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# Bulletin of the Seismographic Stations

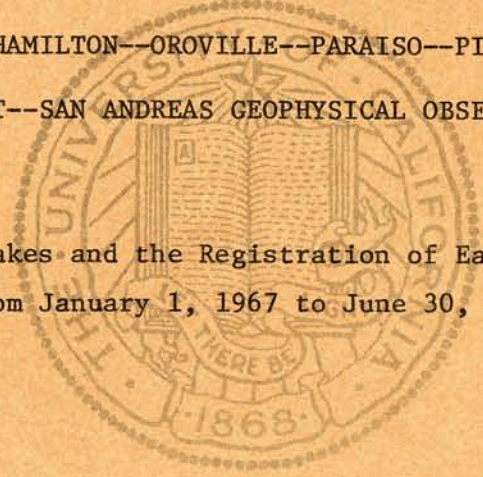
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Vol. 37, No. 1, pp. 1-111

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

Earthquakes and the Registration of Earthquakes  
From January 1, 1967 to June 30, 1967



by  
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and  
K.B. Casaday

University of California  
Berkeley  
1968

BULLETIN OF THE SEISMOGRAPHIC STATIONS  
of the University of California  
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January 1, 1967 to June 30, 1967

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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.

PERSONNEL (November 1968)

Director	Bruce A. Bolt
Assistant Director	T.V. McEvelly
Director Emeritus	Perry Byerly
Associate Research Seismologist	Mansour Niazi
Post Graduate Research Seismologist	John Filson
Associate	Don Tocher (Earthquake Mechanism Laboratory, ESSA, San Francisco)
Associate Engineer	Walter Marion
Full-time Technical Staff	R. Miller*, R. Sell, M. Hilger
Research Assistants	K. Casaday, J. Dewey, L. Drake, M. Somerville, J. Zanetti
Secretary	Loretta Martin

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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. 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.

\*Mr. Roy Miller has replaced Mr. George Mitchell who retired in September 1968.

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 sixteen in 1967. 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: JANUARY - JUNE 1967

Station	North Latitude	West Longitude	Elev. Meters	Foundation Material	Symbol	Present Auspices and Date Established
Berkeley (Haviland)	37° 52!4	122° 15!6	81	Franciscan sandstone	BRK	Univ. of California, 1887
Berkeley (Strawberry)	37° 52!6	122° 14!1	276	Claremont shales	BKS	Univ. of California, 1962
Mt. Hamilton	37° 20!5	121° 38!5	1282	Franciscan formation	MHC	Lick Observatory, 1887
Fresno	36° 46!0	119° 47!8	88	Alluvium	FRE	Fresno City College, 1935
Mineral	40° 20!7	121° 36!3	1495	Volcanic flow	MIN	National Park Service, 1938
Arcata	40° 52!6	124° 04!5	59	Sandstone (loose)	ARC	Humboldt State College, 1948
Manzanita Lake	40° 32!2	121° 33!7	1800	Volcanic tuff	MLC	National Park Service, 1956
San Andreas Geophysical Observatory	36° 45!9	121° 26!7	350	Granite	SAO	Transferred from HRC July 11, 1966
Concord	37° 58!1	122° 04!3	36	Alluvium overlying Franciscan	CNC	Diablo Valley College, 1960
Paraiso	36° 19!9	121° 22!2	363	Granodiorite	PRS	Paraiso Hot Springs, 1961
Llanada	36° 37!0	120° 56!6	475	Alluvium overlying sandstone	LLA	Charles McCullough Ranch, 1961
Priest	36° 08!5	120° 39!9	1187	Greenstone (basic metamorphic)	PRI	Federal Aviation Agency, 1961
Oroville	39° 33!3	121° 30!0	360	Granite	ORV	Department of Water Resources, 1963
Jamestown	37° 56!8	120° 26!3	457	Metamorphic (serpentine)	JAS	Department of Water Resources, 1964
Granite Creek	37° 01!8	121° 59!8	122	Granite	GCC	Kenneth McCullough, Santa Cruz, 1965
Pilarcitos Creek	37° 30!0	122° 22!9	91	Granodiorite (weathered)	PCC	Sare Ranch, 1965

STATION INSTRUMENTATION

January - June 1967

Station	Type of Instrument	T <sub>o</sub> sec	T <sub>g</sub> sec	Component
BRK	Benioff 100 kg	1.0	0.2	Z
	Benioff 100 kg	1.0	8.0	Z
	100X torsion	0.8	-	N, W
	4X torsion	0.8	-	N, W
	Press-Ewing	15	30	Z
MHC	*Press-Ewing	30	Broad band	N45°W, N45°E, Z
	Press-Ewing, ULP	45	300	N45°E
BKS	Benioff 100 kg	1.0	0.75	N, E, Z
	Sprengnether	15	100	N, E, Z
	Wood-Anderson torsion	0.8	-	S, W
MHC	#*Benioff 14 kg	1.0	0.2	Z
	Wood-Anderson torsion	0.8	-	S, E
FRE	Sprengnether moving coil	2.0	2.0	N, E, Z
MIN	Benioff 100 kg	1.0	0.4	Z
	Wood-Anderson torsion	0.8	-	S, E
ARC	Benioff 14 kg	1.0	0.2	Z
	Wood-Anderson torsion	0.8	-	N, E
SAO	#Benioff 14 kg	1.0	0.2	Z
	#Sprengnether 0.70 kg	6.8c/s	20c/s filter	Z
	#*Willmore	3.0	0.2	N45°E
CNC	Benioff 100 kg	1.0	0.2	Z
GCC	#*Willmore	3.0	0.2	N45°E
PRS	#*Willmore	3.0	0.2	N45°E
LLA	#Benioff 14 kg	1.0	0.2	Z
PRI	#*Benioff 14 kg	1.0	0.2	Z
JAS	Benioff 100 kg	1.0	0.75	N, E, Z
	#*Benioff 14 kg	1.0	0.2	Z
PCC	#Benioff 14 kg	1.0	0.2	Z
ORV	Benioff 100 kg	1.0	0.75	N, E, Z
	Geotech moving coil	20	100	N, E, Z

# Signals telemetered to Berkeley via leased telephone lines.

\* Signals recorded on magnetic tape at Berkeley.

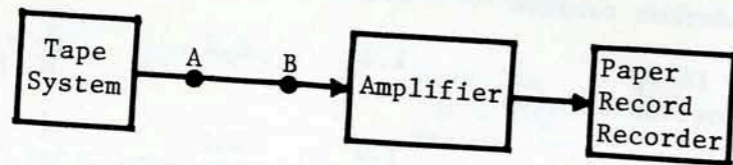
**Direction of motion:** In the "Component" column, each horizontal component seismograph is designated by the direction of ground motion corresponding to upward trace motion on the seismogram when it is oriented so that time increases from left to right. On all vertical component (Z) instruments, upward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

**Tape-recorded long-period seismometers (BRK):** On pages 143 and 144 are given the frequency response curves, amplitude and phase, for the Press-Ewing long-period seismometers which record on magnetic tape at BRK.

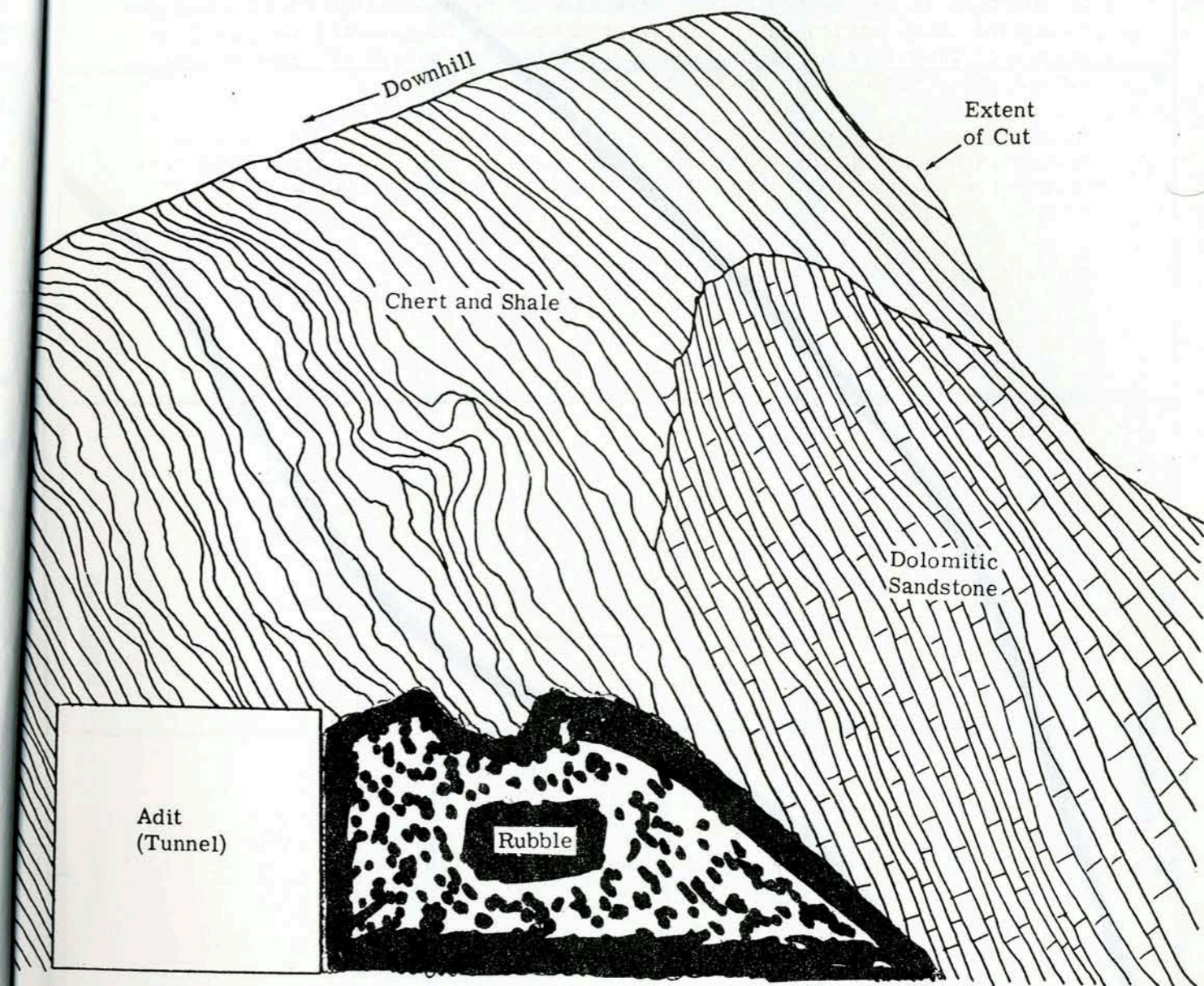
The ordinate of the first curve is the voltage at the terminals of the tape system (point A in diagram), per micron of earth displacement as sensed by 30-second seismometers; versus frequency of earth displacement.

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.

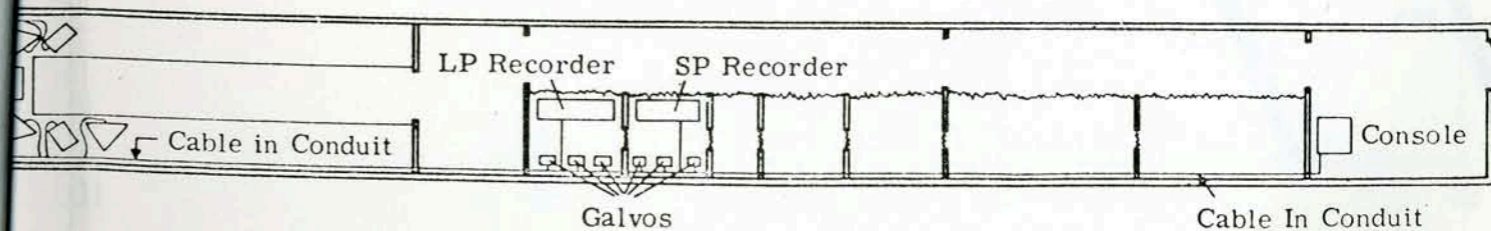


**Phase curve:** Phase of voltage at tape system terminals with respect to ground displacement; versus frequency of earth displacement.

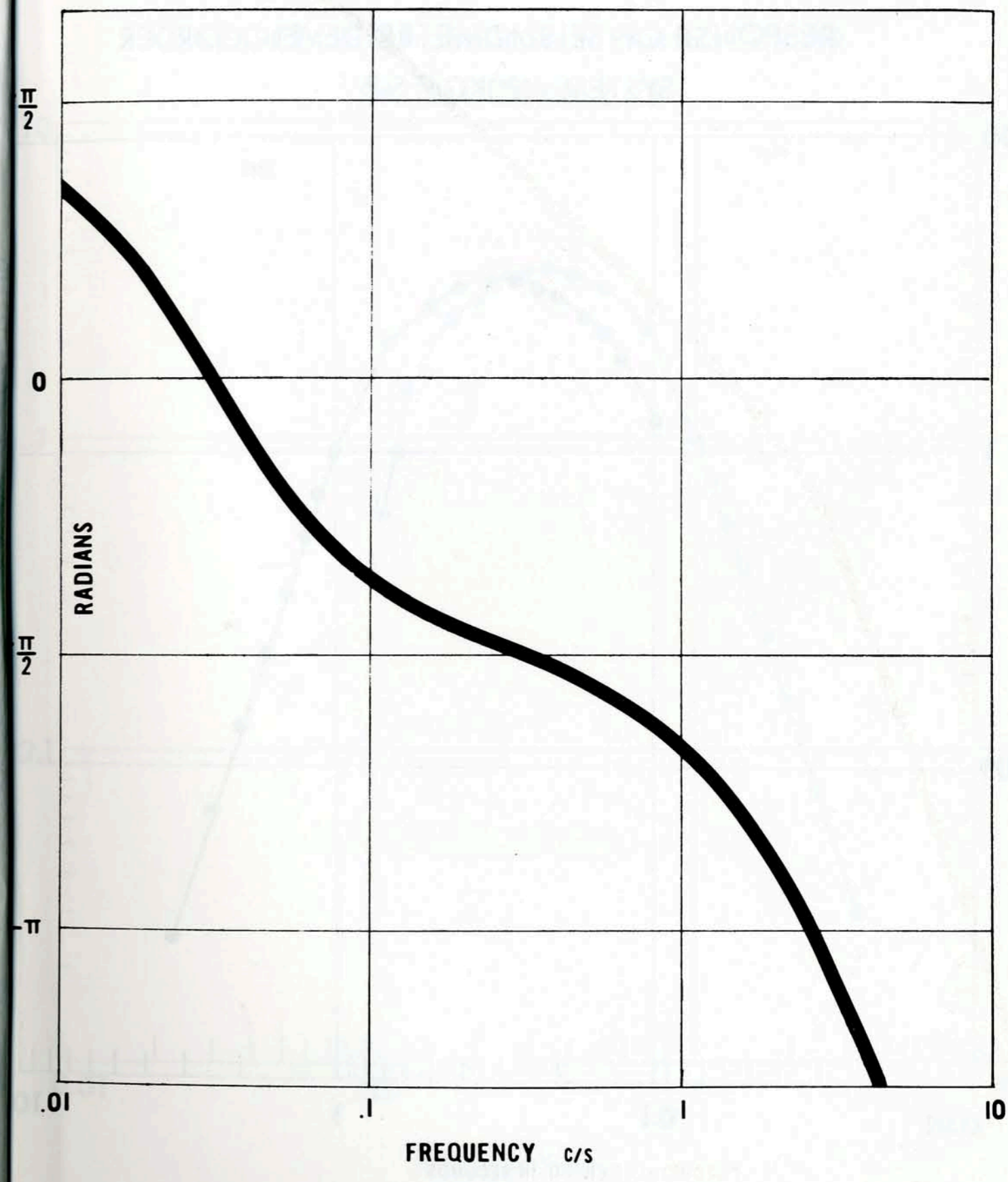
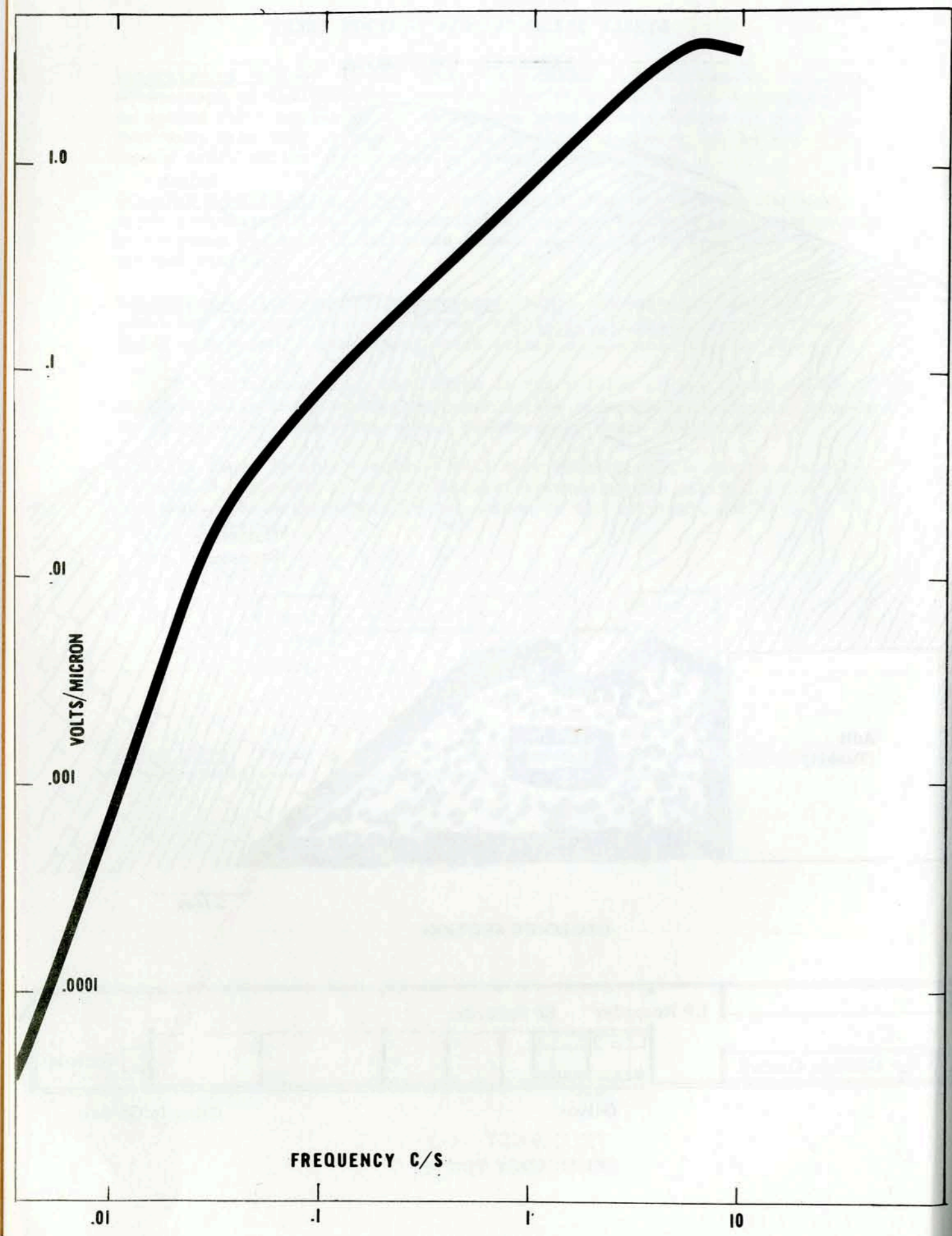
BYERLY SEISMOGRAPHIC STATION (BKS)  
BERKELEY, CALIFORNIA



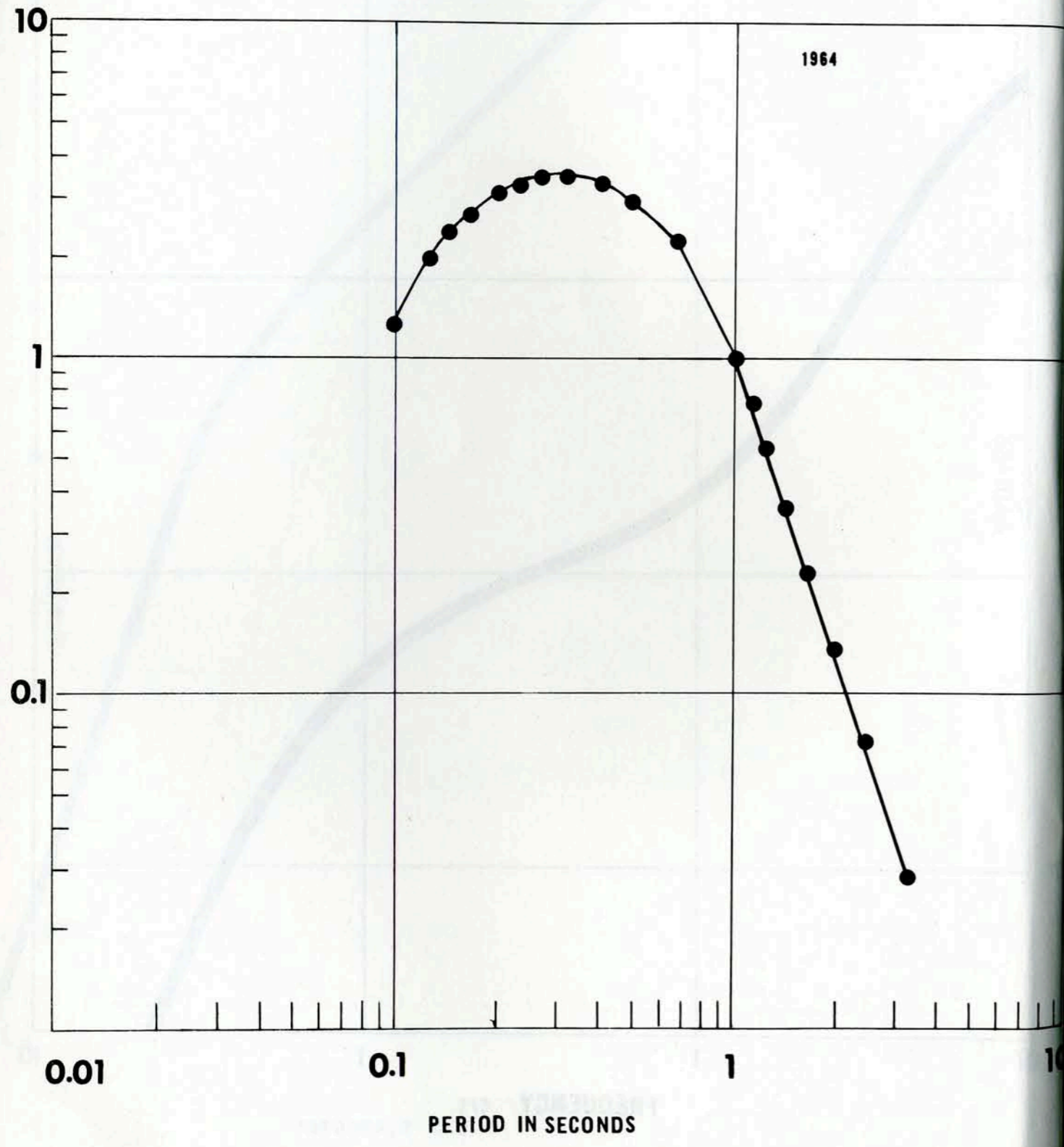
GEOLOGIC SECTION



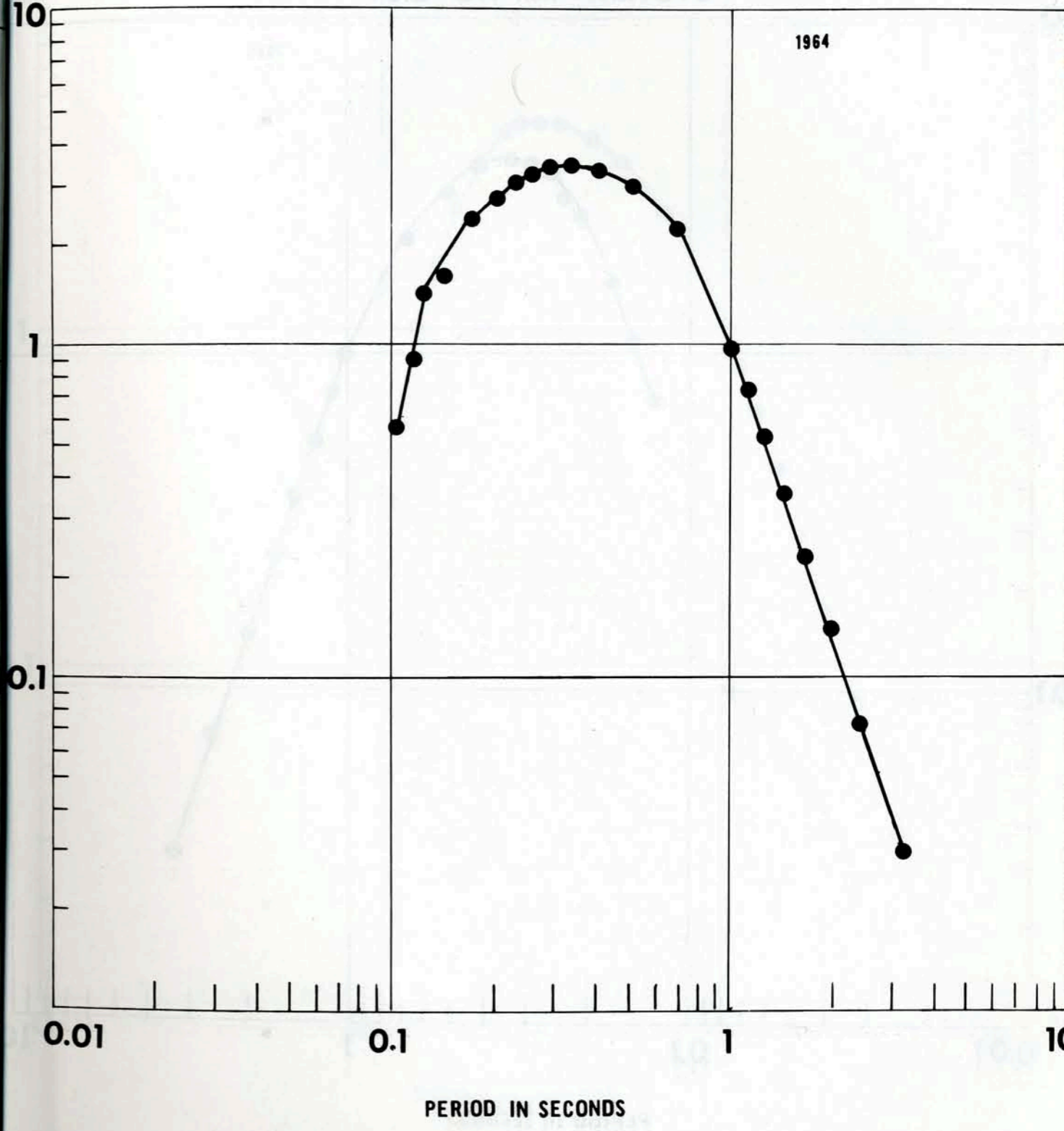
SEISMOLOGY TUNNEL



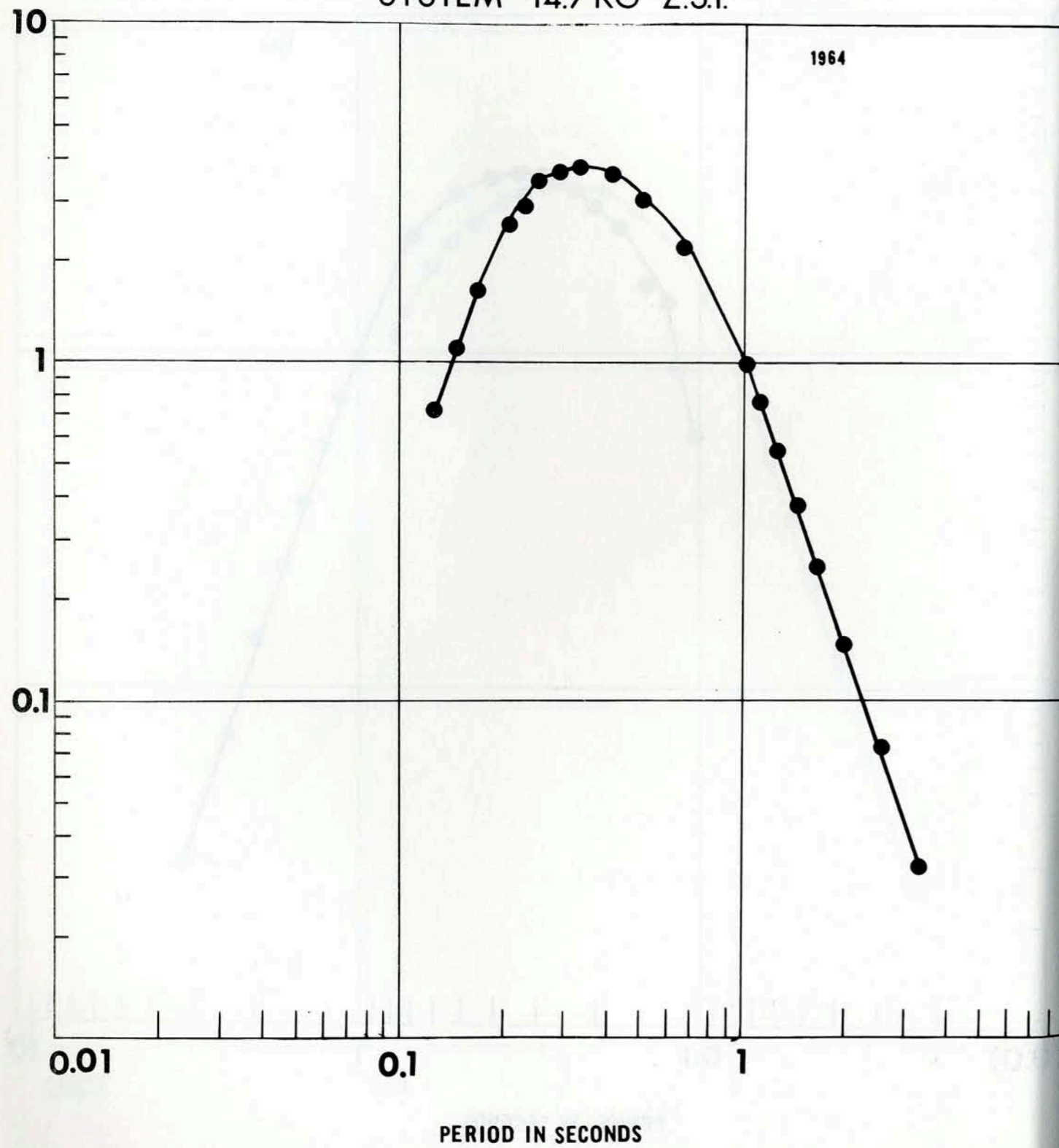
### RESPONSE OF SEISMOMETER-DEVELOCORDER SYSTEM 100KG Z.S.P.



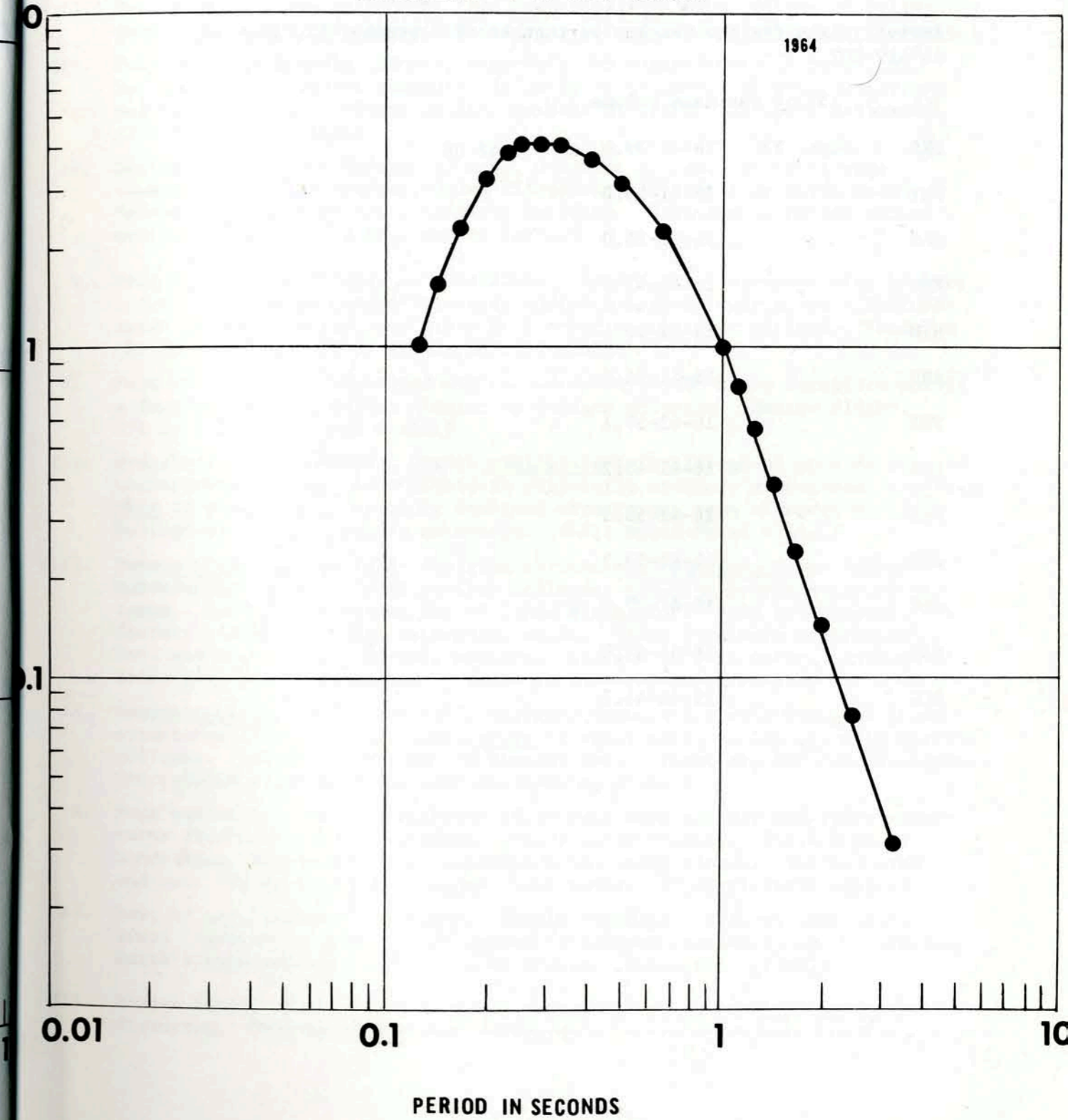
### RESPONSE OF SEISMOMETER-HELICORDER SYSTEM 100KG Z.S.P.



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



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





Addendum

Bulletin of the Seismographic Stations  
Vol. 36, No. 3, p. 201

Arrival times for the Truckee earthquake of September 12, 1966 at  
16<sup>h</sup>41<sup>m</sup> GCT.

(cf., p. 152 of the same volume.)

BKS	Sept. 12	16-41-39.0	C	42 08
PRI		16-41-55.0		
JAS		16-41-28.0		
MHC		16-41-42.1		
MIN		16-41-28.1		
ARC		16-41-54.9		
FRE		16-41-57.1		
LLA		16-41-48.2		
PRS		16-41-53.3		
GCC		16-41-53.3		
CNC		16-41-37.0		
SAO		16-41-48.0		
PCC		16-41-44.2		

 MODIFIED MERCALLI INTENSITY SCALE OF 1931  
(Abridged)

- 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. For the sake of completeness, in cases where these data are not sufficient to determine acceptable epicenters the preliminary epicentral data of the USCGS are quoted. 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 and above, but it is likely that some such shocks have been omitted because the available seismographic data were inadequate for epicenter determination. Within the limited region covered by the map of the central Coast Ranges of California, locatable shocks of magnitude 2.5 and over are included in the tabulation and plotted on the map. Shocks of magnitude 3.0 and over occurring in the limited 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 artificial earthquakes (explosions) ordinarily are not tabulated.

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).

M is the Richter magnitude of the earthquake as determined 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.

h is the focal depth given to the nearest kilometer or 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 depth has been restrained to that value.

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

The quality of the solution is partially reflected by the listed number of stations. The highest quality locations are given to the nearest minute in latitude and longitude and to the tenth of a second origin time. Poorer quality locations are given to the nearest tenth of a degree in latitude and longitude, to the nearest second in origin time, and are denoted by an asterisk.

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 Remarks 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 maximum intensities of shocks reported felt is also included under Remarks. Reports on felt earthquakes may be obtained from the Seismological Field Survey of the U.S. Coast and Geodetic Survey, which publishes a more complete summary in "Abstracts of Earthquake Reports for the Pacific Coast and Western Mountain Region". This regular quarterly publication may be obtained from the District Officer, San Francisco District, Coast and Geodetic Survey, 121 Customhouse, San Francisco, California 94126, or from the Director, U.S. Coast and Geodetic Survey, Washington Science Center, Rockville, Maryland 20852. Intensities given in Roman numerals are assigned by the Coast and Geodetic Survey and based on the Modified Mercalli Intensity Scale of 1931.

## EARTHQUAKES IN NORTHERN CALIFORNIA, NEVADA, AND OREGON

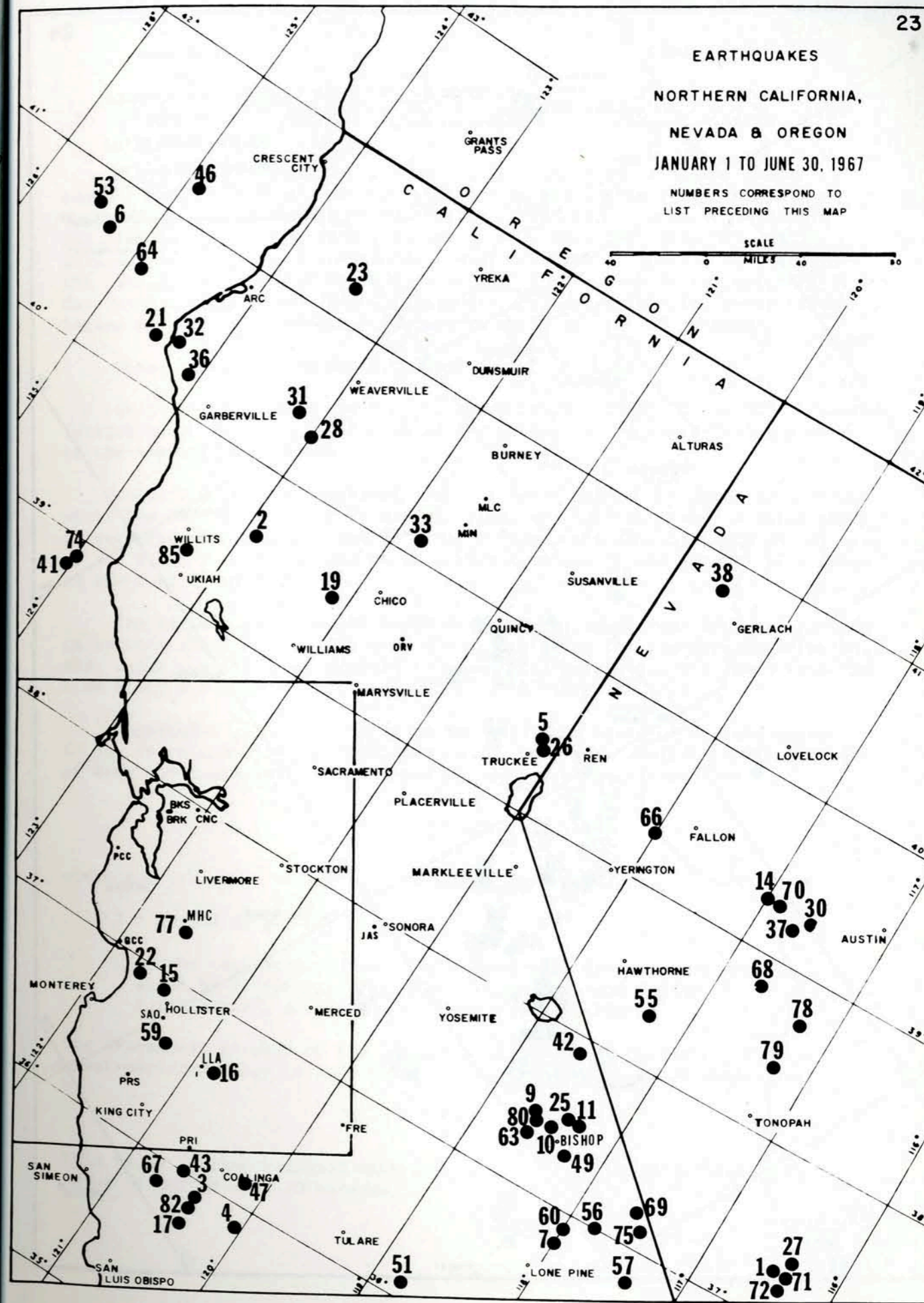
Map No.	Date 1967	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
* 1	Jan. 05	12-15-23	37° 3	116° 5	4.0	33R		USCGS location. S Nevada.
2	Jan. 08	12-14-56.3	39° 35!8	122° 54!7	2.9	OR	5	NE of Willits.
3	Jan. 08	23-03-50.9	35° 53!8	120° 24!9	2.8	OR	8	35 km SE of PRI.
4	Jan. 09	23-18-59.5	35° 52!0	120° 03!8	3.1	d	9	SE of Coalinga.
5	Jan. 10	10-28-23.4	39° 28!2	120° 09!9	4.0	a	12	Near Truckee. Felt.
* 6	Jan. 11	20-01-03	40° 7	125° 3	3.3	OR	9	Off Cape Mendocino.
* 7	Jan. 12	06-10-36	36° 8	118° 0	3.1	OR	7	Near Lone Pine.
8	Jan. 14	09-42-37.4	36° 59!9	121° 43!5	2.7	c	9	West of Gilroy.
9	Jan. 15	23-26-24.5	37° 27!2	118° 38!3	3.8	OR	11	Near Bishop. USCGS. Felt at Long Valley Dam and Independence California. Intensity IV.
10	Jan. 16	01-54-52.3	37° 24!0	118° 28!9	3.5	a	10	Aftershock.
*11	Jan. 16	19-37-49	37° 5	118° 3	4.0	OR	11	Near Bishop. Felt.
12	Jan. 17	11-13-54.6	36° 36!3	121° 15!0	2.5	a	8	West of LLA.
13	Jan. 21	01-20-01.2	36° 47!0	120° 49!0	2.5	2R	7	NE of LLA.
*14	Jan. 25	18-15-45	39° 3	118° 0	3.7	OR	9	East of Fallon, Nev.
15	Jan. 28	00-01-22.4	36° 54!7	121° 30!5	3.0	a	8	NW of Hollister.
16	Jan. 28	09-27-38.3	36° 38!8	120° 49!4	3.4	b	8	10 km E of LLA.
17	Feb. 01	13-55-54.1	35° 42!2	120° 24!3	3.0	a	8	NE of San Luis Obispo.
18	Feb. 01	23-21-29.9	36° 37!9	121° 17!6	2.5	a	8	20 km SE of SAO.
19	Feb. 03	15-35-08.1	39° 31!6	122° 08!6	3.4	a	9	SW of Chico.
20	Feb. 05	07-36-23.3	36° 47!5	122° 07!4	2.6	a	8	Monterey Bay.
*21	Feb. 06	14-24-32	40° 3	124° 5	3.8	OR	6	Off Cape Mendocino.
22	Feb. 07	21-59-58.6	36° 54!2	121° 43!3	3.1	b	8	SE of GCC.

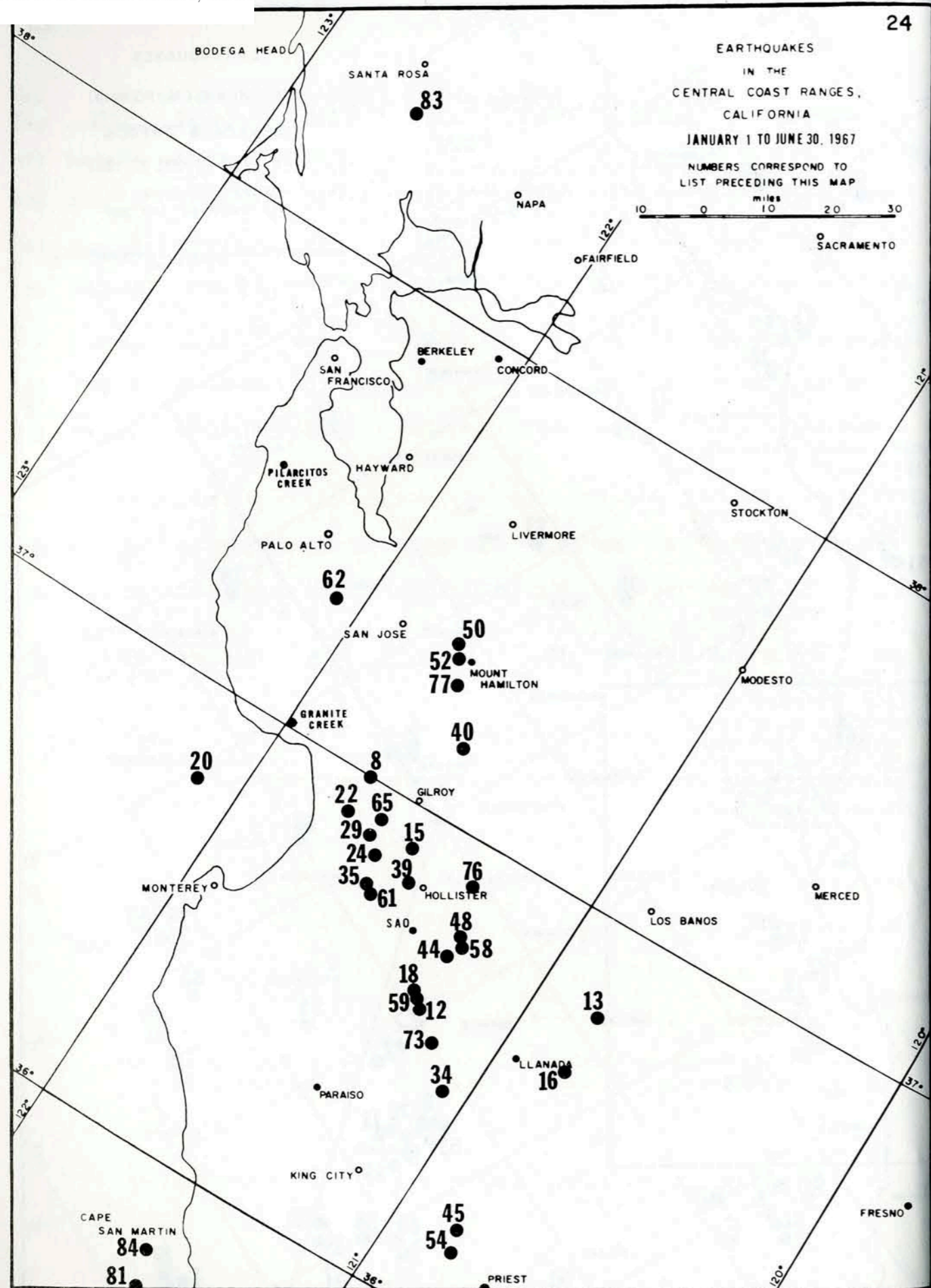
Map No.	Date 1967	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
*23	Feb. 08	09-37-53	41° 2	123° 4	4.0	OR	11	70 km NE of Arcata.
24	Feb. 09	15-29-13.0	36° 50!9	121° 35!4	2.5	a	9	S of Gilroy.
*25	Feb. 11	15-15-21	37° 5	118° 4	3.5	OR	8	15 km N of Bishop.
26	Feb. 12	23-41-18	39° 4	120° 1	3.0	OR	9	Near Truckee.
*27	Feb. 14	01-08-27	37° 4	116° 4	3.9	33R		USCGS location.
24	Feb. 18	01-33-24.3	36° 50!0	121° 35!5	2.5	a	9	W of Hollister.
*28	Feb. 23	20-30-23	40° 3	123° 0	3.4	OR	5	S of Weaverville.
*	Feb. 24	02-26-31.5	40° 5	126° 3	3.1	OR	7	Off Cape Mendocino.
*	Feb. 24	10-17-13	36° 5	116° 0	3.2	OR	4	Calif.-Nev. border.
29	Feb. 25	02-00-32.8	36° 53!0	121° 38!3	2.8	a	9	S of Gilroy. Felt in Aromas (IV) and in the vicinity of San Juan Bautista.
*30	Feb. 25	07-20-15	39° 3	117° 6	3.5	OR	5	W of Austin, Nev.
*31	Feb. 25	15-52-07.5	40° 4	123° 2	4.1	OR	7	SW of Weaverville. Felt in Arcata and Salyer. Intensity IV.
32	Feb. 25	21-33-47	40° 20'	124° 18'	3.3	c	7	65 km SW of Arcata. Felt at Petrolia.
*33	Feb. 26	13-51-57	40° 1	121° 8	3.1	OR	5	30 km SW of Mineral.
34	Feb. 26	15-17-53.9	36° 28!1	121° 03!7	2.5	a	9	SW of LLA.
35	Mar. 01	14-07-35.0	36° 47!1	121° 33!6	2.6	a	9	Near Hollister.
*36	Mar. 02	07-11-02	40° 2	124° 1	4.0	OR	13	30 km NW of Garberville. Felt in Petrolia, Eureka and Scotia. Maximum intensity V.
	Mar. 02	14-12-50.7	36° 25!5	117° 36!6	4.5	10R	13	SE of Lone Pine. Felt in southern Inyo County. Maximum intensity V. Aftershock (M=3.2) at about 14-20.
*37	Mar. 05	21-30-44	39° 2	117° 7	3.7	OR	5	SW of Austin, Nev.
*38	Mar. 06	05-28-33	40° 8	119° 6	3.5	OR	8	NW of Gerlach, Nev.

Map No.	Date 1967	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
39	Mar. 07	02-40-59.3	36° 50!4	121° 27!7	2.2	a	7	Near Hollister. Felt
40	Mar. 10	06-28-48.9	37° 09!8	121° 32!8	2.7	a	9	20 km SE of MHC.
41	Mar. 10	12-45-36.5	38° 48!7	124° 01!6	3.0	b	8	Off coast, Pt. Arena
*42	Mar. 11	15-53-58	37°9	118°6	3.2	OR	5	60 km S of Hawthorne
43	Mar. 13	21-59-48.4	36° 00!6	120° 36!6	3.1	c	8	15 km S of PRI. Felt in San Miguel, Indian Valley and Ranchito Canyon. Intensity IV
44	Mar. 14	09-23-55.4	36° 45!0	121° 15!7	2.7	b	9	15 km NE of SAO.
<u>18</u>	Mar. 14	13-56-03.4	36° 37!5	121° 17!8	2.5	a	8	20 km SE of SAO.
<u>24</u>	Mar. 15	16-48-17.4	36° 49!8	121° 35!7	2.7	a	9	20 km W of Hollister
45	Mar. 21	02-24-28.3	36° 12!7	120° 50!3	2.8	b	8	17 km NW of PRI.
*46	Mar. 22	14-59-26	41°2	124°9	4.2	OR	12	75 km NW of Arcata.
47	Mar. 23	11-39-56.4	36° 09!6	120° 10!5	3.0	d	5	20 km E of Coalinga.
48	Mar. 26	05-36-39.0	36° 46!4	121° 16!9	2.5	b	8	Near SAO.
*49	Mar. 28	12-23-56.5	37°3	118°3	3.9	OR	11	Near Bishop.
50	Apr. 05	15-44-53.7	37° 22!3	121° 43!2	2.5	a	9	Near MHC.
*51	Apr. 06	01-05-47	36°1	118°8	3.5	OR	10	100 km ESE of Tulare Felt at Lindsay and Springfield. Max. intensity IV.
52	Apr. 08	00-30-27.5	37° 19!8	121° 41!7	2.9	b	17	SW of MHC.
*53	Apr. 10	03-21-37	40°8	125°5	3.7	OR	8	Off Cape Mendocino.
54	Apr. 13	09-06-42.5	36° 09!5	120° 48!6	2.7	b	8	13 km W of PRI.
*55	Apr. 13	18-11-40	38°3	118°3	3.8	OR	9	40 km SE of Hawthorne Nev.
* <u>56</u>	Apr. 19	19-56-30	37°0	117°8	3.0	OR	7	50 km NE of Lone Pine
*57	Apr. 20	22-27-43	36°8	117°4	3.6	OR	8	ENE of Lone Pine.
58	Apr. 21	17-04-21.6	36° 46!3	121° 14!4	2.7	a	8	17 km SE of Hollister
59	Apr. 22	16-39-45.1	36° 36!9	121° 16!2	3.4	b	11	18 km SE of SAO. Felt at Paicines. Intensity IV.

Map No.	Date 1967	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
*60	Apr. 26	09-27-56	36°9	118°0	3.0	OR	6	N of Lone Pine.
61	Apr. 27	07-23-07.6	36° 45!8	121° 32!4	2.7	a	9	15 km SW of Hollister.
62	Apr. 28	02-36-15.0	37° 18!1	122° 04!9	2.8	a	9	15 km W of San Jose. Felt at Cupertino, Holy City and San Jose. Intensity IV.
*63	Apr. 28	12-57-41	37°3	118°6	4.0	OR	12	Near Bishop.
*64	May 03	02-46-37	40°6	124°9	3.4	OR	7	Off Cape Mendocino.
*	May 05	09-32-04	40°5	127°5	4.2	OR	8	Mendocino Escarpment.
65	May 15	23-19-09.4	36° 55!6	121° 38!1	2.6	a	9	10 km S of Gilroy.
*66	May 17	18-11-52	39°3	119°0	3.0	OR	6	Near Fallon, Nev.
67	May 17	14-16-52.2	35° 51!2	120° 44!2	3.0	a	6	30 km S of PRI.
*68	May 18	22-41-37	38°8	117°7	3.3	OR	5	About 85 km NE of Hawthorne, Nev.
*69	May 22	13-48-13.5	37°2	117°6	3.6	OR	6	80 km SE of Bishop.
*70	May 23	17-19-06	39°3	117°9	3.3	OR	6	E of Fallon, Nev.
*71	May 23	17-52-04	37°3	116°4	3.6	33R		USCGS location. Southern Nev.
*72	May 23	20-14-07	37°2	116°4	4.1	33R		USCGS location. Southern Nev.
<u>73</u>	May 24	08-36-47.2	36° 32!6	121° 09!7	2.5	a	9	20 km W of LLA.
<u>73</u>	May 24	12-51-30.7	36° 32!7	121° 10!4	2.6	a	6	20 km W of LLA.
<u>73</u>	May 25	05-21-42.6	36° 32!0	121° 09!1	2.8	a	9	20 km W of LLA.
*74	May 25	08-19-58	38°9	124°0	3.5	OR	14	Off coast of northern California.
*75	May 25	22-06-30	37°1	117°5	3.7	OR	6	NE of Lone Pine.
76	May 26	20-51-38.6	36° 53!5	121° 18!3	2.5	b	9	10 km NE of Hollister.
* <u>56</u>	May 29	13-20-18.3	37°0	117°8	3.2	10R	4	SE of Bishop.
77	May 30	03-47-28.4	37° 16°4	121° 39!8	3.9	b	13	Near MHC. Felt in Santa Clara and Santa Cruz counties. Maximum intensity IV.

