27
 PCP 34 09
 PCP 34 16
 MAG 5.4, DIST(DEG) 42
 USNOS 10 24 23.9, 12.1N, 86.5W, H= N KM, M=5.6
 NICARAGUA

JAS AUG 12 22 56 59.9 C
 USNOS 22 46 19.0, 44.1N, 147.8E, H= 69 KM, M=5.2
 KURIL ISLANDS
 *E 57 12

SAO AUG 13 00 34 50.8 C
 PRI 00 34 52.0 C
 MHC 00 34 52.7 C
 BKS 00 34 53.0
 FRE 00 34 56.8 C
 JAS 00 34 58.0 C
 MIN 00 35 02.4 C
 *PP 35 14
 *PP 35 21
 *PP 35 26
 USNOS 00 22 43.0, 25.8S, 177.0W, H= 90 KM, M=5.1
 SOUTH OF FIJI ISLANDS

FHC AUG 13 04 41 13.0 C
 MIN 04 41 14.6 C
 BKS 04 41 16.0
 *PP 41 52 *E 43 08 *E 52 14
 SS 59 08 LQ 17 30 LR 22 00
 MHC 04 41 16.8 C
 JAS 04 41 17.9 C
 PRI 04 41 19.3 C
 FRE 04 41 20.3
 *PP 41 46 PKKP 51 22 SKKP 55 11
 DIST(DEG) 118
 USNOS 04 22 38.5, 8.9S, 118.0E, H=117 KM, M=6.0
 SUMBAWA ISLAND REGION

JAS AUG 13 09 17 44.6 C
 JAS AUG 13 19 39 14.0 C
 USNOS 19 26 55.5, 51.8N, 105.5E, H= N KM, M=4.7
 LAKE BAIKAL REGION

JAS AUG 13 22 54 35.8 D
 BKS AUG 13 23 39
 49 42 *E 39 16 *E 41 36 *E 42 24
 *E 43 16 SS 56 14 L 01 40
 MHC 23 39 28.8 C
 JAS 23 39 32.6 C
 PRI 23 39 34.8 C
 USNOS 23 27 05.7, 14.1N, 146.5E, H= 46 KM, M=5.4
 MARIANA ISLANDS

PRI AUG 14 03 45 16.4 C
 MIN 03 45 38.6 C
 BKS 03 45 54
 JAS 03 46 01.2 C
 MHC 03 46 01.6
 *E 54 12 *E 56 40 LR 58 00

FHC AUG 14 06 29 00.6 D
 MIN 06 29 17.6 C 29 39
 BKS 06 29 32.0 *E 29 48 *E 30 08
 MHC 06 29 42.0 C *I 30 05
 JAS 06 29 43.5 C 30 31
 SAO 06 29 48.3 C
 MAG 4.0, NORTH OF GARBERVILLE, CALIFORNIA. FELT

FRE AUG 15 04 54 42
 JAS 04 54 42.5 C
 MIN 04 54 44.2 C
 USNOS 04 42 55.1, 17.0S, 177.2W, H= N KM, M=5.3
 FIJI ISLANDS REGION

JAS AUG 15 07 12 47.0 D
 MIN 07 12 51.3 C

JAS AUG 15 11 40 36.0

JAS AUG 16 05 43 38.5

JAS AUG 16 07 27 27.6
 MIN 07 27 33.7 D

MIN AUG 16 09 51 03.3 C
 JAS 09 51 22.0 C

JAS AUG 16 16 34 41.3 *PP 35 09

JAS AUG 16 23 23 03.3 C *PP 23 12

JAS AUG 17 12 00 26.9

JAS AUG 18 16 08 10.4 C

JAS AUG 18 17 21 07.1 C *E 21 22

FHC AUG 18 17 57 22.0 C *I 57 29
 MIN 17 57 32.4 C
 BKS 17 57 50.8 C

02 28 *E 59 48 LR 05 08
 MICRON PERIOD
 PZ 0.04 1.0
 MAXR(Z) 14.3 20
 MAXH(N) 7.1 20
 MAXH(E) 17.2 20
 *I 58 00 *E 04 52
 JAS 17 57 55.6 C
 MHC 17 57 56.7 C
 PRI 17 58 08.6

MAG 5 1/2, DIST(DEG) 27
 USNOS 17 52 06.3, 60.7N, 145.4W, H= 16 KM, M=5.6
 SOUTHERN ALASKA. FELT AT CORDOVA, ANCHORAGE,
 AND PALMER (MAX IV)

MIN AUG 19 02 15 00.4 C
 JAS 02 15 07.4 C
 MHC 02 15 12.4 D
 PRI 02 15 15.8 C

USNOS 02 01 53.1, 41.1N, 19.8E, H= N KM, M=5.2
 ALBANIA. SOME DAMAGE

BKS AUG 19 02 23 47.0 C
 PZ 0.11
 MAXR(Z) 3.8
 MAXH(N) 2.5
 MAXH(E) 2.9

*E 34 20 PERIOD 1.0
 *E 43 33 LR 49 48

MHC 02 23 49.4 C
 SAO 02 23 50.3 C
 PRI 02 23 51.6 C
 MIN 02 23 52.8 C
 JAS 02 23 54.2 C

PP 27 16
 MAG 5.6, DIST(DEG) 86
 USNOS 02 11 09.4, 10.5S, 161.5E, H= 33 KM, M=5.7
 SOLOMON ISLANDS. FELT AT HONIARA (III)

MIN AUG 19 06 54 41.9 C
 FHC 06 54 46.6 D
 BKS 06 55 03.2
 JAS 06 55 10.9
 MHC 06 55 13.0 C
 SAO 06 55 21.0
 PRI 06 55 41.4 C

*E 55 19

MAG 4.1, SW OF REDDING, CALIFORNIA

JAS AUG 19 10 07 10.7 C

SAO AUG 20 13 05 45.3
 BKS 13 05 46.0 C

MICRON 0.02 PERIOD 0.8

MHC 13 05 46.7 C
 PRI 13 05 47.2 C
 FHC 13 05 48.1 C
 JAS 13 05 51.5 C
 MIN 13 05 53.5

*E 06 18 *E 06 22

MAG(MB) 5.4, DIST(DEG) 86
 USNOS 12 53 13.0, 22.3S, 171.5E, H=100 KM, M=5.2
 LOYALTY ISLANDS REGION

PRI AUG 20 15 31 37.2 D
 JAS 15 31 42.4 D
 MHC 15 31 44.2 D
 BKS 15 31 47.8

*E 32 18
 *E 32 36

MICRON 0.04 PERIOD 0.7

MIN 15 31 53.2 D
 FHC 15 32 02.8 D

MAG(MB) 5.4, DIST(DEG) 84
 USNOS 15 19 32.7, 28.5S, 67.4W, H=139 KM, M=5.2



LA RIOJA PROVINCE, ARGENTINA

JAS AUG 21 00 54 31.3 D
 USNOS 00 44 06.4, 45.8N, 150.1E, H= 80 KM, M=5.2
 KURIL ISLANDS

SAO AUG 21 08 49 46.2 D
 BKS 08 49 47.8

*E 49 47
 *E 49 55 LR 10 40
 MICRON 0.04 PERIOD 1.0
 PZ 0.04
 MAXR(Z) 0.64
 MAXH(N) 0.36
 MAXH(E) 0.54

MHC 08 49 48.1 D
 PRI 08 49 48.1 D
 JAS 08 49 54.1 D
 MIN 08 49 57.5 D

*PP 49 55
 *PP 50 01

MAG 4.8, DIST(DEG) 72
 USNOS 08 38 22.3, 14.6S, 175.7W, H= N KM, M=5.3
 SAMOA ISLANDS REGION

MIN AUG 21 12 04 08.3 C
 JAS 12 04 34.3 C
 PRI 12 04 44.2 C

MHC AUG 21 20 38 46.5 C
 JAS 20 38 51.2

JAS AUG 22 13 09 20.0 C
 MHC 13 09 21.3

JAS AUG 23 02 47 20.6 D
 MHC 02 47 23.7 D

SAO AUG 23 05 09 26.3 C
 BKS 05 09 27.0 C

MICRON 0.07 PERIOD 1.0

MHC 05 09 27.9 C
 PRI 05 09 28.0 C
 FHC 05 09 30.9 C
 JAS 05 09 33.5 C
 MIN 05 09 36.5 C

MAG(MB) 5.7, DIST(DEG) 77
 USNOS 04 58 31.5, 17.8S, 178.8W, H=560 KM, M=5.0
 FIJI ISLANDS REGION

MIN AUG 23 11 17 03.4 C
 FHC 11 17 10.8 C
 JAS 11 17 11.1 C
 MHC 11 17 19.4 C

USNOS 11 07 18.4, 53.1N, 35.1W, H= N KM, M=5.0
 NORTH ATLANTIC OCEAN

MHC AUG 23 15 52 48.1
 JAS 15 52 54.4 D



MHC AUG 24 09 45 06.3 C
 JAS 09 45 11.5 C
 MIN 09 45 15.7 C
 USNOS 09 32 52.5, 25.8S, 177.1W, H= 63 KM, M=5.2
 SOUTH OF FIJI ISLANDS

PRI AUG 24 12 43 36.4
 MHC 12 43 38.3
 FRE 12 43 40.8
 JAS 12 43 41.8
 BKS 12 43 43.8 C 55 00

*E 47 39
 PP 47 08 *E 54 24
 SS 01 24 LQ 09 00 PS 56 22
 LR 14 08 L 10 28

MICRON PERIOD
 MAXR(Z) 14.3 20
 MAXH(N) 13.2 20
 MAXH(E) 5.7 20
 MAG 6 1/2, DIST(DEG) 96
 USNOS 12 30 19.5, 56.6S, 142.5W, H= N KM, M=5.9
 SOUTH PACIFIC CORDILLERA

BKS AUG 25 05 00 18.2 C
 JAS 05 00 24.2 C
 FHC AUG 25 10 16 39.1 C
 MIN 10 16 48.1 C
 BKS 10 16 50.5 D

MICRON PERIOD
 PZ 0.05 0.8
 MHC 10 16 54.0 C *E 17 05
 JAS 10 16 57.5 C *E 17 09
 PRI 10 17 00.5 C
 FRE 10 17 03
 MAG(MB) 5.5, DIST(DEG) 79
 USNOS 10 04 45.7, 22.1N, 143.9E, H= 43 KM, M=5.4
 VOLCANO ISLANDS REGION

PRI AUG 25 11 58 09.7 C
 BKS 11 58 10.1 C
 MHC 11 58 10.1 C
 FHC 11 58 14.1 C
 FRE 11 58 14.3 C
 JAS 11 58 15.2 C
 MIN 11 58 18.9 C

MICRON PERIOD
 PZ 0.04 0.7
 MAG(MB) 5.2, DIST(DEG) 82
 USNOS 11 46 38.6, 24.4S, 179.9E, H=488 KM, M=5.0
 SOUTH OF FIJI ISLANDS

JAS AUG 26 06 52 03.5 C *PP 52 10
 JAS AUG 26 15 13 29.9 D
 BKS AUG 26 15 25 24 36 09 *E 29 42 *E 38 29 LR 56 45

MICRON PERIOD
 MAXR(Z) 2.0 20
 MAXH(N) 0.7 20
 MAXH(E) 1.2 20
 15 25 36 *E 29 39
 MAG 5 1/2, DIST(DEG) 102
 USNOS 15 11 54.6, 18.1N, 120.5E, H= 53 KM, M=5.4
 LUZON, PHILIPPINE ISLANDS. FELT (MAX IV)

SAD AUG 26 18 25 28.5
 BKS 18 25 29.6 D
 MICRON PERIOD
 PZ 0.03 0.6
 PRI 18 25 30.0 D
 MHC 18 25 30.3 D
 JAS 18 25 35.7 D
 MIN 18 25 39.4
 MAG(MB) 4.8, DIST(DEG) 78
 USNOS 18 14 26.5, 20.1S, 178.1W, H=550 KM, M=4.7
 FIJI ISLANDS REGION

BKS AUG 26 21 06 14.6
 JAS 21 06 22.0
 PRI 21 06 28.3
 USNOS 20 54 42.9, 34.8N, 141.6E, H= 45 KM, M=5.0
 OFF EAST COAST OF HONSHU, JAPAN

JAS AUG 27 06 43 56.7
 BKS AUG 27 16 33 49.0 C 43 00 *E 51 47 LR 54 40
 MICRON PERIOD
 MAXR(Z) 3.4 20
 MAXH(N) 2.7 20
 MAXH(E) 3.2 20
 MHC 16 33 49.4 C
 FHC 16 33 50.2 C
 PRI 16 33 50.8 C
 JAS 16 33 50.8 C
 MAG 6.0, DIST(DEG) 71
 USNOS 16 22 24.7, 15.2S, 173.3W, H= 23 KM, M=5.4
 TONGA ISLANDS

SAD AUG 27 16 38 11.2 C
 MHC 16 38 12.0 C
 PRI 16 38 12.2 C
 JAS 16 38 17.8 C
 FIJI ISLANDS REGION

PRI AUG 27 19 50 53.5 D *I 51 17 PCP 53 56 *E 00 00
 JAS 19 51 01.8 D *E 04 25
 MHC 19 51 05.6 D
 BKS 19 51 14.0 D 56 34 PP 52 27 LQ 59 00 LR 00 56
 MICRON PERIOD
 MAXR(Z) 10 20
 MAXH(N) 8 18



MIN 19 51 21.4 D
 FHC 19 51 36.5 D
 PRI 19 51 53.5 D
 MAG 5 3/4, DIST(DEG) 34
 USNOS 19 44 42.0, 15.4N, 95.6W, H= 31 KM, M=5.5
 NEAR COAST OF OAXACA, MEXICO

FRE AUG 28 01 15 *E 15 50
 FHC 01 15 PP 19 10
 MHC 01 15 PP 19 14
 PRI 01 15 *E 16 16
 MIN 01 15 PP 19 16
 BKS 01 15 34 C 26 00 PS 27 15 SS 32 08 L 39 12
 LR 42 41

MICRON PERIOD
 PZ 2.9 13
 MAXR(Z) 25 20
 MAXH(N) 5.0 20
 MAXH(E) 21 20

JAS 01 15 38.7 C PP 19 21 P'P' 41 24 *E 44 50
 MAG 6 1/4-6 1/2, DIST(DEG) 87
 USNOS 01 02 48.9, 4.6S, 153.1E, H= 88 KM, M=5.9
 NEW IRELAND REGION. FELT AT RABAUL

SAO AUG 28 10 18 54.5 C
 PRI 10 18 55.2 C
 MHC 10 18 56.1 C
 BKS 10 18 56.2 C 29 46 *E 29 36 LR 46 00

MICRON PERIOD
 PZ 0.18 1.0
 MAXR(Z) 1.8 20
 MAXH(N) 1.8 20
 MAXH(E) 1.3 20

FRE 10 18 59.2
 JAS 10 19 00.6 C
 FHC 10 19 01.5 C
 MIN 10 19 04.9
 MAG 5 3/4, DIST(DEG) 88
 USNOS 10 06 08.8, 33.9S, 179.8W, H= 90 KM, M=5.6
 SOUTH OF KERMADEC ISLANDS

BKS AUG 28 14 12 51.5 22 09 SS 26 24 LQ 30 48 LR 33 28
 MICRON PERIOD
 MAXR(Z) 2.0 20
 MAXH(N) 1.6 20
 MAXH(E) 1.6 20

JAS 14 12 55.1 D *E 13 38
 MAG 5 1/4, DIST(DEG) 71
 USNOS 14 01 29.9, 15.1S, 173.4W, H= N KM, M=5.3
 TONGA ISLANDS
 JAS AUG 28 14 27 41.9
 USNOS 14 16 23.2, 15.2S, 173.2W, H= N KM, M=5.0
 TONGA ISLANDS

PRI AUG 29 00 44 29.7
 JAS 00 44 34.3
 JAS AUG 29 01 54 35.4 C *PP 55 40
 PRI 01 54 41.8
 USNOS 01 43 12.2, 37.0N, 136.7E, H=284 KM, M=5.2
 NEAR WEST COAST OF HONSHU, JAPAN. FELT

BKS AUG 29 03 09 LQ 26 00
 JAS 03 09 01.0
 MHC 03 09 05.8

JAS AUG 29 11 40 09.0 C
 FHC AUG 29 15 10 05.4 C
 MIN 15 10 14.0 C
 MHC 15 10 28.3 C
 JAS 15 10 29.6 C P'P' 38 32
 FRE 15 10 37.4 C
 PRI 15 10 37.7 C
 USNOS 14 59 22.6, 51.1N, 135.3E, H= N KM, M=5.4
 EASTERN RUSSIA. BELIEVED TO BE THE FIRST
 EARTHQUAKE INSTRUMENTALLY LOCATED IN THIS
 AREA

MIN AUG 30 00 24 11.5 *E 24 27
 BKS 00 24 20.3
 MHC 00 24 26.2
 JAS 00 24 29.7 C *E 43 40
 PRI 00 24 38.5
 USNOS 00 16 36.5, 52.0N, 179.7W, H= 84 KM, M=5.0
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS

JAS AUG 30 00 48 15.0 C *E 48 27
 BKS 00 48 18.5 *E 48 33
 MICRON PERIOD
 PZ 1.0 5.6
 USNOS 00 38 40.1, 52.1N, 159.6E, H= N KM, M=5.2
 OFF EAST COAST OF KAMCHATKA

BKS AUG 30 00 55 17.5 04 36 *I 55 44 *E 55 47 *E 56 06
 MICRON PERIOD
 PZ 1.0 5.6
 MAXR(Z) 4.8 20
 MAXH(N) 3.1 20

PRI 00 55 17.5
 MHC 00 55 18.0 *E 55 47
 JAS 00 55 23.9
 MIN 00 55 28.6
 MAG 5 3/4, DIST(DEG) 71
 USNOS 00 43 57.4, 16.1S, 172.5W, H= N KM, M=5.3
 SAMOA ISLANDS REGION

JAS AUG 30 03 23 33.9
 BKS AUG 30 16 30 32

PRI 16 30 32.3
 MHC 16 30 32.5
 JAS 16 30 38.5 D
 MIN 16 30 43.1 D
 TONGA ISLANDS REGION

FHC AUG 30 17 54 51.6 02 02 *E 24 17
 MIN 17 55 01.7 D 02 19
 BKS 17 55 10.7 D 02 31 PCP 55 50 *PP 57 13
 *SP 58 18 SCS 03 58 PP 57 33
 SS 06 26

MICRON PERIOD
 PZ 1.3 0.7
 PN 0.4 0.6
 MAXH(E) 17.1 20
 MAXH(N) 18.6 20

MHC 17 55 15.6 D *E 22 15
 JAS 17 55 17.5 D 02 51 PKKP 14 30 *E 22 10 P'P' 24 04
 *PP'P' 26 57
 SAD 17 55 18.6 D 02 46 *E 22 12 *E 24 13
 PRI 17 55 25.2 D
 MAG(MB) 6.7, DIST(DEG) 58
 WELL DEVELOPED P'P' PHASE WITH MANY PRECURSORS
 USNOS 17 46 09.0, 52.4N, 151.6E, H=645 KM, M=6.6
 SEA OF OKHOTSK. FELT IN JAPAN

FHC AUG 30 18 31 58.1 C
 MIN 18 32 04.3 C
 BKS 18 32 10.6
 MHC 18 32 14.0 C
 JAS 18 32 15.0 C
 PRI 18 32 20.7 C *E 35 21 *E 43 21 *E 45 40

JAS AUG 30 18 57 20.8
 MIN 18 57 32.5 D

JAS AUG 30 19 14 12.7 D *E 45 55

FHC AUG 30 20 54 04.6
 MIN 20 54 17.9 C
 BKS 20 54 27.2
 MHC 20 54 33.2 C
 JAS 20 54 36.3 C

ANDREANOF ISLANDS REGION

JAS AUG 31 09 56 22.7 C

JAS AUG 31 12 58 36.4

FHC SEP 01 05 23 09.8 D
 MIN 05 23 18.9 D
 BKS 05 23 20 D 33 16

*I 23 36 PS 34 07 SS 38 06
 *E 42 00 LQ 43 24 LR 46 47
 PERIOD 10 18

MICRON PERIOD
 PZ 5.4
 MAXR(Z) 27.6
 MHC 05 23 23.5 D



05 23 27.2 D
 05 23 29.6 D
 MAG 6.4, DIST(DEG) 79
 USNOS 05 11 16.1, 17.7N, 147.6E, H= 40 KM, M=6.3
 MARIANA ISLANDS REGION