Map No.	Date 1967	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
*78	May 30	18-28-12	38°7	117°3	3.5	OR	4	80 km S of Austin, Nev.
*79	June 03	03-30-46	38°4	117°3	3.3	OR	5	N of Tonopah, Nev.
*80	June 03	18-53-53	37°4	118°6	3.2	OR	7	20 km NW of Bishop.
81	June 03	20-10-53.0	35° 43!5	121° 29!4	2.6	10R	7	Off coast NW of San Simeon.
*	June 05	18-12-42	40°2	127°0	4.0	OR	10	Mendocino escarpment.
82	June 06	06-11-38.5	35° 48!9	120° 25!5	3.0	a	10	40 km SE of PRI.
* 1	June 07	07-31-18.7	37°3	116°5	3.5	OR		Felt in southern Monterey County, Vineyard Canyon and Indian Valley. Max. intensity IV. USCGS located.
83	June 11	12-55-48	38° 20'	122° 40'	2.6	OR	9	SE of Santa Rosa.
84	June 13	12-54-10.7	35° 48!9	121° 30!6	3.3	a	10	Off coast, 35 km NW of San Simeon.
*85	June 26	15-15-35	39°3	123°3	3.5	2R	9	Near Willits. Felt over an area of approximately 1,500 sq. miles of Mendocino and Lake counties. Max. intensity VI. Slight damage in the Redwood Valley-Ukiah area.





**PART II. REGISTRATION OF EARTHQUAKES**

This section tabulates measured arrival times of prominent phases of earthquakes 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), 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 ( $\mu$ ) 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 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.



MHC 13 30 54.8 D  
MIN 13 31 01.3 D

BKS JAN 01 14 31 LR 56 48  
R FROM S.W.  
JAS 14 31 26.5 D \*I 32 39 \*I 33 06  
USCGS 14 18 51, 12.4S, 165.8E, H= 33 KM, M=5.0  
SANTA CRUZ ISLANDS.

BKS JAN 01 22 11 17 C \*E 12 19 \*E 21 53 \*E 25 4  
\*E 33 00 LR 36 24  
R FROM SW  
MICRON PERIOD  
MAXH 6.2 15  
PRI 22 11 26.0 C \*E 12 15 PP 14 35 \*I 14 4  
JAS 22 11 29.0 C  
MHC 22 11 24.0 C  
MIN 22 11 28.5 D \*I 11 46  
USCGS 21 58 57.8, 11.1S, 165.5E, H= 33 KM, M=5.4  
SANTA CRUZ ISLANDS.

JAS JAN 02 02 47 49.0 C \*E 50 09  
MIN 02 47 47.3 C  
USCGS 02 35 15.3, 11.4S, 165.2E, H= 33 KM, M=5.0  
SANTA CRUZ ISLANDS.

PRI JAN 02 07 05 09.3 C \*E 05 19  
JAS 07 05 15.2 C \*E 05 31  
MHC 07 05 17.4 C \*E 05 27  
MIN 07 05 36.9 C  
USCGS 06 53 17.5, 25.2S, 71.0W, H= 38 KM, M=5.0  
NEAR COAST OF N. CHILI.  
SANTA CRUZ ISLANDS.

JAS JAN 03 06 11 36.9 D

JAS JAN 02 09 02 08.1 C

PRI JAN 02 09 12 23.1 C 13 49 \*E 12 40 \*E 13 18  
JAS 09 12 16.8 C 13 41 \*E 12 34 \*E 13 22 \*I 13  
MAG 4.2-4.4 SOUTHERN NEVADA

BKS JAN 02 20 12 18.5 C SCS 23 00 PS 24 00 SS 27  
L 34 18 LR 37 30  
R FROM S.W.  
MICRON PERIOD  
PZ 1.36 8  
MAXH 9.5 18  
MAGNITUDE 5.9 - 6.1  
PRI 20 12 15.5 C \*E 12 27  
JAS 20 12 22.8 C \*E 12 32  
MHC 20 12 18.5 D  
MIN 20 12 31.6 C \*I 13 14  
USCGS 19 59 58.2, 12.3S, 166.4E, H= 33 KM, M=5.0  
SANTA CRUZ ISLANDS.

PRI JAN 02 20 32 45.6 C  
JAS 20 32 48.0 C \*E 33 04  
MHC 20 32 43.5 C

MIN JAN 02 22 15 22.9 C  
JAS 22 15 51.3 C

PRI JAN 02 23 14 10.5 D  
JAS 23 14 13.4 D  
MHC 23 14 07.5 C

PRI JAN 03 00 02 07.9 C  
JAS 00 02 09.5 C

BKS JAN 03 00 08 04.0 C  
PRI 00 08 07.4 D  
JAS 00 08 10.6 D \*I 08 24  
MHC 00 08 05.3 D  
MIN 00 08 10.1 C  
USCGS 23 55 36, 11.7S, 165.1E, H= 33 KM, M=5.2  
SANTA CRUZ ISLANDS.

PRI JAN 03 05 05 12 C  
JAS 05 05 14.2 C  
MHC 05 05 18.2 C  
MIN 05 05 28.1 C

BKS JAN 03 05 34 25.7 C  
PRI 05 34 41.6 D  
JAS 05 34 31.3 C \*E 34 58  
MHC 05 34 36.1 D  
MIN 05 34 08.4 C \*E 34 27

BKS 05 36 14.0 D  
PRI 05 36 17.7 C  
JAS 05 36 19.8 C  
MHC 05 36 15.2 C  
MIN 05 36 19.5 D

BKS JAN 03 05 48 09.5 D \*E 48 21 \*E 49 37 PP 51 19  
SCS 58 44 PPS 59 28 \*E 62 17  
L 70 06 LR 73 12  
R FROM WSW  
MICRON PERIOD  
PZ 0.63 1.2  
PPZ 1.4 9  
MAXH 14.6 18  
MAG 6.1-6.3 DIST DEG 83  
PRI 05 48 14.1 C  
JAS 05 48 16.8 C  
MHC 05 48 12.0 C  
MIN 05 48 16.4 C  
USCGS 05 35 46.6, 10.9S, 165.5E, H= 33 KM, M=5.2  
SANTA CRUZ ISLANDS.

BKS JAN 03 06 05 16.5 C \*E 05 30



PRI 06 05 20.4 C \*E 05 34  
 JAS 06 05 23.1 C \*E 05 37 \*E 06 03  
 MHC 06 05 17.1 C \*E 05 32  
 MIN 06 05 22.5 D  
 USCGRS 05 52 51.8, 11.2S, 165.5E, H= 33 KM, M=5.3  
 MIN 06 11 36.3 C

BKS 06 13 16.5 C  
 PRI 06 13 19.6 C  
 JAS 06 13 22.5 C  
 MHC 06 13 18.0 C  
 MIN 06 13 22.6 C

BKS 06 14 06.2 C \*PP 14 27  
 PRI 06 14 09.5 C \*E 14 21  
 JAS 06 14 12.3 C \*E 14 23  
 MHC 06 14 07.3 C  
 MIN 06 14 12.0 C

PRI JAN 03 10 55 54.4 C  
 JAS 10 55 56.3 C  
 MHC 10 55 51.1 C  
 MIN 10 55 55.1 C

BKS JAN 03 11 17 41.0 C 27 50 \*I 17 55 \*E 18 42 \*E 32 30  
 LQ 39 36 LR 42 36

R FROM S.W.  
 MICRON PERIOD  
 PZ 0.11 1.0  
 SH 2.35 40  
 MAXH 3.4 30  
 MAG 5.1-5.5 DIST DEG 82

PRI 11 17 43.6 D \*E 17 58  
 JAS 11 17 46.6 D \*E 18 00 \*E 20 59  
 MHC 11 17 41.3 D \*E 17 59  
 MIN 11 17 46.0 D \*I 18 17  
 USCGRS 11 05 15.4, 11.2S, 165.4E, H= 33 KM, M=5.3  
 SANTA CRUZ ISLANDS.

JAS JAN 03 11 24 54.6 C  
 MIN 11 24 54.8 C

BKS JAN 03 11 44 00.2 D  
 PRI 11 44 02.5 C  
 JAS 11 44 05.3 C  
 MHC 11 44 00.5 C  
 MIN 11 44 05.6 C  
 USCGRS 11 31 34.4, 11.2S, 165.4E, H= 33 KM, M=5.1  
 SANTA CRUZ ISLANDS.

BKS JAN 03 12 44 32.6 C \*E 44 44 LR 69 30  
 MICRON PERIOD  
 PZ 0.05 0.8  
 DISTANCE DEG 82

PRI 12 44 36.9 C  
 JAS 12 44 40.0 C \*E 44 54

MHC 12 44 34.9 C  
 MIN 12 44 38.8 C  
 USCGRS 12 32 09.2, 10.9S, 165.4E, H= 33 KM, M=5.2  
 SANTA CRUZ ISLANDS.

JAS JAN 03 13 36 25.1 D

PRI JAN 03 17 59 08.7 D  
 JAS 17 59 15.7 D

BKS JAN 03 20 15 35.0 D  
 PRI 20 16 03.6 C  
 JAS 20 15 44.1 D  
 MHC 20 15 44.2 D  
 MIN 20 15 06.0 D

USCGRS \*I 15 23  
 20 13 31.8, 45.7N, 126.5W, H= 33 KM, M=4.7  
 OFF COAST OF OREGON.

PRI JAN 03 20 43 12.5 C  
 JAS 20 42 48.8 C  
 MIN 20 42 49.2 C

PRI JAN 03 20 55 34.6 D  
 JAS 20 55 37.6 D  
 MHC 20 55 32.5 D  
 MIN 20 55 46.9 C

BKS JAN 03 21 35 54 D PPS 47 20 \*E 50 48 L 57 30  
 LR 61 12

R FROM S.W.  
 MICRON PERIOD  
 PZ 0.65 10  
 MAXH 5.4 18  
 MAG 5.4-5.8 DIST DEG 83

JAS 21 36 00.4 D  
 MIN 21 36 08.6 D  
 USCGRS 21 23 22, 12.4S, 166.4E, H= 33 KM, M=5.0  
 SANTA CRUZ ISLANDS.

JAS JAN 03 21 46 01 D

JAS JAN 03 22 39 37.9 D  
 MIN 22 39 37.7 C

PRI JAN 04 00 27 06.5 C  
 JAS 00 27 09.0 C

PRI JAN 04 03 55 18  
 JAS 03 55 14.9 C  
 MHC 03 55 13.4 C  
 MIN 03 55 05.0 C

USCGRS 03 41 36.4, 20.3N, 120.0E, H= 33 KM, M=5.6  
 PHILIPPINE ISLANDS REGION.

PRI JAN 04 06 12 34.4 C  
 JAS 06 12 25.3 C

MIN 06 12 17.6 C  
USCGS

05 58 54.1, 38.6N, 22.1E, H= 7 KM, M=5.2  
8 PERSONS INJURED, MODERATE PROPERTY  
DAMAGE IN PATRAS REGION, GREECE.

PRI JAN 04 10 26 52.5 C  
JAS 10 26 53.5 C  
MIN 10 26 37.3 D

\*E 27 04 \*E 27 08 \*E 27 2  
\*I 26 52

PRI JAN 04 13 19 31.8 C  
JAS 13 19 34.8 C  
MHC 13 19 29.8 C  
MIN 13 19 33.5 C

\*E 19 39

BKS JAN 04 20 25 55.0 C  
PRI 20 25 43.5 C  
JAS 20 25 44.8 C  
MHC 20 25 51.6 C  
MIN 20 25 54.3 C

\*E 26 18 \*E 26 28  
\*E 26 08 \*E 26 36  
\*E 26 09 \*E 26 36  
\*E 26 15 \*E 26 43  
\*I 26 18

20 15 55.8, 10.7N, 62.5W, H= 74 KM, M=5.5  
NEAR COAST OF VENEZUELA. FELT ON TRINIDAD.

BKS JAN 05 00 27 17.8 D

37 48 PCP 27 24 \*PP 27 29 \*E 37  
PS 38 38 SS 43 40 L 50

MICRON PERIOD  
PZ 0.17 1.5  
MAG 7.4-7.6 DIST DEG 86

PRI 00 27 27.4 D  
JAS 00 27 19.4 D  
MHC 00 27 20.0 C  
MIN 00 27 05.6 C  
ARC 00 27 06.7 D

\*I 28 26

PCP 27 14 \*I 27 52 \*I 28

00 14 40.4, 48.1N, 102.8E, H=33 KM, M=6.  
MONGOLIA. FELT AT ULAN BATOR, MONGOLIA  
AND IRKUTSK, USSR.

PRI JAN 05 00 40 48.9 D  
JAS 00 40 39.9 D  
MHC 00 40 41.2 D

\*E 55 13  
\*E 56 26  
\*E 56 20

BKS JAN 05 00 54 47.5 D  
PRI 00 54 59.1 D  
JAS 00 54 51.0 D  
MHC 00 54 51.3 D  
MIN 00 54 36.9 D

\*I 54 42 \*I 55 07

00 42 13.3, 48.4N, 103.1E, H= 33 KM, M=5.  
MONGOLIA.

BKS JAN 05 02 22 42.2 D  
PRI 02 22 45.7 C  
JAS 02 22 48.5 C  
MHC 02 22 43.6 C  
MIN 02 22 47.9 C

\*E 22 57

02 10 17, 11.3S, 165.6E, H= 33 KM, M=5.0  
SANTA CRUZ ISLANDS.

JAS JAN 05 04 47 41.7 D  
MHC 04 47 45.8 D

JAS JAN 05 05 07 16.4 C

PRI JAN 05 06 31 33.5 D  
JAS 06 31 25.1 C  
MHC 06 31 23.3 C

BKS JAN 05 10 48 10.8 D  
PRI 10 48 13.2 C  
JAS 10 48 15.1 D  
MHC 10 48 10.7 D  
MIN 10 48 18.0 D

\*PP 48 26  
\*PP 48 29  
\*PP 48 32  
\*PP 48 28  
\*I 48 33

USCGS 10 35 50.3, 11.3S, 166.2E, H= 62 KM, M=5.1  
SANTA CRUZ ISLANDS.

BKS JAN 05 12 16 49.2 C  
PRI 12 16 21.1 D  
JAS 12 16 12.5 C  
MHC 12 16 30.7 C  
MIN 12 16 35.4 D

\*E 17 40  
17 18  
17 03  
17 28  
\*I 16 57 \*I 18 02

PRI JAN 05 14 50 40.2 D  
JAS 14 50 44.2 D  
MHC 14 50 38

JAS JAN 05 22 53 05.7 D

BKS JAN 06 00 10 54 C  
PRI 00 11 08.3 C  
JAS 00 11 00.3 C  
MHC 00 10 59.3 C  
MIN 00 10 46.9 D

\*E 14 40  
\*E 11 20 \*E 12 12 \*E 12 55

BKS JAN 06 00 15 04.7 C  
PRI 00 15 18.3 C  
JAS 00 15 11.6 C  
MHC 00 15 09.5 C  
MIN 00 15 58.9 C

\*E 15 18 \*E 24 07 \*E 31 00  
LR 36 06  
\*E 15 30  
\*E 15 24 \*E 15 28 \*E 15 37  
\*E 15 21  
\*I 15 10

USCGS 00 04 02.7, 41.8N, 143.3E, H= 35 KM, M=5.5  
HOKKAIDO, JAPAN.

PRI JAN 06 08 27 06.8 C  
JAS 08 26 57.3 C

BKS JAN 07 00 46 48.5 C

P\*P\* 49 29 PPS 61 56 SS 68 00  
SSS 73 00 LQ 84 00 LR 91 24

PRI 00 46 41.5 C  
JAS 00 46 43.1 C  
MHC 00 46 41.0 C

R FROM SW  
\*E 46 52 \*E 46 55 \*E 46 58  
\*E 46 54 \*E 46 56 \*E 46 59  
\*E 46 51 \*E 46 54 \*E 46 57

USCGS 00 27 25.2, 48.6S, 112.7E, H= 33 KM, M=5.8  
S E INDIAN RISE.

JAS JAN 07 02 05 29.0 D  
 \*E 00 53  
 JAS JAN 07 11 00 43.0 D  
 \*E 00 47  
 MHC 11 00 36.6 D  
 PRI JAN 07 13 16 32.0 C  
 \*E 16 32 \*E 16 57  
 JAS 13 16 23.8 C  
 \*E 16 35  
 MHC 13 16 25.8 C  
 MIN 13 16 10.8 C  
 USCGS 13 03 44.9, 48.2N, 102.8E, H= 33 KM, M=5.0  
 MONGOLIA.

BKS JAN 07 13 47 54.5 C  
 PRI 13 47 29.5 C  
 JAS 13 47 37.1 C  
 MHC 13 47 42.4 C  
 MIN 13 47 30.6 C  
 USCGS 13 34 48.3, 11.8N, 142.7E, H= 36 KM, M=5.6  
 SOUTH OF MARIANA ISLANDS.

PRI JAN 07 16 53 27.1 D  
 BKS 16 53 64 00 \*E 75 06 LR 78 00  
 R FROM S.w.  
 \*E 53 49 \*E 54 06  
 JAS 16 53 33.9 C  
 MHC 16 53 27.2 D  
 USCGS 16 41 03, 11.9S, 166.1E, H= 33 KM, M=5.1  
 SANTA CRUZ ISLANDS.

PRI JAN 07 19 29 52.8 C  
 \*E 30 10  
 JAS 19 30 01.5 C  
 \*E 30 18  
 MHC 19 30 05.0 C  
 MIN 19 30 \*1 30 48

PRI JAN 08 05 12 10.4 D  
 BKS 05 12 19 30 \*E 22 30 LQ 24 50 \*E 27 00  
 JAS 05 12 04.9 D  
 \*E 12 14 \*E 16 03  
 MIN 05 11 45.8 C  
 USCGS 05 02 52.1, 56.0N, 162.9E, H= 33 KM, M=5.0  
 NEAR E. COAST OF KAMCHATKA.

JAS JAN 08 06 52 46.1 C  
 \*E 52 49 \*E 52 57 \*E 53 00  
 MIN 06 52 33.0 C

BKS JAN 08 07 38 50.7 C  
 \*E 39 47  
 PRI 07 38 19.2 C 38 55  
 JAS 07 38 40.9 C 39 33  
 MHC 07 38 40.8 C  
 MIN 07 39 22.1 C  
 \*1 41 07  
 MAG 4 SOUTHERN CALIFORNIA

JAS JAN 08 08 20 32.8 C  
 \*E 20 48  
 MIN 08 20 32.2 C

JAS JAN 08 08 41 15.0 C  
 \*E 41 27 \*E 41 36  
 MHC 08 41 12.9 C  
 MIN 08 40 57.3 C

BKS JAN 08 15 39 \*E 51 14 LR 64 42  
 R FROM S.w.  
 MICRON PERIOD  
 MAXH 2.5 22  
 JAS 15 39 50.9 D  
 MIN 15 39 56.6 D  
 USCGS 15 27 10.9, 12.2S, 166.5E, H= 40 KM, M=5.1  
 SANTA CRUZ ISLANDS.

JAS JAN 09 02 20 44.7 C  
 JAS JAN 09 04 18 22.7 C

BKS JAN 09 06 58 59.3 D  
 PRI 06 59 03.4 C  
 JAS 06 59 06.3 C  
 MHC 06 59 01.5 C  
 MIN 06 59 05.8 C

JAS JAN 09 08 02 25.0 D

PRI JAN 09 11 41 44.0 C  
 JAS 11 41 43.2 C  
 MHC 11 41 46.3 C  
 USCGS 11 39 41, 44.0N, 128.3W, H= 33 KM, M=4.3  
 OFF COAST OF OREGON.

JAS JAN 09 12 46 09.0 C \*E 46 38

BKS JAN 09 13 36 51.0 D  
 PRI 13 36 44.5 C  
 JAS 13 36 49.8 C  
 MHC 13 36 51.8 C  
 \*E 37 07 \*E 37 18 \*E 38 22

PRI JAN 09 14 02 22.2 C  
 JAS 14 02 23.5 C

JAS JAN 09 15 34 00.3 C

BKS JAN 09 18 17 31.7 C 25 00 \*E 17 53 \*E 18 34 SS 28 36  
 LQ 31 00 LR 33 36  
 PRI 18 17 16.3 D \*E 17 34  
 JAS 18 17 23.2 D \*E 17 41 \*I 18 22  
 MHC 18 17 27.0 D  
 MIN 18 17 58.8 D  
 USCGS 18 08 23.9, 5.1N, 77.6W, H= 40 KM, M=5.2  
 NEAR W. COAST OF COLOMBIA.  
 FELT AT CALI AND MANIZALES.

BKS JAN 09 19 14 38.2 C  
 MICRON PERIOD  
 PZ 0.06 1.3  
 PRI 19 14 42.2 C  
 JAS 19 14 48.2 C  
 MHC 19 14 42.2 C

MIN 19 14 52.2 C  
USCGS 19 03 44.3, 15.5S, 176.1W, H=339 KM, M=5.0  
FIJI ISLANDS REGION.

BKS JAN 09 19 59 26.2 C  
MICRON 0.56  
PZ 1.3  
\*I 59 36 \*E 86 24  
\*E 59 43  
\*E 59 45 \*E 62 48  
\*E 59 41

PRI 19 59 29.9 C  
JAS 19 59 32.9 C  
MHC 19 59 28.0 C  
MIN 19 59 32.4 C  
USCGS 19 47 06, 11.5S, 165.4E, H= 78 KM, M=5.5  
SANTA CRUZ ISLANDS.

BKS JAN 09 21 29 42.0 C  
PRI 21 29 43.8 C  
JAS 21 29 47.5 C  
MHC 21 29 42.8 C

PRI JAN 09 23 14 44.0 C  
JAS 23 14 49.6 C  
MHC 23 14 44.2 C  
MIN 23 14 53.1 D

PRI JAN 10 13 45 53.5 D  
BKS 13 45  
JAS 13 45 59.5 D  
MHC 13 45 53.2 C  
MIN 13 46 02.9 D  
USCGS \*E 70 00  
13 34 06, 19.6S, 175.8W, H= 33 KM, M=5.0  
TONGA ISLANDS.

JAS JAN 10 17 51 55.8 D  
MIN 17 51 48.5 C

JAS JAN 10 18 16 17.8 C

BKS JAN 11 03 10 26.0 D  
PRI 03 10 29.2 C  
JAS 03 10 32.1 C  
MHC 03 10 27.2  
MIN 03 10 31.6 C  
USCGS \*E 41 00  
02 58 01.2, 11.4S, 165.6E, H= 33 KM, M=5  
SANTA CRUZ ISLANDS.

JAS JAN 11 10 56 11.0 D \*E 56 26

JAS JAN 11 11 38 21.6 C \*E 38 33 \*I 39 14 \*I 40  
BKS 11 38 \*E 47 00  
MIN 11 37 52.6 C \*E 38 08

BKS JAN 11 11 44 49.5 C  
PRI 11 44 53.6 D  
JAS 11 44 58.4 D  
MHC 11 44 54.5 D  
MIN 11 44 57.6 D

PRI JAN 11 11 50 12.3 C  
JAS 11 50 19.7 D \*E 50 31  
MHC 11 50 13.5 D  
MIN 11 50 06.2 C

BKS JAN 11 16 16 49.5 C 23 56 \*E 17 03 SS 27 38 \*E 29 42  
LR 31 42

R FROM ESE  
MICRON PERIOD  
PZ 0.04 1.0  
SH 3.5 22  
MAXH 8.5 22  
MAG 5.1-5.5 DIST DEG 51

PRI 16 16 33.6 C  
JAS 16 16 40.0 C  
MHC 16 16 44.7 C  
MIN 16 16 56.6 D \*I 17 38  
USCGS 16 08 06.1, 5.3N, 82.5W, H= 22 KM, M=5.3  
SOUTH OF PANAMA.

BKS JAN 12 05 36 16.0 C  
JAS 05 36 15.0 D  
MIN 05 36 19.2 C

PRI JAN 12 05 55 16.8 D  
JAS 05 55 22.2 D  
MHC 05 55 25.0 D  
MIN 05 55 35.2 C

BKS JAN 12 10 26 05.5 C  
PRI 10 26 06.4 C  
JAS 10 26 10.8 C \*E 26 21  
MHC 10 26 05.8 C  
MIN 10 26 14.6 D

IN JAN 12 12 36 25.5 D  
AS 12 36 38.1 D

BKS JAN 13 14 00 51.0 D 11 24 \*E 01 04 SS 16 36 \*E 23 00  
LR 26 24

R FROM WSW  
MICRON PERIOD  
PZ 0.16 1.0  
SH 2.4 22  
MAXH 8.7 20  
MAG 5.7-6.1 DIST DEG 84

PRI 14 00 54.8 C  
JAS 14 00 57.0 C \*E 01 06  
MHC 14 00 52.5 D  
MIN 14 00 55.9 C \*I 01 06 \*I 01 24 \*I 01 37  
USCGS 13 48 11.7, 10.6S, 161.4E, H= 32 KM, M=5.7  
SOLOMON ISLANDS.

AS JAN 14 04 58 45.1 D

BKS JAN 14 12 13 10.0 C  
 PRI 12 13 21.6 D  
 JAS 12 13 12.4 D  
 MHC 12 13 21 C  
 MIN 12 12 54.1 C

\*E 22 54 LR 25 42  
 20 00 \*E 13 24 \*I 13 44  
 \*I 12 09  
 12 04 50.7, 52.1N, 175.4E, H= 41 KM, M=5.1  
 RAT ISLANDS, ALEUTIAN ISLANDS.

BKS JAN 14 13 46 00.0 C  
 PRI 13 46 07.0 D  
 JAS 13 46 06.5 D  
 MHC 13 45 03.0 D  
 MIN 13 45 24.4 D

\*E 46 24

BKS JAN 14 14 26 05.5 D  
 PRI 14 26 09.2 D  
 JAS 14 26 12.1 D  
 MHC 14 26 07.2 D  
 MIN 14 26 11.3 C

\*E 54 00

\*I 26 39

JAS JAN 14 20 06 18.5 D

JAS JAN 14 21 09 41.9 C

JAS JAN 15 09 22 14.5 C  
 MIN 09 21 52.7 C

PRI JAN 15 20 10 36.0 C  
 JAS 20 10 37.3 C  
 MHC 20 10 42.0 C  
 MIN 20 10 22.2 C

\*I 11 08  
 19 58 45.6, 55.7N, 110.7E, H= 32 KM, M=5.  
 LAKE BAIKAL REGION.

JAS JAN 15 20 13 31.0 C

PRI JAN 15 20 38 05.1 D  
 JAS 20 38 05.0 D  
 MHC 20 38 13.1 D  
 MIN 20 38 05.0 C

BKS JAN 16 03 43 55.0 D  
 JAS 03 44 01.0 D  
 MIN 03 44 48.6 D

PRI JAN 16 04 02 57.5 C  
 JAS 04 03 01.0 C  
 MHC 04 02 55.4 C  
 MIN 04 03 02.1 D

BKS JAN 16 04 56 56.0 C

\*E 57 07 \*E 67 12 LQ 78  
 LR 82 00

PRI 04 56 53.0 C  
 JAS 04 56 57.9 C  
 MHC 04 56 52.3 C  
 MIN 04 57 07.4 C

\*E 57 03

USCGS 04 44 27.3, 11.3S, 165.7E, H= 33 KM, M=5.3  
 SANTA CRUZ ISLANDS.

BKS JAN 16 07 23 06.3 D  
 PRI 07 22 55.3 D  
 JAS 07 23 00.3 D  
 MHC 07 23 02.7 D  
 MIN 07 23 11.8 D

\*I 23 21  
 USCGS 07 11 12.1, 24.2S, 66.8W, H=188 KM, M=5.4  
 SALTA PROVINCE, ARGENTINA. FELT.

BKS JAN 16 11 21 46.0 D 32 28 LR 48 00  
 R FROM S.W.  
 MICRON PERIOD  
 MAXH 2.2 18  
 MAG 5.3-5.7 DIST DEG 86

PRI 11 21 50.8 C  
 JAS 11 21 52.9 C  
 MIN 11 22 52.1 D

USCGS 11 09 08.4, 10.7S, 161.3E, H= 40 KM, M=5.1  
 SCLGMON ISLANDS.

BKS JAN 16 14 38 52.5 D 49 10 \*E 39 05 PPS 50 14 \*E 53 06  
 L 60 36 LR 63 54

R FROM WSW  
 MICRON PERIOD  
 PZ 0.06 1.0  
 MAXH 12.5 30  
 MAG 5.8-6.2 DIST DEG 83

PRI 14 38 53.4 C  
 JAS 14 38 57.0 C  
 MHC 14 38 51.0 C  
 MIN 14 38 58.4 D

\*E 39 00 \*E 39 16 \*E 39 36

USCGS 14 26 22.9, 11.2S, 165.7E, H= 6 KM, M=5.3  
 SANTA CRUZ ISLANDS.

BKS JAN 16 15 01 22.2 C  
 PRI 15 01 17.5 D  
 JAS 15 01 20.5 D  
 MHC 15 01 22.6 D  
 MIN 15 01 29.6 D

\*E 01 31

BKS JAN 16 16 14 48.8 C  
 PRI 16 14 53.5 C  
 JAS 16 14 53.0 C  
 MHC 16 14 49.1 C

\*E 15 05 \*E 18 21

BKS JAN 17 01 19 31.0 D 29 15 \*PP 21 34 SKS 29 02 SP 30 24  
 MICRON PERIOD  
 PZ 0.09 1.0  
 SH 6.9 10  
 MAGNITUDE 4.8 -5.2

PRI 01 19 21.2 D  
 JAS 01 19 25.8 D  
 MHC 01 19 27.7 D  
 MIN 01 19 35.8 D

\*PP 21 37  
 \*E 19 42 \*PP 21 31 SKS 29 04  
 \*E 19 45 \*PP 21 23  
 \*I 19 45 \*PP 21 43

USCGS 01 07 54.3, 27.4S, 63.3W, H=590 KM, M=5.5  
SANTIAGO, DEL ESTERO PROVINCE, ARGENTINA.

PRI JAN 17 01 29 55 D \*E 30 04 \*I 30 14  
JAS 01 29 48.5 D \*E 29 55  
MHC 01 29 38 D \*I 30 13  
MIN 01 29 D \*E 44 33

BKS JAN 17 10 44 20.7 D  
PRI 10 44 16.9 C  
JAS 10 44 18.5 C  
MHC 10 44 19.2 C  
MIN 10 44 23.4 C

USCGS 10 25 22.7, 58.2S, 25.4W, H= 33 KM, M=5.5  
S. SANDWICH ISLANDS REGION.

BKS JAN 17 12 10 51.0 D 20 06 \*I 11 03 \*E 11 28 PP 13  
\*E 21 00 SSS 27 54 L 29  
LR 32 00

MICRON PERIOD  
PPZ 0.33 2.0  
PZ 1.8 6  
SH 13.0 16  
MAXH 25 22  
MAG 6.5 DIST DEG 72

PRI 12 11 02.5 C \*E 11 16 \*I 12 02 \*I 20  
JAS 12 10 54.0 C 20 20 \*E 11 10 \*I 11 30  
MHC 12 10 52.5 C \*E 11 08  
MIN 12 10 44.8 D \*PP 10 57 \*I 11 30  
ARC 12 10 45.5 D

USCGS 11 59 31.5, 38.3N, 147.1E, H= 44 KM, M=5.5  
NEAR E. COAST OF HONSHU, JAPAN.

BKS JAN 18 04 30 47.0 D \*I 30 24 \*I 30 41  
PRI 04 31 00.6 C \*I 30 54  
JAS 04 30 54.1 C  
MIN 04 30 38.0 C

USCGS 04 20 52.9, 48.9N, 154.9E, H= 40 KM, M=5.5  
KURILE ISLANDS.

BKS JAN 18 05 22 54.0 C  
JAS 05 22 44.4 C

BKS JAN 18 05 45 57.5 C 55 23 \*E 46 06 \*E 46 34 \*E 46 36 LR  
SSS 63 24 \*E 65 36

R FROM N.W.  
MICRON PERIOD  
PZ 0.95 2.0  
PPZ 1.9 6  
SH 6.2 8  
MAXH 20 32  
MAG 6.5 DIST DEG 74

PRI 05 46 10.1 D 55 22 P\*P\* 73 21  
JAS 05 46 00.6 D  
MHC 05 46 01.0 C \*I 45 58 \*E 73 43  
MIN 05 45 44.5 D

USCGS 05 34 32.6, 50.6N, 120.8E, H= 11 KM, M=6.1  
EASTERN RUSSIA. FELT AT CHITA.

KS JAN 18 08 25 12.5 D 30 46 \*I 25 29 \*E 31 00 \*E 33 00  
\*E 33 42 LR 35 00

MICRON PERIOD  
PZ 0.7 0.15  
SH 15 3.6  
MAXH 14 11.3  
MAG 5.5-5.7 DIST DEG 36

PRI 08 25 31.5 C  
AS 08 25 21.1 C 31 06 \*E 25 32 \*E 25 42 \*I 31 23  
HC 08 25 17.6 C \*E 25 27  
IN 08 25 02.9 D \*I 25 20  
RC 08 24 47.5 D

PRI JAN 18 08 40 18.0 C  
AS 08 40 11.5 C  
HC 08 40 08.0  
IN 08 39 58.8 C

USCGS 08 18 22.0, 52.5N, 168.3W, H= 37 KM, M=5.7  
FOX ISLANDS, ALEUTIAN ISLANDS.

KS JAN 18 10 47 51.7 C \*PP 48 13  
RI 10 48 10.5 D \*PP 48 20  
AS 10 47 57.3 D  
HC 10 47 57.2 D \*I 47 57  
IN 10 47 34.7 D

PRI JAN 18 12 48 06.8 C  
AS 12 48 15.5 C

PRI JAN 18 13 33 05.5 D  
AS 13 32 58.2 D

S JAN 18 14 05 34.5 D \*E 05 47  
I 14 05 31.6 C  
S 14 05 32.5 C  
C 14 05 33.2 C  
N 14 05 37.1 C

USCGS 13 46 33.9, 58.4S, 25.7W, H= 11 KM, M=5.1  
S. SANDWICH ISLANDS REGION.

I JAN 18 22 02 12.3 C  
S 22 02 05.2 C \*E 03 28  
C 22 02 03.7 C  
N 22 01 52.8 C

USCGS 21 49 25.8, 48.1N, 102.9E, H= 33 KM, M=5.2  
MONGOLIA. FELT IN LAKE BAIKAL REGION.

S JAN 19 12 50 40.5 C  
MICRON PERIOD  
PZ 2.0 10  
I 12 50 43.6 C  
S 12 50 46.7 C  
C 12 50 42.0 C

MIN 12 50 41.8 C  
USCGS 12 38 31.3, 11.8S, 166.4E, H=156 KM, M=5.0  
SANTA CRUZ ISLANDS.

BKS JAN 19 12 51 53.0 D 61 27 \*E 62 04 \*E 65 54 \*E 68  
L 70 54 LR 73 30

MICRON PERIOD  
PZ 2.0 3.0  
MAG 7.1-7.5 DIST DEG 81

PRI 12 51 54.7 D \*E 52 20 PP 53 55  
JAS 12 51 59.6 D  
MHC 12 51 53.5 D  
MIN 12 51 D  
ARC 12 51 57.2 C  
USCGS 12 40 12.0, 14.8S, 178.8W, H= 18 KM, M=5.0  
FIJI ISLANDS REGION.

PRI JAN 19 13 17 10.7 C \*E 19 31  
JAS 13 17 06.2 C \*E 19 31

PRI JAN 19 14 54 50.7 C  
JAS 14 54 45.4 C  
MHC 14 54 42.0 C

BKS JAN 19 16 46 15.5 C \*I 46 26  
PRI 16 46 50.1 C  
JAS 16 45 56.2 C  
MHC 16 45 09.0 C  
MIN 16 46 22.1 C  
ARC 16 45 C \*E 47 03

JAS JAN 19 18 53 26.8 C

BKS JAN 19 19 50 43.5 C \*PP 50 39  
PRI 19 50 28.5 D \*E 50 42 \*PP 50 43  
JAS 19 50 32.7 D  
MHC 19 50 38.7 C \*PP 50 49

BKS JAN 20 02 10 00.0 D 20 34 PCP 10 04 PP 13 19 PS  
SS 25 42 SSS 30 00 LQ  
LR 38 54

R FROM N.W.  
MICRON PERIOD  
PZ 1.4 2  
PPZ 3.2 4.5  
SH 8.4 14  
MAXH 30  
MAG 6.8-7.2 DIST DEG 87

PRI 02 10 10.5 D  
JAS 02 10 02.5 D  
MHC 02 10 02.8 D  
MIN 02 09 49.4 C  
USCGS 01 57 23.1, 48.0N, 102.9E, H= 33 KM,  
MONGOLIA.

PRI JAN 20 03 40 41.7 C

JAS 03 39 53.5 C  
MHC 03 39 53.1 C  
USCGS

03 27 13.9, 48.0N, 103.0E, H= 33 KM, M=5.0  
MONGOLIA.

BKS JAN 20 03 41 22.2 C  
PRI 03 41 33.7 C

JAS 03 41 25.3 C  
MHC 03 41 25.9 C  
USCGS

03 28 45, 47.8N, 102.8E, H= 33 KM, M=5.1  
MONGOLIA.

PRI JAN 20 06 36 04.0 C  
JAS 06 35 55.9 C

MHC 06 35 56.3 C

BKS JAN 20 17 41 21.3 C \*I 41 31  
PRI 17 41 04.7 C

JAS 17 41 00.9 C  
MHC 17 41 13.8 C  
MIN 17 41 27.2 D

PRI JAN 21 03 06 37.7 C \*E 06 48  
JAS 03 06 38.9 D \*E 06 48

USCGS 02 54 00.8, 49.8S, 114.8W, H= 33 KM, M=5.3  
EASTER IS. CORDILLERA.

PRI JAN 21 14 00 47.8 C \*E 01 04  
JAS 14 00 53.5 C \*E 01 10

JAS JAN 22 10 36 46.9 C  
MIN 10 36 27.2 C  
USCGS

10 30 03.0, 53.5N, 165.3W, H= 69 KM, M=5.0  
FOX ISLANDS, ALEUTIAN ISLANDS.

S JAN 22 12 14 28.3 C \*I 14 43  
C 12 14 28.7 C  
N 12 14 17.5 C

S JAN 22 12 28 41.8 C  
USCGS

12 16 02, 48.0N, 102.9E, H= 33 KM, M=5.0  
MONGOLIA.

S JAN 22 22 46 43 C  
S 22 46 43.6 C  
S 22 46 49.2 C  
S 22 46 43.5 C  
S 22 46 52.3 D

S JAN 23 11 22 26.0 D  
S 11 22 11.3 D  
S 11 22 16.9 D  
S 11 22 12.2 D  
S 11 22 36.2 D  
USCGS

11 09 51.8, 27.7S, 176.9W, H= 60 KM, M=5.1  
KERMADEC ISLANDS.

BKS JAN 23 20 30 20.5 D 34 32 PP 30 51 LQ 35 00 LR 30  
 MICRON 1.1 PERIOD 1.9  
 PZ 16  
 SH 17  
 MAXH 40  
 MAG 5.7-5.9 DIST DEG 23  
 \*E 32 04  
 \*E 31 45 \*E 34 16  
 #I 30 50  
 20 29 57.9 D  
 20 30 12.2 D  
 20 30 12.6 D  
 20 30 40.0 D  
 USCGS 20 25 38.3, 19.9N, 109.3W, H= 56 KM, M=5.3  
 REVILLA GIGEDO ISLANDS REGION.

PRI JAN 23 21 28 35.0 D  
 JAS 21 28 49.7 D  
 MHC 21 28 50.2 D

BKS JAN 24 03 16 44.3 C 25 50 \*E 17 04 \*E 20 19 LQ  
 LR 37 48  
 \*PP 17 16  
 \*PP 17 09  
 \*PP 17 07  
 \*I 16 56  
 03 16 57.5 C  
 03 16 51.2 C  
 03 16 47.8 C  
 03 16 38.3 D  
 USCGS 03 05 39.0, 41.4W, 141.9E, H= 69 KM, M=5.3  
 HCKKAIDU, JAPAN.

BKS JAN 25 18 17 02.5 C 17 48 \*E 17 35  
 18 16 55.3 C 17 00  
 PRI 18 16 24.5 D 17 37  
 JAS 18 16 40.6 C 16 18  
 MHC 18 16 34.6 C  
 MIN USCGS 18 15 47, 39.6N, 118.3W, H= 33 KM, M=5.3  
 NEVADA.

JAS JAN 25 23 52 02.8 D  
 MHC 23 52 06.8 D

BKS JAN 26 02 25 11.3 C  
 02 25 01.8 C  
 PRI 02 25 09.6 C  
 JAS 02 25 10.2 C  
 MHC

BKS JAN 26 02 30 17.8 C \*E 30 27  
 02 30 14.5 C \*E 30 32  
 PRI 02 30 16.4 C \*E 30 29  
 JAS 02 30 17.2 C

BKS JAN 26 06 09 07.5 D 13 00 \*E 10 32 \*E 13 22 LR  
 R FROM S.E.  
 MICRON PERIOD  
 PZ 0.46 1.8  
 SH 6.4 15  
 MAXH 12.6 16  
 MAG 4.9-5.3 DIST DEG 22  
 \*E 12 31  
 06 08 43.2 C

PRI

JAS 06 08 58.1 C 12 46  
 MHC 06 08 56 C 12 45  
 MIN 06 09 26.0 C \*I 09 35 \*I 09 52  
 USCGS 06 04 33.9, 21.4N, 108.9W, H= 33 KM, M=5.3  
 REVILLA GIGEDO ISLANDS REGION.

JAS JAN 26 08 28 59.0 C

JAS JAN 26 09 17 31.9 C

BKS JAN 26 16 17 22 50 \*E 23 50 \*E 25 30 \*E 26 24  
 LR 29 18

R FROM S.E.  
 MICRON PERIOD  
 SH 2.4 14  
 MAXH 14.2 22  
 MAG 5.2-5.6 DIST DEG 37

PRI 16 17 02.3 D \*E 17 12  
 JAS 16 17 09.5 D \*PP 17 24 \*E 19 49  
 MHC 16 17 14.0 D \*E 17 28  
 MIN 16 17 28.2 D \*E 17 44

USCGS 16 10 34.3, 15.0N, 92.8W, H= 56 KM, M=5.3  
 MEXICO-GUATEMALA BORDER REGION.

PRI JAN 26 16 31 02.4 C  
 JAS 16 30 57.5 C \*E 31 54  
 MHC 16 31 13.7 C

PRI JAN 26 16 40 42.0 C  
 JAS 16 40 32.0 C

JAS JAN 26 20 23 28 12 \*E 30 00 LR 31 30

R FROM S.E.  
 MICRON PERIOD  
 MAXH 4.4 14

PRI 20 23 30.2 C  
 JAS 20 23 38 C \*E 23 51 \*E 24 14  
 MHC 20 23 35 C  
 MIN 20 24 00.1 C

PRI JAN 26 20 38 07.6 D  
 JAS 20 38 09.6 C

PRI JAN 27 05 12 41.3 C  
 05 12 50.2 C  
 05 12 52.5 C

JAS JAN 27 08 48 43.0 C  
 08 48 32.3 C  
 08 48 36.5 C \*E 48 52  
 08 48 40.2 C \*E 48 54  
 08 48 49.8 C

JAN 27 12 48 27.2 D  
 12 48 33.0 D  
 12 48 27.6 D



MIN 12 48 37.2 C  
 PRI JAN 27 20 14 00.5 D \*E 15 34  
 JAS 20 14 23.0 D  
 MHC 20 14 25.3 D  
 PRI JAN 28 01 53 44.1 C \*E 53 49 \*E 54 01  
 JAS 01 53 39.3 C  
 MHC 01 53 37.8 C  
 USCGS 01 40 20.9, 24.8N, 121.8E, H= 90 KM, M= TAIWAN.  
 BKS JAN 28 13 59 56.3 C 65 32 \*E 60 13 LQ 67 42  
 MICRON PERIOD  
 PZ 3.68 9  
 MAXZ 20  
 SZ 42 22  
 MAG 6.3-6.7 DIST DEG 35  
 PRI 14 00 14.4 C 06 08 \*E 00 15  
 JAS 14 00 03.0 C \*E 06 03  
 MHC 14 00 01.8 C \*I 59 57 \*I 60 08  
 MIN 13 59 44.6 D  
 ARC 13 59 42 D  
 USCGS 13 52 58.3, 52.4N, 169.5W, H= 47 KM, M= FOX ISLANDS, ALEUTIAN ISLANDS. FELT.  
 BKS JAN 28 14 12 58 D  
 PRI 14 12 13 C  
 JAS 14 12 58.8 D  
 MHC 14 12 57 C  
 MIN 14 13 00.3 C  
 USCGS 14 05 58.1, 52.3N, 169.5W, H= 54 KM, M= FOX ISLANDS, ALEUTIAN ISLANDS.  
 BKS JAN 28 14 30 27.5 D  
 PRI 14 30 45 C \*E 31 15  
 JAS 14 30 33.0 C  
 MHC 14 30 29 C  
 MIN 14 30 18.5 C  
 USCGS 14 23 26.7, 52.4N, 169.4W, H= 47 KM, M= FOX ISLANDS, ALEUTIAN ISLANDS.  
 PRI JAN 28 14 37 42.5 C  
 JAS 14 37 37.5 C  
 MHC 14 37 33.5 C  
 MIN 14 37 19.0 D  
 PRI JAN 28 16 09 23.7 D  
 JAS 16 09 33.7 C  
 MHC 16 09 32.1 C  
 BKS JAN 28 16 38 35 C  
 PRI 16 38 32 C \*E 38 58 \*E 39 29  
 JAS 16 38 26.4 C  
 MHC 16 38 22.8 C  
 MIN 16 38 11.9 C

USCGS 16 31 21.1, 52.3N, 169.3W, H= 32 KM, M=5.6 FOX ISLANDS, ALEUTIAN ISLANDS.  
 S JAN 28 17 08 10.3 C  
 I JAN 28 17 26 49.1 C  
 S 17 26 38.2 C \*E 26 46 \*E 26 56  
 C 17 26 37.7 C  
 I JAN 28 17 33 55.2 C  
 S 17 33 46.1 C  
 S JAN 28 17 49 01.0 C \*E 49 10 \*E 51 39  
 I 17 49 15.5 C \*E 49 31 \*E 49 53  
 S 17 49 06.6 C \*E 49 18 \*E 49 24 \*E 49 40  
 C 17 49 03.0 C \*E 49 20  
 N 17 50 02.2 D \*I 50 12  
 USCGS 17 42 01.5, 52.4N, 169.4W, H= 50 KM, M=5.6 FOX ISLANDS, ALEUTIAN ISLANDS.  
 S JAN 28 20 55 46.5 C  
 N 20 55 34.3 C  
 JAN 28 22 37 26.0 C  
 22 37 17.3 C \*E 37 45  
 22 37 15.2 C  
 22 36 59.6 C  
 USCGS 22 28 01.2, 55.0N, 160.2E, H=113 KM, M=5.1 KAMCHATKA  
 JAN 29 01 29 56.9 C  
 01 29 51.6 C  
 JAN 29 02 11 18.3 C  
 02 11 20.3 C  
 JAN 29 07 14 13.8 C  
 07 14 15.0 C  
 07 14 23.5 C  
 JAN 29 12 18 44.5 C  
 12 18 35.0 C  
 JAN 29 14 43 24.8 C  
 14 43 22.3 C  
 JAN 30 02 49 03.5 C  
 02 49 00.3 C  
 02 49 03.7 C  
 JAN 30 15 27 56.3 D \*E 28 10  
 15 28 13.9 D \*E 28 28  
 JAN 31 03 48 16.4 D  
 JAN 31 13 46 36 C 53 32 SS 57 26 LQ 59 18 LR 62 00

PRI 13 46 05.4 D  
 JAS 13 46 12.5 D  
 MHC 13 46 16.5 D  
 USCGS

\*PP 46 19 PP 47 40 PPP 47

13 37 34.3, 2.8N, 84.8W, H= 33 KM, M=5.3  
 OFF COAST OF CENTRAL AMERICA.

JAS JAN 31 17 54 47.3 C  
 USCGS

17 43 56.2, 42.8N, 145.4E, H= 44 KM, M=5.1  
 HOKKAIDU, JAPAN.

JAS FEB 01 09 28 00.5 D  
 MIN 09 28 14.2 C

PRI FEB 01 14 55 15.6 C  
 JAS 14 55 21.6 C

JAS FEB 01 23 57 47.2 D  
 MHC 23 57 49.8 D

BKS FEB 02 06 44 41.2 C

\*SP\* 46 30 \*E 64 18 SS  
 SSS 73 18  
 PERIOD 0.8

MICRON 0.31

PKPZ

PRI 06 44 38.2 C  
 JAS 06 44 40.0 C  
 MHC 06 44 40.7 C  
 MIN 06 44 43.9 C  
 USCGS

06 25 49.8, 57.9S, 25.7W, H= 81 KM, M=5.1  
 SOUTH SANDWICH IS. REGION.

\*E 44 54 \*E 48 16

PRI FEB 02 06 54 28.3 D  
 JAS 06 54 27.2 D

PRI FEB 02 06 58 29.0 C  
 JAS 06 58 26.0 C  
 MHC 06 58 24.0 C

\*E 58 44

BKS FEB 02 09 37 28.5 C  
 PRI 09 37 32.3 C  
 JAS 09 37 38.7 C  
 MHC 09 37 33.2 C  
 MIN 09 37 41.5 C

\*E 37 50 \*E 39 46  
 \*I 37 54

BKS FEB 02 10 12 13.0 C  
 PRI 10 12 34.8 C  
 MHC 10 12 20.8 C

\*E 13 00  
 \*E 12 34

PRI FEB 02 11 16 38.1 C  
 JAS 11 16 28.5 C  
 MHC 11 16 30.7 C

\*E 16 44 \*E 17 08

BKS FEB 02 16 35 41.0 C  
 R FROM SW  
 MICRON 0.09  
 PERIOD 1  
 MAG 5.4-5.8 DIST DEG 65.4

PRI 16 35 54.0 C  
 JAS 16 35 47.8 C  
 MHC 16 35 45.5 C  
 MIN 16 35 34.3 C  
 USCGS

\*E 36 35  
 \*E 36 30  
 \*E 36 28  
 \*I 36 06

16 24 39.1, 41.6N, 139.7E, H=176 KM, M=5.4  
 HOKKAIDU, JAPAN.

PRI FEB 03 08 29 03.5 C  
 JAS 08 28 55.9 C  
 MHC 08 28 44.3 C

BKS FEB 03 13 06 03.0 C

MICRON 0.09  
 PERIOD 1

PRI 13 06 08.9 C  
 JAS 13 06 06.8 C  
 MHC 13 06 06.0 C  
 MIN 13 06 03.7 C

\*E 06 24

BKS FEB 03 23 37 29.0 D

MICRON 0.09  
 PERIOD 0.9  
 MAG 5.4-5.8 DIST DEG 83.5

PRI 23 37 17.7 D  
 JAS 23 37 23.2 D  
 MHC 23 37 25.8 D  
 MIN 23 37 35.0 C  
 USCGS

23 25 47.8, 21.5S, 67.1W, H=198 KM, M=5.1  
 CHILE-BOLIVIA BORDER REGION.

PRI FEB 04 05 54 42.2 C  
 JAS 05 54 48.2 C

JAS FEB 06 01 29 44.9 C

BKS FEB 06 03 22 27.8 C

PRI 03 22 28.0 C  
 JAS 03 22 34.2 C  
 MHC 03 22 28.8 C

\*E 22 51  
 \*E 22 58  
 \*E 22 52

USCGS 03 10 33.4, 22.8S, 176.1W, H= 90 KM, M=5.1  
 SOUTH OF FIJI ISLANDS.

S FEB 06 03 32 30.8 C  
 I 03 32 51.1 C  
 S 03 32 37.8 C  
 C 03 32  
 N 03 32 15.6 D

\*E 35 39  
 \*E 32 58 \*E 35 35  
 \*E 35 39  
 \*I 32 41

S FEB 06 03 39 07.3 C

I FEB 06 14 55 10.5 C  
 S 14 54 56.0 C  
 C 14 55 05.2 C  
 N 14 54 33.0 C

S FEB 07 08 41 14.3 C

				MICRON	PERIOD				
		PZ	0.2		1				
		MAG	5.5-5.9	DIST	DEG	81			
PRI	08 41	23.3	C		*E	42 20	*E	51 45	
JAS	08 41	21.3	C		*E	42 14	*E	51 45	
MHC	08 41	17.7	C		*E	42 13			
MIN	08 41	03.4	C						
		USCGS		08 28	57.9, 13.9N,	144.8E,	H=138 KM,	M=	
					MARIANA ISLANDS. FELT IN GUAM.				
BKS	FEB 07	14 59	16.2	D	PP	59 30	LQ	67 00	*E 6
					MICRON	PERIOD			
		PZ	0.03		0.8				
		MAG	4.2-4.6	DIST	DEG	24			
PRI	14 59	36.1	D		*E	59 52	*E	62 24	
JAS	14 59	24.5	D		*E	59 40	*E	62 20	
MHC	14 59	22.7	D		*E	59 40	*E	62 20	
MIN	14 59	02.8	D		*PP	59 12	*I	62 13	
		USCGS		14 53	13.9, 56.7N,	157.2W,	H= 67 KM,	M=	
					ALASKA PENINSULA.				
JAS	FEB 07	18 40	34.4	C					
BKS	FEB 08	09 38	47.0	C	39 20				
PRI	09 39	18.4	C						
JAS	09 38	54.1	C	39 39	*I	39 08			
MHC	09 38	55.7	C						
ARC	09 38	05.1	C	38 14					
		USCGS		09 37	53.6, 41.2N,	123.4W,	H= 33 KM,	M=	
					NORTHERN CALIFORNIA.				
BKS	FEB 08	15 16	26.9	C					
PRI	15 16	02.1	D						
JAS	15 15	57.4	C		*E	16 07			
MHC	15 16	10.1	C						
MIN	15 16	23.3	C		*I	16 44	*I	17 56	
PRI	FEB 08	15 31	33.5	C					
JAS	15 31	32	C						
MHC	15 31	49	C						
PRI	FEB 08	19 45	21.5	D					
JAS	19 45	29.4	D						
MHC	19 45	34.4	D						
JAS	FEB 08	19 48	24.2	D					
PRI	FEB 09	14 21	50.8	C					
JAS	14 21	42.2	C						
MHC	14 21	48.5	C						
MIN	14 21	34.3	D						
		USCGS		14 08	18.7, 40.0N,	20.3E,	H= 3 KM,	M=	
					GREECE-ALBANIA BORDER REGION. SLIGHT DAMAGE.				
BKS	FEB 09	15 34	19.0	C	42 07	*PP	34 33	PCP	35 12 *E

		SCS	44 08	*E	45 44	L	48 12		
		*E	65 00						
		MICRON	PERIOD						
		PZ	0.07		1				
		SH			8				
		MAG	7.3-7.5	DIST	DEG	58			
PRI	15 34	05.0	C		PP	34 20	*E	41 24	P** 64 25
JAS	15 34	10.0	C	41 45	*PP	34 25	SCS	44 58	P** 64 26
MHC	15 34	14.7	C		*E	34 30			
MIN	15 34	22.1	C		*PP	34 38			
		USCGS		15 24	47.2, 2.9N,	74.9W,	H= 58 KM,	M=6.3	
					PERU-ECUADOR. 100 KILLED, MANY INJURED, MAJOR DAMAGE.				
JAS	FEB 10	21 47	57.3	D					
PRI	FEB 11	02 49	32	C					
JAS	02 49	23.5	C		*E	49 40	*E	49 47	
MIN	02 49	14.5	D						
BKS	FEB 11	04 27	48.0	C		*E	33 40	L	40 18 LR 43 06
						*E	44 18		
PRI	FEB 11	04 31	35	C					
JAS	04 31	43.5	C						
MIN	04 32	04.4	C		*E	32 13			
PRI	FEB 11	04 53	49.5	C					
JAS	04 54	04.0	C						
JAS	FEB 11	05 10	31.7	C					
BKS	FEB 11	09 39				*E	41 15	*E	41 52
PRI	09 39	58.6	D						
JAS	09 39	45.4	D						
MHC	09 39	48.7	D			*PP	39 56	*I	40 16
MIN	09 39	35.8	D						
		USCGS		09 27	29.6, 52.0N,	106.2E,	H= 5 KM,	M=5.4	
					LAKE BAIKAL REGION. FELT.				
JAS	FEB 11	12 34	35.0	D					
PRI	12 34	17.0	D						
JAS	12 34	31.2	D			*E	34 54		
MHC	12 34	32.1	D						
MIN	12 34	57.3	D			*I	35 03		
JAS	FEB 11	15 41	22.6	C					
MIN	15 41	07.3	C						
PRI	FEB 11	22 59	06.5	D					
JAS	22 58	57.7	D						
MHC	22 58	55.1	D			*E	59 10	*I	59 24
MIN	22 58	39.9	D						
PRI	FEB 12	12 10		C					
JAS	12 10	47.7	D						
						PP	11 27		
						PP	11 30		

MHC 12 10 C PP 11 26  
 MIN 12 10 D \*E 11 00

BKS FEB 12 14 20 05.7 C  
 MICRCN PERIOD  
 PZ 0.04 1  
 DISTANCE DEG 78.5

PRI 14 19 53.8 C \*E 20 02  
 JAS 14 19 59.5 C \*E 20 06 \*I 20 14 \*I 20 14  
 MHC 14 20 02.0 C \*I 20 21  
 MIN 14 20 11.4 C  
 USCGS 14 08 12.5, 21.7S, 70.1W, H= 18 KM, M=

JAS FEB 13 05 26 35.3 D \*E 27 23

MIN FEB 13 10 14 40.0 C

BKS FEB 13 10 35 56.0 C  
 PRI 10 35 42.4 C \*E 35 55  
 JAS 10 35 48.1 C \*E 36 01  
 MHC 10 35 52.0 C \*E 36 04  
 MIN 10 36 02.0 C  
 USCGS 10 25 43.9, 5.2S, 75.4W, H= 39 KM, M=

BKS FEB 13 11 32 42.0 C  
 PRI 11 32 54.1 D  
 JAS 11 32 48.3 C \*E 33 03  
 MHC 11 32 45.3 C  
 MIN 11 32 35.8 D

PRI FEB 13 11 41 32 C  
 JAS 11 41 28.5 D \*E 41 41  
 MHC 11 41 26.1 C \*E 41 44  
 MIN 11 41 13.0 D

PRI FEB 13 15 42 26.0 D  
 JAS 15 42 26.1 C

PRI FEB 13 21 09 54.4 C  
 JAS 21 10 00.2 C \*E 10 23  
 MHC 21 10 02.2 C

BKS FEB 13 23 24 33.0 C 32 54 \*E 37 24 L 39 54 LQ  
 \*E 43 24  
 MICRCN PERIOD  
 PZ 0.4 1  
 SH 19.65 18  
 MAXH 25 15  
 MAG 6.5-6.9 DIST DEG 63

PRI 23 24 30.5 D \*E 24 48 P\*\* 54 09  
 JAS 23 24 21.1 C 33 16 \*I 24 39 \*E 28 20 P\*\*  
 MHC 23 24 24.2 C \*E 24 42  
 MIN 23 24 15.8 C \*I 24 22  
 USCGS 23 14 19.6, 52.7N, 34.1W, H= 10 KM,

NORTH ATLANTIC OCEAN.

BKS FEB 14 01 55 06.0 C  
 PRI 01 54 56.6 D \*E 56 16  
 JAS 01 54 51.3 C \*E 56 13 \*I 58 33  
 MHC 01 54 52.5 C \*E 55 56

BKS FEB 14 05 13 47.1 D  
 PRI 05 13 49.5 C \*E 14 14 \*E 14 43 \*E 17 03  
 JAS 05 13 53.4 C \*E 14 15 \*E 14 46 \*E 17 10  
 MHC 05 13 47.9 C \*E 17 03  
 MIN 05 13 53.9 D \*I 14 12  
 USCGS 05 02 38.4, 13.3S, 171.3E, H=635 KM, M=5.6  
 NEW HEBRIDES IS. REGION.

JAS FEB 14 18 24 55.9 D

PRI FEB 15 06 00 44.9 C  
 JAS 06 00 41.5 C

JAS FEB 15 13 09 06.0 D

BKS FEB 15 16 21 06.0 D 29 14 PCP 21 23 \*PP 23 07 PP 23 54  
 \*E 30 02 \*SS 32 46 SS 33 54  
 \*E 36 40 \*E 37 20 P\*\* 49 20

MICRCN PERIOD  
 PZ 1.9 1  
 SH 16.2 3  
 MAG 7.2-7.4 DIST DEG 67

PRI 16 20 53.5 D 28 48 \*PP 22 54  
 JAS 16 20 58.6 D 29 00 \*PP 22 58  
 MHC 16 21 02.4 D 29 02 \*PP 23 00  
 MIN 16 21 10.9 D 29 22 PCP 21 31 \*I 29 39  
 RC 16 21 22.5 D \*E 21 46  
 USCGS 16 11 11.8, 9.0S, 71.3W, H=597 KM, M=6.2  
 PERU-BRAZIL BORDER REGION.

PRI FEB 15 19 44 35.3 C  
 JAS 19 44 39.5 C \*E 45 04  
 MHC 19 44 35.5 D  
 MIN 19 44 39.2 C \*I 44 45

BKS FEB 16 15 07 28.0 C  
 PRI 15 07 21.3 C 08 45 \*E 07 51 \*E 09 14  
 JAS 15 07 09.3 C 08 30 \*E 07 31  
 MHC 15 07 22.9 C \*E 07 26  
 MIN 15 07 32.5 C \*E 07 32 \*E 09 00  
 \*I 07 43 \*I 09 17

PRI FEB 16 17 39 35.7 C  
 JAS 17 39 55.5 C 41 44 \*E 41 09  
 MHC 17 39 55.5 D \*I 40 21 \*I 41 14 \*I 41 41

PRI FEB 16 19 23 C  
 JAS 19 23 12.0 D 24 56 \*E 25 36  
 MHC 19 23 24.2 C \*I 23 35 \*I 23 42 \*I 23 54  
 MIN 19 23 24.5 D \*E 25 33  
 \*I 23 33

PRI FEB 16 19 42 50.1 C  
 JAS 19 43 09.8 D 44 59  
 MHC 19 43 09.5 D  
 PRI FEB 17 00 56 22.8 C \*I 56 19  
 JAS 00 56 03.6 C  
 MHC 00 56 11.4 C  
 PRI FEB 17 08 14 24.6 C \*E 16 09 \*E 16 24 \*E 16  
 JAS 08 14 44.3 D  
 JAS FEB 17 10 17 14.4 C  
 MHC 10 17 22.5 C  
 MIN 10 17 13.9 D  
 BKS FEB 17 10 22 56.0 D 33 02 PCP 23 01 \*PP 23 10 L  
 LR 46 24 LR 47 24

R FROM S.W.  
 MICRON PERIOD  
 PZ 0.66 1.6  
 SH 8.1 18  
 MAXH 24 21

MAG 6.3-6.5 DIST DEG 81  
 PRI 10 22 55.3 D P\*\* 49 58  
 JAS 10 23 01.5 D 33 14 PCP 23 06 \*I 23 19 \*I  
 \*I 33 44 \*E 33 50 P\*\*  
 MHC 10 22 56.0 D P\*\* 49 59  
 MIN 10 23 05.8 D \*I 34 48 \*I 34 56  
 ARC 10 23 01.2 D  
 USCGS 10 10 51.5, 23.7S, 175.2W, H= 19 KM, M=5.0  
 TCNGA ISLANDS REGION.

JAS FEB 17 16 08 15.8 C \*E 08 34  
 MHC 16 08 22.8 C  
 MIN 16 08 15.8 D  
 PRI FEB 17 18 49 03.2 C \*E 51 04  
 JAS 18 48 45.3 C 50 45 \*I 50 23 \*I 50 36  
 PRI FEB 17 20 29 03.3 C \*I 29 12 \*I 29 48  
 JAS 20 29 04.3 C  
 MHC 20 29 13.2 C  
 PRI FEB 18 00 42 20.1 C \*PP 42 22  
 JAS 00 42 16.2 C  
 MHC 00 42 24.3 C  
 MIN 00 42 16.2 C  
 USCGS 00 31 48, 28.9N, 43.3W, H= 33 KM, M=5.0  
 NCRTH ATLANTIC RIDGE.

BKS FEB 18 02 52 D \*E 72 38 LQ 75 30 LR  
 JAS 02 52 21.3 C  
 MIN 02 52 11.6 D  
 BKS FEB 18 18 50 18.8 C \*E 51 21

MAGNITUDE 4.2 - FELT AT SAN BERNARDINO

PRI 18 49 50.8 C \*E 50 43  
 JAS 18 50 06.7 D \*I 50 22 \*I 51 17  
 MHC 18 50 07.4 D  
 MIN 10 52 00.5 C \*E 52 19  
 K S FEB 19 11 52 22.5 D LQ 61 24 LR 64 00  
 RI 11 52 39.5 C  
 AS 11 52 40.8 D \*I 52 55 \*I 62 17 \*I 02 42  
 HC 11 52 40.3 C  
 K S FEB 19 12 39 44.2 C  
 RI 12 39 53.2 D  
 AS 12 39 50.5 D \*I 40 15  
 HC 12 39 46.8 D  
 IN 12 39 42.0 C  
 RI FEB 19 14 34 04.1 L  
 AS 14 33 51.6 D \*I 35 10  
 K S FEB 19 22 33 24.8 D \*E 33 50 \*E 41 50 \*E 44 40  
 \*E 50 30 \*E 51 20 LQ 65 24  
 \*E 70 00  
 RI 22 33 28.7 C  
 AS 22 33 26.5 C  
 HC 22 33 25.6 C  
 USCGS 22 14 35.3, 9.2S, 113.1E, H= 80 KM, M=6.2  
 SOUTH OF JAVA; 51 KILLED, MANY INJURED,  
 EXTENSIVE PROPERTY DAMAGE.  
 AS FEB 19 23 46 59.2 C \*E 47 26  
 AS FEB 19 23 57 54.5 D \*E 58 05 \*E 58 24  
 RI FEB 20 12 27 21.0 C  
 AS 12 27 11.1 C  
 HC 12 27 07.3 C \*I 27 37  
 USCGS 12 14 35.7, 29.2N, 129.2E, H= 22 KM, M=5.1  
 RYUKYU ISLANDS.  
 I FEB 20 16 53 35.2 C  
 S 16 53 29.8 C  
 C 16 53 19.6 C \*I 53 36 \*I 53 46  
 S FEB 20 22 54 \*E 05 36 LR 80 36  
 I R FROM S.W.  
 S 22 54 28 C  
 S 22 54 16.8 C  
 C 22 54 21.7 C \*I 54 34  
 N 22 54 20.8 C  
 S FEB 21 04 25 17.5 C  
 I 04 25 08.0 C \*E 25 28  
 S 04 25 06.3 C  
 C 04 25 13.8 C \*I 27 00

MIN 04 25 14.8 C

BKS FEB 21 09 24 12.0 C \*E 24 28  
 PRI 09 24 21.2 C  
 JAS 09 24 19.2 C \*I 24 25  
 MHC 09 24 15.5 C  
 MIN 09 24 11.8 D

USCGS 09 11 55.2, 14.1N, 146.4E, H= 70 KM, M=5  
 MARIANA ISLANDS REGION.

JAS FEB 21 12 30 22.5 C \*I 30 39

BKS FEB 22 04 03 09.5 C  
 PRI 04 03 02.7 D  
 JAS 04 03 08.7 C  
 MIN 04 03 D \*E 03 42

PRI FEB 22 08 59 50.4 C  
 JAS 08 59 46.9 D  
 MHC 08 59 44.6 C

BKS FEB 22 14 06 51.5 D \*PP 07 10 LR 32 00  
 PRI 14 06 57.0 C \*PP 07 13  
 JAS 14 06 58.8 D \*PP 07 16  
 MHC 14 06 55.6 C \*PP 07 12  
 MIN 14 06 D \*E 07 13 \*I 07 16

BKS FEB 22 18 39 20.0 D 49 42 \*PP 39 43 \*E 40 05 L  
 LR 65 30

R FROM S. W.  
 MICRON PERIOD  
 PZ 0.12 1.2  
 DISTANCE DEG 86

PRI 18 39 21.1 D \*PP 39 45  
 JAS 18 39 24.3 D \*I 39 47 \*PP 39 51 \*E  
 MHC 18 39 20.3 D \*E 39 44

USCGS 18 26 46.7, 19.5S, 169.0E, H= 87 KM, M=5  
 NEW HEBRIDES ISLANDS.

BKS FEB 22 23 46 52.4 D  
 MICRON PERIOD  
 PZ 0.05 0.8

PRI 23 46 51.5 D  
 JAS 23 46 53.5 D  
 MHC 23 46 55.0 D  
 MIN 23 46 57.8 C \*E 47 05

USCGS 23 27 58, 58.1S, 25.7W, H= 33 KM, M=5  
 SOUTH SANDWICH ISLANDS.

JAS FEB 23 06 10 26.8 C  
 MIN 06 10 32.3 C

PRI FEB 23 14 39 05.6 C  
 JAS 14 39 01.0 C \*E 39 12  
 MHC 14 38 59.2 C  
 MIN 14 38 50.8 C

BKS FEB 23 15 04 27.3 D  
 PRI 15 04 25.4 D  
 JAS 15 04 23.5 D  
 MHC 15 04 23.2 D

BKS FEB 23 18 35 42.0 C \*E 36 48  
 JAS 18 34 58.3 C 36 03 \*E 35 12 \*I 36 55  
 MHC 18 35 13.8 C 36 28 \*E 35 26  
 MIN 18 35 C \*I 35 34

BKS FEB 23 18 51 16.5 C \*I 51 27 \*E 52 31  
 PRI 18 51 01.0 C  
 JAS 18 50 57.1 C  
 MHC 18 51 10.0 C  
 MIN 18 50 22.6 C \*I 52 53  
 ARC 18 50 D \*E 51 50

PRI FEB 23 19 14 29.6 C  
 JAS 19 14 25.2 C

BKS FEB 23 21 13 06.5 C \*I 14 08  
 PRI 21 12 31.4 C \*E 12 45 \*E 12 51  
 JAS 21 12 30.4 C \*E 12 44 \*E 12 51  
 MHC 21 12 47.6 C  
 MIN 21 13 03.5 C \*I 13 18

BKS FEB 24 07 20 \*E 21 23  
 PRI 07 21 24.3 C \*E 22 11 \*E 22 25  
 JAS 07 20 56.0 C 21 29  
 MHC 07 21 10.6 D  
 MIN 07 21 07.1 C \*E 21 21 \*E 21 54  
 \*I 21 38

PRI FEB 24 11 39 13.4 C  
 JAS 11 39 06.0 C  
 MHC 11 39 14.3 C \*E 39 42 \*I 39 48 \*I 41 03  
 MIN 11 39 12.2 C

BKS FEB 25 15 52 49.5 C  
 PRI 15 53 18.9 D \*E 54 19  
 JAS 15 52 58.2 C \*I 53 34 \*I 53 42  
 MHC 15 52 59.0 C 53 31  
 MIN 15 52 29.6 C 52 45  
 ARC 15 52 23.7 C 52 39

PRI FEB 26 03 19 51.2 C  
 JAS 03 19 51.0 C  
 MHC 03 19 45 C  
 MIN 03 19 43.3 C

BKS FEB 26 04 11 05.5 C  
 MICRON PERIOD  
 PZ 0.09 0.8  
 DISTANCE DEG 86

PRI AS 04 11 15.2 C  
 04 11 06.5 C \*I 11 18

MHC 04 11 08.6 C  
 MIN 04 11 53.8 C  
 ARC 04 11 50.7 C  
 USCGRS

\*I 11 12

03 57 57.7, 49.8N, 78.1E, H= 0, M=6.0  
 EASTERN KAZAKH SSR.

\*E 09 28

BKS FEB 26 12 09 22.4 D  
 JAS 12 09 27.6 C  
 MHC 12 09 22.5 C  
 MIN 12 09 31.2 C

JAS FEB 26 18 25 24.0 C

PRI FEB 26 18 35 50.7 D  
 JAS 18 35 44.0 C  
 MIN 18 35 11.7 C

BKS FEB 27 02 16 20.0 D  
 PRI 02 16 13.8 D  
 JAS 02 16 04.8 D  
 MHC 02 16 18.2 D  
 MIN 02 16 27.3 C  
 USCGRS

\*E 16 36

\*E 16 14  
 \*E 16 28

02 06 42.5, 2.9N, 74.8W, H= 69 KM, M=  
 COLOMBIA. FELT IN POPAYAN, BUGOTA,  
 MEDELLIN AREA.

\*E 42 20  
 \*E 42 26 \*E 42 38  
 \*E 42 35

PRI FEB 27 02 42 11.5 D  
 JAS 02 42 17.7 D  
 MIN 02 42 . C

BKS FEB 27 05 43 35.3 D  
 PRI 05 43 52.8 C  
 JAS 05 43 44.0 C  
 MHC 05 43 41.0 C

\*E 43 55

BKS FEB 28 09 49 00.8 C 58 38 \*E 49 16 \*E 59 38 LQ  
 BKS 09 49 00.8 C 58 38 \*E 71 30  
 MICRON PERIOD  
 SH 2.0 16  
 MAXH 3.8 9  
 DISTANCE DEG 75

PRI 09 49 11.0 C \*E 49 19 \*E 50 09  
 JAS 09 49 06.9 D \*E 49 15  
 MHC 09 49 04.0 D \*I 49 11  
 MIN 09 48 55.8 D

BKS MAR 01 01 23 56.7 D \*E 24 10 \*E 27 00 \*E  
 MICRON PERIOD  
 MAXH 3.5 20  
 DISTANCE DEG 17

PRI 01 23 39.5 C \*I 24 23  
 JAS 01 23 47.2 C  
 MHC 01 23 43.9 C  
 MIN 01 23 D \*E 24 14

BKS MAR 01 06 11 49 C

I 06 11 18.5 C 12 20  
 S 06 11 31.6 C 12 47  
 N 06 11 C \*E 12 33

SE OF IMPERIAL VALLEY  
 MAGNITUDE 4.4 - 4.8

S MAR 01 22 24 18.5 C \*E 34 00 \*E 36 00  
 I 22 24 33.8 C  
 S 22 24 27.6 C  
 C 22 24 24.1 C  
 N 22 24 09.3 C  
 USCGRS 22 16 30.4, 51.4N, 179.3W, H= 33 KM, M=5.3  
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS.

S MAR 02 02 56 55.0 D 64 34 \*I 57 04 \*E 57 10 \*PP 57 54  
 SS 68 28 L 71 00

I 02 56 40.2 D \*E 56 56 \*E 57 17 \*I 57 48  
 S 02 56 46.0 D \*E 57 01  
 C 02 56 50.3 D \*I 57 08 \*I 57 57  
 N 02 57 00.7 D  
 USCGRS 02 47 31.7, 0.3S, 78.7W, H=121 KM, M=5.8  
 ECUADOR.

S MAR 02 06 10 04.8 C  
 N 06 10 09.0 D

S MAR 02 13 26 17.0 D 30 10 LQ 30 42 LR 31 18  
 R FROM S.E.

MICRON PERIOD  
 PZ 0.04 1.0  
 SH 3.6 15  
 MAXH 14  
 MAG 4.4-4.8 DIST DEG 22

I 13 25 51.8 D  
 S 13 26 06.1 C \*E 26 23 \*I 26 37  
 C 13 26 14.2 C  
 N 13 26 36.1 D \*I 26 45

S MAR 02 14 13 50.0 C 14 34 \*E 14 48  
 I 14 13 30.7 C 14 02  
 S 14 13 32.9 C 14 01  
 C 14 13 41.8 C \*E 14 34  
 N 14 14 07.0 D \*I 14 19 \*I 15 02

S MAR 02 15 01 27.0 C \*E 01 14  
 I 15 01 02.4 C \*E 01 07 \*I 01 49 \*E 01 55  
 S 15 00 57.4 C  
 C 15 01 10.9 C  
 N 15 01 23.7 C \*I 01 32

S MAR 02 23 13 09.2 C \*I 13 24  
 I 23 13 C \*E 20 36 \*E 29 18 \*E 31 48  
 S USCGRS 23 03 39.7, 53.8N, 160.5E, H= 21 KM, M=5.0  
 NEAR EAST COAST OF KAMCHATKA.

S MAR 03 03 13 16.2 D \*I 13 23

JAS MAR 03 06 01 24.7 C  
 BKS MAR 03 06 08 34.5 C \*E 08 44  
 PRI 06 08 42.2 D \*E 08 42  
 JAS 06 08 35.3 D  
 MHC 06 08 37.6 D  
 MIN 06 08 26.9 C  
 PRI MAR 03 15 20 02.5 C \*E 20 11 \*E 21 01  
 JAS 15 19 58.3 C  
 MHC 15 20 10.1 C  
 BKS MAR 04 05 22 37.8 D \*E 32 54 \*E 35 06 \*E  
 PRI 05 22 46.8 C \*E 47 48 \*E 53 30  
 JAS 05 22 42.5 C \*E 22 52 \*E 26 04 \*I  
 MHC 05 22 40.4 C  
 MIN 05 22 33.3 D \*I 22 49  
 USCGS 05 09 24.2, 21.4N, 121.8E, H=134 KM, TAIWAN REGION.  
 BKS MAR 04 06 27 41.7 C 37 03 PCP 27 54 \*PP 28 36 \*SP  
 SSS 46 36 \*E 49 30  
 MICRON PERIOD  
 PZ 0.11 1.0  
 SH 2.9 14  
 MAG 4.9-5.3 DIST DEG 77  
 PRI 06 27 41.3 D \*PP 28 36  
 JAS 06 27 47.5 D 37 16 \*E 28 00 \*PP 28 42 \*I  
 MHC 06 27 42.0 D \*PP 28 36  
 MIN 06 27 51.8 C \*I 28 01 \*PP 28 45  
 USCGS 06 16 21.9, 18.5S, 175.4W, H=225 KM, TONGA ISLANDS.  
 PRI MAR 04 10 58 06.5 C \*E 58 17  
 JAS 10 58 09.9 C \*E 58 18  
 BKS MAR 04 18 11 41 D 23 06 PP 15 39 SKS 22 23 PS  
 SS 29 50 P\*P\* 37 00 L  
 LR 44 06  
 MICRON PERIOD  
 PZ 2.4 10  
 PPZ 5.1 12  
 SH 3.3 10  
 MAXH 27 22  
 MAG 6.5-6.7 DIST DEG 97  
 PRI 18 11 45.3 C \*E 13 10  
 JAS 18 11 36.3 C \*I 12 00 \*E 12 05 \*E  
 MHC 18 11 41.1 C \*E 12 37 \*E 27 26  
 MIN 18 11 30.2 C  
 USCGS 17 58 06.4, 39.2N, 24.6E, H= 33 KM FELT IN GREECE, WESTERN TURKEY AND BULGARIA.  
 BKS MAR 04 22 54 06.2 D  
 PRI 22 54 14.0 C

AS 22 54 13.7 C \*I 54 29  
 HC 22 54 10.0 C  
 USCGS 22 41 14.5, 7.8N, 146.2E, H= 20 KM, M=5.1 CAROLINE IS. REGION.  
 AS MAR 05 05 44 24.5 C  
 RI MAR 05 11 14 46.8 D  
 AS 11 14 33.8 D \*E 17 13  
 HC 11 14 41.2 C  
 IN 11 13 54.9 D  
 S MAR 06 04 51 32.0 C 60 56 \*PP 53 03 \*E 53 15 \*E 53 29  
 SS 66 20 L 12 20  
 MICRON PERIOD  
 PZ C.11 0.8  
 DISTANCE DEG 78  
 I 04 51 43.5 C \*PP 53 26  
 S 04 51 39.0 C \*PP 53 22 \*I 53 35  
 HC 04 51 36.0 C \*PP 53 19  
 N 04 51 27.6 C  
 USCGS 04 40 17.8, 30.5N, 137.6E, H=490 KM, M=5.1 SOUTH OF HUNSHU, JAPAN.  
 S MAR 06 08 23 42.9 C  
 I 08 23 42.5 C \*E 24 37  
 S 08 23 49.0 C \*E 24 44  
 C 08 23 43.0 C \*E 24 37  
 N 08 23 52.3 C \*I 24 47  
 S MAR 06 11 48 00.3 C  
 N 11 47 44.3 D  
 I MAR 06 23 43 08.8 D  
 S 23 43 11.7 D \*E 43 24  
 C 23 43 06.0 D  
 S MAR 07 03 52 22.0 C PP 56 26 PS 64 20 \*E 79 12  
 I 03 52 D PP 56 27  
 S 03 53 35.7 C \*I 54 30 PP 56 32 \*E 57 06  
 N 03 52 37.7 D \*E 56 34  
 S MAR 07 04 53 16.1 D \*E 53 35  
 S MAR 07 07 30 46.2 C  
 I MAR 07 08 41 07.5 D  
 S 08 40 59.8 C  
 C 08 41 02.9 C  
 S MAR 07 17 35 03.3 C  
 S 17 35 07.0 C  
 C 17 35 10.0 C  
 S 17 35 04.9 C \*I 35 27 \*E 43 04  
 C 17 35 09.1 C  
 USCGS 17 22 43.3, 10.9S, 166.5E, H= 34 KM, M=5.3



SANTA CRUZ ISLANDS.

JAS MAR 08 01 44 23.4 C  
 MIN 01 44 22.8 C

BKS MAR 08 02 01 16 D \*E 09 06  
 PRI 02 01 25.2 D \*E 02 50  
 JAS 02 01 29.2 C  
 MHC 02 01 23.5 C

JAS MAR 08 02 24 02.8 C  
 MIN 02 24 16.8 D

JAS MAR 08 03 01 17.0 D

JAS MAR 08 04 15 57.3 C  
 MHC 04 15 52.2 C

JAS MAR 08 05 25 44.8 D

JAS MAR 08 08 25 31.0 C

BKS MAR 09 03 36 41.8 C \*E 36 54 PPS 47 48 LR 6  
 R FROM S.W.  
 MICRON PERIOD  
 MAXH 1.7 30  
 PRI 03 36 43.6 C \*E 36 56 \*I 37 43  
 JAS 03 36 46.5 C  
 MHC 03 36 41.5 C  
 MIN 03 36 45.7 C  
 USCGS 03 24 18.5, 10.7S, 166.3E, H= 30 KM, M=

JAS MAR 09 03 50 35.3 C  
 PRI MAR 09 05 12 50.6 C \*E 12 58 \*E 13 22  
 JAS 05 12 50.8 C \*E 13 03 \*E 13 24  
 MIN 05 12 C

PRI MAR 09 05 50 39.5 D \*I 50 57  
 JAS 05 50 42.5 D  
 MHC 05 50 37.2 D  
 MIN 05 50 42.0 C  
 USCGS 05 38 14.9, 10.7S, 166.1E, H= 33 KM, M=

BKS MAR 09 06 04 25.0 D PP 04 44 PP 07 46 \*E  
 \*E 15 40 LQ 27 18 LR  
 MICRON PERIOD  
 MAXH 2.9 28  
 PRI 06 04 43.5 D \*E 07 17  
 JAS 06 04 46.3 D \*I 05 00 \*E 05 09 PP  
 MHC 06 04 41.3 D PP 07 15  
 MIN 06 04 42.2 C \*E 05 02  
 ARC 06 04 D  
 USCGS 05 52 19.2, 10.7S, 166.3E, H= 33 KM, M=

SANTA CRUZ ISLANDS.

BKS MAR 09 07 10 54.5 C 21 10 PCP 11 00 PP 13 57 \*E 19 50  
 PPS 22 04 SS 26 10 L 32 12  
 LR 35 06

R FROM S.W.  
 MICRON PERIOD  
 PZ 0.07 0.7  
 PPZ 1.3 10  
 SH 3.3 20  
 MAXH 4C 34  
 MAG 5.6-5.8 DIST DEG 80

PRI 07 11 00.3 C  
 JAS 07 11 03.3 C 21 29 \*I 12 53 \*E 14 16 \*E 39 48  
 MIN 07 11 01.3 D \*I 11 27  
 ARC 07 10 57.5 C  
 USCGS 06 58 35.7, 10.6S, 166.3E, H= 33 KM, M=6.0

PRI MAR 09 08 03 21.5 C  
 JAS 08 03 24.5 C  
 MIN 08 03 24.4 C  
 USCGS 07 50 58, 10.8S, 166.4E, H= 33 KM, M=5.1

PRI MAR 09 08 29 03.5 C  
 JAS 08 29 00.9 D  
 MHC 08 29 01.3 D  
 MIN 08 29 05.0 D  
 USCGS 08 16 40, 10.8S, 166.4E, H= 40 KM, M=5.3

BKS MAR 09 14 15 \*E 26 00 \*E 29 12  
 PRI 14 15 19.2 C \*E 15 35  
 JAS 14 15 25.3 C \*E 15 43 \*E 17 30  
 MHC 14 15 30.5 C  
 MIN 14 15 44.3 C \*E 15 59

PRI MAR 09 14 18 13.1 C  
 JAS 14 17 58.6 C \*E 18 12  
 MIN 14 18 09.1 C

PRI MAR 09 18 10 15.1 C \*E 10 26  
 JAS 18 10 08.2 C \*E 10 20 \*I 10 53 \*E 12 04  
 MHC 18 10 02.2 C  
 MIN 18 10 11.3 D

BKS MAR 09 18 15 03.5 C \*E 15 36 PP 17 56 \*E 19 15  
 \*E 25 22 PPS 26 04 \*E 28 20  
 SS 33 22 LR 39 24

R FROM S.W.  
 MICRON PERIOD  
 PZ 0.71 2.4  
 MAXH 8.7 20  
 MAG 5.9-6.1 DIST DEG 81

PRI 18 15 05.0 C

JAS 18 15 08.3 C \*PP 15 19 \*E 15 24 \*E 16  
 PP 18 19

MHC 18 15 03.0 C  
 MIN 18 15 09.6 C  
 ARC 18 15 03.5 D  
 USCGS 18 02 45.7, 10.7S, 166.3E, H= 59 KM, M=6  
 SANTA CRUZ ISLANDS.

JAS MAR 09 18 38 44.5 C \*I 39 05  
 JAS MAR 09 20 44 37.1 C \*I 43 59  
 MIN 20 44 28.9 C

JAS MAR 09 21 32 36.2 C  
 JAS MAR 09 21 34 39.0 D

BKS MAR 09 21 37 03.4 D \*E 52 54 \*E 56 12  
 PRI 21 37 03.0 D \*I 37 16 \*E 37 46  
 JAS 21 37 09.3 D  
 MHC 21 37 03.9 D  
 MIN 21 37 13.6 C

BKS MAR 10 00 42 33.8 C  
 MICRON PERIOD  
 0.07 0.7  
 PZ  
 PRI 00 42 44.1 C \*E 42 44 \*I 42 59  
 JAS 00 42 39.8 C  
 MHC 00 42 37.2 C  
 MIN 00 42 29.5 C  
 USCGS 00 31 17.0, 28.7N, 138.7E, H=490 KM, M=  
 BONIN IS. REGION.

BKS MAR 10 01 53 C \*E 77 18  
 JAS 01 53 41.9 C \*E 54 41

PRI MAR 10 10 15 05.2 C  
 JAS 10 15 14.2 C \*E 15 25  
 MHC 10 15 09.5 C

JAS MAR 10 10 24 21.7 C  
 JAS MAR 10 13 24 42.0 C \*E 25 52

BKS MAR 11 08 45 46.0 D \*E 56 18 \*E 57 00 LR  
 PRI 08 45 50.1 D \*E 46 03  
 JAS 08 45 51.7 D  
 MHC 08 45 47.9 D  
 MIN 08 45 52.8 C  
 USCGS 08 33 27.4, 10.7S, 166.2E, H= 49 KM, M=  
 SANTA CRUZ ISLANDS.

BKS MAR 11 14 51 12.8 C 56 25 \*E 51 22 \*E 54 20 \*E  
 MICRON PERIOD  
 0.32 1.5  
 PZ

SH 5.9 25  
 MAG 5.2-5.6 DIST DEG 32

PRI 14 50 48.3 C \*E 50 57  
 JAS 14 50 48.8 C \*I 50 59 PCP 54 19  
 MHC 14 50 57.6 C \*E 51 08  
 ARC 14 50 C \*E 51 31 \*E 51 38  
 USCGS 14 44 59.2, 19.1N, 95.8W, H= 33 KM, M=5.5  
 VERA CRUZ. 3 PERSONS INJURED. MODERATE  
 PROPERTY DAMAGE AT VERA CRUZ AND  
 BOCA DEL RIO.

JAS MAR 12 01 33 34.8 C \*I 33 50  
 MIN 01 33 17.8 C  
 USCGS 01 23 49.5, 51.1N, 157.9E, H= 21 KM, M=5.2  
 NEAR EAST COAST OF KAMCHATKA.

JAS MAR 12 03 03 03.9 D \*I 03 31  
 MIN 03 02 50.3 C \*I 03 20  
 USCGS 02 51 54.7, 42.6N, 143.0E, H= 33 KM, M=5.3  
 HOKKAIDO, JAPAN REGION.

BKS MAR 12 21 25 \*E 28 24 LR 29 24  
 R FROM N.W.  
 MICRON PERIOD  
 MAXH 5.8 16

JAS 21 25 13.0 C \*I 25 31 \*E 29 10 \*I 29 16

BKS MAR 13 07 48 41.3 C  
 PRI 07 48 46.3 C  
 JAS 07 48 46.7 D  
 MHC 07 48 41.7 C  
 MIN 07 48 51.3 C

BKS MAR 13 14 50 44.5 C \*E 50 58 \*E 59 30  
 PRI 14 51 03.5 D  
 JAS 14 50 53.7 D \*I 51 05 \*I 54 33  
 MHC 14 50 45.5 C  
 MIN 14 50 31.4 C  
 USCGS 14 44 07.2, 53.7N, 165.4W, H= 33 KM, M=5.2  
 FOX ISLANDS, ALEUTIAN ISLANDS.

BKS MAR 13 16 19 48.1 D \*PP 19 58 \*E 20 00 SKS 30 14  
 PS 31 52 LR 48 54  
 R FROM S.E.  
 MICRON PERIOD  
 PZ 0.34 1.2  
 MAXH 3.1 18  
 MAG 7.1-7.5 DIST DEG 104

PRI 16 19 38.2 D  
 JAS 16 19 44.5 D \*PP 19 55 \*E 20 08 \*I 23 11  
 MHC 16 19 45.2 D \*E 19 56  
 USCGS 16 06 54.3, 40.1S, 74.5W, H= 33 KM, M=6.0  
 OFF COAST OF SOUTHERN CHILE.

BKS MAR 14 07 16 40 C SKS 22 56 \*E 24 25 PS 25 50  
 SS 31 24 \*E 39 42 \*E 50 00

R FROM N.W.  
MICRON 1.45  
PZ 07 16 43.8 C  
MHC 07 16 41.6 C  
MIN 07 16 12.4 C  
DISTANCE DEG 112  
PERIOD 8  
\*I 18 15  
USCGS 06 58 04.6, 28.4N, 94.3E, H= 24 KM, M=5  
INDIA-CHINA BORDER REGION.

BKS MAR 14 23 36 04.4  
PRI 23 36 04.2 D  
JAS 23 36 09.5 D  
MHC 23 36 04.4 D  
\*E 37 03  
JAS MAR 15 01 25 15.5 C  
\*E 25 42  
BKS MAR 15 06 52 10.9 C  
PRI 06 52 13.2 C  
JAS 06 52 17.4 C  
MHC 06 52 12.3 C  
MIN 06 52 18.7 D  
\*E 53 33 \*E 54 23  
JAS MAR 15 15 28 53.2 C  
\*E 49 30  
JAS MAR 15 20 02 41.4 D  
BKS MAR 16 12 23  
PRI 12 23 28.8 D  
JAS 12 23 14.1 D  
\*E 44 50  
BKS MAR 16 17 44 19.5 D  
PRI 17 44 21.8 C  
JAS 17 44 25.4 C  
MHC 17 44 20.4 C  
MIN 17 44 26.7 C  
\*E 46 01  
JAS MAR 17 02 33 48.4 C  
BKS MAR 17 11 37 49.5 C  
SKS 48 10 PPS 49 44 SS  
L 61 00 LR 65 00

R FROM N.W.  
MICRON 3.3  
SH 11 37 51.8 D  
JAS 11 37 52.1 D  
MHC 11 37 47.8 D  
MIN 11 37 38.0 D  
MAXH 10.6  
PERIOD 16  
DISTANCE DEG 88  
PP 41 32  
\*I 38 09 PP 41 31 \*I  
\*I 37 52  
USCGS 11 24 45.7, 3.6S, 150.9E, H= 33 KM  
NEW IRELAND REGION.

BKS MAR 18 09 38 44.5 C  
MICRON PERIOD

PZ 0.65  
MAG 6.7 CIST DEG 76  
09 38 44.7 C \*E 38 53  
09 38 50.4 C \*E 39 01  
09 38 45.2 C  
09 38 53.4 C \*I 39 07  
USCGS 09 27 42.7, 20.7S, 179.4W, H=650 KM, M=4.9  
FIJI ISLANDS REGION.

KS MAR 18 18 01 15.0 C  
RI 18 01 31.0 C \*E 01 57  
AS 18 01 24.7 D \*E 01 51 \*I 02 02 \*E 02 20  
HC 18 01 22.4 D \*E 01 49  
IN 18 01 12.7 C \*I 01 40  
USCGS 17 49 50.8, 36.3N, 139.8E, H=105 KM, M=5.0  
HONSHU, JAPAN. FELT IN CENTRAL AND  
NORTHERN HONSHU.

RI MAR 19 01 25 12.4 C  
AS 01 25 11.6 D \*I 25 24  
HC 01 25 08.2  
IN 01 25 08.9 C  
USCGS 01 10 45.8, 6.7S, 129.9E, H= 60 KM, M=5.9  
BANDA SEA.

S MAR 19 01 29 32.0 C \*E 38 36 \*E 40 10 \*E 40 24  
\*E 60 00 \*E 60 18 \*E 64 18  
I 01 29 13.3 D \*E 29 42  
S 01 28 52.0 D \*E 29 41  
C 01 29 07.8 C \*E 29 35  
N 01 29 11.4 C \*E 29 34  
POSSIBLY PKP OF PREVIOUS EARTHQUAKE.

S MAR 19 04 12 00.2 C 20 26 SS 24 34 L 27 18 LR 30 24  
R FROM N.W.  
MICRON 4.8  
SH 2.9  
MAXH 3.3  
PERIOD 10  
21  
27  
MAG 5.9-6.3 DIST DEG 65  
I 04 12 12.8 C \*E 12 26 \*E 41 10  
S 04 12 03.5 C 20 40 \*E 12 17 \*E 21 03 \*E 21 31  
C P\*P\* 41 03  
N 04 12 00.7 C \*E 12 15 \*E 41 10  
04 11 48.8 D \*I 11 56 \*I 12 06  
USCGS 04 01 36.7, 45.4N, 151.3E, H= 33 KM  
KURILE ISLANDS.

S MAR 19 11 27 22.5 D  
N 11 28 07.8 C

S MAR 19 17 33 04.0 C  
I 17 33 21.1 C  
S 17 33 13.3 C  
C 17 33 07.7 C  
N 17 32 55.1 D  
\*I 34 54  
\*E 33 17  
\*I 33 03 \*I 33 11

PRI MAR 20 10 56 39.4 D  
 JAS 10 56 30.6 C  
 MHC 10 56 27 D  
 MIN 10 56 11.3 D

BKS MAR 20 13 41 50.5 D 50 08 \*PP 42 04 \*E 42 12 \*E 57  
 \*E 57 12 \*E 59 36

MICRON PERIOD  
 PZ 0.07 1.0  
 SH 2.4 19  
 MAXH 2.4 20  
 MAG 5.5-5.9 DIST DEG 62

PRI 13 42 04.7 C \*PP 42 17  
 JAS 13 41 58.1 C \*PP 42 11 \*I 42 28 \*E 49  
 MHC 13 41 54.8 D \*PP 42 09  
 MIN 13 41 43.3 C \*I 41 56 \*I 42 40 \*I 49

USCGS 13 31 34.0, 45.6N, 151.4E, H= 51 KM, M=5  
 KURILE ISLANDS.

BKS MAR 20 13 51 15.0 C  
 PRI 13 51 22.8 C \*PP 51 37  
 JAS 13 51 16.0 C \*PP 51 30 PCP 51 52  
 MHC 13 51 13.5 C \*PP 51 28  
 MIN 13 51 01.7 C \*I 51 21

BKS MAR 20 14 02 28.0 C  
 PRI 14 02 35.6 C  
 JAS 14 02 29.3 C \*I 02 42 \*E 03 34  
 MHC 14 02 27.8 C \*E 02 41  
 MIN 14 02 16.2 D

USCGS 13 52 05.5, 45.6N, 151.5E, H= 32 KM, M=5  
 KURILE ISLANDS.

JAS MAR 20 14 54 42.2 D \*E 54 55  
 MIN 14 54 27.2 D \*E 55 40

PRI MAR 20 15 57 06.3 D  
 JAS 15 56 52.9 D \*I 57 06 \*I 57 47  
 MIN 15 56 38.6 C

USCGS 15 46 29.4, 45.6N, 151.2E, H= 60 KM, M=5  
 KURILE ISLANDS.

JAS MAR 20 17 22 01.0 C  
 USCGS 17 11 34.8 45.5N, 151.4E, H= 33 KM, M=5  
 KURILE ISLANDS.

BKS MAR 20 19 20 C 31 20 \*E 20 20 \*E 31 02 \*E 4  
 LR 47 42

MICRON PERIOD  
 2.95 30

DISTANCE DEG 86

PRI 19 20 10.4 C  
 JAS 19 20 14.6 C \*E 20 39 \*I 20 48  
 MHC 19 20 09.6 C  
 MIN 19 21 05.5 D

USCGS 19 07 25.2, 22.1S, 170.6E, H= 28 KM, M=5.5  
 LOYALTY ISLANDS REGION.

S MAR 21 11 36 47.0 C \*E 64 00  
 I 11 36 46.0 D  
 S 11 36 52.5 D \*E 37 13  
 C 11 36 47.3 D \*E 37 07  
 N 11 36 57.4 D \*E 37 33

USCGS 11 24 44.6, 23.8S, 175.2W, H= 33 KM, M=5.4  
 TONGA ISLANDS REGION.

S MAR 21 18 20 54.0 C  
 MICRON PERIOD  
 PZ 0.09 1.0  
 MAG 4.5 DIST DEG 61

I 18 20 41.0 D \*E 20 54  
 S 18 20 44.5 C \*E 21 00 \*E 21 14 \*E 21 52  
 C 18 20 50.2 C \*E 21 04  
 N 18 20 57.4 C \*I 21 39

I MAR 21 18 48 22.8 D  
 S 18 48 29.9 C \*E 48 48

S MAR 21 19 19 01.9 D  
 N 19 18 59.9 C

I MAR 22 00 23 10.6 D  
 S 00 23 23.6 D \*E 23 35  
 C 00 23 21.0 D

I MAR 22 06 07 04 C  
 S 06 06 55.5 C \*E 07 08  
 C 06 06 52.4 C  
 N 06 06 39.0 C

S MAR 22 13 13 C \*E 48 00  
 I 13 13 54.8 C  
 S 13 13 51.7 C \*E 14 04 \*I 14 22  
 C 13 13 51.0 C  
 N 13 13 59.7 C

S MAR 22 15 00 26.1 C 01 03  
 I 15 00 55.6 C  
 C 15 00 35.8 C  
 S 15 00 37.9 D 01 23 \*E 00 56  
 N 15 00 07.5 C 00 38 \*I 00 50 \*I 01 31 \*I 01 36  
 \*I 00 41

OFF CAPE MENDOCINO  
 MAGNITUDE 4.2

I MAR 22 19 25 45 C  
 S 19 25 48.4 C  
 C 19 25 43.6 C

S MAR 22 21 36 29.0 D  
 I 21 36 34.0 C  
 S 21 36 27.7 D

MHC 21 36 29.0 C  
 BKS MAR 22 23 58 \*E 07 50 \*E 76 30 \*E 79  
 R FROM S.w.  
 MICRON PERIOD  
 MAXH 2.3 22  
 JAS 23 58 14.1 C  
 BKS MAR 23 00 47 \*E 66 24 \*E 68 00  
 PRI 00 47 26.8 C  
 JAS 00 47 28.8 C \*E 47 56  
 MHC 00 47 23.5 D  
 PRI MAR 23 05 43 11.2 C \*I 43 23  
 JAS 05 43 05.4 C  
 MHC 05 43 05.8 C  
 BKS MAR 24 09 18 08.0 C  
 PP 19 51 PPP 21 04 \*E 24  
 SKS 25 46 PS 28 10 \*E 31  
 SS 34 30 LQ 43 30 LR 49  
 MICRON PERIOD  
 PZ 0.13 1.3  
 PPZ 1.0 7  
 MAXH 6.7 22  
 MAG 6.8-7.2 DIST DEG 120  
 PRI 09 18 12.2 C PP 20 05 \*E 20 16  
 JAS 09 18 10.7 C \*E 18 28 PP 19 50 \*E 20  
 \*E 21 50 PS 28 08  
 MHC 09 18 09.1 D PP 19 52 \*E 21 48  
 MIN 09 18 07.1 C \*I 18 40 \*I 20 23 \*I 21  
 PS 28 14  
 USCGS C9 00 19.5, 6.0S, 112.3E, H=600 KM, M=5.3  
 JAVA SEA.  
 BKS MAR 24 12 04 02.2 D \*E 04 33 \*E 13 55  
 PRI 12 04 05.8 D \*E 14 03  
 JAS 12 04 03.8 D  
 MHC 12 04 03.2 D  
 MIN 12 04 00.6 C \*E 12 04  
 JAS MAR 24 23 11 52.2 C  
 MHC 23 11 46.7 C  
 MIN 23 11 56.1 D  
 BKS MAR 25 06 11 07.3 C  
 PRI 06 11 16.2 C  
 JAS 06 11 07.7 C  
 MIN 06 10 55.5 D  
 PRI MAR 25 06 52 27.4 D \*E 52 35  
 JAS 06 52 23.0 C  
 PRI MAR 25 12 30 02.7 D  
 JAS 12 30 07.9 D  
 MHC 12 30 10.3 D  
 MIN 12 30 19.5 C

JAS MAR 25 14 37 28.3 C \*E 37 52  
 MIN 14 37 56.3 D  
 BKS MAR 25 22 58 18.0 C 66 40 \*E 69 56 LQ 73 36 LR 76 48  
 R FROM N.w.  
 MICRON PERIOD  
 PZ 0.72 12  
 SH 2.9 18  
 MAXH 4.0 12  
 MAGNITUDE 5.2 -5.6  
 PRI 22 58 38.0 C  
 JAS 22 58 22.5 D \*E 58 37 \*I 60 54  
 MHC 22 58 21.0 D \*E 58 35  
 MIN 22 58 08.2 C \*I 58 22 \*I 58 35  
 USCGS 22 47 58.4, 45.5N, 151.4E, H= 41 KM, M=5.5  
 KURILE ISLANDS.  
 PRI MAR 26 04 30 42.1 D  
 JAS 04 30 27.0 D  
 MHC 04 30 28.0 D  
 MIN 04 30 04.6 D \*E 30 54  
 JAS MAR 26 07 59 38.0 D \*I 59 46  
 MIN 07 59 19.3 D \*I 59 43  
 PRI MAR 26 20 54 56.0 C  
 JAS 20 54 50.4 C  
 MIN 20 54 44.1 D \*I 54 54  
 BKS MAR 26 22 52 26.5 C  
 PRI 22 52 27 C \*E 52 49  
 JAS 22 52 32.5 C \*E 52 55  
 MHC 22 52 28.2 D \*E 52 53  
 MIN 22 52 30.6 D  
 USCGS 22 39 01.5, 9.3S, 148.6E, H= 14 KM, M=5.3  
 EAST NEW GUINEA REGION.  
 PRI MAR 27 00 07 42.9 C  
 JAS 00 07 49.0 C  
 MHC 00 07 52 C  
 BKS MAR 27 08 36 28.0 C  
 PRI 08 36 15.9 C PP 38 28  
 JAS 08 36 20.8 D 44 19 PP 38 14  
 \*E 36 32 \*E 36 57 \*I 38 20  
 \*I 38 29 \*E 45 23  
 MHC 08 36 23.7 C PP 38 28  
 MIN 08 36 33.2 D PP 38 34 \*I 39 05  
 ARC 08 36 45.6 D  
 USCGS 08 26 34.5, 8.9S, 71.3W, H=603 KM, M=5.3  
 WESTERN BRAZIL.  
 JAS MAR 27 09 04 54.7 C  
 MIN 09 04 49.1 C  
 BKS MAR 27 09 11 05.5 C \*E 36 12

PRI 09 11 16.0 D \*E 11 28 \*E 11 35 \*I 17  
 JAS 09 11 09.3 D \*I 11 18  
 MIN 09 10 57.7 D  
 USCGS 08 58 25.5, 38.4N, 116.5E, H= 61 KM, M=5.0  
 NE CHINA. FELT IN PEKING AREA.

BKS MAR 27 10 14 18.0 C 25 00 \*E 25 48 \*E 26 20 \*E 36  
 \*E 37 18 \*E 40 12  
 MICRON PERIOD  
 PZ 0.09 1  
 MAXH 25.4 22  
 MAG 6.4-6.6 DIST DEG 86

PRI 10 14 20.5 C \*I 14 40  
 JAS 10 14 24.2 C  
 MHC 10 14 19.1 C  
 MIN 10 14 26.0 C  
 USCGS 10 01 42.0, 16.5S, 168.1E, H= 11 KM, M=5.0  
 NEW HEBRIDES ISLANDS. FELT.

JAS MAR 27 20 27 24.0 D  
 JAS MAR 28 02 04 41.4 C \*E 04 57  
 JAS MAR 29 02 01 18.9 C \*I 01 31  
 BKS 02 01 D \*E 16 26 \*E 17 12 \*E 20  
 PRI MAR 29 09 51 21.6 D \*E 51 30 \*I 51 38  
 JAS 09 51 17.1 D \*I 51 20  
 MIN 09 50 59.3 C  
 PRI MAR 29 13 25 28 C \*E 25 38  
 JAS 13 25 31.9 D \*E 25 42  
 BKS MAR 30 02 26 50 C \*E 38 22 \*E 57 00 \*E 63  
 PRI 02 27 01.6 C \*I 27 16 \*E 29 41 \*E 29  
 JAS 02 27 00.0 C  
 MHC 02 27 59.0 C \*I 27 02 \*I 27 16  
 MIN 02 26 56.6 C \*I 37 56 \*I 40 05  
 JAS MAR 30 02 36 47.6 C  
 JAS MAR 30 03 47 25.0 D  
 BKS MAR 30 23 16 \*E 35 36 \*E 38 30  
 JAS 23 16 32.8 D \*I 16 47 \*E 16 54  
 BKS MAR 31 02 19 \*E 27 58 \*E 32 00  
 PRI 02 19 24.9 C \*E 19 53  
 JAS 02 19 24.0 D \*I 19 36  
 MIN 02 19 25.4 C  
 USCGS 23 04 46, 16.9S, 176.9W, H= 33 KM, M=5.0  
 FIJI ISLANDS REGION.

JAS MAR 31 04 24 37.7 C \*E 25 05  
 MIN 04 24 42.3 D

BKS MAR 31 09 23 C \*E 37 30  
 JAS 09 23 47.5 C  
 MIN 09 23 38.9 C

PRI MAR 31 10 41 28.2 C \*E 41 37  
 JAS 10 41 28.0 C

PRI MAR 31 10 45 34.6 C  
 JAS 10 45 40.0 C  
 MIN 10 46 00.9 C

BKS MAR 31 20 17 38.2 C  
 PRI 20 17 41.6 C  
 JAS 20 17 45.0 C \*E 17 52 \*E 18 06 \*E 18 23  
 MHC 20 17 40.0 C  
 MIN 20 17 44.8 C

BKS APR 01 06 04 30.5 D 12 46 \*E 04 48 \*E 05 01 SS 17 08  
 \*E 20 00 \*E 22 20  
 R FROM N.W.  
 MICRON PERIOD  
 SH 4.4 17  
 MAXH 7.8 22  
 MAG 5.7-6.1 DIST DEG 63

PRI 06 04 51.1 C \*E 04 56 \*I 05 21 \*E 07 33  
 JAS 06 04 41.9 C \*E 04 53  
 MHC 06 04 39.1 C \*I 04 40 \*I 07 15 \*I 07 28  
 MIN 06 04 27.3 D  
 USCGS 05 54 19.1, 45.8N, 151.8E, H= 40 KM, M=5.7  
 KURILE ISLANDS.

JAS APR 01 07 58 51.5 C \*E 59 02 \*E 59 33  
 MIN 07 58 38.2 C \*I 58 47 \*I 59 27  
 USCGS 07 48 28, 45.9N, 152.0E, H= 40 KM, M=5.0  
 KURILE ISLANDS.