JAS SEP 02 01 20 57.7 D
 JAS SEP 02 04 01 09.8 C
 JAS SEP 03 08 58 47.9 C
 BKS SEP 03 09 44 56.5 D
 FHC 09 44 57.2 C

*I 45 01 PP 48 29 *E 55 12
 PPS 56 36 SS 01 09 LQ 07 30

MICRON PERIOD
 MAXR(Z) 11.4 20
 MAXH(N) 6.1 20
 MAXH(E) 9.3 20

SAD 09 44 57.6 C
 MHC 09 44 57.9 C
 PRI 09 44 59.4
 JAS 09 45 03.0 C *E 45 08 PP 48 25
 MIN 09 45 03.5 C
 MAG 6.1, DIST(DEG) 85
 USNOS 09 32 23.0, 16.9S, 167.8E, H= 44 KM, M=5.5
 NEW HEBRIDES ISLANDS. FELT AT LAMAP (VI),
 PORT VILLA (IV) AND LUGANVILLE (II)

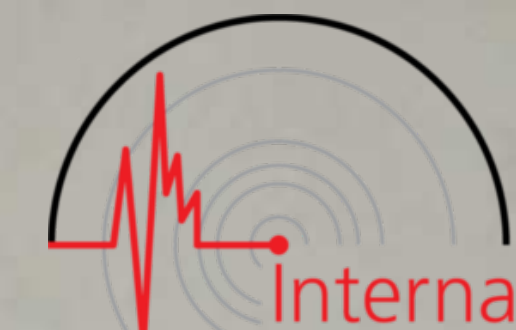
JAS SEP 03 10 00 44.0 C *E 00 52
 JAS SEP 03 10 47 04.1 C
 JAS SEP 03 19 22 20.0 D
 PRI SEP 04 02 46 *E 46 22
 JAS 02 46 17.8 C

FHC SEP 05 08 01 15.8 D *I 01 19 *PP 03 07
 MIN 08 01 26.0 D *I 01 30 *PP 03 18 *E 05 19
 BKS 08 01 35.5 C 09 05 *I 01 39 *PP 03 29 *E 05 26
 *E 10 31 *SS 12 24 *E 16 25

MICRON PERIOD
 PZ 0.83 0.4
 MHC 08 01 39.9 D *E 01 44 *PP 03 33 *E 05 26
 JAS 08 01 41.7 D 09 19 *PP 03 32 PP 04 03 *SP 04 31
 *PP 05 29 P'P' 30 33 *E 32 50
 SAD 08 01 42.8 *I 01 46
 PRI 08 01 49.8 D *I 01 53 *PP 03 39

MAG(MB) 6.3, DIST(DEG) 58
 USNOS 07 52 27.9, 52.2N, 151.4E, H=580 KM, M=5.7
 SEA OF OKHOTSK

JAS SEP 05 08 38 42.1 *E 40 51
 JAS SEP 05 09 12 34.5



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MHC SEP 05 11 57 58.5 C
JAS 11 58 00.5 C

SAO SEP 05 17 19 13.1
PRI 17 19 14.5
BKS 17 19 15.1 C
MHC 17 19 15.1
JAS 17 19 21.2 D
MIN 17 19 25.7

USNOS 17 07 50.7, 17.4S, 171.9W, H= N KM, M=5.2
TONGA ISLANDS REGION

PRI SEP 05 17 26 39.6 C
BKS 17 26 40 C
MHC 17 26 40.4 C
JAS 17 26 46.5 C

USNOS 17 15 15.9, 17.5S, 171.9W, H= N KM, M=5.0
TONGA ISLANDS REGION

FHC SEP 06 04 15 48.1
MIN 04 15 54.2 C
BKS 04 16 06.5 C

MICRON PERIOD
PZ 0.03 0.7

JAS 04 16 06.7 C
MHC 04 16 08.8 C

USNOS 04 02 57.4, 49.8N, 78.1E, H= 0 KM, M=5.6
EASTERN KAZAKH SSR. EXPLOSION

*E 16 12

JAS SEP 06 11 00 35.3 C

JAS SEP 06 11 33 06.5 C

FHC SEP 06 15 48 15
MIN 15 48 29.9
JAS 15 48 52.3

PRI SEP 07 18 13 17.8 C
JAS 18 13 30.0 D
MHC 18 13 31.8 C
BKS 18 13 38.9 C

*I 13 34 *I 13 45 *E 17 21
*E 13 39

MICRON PERIOD
PZ 0.05 1.1

MIN 18 13 53.8 D
JAS SEP 07 18 17 21.2
BKS 18 17 23.7 D

*E 14 00

JAS SEP 07 21 11 50.0
MHC 21 11 51.6

USNOS 20 58 49.8, 43.9N, 16.1E, H= 5 KM, M=5.5
YUGOSLAVIA. INJURIES AND DAMAGE

JAS SEP 08 04 13 11.1 C

SAO SEP 08 11 46 34.8 C
MHC 11 46 35.7
PRI 11 46 35.8 C
JAS 11 46 41.2 C

FIJI ISLANDS REGION

JAS SEP 08 13 07 28.8 *E 08 53

PRI SEP 08 19 53 47.3 D
SAO 19 53 58.0
MHC 19 54 06.0
JAS 19 54 10.0

JAS SEP 09 12 04 48.0 *E 06 08
USNOS 11 53 13.9, 19.6S, 70.1W, H= 49 KM, M=5.0
NEAR COAST OF NORTHERN CHILE

BKS SEP 09 19 31 13.6 C
JAS 19 31 19.6 C
USNOS 19 18 44.1, 29.9N, 131.8E, H= 13 KM, M=5.1
RYUKYU ISLANDS REGION. FELT

SAO SEP 10 03 28 31.6
MHC 03 28 33.3
PRI 03 28 33.4
JAS 03 28 38.9 *PP 30 35
MIN 03 28 42.0

USNOS 03 17 40.5, 17.8S, 178=6W, H=586 KM, M=4.7
FIJI ISLANDS REGION

JAS SEP 10 19 52 42.5 *E 17 04
USNOS 19 40 27.3, 27.1S, 70.9W, H= 32 KM, M=5.2
NEAR COAST OF NORTHERN CHILE

PRI SEP 11 01 16 56.2 C *E 33 58 LQ 40 22 LR 45 11
BKS 01 17 *E 17 23
JAS 01 17 01.4 D *E 17 23
USNOS 01 04 12.4, 50.1S, 114.5W, H= N KM, M=5.2
EASTER ISLAND CORDILLERA

FHC SEP 11 03 17 42.1 *I 17 48 *E 18 42
MIN 03 18 08.9 *I 18 15
BKS 03 18 28.2 D
MHC 03 18 34.5
JAS 03 18 36

USNOS 03 17 06.3, 42.2N, 126.6W, H= N KM, M=4.6
OFF COAST OF OREGON

JAS SEP 12 07 54 08.0

JAS SEP 12 08 23 55.7 D

JAS SEP 12 10 58 21.1

JAS SEP 12 11 06 25.2 08 13

JAS SEP 12 11 56 51.9
 BKS 11 56 53.5 D
 USNOS 11 37 58.8, 56.0S, 26.6W, H= N KM, M=5.4
 SOUTH SANDWICH ISLANDS REGION

PRI SEP 12 14 31 41.9 C
 SAO 14 31 53.6 D
 JAS 14 31 59.2 C
 MHC 14 32 00.6 C
 BKS 14 32 11.0 D 33 27
 MIN 14 32 36.4
 FHC 14 32 55.6

MAG 5.4. 40 KM NORTHWEST OF SAN BERNADINO, CALIFORNIA. FELT WIDELY, SLIGHT DAMAGE
 USNOS 14 30 51.9, 34.3N, 117.5W, H= 9 KM, M=5.4
 SOUTHERN CALIFORNIA

MIN SEP 13 04 48 *E 49 32
 PRI 04 48 37.6 C
 SAO 04 48 49.1
 JAS 04 48 55.5 C
 MHC 04 48 56.5 D
 BKS 04 49 06.5 D

*E 51 10
 MAG 4.3. NORTH OF SAN BERNADINO, CALIFORNIA. FELT. AFTERSHOCK OF PREVIOUS EVENT
 USNOS 04 47 47.7, 34.3N, 117.5W, H= 11 KM, M=4.7
 SOUTHERN CALIFORNIA

JAS SEP 13 14 00 04.0

FHC SEP 13 21 10 40.4 C
 MIN 21 11 04.8 C
 BKS 21 11 12 D
 MHC 21 11 21.8 C 11 46 *I 11 14
 JAS 21 11 28.9 D
 SAO 21 11 29.3 D
 PRI 21 11 41.9

*I 11 44
 MAG 5.4. 160 KM WEST OF CAPE MENDOCINO, CALIFORNIA. FELT AT EUREKA AND GARBERVILLE
 USNOS 21 10 23.0, 40.2N, 125.1W, H= N KM, M=5.4
 OFF CAPE MENDOCINO

JAS SEP 13 22 29 03.0

MIN SEP 14 09 56
 BKS 09 56 10

*E 29 13
 *E 56 05
 *E 09 10 SS 09 56 *E 12 24
 LQ 13 16 LR 17 00

MICRON PERIOD
 PZ 0.04 1.0
 SH 5.6 16
 MAXR(Z) 6.07 20
 MAXH(N) 2.14 20
 MAXH(E) 6.43 20

JAS 09 56 17.2 C
 MAG 5.9, DIST(DEG) 70
 USNOS 09 44 53.6, 38.7N, 142.2E, H= 44 KM, M=5.6

MIN SEP 14 11 26 41.6 C
 JAS 11 26 54.4 C

JAS SEP 14 15 30 28.0

PRI SEP 14 15 35 29.5
 JAS 15 35 35.5
 MHC 15 35 36.7
 USNOS 15 23 04.5, 33.9S, 72.0W, H= N KM, M=5.1
 OFF COAST OF CENTRAL CHILE

PRI SEP 14 15 49 17.2 C *PP 49 28
 JAS 15 49 23.0 C *PP 49 31 *E 50 08
 MHC 15 49 24.3 C
 BKS 15 49 25.0 59 56 LR 18 00

MICRON PERIOD
 PZ 0.04 1.0
 MAXR(Z) 0.72 20
 MAXH(N) 1.07 20
 MAXH(E) 1.07 20

MIN 15 49 34.2
 MAG 5.1, DIST(DEG) 85
 USNOS 15 36 51.3, 34.0S, 72.2W, H= 31 KM, M=5.6
 NEAR COAST OF CENTRAL CHILE

JAS SEP 14 18 18 56.5 C
 USNOS 18 06 22.6, 34.0S, 72.2W, H= 15 KM, M=5.1
 NEAR COAST OF CENTRAL CHILE

JAS SEP 14 19 55 19
 BKS 19 55 24
 USNOS 19 44 31.5, 43.5N, 147.9E, H= 30 KM, M=5.1
 KURIL ISLANDS

JAS SEP 15 03 21 35.5
 BKS 03 21 45 *E 21 45

SAO SEP 15 09 47 11.2
 BKS 09 47 12.5
 MICRON PERIOD
 PZ 0.07 0.7

PRI 09 47 12.6
 MHC 09 47 12.9
 FHC 09 47 16.5
 FRE 09 47 17.3
 JAS 09 47 18.2 *E 47 23
 MIN 09 47 21.8

MAG(MB) 5.2, DIST(DEG) 79
 USNOS 09 36 10.5, 20.3S, 178.8W, H=615 KM, M=5.1
 FIJI ISLANDS REGION

BKS SEP 15 11 09 *E 27 30 LR 41 00
 JAS 11 09 10.5
 USNOS 10 55 19.2, 8.7N, 127.2E, H= N KM, M=5.5

PHILIPPINE ISLANDS REGION

BKS SEP 15 20 55 06 00 LR 21 30
 MICRON PERIOD
 MAXR(Z) 2.5 20
 MAXH(N) 1.6 20
 MAXH(E) 1.43 20
 FHC 20 55 C *E 55 37 *E 55 47
 MHC 20 55 34.2 C *PP 55 47
 JAS 20 55 38.8 C *PP 55 52
 MAG 5.4, DIST(DEG) 86
 USNOS 20 42 59.1, 30.2S, 177.6W, H= 34 KM, M=5.2
 KERMADEC ISLANDS

JAS SEP 16 00 48 09.0 C
 USNOS 00 35 29.6, 30.2S, 177.7W, H= N KM, M=5.0
 KERMADEC ISLANDS

FHC SEP 16 02 01 42.4 C *I 01 51
 MIN 02 01 50.8 C
 BKS 02 01 51.5 C *E 12 10 *E 13 00 SS 17 25
 SSS 21 00 L 23 50
 MICRON PERIOD
 PZ 0.60 2
 MHC 02 01 54.6 C *I 02 12
 SAO 02 01 55.6 C
 JAS 02 01 58.0 C *E 02 13 *E 12 25 P'P' 29 13
 PRI 02 02 00.4 C
 MAG 5.9, DIST(DEG) 83
 USNOS 01 49 20.5, 13.0N, 144.4E, H= 47 KM, M=6.0
 MARIANA ISLANDS. MINOR DAMAGE ON GUAM (V)

JAS SEP 16 03 45 29.0 C

JAS SEP 17 02 48 08.8

MHC SEP 17 04 55 57.8
 BKS 04 55 58 *PP 56 03
 06 30 *PP 56 05 LR 22 00
 MICRON PERIOD
 PZ 0.04 1
 PRI 04 55 59.0 *PP 56 05
 JAS 04 56 02.8 *PP 56 09
 USNOS 04 43 21.7, 18.0S, 168.9E, H= 27 KM, M=5.0
 NEW HEBRIDES ISLANDS

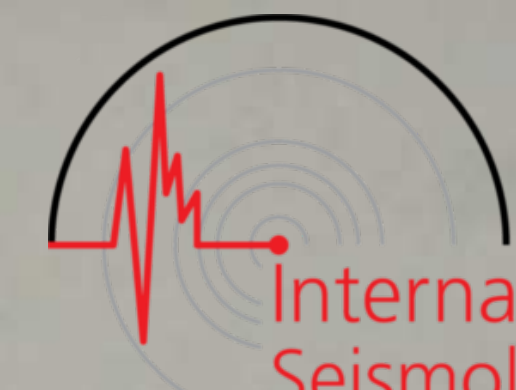
JAS SEP 17 05 25 11.9 C

JAS SEP 17 10 06 30.1 C *PP 06 39

JAS SEP 17 11 39 41.5 C *E 41 30

PRI SEP 17 23 27 14.8 D
 JAS 23 27 20.4 D
 MHC 23 27 22.0 D
 BKS 23 27 25.5 D *PP 27 51

MICRON *E 27 46 *PP 27 56
 PERIOD



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PZ 1
 23 27 31.2 D *PP 27 54
 23 27 40.3 D *E 20 11
 MAG(MB) 5.3, DIST(DEG) 85
 USNOS 23 15 02.1, 31.8S, 70.0W, H=118 KM, M=5.3
 CHILE-ARGENTINE BORDER REGION. FELT

MIN SEP 18 02 16 31.5 D
 FHC 02 16 34.9 D
 JAS 02 16 44.9 D *E 16 53
 USNOS 02 06 30.4, 71.2N, 7.7W, H= N KM, M=5.1
 JAN MAYEN ISLANDS REGION. FELT AT JAN MAYEN (III-IV). APPARENTLY ASSOCIATED WITH VOLCANISM

PRI SEP 18 04 27 13.5 D
 JAS 04 27 15.1 D
 SOLOMON ISLANDS REGION

JAS SEP 18 07 58 30.9 C *PP 58 38

MIN SEP 18 16 22 19.7
 JAS 16 22 26.7 C
 FHC 16 22 26.8
 BKS 16 22 34.5
 MICRON PERIOD
 PZ 0.03 0.8
 MHC 16 22 34.6
 MAG(MB) 5.4, DIST(DEG) 62
 USNOS 16 12 51.1, 51.1N, 29.6W, H= N KM, M=5.2
 NORTH ATLANTIC RIDGE

PRI SEP 18 17 38 42.2 *PP 39 15
 JAS 17 38 47.4 *PP 39 20 *SP 39 34 *E 39 45
 SAO 17 38 47.7 *PP 39 20
 MHC 17 38 50.2 *PP 39 23
 BKS 17 39 *PP 39 26 *SP 39 39 *E 18 00
 MIN 17 39 *PP 39 32
 FHC 17 39 09.8 D *PP 39 43
 USNOS 17 27 11.0, 20.9S, 68.3W, H=133 KM, M=5.3
 CHILE-BOLIVIA BORDER REGION

BKS SEP 18 19 58 03.0 D *PP 58 35
 JAS 19 58 00.9 *E 00 10 *E 01 25
 USNOS 19 39 16.3, 56.1S, 27.5W, H= 90 KM, M=5.5
 SOUTH SANDWICH ISLANDS REGION

PRI SEP 18 23 01 21.2 *E 02 03 *E 06 37
 JAS 23 01 35.5 L 31 00
 BKS 23 01 12 00
 USNOS 22 49 02.9, 34.0S, 72.0W, H= 20 KM, M=5.2
 NEAR COAST OF CENTRAL CHILE

FHC SEP 19 00 55 07.6
 BKS 00 55 21.0 C
 MICRON PERIOD

MHC 00 55 25.1 PZ 0.06 0.8
 SAO 00 55 27.1
 JAS 00 55 27.5 C PP 58 31
 PRI 00 55 32.5
 MAG(MB) 5.4, DIST(DEG) 78
 USNOS 00 44 01.2, 32.4N, 137.7E, H=365 KM, M=5.1
 SOUTH OF HONSHU, JAPAN

JAS SEP 19 01 20 25

JAS SEP 19 02 31 37.1

JAS SEP 19 04 13 37.3
 USNOS 03 54 17.0, 43.2S, 41.5E, H= N KM, M=5.1
 PRINCE EDWARD ISLANDS REGION

SAO SEP 19 06 49 58.4
 JAS 06 49 59.6 C *E 50 06
 MHC 06 50 02.2
 BKS 06 50 04.5 00 30 *E 19 00
 MIN 06 50 10.5
 FHC 06 50 20.2
 USNOS 06 37 27.7, 33.5S, 71.9W, H= 21 KM, M=5.5
 NEAR COAST OF CENTRAL CHILE. FELT IN
 VALPARISO

JAS SEP 19 14 39 00.8 *E 39 09 *E 39 16

BKS SEP 20 08 49 42.0
 JAS 08 49 51.0 D
 PRI 08 49 51.6

BKS SEP 20 10 49 40.5 C
 JAS 10 49 47.5 D MICRON 0.04 PERIOD 0.8
 MAG(MB) 5.5, DIST(DEG) 77 *PP 49 57
 USNOS 10 37 48.5, 29.5N, 141.3E, H= N KM, M=5.0
 SOUTH OF HONSHU, JAPAN

JAS SEP 20 12 01 56.4 D

JAS SEP 20 17 08 45.6 C *E 11 49
 USNOS 17 02 42.0, 16.4N, 97.3W, H= N KM, M=5.0
 OAXACA, MEXICO

JAS SEP 20 17 57 44.1 D

MHC SEP 21 01 23 18.0
 JAS 01 23 23.7
 MIN 01 23 27.7

MIN SEP 21 07 06 *E 07 05
 JAS 07 06 48.2 *E 09 17

MHC SEP 23 02 29 47.0 C
 JAS 02 29 52.1
 JAS SEP 23 06 27 07.8 D
 PRI SEP 23 08 34 20.0 C
 SAO 08 34 31.6 *I 35 15
 MHC 08 34 39.0
 JAS 08 34 40.7 C
 MAG 4, LOS ANGELES AREA
 USNOS 08 33 33.0, 34.0N, 118.3W, H= 10 KM, M=4.3
 SOUTHERN CALIFORNIA

MIN SEP 23 12 12 23.0 *PP 12 46
 MHC 12 12 44.7 *E 13 47
 JAS 12 12 45.1 C *PP 13 08
 PRI 12 12 59.0 *PP 13 21

BKS SEP 23 12 17 41.0 *E 17 45 PP 21 13 *E 28 24
 *E 29 28 SS 34 36 SSS 38 12
 LQ 41 34 L 45 00

MICRON PERIOD
 MAXR(Z) 15.0 20
 MAXH(N) 5.0 20
 MAXH(E) 13.0 20

MHC 12 17 47.4
 SAO 12 17 48.7
 MIN 12 17 48.8
 JAS 12 17 51.4
 PRI 12 17 51.7
 p.p.p. 43 23

MAG 6 1/4, DIST(DEG) 88
 USNOS 12 04 54.2, 6.5S, 154.6E, H= 39 KM, M=5.7
 SOLOMON ISLANDS. FELT AT RABAU (II)