BKS APR 01 08 41 \*E 42 47 \*E 43 35  
 JAS 08 41 53.4 C \*E 42 11 \*E 42 19

BKS APR 01 10 49 15.3 C 55 56 LQ 59 30 LR 60 48  
 MICRON PERIOD  
 PZ 2.13 8.0  
 SH 7 14  
 MAXH 26.3 26  
 MAGNITUDE 5.9-6.1

PRI 10 48 57.6 C \*E 49 06 \*E 49 15  
 JAS 10 49 10.3 C \*E 57 14  
 MHC 10 49 08.9 C  
 USCGS 10 41 00.2, 4.6S, 105.8W, H= 33 KM, M=5.0  
 N. EASTER ISLANDS CORDILLERA.

BKS APR 01 12 33 52.5 C 42 16 \*I 34 04 SS 46 08 L 49 28  
 LR 51 42  
 R FROM N.W.  
 MICRON PERIOD  
 PZ 0.06 1.0

SH 6.C 16  
 MAXH 9.3 24  
 MAG 5.4-5.8 DIST DEG 62

PRI 12 34 05.2 C  
 JAS 12 33 59.0 C \*E 34 12 \*E 34 15  
 MHC 12 33 56.3 C  
 USCGS 12 23 35.5, 45.7N, 151.8E, H= 40 KM, M=5.9  
 KURILE ISLANDS.

BKS APR 01 14 10 53.7 C \*E 11 03  
 PRI 14 11 07.5  
 JAS 14 10 59.4 D \*I 11 06 \*E 11 11  
 MHC 14 10 57.1 C  
 USCGS 14 00 33.8, 45.8N, 151.7E, H= 23 KM, M=5.4  
 KURILE ISLANDS.

BKS APR 01 15 44 \*E 44 36  
 JAS 15 44 05.2 C \*E 44 26 \*E 44 57

JAS APR 01 17 31 31.5 D \*E 31 46  
 MHC 17 31 34.3 D  
 MIN 17 31 18.0 C

BKS APR 01 23 27 09.5 C \*E 27 29 \*E 34 48  
 PRI 23 27 33.0 C  
 JAS 23 27 16.8 C \*E 27 34  
 MIN 23 28 03.9 D \*I 28 14 \*I 28 18

JAS APR 02 02 05 38.6 D \*E 05 51  
 MIN 02 05 46.5 C

JAS APR 02 17 54 07.4 C \*I 54 32  
 BKS 17 54 \*E 83 18

R FROM S.W.  
 USCGS 17 40 38.8, 6.3S, 148.8E, H= 37 KM, M=5.4  
 NEW BRITAIN REGION.

PRI APR 02 20 16 54.3 C \*E 18 15  
 JAS 20 17 09.2 C 18 41 \*E 18 43  
 MHC 20 17 13.5 C  
 MIN 20 17 D \*E 18 29 \*I 20 05  
 MAGNITUDE ABOUT 4.7 DIST DEG 10

BKS APR 03 08 17 16 D \*E 17 34 PP 20 28 SKS 27  
 SCS 28 24 SS 33 38 LQ 40  
 \*E 45 48

R FROM WSW  
 MICRON PERIOD  
 PZ 0.82 8.0  
 PPZ 0.9 7.0  
 MAXH 5 19.0  
 MAGNITUDE 5.8-6.1

PRI 08 17 25.5 C  
 JAS 08 17 26.6 C \*I 17 37  
 MHC 08 17 22.6 C  
 MIN 08 17 25.0 C \*E 17 34

USCGS 08 04 15.4, 6.1S, 151.5E, H= 16 KM, M=4.9  
 NEW BRITAIN REGION.

BKS APR 03 13 10 20.3 D 20 04 \*E 10 34 \*E 23 50 L 29 30  
 LR 32 30

R FROM WSW  
 MICRON PERIOD  
 PZ 0.9 8.0  
 SH 1.57 16  
 MAXH 2.95 16  
 MAG 5.1-5.5 DIST DEG 75

PRI 13 10 20.9 C  
 AS 13 10 27.3 C \*PP 10 37 PCP 10 42  
 MHC 13 10 21.7 C  
 MIN 13 10 33.6 C  
 USCGS 12 58 40.9, 20.2S, 173.7W, H= 48 KM, M=5.3  
 TONGA ISLANDS.

AS APR 04 00 55 17.2 D \*E 64 08 \*E 66 48 \*E 78 00  
 KS 00 55 \*E 81 36 \*E 83 30

AS APR 04 04 04 49.8 D \*E 05 03  
 MIN 04 04 33.3 D \*I 04 46  
 USCGS 03 54 26.2, 45.5N, 152.2E, H= 42 KM, M=5.0  
 KURILE ISLANDS.

BKS APR 04 09 17 20.5 C \*E 17 31 \*E 18 46  
 PRI 09 17 31.7 C  
 AS 09 17 26.7 C \*E 17 44 \*E 18 01  
 MHC 09 17 24.2 C  
 MIN 09 17 14.8 C \*I 17 22  
 USCGS 09 06 01.1, 33.4N, 137.5E, H= 353 KM, M=5.2  
 NEAR S COAST OF HUNSHU, JAPAN.

BKS APR 05 01 03 D \*E 06 12 \*E 07 00  
 R FROM S.E.  
 MICRON PERIOD  
 MAXH 6.2 14  
 JAS 01 03 49.6 D \*I 04 04 \*I 05 13 \*E 05 39  
 MIN 01 03 D \*E 07 43

BKS APR 05 02 46 09.0 C 55 52 \*E 46 22 \*E 48 21 PPS 56 48  
 \*E 67 00 LR 69 00

R FROM N.W.  
 MICRON PERIOD  
 PZ 0.25 1.5  
 MAXH 3.3 20  
 MAG 5.6-5.8 DIST DEG 77

PRI 02 46 19.0 C \*E 46 27 \*E 46 32  
 JAS 02 46 16.3 C \*E 46 23 \*E 46 31 \*I 49 23  
 MHC 02 46 12.5 C \*I 56 28  
 MIN 02 46 06.9 D \*E 46 27  
 ARC 02 45 55.9 D \*I 46 22 \*I 46 28  
 USCGS 02 34 11.1, 20.0N, 147.1E, H= 50 KM, M=5.9

MARIANA IS. REGION.

BKS APR 05 02 59 53.7 D \*E 60 07  
 MICRON PERIOD  
 PZ 0.06 0.7  
 DISTANCE DEG 77  
 PRI 03 00 03.1 C  
 JAS 03 00 00.4 C \*E 02 06 \*I 10 13  
 MHC 02 59 56.8 C  
 MIN 02 59 52.0 D \*I 60 07  
 ARC 02 59 42.4 D  
 USCGS 02 47 55.4, 20.0N, 147.2E, H= 50 KM, M=5.7  
 MARIANA IS. REGION.

BKS APR 05 07 02 00.3 C  
 PRI 07 02 27.0 C  
 JAS 07 02 15.6 C \*E 02 27  
 MHC 07 02 10.0 C  
 MIN 07 01 54.7 C \*I 02 39  
 USCGS 07 00 57, 40.4N, 126.5W, H= 33 KM, M=4.1  
 OFF COAST OF NORTHERN CALIFORNIA.

PRI APR 05 11 58 11.7 C  
 JAS 11 58 28.1 D

BKS APR 05 23 45 43.0 C \*E 45 58  
 PRI 23 45 41.7 D \*E 45 56  
 JAS 23 45 47.6 D \*I 45 59  
 MHC 23 45 42.6 D  
 MIN 23 45 51.9 C  
 USCGS 23 33 06.0, 31.1S, 178.2W, H= 60 KM, M=5.2  
 KURILE ISLANDS.

PRI APR 06 02 04 33.0 C \*E 04 43  
 JAS 02 04 33.2 C \*E 04 47 \*I 05 06 \*I 07 03  
 MHC 02 04 36.1 C

PRI APR 06 02 47 05.8 C \*I 47 13  
 JAS 02 47 03.0 C  
 MHC 02 47 08 C  
 USCGS 02 34 24.1, 29.6N, 129.8E, H= 31 KM, M=5.4  
 RYUKYU ISLANDS.

BKS APR 06 06 29 18.0 C \*E 29 44  
 PRI 06 29 28.3 C \*E 29 45  
 JAS 06 29 24.0 D  
 MHC 06 29 22.0 C  
 MIN 06 29 11.7 D \*I 29 38  
 USCGS 06 17 29.3, 34.4N, 139.0E, H= 13 KM, M=5.1  
 NEAR S COAST OF HONSHU, JAPAN.

BKS APR 06 09 01 28.7 D \*E 01 51 \*E 24 00  
 JAS 09 01 33.3 D  
 MIN 09 01 20.8 D  
 USCGS 08 49 41.3, 34.4N, 139.1E, H= 33 KM M=5.0  
 NEAR S COAST OF HONSHU, JAPAN.

BKS APR 06 09 18 21.8 C \*E 18 36 \*E 24 00  
 PRI 09 18 37.3 C  
 JAS 09 18 31.5 D  
 MHC 09 18 27.0 D  
 MIN 09 18 24.4 C

BKS APR 06 12 33 58.2 D \*E 43 42 \*E 44 26 \*E 47 44  
 \*E 57 18  
 MICRON PERIOD  
 PZ 0.05 0.7  
 SH 2.3 32  
 MAXH 3.5 32  
 MAG 5-5.4 DIST DEG 77

PRI 12 34 08.0 D \*E 34 20  
 JAS 12 34 05.4 D \*E 34 25  
 MHC 12 34 01.7 D  
 MIN 12 33 56.5 D \*I 34 10  
 ARC 12 33 46.5 D  
 USCGS 12 21 57.0, 20.1N, 147.2E, H= 22 KM, M=5.7  
 MARIANA IS. REGION.

BKS APR 06 23 40 39.5 D \*E 63 24  
 PRI 23 40 51.3 D  
 JAS 23 40 46.0 D \*I 40 59  
 MHC 23 40 43.2 D  
 MIN 23 40 33.6 D

USCGS 23 28 51.0, 34.3N, 139.1E, H= 15 KM, M=5.1  
 NEAR S COAST OF HONSHU, JAPAN.

JAS APR 06 23 43 48.3 D  
 MIN 23 43 35.5 D  
 USCGS 23 32 10.6, 36.3N, 140.5E, H= 44 KM, M=5.2  
 NEAR E COAST OF HONSHU, JAPAN.

BKS APR 07 15 01 21.0 C \*E 02 45  
 PRI 15 01 01.2 C \*E 01 11 \*E 01 47  
 JAS 15 00 52.0 C \*E 01 07 \*E 01 35 \*I 01 57  
 MHC 15 01 10.5 C  
 MIN 15 01 28.0 D \*I 03 00

BKS APR 07 15 12 D \*E 12 53  
 PRI 15 12 18.8 C  
 JAS 15 12 17.1 C  
 MHC 15 12 35.5 C  
 MIN 15 12 42.2 D \*I 13 03

BKS APR 07 19 49 20.7 D  
 PRI 19 49 34.0 C  
 JAS 19 49 27.3 C  
 MHC 19 49 24.5 C  
 USCGS 19 39 12.8, 47.0N, 146.0E, H=296 KM, M=5.0  
 SEA OF OKHOTSK.

JAS APR 08 04 16 42.1 C  
 MIN 04 16 23.2 D



BKS APR 08 05 46 16.0 D \*E 47 23  
 MICRON PERIOD  
 PZ 0.14 0.8  
 PRI 05 46 16.0 C  
 JAS 05 46 21.6 C 55 38 \*E 46 41 \*I 47 24 \*I 48 38  
 MHC 05 46 16.3 C \*I 55 58  
 MIN 05 46 24.6 C \*I 48 34  
 USCGS 05 35 17.1, 19.9S, 178.6W, H=616 KM, M=5.3  
 FIJI IS. REGION.

PRI APR 08 09 41 54.0 C  
 JAS 09 41 59.3 C \*I 42 29  
 MIN 09 42 10.8 C

BKS APR 09 00 19 06 C PS 32 16 \*E 33 30 SS 37 40  
 L 46 48 LR 50 54  
 R FROM WSW  
 MICRON PERIOD  
 MAXH 2.9 17  
 PRI 00 19 08.7 D  
 JAS 00 19 13.1 D  
 MIN 00 19 13.7 C  
 USCGS 00 05 07.0, 4.0S, 135.8E, H= 15 KM, M=5.1  
 W NEW GUINEA REGION.

PRI APR 09 01 39 11.3 D  
 JAS 01 39 16.8 C \*E 40 53  
 MIN 01 39 20.9 C

BKS APR 09 06 41 32.5 C  
 PRI 06 41 32.4 C  
 JAS 06 41 38.1 C  
 MHC 06 41 33.0 C  
 MIN 06 41 42.1 D \*E 43 57  
 ARC 06 41 36.5 D

BKS APR 09 09 09 \*E 20 50 \*E 34 24 \*E 39 30  
 JAS 09 09 55.2 D  
 MIN 09 09 53.1 D  
 USCGS 08 56 59.7, 7.2S, 155.8E, H= 40 KM, M=5.1  
 SCLCOMON ISLANDS. FELT AT BUIN.

JAS APR 09 18 11 18.5 D

BKS APR 09 21 31 20 D \*E 38 30 \*E 61 08 \*E 63 30  
 JAS 21 31 24.8 C

BKS APR 10 00 08 46 C 18 26 \*E 27 06 \*E 30 16 \*E 33 30  
 R FROM S.W.  
 MICRON PERIOD  
 PZ 0.88 6.0  
 SH 0.96 20  
 MAXH 1.4 18  
 MAG 5.0-5.4 DIST DEG 74  
 PRI 00 08 49.5 C  
 JAS 00 08 56.0 C

MHC 00 08 50.2 C  
 MIN 00 08 59.1 C  
 USCGS 21 18 36.5, 7.3S, 155.7E, H= 44 KM, M=5.6  
 SCLCOMON ISLANDS.

BKS APR 10 05 12 43 C 22 54 \*PPP 16 05 PS 23 42 PPS 24 40  
 \*E 24 36 \*E 27 42 SS 29 00  
 SSS 32 40 L 36 08 LR 39 24  
 R FROM WSW  
 MICRON PERIOD  
 PZ 0.65 10  
 MAXH 3.5 17  
 MAG 5.2-5.6 DIST DEG 90  
 PRI 05 12 48.4 C  
 JAS 05 12 49.3 C \*I 13 17  
 MIN 05 12 48.9 C \*I 13 16  
 USCGS 04 59 53.9, 7.4S, 155.7E, H= 37 KM, M=5.5  
 SCLCOMON ISLANDS. FELT AT BUIN.

PRI APR 10 10 14 44.9 C  
 JAS 10 14 49.2 C \*I 15 17

BKS APR 10 15 15 29.5 C 26 06 \*E 15 51 \*E 16 30 PP 18 54  
 \*E 24 44 PPS 27 30 SS 31 30  
 SSS 35 18 L 38 36 \*E 36 18  
 LR 42 00  
 R FROM W  
 MICRON PERIOD  
 PZ 0.06 1.2  
 PPZ 0.83 15  
 SH 3.25 36  
 MAXH 8.7 16  
 MAG 5.2-5.6 DIST DEG 86  
 JAS 15 15 37.8 C \*E 15 50 \*E 16 47 PP 19 11  
 PRI 15 15 36.7 C \*E 15 47 PP 19 05  
 MHC 15 15 32.9 D  
 USCGS 15 02 42.2, 7.3S, 155.8E, H= 29 KM, M=5.6  
 SCLCOMON ISLANDS. FELT AT BUIN.

BKS APR 10 17 01 10 D PP 01 28 P) 04 50 \*E 07 44  
 \*E 15 28 SS 21 06 SSS 22 00  
 L 32 12 \*E 37 00  
 R FROM SSW  
 MICRON PERIOD  
 MAXH 5.7 18  
 DISTANCE DEG 110

PRI APR 10 19 03 45 C \*E 04 06  
 JAS 19 03 30.3 C  
 USCGS 19 00 25.6, 39.9N, 104.8W, H= 5 KM, M=4.8  
 COLORADO. SLIGHT DAMAGE AT DENVER. FELT  
 AT GOLDEN, GREELEY AND PUEBLO.

BKS APR 10 20 03 49.3 D \*E 03 56 \*E 04 54 LR 70 42  
 R FROM N.W.  
 MICRON PERIOD

PRI 20 03 50.3 D PZ 0.13 1.0 \*PP 04 19  
 JAS 20 03 37.2 D \*PP 03 56 \*E 10 11 \*I 10 22  
 MHC 20 03 32.1 C \*PP 03 55  
 MIN 20 03 15.5 C \*I 03 34  
 USCGRS 19 57 34.4, 58.6N, 154.3W, H= 86 KM, M=5.5  
 ALASKA PENINSULA.

PRI APR 11 02 18 19.3 D  
 JAS 02 18 06.0 C

BKS APR 11 05 26 20 C PP 29 26 PS 38 30 SS 44 28  
 \*E 51 18 \*E 56 00 LR 61 18  
 R FROM W  
 USCGRS 05 09 12.1, 3.3S, 119.2E, H= 21 KM, M=5.2  
 CELEBES. 37 KILLED, 51 INJURED IN  
 MAJENE AND POLMAS AREA.

BKS APR 11 10 52 16.3 D \*E 52 29  
 PRI 10 52 04.9 D  
 MHC 10 52 12.7 D \*I 52 38  
 JAS 10 52 06.7 D  
 MIN 10 52 22.5 C  
 USCGRS 10 40 21.5, 23.2S, 68.8W, H= 93 KM, M=5.0  
 NORTHERN CHILE.

BKS APR 11 12 52 16 C \*E 59 28 \*E 65 22 \*E 69 48  
 \*E 71 36  
 R FROM N.E.  
 MICRON PERIOD  
 MAXH 3.6 14  
 PRI 12 52 08.5 C \*E 52 18  
 JAS 12 52 04.7 C \*E 52 24  
 MHC 12 52 11.8 C  
 MIN 12 52 13.5 D  
 USCGRS 12 42 47.7, 18.8N, 62.7W, H= 49 KM, M=5.2  
 LEEWARD ISLANDS.

PRI APR 12 00 59 42.4 C \*E 59 52  
 JAS 00 59 24.0 C \*E 59 29  
 MIN 00 58 57.2 C \*PP 59 04 \*I 59 22

PRI APR 12 04 44 07.4 C \*I 44 35 \*I 44 55  
 JAS 04 44 10.0 C  
 MHC 04 44 05.0 C  
 MIN 04 44 26.6 D

JAS APR 12 04 50 09.2 C \*I 50 40

BKS APR 12 05 10 35.0 C \*E 11 08 \*E 11 46 PP 12 21  
 SKS 17 38 \*E 20 20 \*E 23 20  
 P\*p\* 28 28 SS 29 16 \*E 32 00  
 L 43 30 \*E 47 24

R FROM N.W.  
 MICRON PERIOD  
 PPZ 0.14 2.7

PPH 3.0 18  
 SH 3.4 16  
 MAXH 30 40  
 MAG 6.0 DIST DEG 126  
 PRI 05 10 41.0 C \*E 11 10 PP 12 26 \*I 13 31  
 JAS 05 10 34.9 C PP 12 16  
 MIN 05 10 32.4 D  
 USCGRS 04 51 40.2, 5.3N, 96.5E, H= 55 KM, M=6.1  
 NORTHERN SUMATRA. MINOR DAMAGE AT PENANG,  
 MALAYSIA.

PRI APR 12 05 54 47.8 D  
 JAS 05 54 44.6 C  
 MHC 05 54 41.6 D  
 MIN 05 54 37.6 D  
 USCGRS 05 42 20.9, 13.8N, 144.6E, H=139 KM, M=5.2  
 MARIANA ISLANDS. FELT ON GUAM.

BKS APR 12 14 07 43 C 18 32 PPS 19 43 \*E 23 50 \*E 27 18  
 L 31 00 \*E 33 30 LR 34 48

R FROM WSW  
 MICRON PERIOD  
 PZ 0.84 14  
 SH 1.1 20  
 MAXH 3.7 16  
 MAG 4.9-5.3 DIST DEG 87

JAS 14 07 51.7 C  
 MHC 14 07 42.4 C  
 MIN 14 07 50.8 D  
 USCGRS 13 54 57.2, 7.3S, 155.6E, H= 52 KM, M=5.2  
 SOLOMON ISLANDS.

JAS APR 12 14 39 13.0 C  
 MIN 14 39 32.1 D  
 PRI APR 12 21 34 30.6 C \*E 34 58  
 JAS 21 34 46.9 C \*E 35 09  
 MIN 21 34  
 USCGRS 21 22 09.3, 35.5S, 73.3W, H= 12 KM, M=5.3  
 OFF COAST OF CENTRAL CHILE.

BKS APR 13 04 27 01.3 C  
 PRI 04 27 03.2 D  
 JAS 04 27 06.8 D \*I 28 28 PP 30 31  
 MHC 04 27 02.1 D  
 MIN 04 27 08.2 C  
 USCGRS 04 14 33.6, 18.7S, 168.8E, H=123 KM, M=5.2  
 NEW HEBRIDES ISLANDS.

PRI APR 13 14 35 55.3 C  
 JAS 14 36 06.4 C \*E 36 30  
 MHC 14 35 58.9 C  
 MIN 14 35 C \*I 36 16  
 USCGRS 14 26 49.5, 7.0S, 151.0W, H= 33 KM, M=5.2  
 LINE ISLANDS REGION.

BKS APR 13 17 24 35.0 C \*E 24 46  
 PRI 17 24 35.8 C  
 JAS 17 24 41.2 C \*E 24 59  
 MHC 17 24 35.7 C  
 MIN 17 24 44.9 D  
 USCGS 17 13 43.5, 18.0S, 178.6W, H=610 KM, M=5.0  
 FIJI ISLANDS REGION.

BKS APR 13 18 49 41.0 C \*E 50 37  
 PRI 18 49 56.2 C  
 JAS 18 49 48.2 C \*E 49 58 \*E 50 15  
 MHC 18 49 46.0 C  
 MIN 18 49 21.5 C  
 USCGS 18 40 07.7, 52.1N, 157.6E, H= 50 KM, M=5.3  
 KAMCHATKA.

BKS APR 13 20 05 30.5 C 10 14 PP 06 27 \*E 06 46 \*SS 10 45  
 PCS 12 08 \*E 12 35 \*E 13 36  
 R FROM ESE  
 MICRON PERIOD  
 PZ 0.04 1.0  
 PPZ 0.07 1.2  
 SH 1.2 16  
 MAXH 4.5 24  
 MAG 4.3-4.7 DIST DEG 28  
 PRI 20 05 11.7 D \*E 05 23  
 JAS 20 05 20.3 C \*E 05 33 \*I 06 00 PCP 08 45  
 MHC 20 05 24.0 D  
 MIN 20 05 41.2 D \*I 06 23 \*I 06 35  
 USCGS 19 59 51.9, 18.5N, 100.2W, H= 86 KM, M=5.6  
 GUERRERO, MEXICO. FELT AT MEXICO CITY,  
 IGUALA, COYUKA AND CATALAN.

PRI APR 14 04 47 08.9 C  
 JAS 04 47 07.1 D \*I 47 53  
 MIN 04 47 05.2 D

BKS APR 14 04 50 10.7 D \*E 50 20 \*E 61 30 \*E 62 00  
 JAS 04 50 08.5 C  
 MHC 04 50 11.0 C  
 MIN 04 50 42.7 C

BKS APR 14 05 24 \*E 31 30 \*E 33 00  
 PRI 05 24 04.8 D  
 JAS 05 24 13.9 D \*E 24 26 \*E 25 28 \*E 27 47  
 MHC 05 24 17.4 D

JAS APR 14 10 08 03.3 D  
 MHC 10 08 07.5 C  
 MIN 10 08 34.5 C

PRI APR 14 15 35 49.1 C  
 JAS 15 35 40.6 C \*E 35 51  
 MHC 15 35 36.9 C  
 MIN 15 35 21.7 C

BKS APR 14 22 48 32 D  
 PRI 22 47 51.4 D \*E 48 11  
 MHC 22 48 10.8 C 48 43  
 JAS 22 48 12.2 C \*E 48 47  
 MIN 22 48 C \*I 49 06 \*I 49 52

PRI APR 15 09 12 41.5 D  
 JAS 09 12 47.0 C  
 MHC 09 12 42.3 D

PRI APR 16 07 30 27.5 D  
 JAS 07 30 32.3 D  
 MHC 07 30 27.3 C \*E 30 35  
 MIN 07 30 34.4 D \*E 30 49

USCGS 07 18 11.8, 19.4S, 175.9E, H= 38 KM, M=5.3  
 SOUTH OF FIJI ISLANDS.

JAS APR 16 10 20 23.5 C \*E 20 34 \*I 20 38  
 MHC 10 20 09.3 C  
 MIN 10 20 18.0 C \*I 20 43

USCGS 10 10 06.7, 46.4N, 153.3E, H= 24 KM, M=5.3  
 KURILE ISLANDS.

JAS APR 16 16 20 34.9 D \*I 20 42  
 MHC 16 20 37 C

BKS APR 17 11 30 48.5 C \*E 42 12 \*E 42 42 \*E 51 24  
 LR 56 00

R FROM WSW  
 PRI 11 30 53.5 C  
 JAS 11 30 53.0 C \*E 31 05  
 MIN 11 30 44.0 C \*I 31 04

JAS APR 19 18 16 18.1 D \*I 16 25  
 MIN 18 15 52.8 C

BKS APR 19 22 05 C \*PP 06 12 \*SP 06 23  
 PRI 22 05 36.4 C \*E 06 01  
 JAS 22 05 36.0 C \*PP 06 01 \*SP 06 13  
 MHC 22 05 43.3 C \*PP 06 08 \*SP 06 20  
 MIN 22 06 09.3 C \*I 06 21

USCGS 21 57 05.1, 18.8N, 69.6W, H=103 KM, M=5.0  
 DOMINICAN REPUBLIC REGION.

MIN APR 20 03 10 34.6 C

BKS APR 20 04 21 06.3 D  
 MICRON PERIOD  
 PZ 0.02 0.7  
 MAG 4.6 DIST DEG 83

PRI 04 21 15.6 C  
 MHC 04 21 08.8 C  
 JAS 04 21 06.9 C  
 MIN 04 20 53.8 C \*I 21 20

USCGS 04 07 57.6, 49.7N, 78.1E, H= 0, M=5.7  
 EASTERN KAZAKH SSR.

BKS APR 21 08 33 42 C 41 08 \*E 34 38 PKS 36 47 SKS 40 10  
 SP 42 40 SS 49 00 SSS 52 40  
 \*E 55 40 L 59 12 LR 64 24

R FROM WNW  
 MICRON PERIOD  
 PZ 0.91 8  
 PP 1.1 10  
 SH 1.55 18  
 MAXH 14 28  
 MAG 6.4-6.6 DIST DEG 106

PRI 08 33 31.6 C \*E 33 43 \*E 44 07 \*I 48 09  
 JAS 08 33 30.3 C  
 MHC 08 33 28.6 C  
 USCGS 08 14 25.0, 5.4S, 126.9E, H= 33 KM  
 BANDA SEA.

PRI APR 21 15 09 02.4 C \*I 10 08  
 JAS 15 09 58.3 C 10 58  
 MHC 15 10 10.9 C  
 MIN 15 10 26.5 C \*I 10 51

PRI APR 21 16 49 55.9 C \*E 50 40  
 JAS 16 49 53.5 C  
 MHC 16 50 04.0 C

BKS APR 22 08 56 \*E 66 24 LQ 83 10 LR 87 06  
 MICRON PERIOD  
 MAXH 0.8 20  
 MAG 5 1/4 DIST DEG 103  
 JAS 08 56 24.9 D \*E 56 45 \*E 56 57 \*I 57 03  
 \*I 59 19

JAS APR 22 12 28 08.7 D \*E 28 08  
 MIN 12 27 50.9 C

PRI APR 22 13 26 C \*E 28 21  
 JAS 13 26 35.8 C \*I 27 45 \*I 28 31  
 MIN 13 26 31.1 D \*E 28 11

BKS APR 22 14 51 45.5 C \*E 65 45 LQ 69 28  
 MICRON PERIOD  
 MAXH 0.8 20  
 MAG 4 3/4 - 5 DIST DEG 72

PRI 14 51 32.2 D \*I 51 56 \*E 53 23  
 JAS 14 51 36.8 C  
 MHC 14 51 40.8 D  
 MIN 14 51 51.6 D \*I 52 10  
 USCGS 14 43 21.4, 8.3N, 82.8W, H= 40 KM, M=5.0  
 PANAMA-COSTA RICA BORDER REGION.

BKS APR 23 14 03 \*E 10 34  
 PRI 14 03 41.3 D \*I 04 10  
 JAS 14 03 51.0 D  
 MHC 14 03 54.0 D  
 MIN 14 04 13.9 D \*E 04 41

BKS APR 23 17 37 \*E 41 22 \*E 42 04  
 PRI 17 37 32.4 C  
 JAS 17 37 28.1 C  
 MHC 17 37 34.0 C  
 MIN 17 37 58.8 D

BKS APR 23 18 05 24.5 C  
 PRI 18 05 22.2 C \*E 05 33  
 JAS 18 05 19.5 D  
 MHC 18 05 16.5 C  
 MIN 18 05 12.3 D  
 USCGS

17 52 51.0, 13.5N, 146.1E, H= 56 KM, M=5.6  
 SOUTH OF MARIANA ISLANDS. FELT ON GUAM.

PRI APR 23 22 33 21.0 C \*I 34 04 \*I 35 21  
 JAS 22 33 41.0 C  
 MHC 22 33 43.8 C  
 MIN 22 33 55.8 D

PRI APR 24 03 02 58.5 C  
 JAS 03 03 01.3 C  
 MHC 03 02 56.2 C  
 MIN 03 03 00.6 D

PRI APR 24 08 15 48.7 C  
 JAS 08 15 54.3 C  
 MHC 08 15 49.1 C  
 MIN 08 15 56.9 C \*I 16 04

JAS APR 24 10 08 34.5 C  
 MIN 10 07 54.3 D

JAS APR 24 15 23 42.3 C

JAS APR 25 10 44 12.3 C \*E 44 25 \*E 44 51 \*I 44 57  
 MIN 10 43 48.6 D \*I 44 00

BKS APR 25 10 48 53.2 D \*PP 49 02 \*E 78 48 \*E 85 00  
 DISTANCE DEG 111  
 PRI 10 48 42.9 C \*E 48 52  
 JAS 10 48 48.4 C \*E 48 57 \*E 49 09  
 MHC 10 48 50.0 C \*E 48 59  
 MIN 10 48 59.5 D \*I 49 07 \*I 49 35  
 USCGS

10 36 14.3, 32.9S, 69.0W, H= 39 KM, M=5.7  
 MENDOZA PROVINCE, ARGENTINA. MINOR DAMAGE  
 AT MENDOZA. FELT AT SAN JUAN.

JAS APR 25 12 02 22.1 D

JAS APR 25 12 41 05.0 C \*E 41 26

JAS APR 25 15 36 43.4 D \*E 37 35

BKS APR 26 06 46 34.8 D  
 PRI 06 46 37.8 C

JAS 06 46 31.5 D  
MHC 06 46 35.8 D  
MIN 06 46 45.4 D

BKS APR 26 07 20  
MAXH MICRON 2.0  
PRI 07 20 24.0 C  
JAS 07 20 24.6 C  
MIN 07 20 D

BKS APR 26 21 58  
JAS 21 58 43.6 C  
MIN 21 58 45.9 C

BKS APR 27 00 54  
PRI 00 54 29.8 C  
JAS 00 54 23.9 D

BKS APR 27 08 33  
BKS APR 27 14 46 23.0 C  
PRI 14 46 02.2 C  
JAS 14 45 57.2 C  
MHC 14 46 10.5 C  
MIN 14 46 22.1 C

JAS APR 28 07 31 27.5 C  
MIN 07 31 27.4 C

PRI APR 28 07 57 01.1 C  
JAS 07 57 07.9 C  
MHC 07 57 03.5 C  
MIN 07 57 08.2 D

BKS APR 28 12 58 27.5 59 03  
PRI 12 58 15.3 D 58 42  
JAS 12 58 07.0 C  
MHC 12 58 20.7 D 58 52  
MIN 12 58 40.2 C

BKS APR 28 22 55  
PRI 22 55 23.1 C  
JAS 22 55 08.1 C  
MHC 22 55 09.3 C  
MIN 22 55 D

BKS APR 29 00 08 09.3 D  
PRI 00 08 37.5 C  
JAS 00 08 15.0 C  
MHC 00 08 17.8 D  
MIN 00 07 43.5 D  
USCGS

\*E 46 42

LR 23 06 \*E 25 41

PERIOD 20  
\*E 20 38 \*E 20 56 \*I 21 59  
\*E 20 33 \*E 20 51  
\*E 21 11 \*E 24 30

\*E 22 09 LR 22 23

\*E 78 24 \*E 80 00 LR 84 42

\*I 54 31

\*E 36 06 \*E 41 21 LR 54 00

\*I 46 06 \*I 46 56

\*I 40 45

\*I 32 00

\*I 59 28

LQ 57 14 LR 58 12

\*I 55 28 \*E 56 06 \*E 56 50

\*I 58 59 \*I 59 10

\*E 10 30 LR 10 58

\*I 08 22 \*E 08 29 \*I 11 34

\*E 08 29

\*I 08 11

00 04 41.8, 51.2N, 130.4W, H= 6, M=5.1  
QUEEN CHARLOTTE IS. REGION.

\*I 14 40

JAS APR 29 03 14 28.1 D

MIN 03 14 C

BKS APR 29 04 03 02.2 D  
PRI 04 03 19.3 C  
JAS 04 03 11.1 C

MIN 04 02 53.2 C  
USCGS

BKS APR 29 06 36 55.0 C  
JAS 06 36 02.9 C  
MIN 06 36 D

PRI APR 29 12 33 29.9 C  
JAS 12 33 22.3 C  
MHC 12 33 20.2 C  
MIN 12 33 04.6 C  
USCGS

JAS APR 29 12 42 35.5 C  
MIN 12 42 39.7 D

JAS APR 29 22 13 47.8 D

JAS APR 30 02 47 56.9 C  
MIN 02 47 15.5 D

BKS APR 30 07 36 06.5 C 45 45  
PRI 07 35 46.7 C  
JAS 07 35 52.2 C  
MHC 07 35 54.4 C  
MIN 07 36 15.1 C

JAS APR 30 11 17 47.1 C  
MIN 11 17 24.2 D

BKS APR 30 13 27 R FROM S.E.  
JAS MIN 13 27 23.2 C  
13 27 45.7 C

BKS APR 30 16 35 R FROM S.E.  
JAS MIN 16 35 08.9 C  
16 35 25.8 C

BKS APR 30 17 23 16

BKS MAY 01 07 22 20 C

\*E 14 50

\*E 09 04 LQ 12 12 LR 13 42

09 33 \*I 03 24 \*I 03 35 \*E 04 12  
SCP 08 49 \*I 09 41  
\*I 08 49

03 55 20.8, 51.4N, 178.3W, H= 50 KM, M=6.0  
ANDREANUF IS., ALEUTIAN ISLANDS.

\*E 37 47  
\*E 37 54

\*E 33 43  
\*I 33 37 \*E 34 17

\*I 33 18 \*I 33 36  
12 25 32.7, 51.5N, 178.2W, H= 51 KM, M=5.3  
ANDREANUF IS., ALEUTIAN ISLANDS.  
FELT AT ADAK.

\*E 47 38

\*E 36 17 SS 49 17 \*E 51 10  
L 56 54 LR 62 00

\*E 35 57  
\*E 36 03 \*E 36 11 PCP 36 28  
\*E 36 05  
\*PP 36 28

\*I 18 19  
\*I 17 59

LR 36 30

LR 48 24

\*I 35 24

\*E 25 32 \*E 30 42 \*E 43 18

PP 26 22 \*E 32 40 \*E 34 30  
SS 40 30 SSS 44 12 \*E 51 42  
LR 54 42

R FROM N.E.

PRI  
JAS  
MIN

07 22 34.0 C  
07 22 23.8 C  
07 22 19.5 D

MICRCN PERIOD  
PZ 0.67 8  
PPZ 0.46 10  
MAXH 6.1 20  
MAG 5.8-6.2 DIST DEG 98  
\*E 22 48  
\*I 23 02

USCGS 07 09 00.5, 39.7N, 21.3E, H= 15 KM, M=5.6  
GREECE. 9 PERSONS KILLED, 54 INJURED.  
DAMAGE IN NW GREECE.

JAS MAY 01 07 39 17.0 C \*I 39 55  
\*E 36 12 \*E 47 54 LR 53 00

BKS MAY 02 17 27  
JAS 17 27 02.0 C \*E 55 48 LR 57 24  
\*E 51 41 \*I 51 47

BKS MAY 02 23 51  
PRI 23 51 20.3 C  
JAS 23 51 31.9 C  
MHC 23 51 33.0 C

BKS MAY 03 00 36 36 C 40 44  
MICRCN PERIOD  
MAXH 1.2 12  
\*E 36 35  
\*E 36 52 \*I 37 03

PRI 00 36 14.5 C  
JAS 00 36 30.5 C  
MHC 00 36 33.1 C  
MIN 00 36 58.6 C

BKS MAY 04 05 07  
PRI 05 07 51.1 C  
JAS 05 07 31.7 C  
MHC 05 07 28.2 C  
MIN 05 07 38.9 D

BKS MAY 04 08 36 25.7 D \*E 14 36 \*E 14 54 \*E 16 00  
\*E 36 37 \*E 37 33 \*E 46 20  
\*E 47 10 SS 54 56 SSS 59 36  
\*E 63 18 \*E 69 00 LR 77 00

R FROM S.E.  
MICRCN PERIOD  
MAXH 1.2 20  
DIST DEG 135

PRI 08 36 32.6 C \*E 36 35 \*I 37 00 \*I 39 55  
JAS 08 36 24.0 C  
MHC 08 36 24.3 C  
MIN 08 36 27.8 C

USCGS 08 17 32.1, 55.7S, 27.9W, H= 33 KM, M=5.8  
SCOUTH SANDWICH ISLAND REGION.

BKS MAY 04 10 30 \*E 40 28 \*E 50 18  
JAS 10 30 52.9 C \*I 31 04  
MIN 10 31 01.1 D

JAS MAY 04 12 38 37.9 D \*E 38 55

MIN 12 38 26.8 C \*I 56 08  
JAS MAY 04 18 55 58.5 C \*E 37 52 \*E 39 24 \*E 39 42  
\*E 38 43 \*E 39 01  
BKS MAY 04 22 37 10 D \*I 37 28 \*I 38 23 \*E 39 16  
PRI 22 36 52.5 C \*E 39 36 \*E 39 45  
JAS 22 37 08.9 C  
MHC 22 37 C  
MIN 22 37 51.5 C \*E 40 50

JAS MAY 04 23 37 25.6 C \*I 37 51  
\*I 33 07

BKS MAY 05 09 32 16.0 C \*E 32 43 \*I 33 46  
PRI 09 32 40.7 D \*E 33 34  
JAS 09 32 35.4 D \*I 32 53  
MHC 09 32 25.9 D  
MIN 09 32 12.4 C

OFF COAST OF NORTHERN CALIF.  
MAGNITUDE 4.2

BKS MAY 05 15 12 45.4 D 23 08 \*E 12 57 PS 24 12 SS 29 12  
SSS 32 20 L 35 18 LR 39 06

R FROM WSW  
MICRCN PERIOD  
PZ 0.06 0.8  
SH 1.8 20  
MAXH 3.8 32  
MAG 5.1-5.5 DIST DEG 85

PRI 15 12 49.1 C \*I 13 31  
JAS 15 12 51.1 C  
MHC 15 12 46.4 C

USCGS 15 00 07.7, 10.5S, 161.3E, H= 41 KM, M=5.4  
SCLOMON ISLANDS. FELT AT HONIARA.

BKS MAY 05 17 12 19.0 D \*E 14 19 \*E 18 00  
PRI 17 12 37.8 C \*E 12 36 \*I 12 48  
JAS 17 12 22.9 C  
MHC 17 12 24.7 C  
MIN 17 12 00.9 D \*I 12 24

PRI MAY 05 17 57 13.0 D  
JAS 17 57 11.0 D  
MHC 17 57 10.5 C

BKS MAY 06 04 55 26.8 D \*E 55 47  
PRI 04 55 38.5 D \*E 55 43  
JAS 04 55 35.8 D \*I 55 26  
MHC 04 55 32.1 D  
MIN 04 55 16.8 C

BKS MAY 06 13 17 21.3 C  
PRI 13 17 30.0 C  
JAS 13 17 28.1 C  
MHC 13 17 24.3 C  
MIN 13 17 20.3 C

BKS MAY 06 14 09 26.0 C \*E 09 35 \*E 09 52 \*E 10 16  
LR 25 00  
R FROM S.E.  
MICRON PERIOD  
PZ C.07 1.0  
DISTANCE DEG 55  
PRI 14 09 13.7 C \*E 09 24 \*I 09 28 \*E 09 49  
JAS 14 09 15.0 C \*E 09 34  
MHC 14 09 22.4 C  
MIN 14 09 23.8 C  
USCGS 14 00 41.4, 19.3N, 70.0W, H= 39 KM, M=5.3  
DOMINICAN REPUBLIC REGION.

JAS MAY 06 19 59 52.8 C  
MIN 19 59 39.5 D  
BKS MAY 07 06 48 \*E 53 26 \*E 56 42 LR 58 06  
R FROM S.E.  
JAS 06 48 22.3 C \*E 48 37  
MIN 06 48 03.9 D \*I 48 19  
JAS MAY 07 11 12 22.0 C \*E 12 13  
MIN 11 12 03.9 C  
BKS MAY 07 18 03 04.0 D \*E 03 19 \*E 04 27  
PRI 18 02 53.3 C 04 05 \*E 03 06 \*E 04 09  
JAS 18 02 43.0 C \*E 02 55  
MHC 18 02 53.8 C 04 19 \*E 03 13 \*E 04 10  
MIN 18 03 07.8 C \*I 03 31 \*I 04 48  
SE NEVADA - MAG 4.7  
USCGS 18 01 36.1, 37.0N, 115.0W, H= 20 KM, M=4.7  
SOUTHERN NEVADA.

BKS MAY 08 18 57 41.5 C \*E 84 42 \*E 89 00  
R FROM S.W.  
JAS 18 57 47.2 D \*E 57 52 \*I 58 01  
MHC 18 57 42.5 D  
MIN 18 57 51.9 C  
USCGS 18 44 56.8, 33.2S, 178.4W, H= 50 KM, M=5.3  
S OF KERMADEC ISLANDS.

BKS MAY 09 06 25 36.3 C \*E 33 50 \*E 35 00 \*E 41 42  
\*E 44 30  
R FROM N.W.  
PRI 06 25 44.0 C \*E 25 48  
JAS 06 25 37.0 C  
MHC 06 25 38.5 C \*I 25 48  
MIN 06 25 24.0 C  
USCGS 06 14 57.1, 44.2N, 149.0E, H= 40 KM, M=5.3  
KURILE ISLANDS.

PRI MAY 09 11 11 02.0 D \*I 11 04 \*E 12 14  
JAS 11 10 55.4 D  
MHC 11 10 53.1 D  
MIN 11 10 41.3 D

BKS MAY 09 12 42 25.0 C 47 04 \*E 42 35 \*E 42 49 \*E 43 40  
\*E 48 30 LR 49 18  
MICRON PERIOD  
PZ 0.03 1.0  
SH 0.64 15  
MAXH 7.0 14  
MAG 3.9-4.1 DIST DEG 29  
PRI 12 42 40.6 D  
JAS 12 42 28.5 C \*E 42 43 \*E 42 52  
MHC 12 42 31.5 D  
MIN 12 42 06.1 D \*E 42 26  
USCGS 12 36 36.8, 56.6N, 152.6W, H= 33 KM, M=5.0  
KODIAK ISLANDS REGION.

BKS MAY 09 15 12 LR 19 42  
R FROM N.W.  
MICRON PERIOD  
MAXH 1.6 14  
PRI 15 12 04.7 C  
JAS 15 12 51.6 C \*E 13 06 \*I 13 21  
MHC 15 12 50.9 C  
MIN 15 12 29.7 D \*I 12 35  
PRI MAY 09 20 24 47.1 D  
JAS 20 24 53.5 D \*I 25 09 \*E 25 32  
MHC 20 24 47.5 D  
MIN 20 24 57.6 C  
BKS MAY 09 21 43 48 C PP 48 04 PS 57 20 L 72 30  
LR 16 24  
PRI 21 44 03.3 D \*I 44 40 \*E 44 46 \*I 47 18  
JAS 21 44 00.4 D PP 48 16  
MHC 21 43 57.9 D  
USCGS 21 30 08.3, 5.2N, 127.5E, H=119 KM, M=5.5  
PHILIPPINE ISLANDS REGION.

JAS MAY 09 21 59 50.2 D \*I 60 09  
BKS MAY 10 13 41 19.5 C \*E 42 15  
PRI 13 41 01.9 C  
JAS 13 40 57.5 C \*I 41 06  
MHC 13 41 10.5 C  
MIN 13 41 23.5 D \*I 42 48

JAS MAY 10 14 28 46.3 C  
BKS MAY 11 06 17 29.7 C  
PRI 06 17 16.2 D  
JAS 06 17 19.2 D \*I 17 29  
MHC 06 17 25.6 D  
MIN 06 17 32.1 D

BKS MAY 11 15 17 03.0 D 26 43 \*PP 17 32 \*SP 17 43 PP 20 08  
\*E 27 30 \*E 31 00 \*E 32 10  
\*E 35 14 L 38 00

				MICRGN	PERIOD			
				PZ 0.48	1.3			
				SH 2.7	12			
				MAXH 2.6	20			
				MAG 5.9-6.1	DIST DEG 80			
PRI	15 16	51.6	D		*E 17 20			
JAS	15 16	56.8	D	26 32	*E 17 33	*E 17 38	*I 27 21	
MHC	15 16	59.5	D		*E 16 38			
MIN	15 17	18.6	D		*PP 17 29	*SP 17 40		
ARC	15 17	19.7	D					

USCGS 15 05 16.8, 20.3S, 68.5W, H= 67 KM, M=6.1  
CHILE-BOLIVIA BORDER REGION. FELT AT  
IQUIQUE AND TOCOPILLA, CHILE.

JAS MAY	12	02 10	55.4	C				
JAS MAY	12	06 22	27.9	C				
JAS MAY	12	06 25	29.2	D				
MIN		06 25	33.9	C				
BKS MAY	12	17 05	11	C	*E 10 32	LR 13 18		
JAS		17 05	27.3	D	*I 05 39			
MHC		17 05	15	D				
PRI MAY	12	22 23	25.4	D				
JAS		22 23	11.5	D	*E 23 21	*E 23 32		
MHC		22 23	10.3	C				
BKS MAY	13	05 24	43.8	C	29 26	*E 25 00	*E 25 24	*E 28 28

				MICRGN	PERIOD			
				PZ 0.31	1.6			
				PH 0.76	15			
				SH 1.19	14			
				MAXH 12.7	14			
				MAG 4.7-4.9	DIST DEG 28			
PRI	05 24	58.7	C					
JAS	05 24	47.6	D	29 37	*PP 24 56	PP 25 23	*E 25 40	
MHC	05 24	46.1	D					

USCGS 05 18 55.4, 56.5N, 152.6W, H= 33 KM, M=5.3  
KODIAK ISLANDS REGION.

BKS MAY	14	08 50	16.0	C	59 58	*PP 50 43	PS 60 28	L 71 36
PRI		08 50	04.6	C		*PP 50 32		
JAS		08 50	09.9	C		*PP 50 37	*E 50 55	
MHC		08 50	12.6	C		*PP 50 40	*E 50 52	

USCGS 08 38 33.1, 20.6S, 68.9W, H=109 KM, M=5.2  
CHILE-BOLIVIA BORDER REGION.

BKS MAY	14	12 36	46.5	C	*E 36 58	*E 63 00		
PRI		12 36	51.1	C	*E 36 02			
JAS		12 36	53.5	C	*E 37 04			
MHC		12 36	48.6	C	*E 37 01			

USCGS 12 24 08.9, 10.5S, 161.4E, H= 37 KM, M=5.4  
SOLOMON ISLANDS. FELT AT HONIARA.

JAS MAY	15	00 17	38.0	D				
BKS MAY	15	00 40	44	C			*E 47 06	*E 67 12
							*E 82 18	*E 77 36
BKS MAY	15	02 39	18.0	D	48 56	*PP 39 29	*E 39 40	*E 40 40
						SS 53 40	LQ 58 54	*E 62 36

R FROM S.W.

PRI	02 39	21.1	D	*E 39 32
JAS	02 39	25.0	D	*E 39 37
MHC	02 39	21.3	D	*E 39 32

USCGS 02 27 36.0, 32.5N, 141.4E, H= 40 KM, M=5.4  
SOUTH OF HONSHU, JAPAN.

JAS MAY	15	02 50	29.6	C			*E 50 41	
BKS MAY	15	17 19	29.5	D			*E 20 03	
PRI		17 19	16.9	C				
JAS		17 19	22.5	D			*I 19 51	*E 20 13
MHC		17 19	26.1	C				*E 20 37
MIN		17 19	35.9	C				

USCGS 17 08 57.1, 10.3S, 74.6W, H=117 KM, M=5.1  
PERU.

JAS MAY	16	05 19	16.2	C				
MIN		05 19	47.5	C				
BKS MAY	16	06 31	38.0	C			*E 44 28	LR 61 36
JAS		06 31	47.1	D				
MHC		06 31	43.6	C				
MIN		06 31	44.6	C				

PRI MAY	16	07 29	05.7	C				
JAS		07 29	02.4	C			*I 29 16	
MHC		07 29	07.7	C				

BKS MAY	16	07 40	57	C			*E 44 20	*E 52 30
JAS		07 42	57.1	D				
BKS MAY	16	08 25	55.5	C	35 30	*E 36 08	*E 40 20	L 45 44

				MICRGN	PERIOD			
				MAXH 0.9	24			
PRI	08 25	44.2	C					
JAS	08 25	54.4	C				*E 26 04	*E 26 08
MHC	08 25	52.1	C					*E 26 19
MIN	08 26	15.3	D					

USCGS 08 14 34, 33.2S, 108.4W, H= 33 KM, M=5.1  
EASTER ISLANDS CORDILLERA.

BKS MAY	16	13 05	13.0	C	11 04	LQ 15 08	LR 17 00	
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R FROM S.E.

				MICRGN	PERIOD
				PZ 0.07	1.5
				SH 1.4	12



MAXH 5.0 16  
MAG 4.4-4.8 DIST DEG 38

PRI 13 04 55.7 C  
JAS 13 05 02.8 C \*E 06 14 PCP 07 31 \*E 07 40  
MHC 13 05 07.3 C  
MIN 13 05 21.7 C  
ARC 13 05 37.9 D

PRI MAY 16 16 25 42.8 D  
JAS 16 25 49.3 D \*I 26 09 \*E 26 44  
MHC 16 25 43.0 D  
MIN 16 25 54.4 C

USCGS 16 14 22.9, 15.2S, 173.5W, H= 33 KM, M=5.2  
TCNGA ISLANDS. FELT AT APIA.

BKS MAY 16 19 36 41 C \*E 46 20 LQ 56 12 LR 60 00  
PRI 19 36 44 D  
JAS 19 36 41.7 C \*I 37 13  
MHC 19 36 45.5 D  
MIN 19 36 41.3 C

USCGS 19 24 58.6, 32.4N, 141.3E, H= 36 KM, M=5.3  
SOUTH OF HONSHU, JAPAN.

BKS MAY 17 00 38 52.0 D 43 36 \*E 44 08 LR 46 10  
PRI 00 39 11.7 D  
JAS 00 38 56.6 D \*PP 39 00 \*E 39 17  
MHC 00 38 58.1 D \*E 38 02  
MIN 00 38 33.5 D

BKS MAY 17 08 34 48.5 D  
PRI 08 34 50.4 C  
JAS 08 34 54.3 C \*E 35 04 \*E 35 17  
MHC 08 34 49.2 C  
MIN 08 34 55.5 D

USCGS 08 22 20.3, 15.1S, 168.1E, H= 36 KM, M=5.1  
NEW HEBRIDES ISLANDS.

JAS MAY 17 10 03 27.2 C  
MIN 10 03 16.6 D

BKS MAY 17 13 09 37.5 C \*E 09 42 \*E 32 30 LR 36 54  
PRI 13 09 47.5 C  
JAS 13 09 44.3 D \*E 10 07  
MHC 13 09 44.7 C  
MIN 13 09 51.5 D

USCGS 12 56 55.4, 9.7S, 159.8E, H= 32 KM, M=5.1  
SCLC MON ISLANDS. FELT AT HORNIARA.

BKS MAY 17 16 25 \*E 36 32 SS 40 32 LR 49 54  
R FROM S.W.

JAS 16 25 38.6 D  
MIN 16 25 46.8 D

BKS MAY 17 21 45 \*E 54 36 \*E 64 12  
PRI 21 45 03.4 C  
JAS 21 45 01.2 C \*E 45 09 \*E 45 15

BKS MAY 18 04 17 \*E 26 48 \*E 30 32 \*E 34 24  
JAS 04 17 32 C \*E 17 58 \*I 18 08  
MIN 04 17 43.9 C \*I 18 32

BKS MAY 18 11 33 34 C 42 14 LQ 50 16 LR 53 24  
R FROM N.W.

PRI 11 33 43.6 C  
JAS 11 33 36.9 D \*I 33 48 \*E 34 14  
MHC 11 33 39.7 C  
MIN 11 33 20.4 D \*I 33 37

JAS MAY 18 13 12 16.3 C \*I 12 23

JAS MAY 18 14 12 10.5 D  
USCGS 14 00 56.1, 42.0N, 144.7E, H= 40 KM, M=5.1  
HOKKAIDU, JAPAN.

PRI MAY 18 23 51 50.0 C  
JAS 23 51 45.1 C \*E 52 05 \*E 52 13  
MHC 23 51 43.1 C

USCGS 23 39 15.2, 31.1N, 130.7E, H= 43 KM, M=5.6  
KYUSHU, JAPAN.

BKS MAY 19 05 22 LR 49 24  
R FROM S.W.

PRI 05 22 04.9 C \*E 22 30  
JAS 05 22 10.6 C \*E 22 41  
MHC 05 22 06.0 C  
MIN 05 23 14.5 D

USCGS 05 09 10.9, 34.9S, 179.0W, H= 35 KM, M=5.2  
SOUTH OF KERMADEC ISLANDS.

JAS MAY 19 07 58 21.1 C \*I 58 47  
MIN 07 58 27.1 C

USCGS 07 52 03.1, 13.2N, 89.5W, H= 83 KM, M=5.0  
EL SALVADOR. FELT AT SAN SALVADOR.

BKS MAY 19 12 14 55.5 C \*E 15 14 \*E 41 18  
R FROM S.W.

JAS 12 14 58.6 C \*E 15 06 \*E 15 19  
MHC 12 14 57.2 C \*E 15 14  
MIN 12 15 07.3 C \*E 15 24

BKS MAY 19 13 02 \*E 12 10 LR 21 30 LR 24 24  
PRI 13 02 50.3 C  
JAS 13 02 45.1 C \*E 03 02 \*I 03 12  
MIN 13 02 50.2 C \*I 03 15

USCGS 02 51 09.4, 19.8N, 146.0E, H= 42 KM, M=5.5  
MARIANA ISLANDS REGION.

BKS MAY 20 03 03 13.2 C 13 12 \*E 03 23 \*E 17 36 \*E 24 30  
LR 26 36  
MICRON PERIOD  
MAXH 1.6 18

.1 C  
 .2 C  
 MHC 03 03 16.6 C \*E 03 45 \*I 03 51  
 MIN 03 02 11.3 C \*I 02 25  
 BKS MAY 20 07 55 61 28 LQ 65 30 LR 68 18  
 R FROM S.E.  
 MICRON 1.5 PERIOD 14  
 MAXH  
 PRI 07 55 39.0 D  
 JAS 07 55 46.6 C \*E 55 54 \*E 56 16 \*I 58 14  
 MHC 07 55 51.0 C  
 MIN 07 56 04.9 D \*I 56 10  
 BKS MAY 20 15 01 16.5 C \*I 01 27  
 PRI 15 01 01.0 C \*I 01 08  
 JAS 15 00 57.3 C  
 MHC 15 01 09.9 C  
 MIN 15 01 23.1 C  
 ARC 15 01 49.3 D  
 BKS MAY 20 15 10 12.0 C \*E 11 23  
 PRI 15 09 45.5 C  
 JAS 15 09 41.8 D \*I 10 36  
 MHC 15 09 10.6 D  
 BKS MAY 21 03 18 R FROM S. E. \*E 29 36 \*E 32 36  
 PRI 03 18 58.6 C  
 JAS 03 19 04.0 D \*E 19 25  
 MHC 03 19 09.0 C  
 BKS MAY 21 07 21 23.0 C 24 00 \*E 21 36 \*E 22 24 \*E 24 30  
 \*E 25 34 \*E 26 36  
 MICRON 0.19 PERIOD 1.5  
 PZ 6.4 SH 28  
 MAXH 12  
 MAG 4.4-4.8 DIST DEG 16  
 PRI 07 20 56.0 C \*E 21 01 \*E 24 59  
 JAS 07 21 13.6 D \*I 21 22 \*E 21 32 \*I 24 06  
 MHC 07 21 15.3 C  
 MIN 07 21 48.6 C \*I 21 56 \*I 22 22  
 USCGS 07 18 13, 27.9N, 111.3W, H= 33 KM, M=4.7  
 GULF OF CALIFORNIA.  
 BKS MAY 21 14 44 06.4 C \*E 45 04  
 MAGNITUDE 4.4 - 4.6  
 SOUTH OF RIVERSIDE, CALIF.  
 PRI 14 43 38.5 C \*E 44 25 \*E 44 43  
 JAS 14 43 55.8 C \*E 44 55 \*I 45 22  
 MHC 14 43 57.1 D \*E 44 57  
 MIN 14 44 33.0 D \*I 44 54 \*I 46 36 \*I 46 43  
 BKS MAY 21 19 03 54.5 C \*PP\* 04 40 \*E 05 37 PP 05 44  
 \*PPP 06 38 SKS 10 40 \*E 13 35

SP 15 36 SS 22 38 SSS 24 00  
 L 36 54  
 MICRON 0.91 PERIOD 2.0  
 PPZ 2.5  
 PPH 10  
 MAGNITUDE 6.1 - 6.3  
 PRI 19 03 59.3 C \*E 04 45 \*E 05 56  
 JAS 19 03 56.6 C \*E 04 43 \*I 05 43 \*E 05 55  
 MHC 19 03 56.2 C \*E 04 42 \*E 05 52  
 MIN 19 03 52.2 C \*I 04 06 PP 05 39 \*I 07 09  
 ARC 19 03 49.4 C  
 USCGS 18 45 11.7, 1.0S, 101.5E, H=173, M=6.3  
 SOUTHERN SUMATRA.  
 JAS MAY 21 19 16 30.6 C \*E 16 55 \*E 17 51 \*E 21 07  
 MIN 19 17 06.8 D  
 JAS MAY 22 03 01 21.3 D \*E 01 36  
 BKS MAY 22 22 53 35 D \*E 57 00 \*E 58 42 \*E 59 30  
 JAS 22 53 R FROM S.E. C \*E 59 33 \*E 61 46  
 JAS MAY 23 02 03 13.8 C \*E 03 28 \*E 03 43  
 BKS MAY 23 14 01 13.0 C \*I 01 23  
 PRI 14 00 58.0 C  
 JAS 14 00 53.3 C  
 MHC 14 01 06.4 C  
 MIN 14 01 18.7 C \*I 01 37  
 ARC 14 00 51.4 C  
 PRI MAY 23 14 28 37.8 C  
 JAS 14 28 33.3 C  
 BKS MAY 23 19 19 LQ 30 00 LR 32 30  
 JAS 19 19 15.5 D  
 BKS MAY 23 19 36 29.8 C  
 MICRON 0.02 PERIOD 1.0  
 PRI 19 36 26.4 C \*E 36 59 \*E 37 01 PP 39 52  
 JAS 19 36 28.1 C  
 MHC 19 36 29.0 C  
 MIN 19 36 32.3 D  
 PRI MAY 23 20 15 04.7 C 16 07 \*E 15 14  
 JAS 20 14 56.8 C 15 52 \*E 15 05 \*E 15 49  
 MHC 20 15 11.0 C 16 18 \*E 15 20  
 MIN 20 15 22.5 C \*I 15 40  
 BKS MAY 26 15 01 13.2 C 02 07 \*E 01 24  
 MAGNITUDE 5.2  
 PRI 15 00 58.2 C  
 JAS 15 00 53.6 C  
 MHC 15 01 06.8 C

MIN 15 01 19.7 C \*I 01 37 \*I 02 45  
 ARC 15 01 47.2 D  
 PRI MAY 26 15 11 07.2 D  
 JAS 15 11 00.2 C \*I 11 47  
 MHC 15 11 19.7 D  
 PRI MAY 26 15 29 31.3 C \*E 30 26  
 JAS 15 29 21.7 D \*E 30 11 \*I 30 23 \*E 30 31  
 MHC 15 29 44.5 D 30 45  
 MIN 15 29 53.4 C \*I 30 14

BKS MAY 27 17 31 10.0 D 37 40 \*E 31 16 \*I 31 33 \*E 32 28  
 SCS 41 04 L 41 08 \*E 42 14  
 LR 43 06

R FROM N.W.  
 MICRON PERIOD  
 PZ 1.65 12  
 SH 6.2 20  
 MAXH 20 21

MAG 5.5-5.9 DIST DEG 45  
 PRI 17 31 25.7 C \*E 36 50 \*E 38 12  
 JAS 17 31 17.4 C 37 58 \*I 31 32 \*E 36 45 \*E 38 01  
 MHC 17 31 14.5 C \*E 36 45 \*E 38 55  
 MIN 17 31 00.0 D \*I 31 22 \*I 36 36  
 ARC 17 31 46.0 D

USCGS 17 22 58.7, 51.9N, 176.1E, H= 34 KM, M=5.8  
 RAT ISLANDS, ALEUTIAN ISLANDS.

BKS MAY 28 01 40 \*E 51 20 LR 52 42  
 R FROM N.W.  
 PRI 01 40 40.6 C  
 JAS 01 40 21.6 D \*E 40 31  
 MIN 01 40 09.5 C  
 USCGS 01 31 56.7, 52.1N, 175.0E, H= 45 KM, M=5.2  
 RAT ISLANDS, ALEUTIAN ISLANDS.

JAS MAY 28 04 21 06.5 D  
 MIN 04 20 53.7 C

PRI MAY 28 06 41 24.2 C  
 JAS 06 41 23.8 C  
 MHC 06 41 18.6 C  
 MIN 06 41 27.7 D

BKS MAY 29 04 58 24.1 C  
 MICRON PERIOD  
 PZ 0.06 1.0  
 DISTANCE DEG 82  
 PRI 04 58 33.0 C \*E 59 04  
 JAS 04 58 31.0 C \*E 58 59 \*I 59 10  
 MHC 04 58 27.4 C  
 MIN 04 58 23.8 C  
 USCGS 04 45 43.9, 11.9N, 143.3E, H= 33 KM, M=5.6  
 SOUTH OF MARIANA ISLANDS.

BKS MAY 29 11 21 18.2 C \*E 21 28  
 PRI 11 21 18.0 C  
 JAS 11 21 24.1 C  
 MHC 11 21 18.7 C  
 MIN 11 21 28.6 D  
 USCGS

11 09 54, 19.2S, 176.3W, H=236 KM, M=5.1  
 FIJI ISLANDS REGION.

BKS MAY 30 03 47 42.7 D 47 54  
 PRI 03 47 52.1 C  
 JAS 03 47 49.6 C  
 MHC 03 47 30.4 D  
 MIN 03 48 15.7 C  
 \*I 48 24 \*I 48 51 \*I 48 56

BKS MAY 30 10 02 13.5 C \*E 02 23  
 PRI 10 02 34.7 C  
 JAS 10 02 23.3 C \*E 02 33 \*I 02 40  
 MHC 10 02 19.5 C \*E 02 29  
 MIN 10 02 05.6 C \*I 02 15

BKS MAY 30 14 31 45.3 D 35 10 \*E 31 59 LQ 35 48 LR 36 00  
 MICRON PERIOD  
 SH 2.1 20  
 MAXH 7.2 20  
 DISTANCE DEG 19

PRI 14 31 21.5 D  
 JAS 14 31 35.9 C \*I 32 35  
 MHC 14 31 34.0 C  
 MIN 14 31 03.7 D

USCGS 14 27 37, 24.2N, 108.7W, H= 33 KM, M=4.8  
 GULF OF CALIFORNIA.

BKS MAY 31 11 06 \*E 10 34 \*E 26 00  
 JAS 11 06 37.7 C  
 MHC 11 06 42.4 C  
 MIN 11 06 11.2 C

BKS MAY 31 11 48 \*E 49 10 LR 68 54  
 PRI 11 48 25.3 C  
 JAS 11 48 33.4 C  
 MHC 11 48 50.6 C  
 MIN 11 48 42.4 C  
 ARC 11 48 57.0 C  
 USCGS

11 38 39.0, 12.5N, 60.3W, H= 60 KM, M=5.1  
 WINDWARD ISLANDS.

BKS JUN 01 03 42 54.5 C 48 16 \*E 43 09 LQ 50 30 LR 51 30  
 JAS 03 43 05.0 C 48 32 \*E 43 22  
 MHC 03 43 02.0 C  
 MIN 03 42 45.1 C  
 USCGS \*I 42 54

03 36 19.0, 53.7N, 165.6W, H= 60 KM, M=5.7  
 FOX ISLANDS, ALEUTIAN ISLANDS.  
 FELT AT DUTCH HARBOR AND ON UMNAK ISLAND.

BKS JUN 01 03 45 34.2 C  
 JAS 03 45 36.7 C

MHC			03 45 36.2	C					
MIN			03 45 29.8	C					
JAS	JUN	01	10 25 35.9	C					
MIN			10 25 17.9	C					
JAS	JUN	01	11 14 29.0	C					
MIN			11 14 13.4	D					
			USCGS		11 03 52.4,	44.5N,	149.0E,	H= 58 KM,	M=5.1
					KURILE ISLANDS.				
BKS	JUN	01	21 00 36.6	C					
					*E	04 44	*E	10 44	PS 12 16
					SS	16 42	*E	21 00	*E 24 00
					LR	27 24			
JAS			21 00 43.9	C					
MHC			21 00 39.3	C					
			USCGS		20 47 45.6,	6.8S,	155.0E,	H= 31 KM,	M=5.6
					SCLOMON ISLANDS. FELT AT BUIN.				
BKS	JUN	03	09 14 45.0	D	19 24	*E	14 54	LQ	20 48 LR 21 48
JAS			09 14 51.7	D		*E	15 00	*I	15 26 *E 15 48
MHC			09 14 51.3	D		*E	15 00		
MIN			09 14 29.6	D		*PP	14 33	*I	15 03 *I 15 08
ARC			09 14 16.2	D					
			USCGS		09 08 56.4,	58.4N,	151.2W,	H= 32 KM,	M=5.5
					KODIAK ISLANDS REGION.				
BKS	JUN	03	13 18 27.8	C		*PP	19 04		
JAS			13 18 20.3	C		*E	18 39	*PP	18 56
MHC			13 18 23.3	D					
MIN			13 18 33.9	C		*I	18 53		
ARC			13 18 46.6	C					
			USCGS		13 08 06.8,	8.5S,	74.4W,	H=152 KM,	M=5.2
					PERU-BRAZIL BORDER REGION.				
BKS	JUN	04	05 36		44 06	LR	52 48		
JAS			05 36 25.4	C		*E	36 41	*E	37 33
MHC			05 36 23.6	C					
MIN			05 36 09.4	C		*I	36 24		
JAS	JUN	04	06 33 15.3	C		*E	33 24	*E	33 34
MIN			06 33 02.1	C					
JAS	JUN	04	06 44 05.1	C					
JAS	JUN	04	09 47 07.2	C					
MHC			09 47 03.8	C					
MIN			09 46 50.2	C					
JAS	JUN	04	18 39 34.6	C		*I	39 47		
MHC			18 39 39.6	C					
BKS	JUN	05	01 33 09.3	C	43 04	*I	33 24	*E	33 28 L 52 30
						LR	56 18		
JAS			01 33 14.6	C		*E	33 26		
MHC			01 33 08.8	C					

MIN			01 33 10.6	D					
			USCGS						
									*I 33 52
									01 21 20.2, 21.3S, 171.5W, H= 33 KM, M=5.2
									TCNGA ISLANDS .
JAS	JUN	05	08 39 51.5	C					
MIN			08 39 16.6	C					*I 39 25
JAS	JUN	05	09 27 04.2	C					*E 30 26
BKS	JUN	05	11 20 36.7	D					
JAS			11 20 43.5	D					*E 22 13
MHC			11 20 40.0	D					
MIN			11 20 34.6	D					
JAS	JUN	05	16 48 12.7	C					*E 48 26 *E 48 43
BKS	JUN	06	09 42 19.0	D					
JAS			09 42 26.1	D					
MHC			09 42 21.0	D					
BKS	JUN	06	09 42 51.3	D					*E 53 24 PPS 54 18 L 64 30
JAS			09 42 56.4	C					LR 67 24
MHC			09 42 51.3	C					
MIN			09 42 57.3	D					
			USCGS		09 30 26.7,	10.8S,	165.3E,	H= 33 KM,	M=5.1
					SANTA CRUZ ISLANDS.				
BKS	JUN	07	07 12 30.7	D	17 16	*E	17 48	LQ	20 24 LR 21 24
JAS			07 12 17.8	C					
MHC			07 12 22.5	C					
MIN			07 12 39.2	D					
JAS	JUN	07	07 21 16.2	C					*E 21 45
MHC			07 21 41.0	C					
JAS	JUN	07	11 49 17.8	C					*I 49 46
MHC			11 49 31.8	C					
MIN			11 49 32.8	D					
JAS	JUN	07	17 13 56.9	D					*I 14 16
			USCGS		17 01 12.9,	49.4N,	97.2E,	H= 33 KM,	M=5.0
					USSR-MONGOLIA BORDER REGION.				
JAS	JUN	07	18 26 34.9	D					
MHC			18 26 33.1	D					
MIN			18 26 19.0	D					
			USCGS		18 16 31.4,	47.5N,	155.4E,	H= 29 KM,	M=5.2
					KURILE ISLANDS REGION.				
JAS	JUN	07	21 31 10.7	C					
BKS	JUN	08	13 34 48.0	C					*E 35 10 SKS 45 06 *SS 45 36
						*E	46 42	SS	50 40 L 58 10
						*E	62 18		
JAS			13 34 54.9	C		*E	35 20	*E	35 56

MHC	13 34 50.3	C	*E 35 15
MIN	13 34 55.3	C	*I 34 24
	USCGS		13 22 13.7, 21.4S, 170.3E, H= 90 KM, M=5.3
			LCYALTY ISLANDS REGION.
JAS	21 13 10.5	C	
MHC	21 13 11.6	C	
BKS	05 39 44.0	D	50 20 *E 39 55 LR 69 30
JAS	05 39 40.4	C	*E 39 52
MHC	05 39 40.9	C	*E 39 53
MIN	05 39 51.3	D	*E 40 02
	USCGS		05 26 44.4, 41.3S, 73.6W, H= 37 KM, M=5.7
			NEAR COAST OF SOUTHERN CHILE.
BKS	14 09 50.0	C	
JAS	14 09 56.7	C	*E 10 03 *I 12 03
MHC	14 09 51.2	C	
MIN	14 10 00.4	D	
	USCGS		13 58 53.3, 19.3S, 178.2W, H=596 KM, M=5.1
			FIJI ISLANDS REGION.
BKS	18 15 46	C	24 52 *E 32 30 LR 37 30
JAS	18 15 35.1	D	*I 16 00
BKS	00 15		*E 25 06 *E 34 48 LR 39 24
JAS	00 15 27.7	C	*I 15 40 *E 16 03 *E 16 08
MHC	00 15 22.0	C	*E 16 05 *E 16 08 *E 16 10
MIN	00 15 32.1	C	*I 16 06 *I 16 12
	USCGS		00 03 32, 21.0S, 174.6W, H= 33 KM, M=5.0
			TCNGA ISLANDS.
BKS	01 00 57.2	D	10 34 *E 01 05 L 20 30 LR 24 00
JAS	01 00 56.2	C	*I 01 09 *E 01 16
MHC	01 00 51.4	C	
MIN	01 01 01.1	D	*I 01 21
	USCGS		00 48 59.2, 21.1S, 174.4W, H= 13 KM, M=5.1
			TCNGA ISLANDS.
JAS	02 10 20.5	C	
MIN	02 10 26.8	C	
BKS	05 41 06	C	PP 45 44 SKS 55 52 PPS 60 10
			SS 65 54 SSS 66 36 SSS 72 12
			*E 80 12 *E 85 00 L 89 00
			LR 95 18
JAS	05 41 13.3	C	*E 41 22 *E 41 52 *E 45 38
MHC	05 41 11.8	C	*E 45 26
MIN	05 41 15.5	C	
	USCGS		05 21 11, 44.9S, 35.7E, H= 36 KM, M=5.6
			PRINCE EDWARD ISLANDS REGION.
BKS	23 32 50.3	D	40 50 SCP 37 28 *E 41 20 SCS 42 16
JAS	23 32 46.8	D	SS 44 36 L 47 22 LR 49 48
MHC	23 32 51.8	D	*E 32 51 *E 33 12 P*P* 62 12

ARC	23 32 31.3	D	USCGS	23 22 45.3, 47.4N, 154.3E, H= 56 KM, M=5.4	
				KURILE ISLANDS.	
JAS	00 30 03.7	C		*E 30 18	
MHC	00 30	C		*E 29 55	
BKS	15 52 20	C	62 20	PP 55 20 *E 56 08 *E 64 06	
				SSS 71 00 *E 74 40 L 76 30	
JAS	15 52 27.2	C		LR 79 36	
MHC	15 52 23.0	C		*PP 52 47	
	USCGS			15 39 29.7, 5.6S, 148.1E, H=213 KM, M=5.4	
				NEW BRITAIN REGION. FELT AT WAU.	
JAS	15 56 14.6	C		*I 56 24	
MHC	15 56 11.8	C			
BKS	03 25 19.5	C	34 26	*E 25 43 LQ 43 24 *E 49 00	
MHC	03 25 15.5	C		*E 25 41	
	USCGS			03 14 17.5, 14.9S, 73.4W, H= 99 KM, M=5.6	
				PERU.	
BKS	03 57 02.0	C		*PP 17 51 PP 20 20 *E 27 00	
JAS	03 57 07.9	C		*E 27 18 SS 31 08 *E 36 00	
BKS	05 17 39.5	D	26 42	LR 38 00 *E 17 58 *E 18 27	
JAS	05 17 46.5	D			
MHC	05 17 40.4	D			
ARC	05 17 43.2	D			
	USCGS			05 06 16.3, 15.2S, 173.6W, H= 11 KM, M=5.9	
				TCNGA ISLANDS. FELT ON PAGO PAGO	
				AND AT APIA.	
BKS	08 15 57.3	C	24 00	*E 29 40 L 30 48 LR 33 12	
JAS	08 16 04.5	C		*E 16 16 *I 16 43 *E 16 55	
MHC	08 16 03.5	C		*E 16 13	
	USCGS			08 05 58.6, 47.5N, 154.4E, H= 55 KM, M=5.3	
				KURILE ISLANDS.	
JAS	08 23 07.9	D		*E 23 20 *E 23 23	
MHC	08 23 06.5	D		*E 13 21	
	USCGS			08 13 02.2, 47.5N, 154.5E, H= 53 KM, M=5.4	
				KURILE ISLANDS.	
BKS	04 59 23.3	C		*E 60 21	
JAS	04 59 14.2	C	60 05	*I 60 23	
MHC	04 59 14.0	C	60 05		
	USCGS			04 58 05.4, 34.0N, 118.0W, M=4.3	
				SOUTHERN CALIFORNIA. FELT AT LOS ANGELES,	
				LONG BEACH AND SAN BERNARDINO.	
JAS	18 52 53.8	C		*I 53 03	
BKS	18 52			*E 63 30 *E 79 00	

JAS MHC 04 59 14.2 C 60 05 \*I 60 23  
 04 59 14.0 C 60 05

JAS JUN 15 18 52 53.8 C \*I 53 03  
 BKS 18 52 \*E 63 30 \*E 79 00

JAS JUN 16 01 22 31.2 C

JAS JUN 16 11 44 41.2 C

BKS JUN 17 01 04 11 30 SS 15 00 P\* 16 28 LR 17 20  
 MICRON PERIOD  
 SH 2.96 16  
 MAXH 8.1 20  
 MAGNITUDE 5.6 - 6.0

PRI 01 04 28.5 C \*E 06 19  
 JAS 01 04 40.8 C 11 27 \*E 05 23 \*E 06 28 \*I 06 39  
 MHC 01 04 40.0 C

BKS JUN 17 05 15 32 D P\* 18 54 \*PP\* 19 40 PP 20 40  
 \*E 30 40 PPS 31 40 SS 36 00  
 \*E 49 40 L 50 40 LR 59 00  
 MICRON PERIOD  
 PPZ 0.71 2  
 PPH 2.1 9  
 MAGNITUDE 6.3 - 6.5

PRI 05 15 D P\* 18 50 \*PP\* 19 41 PP 20 27  
 JAS 05 15 D PKKP 28 51  
 MHC 05 15 D P\* 18 52 \*PP\* 19 38 PP 20 31  
 SKS 25 41 PKKP 28 44  
 P\* 18 53 \*PP 19 40 PP 20 37  
 USCGS 05 00 11.8, 58.3S, 26.6W, H=140 KM, M=6.1  
 SOUTH SANDWICH ISLANDS.

BKS JUN 17 05 28 41.5 D  
 PRI 05 28 50.2 D  
 JAS 05 28 44.0 D  
 MHC 05 28 44.1 D \*E 29 17

PRI JUN 18 04 16 26.4 C  
 JAS 04 16 50.1 C  
 MHC 04 16 36.6 C

BKS JUN 18 14 11 40 C \*E 15 28 SS 22 32 LR 33 44

JAS JUN 19 04 50 18.6 C \*E 51 34

BKS JUN 19 17 14 31 C 20 10 PCP 16 44 LR 21 58 L 22 19  
 SCS 24 46  
 MICRON PERIOD  
 PZ 1.6 12  
 SH 13.7 14  
 MAG 6.3-6.5 DIST DEG 40

PRI 17 14 46.0 C  
 JAS 17 14 37.9 C 20 15 \*I 15 11 \*E 19 55 \*E 20 17  
 \*E 20 45 SCS 24 58 \*E 25 10

MIN 17 14 21.5 C  
 ARC 17 14 07 C  
 MHC 17 14 34.5 C  
 USCGS 17 04 45.4, 52.7N, 166.9W, H= 33 KM, M=5.7  
 FOX ISLANDS, ALEUTIAN ISLANDS.

PRI JUN 20 05 32 26.4 C  
 JAS 05 32 17.2 C  
 MIN 05 31 57.5 C \*E 32 33 \*E 32 55 \*E 33 38  
 MHC 05 32 14.1 C \*E 32 17

BKS JUN 20 06 27 \*E 28 12 \*E 28 32 LR 29 00  
 MAXH 5.9 PERIOD 12  
 JAS 06 27 24.5 C \*E 27 37 LQ 28 02  
 MHC 06 27 21.7 C

BKS JUN 20 07 45 35.0 C 51 08 \*E 46 14 \*E 53 28 L 54 00  
 MICRON PERIOD  
 PZ 0.57 16  
 SH 5.9 14  
 MAXH 12 11  
 MAG 4.5-5.0 DIST DEG 34

PRI 07 45 51.5 C  
 JAS 07 45 41.0 C 51 18 \*I 45 59 \*E 46 46  
 MHC 07 45 39.0 C  
 MIN 07 45 23.7 C  
 ARC 07 45 09 C  
 USCGS 07 38 44.9, 52.8N, 167.1W, H= 11 KM, M=5.5  
 FOX ISLANDS, ALEUTIAN ISLANDS.

JAS JUN 20 12 32 46.6 D \*E 33 02  
 MIN 12 32 27.6 C

JAS JUN 20 17 49 09.5 C

JAS JUN 21 05 51 52.0 D

BKS JUN 21 06 59 40 C 67 40 L 74 20 LR 77 24  
 MICRON PERIOD  
 SH 1.0 15  
 MAXH 5.4 29  
 MAG 3.5-4 DIST DEG 62

PRI 06 59 25.6 C  
 JAS 06 59 32.0 C \*I 60 02 \*I 60 14 \*E 62 06  
 MHC 06 59 25.5 C \*E 59 42 \*E 60 45  
 MIN 06 59 48.0 D  
 ARC 06 59 C \*E 60 02  
 USCGS 06 49 56.6, 2.2S, 77.6W, H= 49 KM, M=5.3  
 PERU-EQUADOR BORDER REGION.  
 FELT AT QUITO, ECUADOR.

BKS JUN 21 16 09 48 \*E 18 14 \*E 30 00 \*E 34 00

JAS JUN 21 17 03 10.4 D

BKS JUN 21 18 11 10.5 D \*E 16 24 \*E 18 08  
 MICRON PERIOD  
 PZ 0.16 1.5  
 MAG 4.8-5.3 DIST DEG 29.5  
 PRI 18 11 27.1 C  
 JAS 18 11 11.9 C \*E 11 44  
 MHC 18 11 13.9 C  
 USCGS 18 04 49.5, 64.8N, 147.4W, H= 17 KM, M=5.9  
 CENTRAL ALASKA. SLIGHT DAMAGE AT  
 FAIRBANKS. FELT OVER 90,000 SQ. MI. AREA.

BKS JUN 21 18 19 21.0 C \*E 21 32 \*E 23 18  
 MICRON PERIOD  
 PZ 0.42 2  
 MAXH 59 17  
 MAXZ 20  
 MAG 5.2-5.6 DIST DEG 28  
 PRI 18 19 39.7 D  
 JAS 18 19 24.5 D \*E 19 34 \*E 19 41  
 MHC 18 19 26.6 D  
 ARC 18 18 52 C  
 USCGS 18 13 02.9, 64.8N, 147.4W, H= 17 KM, M=5.6  
 CENTRAL ALASKA.

PRI JUN 21 18 23 43.0 C  
 JAS 18 23 38.0 C \*E 24 16 \*E 24 25

BKS JUN 21 18 31 08 D \*E 31 14 \*E 31 26  
 MICRON PERIOD  
 PZ 0.16 1.5  
 MAG 4.7-5.1  
 PRI 18 31 22.0 D  
 JAS 18 31 06.8 D  
 MHC 18 31 09.0 D  
 MIN 18 31 02 D  
 USCGS 18 24 45.7, 64.8N, 147.4W, H= 17 KM, M=5.4  
 CENTRAL ALASKA.

BKS JUN 21 18 42 C \*E 43 25  
 PRI 18 42 38.1 C \*E 42 51 \*E 42 54  
 JAS 18 42 22.8 C \*E 42 36 \*E 42 41

BKS JUN 21 19 21 53.5 D \*E 22 10 \*E 22 20  
 PRI 19 21 54.2 C  
 JAS 19 21 59.7 C  
 MHC 19 21 54.5 C  
 USCGS 19 10 31.1, 23.5S, 180.0E, H=546 KM, M=5.0  
 SOUTH OF FIJI ISLANDS.

BKS JUN 21 20 21 35.4 C \*E 22 14  
 PRI 20 21 23.3 C \*E 21 39 \*E 21 41 \*E 22 12  
 JAS 20 21 28.9 C \*E 21 45 \*E 22 06  
 MHC 20 21 31.0 C  
 ARC 20 21 52 C  
 USCGS 20 09 28.4, 25.2S, 70.5W, H= 23 KM, M=5.7  
 NEAR COAST OF NORTHERN CHILE.

FELT AT TALTAL.

BKS JUN 21 22 16 48.0 D \*E 16 58  
 PRI 22 16 48.8 C \*E 17 11 \*E 18 09  
 JAS 22 16 54.0 C  
 MHC 22 16 48.6 C

JAS JUN 22 05 23 50.2 C \*E 24 06  
 USCGS 05 14 05.0, 51.2N, 156.4E, H= 71 KM, M=5.0  
 KAMCHATKA

BKS JUN 22 13 11 37.6 D \*E 11 13 \*E 11 59 \*E 12 09  
 PRI 13 11 02.5 C \*E 11 06 \*E 11 26 \*E 11 50  
 JAS 13 10 57.9 C \*E 12 22  
 MHC 13 11 10.7 C

JAS JUN 22 13 59 30.7 C  
 MHC 13 59 24.5 C

BKS JUN 22 15 44 11.0 C \*E 49 20 \*E 55 20  
 PRI 15 44 25.2 C  
 JAS 15 44 20.5 C \*E 44 34  
 MHC 15 44 17.0 C \*E 44 31

USCGS 15 36 38.9, 51.7N, 176.8W, H= 54 KM, M=5.3  
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS.  
 FELT ON ADAK.

BKS JUN 22 19 21 \*E 32 00 \*E 33 16 \*E 48 30  
 JAS 19 21 34.3 C \*E 32 00 \*E 33 16 \*E 48 30  
 USCGS 19 08 33.5, 1.3S, 149.8E, H= 34 KM, M=5.0  
 NEW IRELAND REGION.

BKS JUN 23 00 36 44.5 C 46 12 L 54 40 LR 57 32  
 MICRON PERIOD  
 SH 2.5 22  
 MAXH 2.1 22  
 MAG 5.4-5.8 DIST DEG 78

PRI 00 36 43.5 C \*E 37 06  
 JAS 00 36 50.3 C \*E 37 00  
 MHC 00 36 44.1 C \*E 36 53

USCGS 00 25 29.8, 15.0S, 172.3W, H= 33 KM, M=5.1  
 SAMOA ISLANDS REGION. FELT AT APIA.

PRI JUN 23 00 53 27.1 D \*E 53 43 \*E 53 52  
 JAS 00 53 33.9 D  
 MHC 00 53 27.5 C

BKS JUN 23 05 28 C \*E 32 48 \*E 35 00 \*E 36 00  
 L 49 00 LR 54 00

JAS JUN 23 12 00 50.9 C \*E 01 06 \*E 01 11

BKS JUN 23 12 08 48 \*E 12 40 PPS 23 14 \*E 36 40  
 L 38 46 LR 42 40

BKS JUN 23 14 49 43.5 C

PRI 14 49 44.2 C \*E 49 55  
 JAS 14 49 49.7 C \*E 50 04 \*E 50 24  
 MHC 14 49 44.4 C  
 USCGS 14 38 35.7, 21.3S, 179.3W, H=605 KM, M=5.1  
 FIJI ISLANDS REGION.

BKS JUN 23 21 42 54.7 D \*PP 43 06 P\*P\* 70 08 \*E 83 00  
 \*E 94 00  
 MICRON PERIOD  
 PZ 0.09 1.0  
 MAGNITUDE 4.7 - 5.1  
 PRI 21 42 57.0 D \*PP 43 08  
 JAS 21 43 00.9 D \*PP 43 12  
 MHC 21 42 56.0 D \*PP 43 07  
 ARC 21 42 56 D  
 USCGS 21 30 11.5, 19.2S, 167.7E, H= 37 KM, M=5.3  
 NEW HEBRIDES ISLANDS REGION. FELT AT  
 PORT VILA.

BKS JUN 24 13 39 44.5 C  
 MICRON PERIOD  
 PZ 0.03 0.8  
 JAS 13 39 50.1 C \*E 40 04  
 PRI 13 39 44.7 C  
 MHC 13 39 45.0 C  
 PRI JUN 24 14 34 11.9 D \*E 34 27  
 JAS 14 34 23.7 C \*E 34 41  
 MHC 14 34 27.0 C \*E 34 48

BKS JUN 24 21 13 12 D 23 50 PPS 25 14 L 36 15 LR 40 04  
 MICRON PERIOD  
 PZ 1.4 6.8  
 MAXH 1.34 20  
 MAGNITUDE 5.5 - 6.0  
 PRI 21 13 19.7 C  
 JAS 21 13 18.0 C \*E 13 27  
 MHC 21 13 14.5 C \*E 13 24

JAS JUN 25 04 15 18.6 C \*E 15 37  
 MHC 04 15 16 C  
 BKS JUN 25 23 30 49 D LQ 54 25  
 MICRON PERIOD  
 PZ 1.28 6.0  
 MAG 6.0 DIST DEG 89  
 PRI 23 30 57.6 C \*E 31 16 \*E 31 24  
 JAS 23 30 55.0 C \*E 31 05 \*E 31 13 \*E 31 52  
 MHC 23 30 52.1 D \*E 31 10  
 USCGS 23 18 04, 12.4N, 141.8E, H= 42 KM, M=5.6  
 SOUTH OF MARIANA ISLANDS.

BKS JUN 26 02 27 50 D 32 11 \*I 32 20 LQ 33 18 LR 34 42  
 MICRON PERIOD  
 PZ 1.74 8  
 MAXH 7.15 20

MAGNITUDE 5.1 DIST DEG 26  
 PRI 02 27 35.6 D \*I 27, 52 \*I 28 13  
 JAS 02 27 41.9 D  
 MHC 02 27 44.5 D  
 USCGS 02 22 34.8, 18.4N, 105.2W, H= 45 KM, M=5.0  
 OFF COAST OF JALISCO, MEXICO.

BKS JUN 26 16 01 15.5 C \*I 01 24  
 PRI 16 00 59.5 C \*E 02 08  
 MHC 16 01 08.0 C  
 JAS 16 00 55.2 C  
 PRI JUN 27 19 53 31.1 D  
 JAS 19 53 37.7 D  
 MHC 19 53 26.8 D  
 PRI JUN 27 20 41 03.4 D \*E 41 16  
 JAS 20 41 00.8 D \*E 41 12  
 MHC 20 40 57.3 C  
 USCGS 20 32 59.3, 51.3N, 180.0W, H= 26 KM, M=5.1  
 ANDREANOF ISLANDS, ALEUTIAN ISLANDS.

PRI JUN 27 21 57 41 C \*E 57 52  
 JAS 21 57 41.0 C \*E 57 53  
 MHC 21 57 35 C  
 USCGS 21 37 48.1, 46.4S, 96.0E, H= 33 KM, M=5.4  
 SOUTHEAST INDIAN RISE.

BKS JUN 27 22 10 40 C SKS 20 44 \*E 21 36 \*E 32 36  
 L 42 30 LR 47 48  
 MICRON PERIOD  
 MAXH 1 20  
 MAGNITUDE 5.5  
 PRI JUN 27 23 03 42.3 D  
 JAS 23 03 44.1 D \*E 04 04  
 MHC 23 03 41.6 D

BKS JUN 28 00 27 \*E 51 00 \*E 54 00  
 MICRON PERIOD  
 MAXH 0.54 20  
 PRI 00 27 32.2 D \*E 27 40  
 JAS 00 27 33.7 D \*E 27 41 \*E 30 38  
 MHC 00 27 29.1 D \*E 27 37  
 USCGS 00 14 34.5, 9.5S, 157.4E, H= 16 KM, M=5.4  
 SCLCOMON ISLANDS.

BKS JUN 28 01 20 \*E 28 42 \*E 36 05 \*E 38 30  
 \*E 49 40  
 \*E 20 45  
 \*E 20 38 \*E 21 18  
 \*E 20 36  
 PRI 01 20 34.8 C  
 JAS 01 20 28.3 C  
 MHC 01 20 25.7 C  
 USCGS 01 10 03.9, 46.0 N, 151.5E, H= 33 KM, M=5.4  
 KURILE ISLANDS.

BKS JUN 28 05 45 18 D 55 08 \*PP 45 36 SSS 63 32 L 66 02



				MICRCN C.88		PERIOD 5.5			
		PZ		MAGNITUDE 5.7					
PRI		05 45	19.2	C		*E 45 31			
JAS		05 45	24.0	C		*E 45 38	*E 45 48		
MHC		05 45	19.3	C		*E 45 31			
BKS JUN 28		14 52	41	C	62 06	*E 59 10	SS 68 00	*E 78 00	
					R FROM S.W.				
				MICRCN		PERIOD			
		MAXH	1.25			20			
				MAGNITUDE 5.4					
PRI		14 52	43.5	C					
JAS		14 52	46.9	C		*E 53 08			
BKS JUN 29		03 01	32.8	C	08 40	SS 12 16	LQ 15 00	LR 17 00	
					R FROM S.E.				
				MICRCN		PERIOD			
		PZ	0.04			1.1			
		MAXH	2.14			20			
				MAGNITUDE 5.0 - 5.4					
PRI		03 01	07.5	C					
JAS		03 01	24.1	C					
MHC		03 01	28.4	C					
PRI JUN 29		03 10	14.7	C					
JAS		03 10	05.4	C					
MHC		03 10	08.0	C					
PRI JUN 29		09 37	08.2	C					
JAS		09 37	15.1	C		*E 37 26			
MHC		09 37	08.8	C					
BKS JUN 29		10 48	16.9	C					
				MICRCN		PERIOD			
		PZ	0.04			1.0			
				MAGNITUDE 4.8					
PRI		10 48	17.0	C					
JAS		10 48	23.2	C					
MHC		10 48	17.8	C					
BKS JUN 29		11 26	20.3	D		*E 26 34			
PRI		11 26	01.3	C		*E 26 40			
JAS		11 25	57.9	C		*E 26 35			
MHC		11 26	10.3	C		*E 26 56			
PRI JUN 29		11 39	47.8	C					
JAS		11 39	45.8	C		*E 40 28	*E 40 36		
MHC		11 39	48	C		*E 41 03			
PRI JUN 29		18 57	08.6	C		*E 57 39			
JAS		18 57	12.6	C		*E 57 45	*E 57 55		
MHC		18 57	16.3	C		*E 57 45			
JAS JUN 30		16 56	13.6	C		*E 56 21			

PRI JUN 30	19 38	31.3	C		
JAS	19 38	21.7	D		
MHC	19 38	16.7	C		
	*E 38 50			*E 39 12	

8 AUG 1969

# Bulletin of the Seismographic Stations

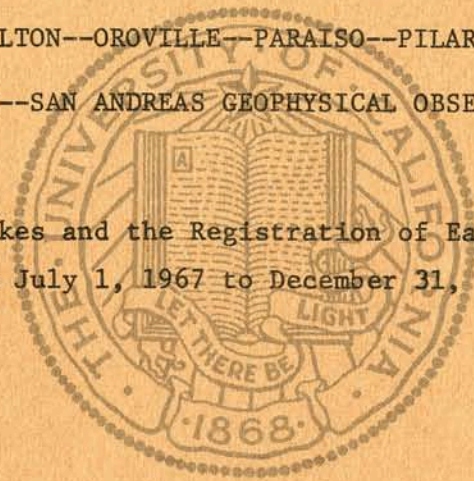
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Vol. 37, No. 2, pp. 112-243

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

Earthquakes and the Registration of Earthquakes  
From July 1, 1967 to December 31, 1967



by

T.V. McEvelly

and

R. Arms

University of California

Berkeley

1969

## BULLETIN OF THE SEISMOGRAPHIC STATIONS

of the University of California

Volume 37, Number 2

July 1, 1967 to December 31, 1967

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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.

## PERSONNEL (April 1969)

Director	Bruce A. Bolt
Assistant Director	Thomas V. McEvelly
Director Emeritus	Perry Byerly
Associate Research Seismologist	Mansour Niazi
Associate	Don Tocher (Earthquake Mechanism Laboratory, ESSA, San Francisco)
Associate Engineer	Walter Marion
Full-time Technical Staff	R. Miller, R. Sell, M. Hilger
Research Assistants	J. Dewey, L. Drake, W. Peppin, M. Somerville, J. Zanetti
Secretary	Loretta Martin

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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. 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 sixteen in 1967. 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, 1967

<u>Station</u>	<u>North Latitude</u>	<u>West Longitude</u>	<u>Elev. Meters</u>	<u>Foundation Material</u>	<u>Symbol</u>	<u>Present Auspices and Date Established</u>
Berkeley (Haviland)	37° 52!4	122° 15!6	81	Franciscan sandstone	BRK	Univ. of California, 1887
Berkeley (Strawberry)	37° 52!6	122° 14!1	276	Claremont shales	BKS	Univ. of California, 1962
Mt. Hamilton	37° 20!5	121° 38!5	1282	Franciscan formation	MHC	Lick Observatory, 1887
Fresno	36° 46!0	119° 47!8	88	Alluvium	FRE	Fresno City College, 1935
Mineral	40° 20!7	121° 36!3	1495	Volcanic flow	MIN	National Park Service, 1938
Arcata	40° 52!6	124° 04!5	59	Sandstone (loose)	ARC	Humboldt State College, 1948
Manzanita Lake	40° 32!2	121° 33!7	1800	Volcanic tuff	MLC	National Park Service, 1956
San Andreas Geophysical Observatory	36° 45!9	121° 26!7	350	Granite	SAO	Transferred from HRC July 11, 1966
Concord	37° 58!1	122° 04!3	36	Alluvium overlying Franciscan	CNC	Diablo Valley College, 1960
Paraiso	36° 19!9	121° 22!2	363	Granodiorite	PRS	Paraiso Hot Springs, 1961
Llanada	36° 37!0	120° 56!6	475	Alluvium overlying sandstone	LLA	Charles McCullough Ranch, 1961
Priest	36° 08!5	120° 39!9	1187	Greenstone (basic metamorphic)	PRI	Federal Aviation Agency, 1961
Oroville	39° 33!3	121° 30!0	360	Granite	ORV	Department of Water Resources, 1963
Jamestown	37° 56!8	120° 26!3	457	Metamorphic (serpentine)	JAS	Department of Water Resources, 1964
Granite Creek	37° 01!8	121° 59!8	122	Granite	GCC	O.C. Tallakson, Santa Cruz, 1965
Pilarcitos Creek	37° 30!0	122° 22!9	91	Granodiorite (weathered)	PCC	Sare Ranch, 1965

STATION INSTRUMENTATION

July 1 - December 31, 1967

Station	Type of Instrument	T <sub>o</sub> sec	T <sub>g</sub> sec	Component
BRK	Benioff 100 kg	1.0	0.2	Z
	Benioff 100 kg	1.0	8.0	Z
	100X torsion	0.8	-	N, W
	4X torsion	0.8	-	N, W
	Press-Ewing	15	30	Z
	*Press-Ewing	30	Broad band	N45°W, N45°E, Z
	Press-Ewing, ULP	45	300	N45°E
BKS	Benioff 100 kg	1.0	0.75	N, E, Z
	Sprengnether	15	100	N, E, Z
	Wood-Anderson torsion	0.8	-	S, W
MHC	#*Benioff 14 kg	1.0	0.2	Z
	Wood-Anderson torsion	0.8	-	S, E
	#*Willmore	3.0	0.2	N45°E, Nov. 8, 1967
MLC	Loucks-Omori	6.0	-	NE
FRE	Sprengnether moving coil	2.0	2.0	N, E
	Benioff	1.0	0.7	Z, May 9, 1967
MIN	Benioff 100 kg	1.0	0.4	Z
	Wood-Anderson torsion	0.8	-	S, E
ARC	Benioff 14 kg	1.0	0.2	Z
	Wood-Anderson torsion	0.8	-	N, E
SAO	#Benioff 14 kg	1.0	0.2	Z
	+ #Sprengnether 0.70 kg (microearthquake array)	6.8 Hz	25 Hz filter	Z
	#*Willmore	3.0	0.2	N45°E
CNC	Benioff 100 kg	1.0	0.2	Z
GCC	#*Willmore	3.0	0.2	N45°E
PRS	#*Willmore	3.0	0.2	N45°E
LLA	#Benioff 14 kg	1.0	0.2	Z
PRI	#*Benioff 14 kg	1.0	0.2	Z
JAS	Benioff 100 kg	1.0	0.75	N, E, Z
	#*Benioff 14 kg	1.0	0.2	Z
PCC	#Benioff 14 kg	1.0	0.2	Z
ORV	Benioff 100 kg	1.0	0.75	N, E, Z
	Geotech moving coil	20	100	N, E, Z

# Signals telemetered to Berkeley via leased telephone lines.

\* Signals recorded on magnetic tape at Berkeley.

+ Signals recorded on magnetic tape at SAO.

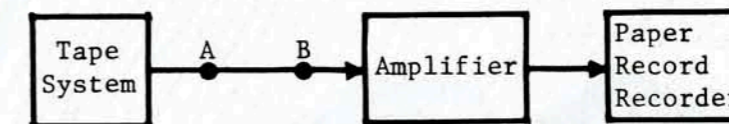
Direction of motion: In the "Component" column, each horizontal component seismograph is designated by the direction of ground motion corresponding to upward trace motion on the seismogram when it is oriented so that time increases from left to right. On all vertical component (Z) instruments, upward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

Tape-recorded long-period seismometers (BRK): On pages 119 and 120 are given the frequency response curves, amplitude and phase, for the Press-Ewing long-period seismometers which record on magnetic tape at BRK.

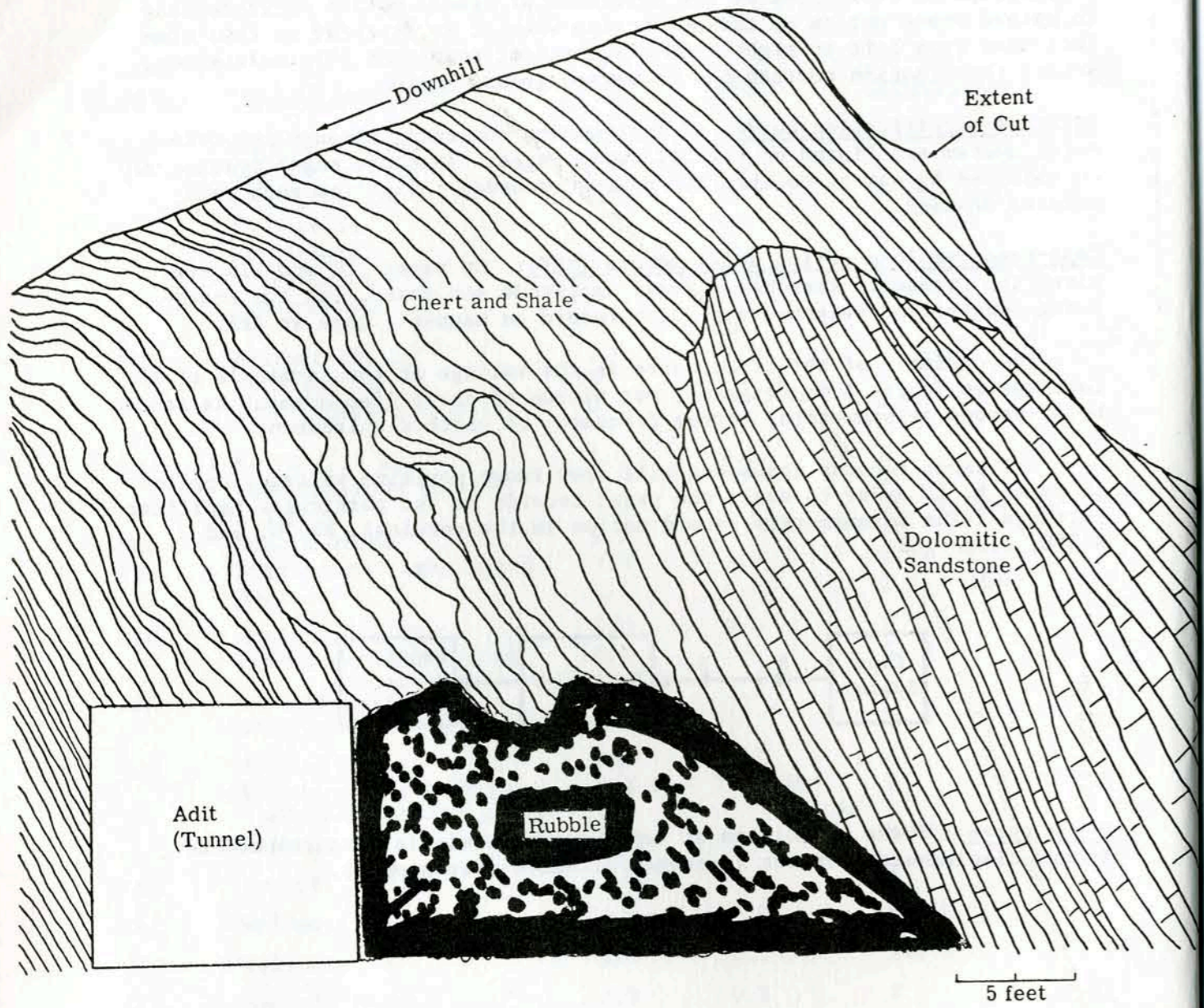
The ordinate of the first curve is the voltage at the terminals of the tape system (point A in diagram), per micron of earth displacement as sensed by 30-second seismometers; versus frequency of earth displacement.

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.

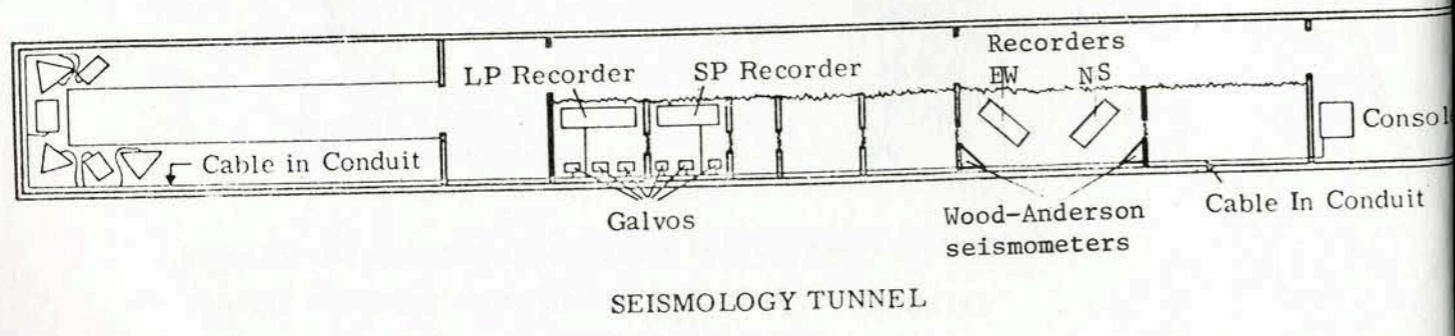


Phase curve: Phase of voltage at tape system terminals with respect to ground displacement; versus frequency of earth displacement.