MIN SEP 23 21 10 33.0 C *E 22 30
 BKS 21 10 42.0 *E 11 08
 JAS 21 10 50.9 C
 USNOS 21 02 54.6, 51.4N, 179.4W, H= 43 KM, M=5.2
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS. FELT ON
 ADAK AND AMCHITKA (II)

PRI SEP 23 22 55 24.0 PCP 57 53
 JAS 22 55 31.1 *E 55 43 PCP 57 56
 MHC 22 55 35.1
 MIN 22 55 47.9
 FHC 22 56 04.9 C PCP 58 37
 SOUTHERN MEXICO

PRI SEP 23 23 02 51.0 *E 03 09 PCP 05 22
 JAS 23 02 58.1 C
 MHC 23 03 02.2
 MIN 23 03 15.0
 FHC 23 03 30.4
 SOUTHERN MEXICO

BKS SEP 23 23 24 48.0 *PP 28 28 *E 35 44 PS 36 40

SS 41 52 SSS 45 20 LQ 48 40
L 51 20

MICRON PERIOD
MAXR(Z) 4.3 20
MAXH(N) 1.8 20
MAXH(E) 3.2 20

PRI
JAS

23 24 53.0
23 24 53.8 PP 28 29

MAG 5.7, DIST(DEG) 88
USNOS 23 11 58.5, 6.5S, 154.7E, H= 47 KM, M=5.3
SOLOMON ISLANDS. FELT AT RABAU, NEW
BRITAIN (II)

JAS SEP 24 00 05 10.0 PCP 07 18

FHC SEP 24 06 42 23.4 C
BKS 06 42 25.0
JAS 06 42 32.7 C

USNOS 06 29 35.7, 6.6S, 154.7E, H= 42 KM, M=5.1
SOLOMON ISLANDS. FELT AT PIVA (IV)

BKS SEP 24 16 53 01 10 *E 04 44 L 10 00

MICRON PERIOD
MAXR(Z) 1.8 20
MAXH(N) 1.1 20
MAXH(E) 1.4 20

MIN
JAS

16 53 36
16 53 54.7 D

MAG 5.0, DIST(DEG) 51
USNOS 16 44 39.9, 54.7N, 162.8E, H= 34 KM, M=5.3
NEAR EAST COAST OF KAMCHATKA

PRI SEP 25
JAS
MHC
BKS

23 33 21.8
23 33 27.3 D
23 33 29.5 D
23 33 33.2 *PP 34 09

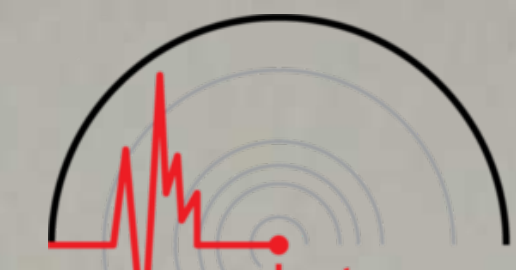
MICRON PERIOD
PZ 0.02 0.7
MAG(MB) 5.0, DIST(DEG) 81
USNOS 23 21 31.6, 24.9S, 68.7W, H= 99 KM, M=5.0
CHILE-ARGENTINE BORDER REGION

FRE SEP 26
PRI
JAS
SAO
MHC
BKS

12 11 17.3
12 11 22.4
12 11 27.0
12 11 28.5
12 11 31.6
12 11 36.7
18 56
MICRON PERIOD
PZ 14
MAXR(Z) 43 14
MAXH(N) 57 19
MAXH(E) 43 20
12 11 40.8 19
12 11 55.1

MIN
FHC

MAG 6.5, DIST(DEG) 52



USNOS 12 02 29.3, 6.2N, 77.6W, H= 8 KM, M=6.1
NEAR WEST COAST OF COLUMBIA. INJURIES AND
DAMAGE

PRI SEP 26 14 12 17.8 *PP 12 46
14 12 23.0 D *PP 12 50
JAS

PRI SEP 26 15 05 53.8
JAS 15 05 58.5 D
MHC 15 06 03.4
BKS 15 06 10.8 D

MICRON PERIOD
PZ 0.04 0.8

FHC 15 06 26.9 D
MAG 4.6, DIST(DEG) 52
USNOS 14 57 02.2, 6.3N, 77.4W, H= 14 KM, M=5.3
NEAR WEST COAST OF COLUMBIA

JAS SEP 26 16 40 43.5
FHC 16 41 11.5

BKS SEP 26 17 13 LR 38 00
MICRON PERIOD
MAXR(Z) 1.2 18
MAXH(E) 0.9 18

JAS 17 13 46
MAG 5.0, DIST(DEG) 79

JAS SEP 26 23 29 29.0
FHC SEP 27 03 37 18.9 D 37 35
MIN 03 37 37.5 C
BKS 03 38 04.5
JAS 03 38 12.7
SAO 03 38 20.5

MAG 4.3. 50 KM NORTH OF CRESCENT CITY, CALIFORNIA
USNOS 03 37 03.9, 41.6N, 123.8W, H= 19 KM, M=4.3
NORTHERN CALIFORNIA

FRE SEP 27 03 47 26.2 D
PRI 03 47 27.9 *E 47 43 *E 48 06
JAS 03 47 32.8 D
SAO 03 47 34.6 *E 47 48
MHC 03 47 37.6 D LR 08 00
BKS 03 47 42.3 D 55 09 PERIOD

MICRON PERIOD
PZ 5.4 7
MAXR(Z) 21 19
MAXH(N) 30 21
MAXH(E) 32 18

MIN
FHC

03 47 46.5 D *E 48 11
03 48 01.1 D
MAG 6.4, DIST(DEG) 53
USNOS 03 38 36.2, 6.4N, 77.4W, H= 8 KM, M=5.8
NEAR WEST COAST OF COLUMBIA

FHC SEP 28 04 27 54.7 C
 MIN 04 28 08.4 C
 BKS 04 28 19.6 C

MICRON PERIOD
 PZ 0.08 0.7

MHC 04 28 26.0 C
 JAS 04 28 28.8 C *E 28 38
 SAO 04 28 30.0 C
 PRI 04 28 38.7 C
 FRE 04 28 39.0

MAG 5.0, DIST(DEG) 33
 USNOS 04 21 49.8, 54.5N, 164.5W, H= 77 KM, M=5.0
 UNIMAK ISLANDS REGION

PRI SEP 28 07 19 46.9 SKP 23 13
 JAS 07 19 48.9 SKP 23 14 PKKP 29 46
 MHC 07 19 49.7 SKP 23 15
 BKS 07 19 52.4 C *PP 20 22 SKP 23 17
 MIN 07 19 53.6
 FHC 07 19 56.7

USNOS 07 01 06.2, 56.3S, 27.3W, H=107 KM, M=5.4
 SOUTH SANDWICH ISLANDS REGION

JAS SEP 28 09 18 56.1

PRI SEP 28 10 56 51.1 *PP 57 18
 JAS 10 56 56.6 *PP 57 24

MIN SEP 28 11 48 48.2
 FHC 11 48 54.6
 JAS 11 48 57.4

FHC SEP 28 17 31 09.2 C *PP 31 38
 BKS 17 31 30.1
 MHC 17 31 35.4 C
 JAS 17 31 37.6 C
 PRI 17 31 45.8

USNOS 17 22 12.1, 53.3N, 158.7E, H=118 KM, M=5.4
 NEAR EAST COAST OF KAMCHATKA

FHC SEP 28 23 59 17.0 *E 59 43
 JAS 23 59 19.8 C *E 59 45

MIN SEP 29 00 06 42.8
 FHC 00 06 49.2
 JAS 00 06 52.1
 PRI 00 07 03.8

PRI SEP 29 04 50 05.9 C
 JAS 04 50 11.7 C
 MHC 04 50 16.9 C
 BKS 04 50 22.2 C

PCP 52 07
 PCP 52 09 *PPCP 52 54 SCP 55 41
 *PP 50 58 PCP 52 12
 PCP 52 13

MICRON PERIOD
 PZ 0.17 1.3
 PCP 52 16
 *PP 51 23

MIN FHC 04 50 27.5 C
 04 50 42.4 C



MAG(MB) 5.4, DIST(DEG) 42
 USNOS 04 42 46.6, 11.5N, 85.5W, H=192 KM, M=5.4
 NICARAGUA

FHC SEP 29 06 15 50.3 *E 16 15
 MHC 06 15 51.8
 BKS 06 15 52.6 26 11 SS 31 42 SSS 35 08 L 38 24
 LR 41 00

MICRON PERIOD
 PZ 0.05 0.9
 MAXR(Z) 41 20
 MAXH(N) 16 20
 MAXH(E) 31 20

PRI 06 15 53.6
 FRE 06 15 56.5
 MIN 06 15 56.7 *E 16 25 P P 42 09
 JAS 06 15 57.8

MAG 6.6, DIST(DEG) 81
 USNOS 06 03 26.0, 13.5S, 166.5E, H= 59 KM, M=5.8
 NEW HEBRIDES ISLANDS

JAS SEP 29 06 57 03.5

FHC SEP 29 19 37 47.5 D
 BKS 19 38 02.0 D
 JAS 19 38 09.2 D

FHC SEP 29 23 21 19.9
 BKS 23 21 21.6 D
 MHC 23 21 23.7 D
 SAO 23 21 24.0
 PRI 23 21 26.3 D
 JAS 23 21 28.1 D

MIN SEP 30 07 33 *E 33 14
 JAS 07 33 09.4 D
 MHC 07 33 10.3 D
 BKS 07 33 11.2 D

USNOS 07 14 17.8, 55.7S, 27.8W, H= N KM, M=5.0
 SOUTH SANDWICH ISLANDS REGION

MIN SEP 30 10 05 45.7
 JAS 10 05 54.9

USNOS 09 52 22.7, 20.6N, 122.0E, H= N KM, M=5.1
 PHILIPPINE ISLANDS REGION. DAMAGE ON BATAN ISLANDS (VI). MINOR LOCAL TSUNAMI

BKS SEP 30 10 19 13 LR 36 00
 JAS 10 19 14.3

USNOS 10 06 44.8, 13.4S, 166.7E, H= 66 KM, M=5.1
 NEW HEBRIDES REGION

JAS SEP 30 13 08 17.0 D *E 08 26
 MIN SEP 30 18 20 *E 20 42
 JAS 18 20 40.3 *E 21 05

JAS SEP 30 19 38 06.5 C

BKS SEP 30 21 03
PRI 21 03 23.5
JAS 21 03 33.5

USNOS 20 52 08.2, 34.7S, 112.2W, H= N KM, M=5.0
EASTER ISLANDS CORDILLERA

BKS SEP 30 23 07
PRI 23 07 14.6
JAS 23 07 20.9
MHC 23 07 22.7

LR 26 42
*E 03 35
*E 04 45
*E 07 52
*E 07 31 *E 07 39
*E 07 37 *E 07 45
*E 07 40 *E 07 48

BKS OCT 01 00 28 12.7
MIN 00 28 13.5
JAS 00 28 19.5 D

FHC OCT 01 09 52 19.4 C
MIN 09 52 29.0 C
BKS 09 52 37.0
MHC 09 52 41.5 C
JAS 09 52 43.6 C
PRI 09 52 49.7 C
FRE 09 52 50.4

USNOS 09 42 28.6, 46.9N, 143.6E, H=385 KM, M=5.0
SAKHALIN ISLAND

JAS OCT 02 05 53 58.7 C

USNOS 05 41 03.7, 6.8S, 155.0E, H= 54 KM, M=5.0
SOLOMON ISLANDS

BKS OCT 02 06 28 23

39 18 PP 31 44 PS 40 22 *E 44 32
SS 45 20 SSS 48 52 *E 52 20
L 53 33 LR 56 00

MICRON PERIOD
MAXR(Z) 10 20
MAXH(N) 0.9 20
MAXH(E) 9 20

MHC 06 28 25.3 C
MIN 06 28 27.4 C
PRI 06 28 28.5 C
JAS 06 28 28.5 C
FRE 06 28 32

MAG 6.0, DIST(DEG) 88
USNOS 06 15 32.8, 6.8S, 154.9E, H= 54 KM, M=5.4
SOLOMON ISLANDS. FELT AT PIVA (IV) AND
RABAU (II)

PRI OCT 02 09 52 45.5 C
MHC 09 52 46.2
BKS 09 52 46.7

03 16 *E 53 23 L 16 12 LR 20 00
MICRON PERIOD
MAXR(Z) 6.2 19
MAXH(N) 4.8 18
MAXH(E) 3.1 18

09 52 50.2
09 52 51.4 C
09 52 56.9

FRE
JAS
MIN

MAG 5.8, DIST(DEG) 82
USNOS 09 40 21.2, 28.9S, 177.1W, H= 59 KM, M=5.5
KERMADEC ISLANDS REGION

BKS OCT 02 19 45 42.5 55 42 LR 11 25
MICRON PERIOD
MAXR(Z) 1.9 18
MAXH(N) 1.9 20
MAXH(E) 1.3 20

PRI
JAS
MIN

19 45 43
19 45 46
19 45 52
MAG 5.5, DIST(DEG) 82
USNOS 19 33 15.9, 29.0S, 176.9W, H= 46 KM, M=5.3
KERMADEC ISLANDS REGION

FHC OCT 03 00 25 13.0
MIN 00 25 20.5
MHC 00 25 36.2
JAS 00 25 38.6
PRI 00 25 41.5
BKS 00 25

33 02 LR 40 45
USNOS 00 16 25.9, 55.2N, 163.2E, H= 31 KM, M=5.2
OFF EAST COAST OF KAMCHATKA

FHC OCT 03 05 53 49.4
MIN 05 53 59.2
JAS 05 54 14.0 C

KURIL ISLANDS REGION

FHC OCT 03 08 17 49.8
MIN 08 17 51.4
BKS 08 18 08

23 00 *PP 18 14 L 25 10
MICRON PERIOD
MAXH(N) 1.2 18
MAXH(E) 2.4 18

JAS 08 18 14.4
PRI 08 18 26.7

*PP 18 21
*PP 18 34
MAG 4 3/4, DIST(DEG) 27
USNOS 08 12 20.8, 58.4N, 150.5W, H= 25 KM, M=5.0
GULF OF ALASKA

JAS OCT 03 10 47 23.2
PRI 10 47 32.3
BKS 10 47

59 28 LQ 12 00 LR 15 30
MICRON PERIOD
MAXH(N) 1.2 20
MAXH(E) 3.7 20
MAG 5.7, DIST(DEG) 90
USNOS 10 34 09.8, 6.1S, 150.5E, H= 23 KM, M=5.0
NEW BRITAIN REGION. FELT ON NEW BRITAIN
(VII)

PRI OCT 03 14 25 44.0 C
 JAS 14 25 49.7 C
 MHC 14 25 54.8 C
 BKS 14 26 00.0 33 20 L 44 00
 MIN 14 26 03.7 C
 FHC 14 26 18.2 C
 USNOS 14 16 55.3, 6.4N, 77.5W, H= 25 KM, M=5.2
 NEAR WEST COAST OF COLUMBIA. FELT AT NUQUI

PRI OCT 03 19 01 14.5 D
 JAS 19 01 20.1 D
 FHC 19 01 42.0 D
 USNOS 18 49 22.1, 25.2S, 71.1W, H= 31 KM, M=5.0
 OFF COAST OF NORTHERN CHILE

JAS OCT 04 00 48 05.5 D

FRE OCT 04 06 39 42 08
 JAS 06 39 45 42 18

JAS OCT 04 07 08 20 *E 11 08
 BKS 07 08 L 11 30

FRE OCT 04 07 23 *E 26 02
 JAS 07 23 46 *E 26 20
 BKS 07 23 L 27 00

FRE OCT 04 07 45 *E 48 23
 JAS 07 45 55 *E 48 35
 BKS 07 45 L 49 18

JAS OCT 04 15 39 49 *E 42 27
 BKS 15 39 L 43 00

JAS OCT 04 17 00 35 *E 03 15
 BKS 17 00 L 04 06

FRE OCT 04 17 14 *E 16 58
 JAS 17 14 47 *E 17 28
 BKS 17 14 L 17 36

PRI OCT 04 17 41 43 *E 42 21
 FRE 17 41 58 *E 42 04 *E 44 30
 JAS 17 41 58.7 D *E 42 40 L 44 30
 BKS 17 41

MICRON
 MAXR(Z) 16
 MAXH(N) 14
 MAXH(E) 13
 MAG 5 1/4, DIST(DEG) 11
 USNOS 17 39 45.4, 30.6N, 113.6W, H= N KM, M=5.0
 GULF OF CALIFORNIA

SAD OCT 05 11 33 20.0 C
 MHC 11 33 21.3 C
 PRI 11 33 21.3 C

JAS MIN 11 33 26.7 C
 11 33 30.0 C
 FIJI ISLANDS REGION

PRI OCT 05 11 57 06.3 C
 JAS 11 57 12.1 C
 USNOS 11 44 43.4, 34.0S, 72.2W, H= 53 KM, M=5.1
 NEAR COAST OF CENTRAL CHILE. FELT

SAD OCT 05 14 37 15.3 C
 BKS 14 37 16.5 C
 PRI 14 37 16.7 C
 MHC 14 37 17.0 C
 JAS 14 37 22.4 C
 FIJI ISLANDS REGION

FHC OCT 05 19 13 10.0 C
 MIN 19 13 16.1 C
 JAS 19 13 37.8 C

SAD OCT 05 19 52 49.9 C
 BKS 19 52 50.8 C
 MICRON PERIOD
 PZ 0.05 0.8

MHC 19 52 51.5 C
 PRI 19 52 51.6 C
 FHC 19 52 54.4 C
 JAS 19 52 57.4 C
 MIN 19 53 00.5 C
 MAG(MB) 5.1, DIST(DEG) 74
 USNOS 19 41 58.2, 15.8S, 177.7W, H=456 KM, M=4.8
 FIJI ISLANDS REGION

BKS OCT 05 22 05 *E 28 45 LQ 34 10
 MICRON PERIOD
 MAXR(Z) 1.6 20
 MAXH(N) 1.4 20
 MAXH(E) 1.1 20
 JAS 22 05 10
 MAG 5.3, DIST(DEG) 84
 USNOS 21 52 40.1, 29.2S, 176.8W, H= 34 KM, M=5.1
 KERMADEC ISLANDS REGION

JAS OCT 06 04 26 04.5 C
 JAS OCT 06 21 34 18.8 C *E 34 21 *I 34 49
 MHC 21 34 21.8 C L 52 30
 BKS 21 34 24 41 36 *E 46 50
 FHC 21 34 *E 34 49
 USNOS 21 25 21.0, 6.2N, 77.6W, H= 33 KM, M=5.2
 NEAR WEST COAST OF COLUMBIA. FELT

MIN OCT 06 23 46 26.6 C *PP 46 46 *I 47 17
 JAS 23 46 40.5 C *PP 46 59
 USNOS 23 35 28.6, 41.5N, 142.1E, H= 71 KM, M=5.0
 HOKKAIDO, JAPAN. FELT

MHC OCT 07 16 09 19.5 D
 JAS 16 09 23.0 D *E 09 43
 PRI 16 09 30.5

BKS OCT 07 18 54 24.8 L 15 30
 PRI 18 54 24.8 D
 MHC 18 54 25.2
 JAS 18 54 31.4 D
 USNOS 18 43 01.2, 16.4S, 172.4W, H= 14 KM, M=5.1
 SAMOA ISLANDS REGION

JAS OCT 08 03 59 57.0 C *PP 00 06 *E 00 14
 USNOS 03 48 13.3, 19.3S, 173.5W, H= 40 KM, M=5.2
 TONGA ISLANDS

FHC OCT 08 05 02 16.5
 MIN 05 02 28.6 D
 BKS 05 02 38.8 10 06 SCS 12 30 SS 13 46 SSS 16 06
 LQ 16 26 LR 18 06

MICRON PERIOD
 MAXR(Z) 2.1 20
 MAXH(N) 0.9 22
 MAXH(E) 1.8 20

MHC 05 02 43.7 D
 JAS 05 02 45.9 D *E 03 15
 PRI 05 02 54.4 D
 MAG 5 1/4, DIST(DEG) 53
 USNOS 04 53 21.8, 53.8N, 160.4E, H= 53 KM, M=5.6
 NEAR EAST COAST OF KAMCHATKA