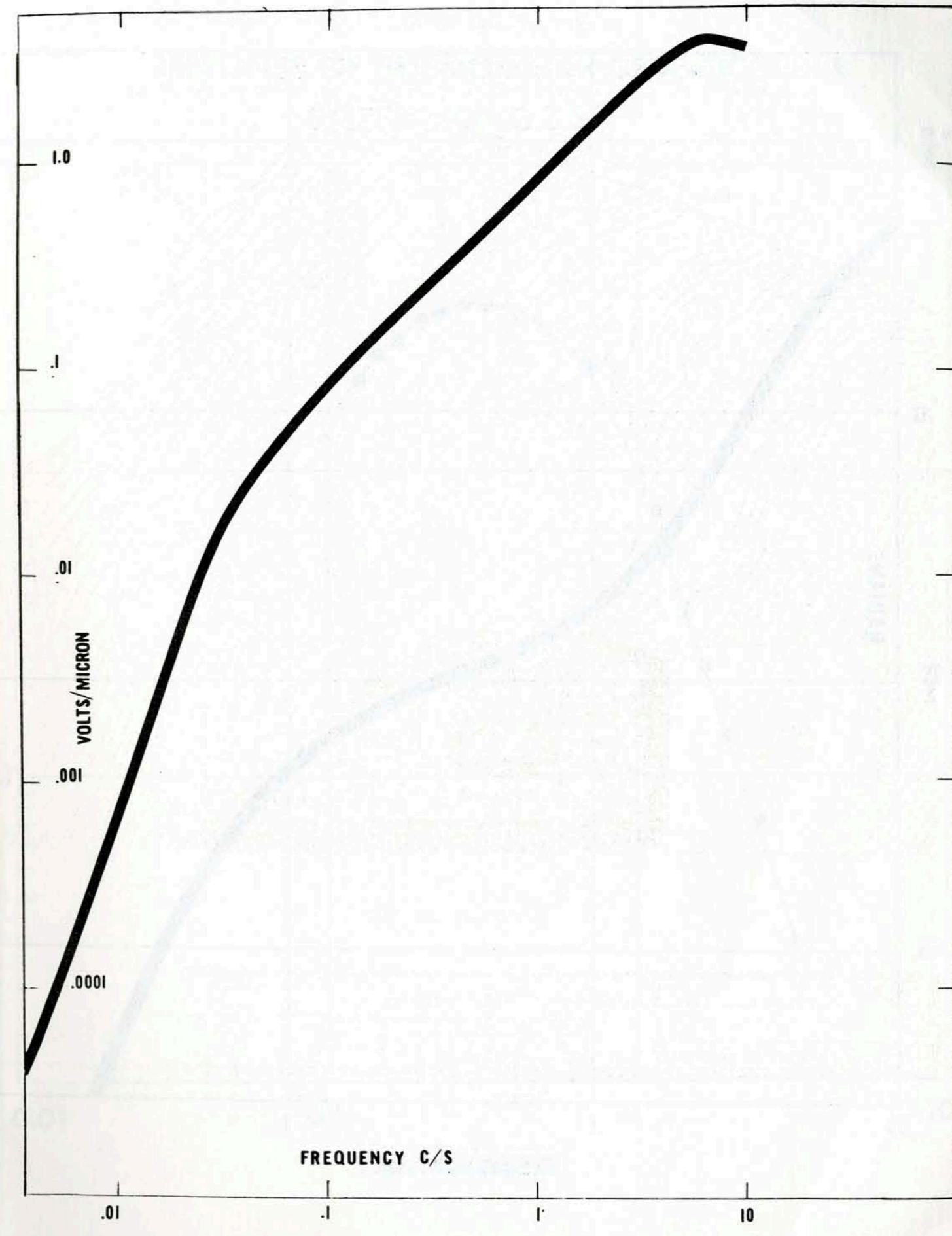
### BYERLY SEISMOGRAPHIC STATION (BKS) BERKELEY, CALIFORNIA

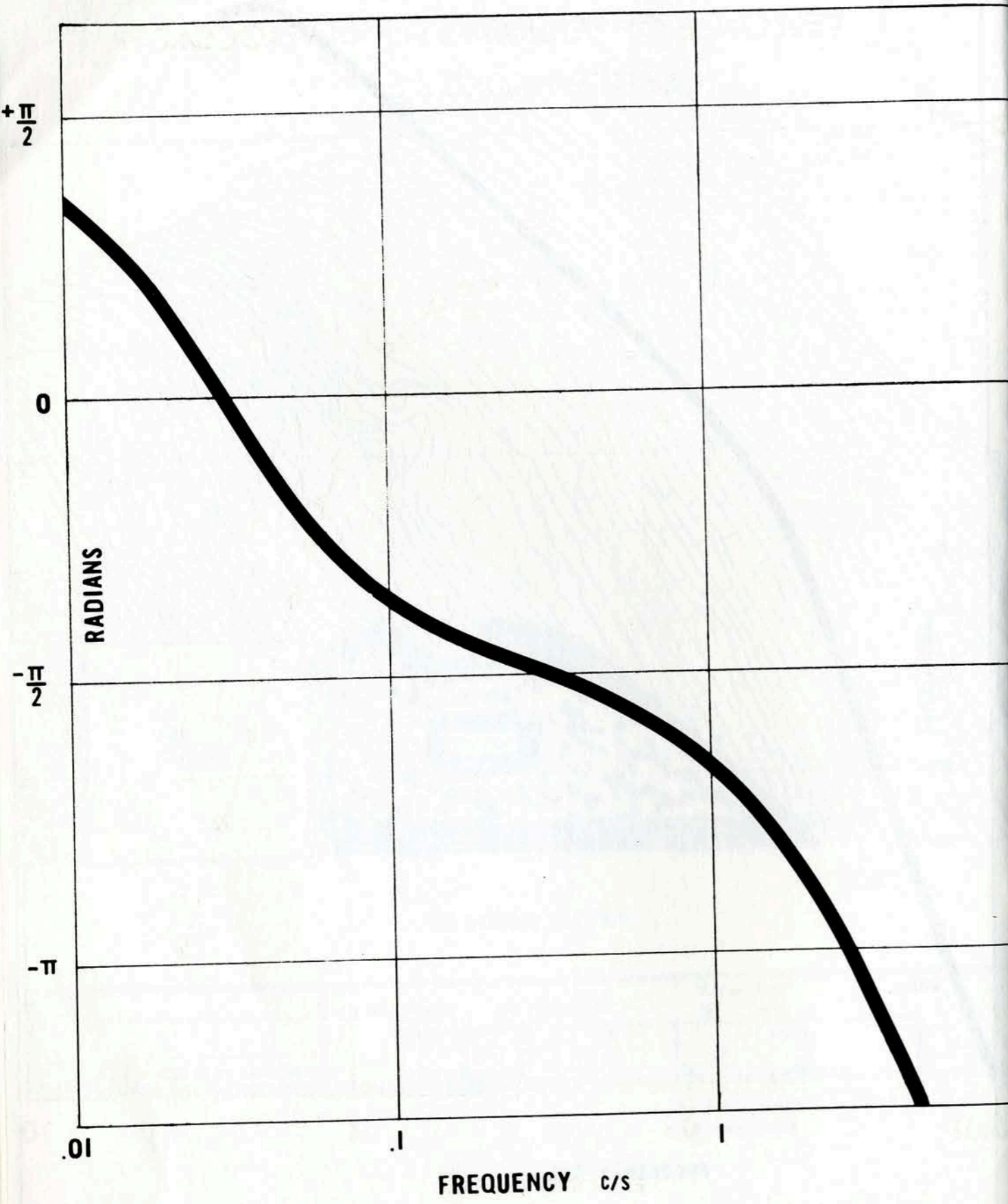


GEOLOGIC SECTION

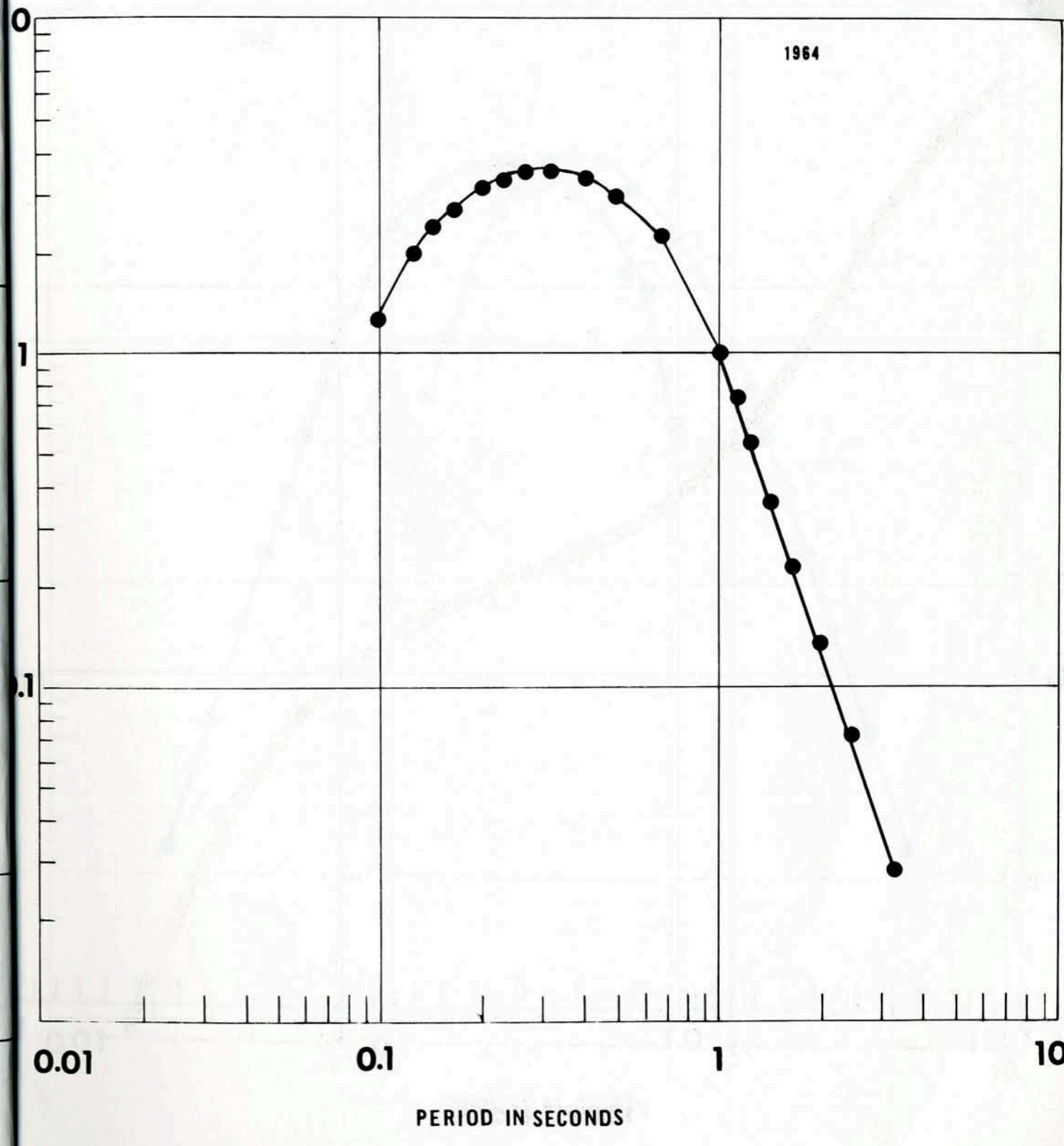


SEISMOLOGY TUNNEL



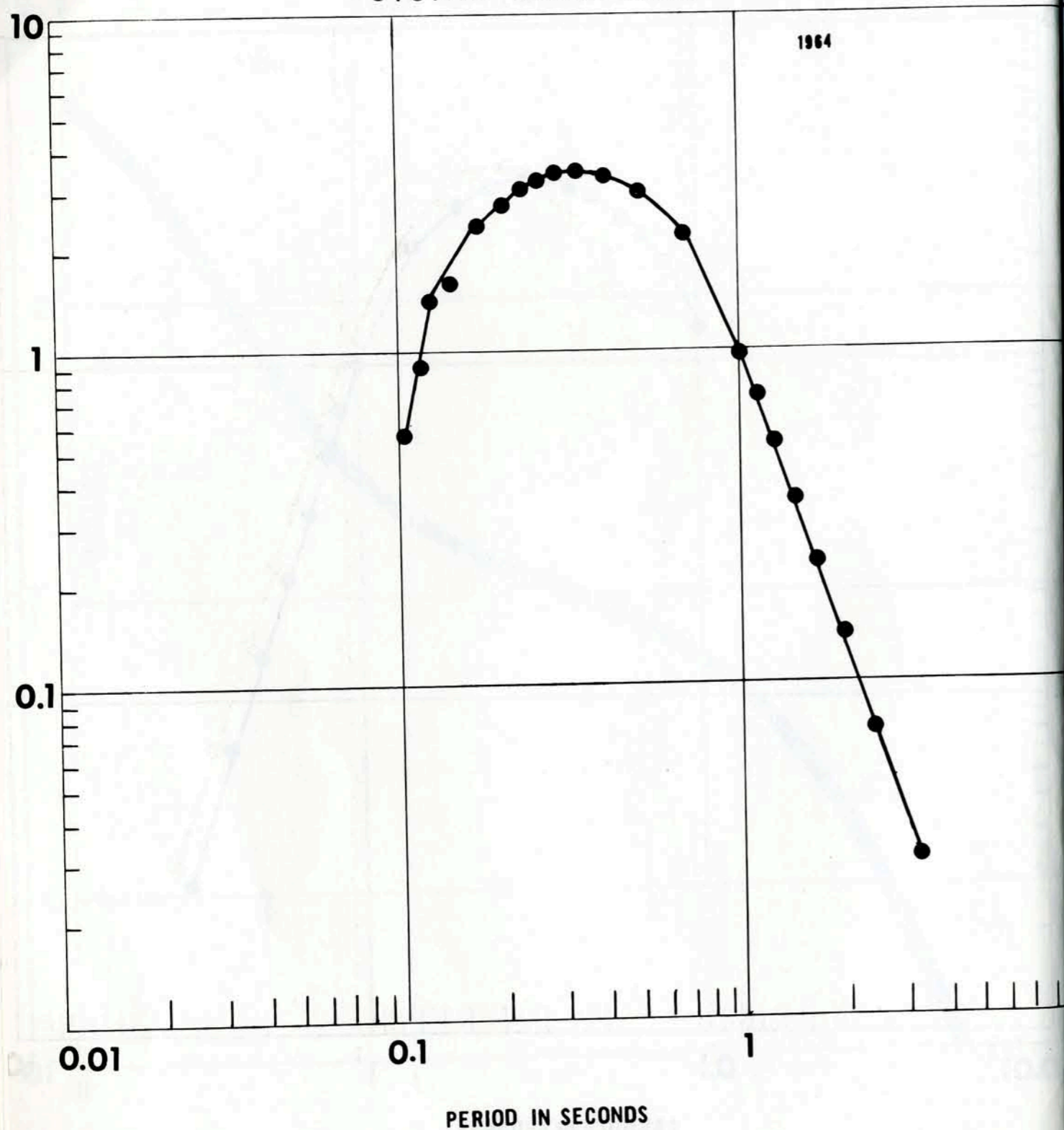


### RESPONSE OF SEISMOMETER-DEVELOCORDER SYSTEM 100KG Z.S.P.

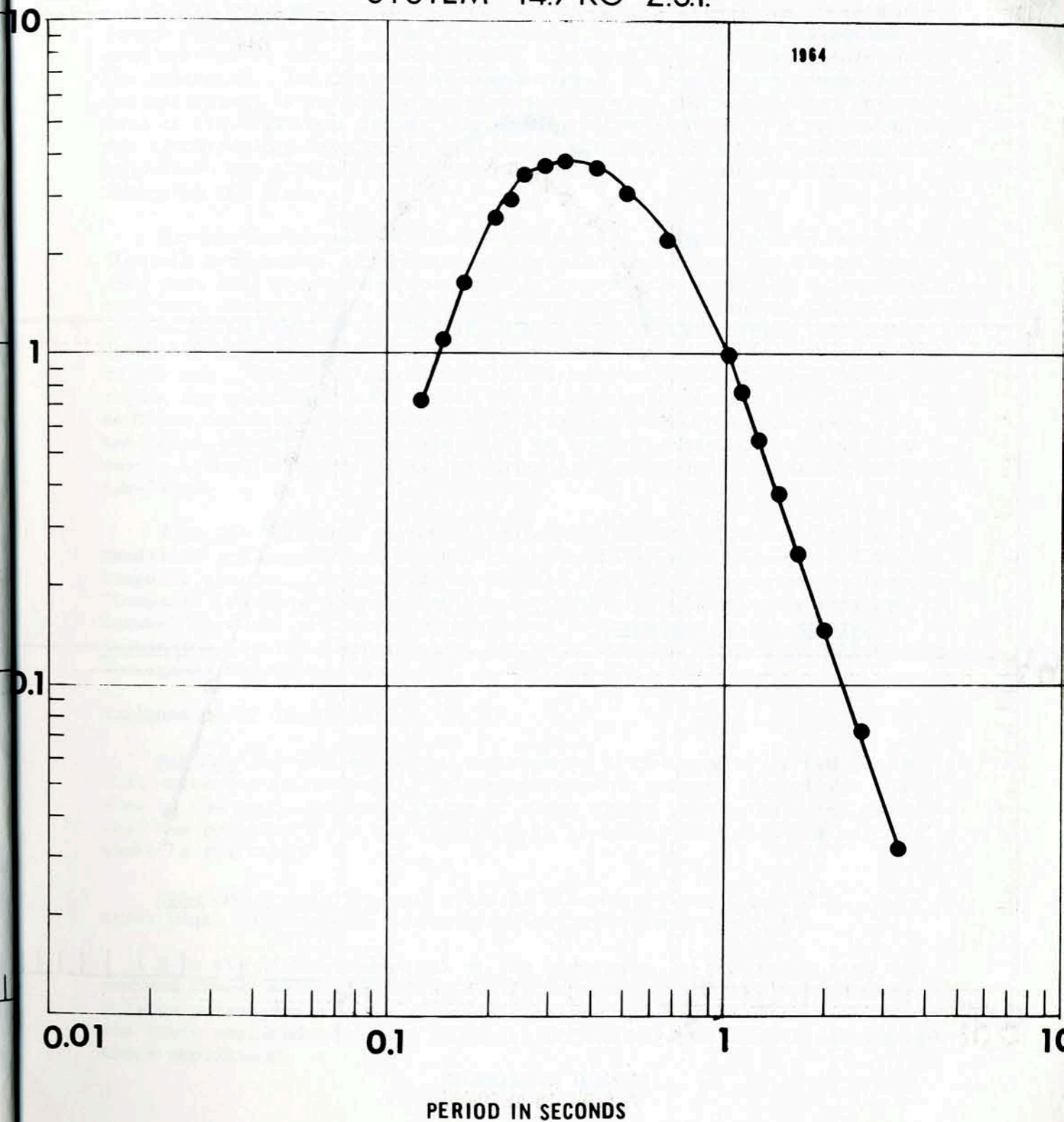




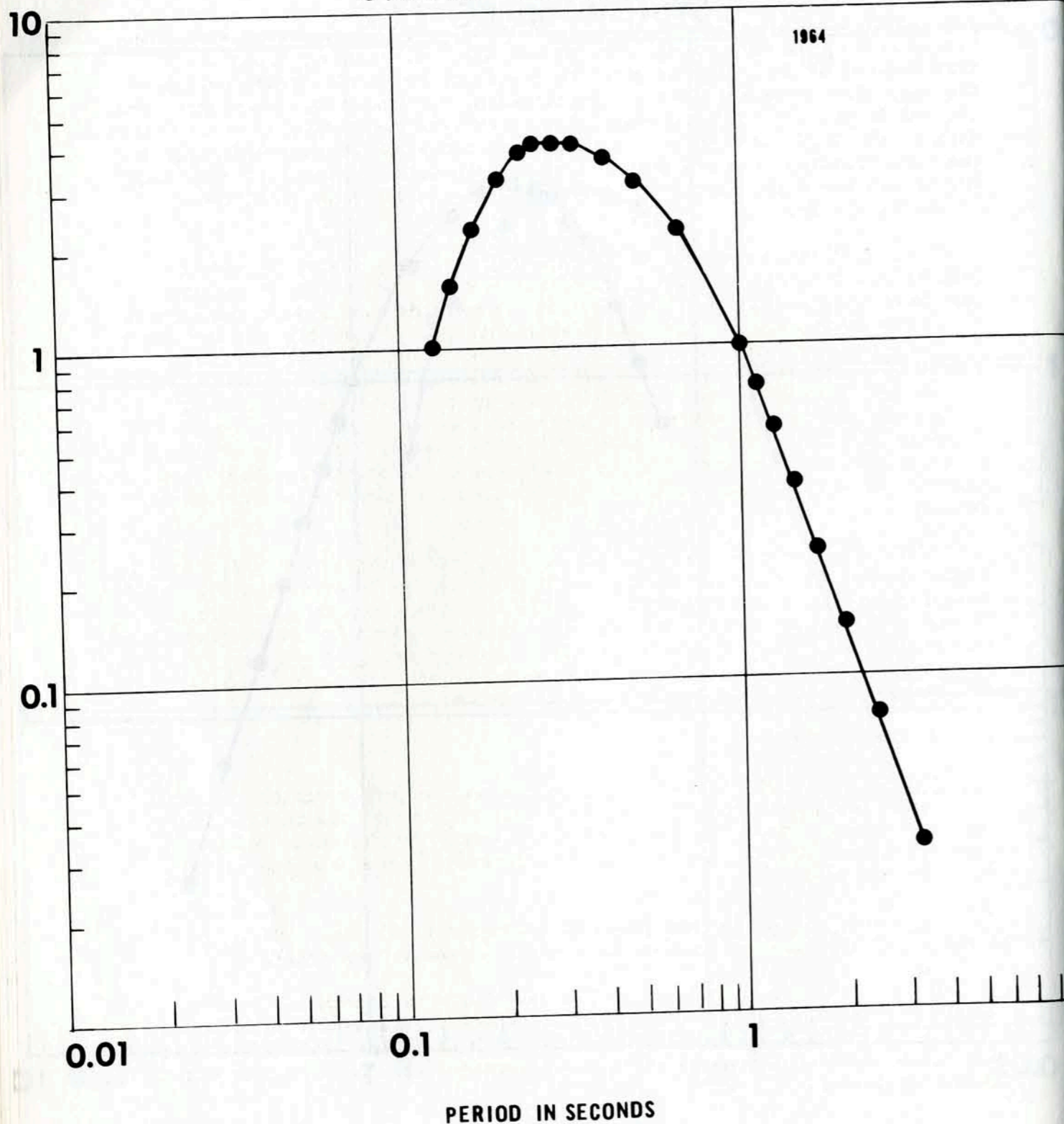
### RESPONSE OF SEISMOMETER-HELICORDER SYSTEM 100KG Z.S.P.



### 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, 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. For the sake of completeness, in cases where these data are not sufficient to determine acceptable epicenters the preliminary epicentral data of the USCGS are quoted. 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 and above, but it is likely that some such shocks have been omitted because the available seismographic data were inadequate for epicenter determination. Within the limited region covered by the map of the central Coast Ranges of California, locatable shocks of magnitude 2.5 and over are included in the tabulation and plotted on the map. Shocks of magnitude 3.0 and over occurring in the limited 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 artificial earthquakes (explosions) ordinarily are not tabulated.

With the exception of some graphically located epicenters off Cape Mendocino and in northern Nevada, 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).

M is the Richter magnitude of the earthquake as determined 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.

h is the focal depth 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 depth has been restrained to that value.

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

The quality of the solution is partially reflected by the listed number of stations. The highest quality locations are given to tenths of minutes in latitude and longitude and to the tenth of a second origin time. Poorer quality locations are given to the nearest tenth of a degree in latitude and longitude, to the nearest second in origin time. Care is taken in selecting stations used in the hypocenter estimation to obtain as uniform as possible distribution in azimuth and distance to avoid abnormal weighting in any azimuthal station group. For example, in locating Owens Valley or Cape Mendocino shocks, the Priest to Berkeley station array may be represented by only two or three stations. In special cases, such as small Parkfield shocks, previous detailed study of earthquake sequences in the area have provided station corrections or other special location techniques. For a group of earthquakes in a particular area, the same station group, if possible, is used for all locations.

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 Remarks 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 maximum intensities of shocks reported felt is also included under Remarks. Reports on felt earthquakes may be obtained from the Seismological Field Survey of the U.S. Coast and Geodetic Survey, which publishes a more complete summary in "Abstracts of Earthquake Reports for the Pacific Coast and Western Mountain Region". This regular quarterly publication may be obtained from the District Officer, San Francisco District, Coast and Geodetic Survey, 121 Customhouse, San Francisco, California 94126, or from the Director, U.S. Coast and Geodetic Survey, Washington Science Center, Rockville, Maryland 20852. Intensities given in Roman numerals are assigned by the Coast and Geodetic Survey and based on the Modified Mercalli Intensity Scale of 1931.

EARTHQUAKES IN NORTHERN CALIFORNIA, NEVADA AND OREGON

Map No.	Date 1967	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
<u>1</u>	July 05	10-43-00.6	36° 37!4	120° 40!8	2.5	a	6	E of Panoche Valley.
2	July 06	01-01-08.7	36° 36!5	120° 38!8	2.5	a	5	E of Panoche Valley.
3	July 09	15-41-42.3	37° 06!4	117° 54!7	3.5	c	5	Owens Valley.
4	July 22	09-23-26.6	36° 32!1	121° 09!8	3.8	a	16	Bear Valley. Felt at Coalinga, Paicines, San Benito. Max. intensity VI. Followed by sequence of aftershocks.
<u>1</u>	July 23	15-16-43.6	36° 36!8	120° 41!4	3.3	b	5	E of Panoche Valley. Felt max. intensity V.
5	July 23	22-26-23.7	36° 36!5	120° 43!4	2.5	b	7	E of Panoche Valley. Aftershock of previous earthquake.
6	July 24	07-08-52.9	35° 58!4	120° 29!8	3.7	b	9	Parkfield area.
<u>7</u>	July 24	08-37-12.8	36° 33!8	121° 10!4	2.6	b	8	Bear Valley.
<u>8</u>	July 24	10-19-55.0	36° 32!3	121° 08!3	2.7	b	9	Bear Valley.
<u>9</u>	July 26	07-29-16.1	36° 33!1	121° 08!9	2.5	b	7	Bear Valley.
10	July 28	14-44-40.1	35° 45!3	121° 22!7	3.0	a	6	Near San Simeon.
11	July 30	15-45-08.0	38° 57!2	118° 11!8	3.1	c	6	NE of Walker Lake, Nev.
12	Aug. 01	22-14-18.0	35° 44!9	121° 24!4	2.7	a	6	NW of San Simeon.
13	Aug. 02	00-10-35.0	38° 30!4	122° 45!6	2.8	c	6	NW of Santa Rosa.
<u>7</u>	Aug. 02	01-10-52.5	36° 33!5	121° 09!9	2.5	a	7	Bear Valley.
<u>7</u>	Aug. 03	05-33-40.6	36° 33!7	121° 10!0	2.5	a	6	Bear Valley.
14	Aug. 06	07-27-52.2	37° 04!2	117° 52!8	3.1	c	5	Owens Valley.
15	Aug. 06	11-15-00.9	39° 35!8	118° 04!6	3.3	a	6	NE of Walker Lake, Nev.
16	Aug. 07	21-07-36.4	36° 44!8	121° 28!6	2.5	b	9	S of Hollister
17	Aug. 08	16-11-28.3	36° 24!7	120° 25!0	2.5	a	7	N of Coalinga.
<u>9</u>	Aug. 08	20-01-44.5	36° 32!8	121° 08!7	2.6	a	7	Bear Valley
18	Aug. 09	06-45-13.5	37° 36!6	116° 41!8	3.8	c	7	Southern Nevada.
19	Aug. 12	18-57-40.4	35° 48!1	120° 26!8	4.1	b	18	Parkfield area. Felt Parkfield, Cholame. Max. intensity V.

Map No.	Date 1967	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
20	Aug. 12	23-21-07.8	36° 06!7	120° 47!8	2.8	a	6	SE of King City.
21	Aug. 12	23-22-05.3	36° 08!3	120° 46!5	2.5	a	7	SE of King City.
22	Aug. 13	11-52-42	40°9	125°5	3.4	a(R)		Off shore Cape Mendocino.
23	Aug. 17	23-12-02.7	35° 54!4	121° 29!6	2.6	a	5	NW of San Simeon.
<u>9</u>	Aug. 18	18-48-10.9	36° 33!4	121° 09!3	2.7	a	8	Bear Valley.
24	Aug. 18	20-12-40.2	37° 11!4	116° 46!3	4.4	a(R)	9	Southern Nevada.
25	Aug. 20	06-14-06.4	37° 31!6	118° 47!5	3.1	a	6	NW of Bishop.
26	Aug. 22	08-03-54	40°3	123°8	3.1	a(R)		N of Garberville.
27	Aug. 22	08-19-27.3	37° 29!1	118° 23!8	3.0	a	6	N of Bishop.
28	Aug. 23	23-10-27.4	37° 36!8	118° 16!7	3.4	a	9	N of Bishop.
29	Aug. 25	02-28-14.4	35° 48!6	121° 16!4	2.7	a	6	NW of San Simeon.
30	Aug. 25	16-35-27.8	36° 03!4	120° 00!3	3.2	c	7	SE of Coalinga.
* 31	Aug. 25	16-46-50.2	36° 01!4	119° 57!3	3.0	b	7	SE of Coalinga.
32	Aug. 26	03-57-13	40°5	119°9	3.0	a(R)		N of Reno.
33	Aug. 26	10-35-06.4	36° 33!5	121° 09!0	2.6	a	6	Bear Valley.
<u>8</u>	Aug. 27	18-09-11.0	36° 32!3	121° 08!1	2.7	a	6	Bear Valley.
34	Aug. 27	23-02-35.9	39° 13!8	123° 33!5	3.4	b	6	NW of Ukiah.
35	Aug. 29	17-14-17.6	40° 26!7	125° 03!9	4.1	a	6	Off shore Cape Mendocino.
36	Aug. 29	19-40-05.3	40° 22!5	119° 48!5	3.5	b(R)	6	N of Reno, Nev.
37	Aug. 31	18-10-40.4	35° 52!3	121° 21!3	2.8	a	7	NW of San Simeon.
38	Sept. 02	20-25-43.3	37° 34!7	117° 57!7	3.8	a	12	Near Oasis.
39	Sept. 07	12-39-17.2	37° 02!1	121° 46!6	4.7	b	18	W of Gilroy. Felt over wide area from Hollister to Berkeley. Minor damage in San Jose. Max. intensity VI.
40	Sept. 08	05-39-52.4	37° 11!7	118° 28!1	2.9	a(R)	9	Owens Valley.
41	Sept. 09	21-35-05.6	35° 41!1	121° 38!6	2.4	a(R)	3	Off shore San Simeon.
42	Sept. 11	05-05-33	38°0	118°0	3.0	a(R)		Mt. Montgomery, Nev.
43	Sept. 11	18-57-28.5	40° 38!7	123° 20!5	3.5	a	6	E of Ferndale.
44	Sept. 12	18-33-32.8	37° 06!9	121° 59!8	2.6	b	9	N of Santa Cruz.
45	Sept. 14	16-38-29.1	36° 31!2	121° 12!8	2.6	b	7	Bear Valley.
46	Sept. 21	17-00-09.0	36° 13!8	118° 16!3	3.3	a(R)	12	SW of Owens Lake. Felt Fresno.
47	Sept. 26	05-51-14.5	41° 59!2	125° 59!2	4.3	c(R)		Off shore Cape Mendocino.

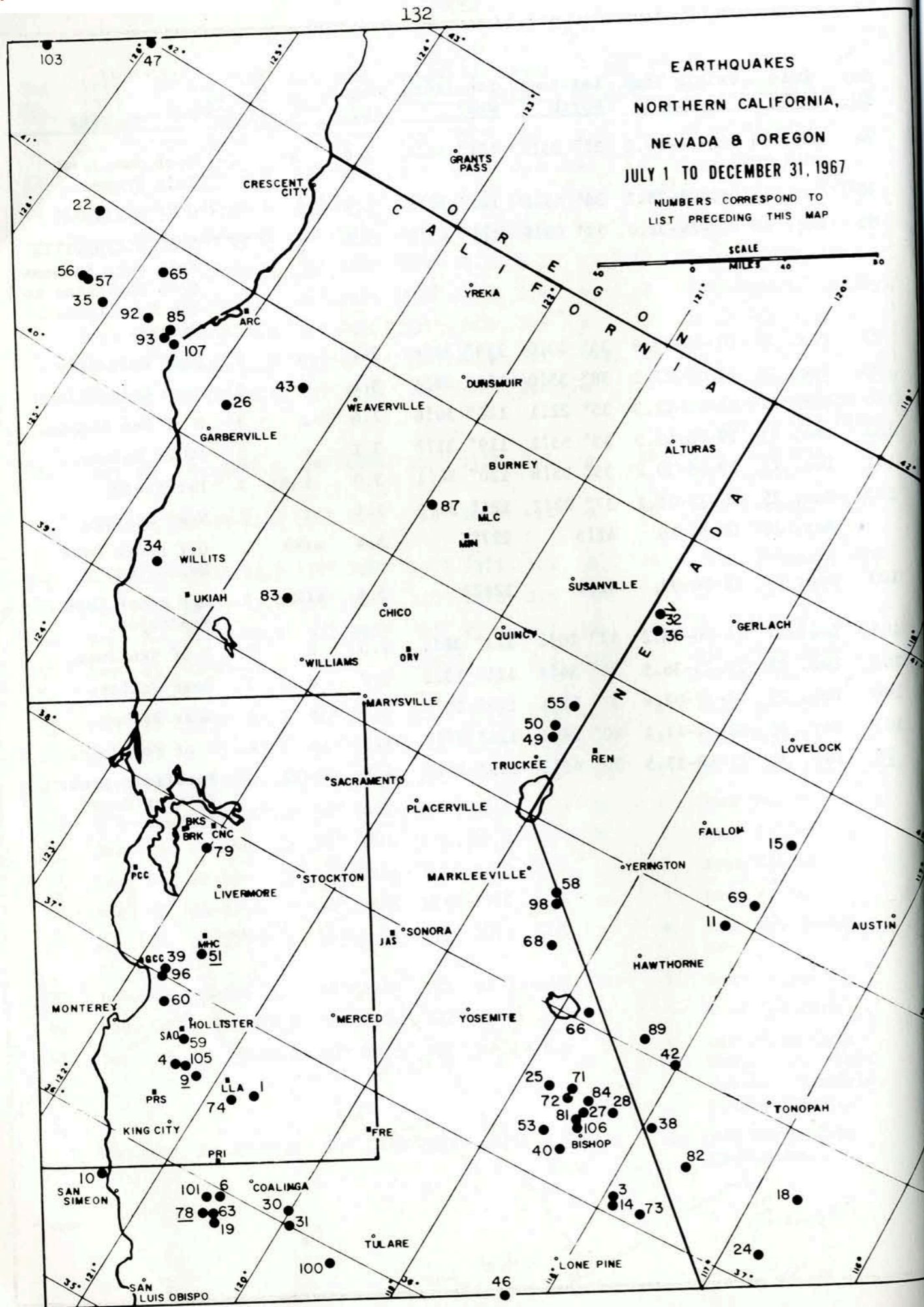
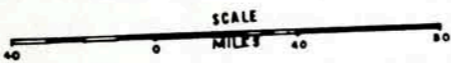
Map No.	Date 1967	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
48	Sept. 27	02-41-23.9	38° 44!3	122° 10!7	2.6	a(R)	5	W of Woodland.
49	Sept. 27	05-32-25.1	39° 29!7	120° 09!6	3.5	b	8	Near Truckee. Felt. Max. intensity IV.
50	Sept. 28	02-51-54.7	39° 32!9	120° 11!7	3.7	a	9	Near Truckee. Felt in Truckee and Reno. Max. intensity V.
<u>51</u>	Sept. 28	15-38-36.1	37° 13!8	121° 37!2	4.9	b	15	SE of San Jose. Felt over wide area. Damage at San Jose. Max. intensity VI.
52	Sept. 28	18-33-27.0	36° 36!7	121° 14!6	2.5	a	7	Bear Valley.
<u>51</u>	Sept. 28	21-08-11.6	37° 13!6	121° 37!2	3.5	b	12	SE of San Jose. Felt. Max. intensity IV. Aftershock of Sept. 28, 15-38-36.
53	Oct. 02	09-44-33.7	37° 16!4	118° 37!6	3.1	a	7	W of Bishop.
54	Oct. 02	16-16-11.0	37° 54!6	122° 45!4	2.8	a(R)	8	W of Mill Valley.
55	Oct. 05	15-30-52.0	39° 44!9	120° 07!9	3.0	b	6	NW of Reno.
56	Oct. 08	07-00-14	40°5	125°3	3.7	a(R)		Off shore Cape Mendocino.
57	Oct. 09	08-13-34	40°5	125°3	3.6	a(R)		Off shore Cape Mendocino.
58	Oct. 09	17-01-12.5	38° 38!7	119° 27!7	3.3	b(R)	6	Near Coleville.
59	Oct. 10	02-37-38.7	36° 43!2	121° 25!0	3.2	a	9	S of Hollister. Felt Hollister.
60	Oct. 11	18-35-47.1	36° 52!1	121° 40!9	3.0	a	11	Near Watsonville.
61	Oct. 14	12-02-43.6	36° 30!1	120° 36!9	2.7	b	5	Near Mt. Ciervo.
62	Oct. 18	22-52-56.8	36° 49!1	120° 54!7	2.5	a	6	E of Hollister.
63	Oct. 21	12-05-21.8	35° 49!7	120° 28!4	3.1	b	7	Parkfield area.
64	Oct. 25	23-05-39.5	35° 43!8	121° 26!9	2.6	a	4	Near San Simeon.
65	Oct. 31	04-11-40	41°0	124°9	3.7	a(R)		Off shore Cape Mendocino.
66	Nov. 02	17-56-30.9	38° 04!0	118° 47!8	3.0	a	6	Near Mono Lake
68	Nov. 06	07-22-46.2	38° 20!2	119° 19!9	3.4	a	11	NW of Mono Lake. Felt in Coleville and near Bridgeport.
69	Nov. 07	03-44-34.5	39° 08!1	118° 05!6	3.1	a	5	Near Walker Lake, Nev.
70	Nov. 09	07-41-35.1	36° 53!3	121° 18!9	2.5	a	9	NE of Hollister.
71	Nov. 11	05-44-22.1	37° 35!9	118° 36!2	3.1	a	7	NW of Bishop.

Map No.	Date 1967	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
72	Nov. 11	05-51-51.7	37° 32!5	118° 35!8	3.4	a	9	NW of Bishop.
73	Nov. 11	14-24-26.4	37° 04!4	117° 41!9	3.3	b	6	N of Lone Pine.
74	Nov. 11	22-10-06.8	36° 29!9	120° 49!1	3.3	a	9	S of Panoche Valley.
75	Nov. 11	22-33-47.5	36° 29!0	120° 47!5	2.8	b	6	S of Panoche Valley.
76	Nov. 12	06-27-34.8	36° 55!7	121° 42!3	2.7	b	10	Near Watsonville.
75	Nov. 12	07-11-20.4	36° 29!4	120° 48!3	2.6	b	7	S of Panoche Valley.
77	Nov. 12	17-02-24.0	37° 24!2	121° 44!6	2.6	a	10	NE of San Jose.
78	Nov. 14	00-00-51.7	35° 47!2	120° 32!4	3.1	b(R)	3	Parkfield.
79	Nov. 18	18-00-58.1	37° 50!6	122° 00!4	3.2	a	9	Near Danville. Felt Oakland and Palo Alto. Slight damage Alamo.
80	Nov. 18	18-13-02.6	37° 48!5	122° 01!7	2.5	a	10	Near Danville. Aftershock.
81	Nov. 21	05-30-22.6	37° 25!7	118° 26!9	4.2	a	10	Near Bishop. Felt near Bishop.
82	Nov. 21	17-25-12.9	37° 28!9	117° 33!5	3.3	a	6	SW of Tonopah, Nev.
83	Nov. 24	15-12-13.6	39° 26!7	122° 30!7	3.6	a	6	NW of Lodoga.
84	Nov. 24	19-13-09.7	37° 34!7	118° 27!4	3.2	a	4	N of Bishop.
85	Nov. 25	02-46-56	40° 5	124° 5	3.4	a(R)		Off shore Cape Mendocino.
7	Nov. 25	13-09-56.9	36° 34!0	121° 10!4	2.6	a	8	Bear Valley.
86	Nov. 25	15-27-43.4	36° 28!3	121° 04!4	2.5	a	6	Bear Valley.
87	Nov. 29	02-55-02.9	40° 24!4	121° 57!5	3.1	a	5	SW of Lassen.
7	Nov. 29	05-44-08.1	36° 34!0	121° 10!3	2.7	b	8	Bear Valley.
9	Dec. 03	20-54-27.1	36° 33!0	121° 09!3	3.0	a	8	Bear Valley.
7	Dec. 04	22-10-37.2	36° 33!6	121° 10!9	2.5	a	5	Bear Valley.
88	Dec. 05	04-11-33.9	36° 37!8	121° 17!2	2.5	a	5	Bear Valley.
89	Dec. 05	18-28-54.5	38° 04!2	118° 20!1	3.5	a	9	Near Mt. Montgomery, Nev.
90	Dec. 06	10-05-56.2	36° 33!9	121° 07.3	2.8	b	8	Bear Valley.
91	Dec. 08	12-42-09.6	38° 04!6	122° 00!1	2.5	a	5	N of Concord.
92	Dec. 10	12-06-52.2	40° 29!5	124° 41!6	5.6	b	6	Off shore Cape Mendocino. Felt Eureka, Ferndale, Willow Creek.
93	Dec. 10	12-33-59.9	40° 26!0	124° 29!5	4.0	c	4	Off shore Cape Mendocino.

Map No.	Date 1967	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
94	Dec. 14	18-54-35.3	37° 33!0	121° 54!4	2.6	a	7	N of San Jose. Felt Fremont.
95	Dec. 17	10-04-28.2	36° 49!2	121° 38!8	2.5	b	8	W of Hollister.
96	Dec. 18	17-24-32.0	37° 00!6	121° 47!3	5.3	c	17	N of Watsonville. Felt over an area from Hollister to San Francisco. Damage.
97	Dec. 20	01-49-13.9	38° 30!0	119° 30!6	2.8	a	9	Near Coleville.
98	Dec. 20	02-27-27.1	38° 35!0	119° 28!5	3.4	a	9	Near Coleville.
99	Dec. 21	05-13-11.3	35° 22!1	120° 50!6	2.6	a	3	S of San Simeon.
100	Dec. 21	19-08-53.3	35° 55!1	119° 31!7	3.1	c	5	NW of Delano.
101	Dec. 21	23-58-30.2	35° 55!8	120° 34!1	3.0	b(R)	3	Parkfield.
102	Dec. 25	00-27-01.1	37° 02!2	121° 39!5	2.5	c	7	Near Gilroy.
	Dec. 26	10-11-28	41° 5	127° 5	3.4	a(R)		Off shore Cape Mendocino.
103	Dec. 27	14-04-03	41° 6	126° 7	3.6	a(R)	7	Off shore Cape Mendocino.
104	Dec. 27	16-00-38.2	37° 20!1	121° 38!1	2.5	a	5	E of San Jose.
105	Dec. 28	20-25-36.5	36° 34!9	121° 13!5	3.2	a	7	Bear Valley.
106	Dec. 29	22-17-09.4	37° 22!4	118° 25!7	3.3	a	6	Near Bishop.
107	Dec. 30	08-04-41.1	40° 26!4	124° 22!4	4.5	a	4	S of Ferndale.
78	Dec. 31	23-48-13.5	35° 45!3	120° 26!8	4.3	b(R)	3	Parkfield area. Felt at Paso Robles.

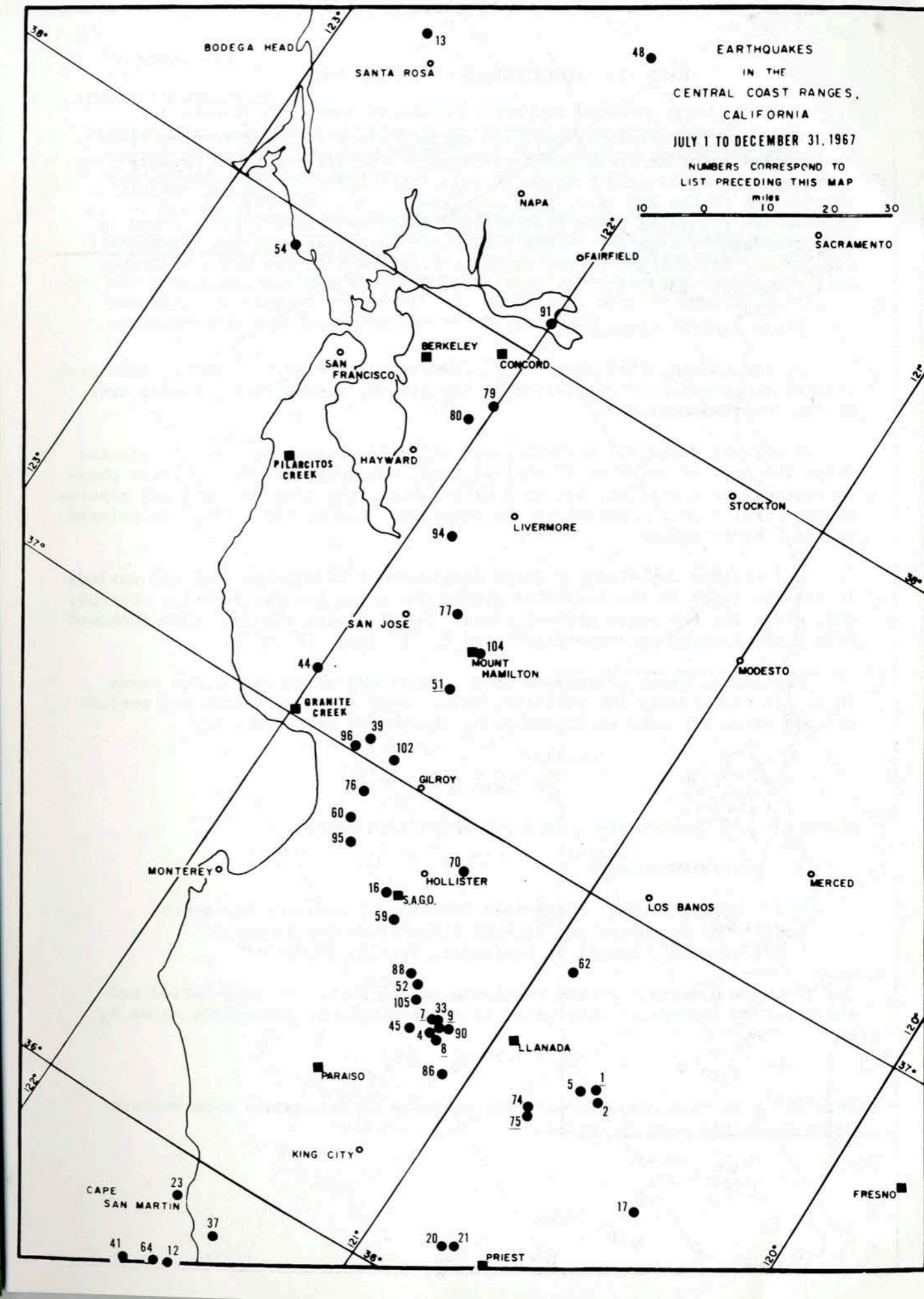
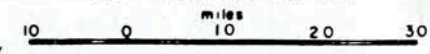
**EARTHQUAKES  
 NORTHERN CALIFORNIA,  
 NEVADA & OREGON  
 JULY 1 TO DECEMBER 31, 1967**

NUMBERS CORRESPOND TO  
 LIST PRECEDING THIS MAP



**EARTHQUAKES  
 IN THE  
 CENTRAL COAST RANGES,  
 CALIFORNIA  
 JULY 1 TO DECEMBER 31, 1967**

NUMBERS CORRESPOND TO  
 LIST PRECEDING THIS MAP



PART II. REGISTRATION OF EARTHQUAKES

This section tabulates measured arrival times of prominent phases of earthquakes 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), 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 ( $\mu$ ) 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 correspond to the magnitude based on surface waves ( $M_s$ ). In calculating the published value, body wave amplitudes and periods of <sup>S</sup>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 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 six 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 AUG 31 1967  
PRELIMINARY READINGS AT  
BKS, BPK, PRI, JAS, MHC, MIN, ARC, SAN, FPF

\* PRECEDING ALPHABET INDICATES LOWER CASE  
D\* IS TO BE READ AS PKP

D OR PKP S OTHER PHASES

BKS JUL 01 07 48 \*F 50 00 \*E 67 00 \*E 84 00  
R FROM N.W.  
PRI 07 48 07.3 C  
JAS 07 48 04.3 C PP 50 08  
MHC 07 48 04.0 C  
USCGS 07 28 57.6, 0.8S, 08.7E, H= 26 KM, M=5.5  
SOUTHERN SUMATRA.

PRI JUL 01 19 39 46.7 D \*E 39 54  
JAS 19 39 52.5 D \*E 40 00  
MHC 19 39 54.4 D \*F 40 02

PRI JUL 01 21 28 45.6 D \*E 28 59  
JAS 21 28 37.5 D \*E 28 51  
MHC 21 28 34.0 D \*F 28 48

BKS JUL 01 23 16 09.8 D 20 00 \*E 17 18 LQ 21 06 LR 22 10  
\*E 24 36

MICRON PERIOD  
P7 4.4 2.5  
PH 1.8 2.5  
SH 7.2 10  
MAG 6.3-6.5 DIST DEG 22  
PRI 23 16 29.3 D \*PP 16 43  
JAS 23 16 19.6 D  
MHC 23 16 16.2 D \*PP 16 27  
ARC 23 15 42.0 C

USCGS 23 12 07.2, 54.4N, 158.0W, H= 33 KM, M=6.0  
SOUTH OF ALASKA. FELT AT GOLD BAY AND SAND POINT.

BKS JUL 02 07 23 D PP 24 33 SKKS 31 12 SP 24  
SS 41 24 SSS 45 30 LQ 55  
LR 62 48

MICRON PERIOD  
P7 1.3 10  
PH 0.9 10  
MAG 6.0-6.4 DIST DEG 124  
PRI 07 23 20.8 C \*E 24 46  
JAS 07 22 57.6 C \*E 24 34  
MHC 07 22 58.3 C \*E 24 30

USCGS 07 03 52.9, 8.7N, 93.8E, H= 33 KM, M=5.7  
NICOBAR ISLANDS REGION.

PRI JUL 02 07 50 09.5 D \*E 50 22  
JAS 07 50 00.2 D \*E 50 13  
MHC 07 49 58.1 C

USCGS 07 38 15.0, 33.0N, 141.6E, H= 39 KM, M=5.0  
OFF EAST COAST OF HONSHU, JAPAN.

PRI JUL 02 10 15 35.6 C  
JAS 10 15 24.2 C  
MHC 10 15 21.5 C

BKS JUL 02 16 27 LR 49 42  
PRI 16 27 43.5 C  
JAS 16 27 36.5 C \*E 27 56  
MHC 16 27 35.1 C

USCGS 16 15 48.4, 32.9N, 141.7E, H= 19 KM, M=5.0  
SOUTH OF HONSHU, JAPAN.

PRI JUL 02 20 46 56.9 C  
JAS 20 46 46.1 C \*E 46 52  
MHC 20 46 43.0 D

BKS JUL 02 22 13 03 LR 36 42  
PRI 22 13 00 C  
JAS 22 12 50.7 C  
MHC 22 12 51.5 D

BKS JUL 03 03 55 \*E 32 36  
PRI 03 55 03.5 D  
JAS 03 54 58.0 D  
MHC 03 54 58.2 D

USCGS 03 42 18.2, 12.3N, 143.9E, H= 33 KM, M=5.0  
SOUTH OF MARIANA ISLANDS.

BKS JUL 03 05 39 D \*E 67 24  
JAS 05 39 14.5 D  
MHC 05 39 15.7 D

PRI JUL 03 12 55 37.1 D \*PP 56 13 \*E 56 36  
JAS 12 55 42.6 D \*PP 56 18  
MHC 12 55 45.2 D \*PP 56 21

BKS JUL 04 10 16 LQ 25 08 LR 26 12  
PRI 10 16 40.5 C  
JAS 10 16 52 C  
MHC 10 16 53 C

BKS JUL 04 14 29 39.0 C 40 06 \*PP 29 47 SS 46 06 SSS 49 42  
LQ 54 30 LR 58 06  
MICRON PERIOD  
PZ 0.6 12  
SH 0.8 16  
MAG 6.4-6.6 DIST DEG 86  
PRI 14 29 30.9 C \*E 29 45



JAS 14 29 37.3 C \*E 29 52  
MHC 14 29 38.0 C \*F 29 54  
USCGS 14 16 51.6, 38.1S, 73.4W, H= 23 KM, M=5.4  
NEAR COAST OF CENTRAL CHILE. FELT STRONGLY  
IN CENTRAL CHILE.

BKS JUL 04 23 53 01.3 D 61 52 \*PP 53 41 \*F 63 00 \*F 66 24  
L 69 32  
MICRON PERIOD  
PZ 0.04 0.6  
MAG 5.4-5.8 DIST DEG 66  
PRI 23 53 14.0 C \*PP 53 54  
MHC 23 53 04.7 D \*PP 53 44  
USCGS 23 42 13.7, 43.2N, 142.5E, H=140 KM, M=5.6  
HOKKAIDO, JAPAN REGION.

BKS JUL 05 05 26 LQ 38 18 LR 40 13  
PRI 06 26 55.0 C  
JAS 06 26 59 C  
MHC 06 27 05.9 C

BKS JUL 06 05 12 10.1 C LR 20 30  
PRI 05 12 25.2 D  
JAS 05 12 14.6 D  
MHC 05 12 16.1 D  
USCGS 05 06 13.4, 62.4N, 147.4W, H= 53 KM, M=5.1  
CENTRAL ALASKA. FELT AT GLENALLEN, GULKANA  
AND TAZLINA.

BKS JUL 06 13 49 16.1 54 48 LR 57 20  
MICRON PERIOD  
PZ 0.2 0.8  
SH 10 9  
MAXH 16 17  
MAG 5.8-6.0 DIST DEG 33  
PRI 13 49 34.3 D \*PP 49 41  
JAS 13 49 25.7 D \*PP 49 30  
MHC 13 49 22.2 D  
ARC 13 48 49.7 C  
USCGS 13 42 22.5, 52.6N, 168.2W, H= 14 KM, M=5.0  
FOX ISLANDS, ALEUTIAN ISLANDS.

BKS JUL 06 13 53 43.6 \*F 54 12  
PRI 13 54 02.2 C \*F 54 05 \*F 54 39  
JAS 13 53 53.7 C \*E 54 00  
MHC 13 53 50.2 C

BKS JUL 06 16 21 17 D LR 36 32  
PRI 16 21 33.6 C \*E 21 32  
JAS 16 21 23.8 C  
MHC 16 21 21.5 C

BKS JUL 06 18 41 46.0 D \*F 49 30 LQ 55 26 LP 59  
P FROM N.W.  
PRI 18 42 37.0 C  
JAS 18 42 35.6 C \*PP 42 51

MHC 18 42 40.7 C \*PP 42 58  
USCGS 18 32 15.1, 18.9N, 61.9W, H= 57 KM, M=5.1  
LEFFWARD ISLANDS.

BKS JUL 06 19 31 LQ 54 14 LR 57 42  
PRI 19 31 51.0 C \*E 31 59  
JAS 19 31 50.1 C \*E 32 25  
MHC 19 31 55.1 C \*E 32 03

JAS JUL 06 19 59 46.9 C

BKS JUL 07 05 53 11.7 D  
PRI 05 53 11.8 D  
JAS 05 53 17.5 D \*E 53 33  
MHC 05 53 12.1 D

BKS JUL 08 01 11 14 C 22 18 \*E 34 04 \*E 37 20  
MICRON PERIOD  
PZ 1.8 8  
MAXH 0.7 20  
MAG 5.0-5.4 DIST DEG 83  
PRI 01 11 16.7 C  
JAS 01 11 20.3 C PP 14 41  
MHC 01 11 15.2 C  
USCGS 00 58 54.7, 15.4S, 167.5E, H=137 KM, M=5.2  
NEW HEBRIDES ISLANDS.

BKS JUL 08 06 35 32 C 45 56 \*E 47 48 \*F 62 32  
MICRON PERIOD  
PZ 0.5 12  
MAXH 1 20  
MAGNITUDE 4.5-5.0  
JAS 06 35 42 C \*PP 35 55  
USCGS 06 22 52.8, 16.3S, 166.8E, H= 9 KM, M=5.0  
NEW HEBRIDES ISLANDS.

PRI JUL 08 13 24 34.9  
JAS 13 24 40.2  
MHC 13 24 34.7

PRI JUL 08 15 42 21 C 42 46  
JAS 15 42 18.2 C  
MHC 15 42 29.2 C \*E 43 12

PRI JUL 09 21 41 47.2 D  
JAS 21 41 51.7 D \*E 41 58  
MHC 21 41 05.3 D \*E 42 12

BKS JUL 09 21 46 \*E 67 50 \*F 71 45  
PRI 21 46 46 D  
JAS 21 46 51.5 C

BKS JUL 10 06 40 29.5 D  
PRI 06 40 29.2 C  
JAS 06 40 34.7 C  
MHC 06 40 29.5 D

PRT JUL 10 10 29 35.0 D  
 JAS 10 29 38.3 D \*E 29 46  
 MHC 10 29 33.1 D

BKS JUL 10 12 19  
 PRT 12 19 24.9 D \*E 37 04  
 JAS 12 19 21.5 D  
 MHC 12 19 20.8 D  
 USCGS 12 01 31.5, 5.9S, 113.1E, H=591 KM, M=5.4  
 JAVA SEA.