PRI OCT 08 07 10 20.6
 BKS 07 10 20.9
 MHC 07 10 21.0 D
 FHC 07 10 24.9
 JAS 07 10 26.3 D
 MIN 07 10 29.9
 USNOS 06 59 10.6, 21.6S, 179.1W, H=577 KM, M=5.0
 FIJI ISLANDS REGION

JAS OCT 08 10 51 14.5 *E 51 31

JAS OCT 08 11 20 13

FHC OCT 08 13 09 14.3
 MIN 13 09 28.2 D
 BKS 13 09 36.0 D
 MHC 13 09 42.6 D L 25 00
 JAS 13 09 46.3 D
 PRI 13 09 54.0 D *E 10 06
 USNOS 13 02 04.7, 50.4N, 176.2W, H= 38 KM, M=5.1
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS

FHC OCT 08 23 46 31.7 C
 BKS 23 46 53.0
 55 33 SS 59 40 LQ 03 06 LR 05 45
 MICRON PERIOD



MAXR(Z) 2.8 22
 MAXH(N) 1.5 22
 MAXH(E) 2.4 22

MHC 23 46 57.3 C
 JAS 23 46 59.9 C *I 47 13
 PRI 23 47 06.3 C

MAG 5 1/4, DIST(DEG) 64
 USNOS 23 36 09.7, 43.8N, 147.4E, H= 15 KM, M=5.8
 KURIL ISLANDS. FELT

MIN OCT 09 11 14 54.1 C
 BKS 11 15 02.8 L 26 30
 MHC 11 15 08.6 C
 JAS 11 15 12.2 C *I 15 28
 USNOS 11 07 20.2, 51.4N, 178.4W, H= 41 KM, M=5.2
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS.
 FELT AT ADAK (I)

JAS OCT 09 16 03 45
 USNOS 15 53 12.5, 9.8S, 78.8W, H= N KM, M=5.0
 NEAR COAST OF NORTHERN PERU

JAS OCT 10 00 24 43.3

BKS OCT 10 09 12 29.0 *E 12 45 *PP 16 00 *E 29 58
 SS 33 10 LQ 49 00 LR 01 50
 P 12 28 PP 15 15

JAS 09 12 17
 PRI 09 12 23.5
 DIST(DEG) 137. FIRST ARRIVALS AT JAS AND PRI APPEAR
 TO BE GH BRANCH OF P, AHEAD OF PKIKP ARRIVAL
 USNOS 08 53 04.8, 3.6S, 86.2E, H= N KM, M=5.9
 SOUTH INDIAN OCEAN

FHC OCT 10 10 36 *E 36 53 *E 40 09
 FRE 10 36 06.6 C
 PRI 10 36 08.0 *E 36 31 *E 39 34
 JAS 10 36 17.5 D
 MHC 10 36 20.2
 USNOS 10 30 29.8, 16.4N, 100.4W, H= N KM, M=4.9
 NEAR COAST OF GUERRERO, MEXICO

JAS OCT 10 14 40 15.2 C
 MIN 14 40 17.8 C

PRI OCT 10 15 14 12.1
 JAS 15 14 21.0 C

PRI OCT 10 21 17 52.6 D
 JAS 21 17 57.8 D
 MHC 21 18 00.3

SAD OCT 10 22 12 22.7
 PRI 22 12 23.9
 MHC 22 12 24.9
 BKS 22 12 26.2

22 51 L 35 08 *E 38 50 LR 40 13
 MICRON PERIOD

PZ 0.24 1.1
 MAXR(Z) 15 20
 MAXH(N) 13 20
 MAXH(E) 10 20
 PP 15 57

JAS
 FHC
 MIN

22 12 29.8
 22 12 32.5
 22 12 34.1

MAG 6.3, DIST(DEG) 88
 USNOS 21 59 42.9, 31.9S, 177.9W, H= N KM, M=5.9
 KERMADEC ISLANDS REGION

JAS OCT 11 01 08 23.8 C

USNOS 00 55 35.3, 35.1S, 178.6E, H=190 KM, M=5.3
 OFF EAST COAST OF NORTH ISLAND, NEW ZEALAND

JAS OCT 11 01 15 39.7

SAO OCT 11 03 29 29.7

PRI 03 29 30.8 C

MHC 03 29 31.8

BKS 03 29 34.2

40 02 LQ 52 16 L 56 02 L 57 50
 MICRON PERIOD

PZ 0.16 0.9
 MAXR(Z) 36 20
 MAXH(N) 27 20
 MAXH(E) 24 20

FHC 03 29 35.5 C

JAS 03 29 36.4 C

FRE 03 29 36.5 C

MIN 03 29 41.1

MAG 6.6, DIST(DEG) 88
 USNOS 03 16 49.6, 31.8S, 178.1W, H= N KM, M=5.6
 KERMADEC ISLANDS REGION

*E 29 51 *E 30 09 PP 33 06
 *E 42 50 P'P' 55 42

*I 29 57 *I 30 37

JAS OCT 11 03 42 59.8

USNOS 03 30 01.9, 26.7N, 129.7E, H= 27 KM, M=5.3
 RYUKU ISLANDS

JAS OCT 11 05 00 58.9 C

MIN OCT 11 05 11 42.9 D

JAS 05 11 54.3 D

USNOS 04 59 18.3, 29.3N, 130.4E, H= 51 KM, M=5.1
 RYUKU ISLANDS

MIN OCT 11 05 39 48.8 D

JAS 05 40 02.8

USNOS 05 29 17.3, 43.5N, 147.7E, H= 50 KM, M=5.2
 KURIL ISLANDS

*E 39 54

*E 46 47

PP 54 01

PRI OCT 11 05 50 44.5

SAO 05 50 44.5

MHC 05 50 45.5

JAS 05 50 50.3 C

FRE 05 50 51.6

05 50 51.9 MICRON LR 17 36
 PERIOD

PZ 0.9 0.07
 MAXR(Z) 13 20
 MAXH(N) 9 20
 MAXH(E) 8 20

BKS

05 50 57.9 D *I 51 34 *E 51 54

MIN

MAG 5.9 DIST(DEG) 88
 USNOS 05 38 06.0, 32.1S, 177.8W, H= 32 KM, M=5.6
 KERMADEC ISLANDS

JAS OCT 11 06 27 15.5

JAS OCT 11 06 50 33.1

PRI OCT 11 06 57 47.9 C

MHC 06 57 49.1 C

BKS 06 57 50 C

JAS 06 57 53.7 C

MIN 06 57 58.3 C

JAS OCT 11 10 35 56.5 USNOS 10 26 34.4, 53.8N, 160.7E, H= N KM, M=5.0
 NEAR EAST COAST OF KAMCHATKA

JAS OCT 11 10 44 33.0

PRI OCT 11 11 39 21.2

MHC 11 39 22.3

BKS 11 39 22.8

FRE 11 39 26.2

JAS 11 39 27.3

MIN 11 39 32.1 D

USNOS 11 26 40.3, 32.3S, 177.8W, H= N KM, M=5.0
 SOUTH OF KERMADEC ISLANDS

LR 08 00

JAS OCT 11 15 53 52.9

JAS OCT 11 22 41 13.1 C

PRI OCT 12 07 12 39.8

MHC 07 12 40.8

BKS 07 12 41.6

FRE 07 12 45.2

JAS 07 12 45.5 C

MIN 07 12 50.9 D

23 16 L 35 57 LR 39 10

USNOS 06 59 58.3, 32.0S, 178.0W, H= N KM, M=5.1
 SOUTH OF KERMADEC ISLANDS

JAS OCT 12 07 15 30.3

JAS OCT 12 07 20 41.0

PP 23 25

MIN OCT 12 07 25 04.3 C

JAS 07 25 09.6

*E 25 28

MIN OCT 12 09 44 19.3 C *PP 46 16
 SAO 09 44 23.4 C
 BKS 09 44 27.2 *PP 46 25

MICRON PERIOD
 PZ 0.11 0.6

PRI 09 44 39.1 C *PP 46 38
 JAS 09 44 32.6 C *E 44 37 *PP 46 31 *SP 47 42
 MHC 09 44 31.1 C *PP 46 29
 FHC 09 44 11.2 C *PP 46 08

MAG(MB) 5.4, DIST(DEG) 74
 USNOS 09 33 36.6, 42.8N, 131.0E, H=555 KM, M=5.2
 EAST RUSSIA-NORTHEAST CHINA BORDER REGION

JAS OCT 12 11 39 12.3 C
 USNOS 11 20 15.6, 57.3S, 24.5W, H= N KM, M=5.5
 SOUTH SANDWICH ISLANDS REGION

JAS OCT 12 11 43 15.2

PRI OCT 12 12 30 32.0 C
 JAS 12 30 41.5 C
 MIN 12 31 00.7 C

JAS OCT 12 12 37 14.0

PRI OCT 12 20 07 47.7 *E 11 01
 BKS 20 08 10 00 LR 10 36
 JAS 20 08 02.4 *E 11 26
 MHC 20 08 05.5

USNOS 20 05 34.5, 30.1N, 113.4W, H= N KM, M=5.2
 GULF OF CALIFORNIA

MIN OCT 13 04 11 *E 11 55
 MHC 04 11 49.6
 PRI 04 11 49.8
 JAS 04 11 54.7 D

FIJI ISLANDS REGION
 USNOS 03 59 35.9, 18.8S, 176.0E, H= N KM, M=5.3
 FIJI ISLANDS REGION

PRI OCT 13 04 51 16.8 *PP 51 26
 JAS 04 51 22.9 C *PP 51 31
 MHC 04 51 24.8 *PP 51 33
 MIN 04 51 34.6 C

USNOS 04 39 28.4, 23.7S, 70.5W, H= 25 KM, M=5.1
 NEAR COAST OF NORTHERN CHILE. FELT

PRI OCT 13 07 05 *E 05 43
 JAS 07 05 47.4 D *E 05 55
 MIN 07 05 49.0 D

USNOS 06 53 28.6, 18.8S, 176.0E, H= N KM, M=5.1
 FIJI ISLANDS REGION

PRI OCT 13 08 24 *E 24 46
 MHC 08 24 *E 24 47
 JAS 08 24 50.4 D

JAS OCT 13 14 14 43.8 C
 USNOS 14 02 25.8, 18.5S, 176.1E, H= N KM, M=5.1
 FIJI ISLANDS REGION

SAO OCT 13 15 05 *E 06 15
 15 05 57.6 C 06 56 *I 06 08
 JAS 15 06 02.4 C *E 06 31
 PRI 15 06 19.3 C *I 07 25 *I 07 29
 MHC MAG 4.2, NEVADA-UTAH BORDER

BKS OCT 13 19 06 46.7 *E 16 56 L 24 41
 MHC 19 06 47.6 C
 JAS 19 06 52.6 C
 PRI 19 06 53.6 C

USNOS 18 53 30.0, 4.1S, 143.0E, H=120 KM, M=5.7
 NEW GUINEA. FELT (MAX V)

BKS OCT 13 19 23 *E 33 20 *E 37 15 *E 40 32
 JAS 19 23 32.1 D *I 24 01 *E 24 29

PRI OCT 13 23 28 30.2 D *E 28 41 *E 31 00
 JAS 23 28 37.0 D 34 45 PP 31 01
 MHC 23 28 41.6 D *E 28 56
 BKS 23 28 47.4 *E 39 24 *E 42 21
 MIN 23 28 54.6 D
 FHC 23 29 10.9 D *I 29 25

FHC OCT 14 06 10 48.7 C PP 13 16 P'P' 39 22
 MIN 06 10 51.0 C PP 13 17 PK4P 47 42
 JAS 06 11 06.2 C *I 12 11 PP 13 38 *E 36 47
 BKS 06 11 07.2 C P'P' 39 13 PK4P 47 52 *E 43 16
 MHC 06 11 10.5 C PCP 11 29 P'P' 39 11

MICRON PERIOD
 PZ 1.18 0.9
 P'P' 39 11

MHC 06 11 13.7 C *E 36 45 P'P' 39 10
 SAO 06 11 18.4 C
 PRI MAG(MB) 6.9, DIST(DEG) 69. STRONG P'P' PHASES
 RECORDED THROUGHOUT NETWORK, WITH MANY PROMINENT
 PRECURSORS, LEADING MAIN PHASE BY UP TO 140 SEC.
 PHASE P'P'P'P'P' RECORDED AT JAS AND MIN
 USNOS 05 59 57.1, 73.3N, 55.1E, H= 0 KM, M=6.7
 NOVAYA ZEMLYA. EXPLOSION

BKS OCT 14 10 51 49.5 C MICRON PERIOD
 0.17 1.0

SAO 10 51 49.7 C
 MHC 10 51 50.4 C
 PRI 10 51 50.6 C
 FHC 10 51 53.5
 JAS 10 51 56.1 C
 MIN 10 51 59.0 C

MAG(MB) 5.5, DIST(DEG) 76
 USNOS 10 40 58.0, 18.1S, 178.5W, H=609 KM, M=5.3

FIJI ISLANDS REGION

JAS OCT 14 11 33 14.8 C
 JAS OCT 14 13 48 32.7
 JAS OCT 14 14 30 57.6 C
 PRI 14 31 01.1 C
 SAO 14 31 07.8 C
 MHC 14 31 10.5 C
 BKS 14 31 17.0 C
 MIN 14 31 23.6 C

*E 31 28

MAG 5.3. SOUTHERN NEVADA. NUCLEAR TEST 'TIJERAS'
 USAEC 14 30 00.0, 37 04 14.4N, 116 00 18.5W

JAS OCT 14 15 23 18.3 D
 PRI 15 23 21.5 D
 MHC 15 23 29.2 C
 SAO 15 23 38.4 D
 BKS 15 23 51.7

MAG 4.3. SOUTHERN NEVADA. 'TIJERAS' COLLAPSE

JAS OCT 14 16 11 20.0
 USNOS 16 00 34.1, 43.4N, 148.0E, H= 42 KM, M=5.2
 KURIL ISLANDS

JAS OCT 14 18 16 48.5
 USNOS 18 05 59.9, 43.5N, 147.8E, H= 33 KM, M=5.1
 KURIL ISLANDS

BKS OCT 14 18 26 20.8
 MHC 18 26 24.5
 JAS 18 26 25.5 C
 PRI 18 26 31.5 C

*E 35 00 L 42 29 L 44 52

*E 26 38 *E 30 17 *E 37 33

USNOS 18 15 37.3, 43.5N, 148.0E, H= 30 KM, M=5.5
 KURIL ISLANDS. FELT ON HOKKAIDO, JAPAN

MIN OCT 14 21 24 37
 BKS 21 24 43
 JAS 21 24 52
 PRI 21 24 58

*E 33 28 L 41 15 L 43 30

*PP 25 03

USNOS 21 14 00.9, 43.5N, 147.0E, H=410 KM, M=5.4
 KURIL ISLANDS. FELT AT NEMURO, JAPAN

MIN OCT 14 21 42 15.3
 BKS 21 42 17.0
 MHC 21 42 20.1
 JAS 21 42 23.6 D
 PRI 21 42 26.2

MARIANA ISLAND REGION

SAO OCT 15 12 24 17.7 C
 BKS 12 24 18.9
 MHC 12 24 19.1 C
 PRI 12 24 19.3 C



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12 24 24.7 C *E 24 28 *PP 26 24

12 24 28
 USNOS 12 13 23.6, 17.6S, 178.8W, H=564 KM, M=5.1
 FIJI ISLANDS REGION

JAS MIN

MIN OCT 15 15 36 22
 JAS 15 36 36.2 C

JAS OCT 16 02 00 52.9 C
 USNOS 01 39 53.2, 26.1S, 70.8E, H= N KM, M=5.6
 SOUTH INDIAN OCEAN

FHC OCT 16 05 37 20.9 C *PP 37 26 *I 37 37 P'P' 05 28
 MIN 05 37 30.5 C *PP 37 36
 BKS 05 37 36.9 C 47 00 SS 51 14 SSS 55 10 L 57 15
 LR 58 48

MICRON PERIOD

PZ 0.26 1.0
 SH 3.74 16
 MAXR(Z) 3.4 20
 MAXH(N) 2.7 20
 MAXH(E) 3.0 20

MHC 05 37 41.3 C
 JAS 05 37 43.3 C p'p' 05 15
 SAO 05 37 43.7 C
 PRI 05 37 49.5 C
 MAG 5.8, DIST(DEG) 72
 USNOS 05 26 13.3, 39.3N, 140.7E, H= 24 KM, M=5.9
 HONSHU, JAPAN. SLIGHT DAMAGE AT YUDA

*E 55 23

JAS OCT 16 10 55 19.2 C
 JAS OCT 16 12 32 05.2 C
 JAS OCT 16 16 18 47
 JAS OCT 17 16 33 25.8

SAO OCT 18 01 18 52.4 C
 PRI 01 18 53.7 C
 BKS 01 18 54.1

MICRON PERIOD

PZ 0.06 0.8
 01 18 54.0 C
 01 18 58.0
 01 18 58.9 C
 01 19 02.6 C

MAG(MB) 5.3, DIST(DEG) 85
 USNOS 01 07 20.9, 25.7S, 178.6E, H=572 KM, M=4.9
 SOUTH OF FIJI ISLANDS

SAO OCT 18 09 30 52.9
 MHC 09 30 55.0 D *E 49 06 *E 52 12
 BKS 09 30 54.2 D 40 46
 MICRON PERIOD
 PZ 0.05 0.9

PRI 09 30 54.4 D
 FHC 09 30 59.8
 JAS 09 31 00.9 D *E 31 27
 MIN 09 31 05.5
 MAG 5, DIST(DEG) 71
 USNOS 09 19 33.2, 16.7S, 172.1W, H= 35 KM, M=5.5
 SAMOA ISLANDS REGION

SAD OCT 18 16 26 07.5
 PRI 16 26 08.7 C
 BKS 16 26 09.2
 MICRON PERIOD
 PZ 0.05 1.0
 MHC 16 26 09.5 C
 JAS 16 26 14.9 C
 MIN 16 26 19.3
 MAG 4 3/4, DIST(DEG) 80
 USNOS 16 14 06.9, 22.9S, 176.0W, H= 30 KM, M=5.0
 SOUTH OF FIJI ISLANDS

PRI OCT 18 18 41 22.0
 MHC 18 41 22.8
 BKS 18 41 27.3
 MICRON PERIOD
 PZ 0.04 0.7
 JAS 18 41 27.4 C
 MIN 18 41 35.8 C
 USNOS 18 28 40.6, 33.3S, 179.7W, H=115 KM, M=5.1
 SOUTH OF KERMADEC ISLANDS

BKS OCT 18 20 09
 JAS 20 09 11.2 *E 14 10
 USNOS 12 13
 20 06 32.6, 46.2N, 111.5W, H= 15 KM, M=4.3
 MONTANA. FELT IN HELENA AREA

BKS OCT 18 20 45 12.0
 JAS 20 45 16.8 D *E 13 11
 PRI 20 45 21.7 *E 45 37

MHC OCT 19 05 14 12.6
 BKS 05 14 13.9
 JAS 05 14 18.4 C *E 40 00
 MIN 05 14 22.5 *E 14 35
 USNOS 05 02 15.5, 22.9S, 174.8W, H= N KM, M=5.1
 TONGA ISLANDS REGION

JAS OCT 19 08 19 26.4
 MIN OCT 19 17 14 04.7
 MHC 17 14 08.8 *E 14 18
 JAS 17 14 12.0 *E 14 22
 PRI 17 14 13.5 *E 14 26
 USNOS 17 01 33.1, 12.7N, 144.3E, H= 46 KM, M=5.0
 SOUTH OF MARIANA ISLANDS
 *PP 22 30 *E 45 13

MHC 18 22 16.1 C
 JAS 18 22 19.0 C *PP 22 36
 PRI 18 22 23.7
 USNOS 18 10 29.3, 32.0N, 140.7E, H= 61 KM, M=5.2
 SOUTH OF HONSHU, JAPAN

JAS OCT 20 00 32 22.2
 SAD OCT 20 08 38 07.2 C
 FHC 08 38 07.2
 BKS 08 38 07.4 48 26 *PP 38 36 *SP 38 51 *E 04 12
 MICRON PERIOD
 PZ 0.07 0.9