PRT JUL 11 15 04 29.0 C  
 JAS 15 04 34.3 C  
 MHC 15 04 36.6 C

BKS JUL 12 04 54 10.0 \*E 55 54  
 PRI 04 53 45.7 C 54 28  
 JAS 04 54 02.5 C 55 00  
 MHC 04 54 04.2

BKS JUL 12 10 38 C \*E 46 16  
 PRT 10 38 31.8 D \*E 38 39  
 JAS 10 38 28.9 D  
 MHC 10 38 26.6 D  
 USCGS 10 32 01.6, 54.9N, 161.1W, H= 33 KM, M=5.0  
 ALASKA PENINSULA.

BKS JUL 12 21 09 03 C 15 56 PP 10 57 \*E 11 04 \*E 19 40  
 \*E 23 30 \*E 24 15  
 MICRON PERIOD  
 PZ 3 16  
 MAXH 22  
 MAG 6.2-6.5 DIST DEG 50

PRT 21 08 45.8 C \*E 09 54  
 JAS 21 08 50.5 C  
 MHC 21 08 55.1 C  
 MIN 21 09 04.4 D \*E 11 03  
 USCGS 21 00 20.9, 5.6N, 82.6W, H= 33 KM, M= .  
 SOUTH OF PANAMA.

BKS JUL 12 21 26 \*E 49 30  
 MICRON PERIOD  
 MAXH 5 20  
 MAGNITUDE 5.6-6.0

PRT 21 26 49.5 C \*E 27 19  
 JAS 21 26 55.1 C \*E 27 23  
 MHC 21 26 49.2 C  
 USCGS 21 14 53. , 16.1S, 178.3E, H= 33 KM, M=5.3  
 FIJI ISLANDS.

PRT JUL 12 21 33 36.8 D  
 JAS 21 33 38.2 D  
 MHC 21 33 33.7 D

PRT JUL 13 22 23 18.8 D

JAS 02 23 11.0 D  
 MHC 02 23 19 D  
 USCGS 02 10 20.0, 35.5N, 0.1W, H= 13 KM, M=5.0  
 ALGERIA-10 KILLED, 15 INJURED, 40 HOUSES  
 DESTROYED AT M'KHALIF.

BKS JUL 13 07 48 03.7 C \*E 49 12 \*E 52 20 L 67 36  
 MICRON PERIOD  
 PZ 0.5 3  
 MAXH 0.73 20  
 MAGNITUDE 5.0-5.2

PRI 07 48 02.2 C \*E 48 13  
 JAS 07 48 07.0 D \*E 48 17 \*E 48 29  
 MHC 07 48 01.3 D  
 MIN 07 48 09.6 D  
 USCGS 07 36 07.2, 16.2S, 178.1E, H= 50 KM, M=5.4  
 FIJI ISLANDS.

PRI JUL 13 09 44 20.7 C \*E 45 37  
 JAS 09 44 46.3 C \*E 46 21

BKS JUL 13 10 16 \*E 39 00 \*E 44 10  
 PRT 10 17 00.9 D  
 JAS 10 17 04.2 C  
 MHC 10 16 59.5 D  
 MIN 10 17 06.2 D  
 USCGS 10 04 19.0, 20.4S, 169.3E, H= 46 KM, M=5.0  
 NEW HEBRIDES ISLANDS.

BKS JUL 13 14 31 39.2 C  
 MICRON PERIOD  
 PZ 0.06 1

PRI 14 31 26.2 C  
 JAS 14 31 32.5 C \*E 31 54  
 MHC 14 31 35.2 C  
 MIN 14 31 46.4 C  
 USCGS 14 20 38.7, 15.2S, 74.9W, H= 74 KM, M=5.2  
 NEAR COAST OF PERU.

BKS JUL 14 03 00 11.0 C 10 20 \*E 00 30 L 21 00 LR 25 00  
 MICRON PERIOD  
 PZ 0.1 1  
 MAXH 1.5 20  
 MAGNITUDE 5.2-5.5

PRT 03 00 13.5 C \*E 00 33  
 JAS 03 00 16.5 C \*E 00 36 \*E 03 30  
 MHC 03 00 11.6 D \*E 00 30  
 MIN 03 00 18.1 C  
 USCGS 02 47 53.0, 11.4S, 166.2E, H= 80 KM, M=5.2  
 SANTA CRUZ ISLANDS.

BKS JUL 14 03 30 53.1 C  
 MICRON PERIOD  
 PZ 0.04 1

PRT 03 30 40.7 D \*PP 30 57  
 JAS 03 30 46.7 D \*PP 31 03

MHC 03 30 49.2 D  
USCGS \*PP 31 06  
03 19 26.8, 17.6S, 72.3W, H= 37 KM, M=5.1  
NEAR COAST OF PERU. FLT AT APOQUITA.

JAS JUL 14 18 56 14.3 C  
USCGS 18 35 46.7, 16.4S, 66.8E, H= 33 KM, M=5.2  
MID-INDIAN RISE.

JAS JUL 14 19 40 04.9 D \*F 40 20  
MHC 19 39 56.0 D

JAS JUL 14 22 10 18.2 C \*E 10 52

JAS JUL 15 03 40 06.0 C \*F 40 20  
USCGS 03 26 57.4, 49.8N, 75.1E, H= 2 KM, M=5.4  
EASTERN KAZAKH SSR.

BKS JUL 15 08 23 07.0 C \*E 36 10  
PRI 08 23 23.5 D  
JAS 08 23 15.5 D \*F 23 33 \*F 23 45  
MHC 08 23 12.3 D \*E 23 24 \*F 23 41  
MIN 08 22 57.3 D

PRI JUL 15 11 59 22.9 C \*F 59 45  
JAS 11 59 34.1 C  
MHC 11 59 18.2 D

JAS JUL 16 09 55 01.5 C \*E 55 31

BKS JUL 16 13 48 34 C \*F 52 14 \*E 59 10 \*E 60 10  
\*F 61 51 \*I 64 10 \*I 65 50  
\*E 67 11 L 76 47 LR 80 40

MICRON PERIOD  
SH 1.3 24  
MAXH 1.2 20  
MAG 5.8-6.2 DIST DEG 102  
\*E 52 49 \*E 52 59  
\*E 52 52  
\*E 52 49 \*F 52 58

PRI 13 48 52.4 C  
JAS 13 48 53.8 D  
MHC 13 48 26.0 C  
USCGS 13 34 29.9, 0.8S, 132.6E, H= 33 KM  
NEW GUINEA.

MHC JUL 16 21 22 44.5 C \*F 22 52  
PRI 21 22 43.8 D \*E 28 25  
JAS 21 22 50.4 D

TONGA ISLANDS

BKS JUL 17 11 35 LR 47 00  
PRI 11 35 29.5 D \*E 35 37  
JAS 11 35 19.0 D \*E 35 33  
MHC 11 35 15.5 C \*I 35 10  
MIN 11 35 00.4 C  
USCGS 11 28 13.4, 5.1N, 169.3W, H= 33 KM, M=5.1

FOX ISLANDS, ALEUTIAN ISLANDS.

PRI JUL 17 18 57 39.5 C  
JAS 18 57 46.5 C

PRI JUL 19 01 55 24.3 D \*E 55 35  
JAS 01 55 34.0 D \*E 55 43 \*E 61 28

BKS JUL 19 09 22 43.5 D  
PRI 09 22 32.1 D  
JAS 09 22 37.4 D  
MHC 09 22 40.0 D  
W. ARGENTINA

PRI JUL 19 12 52 36.5 D  
JAS 12 52 42.1 D \*E 53 16  
MHC 12 52 36.8 D  
MIN 12 52 45.7 C \*I 53 00  
S.W. PACIFIC

JAS JUL 20 09 08 41.8 D  
MIN 09 08 19.6 D \*I 08 28

BKS JUL 20 13 23 48.9 D 33 58 \*E 24 29 PS 35 10  
PRI 13 23 36.7 D \*PP 24 19  
JAS 13 23 41.8 D \*PP 24 25  
MHC 13 23 43.8 D \*PP 24 23  
MIN 13 23 52.7 D \*PP 24 38  
USCGS 13 11 35.0, 28.1S, 66.9W, H=157 KM, M=5.3  
CATAMARCA PROVINCE, ARGENTINA.

BKS JUL 20 14 34 14.2 C 40 42 LQ 44 11 LR 46 08  
R FROM W  
MICRON PERIOD  
PZ 1.5 0.6  
SH 1.2 16  
MAXH 2.25 22  
MAGNITUDE 4.6 - 5.0

PRI 14 34 31.1 C \*E 34 42  
JAS 14 34 23.4 C \*E 34 36 \*E 36 16  
MHC 14 34 19.8 C \*E 34 32  
MIN 14 34 05.2 C  
USCGS 14 26 14.1, 51.4N, 178.3E, H= 33 KM, M=5.3  
RAT ISLANDS, ALEUTIAN ISLANDS.

BKS JUL 20 15 49 46.6 C  
PP 53 45 \*E 59 56 \*E 60 24  
PS 62 30 SS 67 24 LQ 74 44  
LR 79 24

MICRON PERIOD  
PZ 1.77 0.6  
SH 5.85 16  
MAXH 14 25  
MAGNITUDE 6.2 - 6.7

PRI 15 49 54.2 C  
JAS 15 49 52.7 D  
MHC 15 49 50.3 C  
MIN 15 49 49.7 D

PP 53 44  
USCGS 15 36 20.1, 7.7N, 134.9E, H= 8 KM  
WEST CAROLINE ISLANDS. SLIGHT DAMAGE ON  
KOROR ISLAND.

PRI JUL 20 21 12 34.2 D  
JAS 21 12 16.8 D  
MHC 21 12 21.2 C

PRI JUL 21 12 57 31.7 D  
JAS 12 57 40.5 D  
MHC 12 57 30.6 D  
MIN 12 57 46.7 C

\*E 57 47  
\*E 57 56  
\*E 57 46

PRI JUL 21 19 40 47.5 C  
JAS 19 40 51.3 C  
MHC 19 40 48.6 C  
MIN 19 40 52.7 D

PRI JUL 21 23 20 24.8 C  
JAS 23 20 24.6 D

BKS JUL 22 04 10 56 21 22 L 34 27 LR 37 46  
R FROM S.W.

MICRON PERIOD  
SH 3.16 14  
MAXH 5.6 20  
MAG 5.8-6.2 DIST DEG 87

PRI 04 10 51.7 C  
JAS 04 10 54.0 C  
MHC 04 10 53.0 C  
MIN 04 10 35.2 D

USCGS 03 58 02.4, 33.5S, 179.0W, H= 39 KM, M=5  
SOUTH OF KERMADEC ISLANDS.

PRI JUL 22 05 40 57.2 D  
JAS 05 40 59.6 D  
MHC 05 40 54.7 C  
MIN 05 40 59.4 C

USCGS 05 28 34.1, 10.9S, 165.8E, H= 64 KM, M=5  
SANTA CRUZ ISLANDS.

PRI JUL 22 14 00 07.5 D \*E 00 36  
JAS 14 00 13.1 D \*E 00 43 \*E 00 54  
MHC 14 00 16.0 C \*E 00 45  
MIN 14 00 35.8 C

BKS JUL 22 17 10 34 D \*E 14 32 PP 14 40 SKS 21 18  
L 47 32

MICRON PERIOD  
PZ 3.1 20  
PPZ 15.8 18  
SH 19.9 28  
MAGNITUDE 7.2

PRI 17 10 40.1 D PP 14 40  
JAS 17 10 31.2 D PP 14 24 \*E 22 40  
MHC 17 10 36.0 D  
MIN 17 10 22.2 D \*I 10 48 PP 14 15 \*E 23 03

USCGS 16 56 53.3, 40.7N, 30.8E, H= 4 KM, M=6.0  
TURKEY - 173 KILLED, 183 INJURED AND MAJOR  
PROPERTY DAMAGE IN SAKARYA, HENDEK AND  
AKYAZI PROVINCES.

BKS JUL 23 03 21 18 C \*E 31 56 \*E 33 00 LR 46 48  
R FROM S.W.

MICRON PERIOD  
MAXH 2.07 20  
MAGNITUDE 5.1 - 5.4

PRI 03 21 22.7 C  
JAS 03 21 23.5 C  
MHC 03 21 18.3 C  
MIN 03 21 C \*I 22 25

BKS JUL 23 14 07 D \*E 08 00 \*E 13 52 \*E 17 48  
\*E 19 09 \*E 24 20 L 36 18  
LR 40 46

R FROM SSW  
MICRON PERIOD  
MAXH 2.07 20  
MAGNITUDE 5.5 - 5.7

USCGS 13 48 06. , 56.2S, 158.3E, H= 33 KM, M=5.1  
MACQUARIE ISLAND REGION.

PRI JUL 23 14 39 52.5 C  
JAS 14 39 39.2 D  
MHC 14 39 31.5 C  
MIN 14 40 20.3 C

PRI JUL 24 07 57 56.2 D \*E 58 12  
JAS 07 57 54.8 D \*E 58 11  
MHC 07 57 53.8 D  
MIN 07 57 52.3 C

USCGS 07 39 31.7, 8.3S, 121.3E, H=197 KM, M=5.7  
FLORES ISLAND REGION.

JAS JUL 25 00 23 23.2 C  
MIN 00 23 49.8 C

JAS JUL 25 07 30 37.8 D

BKS JUL 26 06 43 54.2 D  
PRT 06 43 52.9 C  
JAS 06 43 58.7 C  
MHC 06 43 54.3 D  
MIN 06 44 03.4 D

USCGS 06 31 10.6, 31.8S, 179.7W, H= 37 KM, M=5.1  
KFERMADEC ISLANDS.

BKS JUL 26 08 27 45 D \*E 44 04 \*E 44 12 \*E 44  
\*E 34 53 \*F 39 32 \*E 43  
\*E 47 44 \*F 51 32 LR 54

R FROM S.W.  
MICRON PERIOD  
MAXH 1.2 20  
MAG 5.0-5.4 DIST DEG 90  
\*E 27 46

JAS MIN 08 27 32.1 C  
08 27 52.1 C  
USCGS 08 14 56.3, 22.0S, 170.1E, H= 30 KM, M=5.1  
LOYALTY ISLANDS REGION.

JAS JUL 26 12 31 11.4 C  
MIN 12 30 58.2 C

PRT JUL 26 19 03 57.2 C  
JAS 19 04 01.4 C  
MHC 19 03 55.7 D  
MIN 19 04 05.5 D

USCGS 18 52 21.2, 17.4S, 174.0W, H= 15 KM, M=5.1  
TONGA ISLANDS.

BKS JUL 26 19 06 \*E 10 56 \*E 20 04 \*E 21  
\*E 25 32 \*E 28 12 \*E 30  
\*F 33 30 \*F 38 28

MICRON PERIOD  
MAXH 5.9 20  
MAGNITUDE 5.5 - 5.9

PRT JAS 19 06 57.1 C  
19 06 50.4 C  
USCGS 18 53 01.3, 39.5N, 40.4E, H= 33 KM, M=5.1  
TURKEY. 92 KILLED, 120 INJURED AND MAJOR  
PROPERTY DAMAGE IN EASTERN TURKEY.

JAS JUL 26 19 10 49 C  
MIN 19 10 44.7 C

RKS JUL 27 00 05 32.3 D 09 35 \*E 06 40 \*E 07 57 LR 10 58  
PRT 00 05 08.8 C \*E 07 18  
JAS 00 05 23.5 C \*E 05 32 \*F 05 49  
MHC 00 05 24.3 C \*E 05 34  
MIN 00 05 51.9 D \*I 06 25

USCGS 00 00 47.9, 19.9N, 109.4W, H= 31 KM, M=5.1  
REVILLA GIGEDO IS. REGION.

JAS JUL 27 16 43 12.9 C \*E 43 21

BKS JUL 28 03 52 LR 61 10  
PRT 03 52 38.2 C  
JAS 03 52 37.4 C \*E 52 52  
MHC 03 52 40.7 C

JAS JUL 28 04 12 45.0 C \*E 13 07 \*E 15 02  
MIN 04 12 34.3 C

PRT JUL 28 06 08 45.0 C  
JAS 06 08 37.0 C  
MHC 06 08 36.1 C  
MIN 06 08 24.7 C  
LAKE BAIKAL USSR

MIN JUL 28 10 12 44.7 D

PRT JUL 28 18 43 42.1 C  
JAS 18 43 47.6 C  
MHC 18 43 41.9 C  
MIN 18 43 50.6 D  
FIJI ISLAND REGION

PRT JUL 28 20 25 41.6 D  
JAS 20 25 39.8 D \*E 25 56  
MHC 20 25 39.0 D

USCGS 20 06 53.7, 8.4S, 116.9E, H= 63 KM, M=5.4  
SUMBAWA ISLAND REGION.

RKS JUL 29 10 33 35.2 D 41 04 \*PP 34 12 SCS 43 11 SSS 47 18  
\*E 49 32

MICRON PERIOD  
PZ 0.55 1.0  
PH 3.3 12

SH 33.1 19  
 MAXH 29.9 20  
 MAG 6.1-6.3 DIST DEG 55  
 PRI 10 33 21.3 D  
 JAS 10 33 25.1 D  
 MHC 10 33 30.9 D  
 MTN 10 33 37.5 D  
 ARC 10 33 52.6 D  
 USCGS \*I 34 02 \*I 34 14  
 \*E 33 28  
 10 24 24.6, 6.8N, 73.0W, H=161 KM, M=6.  
 NORTHERN COLUMBIA-10 KILLED AND MODERATE  
 PROPERTY DAMAGE. FELT IN COLUMBIA AND  
 WESTERN VENEZUELA.

BKS JUL 29 22 15 R FROM S.W.  
 PRI 22 15 51.4 C  
 JAS 22 15 57.5 C  
 MHC 22 15 51.6 C  
 MTN 22 16 00.9 C  
 \*E 25 32 \*E 34 52  
 \*E 16 09  
 \*E 16 03

BKS JUL 30 00 09 40.7 D 17 34 \*E 18 18 \*E 19 34 LR 26  
 \*E 27 36  
 R FROM S. E.  
 MICRON PERIOD  
 PZ 0.09 1.0  
 SH 7.54 13  
 MAXH 20  
 VENEZUELA, CARACAS AREA  
 \*E 09 37  
 PRI 00 09 28.6 D  
 JAS 00 09 30.5 D  
 MHC 00 09 36.8 D  
 MIN 00 09 40.8 D  
 ARC 00 09 55.9 D  
 USCGS \*I 09 49  
 23 59 58.7, 10.6N, 67.3W, H=10 KM  
 NEAR COAST OF VENEZUELA. 236 DEATHS, 200  
 INJURED, MAJOR PROPERTY DAMAGE IN CARACAS  
 AREA.

PRI JUL 30 01 44 44.6 D  
 JAS 01 44 35.7 D  
 MHC 01 44 40.2 D  
 MIN 01 44 26.5 D  
 USCGS \*E 44 58  
 \*E 48 17  
 01 31 01.7, 40.7N, 30.4E, H=16 KM, M=6  
 TURKEY. PROPERTY DAMAGE IN AKYAZI-SAKARYA  
 AREA.

BKS JUL 30 03 49 19.5 D  
 PRI 03 49 29.7 D  
 JAS 03 49 26.6 D  
 MHC 03 49 22.8 D  
 MIN 03 49 16.9 D  
 USCGS 03 37 22.7, 22.0N, 143.8E, H=121 KM, M=6

VOLCANO ISLANDS REGION.

PRI JUL 30 08 38 24.2 C  
 JAS 08 38 26.3 C  
 MIN 08 38 30.1 C  
 USCGS 08 19 28.3, 60.1S, 28.5W, H=33 KM, M=5.2  
 SOUTH SANDWICH ISLANDS REGION.

BKS JUL 30 11 09 46 C \*E 21 32 \*E 26 29 \*E 30 46  
 \*E 33 38  
 MIN 11 08 29.8 C  
 USCGS 10 49 32.8, 56.2S, 146.9E, H=33 KM, M=5.1  
 WEST OF MACQUARIE ISLANDS.

BKS JUL 30 13 48 05 C 58 32 SS 64 42 \*E 71 00 LR 75 24  
 R FROM WSW  
 PRI 13 48 31 C  
 JAS 13 48 32 C \*E 48 56  
 MHC 13 48 31.3 D \*E 48 57  
 USCGS 13 35 14.4, 5.3S, 153.6E, H=50 KM, M=5.2  
 NEW IRELAND REGION. FELT AT RABAUL.

BKS JUL 30 15 33 18.5  
 PRI 15 33 23.2 C  
 JAS 15 33 26.0 C  
 MHC 15 33 20.8 C  
 MIN 15 33 24.5 C

BKS JUL 30 17 35 38.0 C \*E 56 28  
 MIN 17 35 47.2 C  
 MICRON PERIOD  
 PZ 0.19 1.2  
 PRI 17 35 39.0 C  
 JAS 17 35 45.0 C  
 MHC 17 35 38.9 C  
 USCGS 17 24 43.1, 17.8S, 178.8W, H=564 KM, M=5.1  
 FIJI ISLANDS REGION.

JAS JUL 30 22 40 25.2 D \*E 40 57  
 USCGS 22 21 42.6, 56.3S, 26.9W, H=118 KM, M=5.3  
 SOUTH SANDWICH ISLANDS REGION.

JAS JUL 31 06 59 50.8 D  
 MHC 06 59 46.6 D  
 USCGS 06 47 15.5, 12.8S, 165.6E, H=33 KM, M=5.0  
 SANTA CRUZ ISLANDS.

BKS JUL 31 22 18 11 \*E 24 30 \*E 40 20

R FROM SSW

JAS JUL 31 23 57 09.3 C \*E 57 25  
 BKS AUG 01 01 24 25.5 C 33 14  
 MICRON 0.11 PERIOD 1.0  
 PZ 01 24 12.0 C \*E 24 35 \*E 25 06  
 JAS 01 24 18.7 C \*E 24 34  
 MHC 01 24 21.4 C \*I 24 48  
 MTN 01 24 31.7 C \*E 24 45  
 ARC 01 24 USCGS 01 13 42.6, 13.0S, 76.8W, H= 66 KM, M=5.0  
 NEAR COAST OF PERU.

BKS AUG 01 09 \*E 35 30 \*E 41 40 \*E 53  
 R FROM SW

JAS AUG 01 12 00 18.6 C  
 MTN 11 59 44.9 C  
 USCGS 09 05 49.3, 60.0S, 159.2E, H= 33 KM, M=5.0  
 SOUTH OF NEW ZEALAND.

JAS AUG 01 14 10 42.0 C \*E 10 54

PRI AUG 01 19 30 36.6 D  
 JAS 19 30 41.0 D  
 MHC 19 30 37.6 D

BKS AUG 02 00 55 10.1 C  
 PRI 00 55 23.8 C \*E 55 34 \*F 55 48  
 JAS 00 55 17.3 C \*E 55 31  
 MHC 00 55 14.7 C \*I 55 34  
 MTN 00 55 03.0 C  
 USCGS 00 44 41.4, 44.6N, 146.4E, H=149 KM, M=5.0  
 KURILE ISLANDS.

JAS AUG 02 07 14 38.1 D \*E 14 51

BKS AUG 02 09 48 35.5 C  
 PRI 09 48 35.7 C  
 JAS 09 48 41.2 C  
 MHC 09 48 35.9 C  
 MTN 09 48 45.3 D

BKS AUG 02 11 16 57.2 C 25 10 \*E 19 14 \*E 20 44 SS 28  
 \*F 29 06 \*F 32 00 \*E 38

R FROM N.E.

MICRON PERIOD  
 PZ 0.04 0.9  
 SH 1.7 12  
 MAXH 11.1 20  
 MAG 5.2 DIST DEG 61

PRI 11 17 04.5 C \*E 17 13  
 JAS 11 16 51.4 C \*E 17 01 \*E 17 17  
 MHC 11 16 57.8 C \*E 17 07  
 MIN 11 16 38.4 C \*I 16 59  
 USCGS 11 06 38.7, 71.2N, 8.0W, H= 33 KM, M=5.0  
 JAN MAYEN ISLAND REGION.

BKS AUG 02 14 16 35.2 C 25 02 \*E 16 41 \*F 28 36 \*F 31 38  
 LR 35 00

MICRON PERIOD  
 SH 0.84 11  
 PRI 14 16 43.1 C \*E 19 50  
 JAS 14 16 30.0 C \*E 17 01  
 MHC 14 16 36.8 C \*E 16 44  
 MTN 14 16 16.8 C

USCGS 14 06 17.8, 71.2N, 8.5W, H= 33 KM, M=5.3  
 JAN MAYEN ISLAND REGION.

PRI AUG 03 00 19 58.5 C  
 JAS 00 20 04.9 D \*E 20 14  
 MHC 00 19 59.0 C

BKS AUG 03 05 34 10  
 PRI 05 33 51.7 D 34 02  
 JAS 05 34 07.1 C 34 26  
 MHC 05 33 57.9 D  
 MTN 05 34 52.7 D 34 12

PRI AUG 03 06 55 52.0 C  
 JAS 06 55 55.0 C

BKS AUG 03 12 51 08.8 C  
 PRI 12 50 55.0 C  
 JAS 12 51 00.0 C \*E 51 12 \*E 51 30  
 MHC 12 51 04.5 D  
 MTN 12 51 14.9 C

USCGS 12 40 21.1, 13.5S, 74.8W, H=116 KM, M=5.2  
 PERU.

BKS AUG 03 21 44 20.5 C \*E 44 34  
 JAS 21 44 \*E 49 38 \*F 52 00 \*E 52 44  
 MHC 21 44 22 C

BKS AUG 03 23 23 53.5 D  
 JAS 23 24 02.7 C  
 MHC 23 23 59.4 C

BKS AUG 04 04 12 55.7  
 JAS 04 12 53.4 C  
 MHC 04 13 01.5 C  
 MIN 04 13 47.1 C

PRI AUG 04 06 13 26.7 C  
 JAS 06 13 23.5 C  
 MHC 06 13 31.1 C  
 MIN 06 13 29.2 C

BKS AUG 04 07 11 06.5 C  
 JAS 07 11 06.7 C  
 MIN 07 10 55.0 D

BKS AUG 04 14 01  
 PRI 14 01 01.2 C  
 JAS 14 00 58.0 D  
 MHC 14 01 18.7 D  
 MIN 14 01 36.2 C

PRI AUG 04 14 17 04.0 C  
 JAS 14 16 59.5 C  
 MHC 14 17 12.7 D  
 MIN 14 17 30.5 D

BKS AUG 04 22 46 33 D  
 PRI 22 46 16.3 D  
 JAS 22 46 20.7 D  
 MHC 22 46 18.1 D

PRI AUG 05 18 36 54.0 C  
 JAS 18 36 52.6 C  
 MHC 18 36 49.5 C

\*E 24 11 \*E 24 40 \*E 25 07  
 \*E 29 07

\*E 16 09

USCGS 06 01 09.9, 7.4N, 36.3W, H= 33 KM, M=5  
 CENTRAL MID-ATLANTIC RIDGE.

\*E 01 33  
 \*E 01 48  
 \*E 02 28

\*E 55 47 SCS 56 30 L 65  
 LR 68 30

R FROM S.W.  
 MICRON PERIOD  
 PZ 0.23 8  
 SH 0.41 14  
 MAXH 16  
 MAG 4.4-4.5 DIST DEG 75

TONGA ISLANDS

MIN 18 36 34.1 C

PRI AUG 06 22 53 23.5 C  
 JAS 22 53 07.9 C  
 MHC 22 53 56.6 C

MIN AUG 07 08 27 20.2 C

BKS AUG 07 11 20 50.4 D  
 JAS 11 21 05.5 D  
 JAS 11 20 52.6 D  
 MHC 11 20 51.5 D  
 MIN 11 20 30.1 D

MICRON PERIOD  
 SH 0.83 7  
 MAXH 1.68 20  
 MAG 4.3-4.5 DIST DEG 26

USCGS 11 14 42.7, 58.7N, 154.6W, H= 37 KM, M=5.1  
 ALASKA PENINSULA.

JAS AUG 07 17 19 43.2 C

BKS AUG 08 07 24 46  
 PRI 07 24 49.9 D  
 JAS 07 24 55.5 D  
 MHC 07 24 49.6 D  
 MIN 07 24 58.8 C

JAS AUG 08 11 11 11.4 C  
 MHC 11 11 10.8 C

BKS AUG 08 14 42  
 PRI 14 42 29.9 D  
 AS 14 42 40.7 C  
 HC 14 42 36.3 C

AS AUG 08 19 18 55.6 D

RI AUG 09 06 46 08 D

\*E 25 39 L 27 36 LR 28 18  
 \*E 21 39  
 \*E 21 31

\*E 25 03  
 MICRON PERIOD  
 PZ 0.2 5  
 MAG 4.7-5.0 DIST DEG 85

\*E 11 25

48 17 LQ 50 48 LR 52 24  
 R FROM S.W.  
 MICRON PERIOD  
 SH 0.87 8  
 MAXH 3 19  
 MAGNITUDE 4.9-5.1

\*E 46 57 \*E 46 11



JAS 06 45 56.4 C 46 49 \*E 47 17  
MHC 06 46 15.0 C \*E 47 48  
MTN 06 46 34.9 C

PRI AUG 09 07 24 31.6 C \*E 24 42  
JAS 07 24 35.1 C \*E 24 48  
MHC 07 24 38.8 C  
MTN 07 24 49.2 D  
USCGS 07 14 08.1, 8.5S, 73.8W, H= 46 KM, M=5.0  
PERU-BRAZIL BORDER REGION.

BKS AUG 09 08 49 SSS 54 54 L 64 24 LR 69 3  
R FROM W  
MICRON PERIOD  
MAXH 1.45 36  
MTN 08 49 36.9 C

PRI AUG 09 09 38 10.0 C \*E 38 18 \*E 38 53  
JAS 09 37 54.5 C  
MHC 09 37 52.6 C  
MTN 09 37 37.0 C  
QUEEN CHARLOTTE ISLAND AREA

BKS AUG 09 21 07 23.0 C \*E 17 18  
PRI 21 07 16.3 D  
JAS 21 07 19.1 D  
MHC 21 07 20.6 D  
USCGS 20 47 40. , 52.0S, 15.7E, H= 33 KM, M=5.0  
SOUTHWEST OF AFRICA.

BKS AUG 10 04 33 \*E 40 36 \*E 44 42 \*E 48  
\*E 68 06 \*E 77 18  
\*F 33 35  
PRI 04 33 22.4 C  
JAS 04 33 25.8 C  
MHC 04 33 27 C  
MTN 04 33 40.1 C  
USCGS 04 20 27.8, 45.0S, 79.5W, H= 33 KM, M=5.0  
OFF COAST OF SOUTHERN CHILE.

BKS AUG 10 11 31 45.0 C 40 14 \*F 32 09 SS 44 20 L 47  
LR 50 12  
MICRON PERIOD  
P7 0.06 1  
PH 0.02 1  
SH 1.2 25  
MAXH 2.12 34  
MAG 5.5-5.9 DIST DEG 62  
PRI 11 31 59.5 C \*E 30 03 \*E 32 27 P P 60  
JAS 11 31 52.9 C  
MHC 11 31 50.0 C

MIN 11 31 37.6 C \*I 31 49  
USCGS 11 21 22.3, 45.4N, 150.3E, H= 37 KM, M=5.7  
KURILE ISLANDS.

BKS AUG 10 12 05 LQ 14 30 LR 17 12  
MICRON PERIOD  
MAXH 1.17 15  
PRI 12 05 44 C  
JAS 12 05 52.5 C  
MHC 12 05 56.8 D  
MTN 12 06 13.1 C

BKS AUG 10 13 39 \*E 62 48  
PRI 13 39 30 D  
JAS 13 39 39.0 C  
MHC 13 39 37.5 C

BKS AUG 11 00 58 45.1 C  
SOUTHWEST OF MEXICALI  
MAGNITUDE ABOUT 4.7  
PRI 00 58 15.5 C \*E 58 24 \*F 59 12  
JAS 00 58 33.0 D \*E 58 41 \*F 59 42  
MHC 00 58 31.5 C  
MTN 00 58 C \*I 59 30 \*I 61 14

JAS AUG 11 04 02 14.1 C \*E 02 27  
MTN 04 02 00.1 D

BKS AUG 11 06 29 \*E 32 33 \*E 36 16 LR 51 42  
MICRON PERIOD  
MAXH 0.88 27  
PRI 06 29 32.6 D  
JAS 06 29 43.3 D \*E 29 54

JAS AUG 11 10 50 46.0 C \*E 51 05  
MTN 10 50 26.9 C

BKS AUG 11 12 34 07.0 C LR 46 24  
MICRON PERIOD  
PZ 0.04 1.2  
PRI 12 34 00.9 D  
JAS 12 33 56.2 D \*E 34 06  
MHC 12 34 01.1 D \*E 34 11  
MTN 12 34 21.2 D

JAS 12 35 \*E 50 06 \*E 51 12  
MTN 12 35 55.4 D  
12 35 57.6 D

BKS AUG 11 19 06 24 D  
 PZ MICRON 0.08 PERIOD 1.0  
 MAGNITUDE 5.2  
 PRT 19 06 34.2 D \*E 06 42 \*E 07 05  
 JAS 19 06 31.0 D  
 MHC 19 06 27.7 \*I 07 07  
 MIN 19 06 21.2 D  
 USCGS 18 54 28.8, 22.1N, 144.0E, H=125 KM, M=5.  
 VOLCANO ISLANDS REGION.

BKS AUG 12 04 41 55 D  
 PZ MICRON 0.04 PERIOD 0.8  
 MAGNITUDE 4.8  
 PRT 04 42 08.6 D \*E 42 16  
 JAS 04 42 02.7 D \*E 42 10 \*E 42 24  
 MHC 04 42 00.2 D  
 MIN 04 41 49.2 D \*E 42 10  
 USCGS 04 30 38.5, 38.5N, 141.9E, H= 53 KM, M=5.  
 NEAR EAST COAST OF HONSHU, JAPAN.

BKS AUG 12 09 51 48 D 61 47 PCP 51 58 \*PP 52 10 PP 54  
 SS 67 04 SSS 70 36 L 73  
 PZ MICRON 0.12 PERIOD 0.8  
 PH 0.11 1  
 SH 1.5 3  
 PPZ 3.5 10  
 MAXH 36 20  
 MAG 6.1-6.3 DIST DEG 81  
 TONGA TRENCH  
 PRT 09 51 45.6 C 61 45 \*E 52 23 \*P\*P\* 78 12  
 JAS 09 51 51.5 C 61 52 \*E 52 29 \*E 78 02 \*E 78  
 MHC 09 51 46.2 C 61 46 \*E 52 23 \*P\*P\* 78 22  
 MIN 09 51 55.9 D 62 04 \*PP 52 07 \*P\*P\* 78 23  
 USCGS 09 39 44.3, 24.7S, 177.5W, H=134 KM, M=5.  
 SOUTH OF FIJI ISLANDS. FELT AT RAOUL.

JAS AUG 12 10 50 11.1 D \*E 50 31 \*F 50 42  
 MHC 10 50 09.6 C  
 MIN 10 49 54.4 C  
 USCGS 10 40 43.9, 53.7N, 160.4E, H= 25 KM, M=5.  
 NEAR EAST COAST OF KAMCHATKA.

PRT AUG 12 12 43 33.0 D \*E 43 43 \*F 44 41  
 JAS 12 43 35.3 D  
 MHC 12 43 31.3 C  
 MIN 12 43 35.1 C  
 USCGS 12 30 56.1, 14.9S, 166.7E, H= 23 KM, M=5.  
 NEW HEBRIDES ISLANDS. FELT AT LUGANVILLE

BKS AUG 12 18 58 20.5 C  
 SIX MILES NW OF CHOLAME  
 MAGNITUDE ABOUT 4.1  
 PRT 18 57 48.4 C  
 JAS 18 58 15.1 D  
 MHC 18 57 10.6 D

JAS AUG 13 03 54 26.2 C

PRT AUG 13 08 03 38.4 D  
 JAS 08 03 58.9 D \*E 05 55  
 MHC 08 03 58.5 C  
 MIN 08 04 35.2 C \*I 06 34  
 RAJA, CALIFORNIA

BKS AUG 13 12 53 08.0 C \*E 54 20 \*E 54 48  
 MAGNITUDE ABOUT 4.5  
 PRT 12 52 39.8 C \*E 53 13  
 JAS 12 53 04.7 C  
 MHC 12 52 57.6 C  
 MIN 12 53 40.9 D

BKS AUG 13 16 45 59.0 D 47 28 \*E 46 04 \*F 46 07 \*E 46 10  
 MICRON 0.1 PERIOD 0.8  
 PRT 16 46 28.3 C  
 JAS 16 46 13.0 D  
 MHC 16 46 08.7 D  
 MIN 16 45 39.5 C  
 ARC 16 45 14.2 D

PRT AUG 13 16 53 03.3 C  
 JAS 16 52 56.7 C \*E 53 07 \*E 53 20  
 MHC 16 52 54.5 C  
 MIN 16 53 26.4 C  
 USCGS 16 33 04.0, 50.9S, 29.1E, H= 33 KM, M=5.4  
 SOUTH OF AFRICA.

BKS AUG 13 17 11 LR 31 16  
 JAS 17 11 17.6 C \*E 11 26  
 USCGS 16 54 45.7, 4.3S, 152.5E, H= 25 KM, M=5.0  
 NEW BRITAIN REGION. FELT AT GILALUN,  
 RABAU, RON GAMATANE AND ULAMONA.

BKS AUG 13 20 18 11.0 D 27 34 PCP 18 22 \*PP 19 33 \*SS 30 04  
 SS 32 40 L 39 00  
 MICRON PERIOD

PZ 0.78 0.7  
 PH 0.47 0.9  
 SH 12.2 8  
 MAG 6.4 DIST DEG 76  
 20 18 22.2 D 28 03 \*PP 19 34 PP 21 22 \*F 27 3  
 20 18 16.7 D \*PP 19 36  
 20 18 14.7 D 27 41 \*E 26 51 \*I 27 24  
 20 18 04.7 D  
 20 17 55.2 D  
 USCGS 20 06 50.6, 35.3N, 135.3E, H=357 KM, M=6.  
 SOUTHERN HONSHU, JAPAN.

BKS AUG 13 22 20  
 MAXH 14.4  
 MAG 6-2 DIST DEG 82  
 22 20 20.6 D \*E 38 30 \*E 42 58 \*E 48  
 22 20 12.3 C PERIOD 20  
 22 20 17.6 C \*E 20 45  
 22 20 05.3 D \*E 20 23 \*E 20 36  
 USCGS 22 07 47.5, 43.2N, 0.5W, H= 15 KM, M=5.  
 PYRENEES. ONE KILLED, 60 INJURED, AND 80  
 HOUSES DESTROYED AT ARETTE, FRANCE. FELT  
 NORTHERN SPAIN.

PRI AUG 14 12 50 31.5 C  
 JAS 12 50 18 C  
 MHC 12 50 14.7 C  
 MIN 12 50 C  
 \*E 50 58

BKS AUG 15 03 32  
 JAS 03 32 34.9 D  
 MHC 03 32 40.8 C  
 MIN 03 32 43.2 D  
 \*F 50 00  
 \*E 32 43

PRI AUG 15 04 15 50.5 D  
 JAS 04 15 57.0 D  
 MHC 04 16 02.8 D  
 MIN 04 16 09.8 D  
 \*E 16 12 \*E 17 04

PRI AUG 15 15 47 51.8 C  
 JAS 15 47 44.9 C  
 MHC 15 47 43.2 C  
 USCGS 15 36 06.6, 44.8N, 132.4E, H= 33 KM, M=5.  
 E. RUSSIA-N.E. CHINA BORDER REGION. FELT  
 SPASSK, DAL'NIY AND VLADIVOSTOK, USSR.  
 \*F 47 56

JAS AUG 16 14 14 56.8  
 MHC 14 14 51.1 C

PRI AUG 16 18 01 35 C  
 JAS 18 01 34.2 C  
 MHC 18 01 34.5 C  
 USCGS 17 42 55.7, 56.2S, 26.9W, H=113 KM, M=5.4  
 SOUTH SANDWICH ISLANDS REGION.

PRI AUG 16 19 38 04.2 D  
 JAS 19 38 01.3 D \*E 38 22 \*F 39 51  
 MHC 19 38 01.5 C  
 MIN 19 37 57.6 D \*I 38 21  
 USCGS 19 18 57.6, 0.9N, 98.9E, H= 26 KM, M=5.6  
 NORTHERN SUMATRA.

PRI AUG 17 14 43 15.3 C  
 JAS 14 43 12.2 D \*E 43 24 \*F 43 37  
 MHC 14 43 05.5 D

MHC AUG 17 20 47 21.6 C  
 JAS 20 47 21.2 C \*E 47 30  
 USCGS 20 28 34., 60.3S, 27.0W, H= 98 KM, M=5.2  
 SOUTH SANDWICH ISLANDS REGION.

BKS AUG 17 22 48 \*E 55 34  
 PRI 22 48 21.1 D \*PP 48 33  
 JAS 22 48 07.8 D \*E 48 19 \*F 48 41  
 MHC 22 48 07.6 D  
 USCGS 22 42 09.3, 59.4N, 151.4W, H= 55 KM, M=5.0  
 KENAI PENINSULA, ALASKA. FELT AT PALMER.

PRI AUG 17 23 31 44.7 D \*E 32 09 \*E 32 21  
 JAS 23 31 50.3 D \*E 32 13 \*F 32 26  
 MHC 23 31 52.5 D \*E 32 28  
 NORTH CENTRAL ARGENTINA

PRI AUG 18 03 48 29.6 D  
 JAS 03 48 25.0 D \*E 48 44 \*F 48 56  
 MHC 03 48 23.2 D  
 MIN 03 48 14.5 D \*E 48 23  
 USCGS 03 35 40.5, 27.8N, 127.7E, H= 94 KM, M=5.4  
 RYUKYU ISLANDS.

PRI AUG 18 05 56 55.0 C \*E 57 06  
 JAS 05 56 41.0 C \*E 56 53  
 MHC 05 56 41.5 C \*E 56 53  
 MIN 05 57 18.3 D  
 ALASKA

BKS AUG 18 20 13 58.5 C  
 MAGNITUDE 4.4 SOUTHERN NEVADA  
 PRI 20 13 31.2 D  
 JAS 20 13 27.8 C  
 MHC 20 13 41.4 C  
 MIN 20 13 54.5 D

PRI AUG 19 07 12 06 D  
 JAS 07 12 10.0 D  
 MHC 07 12 15.6 D  
 MIN 07 12 23.0 C

PRI AUG 19 08 34 03.8 C  
 JAS 08 33 58.5 C  
 MHC 08 33 47.8 C  
 MIN 08 34 03.5 D

JAS AUG 19 12 25 32.8 C  
 MIN 12 25 19.7 D

BKS AUG 19 15 41 50 C  
 PRI 15 41 56.6 C  
 JAS 15 41 56.7 C  
 MHC 15 41 54.0 C  
 MIN 15 41 48.3 C  
 USCGS

15 28 08.5, 10.4N, 126.0E, H= 58 KM, M=5  
 PHILLIPINE ISLANDS REGION. FELT IN  
 SOUTHERN PHILLIPINE ISLANDS.

BKS AUG 19 15 54 11.0 C  
 PRI 15 54 14.7 C  
 JAS 15 54 17.7 C  
 MIN 15 54 16.9 C  
 USCGS

\*PP 54 34 \*F 64 00 \*E 70  
 \*DP 54 38  
 PCD 54 21 \*PP 54 41 \*F 57  
 \*E 57 58  
 \*PP 54 43 \*E 57 59  
 15 41 53.3, 12.4S, 166.6W, H= 86 KM, M=5  
 SANTA CRUZ ISLANDS.

PRI AUG 19 18 50 17.0 C  
 JAS 18 50 23.4 C  
 MHC 18 50 18.3 C  
 MIN 18 50 27.8 D

BKS AUG 20 00 13 46 C  
 PRI 00 14 04.7 D  
 JAS 00 13 52.5 D  
 MHC 00 13 51.3 D  
 MIN 00 13 30.7 D

\*E 14 00  
 \*E 14 07

JAS AUG 20 02 15 26.5 C  
 MIN 02 15 14.2 C  
 USCGS

\*E 15 36

02 02 05.2, 45.3N, 80.1E, H= 33 KM, M=5.1  
 KAZAKH-SINKLANG BORDER REGION.

PRI AUG 20 07 34 44.8 C  
 JAS 07 34 35.6 C  
 MHC 07 34 31.5 C  
 MIN 07 34 17.3 C

\*E 34 46

JAS AUG 20 13 17 29.0 D

\*E 17 44 \*E 18 08

BKS AUG 20 15 15 36.5 D  
 MICRON  
 PZ 0.25  
 PH 0.78

\*PP 16 06 \*E 16 14  
 PERIOD  
 1.4  
 1.0

MAGNITUDE 5.7-6.1

PRI 15 15 25.3 D  
 JAS 15 15 31.1 D  
 MHC 15 15 33.2 D  
 MIN 15 15 52.5 D  
 USCGS

\*PP 15 55  
 \*PP 16 00

15 03 36.2, 25.2S, 69.0W, H=109 KM, M=5.6  
 NORTHERN CHILE.

BKS AUG 20 20 06 C  
 PRI 20 06 47.0 C  
 JAS 20 06 59.4 C  
 MHC 20 06 56.8 C

14 00 \*E 10 00 LR 19 40  
 \*E 06 56  
 \*E 07 07  
 \*E 07 07

BKS AUG 21 07 48 44 C

P\* 52 00 PP 53 52 SKS 59 00  
 PS 64 14 SS 71 44 SSS 75 00  
 \*E 86 00 LR 93 00

MICRON  
 PPZ 3.5  
 PPH 3.5  
 MAXH 9.3  
 MAG 6.3-6.7 DIST DEG 140

PRI 07 48 C  
 JAS 07 48 C  
 MHC 07 48 C  
 MIN 07 48 C

P\* 52 06 \*E 52 21 \*E 54 12  
 P\* 52 02 \*F 52 22 \*E 54 00  
 \*E 61 47  
 P\* 52 03  
 P\* 51 58 \*I 52 02 \*I 53 50  
 \*I 53 59

USCGS 07 33 00.6, 3.6N, 95.8E, H= 33 KM, M=5.9  
 OFF WEST COAST OF NORTHERN SUMATRA.

JAS AUG 22 07 53 00.1 D  
 MHC 07 53 06.5 C  
 MIN 07 53 09.3 C

\*E 53 14

USCGS 07 42 45. , 11.0S, 78.2W, H= 33 KM, M=5.0

OFF COAST OF PERU.

PRI AUG 22 09 07 22.5 C  
 JAS 09 07 28.0 C  
 MHC 09 07 30.2 C  
 MIN 09 07 40.2 D

\*E 08 00

PRI AUG 22 10 10 03.4 C  
 JAS 10 10 11.1 C  
 MHC 10 10 11 D  
 MIN 10 10 32.0 C

\*E 10 24

BKS AUG 22 13 17 52 C

p\* 21 07 DP 23 08 \*E 30  
 \*F 33 00 SS 40 00 L 54

MICRON PERIOD  
 PPZ 3.6 12  
 PPH 1.6 17  
 MAG 5.7-6.1 DIST DEG 130

PRI 13 17  
 JAS 13 17  
 MHC 13 17  
 MIN 13 17

USCGS 13 02 06.8, 60.8S, 24.6W, H= 33 KM, M=6  
 SOUTH SANDWICH ISLANDS REGION.

BKS AUG 22 13 36 06.0 C  
 PRI 13 36 02.0 D  
 JAS 13 36 04.0 D  
 MHC 13 36 04.5 D  
 MIN 13 36 08.1 C

pp 37 52 \*F 39 03

USCGS 13 17 02.5, 60.9S, 23.2W, H= 19 KM, M=5

PRI AUG 22 23 24 14.4 D  
 JAS 23 24 05.8 D  
 MHC 23 24 06 D  
 MIN 23 23 50.5 C

\*PP 24 21  
 \*PP 24 12 \*E 24 25  
 \*E 24 14

USCGS 23 12 18.9, 56.2N, 112.6E, H= 22 KM, M=5  
 LAKE BAIKAL REGION.

BKS AUG 23 00 21 07 D  
 PRI 00 22 54.8 D  
 JAS 00 20 00.6 D  
 MHC 00 21 03.0 D

\*F 21 22  
 \*E 21 21

PRI AUG 23 07 41 51.7 D  
 JAS 07 41 51.6 C

\*E 42 14

BKS AUG 23 09 31 D

\*E 36 36 \*E 40 00 \*E

DISTANCE DEG 71

\*E 50 00

PRI  
 JAS  
 MIN

09 31 25.7 C  
 09 31 32.7 D  
 09 31 48.8 C

\*E 31 33  
 \*E 31 41

USCGS 09 21 59.4, 4.3S, 81.5W, H= 33 KM, M=5.0  
 NEAR COAST OF NORTHERN PERU.

PRI AUG 23  
 JAS  
 MHC

17 20 01.5 C  
 17 20 07.0 C  
 17 20 02.0 C

PRI AUG 24  
 JAS  
 MHC

01 30 38.0 C  
 01 30 42.7 C  
 01 30 44.6 C

BKS AUG 24

03 31 54.5 C

\*PP 32 14 \*SP 32 24

MICRON PERIOD  
 PZ 0.03 0.4  
 MAG 4.2-4.6 DIST DEG 60

PRI  
 JAS  
 MHC  
 MIN

03 32 08.2 C  
 03 32 01.8 C  
 03 31 59.1 C  
 03 31 47.7 C

\*PP 32 21  
 \*PP 32 17

USCGS 03 21 17.6, 43.5N, 147.5E, H= 70 KM, M=5.4  
 KURILE ISLANDS.

BKS AUG 24

05 41 06.6 D

MICRON PERIOD  
 PZ 0.04 0.4  
 MAG 4.4-4.8 DIST DEG 79  
 SOUTH OF FIJI ISLANDS

PRI  
 JAS  
 MHC  
 MIN

05 41 07.1 C  
 05 41 12.3 C  
 05 41 07.4 C  
 05 41 15.9 C

BKS AUG 24

10 45 24.6 D

PPS 56 56 \*F 65 00 LQ 67 00  
 LR 70 00

MICRON PERIOD  
 PZ 0.03 0.5  
 MAG 4.7 DIST DEG 85

PRI  
 JAS  
 MHC  
 MIN

10 45 28.8 C  
 10 45 32.1 C  
 10 45 27.0 C  
 10 45 33.1 C

\*E 46 32  
 \*E 46 28

USCGS 10 32 52.6, 14.9S, 166.9E, H= 23 KM, M=5.3  
 NEW HEBRIDES ISLANDS. FELT AT LUGANVILLE.

PRI AUG 24

11 03 39.4 C

JAS 11 03 24.4 D \*E 03 35  
 MHC 11 03 38.8 D \*I 03 32  
 MIN 11 03 21.4 D  
 USCGS 10 43 26. , 17.1S, 40.3E, H= 33 KM, M=5.1  
 MOZAMBIQUE CHANNEL.

PRI AUG 24 11 42 22.6 D  
 JAS 11 42 38.3 D  
 MIN 11 43 13.6 C

BKS AUG 24 13 45 43.7 D  
 MICRON PERIOD  
 PZ 0.03 0.4  
 MAG 4.8 DIST DEG 90  
 PRI 13 45 42.7 D  
 JAS 13 45 48.5 D  
 MHC 13 45 43.6 C

BKS AUG 24 17 25 52.2 C \*E 26 34  
 MICRON PERIOD  
 PZ 0.03 0.9  
 MAG 4 DIST DEG 77  
 PRI 17 26 02.0 D \*PP 26 47  
 JAS 17 26 59.4 D \*PP 26 43  
 MHC 17 26 55.7 D \*PP 26 41  
 USCGS 17 14 00.1, 18.5N, 145.5E, H=197 KM, M=5.1  
 MARIANA ISLANDS.

PRI AUG 25 09 20 34.7 D  
 JAS 09 20 38.5 D  
 MHC 09 20 31 D

PRI AUG 25 10 04 38.7 D  
 JAS 10 04 37.7 D  
 MHC 10 04 38 C  
 USCGS 09 45 43. , 57.3S, 25.6W, H= 33 KM, M=5.1  
 SOUTH SANDWICH ISLANDS REGION.

BKS AUG 25 15 11 37.5 C 18 20 SS 21 28 LQ 22 00 LR 26  
 PRI 15 11 47.3 D \*E 12 03  
 JAS 15 11 38.9 D \*F 11 55 \*E 13 19  
 MHC 15 11 35.8 D \*F 11 52

PRI AUG 25 17 24 47.7 C  
 JAS 17 24 38.2 C  
 MHC 17 24 36.6 C

PRI AUG 25 23 07 25 C

JAS 23 07 07.5 C \*E 07 14 \*E 07 24  
 MHC 23 07 05 C \*E 07 11

PRI AUG 25 23 11 44.7 D  
 JAS 23 11 43.3 D \*E 11 52  
 USCGS 22 58 48.3, 12.2N, 140.9E, H= 33 KM, M=5.1  
 WEST CAROLINE ISLANDS.

BKS AUG 26 00 49 31.2 D 60 16 \*E 61 40 \*E 69 34 \*E 72 36  
 \*E 73 16 \*E 76 16 \*E 82 10  
 R FROM W  
 MICRON PERIOD  
 PZ 0.19 1.2  
 SH 4.65 16  
 PH 2.2 16  
 MAXH 6.9 20  
 MAG 6.0-6.4 DIST DEG 88

RI 00 49 39.6 D \*E 49 59  
 AS 00 49 37.4 D \*E 49 57 \*E 51 12 \*E 53 08  
 HC 00 49 34.2 D  
 IN 00 49 29.8 D \*I 49 53 \*E 52 56  
 RC 00 49 21.3 D

USCGS 00 36 42.1, 12.2N, 140.7E, H= 33 KM, M=6.1  
 WEST CAROLINE ISLANDS.

RI AUG 26 01 06 17.7 C \*E 06 47  
 AS 01 06 15.0 D \*E 06 43  
 HC 01 06 11.9 D \*E 06 42  
 USCGS 00 53 17.4, 12.2N, 140.7E, H= 14 KM, M=5.3  
 WEST CAROLINE ISLANDS.

BKS AUG 26 02 19 57.5  
 PRI 02 20 04.9 C  
 AS 02 20 03.3 C  
 HC 02 20 01.2 D  
 MIN 02 19 58.2 C  
 USCGS 02 07 08.9, 12.2N, 140.8E, H= 30 KM, M=5.3  
 WEST CAROLINE ISLANDS.

S AUG 26 03 57 53.9 C 59 33  
 N 03 57 39.4 C 57 58

I AUG 26 05 38 04.6 C  
 S 05 38 06.6 C \*E 38 53  
 N 05 38 05.0 C

S AUG 26 18 31 14.4 C \*PP 31 26 \*E 31 40 \*E 41 06  
 L 49 12 LR 51 50

R FROM S.W.  
 MICRON PERIOD

MAXH 2.65 DIST DEG 70  
 MAG 5.4  
 18 31 15.1 C \*PP 31 26 \*F 31 40  
 18 31 21.5 C \*PP 31 33 \*F 31 46  
 18 31 15.4 C \*PP 31 26  
 USCGS 18 19 58.2, 15.4S, 172.7W, H= 37 KM, M=5  
 SAMOA ISLANDS REGION. FELT AT APIA.