MHC 08 38 08.3 C *PP 38 38 *E 56 18
 JAS 08 38 09.8 C *PP 38 40 *E 56 19 P'P' 04 27
 PRI 08 38 13.2 C PCP 38 17 *E 38 20 *PP 38 43
 JAS *SP 38 55 PP 41 35 *PPP 42 04
 PKKP 56 14 P'P' 04 20
 *E 56 14 P'P' 04 20
 MIN 08 38 13.6 C
 MAG(MB) 5.6, DIST(DEG) 84
 USNOS 08 25 45.1, 15.4S, 167.4E, H=112 KM, M=5.5
 NEW HEBRIDES ISLANDS

JAS OCT 20 11 20 14.6
 JAS OCT 21 01 26 20.7 C
 MIN OCT 21 08 24 24.2 C *E 24 29
 JAS 08 24 38.2 C *E 24 43 *E 53 45
 MHC 08 24 44.6 *E 24 50
 BKS 08 24 47.3 L 45 40
 PRI 08 24 51.4 C *E 24 56
 USNOS 08 14 14.1, 74.6N, 8.4E, H= N KM, M=5.5
 GREENLAND SEA

MHC OCT 21 12 43 *E 43 26
 JAS 12 43 16.3 C *I 43 30
 BKS 12 43 18.1
 USNOS 12 35 43.7, 51.4N, 174.2W, H= 21 KM, M=5.1
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS

PRI OCT 21 16 02 10.8
 JAS 16 02 13.1 C
 MHC 16 02 19.2
 USNOS 15 50 05.5, 7.7N, 37.6W, H= N KM, M=5.3
 CENTRAL MID-ATLANTIC RIDGE

FHC OCT 22 02 34 46.5 C
 MIN 02 34 52.4 C
 BKS 02 34 53.5 D
 MICRON PERIOD
 PZ 0.08 0.8
 MHC 02 34 56.4 C
 SAD 02 34 57.1 C
 JAS 02 35 00.0 C
 PRI 02 35 02.1 C

MAG(MB) 5.5, DIST(DEG) 82
 USNOS 02 22 36.9, 13.9N, 144.7E, H=142 KM, M=5.3
 MARIANA ISLANDS. FELT ON GUAM

JAS OCT 22 02 47 13.8 D
 MHC 02 47 20.5

FHC OCT 22 03 15 15.2 C
 MIN 03 15 29.1 C
 BKS 03 15 40.4 D
 MHC 03 15 46.3 C
 JAS 03 15 49.0 C
 SAO 03 15 50.0 C
 PRI 03 15 58.9 C

PCP 18 41

MAG 4 3/4, DIST(DEG) 32
 ALEUTIAN ISLANDS

PRI OCT 21 06 25 43.8
 MHC 06 25 51.7
 JAS 06 25 52.6 D
 BKS 06 26 00.4

*E 26 20

USNOS 06 14 00.2, 36.5S, 97.2W, H= N KM, M=5.3
 WEST CHILE RISE

SAO OCT 22 10 04 41
 PRI 10 04 41.6
 MHC 10 04 43.2
 JAS 10 04 48.7 C

PRI OCT 22 20 00 33.3 C
 MHC 20 00 34.3 C
 JAS 20 00 39.2 C
 MIN 20 00 40.3 C

JAS OCT 23 00 05 16.0 C
 USNOS 23 55 20.0, 48.0N, 145.5E, H=479 KM, M=5.1
 SEA OF OKHOTSK

*I 05 21

MIN OCT 23 10 47 25.1 D
 JAS 10 47 43.5 C

PRI OCT 23 11 13 12.0 D
 JAS 11 13 21.6 D
 MHC 11 13 19.8 D
 BKS 11 13 23.0 D
 MIN 11 13 37.9 D
 FHC 11 13 41.9 D

*E 13 18

*I 13 33

*E 13 33

USNOS 11 01 28.4, 36.5S, 97.2W, H= N KM, M=5.5
 WEST CHILE RISE

JAS OCT 24 00 16 07.8

MHC OCT 24 06 58 52.0
 JAS 06 58 53.8

JAS OCT 24 11 31 16.6

*E 32 11

MHC 11 31 24.0
 MIN 11 31 24.6

JAS OCT 24 20 45 37.5
 JAS OCT 25 07 50 14.0

*E 52 05

FHC OCT 25 12 20 30
 MIN 12 20 32.6
 BKS 12 20 42.0 C
 JAS 12 20 30.8

*E 21 04

*E 04 40 *E 07 12 LR 15 00

*E 20 55 PP 24 32 PKKP 28 50

*E 31 20

MHC 12 20
 PRI 12 20

P'2 20 58

P'2 21 04 PP 24 40

DIST(DEG) 153. ARRIVALS AT FHC AND MIN ARE GH
 BRANCH OF P'

USNOS 12 00 35.2, 13.7S, 66.3E, H= 24 KM, M=5.8
 MID-INDIAN RISE

MIN OCT 25 15 28 40.1 C
 BKS 15 28 42.2 C
 JAS 15 28 46.2 C

PP 29 51

*E 47 10 LQ 01 00

PP 30 22 *E 42 23

USNOS 15 09 49.4, 9.0N, 93.9E, H= N KM, M=5.5
 NICOBAR ISLANDS REGION

JAS OCT 26 02 14 12.7 C

JAS OCT 26 04 10 26.5

*E 13 10

PRI OCT 26 08 23 47.9
 MHC 08 23 48.0
 JAS 08 23 53.6
 MIN 08 23 57.2 C

USNOS 08 12 57.7, 18.2S, 177.9W, H=609 KM, M=5.1
 FIJI ISLANDS REGION

SAO OCT 26 09 02 18.5
 BKS 09 02 20.0
 PRI 09 02 20.2
 MHC 09 02 20.4
 JAS 09 02 25.8 C
 MIN 09 02 29.2

MIN OCT 26 09 41 25.9 C
 JAS 09 41 35.2

JAS OCT 26 13 18 40.3
 MIN 13 18 54.6 C

MIN OCT 26 13 54 34.7 D
 JAS 13 54 58.8 D

FHC OCT 26 21 03 09.6
 MIN 21 03 10.1 D
 JAS 21 03 25.5 D
 BKS 21 03 28.0 D

*PP 03 20

*PP 03 20

*PP 03 36 P'P' 33 12

LQ 18 00 *E 21 00

11 36

MHC 21 03 31.5 D
 SAO 21 03 34.5
 PRI 21 03 39.3 D
 MICRON 0.09
 PERIOD 1.2
 MAXR(Z) 7.0
 MAXH(N) 11
 MAXH(E) 25
 *PP 03 42
 *PP 03 49
 MAG 6 1/4, DIST(DEG) 60
 USNOS 20 53 32.4, 79.8N, 2.7E, H= 32 KM, M=5.6
 GREENLAND SEA

FHC OCT 27 02 38 34.1 C
 MIN 02 38 59.0 C
 BKS 02 39 04.0 D 39 56
 MHC 02 39 13.5 D 40 13
 SAO 02 39 19.8 C
 JAS 02 39 22.2 D 40 28
 PRI 02 39 32.7 C
 *I 39 00
 MAG 5.1. 300 KM WEST OF ARCATA, CALIFORNIA
 USNOS 02 37 57.5, 40.4N, 127.0W, H= N KM, M=4.9
 OFF COAST OF NORTH CALIFORNIA

FHC OCT 27 04 24 17.4 C
 MIN 04 24 43.0 C
 BKS 04 24 46.8 D 25 40
 MHC 04 24 56.5 D 25 56
 SAO 04 25 02.7 D
 JAS 04 25 05.2 C 26 11
 PRI 04 25 16.2 D
 *I 24 52
 MAG 4.2. 300 KM WEST OF ARCATA, CALIFORNIA
 USNOS 04 23 38.2, 40.3N, 127.2W, H= N KM, M=4.0
 OFF COAST OF NORTH CALIFORNIA

PRI OCT 27 09 48 08.5 C
 JAS 09 48 15.0 C
 FHC OCT 27 10 15 00.5 C
 MIN 10 15 27.0
 BKS 10 15 30.7 D 16 24
 MHC 10 15 40.5 C 16 39
 SAO 10 15 46.2 C
 JAS 10 15 49.0 C
 PRI 10 16 00.0
 *E 15 56
 MAG 4.6. 300 KM WEST OF ARCATA, CALIFORNIA
 USNOS 10 14 27.4, 40.3N, 126.7W, H= N KM, M=4.4
 OFF COAST OF NORTH CALIFORNIA

JAS OCT 28 06 28 30.9 D
 PRI OCT 28 14 30
 FRE 14 30 51.3 D
 JAS 14 30 58.5 D
 SAO 14 31 08.3 D
 MHC 14 31 12.5 C
 *E 31 04
 *I 31 08 *I 32 05
 MAG 4.5. SOUTHWEST OF WELLS, NEVADA

JAS OCT 28 22 17 03.9
 BKS OCT 28 22 38 44.5
 JAS 22 38 46.0
 FHC OCT 29 01 03 53.5 D
 MIN 01 04 08.7
 BKS 01 04 18.4
 MHC 01 04 24.8 D
 JAS 01 04 27.8 D
 PRI 01 04 35.0 D
 USNOS 00 57 42.8, 54.2N, 164.6W, H= 27 KM, M=5.3
 UNIMAK ISLANDS REGION
 PCP 06 57 SCP 10 36
 PCP 07 00 LR 12 56
 PCP 07 03 SCP 10 44
 *E 04 40 PP 05 45 PCP 07 03
 *E 10 44
 PCP 07 07 *E 10 49

JAS OCT 29 01 21 39.6 C
 BKS OCT 29 02 43 22.8
 JAS 02 43 39
 USNOS 02 23 24.7, 40.9S, 80.5E, H= N KM, M=5.9
 MID-INDIAN RISE

MIN OCT 29 09 30 35
 JAS 09 31 04.0 C
 PP 34 43
 DIST(DEG) 155. ARRIVAL AT MIN IS P'GH, THAT AT JAS IS P'AB
 USNOS 09 10 44.0, 15.5S, 67.2E, H= N KM, M=5.4
 MID-INDIAN RISE

JAS OCT 29 19 41 11.4 D
 USNOS 19 30 35.8, 44.6N, 149.0E, H= 67 KM, M=5.2
 KURIL ISLANDS
 *I 41 26

BKS OCT 29 23 26 16.5
 JAS 23 26 23.0 C
 MHC 23 26 23.8
 PRI 23 26 28.5

MIN OCT 30 05 26
 BKS 05 26 20.9
 JAS 05 26 27.9 D
 *E 26 32

MIN OCT 30 05 35
 JAS 05 35 43.5 C
 USNOS 05 22 30.0, 24.7N, 121.8E, H= 81 KM, M=5.0
 TAIWAN
 *I 35 34

MIN OCT 30 09 29
 JAS 09 29 36.7 D
 BKS 09 29 44.5 C
 *E 30 09

MIN OCT 30 11 04
 JAS 11 04 21.2 C
 *E 04 58

JAS OCT 30 12 59 25.3 C

MIN OCT 31 03 02 03.8 C
 JAS 03 02 03.8 C
 PRI 03 02 06.0 C
 USNOS 02 42 09.9, 26.8S, 26.9E, H= N KM, M=5.3
 REPUBLIC OF SOUTH AFRICA

JAS OCT 31 03 39 05.7 D

JAS OCT 31 11 34 11.3 C

MIN OCT 31 15 01 51.0 C
 JAS 15 02 12.9 D

MHC OCT 31 16 06 06.5 C
 JAS 16 06 12.3 C

JAS OCT 31 16 16 39.0 D
 USNOS 16 08 41.7, 51.2N, 179.4W, H= 39 KM, M=5.0
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS. FELT
 ON ADAK (I)

FHC OCT 31 18 06 25.6
 MHC 18 06 32.9
 BKS 18 06 33.0 C 18 04 PP 10 31
 *E 06 38 *E 06 47 PP 10 48
 *E 13 44 SS 24 25 L 32 00
 LR 36 00

MICRON PERIOD
 PZ 0.03 0.7
 PPZ 6.5 8
 MAXR(Z) 36 20
 MAXH(N) 16 20
 MAXH(E) 24 20

MIN 18 06 33.2
 SAO 18 06 34.0 C
 JAS 18 06 36.0
 FRE 18 06 42.3 D
 PP 10 37
 PP 10 23
 PP 10 40 PKKP 23 20 P*P* 31 50

MAG 6.7, DIST(DEG) 96
 USNOS 14 53 09.3, 4.9S, 145.5E, H= 42 KM, M=6.7
 NEAR NORTH COAST OF NEW GUINEA. AT LEAST
 5 KILLED. DAMAGE AT MANDANG. FELT THROUGHOUT
 MAINLAND NEW GUINEA

PRI OCT 31 23 58 46.9
 JAS 23 58 53.7 D
 MHC 23 58 58.3
 *E 59 10 *E 01 44
 *E 59 15

JAS NOV 01 00 29 03.7 C

MIN NOV 01 00 36 33.8 C
 JAS 00 36 37.5 C

PRI NOV 01 04 35 02.8 D
 FRE 04 35 04.3
 SAO 04 35 14.5
 JAS 04 35 18.0

MHC 04 35 23.4
 BKS 04 35 28.8 D 39 14 L 39 44
 MICRON PERIOD
 SH 10.5 12
 PZ 0.29 1.8
 MAXR(Z) 9 20
 MAXH(N) 10 20
 MAXH(E) 9 20

MHC BKS

04 35 45.5
 MAG 5.2, DIST(DEG) 22
 USNOS 04 31 04.5, 22.9N, 108.0W, H= N KM, M=5.1
 OFF COAST OF CENTRAL MEXICO

MIN

JAS NOV 01 08 21 40.0

JAS NOV 01 09 52 04.8 D

BKS NOV 01 11 21 00.3 C
 MICRON PERIOD
 PZ 0.05 0.9

MHC

PRI

JAS

FRE

11 21 02.2
 11 21 05.9
 11 21 06.1 *PP 25 12
 11 21 09.3 C
 MAG 5 1/2, DIST(DEG) 94
 USNOS 11 07 40.7, 4.8S, 145.7E, H= N KM, M=5.5
 NEAR NORTH COAST OF NEW GUINEA

PRI NOV 01 13 33 07.4 *E 33 29 PP 34 50 SKP 36 37
 JAS 13 33 09.4
 MHC 13 33 10.0

BKS

MIN

13 33 11.4 D
 13 33 13.9 D
 USNOS 13 14 14.6, 59.6S, 26.3W, H= N KM, M=5.8
 SOUTH SANDWICH ISLAND REGION

MIN NOV 01 17 18
 BKS 17 18
 JAS 17 18 01.9 D

JAS

MIN NOV 01 20 32 43.8
 BKS 20 32 50.5 C

BKS

MHC

JAS

PRI

MICRON PERIOD
 PZ 0.02 0.6
 *E 33 38
 20 32 54.6
 20 32 57.0 D
 20 33 03.0

MHC

PRI

BKS

NOV 02 10 25 05
 10 25 05
 10 25 06.0 C 34 50 *E 35 18 L 43 20 SCS 35 10
 MICRON PERIOD
 PZ 0.02 0.8
 *E 25 18 *E 25 50
 10 25 11.0 C
 10 25 14
 MAG(MB) 5.1, DIST(DEG) 73

JAS

MIN

USNOS 10 13 36.3, 15.5S, 176.2W, H= 44 KM, M=5.4
FIJI ISLANDS REGION

FHC NOV 03 02 35 47.9 D
MIN 02 35 58.7 D
BKS 02 36 16.0 D
JAS 02 36 21.3 D
MHC 02 36 22.2 D
SAO 02 36 26.7 D
PRI 02 36 35.6 D

SCP 42 44
*PP 36 35 *E 36 41
*PP 36 40 SCP 42 53 *E 48 30
PCP 39 38 *E 43 31
SCP 42 53

MAG 5 1/4, DIST(DEG) 29
USNOS 02 30 11.4, 62.0N, 151.2W, H= 70 KM, M=5.6
CENTRAL ALASKA. FELT (III) AT PALMER AND ANCHORAGE

JAS NOV 03 09 35 53.5
USNOS 09 23 04.5, 50.0S, 114.4W, H= N KM, M=5.2
EASTER ISLAND CORDILLERA

PRI NOV 03 12 47 47.8 D
JAS 12 47 52.8 D
MHC 12 47 55.2 D
BKS 12 47 58.5 D

MICRON PERIOD
PZ 0.02 0.4
MAG(MB) 5.1, DIST(DEG) 82
USNOS 12 36 05.4, 24.0S, 66.8W, H=186 KM, M=4.6
SALTA PROVINCE, ARGENTINA

JAS NOV 03 15 25 53.4 C
USNOS 15 12 11.6, 18.4N, 120.9E, H= 41 KM, M=5.5
LUZON, PHILIPPINE ISLANDS. FELT

FHC NOV 04 06 15 50.0
MIN 06 15 53.3
BKS 06 16 04.3 C
JAS 06 16 05.4 C
MHC 06 16 07.7
PRI 06 16 14.4
MAG(MB) 5.5, DIST(DEG) 90
USNOS 06 02 57.0, 50.0N, 77.8E, H= 0 KM, M=5.4
EASTERN KAZAKH SSR. EXPLOSION

BKS NOV 04 17 55 50.6 D
MHC 17 55 51.6
PRI 17 55 52.7
JAS 17 55 56.7 C
MIN 17 55 57.9 D
MAG 5, DIST(DEG) 85
USNOS 17 43 11.1, 20.0S, 169.3E, H= 44 KM, M=5.2
NEW HEBRIDES ISLANDS

PRI NOV 05 13 20 10.4 C

13 20 16.8 C *E 20 57 *E 22 06
13 20 21.9 C
13 20 27.0 D 27 25 *E 20 38 *E 20 48 SS 31 10
*E 34 10

JAS
MHC
BKS

MICRON PERIOD

PZ 0.07 1.0
SH 5.1 16

13 20 32.6 C
13 20 46.5 C
MAG 5.3, DIST(DEG) 49
USNOS 13 11 53.5, 6.9N, 82.6W, H= N KM, M=5.6
SOUTH OF PANAMA

MIN
FHC

JAS NOV 05 15 00 58.0 C *E 01 07
15 01 01.4 *E 01 08
PRI 15 01 08.2
SAO 15 01 09.5 *E 01 19
MHC 15 01 17.5 C *E 01 26
BKS MAG 4.7. SOUTHERN NEVADA. NUCLEAR TEST 'ABFYTAS'
USAEC 15 00 00.0, 37 01 46.1N, 116 00 42.5W

JAS NOV 05 20 46 50.5 C
USNOS 20 36 11.9, 34.7N, 37.0W, H= N KM, M=5.1
NORTH ATLANTIC RIDGE

JAS NOV 06 20 03 13.1

JAS NOV 06 22 58 16.3
MHC 22 58 19.3
USNOS 22 46 59.8, 15.4S, 71.2W, H= 16 KM, M=5.0
SOUTHERN PERU

JAS NOV 07 00 22 25.8 C

JAS NOV 07 03 33 32.0

PRI NOV 07 07 57 48.7 *PP 58 10
MHC 07 57 49.7 *PP 58 14
JAS 07 57 54.1 *E 58 15
BKS 07 58
USNOS 07 44 57.0, 34.6S, 179.7E, H= 76 KM, M=5.1
SOUTH OF KERMADEC ISLANDS

JAS NOV 07 23 32 03.5 C *E 36 08
USNOS 23 18 24.0, 18.5N, 120.9E, H= 55 KM, M=5.4
LUZON, PHILIPPINE ISLANDS. FELT

JAS NOV 08 04 46 41.0 C *PP 46 52
MIN 04 46 44.7 C
USNOS 04 34 52.5, 19.8S, 174.5W, H= N KM, M=5.0
TONGA ISLANDS

PRI NOV 08 11 56 21.9
JAS 11 56 29.1 C
MHC 11 56 33
FHC 11 57 03.1 C
PCP 58 56

MIN NOV 08 13 49 48.6 C
JAS 13 49 56.3

JAS NOV 08 15 12 49.0 USNOS 14 58 53.6, 9.1N, 126.3E, H= 22 KM, M=5.7
*PP 12 57 PP 16 14 PKKP 28 52
MINDANAO, PHILIPPINE ISLANDS. FELT

FHC NOV 08 22 49 23.5
BKS 22 49 35.7 00 15 PP 53 58 PS 02 46 SS 07 36
LQ 17 16 *E 21 06

MICRON PERIOD
PZ 0.07 1.1
MAXR(Z) 36 20
MAXH(N) 14 20
MAXH(E) 30 20

MIN 22 49 38.2 D PP 54 05
MHC 22 49 41.1
JAS 22 49 44.5 C PKKP 05 46
PRI 22 49 45.6 C

MAG 6.7, DIST(DEG) 96
USNOS 22 35 46.7, 3.4S, 135.6E, H= N KM, M=6.2
WEST NEW GUINEA

JAS NOV 08 23 20 01.4 C *PP 20 17
MHC 23 20 08.7
MIN 23 20 23.4 C

JAS NOV 09 02 13 47.0

FHC NOV 10 00 37 25.2 C
BKS 00 37 39.6 C

MICRON PERIOD
PZ 0.12 1.2

MHC 00 37 43.6
JAS 00 37 45.9 C *PP 39 07
PRI 00 37 51.0 C

MAG(MB) 5.5, DIST(DEG) 77
USNOS 00 26 21.6, 34.6N, 136.7E, H=349 KM, M=5.3
SOUTHERN HONSHU, JAPAN. FELT

JAS NOV 10 02 14 10.6 D
PRI 02 14 28.2

JAS NOV 10 10 45 50.3 D *E 49 28

PRI NOV 10 14 00 15.0
MHC 14 00 16.0
BKS 14 00 16.4
JAS 14 00 20.9 D

USNOS 13 47 34.1, 32.0S, 178.1W, H= 37 KM, M=5.4
*E 01 10 *E 04 42
SOUTH OF KERMADEC ISLANDS

MHC NOV 10 22 23
JAS 22 23 44.9 D *E 23 47

JAS NOV 11 03 06 27.7 D
JAS NOV 11 03 55 49.6 D

MIN NOV 11 11 57 21.6 C *I 57 43
JAS 11 57 36.1 C USNOS 11 46 55.7, 44.6N, 148.1E, H= 50 KM, M=5.1
KURIL ISLANDS. FELT IN NORTHERN HOKKAIDO, JAPAN

MIN NOV 12 04 12 *E 12 11
JAS 04 12 24.1 *E 12 39
USNOS 04 01 13.5, 41.9N, 142.5E, H= 61 KM, M=5.0
HOKKAIDO, JAPAN. FELT

FHC NOV 12 06 20 *E 20 42
MIN 06 20 *E 20 44
MHC 06 20 *E 20 45
PRI 06 20 *E 20 49 *E 24 40
BKS 06 20 41.0 D 31 16 PP 24 31 PS 33 20 SS 38 30
*E 44 58 LR 45 32 *E 50 10

MICRON PERIOD
PZ 0.09 1.1
MAXH 32.4 20
MAXR(Z) 43 20
MAXH(N) 32 20
MAXH(E) 6.1 20

JAS 06 20 41.6 *E 20 52 *E 21 22 PP 24 40
PKKP 38 05 P'P' 45 47

MAG 6.2, DIST(DEG) 94
USNOS 06 07 12.4, 5.1S, 145.1E, H= 15 KM, M=5.9
EAST NEW GUINEA REGION. FELT

PRI NOV 12 07 44 07.1
MHC 07 44 08.0
JAS 07 44 12.6
USNOS

07 31 01.7, 36.8S, 179.3E, H= 21 KM, M=5.0
OFF EAST COAST OF NORTH ISLAND, NEW ZEALAND

PRI NOV 12 12 08 38.7
JAS 12 08 48.9
USNOS

11 57 18.6, 34.8S, 107.5W, H= N KM, M=5.1
EASTER ISLAND CORDILLERA

PRI NOV 13 00 20 41.7 C *E 20 52
JAS 00 20 47.1 C *E 21 00
MHC 00 20 49.4 C
USNOS 00 08 59.9, 22.1S, 70.0W, H= 36 KM, M=5.6
NEAR COAST OF NORTHERN CHILE

MIN NOV 13 02 24 *E 24 09
MHC 02 24 09.8 D
JAS 02 24 13.9 C
USNOS

02 11 27.2, 31.6S, 179.3W, H= 65 KM, M=5.2
KERMADEC ISLANDS REGION

JAS NOV 13 14 30 13
 USNOS 14 16 18.0, 11.9N, 124.0E, H= 15 KM, M=5.4
 *E 33 51
 LEYTE, PHILIPPINE ISLANDS

JAS NOV 13 23 10 21.9

JAS NOV 14 04 50 58.0
 USNOS 04 42 30.6, 6.3N, 82.6W, H= N KM, M=5.0
 SOUTH OF PANAMA

FHC NOV 14 05 04 00.2
 MIN 05 04 07.0
 BKS 05 04 10.0 D
 MICRON PERIOD
 PZ 0.13 1.2

MHC 05 04 10.7
 JAS 05 04 14.0
 PRI 05 04 16.5
 FRE 05 04 21.0
 MAG 5 1/4, DIST(DEG) 85
 USNOS 04 51 37.8, 12.6N, 143.3E, H= 95 KM, M=5.5
 SOUTH OF MARIANA ISLANDS. FELT ON GUAM

FHC NOV 14 08 11 30.9
 MIN 08 11 37.8
 BKS 08 11 41.7 D
 MHC 08 11 45.9
 JAS 08 11 47.8
 PP 15 37
 USNOS 07 58 19.8, 22.7N, 121.3E, H= 28 KM, M=5.7
 TAIWAN REGION. 2 KILLED, 2 INJURED

JAS NOV 14 10 09 18.7
 *E 09 41

BKS NOV 14 22 06 23.2
 MHC 22 06 23.6
 PRI 22 06 23.8
 JAS 22 06 29.1

PRI NOV 15 03 24 45.4
 MHC 03 24 46.1
 BKS 03 24 47.1 D
 JAS 03 24 51.5
 FHC 03 24 52.2
 MTN 03 24 55.8
 *PP 25 34
 USNOS 03 12 56.7, 22.9S, 177.1W, H=171 KM, M=5.2
 SOUTH OF FIJI ISLANDS

JAS NOV 15 09 27 55.5
 *E 29 16

PRI NOV 15 19 46 06.2 C
 JAS 19 46 12.2 C
 MHC 19 46 19.0 C

PRI NOV 15 22 29 59.7
 JAS 22 30 04.9 D
 MHC 22 30 07.4 D
 *PP 30 33
 *PP 30 38
 *PP 30 41

USNOS 22 18 24.7, 21.9S, 68.3W, H=134 KM, M=5.2
 CHILE-BOLIVIA BORDER REGION

JAS NOV 16 05 11 03.0 C
 USNOS 04 57 32.9, 43.2N, 81.2E, H= 24 KM, M=5.2
 *E 14 54
 NORTHERN SINKIANG PROVINCE, CHINA

JAS NOV 16 06 57 33.2 C
 USNOS 06 44 21.6, 6.1S, 148.6E, H= 81 KM, M=5.5
 NEW BRITAIN REGION. FELT

PRI NOV 16 12 32 28.1
 JAS 12 32 34.2 D
 MHC 12 32 37.7

FHC NOV 16 12 51 28.5
 MIN 12 51 45.9 D
 BKS 12 52 *E 52 16
 MHC 12 52 *E 52 21
 JAS 12 52 19.2 *E 52 26 *E 52 37 *E 53 08
 FRE 12 52 37.2 C
 PRI 12 52 41.9

JAS NOV 17 07 44 49.4
 USNOS 07 32 53.5, 29.4N, 142.2E, H= N KM, M=5.1
 SOUTH OF HONSHU, JAPAN

JAS NOV 17 19 28 04.2 C

BKS NOV 18 02 10 19.2
 MHC 02 10 23.1
 MIN 02 10 25.1
 PRI 02 10 25.7
 JAS 02 10 26.4 C

MAG 5.6, DIST(DEG) 88
 USNOS 01 57 25.9, 6.1S, 154.4E, H= 15 KM, M=5.2
 SOLOMON ISLANDS. FELT

JAS NOV 18 12 33 56.7 C
 MIN 12 33 57.0
 PRI 12 34 *E 33 59 *E 34 02
 FHC 12 34 06.3 *E 34 06
 MHC 12 34 10.6 *E 34 10

BKS 12 34 11.9 D
 *E 43 04 *E 50 40 *E 54 46
 MICRON PERIOD
 PZ 0.05 20
 MAXR(Z) 6 20
 MAXH(N) 13 20
 MAXH(E) 8

DOUBLE EVENT
 MAG 6.0, DIST(DEG) 67
 USNOS 12 23 13.0, 35.2N, 35.8W, H= N KM, M=4.5
 USNOS 12 23 18.0, 35.1N, 35.7W, H= N KM, M=5.4
 MID-ATLANTIC RIDGE

SAO NOV 18 16 54 44.4

BKS 16 54 44.8 MICRON PERIOD
 PZ 0.05 0.6
 MHC 16 54 45.3 *PP 56 47
 PRI 16 54 45.5
 JAS 16 54 50.2 *E 55 28 *PP 56 54
 MIN 16 54 52.8
 MAG(MB) 5.7, DIST(DEG) 83
 USNOS 16 43 14.1, 21.9S, 175.2E, H=570 KM, M=5.6
 SOUTH OF FIJI ISLANDS

JAS NOV 18 20 03 06.1 C
 PRI NOV 18 20 21 36.8 C
 SAO 20 21 40.5
 MHC 20 21 45.3 C
 JAS 20 21 48.0 C *E 24 32
 BKS 20 21 52 C *E 30 48 LR 42 34

MICRON PERIOD
 PZ 0.47 2.0
 MAXR(Z) 8 20
 MAXH(N) 8 20
 MAXH(E) 3 20

MIN 20 22 03.0
 MAG 5.8, DIST(DEG) 67
 USNOS 20 12 58.2, 28.7S, 112.7W, H= N KM, M=5.6
 EASTER ISLAND REGION

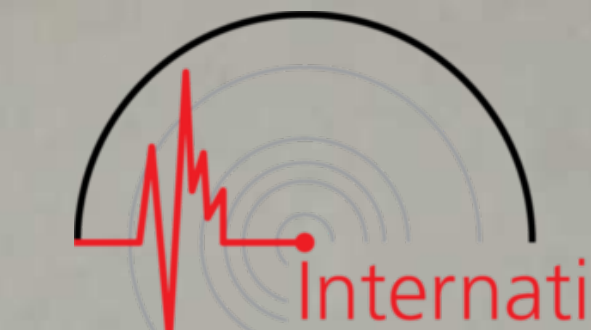
SAO NOV 19 15 00 *E 01 08
 FRE 15 00 50.7 C
 JAS 15 00 58.4 D *E 01 06
 PRI 15 01 02 *E 01 12
 MHC 15 01 12.5 *E 01 19
 MAG 4.7. SOUTHERN NEVADA

MIN NOV 19 18 28 06.1 C *I 28 16
 JAS 18 28 07.0 C
 USNOS 18 09 11.5, 12.2S, 65.7E, H= N KM, M=5.2
 MID-INDIAN RISE

MIN NOV 19 19 33 33.8 C *PP 33 54
 JAS 19 33 43.6 C
 USNOS 19 21 48.3, 29.4N, 142.1E, H= 40 KM, M=5.0
 SOUTH OF HONSHU, JAPAN

MIN NOV 20 04 40 45.0 D
 BKS 04 40 53.3 D
 JAS 04 41 02.5 C
 MICRON PERIOD
 PZ 0.02 0.6
 MAG(MB) 5.0, DIST(DEG) 42
 USNOS 04 33 02.6, 52.3N, 179.9W, H= 40 KM, M=5.1
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS

PRI NOV 20 07 53 43.5
 JAS 07 53 53.0 D



07 53 56.8 D *E 14 44 *E 18 34
 MICRON PERIOD
 PZ 0.03 0.8
 MAG(MB) 5.3, DIST(DEG) 78
 USNOS 07 42 01.8, 36.4S, 97.3W, H= N KM, M=4.9
 WEST CHILE RISE

BKS 11 20 41.5 C *PP 20 50
 MIN NOV 20 11 21 00.0 D *PP 21 10
 JAS 11 21 05.2 C *PP 21 15
 MHC USNOS 11 13 07.3, 51.4N, 178.3W, H= 34 KM, M=5.1
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS. FELT ON ADAK

JAS NOV 20 12 17 07.5 C *PP 17 33 *E 17 46
 BKS NOV 20 13 58 50 *E 59 05 *E 17 58

MICRON PERIOD
 MAXR(Z) 2.8 20
 MAXH(N) 1.2 20
 MAXH(E) 1.8 20

PRI 13 58 *E 58 56
 JAS 13 58 52.1 D *I 59 11
 MIN 13 58 *E 59 01
 MAG 5 1/4, DIST(DEG) 77
 USNOS 13 46 52.8, 28.2N, 142.6E, H= N KM, M=4.6
 BONIN ISLANDS REGION

PRI NOV 21 00 39 59.0
 SAO 00 39 59.0
 MHC 00 40 00.5
 JAS 00 40 03.5
 USNOS 00 28 14.5, 20.4S, 174.2W, H= N KM, M=5.2
 TONGA ISLANDS

JAS NOV 21 05 38 03.2 *PP 38 35
 MHC 05 38 05.0 *PP 38 37

PRI NOV 21 08 24 53.5
 JAS 08 24 55.6

FHC NOV 21 19 32 23.5
 MIN 19 32 35.5
 JAS 19 32 57.2 D

JAS NOV 22 02 16 26.0 *E 58 26
 JAS NOV 22 05 56 30.2 *E 40 16
 FHC NOV 22 06 39 31.5
 JAS 06 40 13.0

FHC NOV 22 12 05 52.0 *PP 06 24
 MIN 12 06 01.0 *PP 06 27 *E 30 00
 BKS 12 06 02.4 D
 MICRON PERIOD

MHC 12 06 05.8 PZ 0.07 1.0 *PP 06 30
 SAO 12 06 06.8 *PP 06 33
 JAS 12 06 09.4 D
 PRI 12 06 12.0 D *PP 06 38
 FRE 12 06 14.1 D
 MAG(MB) 5.4, DIST(DEG) 80
 USNOS 11 53 59.1, 18.3N, 146.0E, H= 91 KM, M=5.5
 MARIANA ISLANDS

FHC NOV 23 08 44 32.5 *E 45 05
 MIN 08 44 59.8
 BKS 08 45 16.1 *E 47 04

MHC 08 45 26.0 MICRON PERIOD
 JAS 08 45 30.6 0.02 0.6
 PRI 08 45 45.8

JAS NOV 24 02 04 05.5 D *E 04 24
 USNOS 01 52 39.1, 15.1S, 173.4W, H= 25 KM, M=5.0
 TONGA ISLANDS. FELT AT APIA, WESTERN SAMOA

MIN NOV 24 05 16 30.5 *PP 17 03
 JAS 05 16 46.0 C *PP 17 19
 BKS 05 16 58.5

MICRON PERIOD
 PZ 0.03 1.0
 USNOS 05 06 41.4, 47.4N, 152.5E, H=136 KM, M=5.3
 KURIL ISLANDS

MIN NOV 24 11 58 54.5
 JAS 11 59 06.9

MIN NOV 25 09 50 33.8 C
 JAS 09 50 47.2 C

JAS NOV 25 11 10 35.9 C

JAS NOV 25 23 49 05.5 C
 USNOS 23 37 16.7, 32.6N, 141.0E, H= 51 KM, M=5.0
 SOUTH OF HONSHU, JAPAN

FHC NOV 26 03 12 42.4 *I 12 43
 MIN 03 13 03.7 *E 13 08 *I 13 11
 BKS 03 13 25.2 *E 13 28 *I 13 37 LR 15 00
 MHC 03 13 34.8 *E 13 38
 JAS 03 13 38.6 *E 13 40
 SAO 03 13 39.6 *E 13 44
 PRI 03 13 55.8 *E 13 59
 FRE 03 13 56.9

USNOS 03 11 42.8, 43.8N, 127.4W, H= 14 KM, M=5.6
 OFF COAST OF OREGON

SAO NOV 26 16 27 54.5
 BKS 16 27 55.2

MHC 16 27 56.2
 PRI 16 27 55.7
 JAS 16 28 01.1
 MIN 16 28 05.0
 MAG(MB) 5.1, DIST(DEG) 87
 USNOS 16 16 33.3, 24.4S, 179.9E, H=549 KM, M=4.7
 SOUTH OF FIJI ISLANDS

FHC NOV 27 09 52 23.0 C
 MIN 09 52 30.0 C *E 22 32
 BKS 09 52 34.6 C MICRON PERIOD
 0.11 1.0

MHC 09 52 38.0 C
 SAO 09 52 39.4 C *E 56 24
 JAS 09 52 39.9 C
 PRI 09 52 44.6 C

MAG 5.6, DIST(DEG) 92
 USNOS 09 39 23.2, 24.2N, 122.3E, H= 57 KM, M=5.9
 TAIWAN REGION. FELT

FRE NOV 28 11 20 17.5 C *E 20 37
 PRI 11 20 20.2 C
 SAO 11 20 24.2 C *E 20 42
 JAS 11 20 25.7 C *E 20 44
 MHC 11 20 28.5 C *E 20 45
 BKS 11 20 31.7 C

MICRON PERIOD
 PZ 0.44 1.5
 FHC 11 20 48.3
 MAG(MB) 6.3, DIST(DEG) 77
 USNOS 11 08 42.5, 20.9S, 69.8W, H= 33 KM, M=6.0
 NORTHERN CHILE

FRE NOV 28 14 57 06.8 C
 PRI 14 57 09.2 C *PP 57 27
 JAS 14 57 14.7 C *PP 57 30
 MHC 14 57 17.2 C
 BKS 14 57 20
 FHC 14 57 37.2 C *PP 57 50

USNOS 14 45 31.7, 20.9S, 69.9W, H= 34 KM, M=5.9
 NORTHERN CHILE

JAS NOV 29 11 46 13.8

PRI NOV 29 16 37 07.9
 JAS 16 37 12.6

PRI NOV 29 20 07 17.8 *PP 07 38
 JAS 20 07 24.7 D *PP 07 45
 MHC 20 07 29.3 *PP 07 51
 FHC 20 07 58.8 *PP 08 20

USNOS 20 00 56.2, 15.3N, 92.7W, H=124 KM, M=5.1
 MEXICO-GUATEMALA BORDER REGION

JAS DEC 01 13 02 24.0
USNOS 12 49 19.0, 6.0S, 152.6E, H= 34 KM, M=5.4
NEW BRITAIN REGION

BKS DEC 01 18 27 09.5 D 37 42 SS 43 24 LQ 49 20 LR 52 48
MICRON PERIOD
PZ 0.04 1.0

MHC 18 27 12.2 D
PRI 18 27 14.6 D
JAS 18 27 16.9 D *I 28 52
MAG(MB) 5.5, DIST(DEG) 85
USNOS 18 14 38.6, 11.0S, 163.4E, H= N KM, M=5.5
SOLOMON ISLANDS

JAS DEC 01 19 03 57.9 D
USNOS 18 51 18.7, 10.9S, 163.5E, H= 26 KM, M=5.0
SOLOMON ISLANDS

JAS DEC 01 19 36 28.5 D
USNOS 19 29 16.6, 52.4N, 169.1W, H= 60 KM, M=5.2
FOX ISLANDS, ALEUTIAN ISLANDS

JAS DEC 01 21 17 13.7 D *I 17 30
BKS 21 17 17 *E 17 20 *E 23 00 *E 26 00
MICRON PERIOD
PZ 0.08 0.8

PRI 21 17 23.6 D
FRE 21 17 34
MAG 4.5, DIST(DEG) 39
USNOS 21 09 37.2, 51.4N, 175.3W, H= 36 KM, M=5.6
ANDREANOF ISLANDS, ALEUTIAN ISLANDS. FELT
ON ADAK

SAD DEC 01 22 13 13.0 C
BKS 22 13 14 C
MICRON PERIOD
PZ 0.05 0.8

PRI 22 13 14.2 D
MHC 22 13 14.4 D
JAS 22 13 20.7 D
MIN 22 13 25.0 C *I 13 32
MAG(MB) 5.5, DIST(DEG) 72
USNOS 22 01 54.1, 15.6S, 173.2W, H= N KM, M=5.4
TONGA ISLANDS

MIN DEC 02 02 42 24.3
JAS 02 42 34.1 D *E 42 33
MHC 02 42 35.5
PRI 02 42 50.3 *E 42 41
USNOS 02 34 59.5, 51.4N, 175.2W, H= 57 KM, M=5.4
ANDREANOF ISLANDS, ALEUTIAN ISLANDS. FELT
ON ADAK

JAS DEC 02 15 29 59.9 D
USNOS 15 17 22.2, 11.0S, 163.6E, H= 39 KM, M=5.0

SOLOMON ISLANDS

MHC DEC 02 15 38 17.8
BKS 15 38 20 48 52 PS 49 48 L 00 20 LR 03 06
MICRON PERIOD
PZ 0.07 1.0

PRI 15 38 20.4
JAS 15 38 23.2
MAG(MB) 5.7, DIST(DEG) 85
USNOS 15 25 46.7, 10.9S, 163.5E, H= 36 KM, M=5.3
SOLOMON ISLANDS

BKS DEC 02 16 06 52 D 17 28 PS 18 28 L 29 00 LR 32 28
MICRON PERIOD
PZ 0.13 1.0

SAD 16 06 53.2
MHC 16 06 54.0
PRI 16 06 56.4 C
JAS 16 06 58.8 C
FRE 16 06 *E 07 02
MAG(MB) 6.0, DIST(DEG) 85
USNOS 15 54 19.9, 11.0S, 163.3E, H= N KM, M=5.8
SOLOMON ISLANDS

JAS DEC 02 16 14 51.0 C
USNOS 16 02 10.9, 10.9S, 163.1E, H= N KM, M=5.1
SOLOMON ISLANDS

JAS DEC 02 18 21 16.1 D
PRI 18 21 26.4

FRE DEC 03 05 08 40.5 D
PRI 05 08 41.0 *E 09 28 *E 10 10
JAS 05 08 48.5
SAD 05 08 49.7
MHC 05 08 53.6 D *E 17 00 *E 25 00
BKS 05 08 59.0
MICRON PERIOD
PZ 0.04 1.0

FHC 05 09 16.5 D *E 09 32
USNOS 04 59 53.4, 7.4N, 76.1W, H= 38 KM, M=5.7
NORTHERN COLUMBIA. FELT

PRI DEC 03 08 10 22.0
JAS 08 10 25.0
USNOS 07 57 49.0, 10.9S, 163.7E, H= 42 KM, M=5.2
SOLOMON ISLANDS

JAS DEC 03 12 07 08.2
USNOS 11 54 32.1, 10.9S, 163.8E, H= N KM, M=5.1
SOLOMON ISLANDS

JAS DEC 03 13 38 57.9

FRE DEC 04 09 59 27
PRI 09 59 36.1 C

JAS MHC 09 59 41.3 C *PP 59 49
 09 59 46.7 C
 USNOS 09 51 16.1, 9.8N, 79.7W, H= 20 KM, M=5.3
 PANAMA. FELT (IV) AT BALBOA

JAS DEC 04 12 12 56.7
 USNOS 12 00 20.5, 10.6S, 163.5E, H= 37 KM, M=5.0
 SOLOMON ISLANDS

BKS DEC 04 17 20 30 36
 MICRON PERIOD
 MAXR(Z) 6.8 20
 MAXH(N) 4.3 20
 MAXH(E) 5.7 20

PRI 17 20 34.2 C
 FRE 17 20 36
 SAO 17 20 39.0 C
 JAS 17 20 40.0 C *PP 20 52
 MHC 17 20 42.4 C *PP 20 55
 FHC 17 21 01.8 C *PP 21 14
 MAG 5 3/4, DIST(DEG) 78
 USNOS 17 08 48.7, 23.1S, 70.1W, H= 36 KM, M=5.9
 NEAR COAST OF NORTHERN CHILE. MINOR DAMAGE

JAS DEC 05 02 56 16.0 *E 56 27 *E 57 58

PRI DEC 05 22 10 40.8
 MHC 22 10 41.2
 JAS 22 10 47.0 D *PP 11 46
 USNOS 21 59 25.3, 18.1S, 175.4W, H=241 KM, M=5.0
 TONGA ISLANDS

PRI DEC 05 23 41 21.3
 JAS 23 41 37.9 *E 13 21

BKS DEC 06 03 13
 PRI 03 13 09.4
 JAS 03 13 14.5 D
 MHC 03 13 17.4
 FHC 03 13 37.5
 USNOS 03 01 47.5, 19.1S, 69.4W, H=111 KM, M=5.3
 NORTHERN CHILE

JAS DEC 06 04 29 20
 USNOS 04 10 37.8, 6.3S, 130.1E, H=118 KM, M=5.7
 BANDA SEA

JAS DEC 06 11 51 26.2
 MHC 11 51 30.8
 BKS 11 51 37.0

FHC DEC 06 20 31 36.6 C
 BKS 20 31 53.0
 *PP 31 47
 *PP 32 04 *E 32 09 *E 32 31
 L 49 00
 MICRON PERIOD
 0.04 1.0

20 31 57.8
 20 32 00.2 C *PP 32 11
 20 32 06.3 C
 20 32 06.6

MHC JAS FRE PRI
 MAG(MB) 5.6, DIST(DEG) 68
 USNOS 20 20 52.2, 41.8N, 143.5E, H= 48 KM, M=5.7
 HOKKAIDO, JAPAN. FELT

FHC DEC 07 21 46 48.3 56 36 *E 47 07 PP 50 48 SS 01 48
 21 47 01.0 L 07 28

BKS MICRON PERIOD
 PZ 0.2 0.5
 MAXR(Z) 6.1 20
 MAXH(N) 4.3 20
 MAXH(E) 7.15 20

MHC JAS 21 47 05.6 C
 21 47 08.4 C 56 53 *PP 47 31 *E 47 54 PKKP 05 59
 P'P' 13 19

PRI 21 47 12.8 C
 MAG 5.8, DIST(DEG) 78
 USNOS 21 35 21.4, 29.7N, 140.0E, H=179 KM, M=5.9
 SOUTH OF HONSHU, JAPAN. FELT

MHC DEC 08 00 54 33.6 D
 PRI 00 54 35.9 D
 JAS 00 54 38.5 D
 USNOS 00 42 01.0, 10.9S, 163.2E, H= 48 KM, M=5.1
 SOLOMON ISLANDS

JAS DEC 08 02 08 27.2 C

JAS DEC 08 04 03 57.0

PRI DEC 08 11 22 01.5
 JAS 11 22 05.1 C

PRI DEC 08 19 42 18.4 C *PP 42 28
 SAO 19 42 23.7 C *I 42 26 P'P' 09 05 *E 12 13
 JAS 19 42 24.6 C *PP 42 40
 MHC 19 42 27.0 C *PP 42 44 PP 45 44 SS 58 28
 BKS 19 42 31.0 52 50 L 05 00 LR 10 00

FHC MICRON PERIOD
 PZ 0.11 1.0
 MAXR(Z) 7.15 20
 MAXH(N) 8.9 20
 MAXH(E) 4.3 20
 *PP 42 59

19 42 46.9 D
 MAG 6.0, DIST(DEG) 83
 USNOS 19 30 06.7, 30.7S, 71.2W, H= 50 KM, M=5.8
 NEAR COAST OF CENTRAL CHILE. FELT

JAS DEC 09 04 30 41.5 C

JAS DEC 09 05 42 37.6 C

FRE DEC 09 08 08 27.5 D
 PRI 08 08 28.6 D
 SAO 08 08 36.0 D
 JAS 08 08 38.0 D
 MHC 08 08 41.2 D
 BKS 08 08 48.0 D

*I 11 49
 PCP 11 50
 LQ 21 00

MICRON 0.04 PERIOD 1.0

FHC 08 09 13.7 D
 MAG(MB) 5.3, DIST(DEG) 30
 USNOS 08 02 43.3, 16.1N, 99.4W, H= 34 KM, M=5.5
 NEAR COAST OF GUERRERO, MEXICO

MHC DEC 09 11 58 57.5
 PRI 11 58 58.6
 JAS 11 59 00.8

PRI DEC 09 16 37 46.1 D
 JAS 16 37 52.2 D
 MHC 16 37 55.7 D
 FHC 16 38 19.7

*PP 38 28
 *E 38 20 *PP 38 34
 *PP 38 38

USNOS 16 28 33.4, 1.4S, 77.7W, H=178 KM, M=5.0
 ECUADOR

PRI DEC 10 04 44 08.2 C
 FRE 04 44 12.1 C
 SAO 04 44 14.5 C
 JAS 04 44 15.2 C
 MHC 04 44 18.0 C
 BKS 04 44 23.0 C

52 12 *PP 44 22 *I 44 42 P'P' 14 18
 52 24 *PP 44 26 *I 44 40 P'P' 14 18
 *E 47 00 *E 49 06 LR 59 00

MICRON 1.55 PERIOD 2.0

FHC 04 44 43.4 C
 MAG 7.1, DIST(DEG) 57
 USNOS 04 34 38.8, 4.0S, 80.7W, H= 25 KM, M=6.3
 PERU-ECUADOR BORDER REGION. 81 KILLED, MANY
 INJURIES. MAJOR PROPERTY DAMAGE IN SOUTHERN
 ECUADOR AND NORTHERN PERU

PRI DEC 10 04 59 10.7 C
 JAS 04 59 18.1
 MHC 04 59 19.9
 FHC 04 59 45.5

PCP 00 17
 PCP 00 33

USNOS 04 49 42.3, 4.1S, 80.7W, H= 32 KM, M=5.3
 PERU-ECUADOR BORDER REGION. AFTERSHOCK

PRI DEC 10 05 42 17.0 C
 JAS 05 42 24.1
 MHC 05 42 27.0
 FHC 05 42 51.9

*PP 42 28
 *PP 42 35 PCP 43 24
 *PP 42 38
 *PP 43 03

USNOS 05 32 49.7, 4.0S, 80.7W, H= 33 KM, M=5.4
 PERU-ECUADOR BORDER REGION. AFTERSHOCK

JAS DEC 10 09 28 24.4

FHC DEC 10 10 21 41.2 D
 BKS 10 22 04.0

27 52 LQ 30 56 LR 33 00
 MICRON PERIOD
 0.07 1.0

PZ

MHC 10 22 11.2
 JAS 10 22 14.2 D
 SAO 10 22 15.0
 PRI 10 22 23.0 D
 FRE 10 22 24.1 D

MAG(MB) 5.5, DIST(DEG) 36
 USNOS 10 15 07.2, 53.1N, 169.8W, H= 48 KM, M=5.5
 FOX ISLANDS, ALEUTIAN ISLANDS

PRI DEC 10 11 47 10.4 C
 JAS 11 47 17.3 C
 BKS 11 47 18.0
 MHC 11 47 20.5 C
 FHC 11 47 45.5 C

*PP 47 21
 *PP 47 28 *E 48 16
 *E 06 00
 *PP 47 31
 *PP 47 56

USNOS 11 37 42.4, 4.0S, 80.8W, H= 32 KM, M=5.4
 PERU-ECUADOR BORDER REGION

JAS DEC 10 13 57 12.7 C
 PRI DEC 10 17 39 07.3 D
 JAS 17 39 14.3 C
 FHC 17 39 41.5

*E 57 22 *E 58 11 PKKP 15 49
 *PP 39 24

USNOS 17 29 39.4, 3.9S, 80.8W, H= 32 KM, M=5.0
 PERU-ECUADOR BORDER REGION

JAS DEC 10 20 00 18.6 C
 JAS DEC 10 21 56 16.7 D

19 50 43.1, 4.1S, 80.7W, H= N KM, M=5.1
 PERU-ECUADOR BORDER REGION

*E 56 27
 21 46 41.7, 3.9S, 80.8W, H= 34 KM, M=5.0
 PERU-ECUADOR BORDER REGION

JAS DEC 11 07 45 41.2
 USNOS 07 34 54.5, 43.8N, 28.4W, H= N KM, M=5.2
 NORTH ATLANTIC RIDGE

FRE DEC 11 10 34 01.9 C
 PRI 10 34 03.9 C
 SAO 10 34 08.8
 JAS 10 34 10.6 C
 MHC 10 34 13.0
 BKS 10 34 18.5

*PP 34 22 P'P' 04 25
 *E 35 14 LQ 49 00 LR 51 00

42 12 PERIOD 1.0
 MICRON 0.07

MIN 10 34 24.3
 MAG 5.4, DIST(DEG) 57
 USNOS 10 24 36.2, 3.9S, 80.7W, H= 37 KM, M=5.7
 PERU-ECUADOR BORDER REGION

PRI DEC 11 21 10 10.4 *E 10 18

JAS 21 10 17.7 C *E 10 25
 JAS DEC 12 00 10 09.0
 SAD DEC 12 01 21 59.1 D
 PRI 01 22 00.0
 MHC 01 22 00.5
 BKS 01 22 00.5 D *E 22 13 *E 22 25 *PP 23 33
 PP 25 02
 MICRON PERIOD
 PZ 0.10 0.8
 JAS 01 22 06.0 D *PP 23 36 PP 25 08
 MIN 01 22 09.5
 MAG(MB) 5.6, DIST(DEG) 79
 USNOS 01 10 41.2, 20.8S, 178.0W, H=411 KM, M=5.5
 FIJI ISLANDS REGION

BKS DEC 12 03 16 40.0
 MICRON PERIOD
 PZ 0.02 0.8
 MHC 03 16 51.2
 JAS 03 16 53.7
 FHC DEC 12 07 14 27.7
 MIN 07 14 28.6
 JAS 07 14 39.6 C
 BKS 07 14 40.5 C
 MICRON PERIOD
 PZ 0.04 1.0
 MHC 07 14 43.3
 MAG(MB) 6.0, DIST(DEG) 97
 USNOS 07 00 57.3, 43.9N, 54.8E, H= 0 KM, M=6.1
 WESTERN KAZAKH SSR

JAS DEC 13 00 49 23.7 D
 FHC DEC 13 04 14 56.0
 MIN 04 15 03.6
 BKS 04 15 10.5
 MICRON PERIOD
 PZ 0.03 0.8
 JAS 04 15 16.8
 MAG(MB) 5.5, DIST(DEG) 72
 USNOS 04 03 42.5, 39.8N, 139.4E, H= 14 KM, M=5.4
 NEAR WEST COAST OF HONSHU, JAPAN

FHC DEC 13 13 05 46.8 C
 MIN 13 05 50.2 C
 BKS 13 05 53.0 D *E 06 16
 MICRON PERIOD
 PZ 0.08 1.2
 MHC 13 05 53.9 C
 JAS 13 05 54.4 C
 PRI 13 05 57.0 C
 USNOS 12 47 00.3, 4.2S, 103.4E, H=119 KM, M=5.4
 SOUTHERN SUMATRA



JAS DEC 13 23 20 47.0 C *E 34 42
 USNOS 23 08 22.5, 41.1S, 91.1W, H= N KM, M=5.0
 SOUTHERN PACIFIC OCEAN

PRI DEC 14 04 15 13.8 *E 16 31
 JAS 04 15 16.8 D
 SAD 04 15 19.5 D
 MHC 04 15 22.6
 BKS 04 15 22.7
 MIN 04 15 29.2 D
 FHC 04 15 43.9 D
 USNOS 04 06 29.0, 10.0N, 72.7W, H=159 KM, M=5.2
 VENEZUELA. FELT

JAS DEC 14 04 56 35.8
 PRI DEC 14 07 42 04.2
 FRE 07 42 06
 MHC 07 42 12.3
 JAS 07 42 12.8 C
 BKS 07 42 22.0
 50 02 *PP 42 33 *E 43 00 PCS 47 10
 SS 53 58 SSS 54 40 LR 00 00

MICRON PERIOD
 MAXR(Z) 2.8 20
 MAXH(N) 2.1 20
 MAXH(E) 5.5 20
 FHC 07 42 37.7
 MAG 5.8, DIST(DEG) 54
 USNOS 07 32 52.5, 1.3S, 80.9W, H= N KM, M=5.4
 NEAR COAST OF ECUADOR

PRI DEC 14 09 51 02.2 *PP 51 16
 JAS 09 51 10.3 *PP 51 24

JAS DEC 14 14 09 04.2 C
 MIN DEC 14 14 54 59.7 *E 05 00
 BKS 14 55 10.5
 MHC 14 55 15.7

JAS 14 55 19.2 D
 SAD 14 55 19.3
 PRI 14 55 28.2
 FRE 14 55 29.3 D
 USNOS 14 48 11.8, 53.0N, 169.9W, H= 50 KM, M=5.3
 FOX ISLANDS, ALEUTIAN ISLANDS

SAD DEC 14 19 15 *E 15 37
 PRI 19 15 27.5 16 45
 JAS 19 15 39.5 C 17 03
 MHC 19 15 43.5
 MAG 4 3/4, BAJA CALIFORNIA

FHC DEC 14 21 18 13.2
 MIN 21 18 27.0
 BKS 21 18 38 24 30 LQ 28 00

MICRON PERIOD
 MAXR(Z) 4.3 20
 MAXH(N) 2.1 20
 MAXH(E) 5 20

MHC 21 18 43.1
 JAS 21 18 46.4 C
 PRI 21 18 52.0
 FRE 21 18

*E 18 56
 MAG 5 1/4, DIST(DEG) 36
 USNOS 21 11 39.1, 53.0N, 173.3W, H= 54 KM, M=5.2
 FOX ISLANDS, ALEUTIAN ISLANDS

MIN DEC 15 03 51 09.0
 BKS 03 51 18.5

MICRON PERIOD
 PZ 0.03 0.8

MHC 03 51 24.2
 JAS 03 51 27.4 C
 SAO 03 51 27.9 C

MAG(MB) 5.0, DIST(CEG) 39
 USNOS 03 44 01.5, 52.4N, 176.2W, H=189 KM, M=4.8
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS. FELT
 ON ADAK

PRI DEC 15 08 01 24.7 C
 JAS 08 01 32.1 C
 MHC 08 01 36.4

PCP 04 11
 USNOS 07 54 51.6, 14.4N, 93.1W, H= N KM, M=5.1
 NEAR COAST OF CHIAPAS, MEXICO

PRI DEC 15 10 39 30.7
 JAS 10 39 38.8
 MHC 10 39 42.4

PCP 42 19
 USNOS 10 32 59.0, 14.3N, 93.1W, H= N KM, M=5.2
 NEAR COAST OF CHIAPAS, MEXICO

PRI DEC 15 10 59 52.0
 JAS 10 59 59.7 C

PCP 02 39

BKS DEC 15 15 36 48.5

*E 37 26
 MICRON PERIOD
 PZ 0.05 0.8

SAO 15 36 49.2 C
 MHC 15 36 50.0 C
 PRI 15 36 51.7 C
 JAS 15 36 55.1 C
 MIN 15 36 55.2 C

*E 37 04 *E 37 13
 MAG(MB) 5.4, DIST(DEG) 84
 USNOS 15 24 37.4, 14.4S, 167.3E, H=182 KM, M=5.8
 NEW HEBRIDES ISLANDS

BKS DEC 15 15 41 25.0
 JAS 15 41 30.0 C

JAS DEC 15 17 09 06



*PP 25 06
 21 15 20.2, 4.0S, 80.9W, H= 32 KM, M=5.2
 PERU-ECUADOR BORDER REGION

PRI DEC 15 21 24 48.4
 JAS 21 24 55.4
 USNOS

PRI DEC 16 01 09 39.8 C
 JAS 01 09 44.8 C
 MHC 01 09 49.5 C
 BKS 01 09 54.0

MICRON PERIOD
 PZ 0.06 1.0
 MAG(MB) 5.5, DIST(DEG) 52
 USNOS 01 00 46.5, 6.0N, 77.5W, H= 14 KM, M=5.6
 NEAR WEST COAST OF COLUMBIA

BKS DEC 16 08 52
 JAS 08 52 29.8 D
 MHC 08 52 34.7 D
 USNOS

*E 52 39
 08 44 22.0, 8.7N, 83.2W, H= 64 KM, M=5.2
 COSTA RICA

JAS DEC 16 16 00 57.5 C
 PRI 16 01 01.6 C
 SAO 16 01 08.0 C
 MHC 16 01 10.7 C
 BKS 16 01 17.0
 MIN 16 01 23.8 C

*E 02 08
 MAG 5.1. SOUTHERN NEVADA. NUCLEAR TESTS 'ARTESIA'
 AND 'CREAM'
 USAEC 16 00 00.1, 37 06 00.6N, 116 00 28.6W
 USAEC 16 00 00.2, 37 08 34.4N, 116 02 02.4W

MHC DEC 16 16 14
 PRI 16 14
 JAS 16 14 30.5

*E 14 09
 *E 14 10
 MAG 4.6. SOUTHERN NEVADA

JAS DEC 16 16 32 40
 PRI 16 32 45
 MHC 16 32 55

MAG 4.3. SOUTHERN NEVADA

MIN DEC 17 07 13 54.4
 BKS 07 14 05.5

JAS MHC 07 14 06.5 C
 SAO 07 14 08.7 C
 PRI 07 14 11.5
 07 14 15.2 C

MICRON PERIOD
 PZ 0.04 1.0
 MAG(MB) 5.6, DIST(DEG) 90
 USNOS 07 00 57.4, 49.7N, 78.1E, H= 0 KM, M=5.5
 EASTERN KAZAKH SSR. EXPLOSION

PRI DEC 17 09 01 02.1 C
 SAO 09 01 03.0

SKP 04 26 SKS 09 11

JAS 09 01 03.8 C SKP 04 28 SKS 08 24 *E 11 03
 *E 14 00 *E 15 02
 MHC 09 01 04.6 C SKP 04 28
 BKS 09 01 06.0 SKP 04 29
 MICRON PERIOD
 0.25 0.8
 PZ SKP 04 32
 MIN 09 01 07.8 USNOS 08 42 21.5, 56.0S, 27.5W, H=115 KM, M=5.9
 SOUTH SANDWICH ISLAND REGION

JAS DEC 17 09 30 52.2 C
 JAS DEC 17 16 05 57.0 C
 PRI 16 06 00.8 C
 SAO 16 06 07.5 C
 MHC 16 06 09.9 C
 BKS 16 06 16.0
 FHC 16 06 48.3 C
 MAG 5.7. SOUTHERN NEVADA. NUCLEAR TEST 'CARPETBAG'
 USAEC 16 05 00.2, 37 07 44.9N, 116 04 58.8W

JAS DEC 17 16 21 38.5
 PRI 16 21 43
 MAG 4.5. SOUTHERN NEVADA

JAS DEC 18 15 30 56.7 C
 PRI 15 31 01.2 C
 SAO 15 31 07.1 C *I 31 15
 MHC 15 31 09.7 C
 BKS 15 31 17.0
 MIN 15 31 22.3 C
 MAG 4.9. SOUTHERN NEVADA. NUCLEAR TEST 'BANE BERRY'
 USAEC 15 30 00.2, 37 10 23.3N, 116 05 55.9W

JAS DEC 18 18 26 06
 MHC 18 26 12.2 *E 28 35
 MIN 18 26 24.5
 FHC 18 26 42

FHC DEC 18 22 38 14.5 C
 MIN 22 38 25.9 C
 BKS 22 38 34.4 C

JAS 22 38 PZ 42.0 C MICRON 0.04 PERIOD 0.9
 USNOS 22 28 54.1, 50.2N, 156.7E, H= 61 KM, M=5.1
 KURIL ISLANDS

BKS DEC 19 00 05
 JAS 00 05 SKS 13 22 SP 16 08 PKKP 19 06
 SS 22 40 SSS 26 20 G 33 00
 *PP 05 41 PP 08 05 PKKP 19 02
 *E 19 20
 USNOS 23 50 12.2, 5.1N, 123.5E, H=511 KM, M=5.5
 MINDANAO, PHILIPPINE ISLANDS

JAS DEC 19 07 40 42



BKS 07 40 49.4
 FHC DEC 19 10 57 01.5 *PP 57 18
 MIN 10 57 04.0 *PP 57 20
 MHC 10 57 08.4 *PP 57 25
 JAS 10 57 08.6 *PP 57 25 *E 59 06
 BKS 10 57 09.7 *PP 57 22 *E 57 44 PP 59 00
 *E 16 48 LR 37 00
 USNOS 10 38 05.2, 1.6S, 99.9E, H= 46 KM, M=5.8
 SOUTHERN SUMATRA

FHC DEC 20 06 07 14.0 *PP 07 53
 MIN 06 07 24.3 D *I 08 19
 BKS 06 07 42.0 MICRON PERIOD
 0.09 1.0
 PZ *PP 08 16 *E 14 06
 JAS 06 07 46.7 D
 MHC 06 07 48.0 D
 SAO 06 07 52.8
 PRI 06 08 01.0 D
 MAG(MB) 5.4, DIST(DEG) 30
 USNOS 06 01 36.1, 63.1N, 151.4W, H=130 KM, M=5.3
 CENTRAL ALASKA. FELT AT PALMER AND ANCHORAGE

SAO DEC 20 12 06 50.1 C
 BKS 12 06 51.0 D MICRON PERIOD
 0.04 1.0
 PZ
 MHC 12 06 51.4 C
 PRI 12 06 51.6 C
 JAS 12 06 56.8 C
 MIN 12 06 59.7 C
 MAG(MB) 4.9, DIST(DEG) 77
 USNOS 11 55 56.7, 17.8S, 180.0E, H=635 KM, M=4.9
 FIJI ISLANDS REGION

JAS DEC 21 07 32 19.0 D
 JAS DEC 21 07 43 00.5
 MIN 07 43 05.5
 USNOS 07 33 15.5, 4.0S, 80.8W, H= 32 KM, M=5.1
 PERU-ECUADOR BORDER REGION

JAS DEC 21 11 03 27.6 D
 USNOS 10 52 54.9, 43.8N, 151.0E, H= 38 KM, M=5.1
 KURIL ISLANDS REGION

MHC DEC 21 14 59 29.4
 BKS 14 59 30.0 C *E 09 32 *E 13 15
 JAS 14 59 30.5 C
 USNOS 14 40 45.0, 9.1S, 116.4E, H= 92 KM, M=5.9
 SUMBAWA ISLAND REGION

JAS DEC 22 01 58 04.6 C *E 59 04
 USNOS 01 48 30.2, 4.0S, 80.8W, H= 33 KM, M=5.5
 PERU-ECUADOR BORDER REGION

SAO DEC 22 05 50 19.1 D *E 50 50
 BKS 05 50 19.2 D MICRON PERIOD
 0.11 0.9

MHC 05 50 20.0 D
 PRI 05 50 20.9 D *PP 50 55
 JAS 05 50 25.1 D
 MIN 05 50 26.5 D
 MAG(MB) 5.8, DIST(DEG) 86
 USNOS 05 37 47.9, 20.8S, 169.8E, H=119 KM, M=5.6
 NEW HEBRIDES ISLANDS

PRI DEC 22 15 31 06.8 D *PP 31 36
 SAO 15 31 11.2 D *PP 31 41
 JAS 15 31 12.0 D *PP 31 44
 MHC 15 31 14.7 *PP 31 47 *SP 32 01
 BKS 15 31 18.5 MICRON PERIOD
 0.06 0.9

MIN 15 31 23.7 *PP 32 04
 FHC 15 31 34.2
 MAG(MB) 5.4, DIST(DEG) 78
 USNOS 15 19 36.6, 20.5S, 68.6W, H=115 KM, M=5.5
 CHILE-BOLIVIA BORDER REGION

BKS DEC 22 18 23 *PP 23 21
 SAO 18 23 09.4 *PP 23 21
 MHC 18 23 10.6 *PP 23 22
 PRI 18 23 11.5 *PP 23 22
 JAS 18 23 15.5 C *PP 23 27
 MIN 18 23 *PP 23 28

JAS DEC 22 19 36 14.8 C
 USNOS 19 23 20.9, 9.2S, 158.1E, H= 25 KM, M=5.1
 SOLOMON ISLANDS

JAS DEC 22 21 01 44.2 C *I C1 50
 MIN 21 01 45.0 C *E C1 50
 FHC 21 01 47.6
 MHC 21 01 52.2 C
 USNOS 20 51 16.2, 28.3N, 43.9W, H= N KM, M=5.1
 NORTH ATLANTIC RIDGE

JAS DEC 22 21 03 32.2 C *I 03 38
 MIN 21 03 33.0 C *E 03 39
 MHC 21 03 40.2 C *E 03 46
 BKS 21 03 41.3
 FHC 21 03 *I 03 44
 USNOS 20 53 04.3, 28.3N, 43.9W, H= N KM, M=5.1
 NORTH ATLANTIC RIDGE

MIN DEC 23 07 14 28.4 C
 JAS 07 14 39.6 C PP 18 36 PKKP 31 08
 BKS 07 14 41.0 D
 MICRON PERIOD



07 14 43.0 C
 C7 14 48.4 C
 MAG(MB) 6.2, DIST(DEG) 98
 USNOS 07 00 57.3, 43.8N, 54.8E, H= 0 KM, M=6.1
 WESTERN KAZAKH SSR. EXPLOSION

FHC DEC 23 08 27 46.7 C
 MIN 08 28 12.0 C
 BKS 08 28 24.2 C
 MHC 08 28 35.6 C *I 28 45
 JAS 08 28 40.0 C
 SAO 08 28 45.6 C
 PRI 08 28 55.2 C

FHC DEC 23 11 55 17.0
 MIN 11 55 24.5 C
 BKS 11 55 25.6 *I 55 32 *E 55 44 *E 21 45
 MICRON PERIOD
 0.11 1.2

MHC 11 55 28.5 C
 JAS 11 55 32.0 C
 PRI 11 55 34.0
 MAG(MB) 5.7, DIST(DEG) 85
 USNOS 11 42 47.4, 12.3N, 142.9E, H= 49 KM, M=5.7
 SOUTH OF MARIANA ISLANDS

PRI DEC 23 15 29 53.7 D
 SAO 15 30 00.5 D
 JAS 15 30 01.0 D *I 32 47
 MHC 15 30 05.5 D
 MIN 15 30 19.7 D
 FHC 15 30 35.0 D
 USNOS 15 23 39.1, 15.9N, 93.8W, H= 90 KM, M=5.3
 NEAR COAST OF CHIAPAS, MEXICO

MHC DEC 24 02 08 41.0
 JAS 02 08 42.0
 PRI 02 08 43.5
 USNOS 01 49 49.5, 9.0S, 116.4E, H= 24 KM, M=5.6
 SUMBAWA ISLAND REGION

JAS DEC 24 02 16 23.7 *E 18 44

FRE DEC 24 08 06 45.9
 PRI 08 06 48.8 D *E 09 41
 SAO 08 06 55.5 D *E 09 42
 JAS 08 06 56.0 D *E 09 42 *E 10 06 *E 13 13
 MHC 08 07 00.5 D *E 07 23 *E 09 44
 BKS 08 07 06.3 D *E 13 00 *E 15 00 LR 17 00
 MICRON PERIOD
 0.11 1.3
 MAXR(Z) 1.1 20
 MAXH(N) 1.1 20
 MAXH(E) 2.1 20

MIN 08 07 14.7 D

FHC 08 07 30.0 D *E 07 53
 MAG 5 1/4, DIST(DEG) 36
 USNOS 08 00 37.6, 16.1N, 93.6W, H=116 KM, M=5.6
 CHIAPAS, MEXICO

MIN DEC 24 08 29 53.8 *E 30 14
 BKS 08 30 01.8
 MHC 08 30 07.5
 JAS 08 30 11.0
 PRI 08 30 18.2
 USNOS 08 22 20.8, 51.5N, 178.3W, H= 53 KM, M=5.3
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS. FELT
 (III) ON ADAK

JAS DEC 24 23 29 56.7 *E 31 29

JAS DEC 25 04 17 55.6

JAS DEC 25 12 55 18.4 *PP 55 41

BKS DEC 25 13 07 PS 20 32 SS 26 08 LQ 35 24
 LR 40 40

MICRON PERIOD
 MAXR(Z) 1.8 20
 MAXH(N) 2.0 20
 MAXH(E) 2.1 20

JAS 13 07 17.1 *E 07 32 *E 10 29
 MIN 13 07 19.4
 MHC 13 07 23

MAG 5.6, DIST(DEG) 103
 USNOS 12 53 37.4, 0.3S, 19.2W, H= N KM, M=5.5
 CENTRAL MID-ATLANTIC RIDGE

JAS DEC 25 13 55 41.9

PRI DEC 25 16 23 12.9

SAO 16 23 19.8

JAS 16 23 20.1 *E 26 18
 MHC 16 23 24

FRE DEC 25 20 00 48 C

JAS 20 00 48.5
 USNOS *E 01 17

19 48 09.7, 21.8S, 174.4E, H= 13 KM, M=5.0
 NEW HEBRIDES ISLANDS REGION

JAS DEC 25 22 17 34.5

SAO DEC 26 06 37 56.7

PRI 06 37 57.7

BKS 06 37 57.8

MHC 06 37 58.2
 JAS 06 38 03.8 C
 MIN 06 38 08.2

BKS DEC 26 07 11 41.2
 JAS 07 11 47.3

MIN DEC 26 10 21 35.5
 BKS 10 21 40.4
 JAS 10 21 40.5
 PRI 10 21 44.1
 USNOS 10 02 47.9, 9.3N, 94.1E, H= 47 KM, M=5.4
 NICOBAR ISLANDS REGION

LR 07 10

BKS DEC 26 10 35
 JAS 10 35 17.8

FHC DEC 26 11 21 19.2 C

MIN 11 21 27.7 C

BKS 11 21 32.1 C

MHC 11 21 35.4 C

JAS 11 21 38.0 C

JAS DEC 26 19 08 16.6 C

SAO DEC 26 19 17 33.8 C

BKS 19 17 34.8 *E 18 06 LQ 38 16 LR 42 30

MICRON PERIOD

PZ 0.06 1.0

MAXR(Z) 1.2 20

MAXH(N) 0.9 20

MAXH(E) 0.8 20

MHC 19 17 35.0 C

PRI 19 17 35.6 C

FHC 19 17 37.0

FRE 19 17 40.7 D

JAS 19 17 40.7 C *E 20 43

MIN 19 17 43.2 C

MAG 5.1, DIST(DEG) 77

USNOS 19 05 46.9, 16.0S, 178.2E, H= 86 KM, M=5.3
 FIJI ISLANDS

JAS DEC 26 23 18 23.1

BKS DEC 27 02 18 44.5 *pp 18 56

JAS 02 18 44.5 C

FRE 02 18 45

USNOS 02 06 45.1, 16.2S, 178.8E, H= 29 KM, M=5.1
 FIJI ISLANDS

PRI DEC 27 03 19 32.6 C

JAS 03 19 39.2 C

MHC 03 19 42.5

FHC 03 20 07.5

SAO DEC 27 10 24 46.8

BKS 10 24 48.0

PRI 10 24 48.0

MHC 10 24 48.2

JAS 10 24 53.5 D

MIN 10 24 57.1

MIN DEC 27 12 27 32.0 C *PP 28 06
 BKS 12 27 33.7 *PP 28 08
 MHC 12 27 36.7 C *PP 28 11
 JAS 12 27 40.4 C *PP 28 14
 FRE 12 27 44.6

PRI DEC 27 20 14 *E 15 10
 JAS 20 14 46.3 C *E 15 03
 BKS 20 15 12

USNOS 20 02 23.3, 11.1S, 163.0E, H= N KM, M=5.0
 SOLOMON ISLANDS

MIN DEC 27 20 55 03.7 *PP 55 18
 JAS 20 55 18.6 *PP 55 33
 BKS 20 55 25.2

USNOS 20 44 48.9, 44.9N, 153.7E, H= 48 KM, M=5.2
 KURIL ISLANDS REGION

JAS DEC 27 21 54 05.0

BKS DEC 28 00 14 58.5
 JAS 00 15 04.0 C

PRI DEC 28 10 46 18.0
 JAS 10 46 23.3 D
 MHC 10 46 25.2
 BKS 10 46 30 C

BKS DEC 28 20 16 18.0

*E 18 40 SKS 26 35 SP 28 00
 SS 32 50 SSS 36 20 LQ 39 20
 LR 43 00

MICRON PERIOD
 PZ 3.5 13
 MAXR(Z) 68 20
 MAXH(N) 12.5 20
 MAXH(E) 75 20

MHC 20 16 19.5
 JAS 20 16 22

*E 16 43 PP 19 55 PKKP 33 55
 P'P' 42 00

MAG 6 3/4, DIST(DEG) 89
 USNOS 20 03 25.1, 5.2S, 253.6E, H= 61 KM, M=6.0
 NEW IRELAND REGION. FELT

FHC DEC 29 02 38 44.5 C
 BKS 02 38 46.2 C

PP 42 15 SKS 49 10 SP 50 10
 *E 54 30 LR 04 30

MICRON PERIOD
 PZ 6.5 10
 MAXR(Z) 23.2 20
 MAXH(N) 10.7 20
 MAXH(E) 21.4 20

SAO 02 38 47.4
 MHC 02 38 48.2 C
 PRI 02 38 50.2 C

*E 38 57 *E 39 03



02 38 51.2 C *E 39 05 *E 39 15 *E 49 37
 02 38 52.5 C *E 50 29

MIN JAS
 JAS MAG 6 1/2 TO 6 3/4, DIST(DEG) 86
 USNOS 02 26 12.2, 10.5S, 161.4E, H= 72 KM, M=6.1
 SOLOMON ISLANDS. FELT AT HONIARA (V) AND
 KIETA (II)

JAS DEC 29 07 42 05

PRI DEC 29 08 11 24.5 C
 SAO 08 11 30.8 C *E 12 07 *E 12 31 *E 16 24
 JAS 08 11 31.7 C
 MHC 08 11 35.0 C LQ 30 10 *E 32 30
 BKS 08 11 40.2 C
 MIN 08 11 47.0 C
 FHC 08 12 00.0 C

USNOS 08 01 59.3, 3.9S, 80.9W, H= 47 KM, M=5.8
 NORTHERN PERU

MHC DEC 29 10 31 32.0
 JAS 10 31 35.8 D

USNOS 10 24 31.4, 51.2N, 168.4W, H= 9 KM, M=5.0
 FOX ISLANDS, ALEUTIAN ISLANDS

BKS DEC 30 03 54 14.8 LR 21 00
 MIN 03 54 16.6 *E 57 40
 JAS 03 54 20.7 C

USNOS 03 41 11.9, 3.3S, 152.5E, H= 29 KM, M=5.2
 NEW IRELAND REGION. FELT (IV) AT RABAU

PRI DEC 30 06 20 26.2 D
 SAO 06 20 31.1 C *PP 20 58
 JAS 06 20 31.8 D
 MHC 06 20 34.0 D
 BKS 06 20 37.5
 FHC 06 20 58.6 C

USNOS 06 08 29.4, 24.0S, 69.3W, H= 82 KM, M=5.5
 NORTHERN CHILE. FELT (IV) AT ANTOFAGASTA

FHC DEC 30 08 29 58.6
 MIN 08 30 03.8 *E 32 04
 JAS 08 30 04.0 C
 MHC 08 30 04.0 C
 PRI 08 30 07.4 C

USNOS 08 11 09.7, 1.4N, 99.1E, H= 86 KM, M=5.5
 NORTHERN SUMATRA

MIN DEC 30 13 05 *E 06 22 *I 07 42
 PRI 13 05 30.3 C 06 21 *I 05 44 *I 06 25
 JAS 13 05 40.4 D *I 05 44
 SAO 13 05 40.5 D *I 05 49
 MHC 13 05 45.6 C *E 05 59 *E 06 53
 BKS 13 05 54.9

MAG 4.6, MOJAVE DESERT

JAS DEC 30 19 59 02.0

MIN DEC 30 21 09 32.0
JAS 21 09 35USNOS 20 57 30.5, 37.2N, 15.0W, H= N KM, M=5.1
NORTH ATLANTIC OCEAN. FELT ALONG COAST OF
PORTUGAL

JAS DEC 31 01 30 23.0

MIN DEC 31 05 36 25.2 C

FHC 05 36 07

BKS 05 36 50.0 D 39 00

MICRON PERIOD

PZ 1.0 1.5

JAS 05 36 59.3 C *E 37 38

MHC 05 36 59.7

SAO 05 37 06.8 C

PRI 05 37 18.4

USNOS 05 34 13.5, 47.8N, 128.8W, H= N KM, M=5.2
OFF COAST OF WASHINGTON

JAS DEC 31 06 03 14

BKS DEC 31 07 23 35.2

JAS 07 23 39.3

FHC DEC 31 10 48 07

BKS 10 48 49.5

JAS 10 48 58.8

JAS DEC 31 23 44 10.6

USNOS 23 33 31.7, 44.6N, 148.0E, H= 67 KM, M=5.1
KURIL ISLANDS. FELT AT NEMURO, JAPAN