PRI AUG 26 21 51 42.4 D \*E 51 54  
 JAS 21 51 32.2 D  
 MHC 21 51 33.9 D

BKS AUG 27 08 37 06 C  
 JAS 08 37 05.9 C \*E 37 29  
 MIN 08 36 31.4 D

RKS AUG 27 12 06 22 C \*E 08 44 \*E 41 32  
 MICRON PERIOD  
 MAXH 0.71 20  
 MAGNITUDE 4.8

PRI 12 05 27 C  
 JAS 12 05 27.5 C

PRI AUG 27 12 38 35.5 C \*E 38 46 \*E 40 59  
 JAS 12 38 39.3 C \*E 41 36  
 MIN 12 39 22.5 C

PRI AUG 27 12 59 18.0 D \*E 00 24  
 JAS 12 59 57.0 C \*E 73 05  
 MHC 12 59 56.7 C  
 MIN 12 59 21.5 C \*I 59 39

BKS AUG 27 13 16 23.8 C \*E 16 58 \*F 18 41 \*E  
 \*E 23 41 SCS 25 54 \*F  
 \*E 30 00

MICRON PERIOD  
 PZ 0.17 1.5  
 SH 2.88 20  
 MAG 4.6-4.9 DIST DEG 42  
 13 16 07.2 C \*PP 18 15 \*E 21 46  
 13 16 11.0 C \*PP 18 16 \*F 21 48  
 13 16 18.0 C \*PP 18 19 \*F 21 52  
 13 16 29.3 C \*I 16 53 \*I 17 10  
 13 16 45.1 C \*F 17 25  
 USCGS 13 08 55.9, 12.3N, 86.2W, H=183 KM, M=5  
 NICARAGUA. FELT IN MANAGUA AREA.

BKS AUG 27 13 38 04.7 C \*E 40 06 \*E 40 48 \*E  
 \*E 41 28

MICRON PERIOD  
 PZ 0.21 2.0  
 MAXH 8.0 20.0  
 13 38 32.4 C \*E 38 44  
 13 38 11.6 C \*E 38 24 \*E 38 31  
 13 38 13.6 C  
 13 37 38.7 C \*E 38 43  
 13 37 23.9 C  
 USCGS 13 34 52.6, 50.2N, 130.0W, H= 24 KM, M=5.1  
 VANCOUVER ISLAND REGION.

BKS AUG 27 15 22 \*E 22 53  
 PRI 15 22 27.2 D  
 JAS 15 22 02.2 D  
 MHC 15 22 05.7 C  
 MIN 15 21 27.9 C

VANCOUVER ISLAND AREA

PRI AUG 27 17 55 43.2 C  
 JAS 17 55 16.8 C

BKS AUG 27 18 08 \*E 11 20 \*E 12 44  
 PRI 18 08 24.9 C  
 JAS 18 08 27.4 C \*E 08 37

BKS AUG 27 18 32 18 D \*E 34 56  
 PRI 18 32 49.6 C  
 JAS 18 32 22.4 C  
 MHC 18 32 28.1 C  
 MIN 18 31 51.6 D

BKS AUG 28 01 06 49.5  
 PRI 01 06 37.0 D \*E 08 36  
 JAS 01 06 42.5 D \*E 08 38  
 MHC 01 06 46.0 D \*E 08 44  
 MIN 01 06 55.1 C

AS AUG 28 09 24 17 C  
 IN 09 23 44.0 C

AS AUG 28 11 35 26.8 C  
 IN 11 34 53.0 D

AS AUG 28 11 44 42.5 D  
 IN 11 43 59.2 D

PRI AUG 28 11 49 19 C  
 AS 11 49 03.0 C

MIN 11 48 19.8 C

JAS AUG 28 12 02 03.8 C  
 MHC 12 02 31 C  
 MIN 12 02 48.4 D

JAS AUG 28 12 26 30.5 C  
 MHC 12 26 34.7 C  
 MIN 12 25 55.0 C

PRI AUG 28 12 30 06.5 C  
 JAS 12 30 13.4 C  
 MHC 12 30 08.5 C  
 MIN 12 29 39.7 D

PRI AUG 28 12 42 58.2 C  
 JAS 12 42 34.5 C  
 MHC 12 42 35 C  
 MIN 12 42 00.8 D

PRI AUG 28 12 47 38.7 D  
 JAS 12 47 14.0 C  
 MIN 12 46 37.4 D

PRI AUG 28 13 02 42.8 D  
 JAS 13 02 18.2 D  
 MIN 13 01 46.8 D

PRI AUG 28 13 19 14 C  
 JAS 13 19 49.7 C  
 MIN 13 19 05.4 D

BKS AUG 28 13 53  
 PRI 13 53 23.8 C  
 JAS 13 53 03.0 C  
 MHC 13 53 05.0 C  
 MIN 13 52 29.9 C

PRI AUG 28 15 10 51.5 D  
 JAS 15 10 32.2 D  
 MHC 15 10 34.5 C

BKS AUG 28 15 29 05.3 C  
 MICRON 0.60  
 PZ 2.0  
 MAXH 7.44

\*E 30 21

\*F 42 46

\*E 47 51  
 \*E 47 28

\*F 02 23

\*E 19 22  
 \*F 20 05  
 \*E 19 25

\*E 53 57  
 \*E 54 02  
 \*E 53 14 \*E 53 32  
 \*E 53 34

\*F 10 40  
 \*E 10 42

\*F 29 32 \*E 31 40  
 PERIOD 2.0  
 20.0

MAG 4.1-4.5 DIST DEG 10  
 PRI 15 29 33.0 C \*E 30 03  
 JAS 15 29 10.3 D \*I 29 22 \*E 29 46  
 MHC 15 29 14.3 C  
 MIN 15 28 39.2 C  
 ARC 15 28 20.0 C

USCGS 15 25 51.8, 50.4N, 129.9W, H= 33 KM, M=5.2  
 VANCOUVER ISLAND REGION.

BKS AUG 28 16 23 19.5 C

MICRON 0.60  
 PZ 2.0  
 MAXH 7.8 20

PRI 16 23 46.8 C \*E 24 29  
 JAS 16 23 26.1 C 25 07 \*E 23 34 \*E 24 08 LR 28 25  
 MIN 16 22 53.6  
 ARC 16 22 35.0 D

USCGS 16 20 06.6, 50.4N, 129.8W, H= 33 KM, M=5.1  
 VANCOUVER ISLAND REGION.

PRI AUG 29 04 54 41.6 C \*E 54 50  
 JAS 04 54 52.2 C \*E 55 03  
 MHC 04 54 50.7 C

PRI AUG 29 07 46 16.7 C  
 JAS 07 46 06.5 D  
 MIN 07 46 09.8 C \*E 47 04

MIN AUG 29 11 03 40.6 D

PRI AUG 29 13 54 12.5 D  
 JAS 13 54 15.5 D  
 MHC 13 54 06.3 D

BKS AUG 29 17 15 08.1 15 38  
 MAG 4.1 OFFSHORE CAPE MENDOCINO  
 PRI 17 15 35.9 \*E 16 45  
 JAS 17 15 24.5 16 06 \*I 16 16  
 MHC 17 15 17.6 15 52 \*E 16 18  
 MIN 17 14 59.8 15 31

BKS AUG 30 04 35 54 C  
 MICRON 2.03  
 PZ 16  
 MAXH 21.1 20

MAG 6.4-6.6 DIST DEG 103  
 I 04 36 03.4 C \*E 39 41 \*F 40 17  
 S 04 35 55.1 D P\* 39 00 PP 39 44 \*E 40 07  
 \*E 41 17 SKS 52 04 \*E 52 31



MHC 04 36 44.9 D \*E 40 07  
 MTN 04 36 44.3 C \*E 39 09 PP 39 48  
 USCGRS 04 22 01.5, 31.7N, 100.3E, H= 3 KM, M=6,  
 SZECHWAN PROVINCE, CHINA.

JAS AUG 30 10 54 09.2 C \*E 54 21

JAS AUG 30 11 22 43.3 C \*E 22 53  
 MIN 11 22 31.0 C \*E 26 29  
 USCGRS 11 08 49.6, 31.6N, 100.3E, H= 33 KM, M=5,  
 SZECHWAN PROVINCE, CHINA.

PRI AUG 30 11 54 58.0 C  
 JAS 11 55 03.5 C  
 MHC 11 55 58.0 C  
 MIN 11 55 06.6 C

BKS AUG 30 12 08 14.0 \*E 08 21  
 PRI 12 08 13.1 C \*E 08 57  
 JAS 12 08 19.0 C  
 MHC 12 08 14.3 C  
 MIN 12 08 24.3 C  
 TONGA ISLANDS

BKS AUG 30 13 43 51.0 D 52 04 \*E 59 38 \*E 61 30  
 MICRON PERIOD  
 SH 2.6 22  
 MAXH 3.07 20  
 MAG 5.3 DIST DEG 64  
 PRI 13 43 53.5 C \*E 44 32  
 JAS 13 43 52.5 C \*E 44 28  
 MHC 13 43 55.1 C  
 MIN 13 43 37.8 C \*I 43 53  
 USCGRS 13 33 26.4, 45.4N 151.5W, H= 33 KM, M=5,  
 KURILE ISLANDS.

MHC AUG 31 16 31 08.2 C  
 MIN 16 31 22.3

BKS AUG 31 19 04 33.9 C \*E 05 38  
 PRI 19 04 33.0 C \*E 04 53 \*PP 05 45  
 JAS 19 04 39.5 C \*E 04 47 \*PP 05 38  
 MHC 19 04 34.6 D  
 USCGRS 18 53 25.2, 17.5S, 175.2W, H=277 KM, M=5,  
 TONGA ISLANDS.

PRI AUG 31 19 10 11 C  
 JAS 19 09 54.0 C

MHC 19 09 50.5 C

BKS SEP 01 03 44 09.3 D \*E 45 08  
 MICRON PERIOD  
 PZ 0.1 1.5  
 MAGNITUDE 5.0-5.4

PRI 03 44 14.5 C  
 JAS 03 44 14.8 C  
 MHC 03 44 10.6 C  
 MIN 03 44 11.2 D \*I 44 23  
 ARC 03 44 03.8 D  
 USCGRS 03 31 10.5, 5.6S, 147.2E, H=182 KM, M=5.2  
 E. NEW GUINEA REGION. FELT IN EASTERN NEW  
 GUINEA.

BKS SEP 01 09 07 47.9  
 MICRON PERIOD  
 PZ 0.03 1.0  
 MAGNITUDE 4.5-4.8

PRI 09 07 50.4 C  
 JAS 09 07 54.2 C  
 MHC 09 07 49.5 C  
 MIN 09 07 55.8 D  
 VICINITY OF SAMOA IS.

JAS SEP 01 12 59 42.0 D \*E 60 01  
 MIN 12 59 24.7 C

PRI SEP 01 15 06 42.5 C  
 JAS 15 06 46.7 C  
 MHC 15 06 46.5 C  
 USCGRS 14 53 55. , 44.1S, 82.1W, H= 33 KM, M=5.2  
 WEST CHILE RISE.

BKS SEP 01 22 52 29.0 C \*PP 52 58  
 MICRON PERIOD  
 PZ 0.1 1.2  
 PRI 22 52 42.8 C \*PP 53 11  
 JAS 22 52 36.1 C \*PP 53 05 \*SP 53 17  
 MHC 22 52 33.5 C \*PP 53 03  
 USCGRS 22 42 01.8, 44.9N, 147.0E, H=134 KM, M=5.4  
 KURILE ISLANDS.

BKS SEP 02 01 37 09.3 D \*E 08 24 \*E 11 36  
 PRI 01 37 02.6 C  
 JAS 01 37 05.0 C  
 MHC 01 37 03.0 C \*E 37 21  
 S OF AUSTRALIA

BKS SEP 02 05 49 53.6 C MICRON PERIOD  
0.03 0.8  
PZ  
PRI 05 49 52.3 D  
JAS 05 49 57.9 D  
MHC 05 49 53.3 D  
MIN 05 50 02.3 C  
NEW HEBRIDES IS.

JAS SEP 02 07 09 40.4 D

PRI SEP 03 01 36 35.5 D \*E 36 48  
JAS 01 36 35.5 D \*E 36 44  
MHC 01 36 32.1 D  
MIN 01 36 32.5 C  
USCGS

01 23 19.6, 7.8S, 147.1E, H=139 KM, M=5.5  
E. NEW GUINEA REGION. FELT IN EASTERN  
NEW GUINEA.

PRI SEP 03 04 58 20.7 D  
JAS 04 58 15.8 D  
MIN 04 58 04.9 C

PRI SEP 03 06 53 45.7 D  
JAS 06 53 54.9 D  
MIN 06 54 16.1 D

JAS SEP 03 11 36 53.7 C \*E 37 14  
MIN 11 36 52.6 D

BKS SEP 03 21 17 52.9 C 26 24 SS 30 19 L 33 45 LR 30  
p\*p\* 46 59  
MICRON PERIOD  
PZ 44 15  
SH 90 26  
MAXH 54 20  
MAG 6.4-6.6 DIST DEG 65  
PRI 21 17 38.5 C 26 09 p\*p\* 47 09  
JAS 21 17 45.6 C 26 05 p\*p\* 46 54  
MHC 21 17 48.3 D p\*p\* 45 56  
MIN 21 18 04.5 C p\*p\* 46 00  
ARC 21 18 12.5 D  
USCGS 21 07 30.8, 10.6S, 79.8W, H=38 KM, M=5.5  
OFF COAST OF PERU. FELT AT LIMA.

PRI SEP 03 21 54 47.6 D  
JAS 21 54 51.8 D  
MHC 21 54 53.4 D

JAS SEP 04 03 54 04.0 D \*E 54 13  
MHC 03 54 06.1 D \*E 54 13

BKS SEP 04 04 04 20.8 D PP 05 14 \*F 05 30 PS 14 25  
PPS 15 30 \*E 15 38 LQ 28 40

MICRON PERIOD  
PZ 1.8  
PPZ 0.11 1.4  
MAXH 2.1 20  
MAG 6.0-6.2 DIST DEG 110

PRI 04 04 20.0 D PP 05 19 \*E 07 51  
JAS 04 04 25.5 D PP 05 22 \*E 07 55 PS 14 31  
MHC 04 04 21.0 D PP 05 17 \*E 07 53  
MIN 04 04 29.7 D \*I 05 30

USCGS 03 51 58.9, 31.4S, 179.4W, H=231 KM, M=5.5  
KERMADEC ISLANDS.

PRI SEP 04 18 14 25.1 D  
JAS 18 14 26.8 D  
MHC 18 14 22 D

USCGS 18 01 32.7, 8.8S, 157.7E, H=33 KM, M=5.2  
SOLOMON ISLANDS.

PRI SEP 04 19 39 C \*E 40 22  
JAS 19 39 27.0 D \*E 40 06  
MHC 19 39 28 C \*E 40 05  
MIN 19 39 10.1 D

PRI SEP 04 22 17 42.4 C  
JAS 22 17 47.0 C  
MHC 22 17 49.0 C

PRI SEP 05 03 53 24.8 D  
JAS 03 53 23.2 D \*E 53 31  
MHC 03 53 19.6 C \*E 53 28  
MIN 03 53 19.9 C

USCGS 03 39 55.9, 4.4S, 144.8E, H=27 KM, M=5.1  
NEAR NO. COAST NEW GUINEA.

JAS SEP 05 05 29 16.1 C  
MIN 05 29 20.4 D

JAS SEP 06 03 28 38 D  
MIN 03 28 24.6 D

PRI SEP 06 07 49 01.5 C  
JAS 07 48 57.6 C \*E 50 56

MHC 07 48 53.2 C  
MIN 07 48 52.8 C

JAS SEP 06 08 12 57.7 C  
MIN 08 12 44.5 C

JAS SEP 06 09 32 34.6 C  
MIN 09 33 15.1 C

BKS SEP 06 17 31  
PRI 17 31 49.2 D  
JAS 17 31 40.7 D  
MHC 17 31 37.6 D

PRI SEP 06 19 57 08.2 C  
JAS 19 57 06.2 C  
MHC 19 57 04.7 C  
USCGS

19 44 07.9, 5.2S, 151.7E, H= 74 KM, M=1  
NEW BRITAIN REGION. FELT AT RABAUL, POMI  
AND ULAMONA.

BKS SEP 07 02 02 R FROM S.W.  
PRI 02 01 50.3 D  
JAS 02 02 03.1 C  
MHC 02 02 12.4 C  
MIN 02 02 43.1 C  
USCGS

01 59 58.1, 31.3N, 114.4W, H= 11 KM, M=1  
GULF OF CALIFORNIA.

BKS SEP 07 02 55 LQ 60 30  
PRI 02 55 07.3 D  
JAS 02 55 24.2 C  
GULF OF CALIFORNIA

PRI SEP 07 04 41 15.1 C  
JAS 04 41 25.0 C  
MIN 04 42 23.8 D  
GULF OF CALIFORNIA \*E 43 32

PRI SEP 07 09 46 47.8 D  
JAS 09 46 53.3 C  
MHC 09 46 48.5 C  
MIN 09 47 08.8 C

BKS SEP 07 11 20 16.0 C

PRI 11 20 15.0 C  
JAS 11 20 20.0 D  
MHC 11 20 15.9 C  
MIN 11 20 24.5 C  
MICRON 0.05  
PERIOD 0.5  
USCGS 11 08 13.2, 31.3S, 179.6E, H=430 KM, M=5.1  
KFERMADEC ISLANDS.

JAS SEP 07 12 26 10.5 C \*E 28 12  
GULF OF CALIFORNIA

BKS SEP 07 12 39 33.6 C 39 46  
MAGNITUDE 4.7  
ABOUT 20KM WEST OF GILROY

PRI 12 39 39.6 D  
JAS 12 39 41.4 D  
MHC 12 39 24.0 D  
MIN 12 40 08.3 D \*I 40 46 \*I 40 56  
ARC 12 40 C \*E 40 22

BKS SEP 08 08 19 D \*E 19 51 \*E 20 10  
PRI 08 19 23.7 D \*E 19 34  
JAS 08 19 30.3 D \*E 19 41 \*E 19 48  
MHC 08 19 31.6 D  
MIN 08 19 42.1 D  
N. CHILE - ARGENTINA

PRI SEP 08 09 11 44.2 C \*E 12 07  
JAS 09 11 50.3 C \*E 12 09  
MHC 09 11 52.6 C  
MIN 09 12 02.5 D  
USCGS 08 59 59.3, 23.4S, 70.7W, H= 33 KM, M=5.5  
NEAR COAST OF NORTHERN CHILE. FELT IN  
ANTOFAGASTA.

JAS SEP 08 12 54 33.8 D \*E 54 43  
MIN 12 54 24.4 C

JAS SEP 08 14 51 41.9 D \*E 51 51

PRI SEP 08 22 01 32.3 C  
JAS 22 01 24.1 C \*E 01 30  
MHC 22 01 21.0 C  
NEAR IS. REGION

BKS SEP 08 22 50 33 C \*E 01 13 L 13 42 LR 17 17  
MICRON PERIOD

PRI  
JAS  
MHC

22 50 37.6 C  
22 50 35.6 C  
22 50 32.0 C

USCGS 22 37 39.5, 12.2N, 140.8E, H= 27 KM, M=5.4  
WEST CAROLINE ISLANDS.

PZ 0.13 1.3  
SH 2.15 10  
MAXH 4.6 17  
MAG 5.4-5.6 DIST DEG 86  
\*E 50 47  
\*E 50 44 \*E 54 11  
\*E 50 41

JAS SEP 09 06 27 58.6 C  
MHC 06 27 55.2 C  
MIN 06 27 50.7 D

BKS SEP 09 08 49 39.7 C

USCGS 08 37 50.4, 18.0N, 145.5E, H=241 KM, M=5.4  
MARIANA ISLANDS.

\*PP 50 38  
MICRON PERIOD  
PZ 0.04 0.9  
PH 0.03 0.8  
MAG 3.9-4.1 DIST DEG 79  
\*E 50 46  
\*E 49 56 \*E 50 44  
\*E 50 40  
\*PP 50 37  
\*E 50 22

PRI  
JAS  
MHC  
MIN  
ARC

08 49 49.4 C  
08 49 47.0 C  
08 49 43.4 C  
08 49 39.4 D  
08 49 29.9 D

BKS SEP 09 10 18 22.9 C

\*PP 20 27 \*E 22 17 \*PPP  
PPP 23 31 SKS 27 53 SP  
\*E 29 07 SSS 36 45 LQ

PRI  
JAS  
MHC  
MIN  
ARC

10 18 12.9 C  
10 18 17.8 C  
10 18 19.8 C  
10 18 27.6 D  
10 18 37.6 D

USCGS 10 06 44.1, 27.7S, 63.1W, H=578 KM,  
SANTIAGO DEL ESTERO PROV., ARGENTINA.

MICRON PERIOD  
PZ 0.45 1.2  
PH 1.0  
MAG 5.0-5.2 DIST DEG 77  
\*PP 20 17 \*E 44 36 \*E  
\*PP 20 22 \*E 44 33 \*E  
\*PP 20 24  
\*I 19 08 \*PP 20 33 \*I

PRI SEP 09 10 36 28.0 D  
JAS 10 36 24.2 D  
MHC 10 36 21.2 D

PRI SEP 09 14 48 58.8 C  
JAS 14 48 55.8 C  
MIN 14 48 22.6 D

PRI SEP 09 14 56 56.8 C  
JAS 14 56 53.0 C  
MHC 14 56 49.8  
MIN 14 56 43.6 C

USCGS 14 43 57.7, 12.3N, 140.7E, H= 33 KM, M=5.4  
WEST CAROLINE ISLANDS.

BKS SEP 09 17 05

MICRON PERIOD  
SH 4.2 24  
MAXH 28  
MAG 5.9-6.1 DIST DEG 90  
\*E 05 20  
\*E 05 28

PRI  
JAS  
MHC

17 05 10.8 D  
17 05 19.5 C  
17 05 17.0 C

USCGS 16 52 01.3, 54.8S, 136.0W, H= 33 KM, M=5.4  
SOUTH PACIFIC CORDILLERA.

BKS SEP 09 23 49 30.4 D

MICRON PERIOD  
PZ 0.02 0.8  
DISTANCE DEG 20

PRI  
JAS  
MHC  
MIN

23 49 51.0 C  
23 49 38.4 C  
23 49 36.0 C  
23 49 18.5 C

JAS SEP 10 06 25 49.6 C  
MHC 06 25 49.2 C  
MIN 06 26 02.7 C

PRI SEP 10 21 12 43.5 C  
JAS 21 12 47.0 C  
MHC 21 12 46 C

JAS SEP 10 23 47 16.3 D

BKS SEP 11 01 35

MICRON PERIOD  
MAXH 1.3 20  
MAGNITUDE 5 1/4  
R FROM SW

PRI  
JAS  
MHC  
MIN

01 35 14.5 C  
01 35 17.7 C  
01 35 15.2 C  
01 35 22.2 D

BKS SEP 11 04 50 02.6 C

PPS 62 05 LR 77 18  
MICRON PERIOD  
R FROM SW

P7 0.04 1.0  
 MAXH 1.2 22  
 MAG 5.1-5.2 DIST DEG 88  
 04 50 05.1 D  
 04 50 08.2 C  
 04 50 03.8 C  
 04 50 10.5 D  
 USCGS 04 37 16.4, 21.4S, 169.7E, H= 11 KM, M=5,  
 LOYALTY ISLANDS REGION.

BKS SEP 11 07 04 15 09 L 27 10 LR 31 06  
 MICRON PERIOD  
 SH 0.83 16  
 MAXH 1.1 20  
 MAG 4.7-5.1 DIST DEG 85

PRT 07 04 45.0 D  
 JAS 07 04 48.4 D  
 MHC 07 04 45.5 D  
 MIN 07 04 54.6 C

BKS SEP 11 10 27 LQ 49 42 LR 53 54  
 R FROM WSW  
 MICRON PERIOD  
 MAXH 1.45 26

PRT 10 27 02.2 D  
 JAS 10 27 06.5 C  
 MHC 10 27 00.9 C  
 MIN 10 27 12.0 C

PRT SEP 11 11 26 37.2 C  
 JAS 11 26 41.5 C  
 MHC 11 26 36.5 C  
 USCGS 11 14 23.7, 18.7S, 169.2E, H=245 KM, M=5,  
 NEW HEBRIDES ISLANDS.

PRI SEP 11 13 06 35.7 C  
 JAS 13 06 34.5 C  
 MHC 13 06 22.3 C

BKS SEP 12 00 21 L 30 18 LR 32 54  
 R FROM S.E.  
 MICRON PERIOD  
 MAXH 2.8 13

PRT 00 21 42.7 C  
 JAS 00 21 52.0 C

PRI SEP 12 02 54 01.8 D  
 JAS 02 54 10.0 D  
 MHC 02 54 11.5 D  
 MIN 02 53 54.6 C  
 USCGS 02 43 33.1, 44.6N, 149.8E, H= 25 KM, M=5,  
 \*E 54 23

KURILE ISLANDS.

PRI SEP 12 10 28 10.4 D  
 JAS 10 28 15.8 D \*E 28 40  
 MHC 10 28 18.3 D  
 MIN 10 28 27.6 D

PRI SEP 12 12 50 12.5 C \*E 50 21  
 JAS 12 50 14.0 C \*E 50 23  
 MHC 12 50 10.8 C \*E 50 18  
 MIN 12 50 24.5 C

BKS SEP 12 22 02 48.2 D 13 36 PS 14 48 SSS 23 40 L 26 24  
 LR 30 30

R FROM W  
 MICRON PERIOD  
 PZ 0.03 0.7  
 SH 2.0 18  
 MAXH 10.5 19  
 MAG 6.0-6.4 DIST DEG 90

PRI 22 02 53.7 C  
 JAS 22 02 51.2 C \*E 03 11  
 MHC 22 02 48.7 C \*E 03 08  
 USCGS 21 49 47.6, 5.5S, 151.7E, H= 50 KM, M=5.2  
 NEW BRITAIN REGION. FELT AT RABAU, POMIO,  
 LOLOBAU AND ULAMONA.

BKS SEP 13 00 18 44.9 C \*PP 18 51

MICRON PERIOD  
 PZ 0.02 1.0  
 MAG 4.4 DIST DEG 83

PRI 00 18 44.9 C \*PP 18 54  
 JAS 00 18 49.2 C \*PP 18 58  
 MHC 00 18 45.3 C \*PP 18 53  
 MIN 00 18 \*PP 19 00

USCGS 00 05 55.8, 19.4S, 167.5E, H= 17 KM, M=5.0  
 NEW HEBRIDES ISLANDS REGION.

AS SEP 13 00 27 56.3 D \*E 28 04

AS SEP 13 00 52 10.3 D PP 52 20  
 HC 00 52 05.4 D \*PP 52 15

AS SEP 13 12 17 55.1 C  
 IN 12 17 20.8 C

BKS SEP 13 18 49 56 27 LQ 59 42 LR 61 54  
 R FROM NW

PRI  
JAS  
MHC

18 49 59.0 C  
18 49 50.8 C  
18 49 48.1 C

USCGS

MICRON 1.18  
SH 3.0  
MAXH 3.0  
MAG 4.4-4.8

PERIOD 20  
25

DIST DEG 47

\*E 51 24  
\*E 51 17 \*E 52 08  
\*E 51 11

18 41 15.4, 52.7N, 172.5E, H= 34 KM, M=5.2  
NEAR ISLANDS, ALEUTIANS.

BKS SEP 13 20 16 27.8 C

PRI  
JAS  
MHC

20 16 24.3 C  
20 16 25.9 C  
20 16 26.9 C

USCGS

MICRON 0.02  
SH 0.88  
MAXH 2.9  
MAG 4.6

PERIOD 19 50  
0.7

DIST DEG 143

\*E 16 56 \*E 19 47  
\*E 16 57 \*E 19 40  
\*E 16 58 \*E 19 49

19 57 47.9, 56.0S, 27.4W, H=148 KM, M=5.2  
S. SANDWICH ISLANDS REGION.

BKS SEP 13 20 50

PRI  
JAS  
MHC

20 50 35.3 C  
20 50 48.8 C  
20 50 44.0 C

USCGS

MICRON 3.9  
SH 3.3  
MAXH 3.3  
MAG 4.8-5.2

PERIOD 12  
20

DIST DEG 28

\*E 51 05

R FROM S  
55 02 LQ 55 24 LR 56 42 SCS 61  
COAST OF MEXICO

PRI SEP 14 14 24 42.2 D  
JAS 14 24 49.5 D  
MHC 14 24 50.8 D

BKS 14 26 48 D 32 08

PRI  
JAS  
MHC

15 47 37.9 C  
15 47 41.4 C  
15 47 36.2 C

USCGS

MICRON 0.42  
SH 3.1  
MAXH 4.7  
MAG 4.8-5.2

PERIOD 12  
20  
28

DIST DEG 34

VICINITY OF HONDURAS

\*E 25 08 \*E 26 07  
\*E 35 56 LQ 38 12 LP

BKS SEP 14 15 47 35.6 D

PRI  
JAS  
MHC

15 47 37.9 C  
15 47 41.4 C  
15 47 36.2 C

USCGS

MICRON 0.8  
SH 3.1  
MAXH 4.7  
MAG 4.4

PERIOD 0.02  
84

DIST DEG 84

\*E 48 13  
\*E 48 16

NEW HEBRIDES REGION

BKS SEP 14 20 44 46.8 D

PRI  
JAS

20 44 25.3 C  
20 44 31.1 C

USCGS

MICRON 0.02  
SH 0.88  
MAXH 2.9  
MAG 4.7-5.1

PERIOD 0.9

\*PP 44 41  
\*PP 44 47

\*E 40 38 \*E 50 56 LQ 59 24  
LR 62 12

R FROM NW

MICRON 0.04  
SH 0.88  
MAXH 2.9  
MAG 4.7-5.1

PERIOD 1.0  
16  
28

DIST DEG 76

\*E 40 31 \*E 41 30  
\*E 40 27

00 28 39.8, 35.6N, 140.4E, H= 59 KM, M=5.2  
NEAR E. COAST OF HONSHU, JAPAN.

PRI SEP 15 08 15 33.7 D  
JAS 08 15 29.5 D  
MHC 08 15 26.8 D  
IN 08 15 18.8 D

BKS SEP 15 10 50

PRI  
JAS  
MHC  
IN

10 50 31.0 C  
10 50  
10 50 27.3 D

USCGS

MICRON 3.9  
SH 3.3  
MAXH 3.3  
MAG 4.8-5.2

PERIOD 12  
20

DIST DEG 28

\*E 51 05

R FROM S  
55 02 LQ 55 24 LR 56 42 SCS 61  
COAST OF MEXICO

LR 35 06  
\*E 51 23  
\*E 51 13 \*E 51 34  
\*E 51 26  
\*E 51 30

10 32 48.7, 27.4N, 91.8E, H= 57 KM, M=5.8  
BHUTAN.

PRI SEP 15 11 02 21.7 D  
JAS 11 02 27.5 D

\*E 02 32  
\*E 02 39

S SEP 15 11 49 27.2 C  
C 11 49 17 C  
N 11 49 28.3

\*E 49 37  
\*E 49 32

T SEP 15 18 04 15.5 D  
S 18 04 21.1 D  
C 18 04 22.6 D

\*E 04 53

S SEP 16 04 17 05.0 C  
T 04 17 15.3 D  
S 04 17 07.0 C  
C 04 17 08.4 C

MIN 04 16 54.1 D  
USCGS \*I 17 05  
04 03 58.0, 50.0N, 77.8E, H= 0 KM, M=5.5  
EASTERN KAZAKH, SSR.

BKS SEP 16 08 39 26.7 C  
MICRON PERIOD 0.5  
PZ 0.81  
PP 41 39 \*F 45 48  
PP 41 29 \*F 45 18 \*E 45  
\*E 41 31 \*E 45 42  
\*PP 39 24 PP 41 27 PCP 45  
08 39 44.9 C  
08 39 36.5 C  
08 39 33.2 D  
08 39 18.4 C  
USCGS 08 31 58.4, 52.0N, 176.4W, H= 65 KM, M=5.5  
ANDEAN IS., ALEUTIANS. FELT ON ADAK.

JAS SEP 16 15 23 50.4 D  
MHC 15 23 45.5 D

BKS SEP 16 18 33 30.3 D  
R FROM S. E. LR 49 00  
\*E 33 33  
18 33 14.6 D \*E 33 37  
18 33 21.3 D \*E 33 39  
18 33 25.1 D

BKS SEP 16 19 24 51.2 C  
MICRON PERIOD 1.0  
PZ 0.06  
MAGNITUDE 5.4  
\*PP 25 08  
\*PP 25 11  
\*PP 25 14  
\*PP 25 10  
19 24 55.3 C  
19 24 57.7 C  
19 24 52.8 C  
NEAR SOLOMON ISLANDS

PRI SEP 16 23 43 33.8 D  
JAS 23 43 39.0 D  
MHC 23 43 34.5 D

PRI SEP 17 01 21 14.7 C \*E 21 57  
JAS 01 21 08.8 C \*E 21 52  
MHC 01 21 05.7 C

BKS SEP 17 08 02 46.5 C  
\*I 03 00 PCP 05 37 LQ  
LR 12 30  
\*PP 02 43 PCP 05 32  
\*PP 02 50 PCP 05 34 \*E  
\*PP 02 54 PCP 05 35  
\*I 03 08 \*I 03 25  
\*E 03 25  
08 02 31.0 C  
08 02 37.8 C  
08 02 42.6 C  
08 02 57.3 D  
08 03 13.6 D  
USCGS 07 56 22.7, 17.2N, 94.1W, H= 45 KM,  
CHIAPAS, MEXICO.

PRI SEP 17 16 50 50.3 C  
BKS 16 50 LR 53 30  
R FROM S.E.  
JAS 16 51 05.8 C \*E 53 26  
MHC 16 51 04.3 C  
NEAR REVILLE GIDEGO IS.

PRI SEP 18 06 57 20.5 C  
JAS 06 57 34.9 C \*E 59 50  
MHC 06 57 35.0 C  
MTN 06 58 27.3 C

BKS SEP 18 15 46 24.5 D LR 76 00  
PRI 15 46 32.1 C \*E 46 52  
JAS 15 46 30.0 C \*E 46 51 P\* 50 32  
MHC 15 46 26.2 C \*E 46 48  
USCGS 15 33 06.5, 5.9S, 146.6E, H= 39 KM, M=5.5  
EAST NEW GUINEA REGION. FELT AT LAE AND BU  
NDI.

PRI SEP 18 19 05 36.8 C  
JAS 19 05 33.8 C  
MHC 19 05 37.9 C

JAS SEP 19 03 40 26.7 C \*E 40 38  
MTN 03 40 14.2 D

BKS SEP 19 11 06 55.3 D 15 43 SS 20 00 L 23 24  
MICRON PERIOD  
PZ 0.23 1.1  
SH 9.4 16  
MAGNITUDE 6.2-6.6  
PRI 11 07 08.5 D \*E 07 23 \*F 07 39 \*E 15 58  
JAS 11 07 01.8 C P\* P\* 39 10  
MTN 11 06 47.8 C \*I 06 54 \*I 07 01  
ARC 11 06 37.5 D  
USCGS 10 56 08.6, 43.0N, 145.2E, H= 84 KM, M=5.9  
HOKKAIDO, JAPAN REGION.

BKS SEP 19 13 04 34.4 C \*E 04 46  
PRI 13 04 30.8 D \*E 04 43  
JAS 13 04 32.7 C \*E 04 44 PP 06 16 \*E 14 15  
MHC 13 04 33.6 D \*E 18 08  
MTN 13 04 37.1 C \*E 04 05  
USCGS 12 45 35.3, 57.8S, 23.4W, H= 33 KM, M=5.7  
SOUTH SANDWICH ISLANDS.

PRI SEP 19 19 20 49.3 C  
 JAS 19 20 20.0 C  
 USCGS 19 01 47.5, 1.6S, 100.5E, H= 83 KM, M=5.1  
 SOUTHERN SUMATRA.

PRI SEP 20 00 44 32.7 C  
 JAS 00 44 19.7 C  
 MHC 00 44 15.7 C

\*E 45 07  
 \*E 44 34 \*F 44 53  
 \*E 44 53

PRI SEP 20 09 43 51.4 C  
 JAS 09 43 58.5 C  
 MHC 09 44 08.5 D  
 MIN 09 44 18.3 D

\*E 43 59 \*E 44 35  
 \*E 44 05 \*E 44 39  
 \*E 44 43  
 \*I 44 53

USCGS 09 33 54.1, 8.0S, 74.5W, H=145 KM, M=5.1  
 PERU-BRAZIL BORDER REGION.

BKS SEP 20 09 53

\*E 56 50 \*E 58 17 \*E 64 83  
 \*E 67 38 \*E 73 20 L  
 LR 87 00

R FROM S.W.  
 MICRON PERIOD  
 MAXH 15 18  
 MAGNITUDE 6.3-6.7

PRI 09 53 44.8 C  
 JAS 09 53 54.2 C  
 MIN 09 53

\*E 57 18 \*E 57 52 \*E 51 51  
 \*E 57 52 \*I 68 47

USCGS 09 39 15.2, 49.8S, 163.4E, H= 30 KM, M=5.1  
 AUCKLAND ISLANDS REGION. FELT ON CAMPBELL ISLAND.

BKS SEP 20 10 49 49.5 D

PZ MICRON PERIOD  
 0.4 1.1  
 MAGNITUDE 5.3-5.7

PRI 10 49 51.5 D  
 JAS 10 49 55.6 D  
 MHC 10 49 50.7 D  
 MIN 10 49 56.8 D  
 APC 10 49 51.8 D

\*E 50 26 \*F 53 14  
 \*F 50 28 \*E 53 22  
 \*E 50 26 \*F 53 11  
 \*I 50 29

USCGS 10 37 20.3, 20.8S, 169.8E, H=129 KM, M=5.1  
 NEW HEBRIDES ISLANDS. FELT ON LIFU.

PRI SEP 20 18 50 51.5 D  
 JAS 18 50 53.1 D  
 MHC 18 50 45.4 D

USCGS 18 38 25., 28.6S, 175.9W, H= 39 KM, M=5.1  
 KERMADEC ISLANDS.

JAS SEP 20 21 53 02.6 D

BKS SEP 21 00 03 57.4 C  
 PRI 00 03 25.5 C  
 JAS 00 03 46.5 D  
 MHC 00 03 44.2 C

\*I 05 22  
 \*E 05 20

05 44

USCGS 00 01 54., 31.2N, 115.9W, H= 33 KM, M=5.1  
 BAJA CALIFORNIA.

PRI SEP 21 20 46 02.0 C  
 JAS 20 45 57.7 D  
 MHC 20 46 11.1 D

\*E 46 54 \*E 46 07  
 \*E 47 24

PROBABLE BLAST FROM NEVADA

BKS SEP 22 05 17 05.0 C  
 PRI 05 17 14.3 C  
 JAS 05 17 05.8 C  
 MHC 05 17 07.9 C  
 MIN 05 16 46.3 C

\*I 17 04

USCGS 05 03 57.9, 50.0N, 77.6E, H= 0 KM, M=5.3  
 EASTERN KAZAKH, SSR.

PRI SEP 22 08 21 45.0 D  
 JAS 08 21 42.0 D  
 MHC 08 21 34.5 D

\*E 21 57

USCGS 08 08 04.3, 0.7S, 20.1W, H= 33 KM, M=5.3  
 CENTRAL MID-ATLANTIC RIDGE.

BKS SEP 22 10 28 26.5 D 37 00

PZ MICRON PERIOD  
 0.07 1.1  
 SH 2.9 20  
 MAXH 3.6 20  
 MAGNITUDE 5.3-5.7

PRI 10 28 40.0 D  
 JAS 10 28 33.8 D  
 MHC 10 28 31.2 D  
 MIN 10 28 19.0 D

\*E 28 42 \*I 29 20 LQ 44 06  
 \*E 45 54 \*E 47 30  
 \*PP 28 56  
 \*PP 28 50 \*E 28 22 PIP 57 30  
 \*PP 28 48

USCGS 10 17 59.9, 44.5N, 149.4E, H= 60 KM, M=5.9  
 KURILE ISLANDS.

PRI SEP 22 11 30 20.5 D  
 JAS 11 29 57.6 D

\*E 30 13 \*E 30 42

PRI SEP 22 12 45 33.5 C  
 JAS 12 45 27.0 C  
 MIN 12 45 09.6 C

\*E 45 40



BKS SEP 23 00 01 09 05 \*E 12 53 \*E 13 40 \*E 14 00  
 LR 15 28  
 MICRON PERIOD  
 MAXH 2.42 20  
 MAG 5.3 DIST DEG 50

PRI 00 01 33.4 C \*E 01 54  
 JAS 00 01 46.0 C  
 MHC 00 01 46.8 C

PRI SEP 23 00 17 20.9 C  
 JAS 00 17 34.8 C

JAS SEP 23 00 32 18.0 C \*E 34 10  
 MIN 00 32 04.0  
 PROBABLY BAJA, CALIF.

BKS SEP 23 02 08 40.9 C  
 PRI 02 08 19.4 C  
 JAS 02 08 22.3 C  
 MHC 02 08 33.7 C

BKS SEP 23 03 33 53.5 C  
 MICRON PERIOD  
 PZ 0.09 1.0  
 MAG 4.5 DIST DEG 57  
 \*E 34 11  
 \*E 34 16

PRI 03 33 55.0 C  
 JAS 03 34 00.5 C  
 MHC 03 33 55.0 C  
 MIN 03 34 02.8 D

USCGS 03 22 59.7, 17.7S, 178.7W, H=567 KM, M=5.1  
 FIJI ISLANDS REGION.

BKS SEP 23 07 07 54.9 C \*E 21 04 \*E 31 34 \*E 55  
 \*E 61 30  
 MICRON PERIOD  
 PZ 0.17 1.0  
 MAG 6.0-6.4 DIST DEG 101  
 \*E 08 00 \*E 10 04  
 \*F 08 06 \*E 10 06 \*F 11  
 \*E 10 03 \*F 11 07  
 \*I 08 10 \*I 08 17

PRI 07 07 55.0 C  
 JAS 07 08 00.6 C  
 MHC 07 07 55.4 C  
 MIN 07 08 03.8 C

USCGS 06 56 43.6, 21.8S, 179.7W, H=595 KM, M=5.1  
 FIJI ISLANDS REGION.

PRI SEP 23 07 50 59.9 C  
 JAS 07 51 05.3 C  
 MHC 07 50 59.9 C  
 MIN 07 51 09.4 C

PRI SEP 23 08 21 43.6 C  
 JAS 08 21 55.6 C \*E 23 52

PRI SEP 23 09 21 40.5 D  
 JAS 09 21 47.6 D \*E 22 02  
 MHC 09 21 36.5 D  
 MIN 09 21 30.4 C \*I 21 42

PRI SEP 23 22 55 16.8 C \*E 56 42  
 JAS 22 55 23.9 C \*E 56 46  
 MHC 22 55 18.4 C

JAS SEP 24 08 05 46.8 D \*E 05 53 \*E 06 09  
 USCGS 07 48 36.4, 6.2S, 146.9E, H= 84 KM, M=5.1  
 EAST NEW GUINEA REGION.

JAS SEP 24 12 10 27.9 C \*E 11 04

PRI SEP 24 20 30 06.8 D  
 JAS 20 29 54.3 D \*E 30 06  
 MHC 20 30 00.5 D  
 MIN 20 29 31.2 C

PRI SEP 25 04 14 51.0 C  
 JAS 04 14 51.0 C \*E 15 34  
 MHC 04 14 53.6 C  
 MIN 04 15 23.3 C

PRI SEP 25 04 49 50.8 C \*PP 49 59  
 JAS 04 49 47.6 D \*PP 50 05 \*E 50 15  
 MHC 04 49 41 C \*PP 49 59 \*E 50 10  
 MIN 04 49 53.2 C  
 USCGS 04 38 26.2, 15.1S, 173.4W, H= 63 KM, M=5.0  
 TONGA ISLANDS. FELT AT APIA.

PRI SEP 25 06 29 35.8 D  
 JAS 06 29 42.5 D  
 MHC 06 29 37.3 D  
 MIN 06 29 46.6 C

PRI SEP 25 08 19 38.2 C  
 JAS 08 19 36.8 C \*PP 19 47  
 MHC 08 19 43.8 C \*PP 19 54  
 MIN 08 19 44.4 D

BKS SEP 25 09 01 \*E 20 00 \*E 23 00

PRT JAS MHC MIN 09 01 18.3 D  
 09 01 17.8 C \*E 01 31 \*F 01 43  
 09 01 25.0 C \*E 01 39  
 09 01 26.8 C \*I 01 51  
  
 BKS SEP 25 09 23 29.0 D  
 MICRON PERIOD  
 MAXH 1.6 20  
 MAG 4.9-5.1 DIST DEG 51  
 PZ 0.03 0.6  
 MAG 4.2 DIST DEG 79  
 PRT 09 23 38.4 D \*E 23 41 \*E 24 33  
 JAS 09 23 36.0 D \*E 23 37  
 MHC 09 23 32.6 D  
 MIN 09 23 28.2 D  
 USCGS 09 11 37.7, 17.0N, 145.4E, H=252 KM, M=5.1  
 MARIANA ISLANDS.  
  
 PRI SEP 25 19 46 10.4 C  
 JAS 19 46 15.9 C  
 MHC 19 46 10.5 C  
  
 JAS SEP 25 19 51 41.3 D \*E 51 57  
  
 BKS SEP 26 05 52 26.7 C \*E 53 36 \*E 55 14  
 JAS 05 52 39.3 C \*E 53 44  
 MHC 05 52 37.4 C 33 42  
 MIN 05 52 07.9 C \*I 52 47  
 MAG 4.3 OFF SHORE CAPE MENDOCCINO  
  
 JAS SEP 26 06 57 23.3 C \*E 57 41 \*E 58 02  
 MIN 06 57 09.8 C  
  
 BKS SEP 26 11 23 56.4 D SCS 34 23 LR 52 32  
 MICRON PERIOD  
 PZ 0.14 1.0  
 MAG 5.5-5.7 DIST DEG 86  
 PRT 11 23 45.5 D \*PP 24 07  
 JAS 11 23 51.1 D \*PP 24 11  
 MIN 11 24 01.1 D \*I 24 20  
 USCGS 11 11 23.7, 33.6S, 70.5W, H= 34 KM, M=5.1  
 CHILE-ARGENTINA BORDER REGION. MINOR DAM  
 E IN SANTIAGO, CHILE AREA.  
  
 PRI SEP 26 12 43 25.0 C \*E 43 39  
 JAS 12 43 27.8 C \*E 43 41 \*E 45 16  
 MHC 12 43 56.4 D  
 MIN 12 43 \*E 46 57

PRI SEP 26 14 46 44.8 D  
 JAS 14 46 54.0 C \*E 48 34  
  
 BKS SEP 26 16 23 43.0 C 33 58 \*PP 23 58 \*E 39 20 \*E 43 08  
 LQ 45 48 LR 50 42  
 MICRON PERIOD  
 PZ 0.05 0.6  
 MAXH 7.1 20  
 MAG 5.8-6.0 DIST DEG 85  
 PRT 16 23 30.4 C \*PP 23 47  
 JAS 16 23 37.6 C \*PP 23 51 \*E 24 18  
 MHC 16 23 38.0 C \*PP 23 54  
 USCGS 16 11 23.9, 30.0S, 71.5W, H= 55 KM  
 NEAR COAST OF CENTRAL CHILE.  
  
 PRI SEP 26 20 15 05.7 C  
 JAS 20 15 18.7 C \*E 19 57  
  
 PRI SEP 27 06 12 22.5 D \*PP 12 32  
 JAS 06 12 29.3 D \*PP 12 42  
 MHC 06 12 32.5 D \*PP 12 44  
 MIN 06 12 44.6 D  
 USCGS 06 02 39.5, 7.3S, 81.3W, H= 37 KM, M=5.1  
 OFF COAST OF NORTHERN PERU.  
  
 PRI 06 13 48.8 C  
 JAS 06 13 50.8 C \*E 15 37  
 MIN 06 13 52.5 C  
  
 JAS SEP 27 09 45 00.6 C \*E 45 04 PP 45 25  
 MIN 09 44 43.3 D \*E 45 28  
  
 BKS SEP 27 21 27 29 47 \*E 30 15 \*E 31 32  
 PRI 21 27 38.1 C \*E 29 48  
 JAS 21 27 33.7 D \*E 29 46  
 MHC 21 27 50.7 D \*E 29 57  
  
 BKS SEP 28 03 07 34.3 D \*E 07 53 \*E 08 22 LR 17 28  
 MICRON PERIOD  
 PZ 0.02 0.6  
 MAXH 1.25 20  
 MAG 4.1-4.5 DIST DEG 38  
 PRT 03 07 52.3 D \*E 08 05  
 JAS 03 07 43.4 C \*E 07 57 \*E 08 31  
 MHC 03 07 38.2 C  
 MIN 03 07 25.0 D  
 USCGS 03 00 30.5, 52.5N, 171.0W, H= 48 KM, M=5.1  
 FOX ISLANDS, ALEUTIAN ISLANDS.

BKS SEP 28 ✓ 05 09 51.8 D 20 22 \*E 19 24 PS 21 24 SS 26 01  
 SSS 30 00 L 33 44 LP 37 05

R FROM W  
 MICRON PERIOD  
 PZ 0.07 0.8  
 MAXH 7.85 20  
 MAG 6.1-6.3 DIST DEG 88

PRI 05 09 55.4 D \*E 10 14  
 JAS 05 09 57.2 D \*PP 10 08 \*F 13 31  
 MHC 05 09 53.0 D \*PP 10 08 \*E 13 22  
 MIN 05 09 55.9 C \*I 10 08

USCGS 04 56 56.3, 6.6S, 153.4E, H= 44 KM, M=5.9  
 NEW BRITAIN REGION. FELT AT RABAUL, SOHANO  
 AND PIVA.

JAS SEP 28 05 35 32.0 C  
 MIN 05 35 25.5 C

BKS SEP 28 15 38 51.4 D 39 02  
 6 MILES NE OF MORGAN HILL  
 MAGNITUDE 4.9

PRI 15 38 59.5 C  
 JAS 15 38 57.0 D  
 MHC 15 38 38.6 D  
 MIN 15 39 26.5 D 40 11

BKS SEP 28 ✓ 15 50 33.2 C 55 12 \*E 50 49 PCP 53 39 L 56 28  
 LR 57 27

R FROM N.W.  
 MICRON PERIOD  
 PZ 1.33 2.8  
 MAG 5.4-5.8 DIST DEG 28

PRI 15 50 55.3 D \*E 51 18  
 JAS 15 50 41.6 D \*E 51 12  
 MHC 15 50 42.1 D \*E 51 11

USCGS 15 44 55.7, 59.5N, 147.1W, H= 28 KM, M=5.6  
 GULF OF ALASKA. FELT ON MIDDLETON ISLAND.

BKS SEP 29 05 26 03.5 \*E 27 55 LP 40 00  
 PRI 05 25 46.7 C \*E 25 58  
 JAS 05 25 54.0 C \*E 29 05  
 MHC 05 25 58.0 C \*E 26 09  
 MIN 05 26 12.7 D

USCGS 05 18 49.6, 12.3N, 91.2W, H= 33 KM, M=5.2  
 OFF COAST OF CENTRAL AMERICA.

PRI 05 28 14.3 D  
 JAS 05 28 16.5 D

BKS SEP 29 15 46 \*E 54 42 \*E 58 00  
 PRI 15 46 37.6 C \*E 47 26  
 JAS 15 46 46.2 C \*E 47 15  
 MHC 15 46 49.6 C

USCGS 15 40 46.9, 16.2N, 98.4W, H= 35 KM, M=5.0  
 NEAR COAST OF GUERRERO, MEXICO.

PRI SEP 29 15 56 21.6 C  
 JAS 15 56 21.3 C \*E 59 34

BKS SEP 30 08 09 55.3 C  
 MAGNITUDE 5.1

PRI 08 10 05.6 C \*E 10 17  
 JAS 08 10 01.0 C \*E 10 12 \*E 13 21  
 MHC 08 10 07.7 C  
 MIN 08 09 50.2 C \*I 10 02

USCGS 07 57 19.9, 28.9N, 129.9W, H= 32 KM, M=5.5  
 RYUKYU ISLANDS.

JAS OCT 01 02 49 15.7 C

JAS OCT 01 12 07 24.2 C  
 MHC 12 07 18.2 C  
 MIN 12 07 28.3 D

JAS OCT 01 22 38 40.9 D  
 MHC 22 38 43.1 D

BKS OCT 01 23 21 50.5 D \*E 22 08  
 JAS 23 21 54.3 C 22 13  
 MHC 23 21 39.1 D 21 47

BKS OCT 02 00 23 57.7 D  
 JAS 00 24 03.4 D \*E 26 13  
 MHC 00 23 58.0 D  
 MIN 00 24 07.4 C \*I 24 20 \*E 26 17

USCGS 00 12 52.8, 21.0S, 178.8W, H=604 KM, M=5.2  
 FIJI ISLANDS REGION.

JAS OCT 02 09 45 00.0 C 45 22  
 MHC 09 45 13.8 C

BKS OCT 02 16 16 19.0 D 16 25  
 JAS 16 16 41.6 C 17 05  
 MHC 16 16 30.2 D 16 45

JAS OCT 03 18 02 57.7 C

BKS OCT 03 18 23 57.0 D 30 30 LR 40 04 SCS 34 04  
 MICRON PERIOD  
 PZ 11.4 18  
 PRI 18 23 40.2 C \*E 23 55 \*E 25 46

JAS 18 23 46.1 C \*E 24 00 \*F 25 48 \*F 25 58  
 MHC 18 23 51.8 D \*E 24 03 \*F 25 52  
 USCGS 18 16 03.2, 10.9N, 85.9W, H= 21 KM, M=5.8  
 COSTA RICA.

JAS OCT 03 19 30 20.6 C \*E 30 30  
 MHC 19 30 25 C

JAS OCT 03 19 59 03.0 C  
 USCGS 19 50 25.9, 52.6N, 172.5E, H= 21 KM, M=5.1  
 NEAR ISLANDS, ALEUTIANS.

JAS OCT 04 02 01 54.2 D  
 MHC 02 01 02.8 D

BKS OCT 04 06 10 10.2 C \*PP 10 17 PP 12 06 LR 25 30  
 JAS 06 09 59.5 C \*E 10 08 PCP 12 01  
 MHC 06 10 03.6 C \*E 10 12 PCP 12 03  
 USCGS 06 02 16.4, 10.7N, 86.0W, H= 33 KM, M=5.3  
 OFF COAST OF COSTA RICA.

JAS OCT 04 09 06 48.4 C  
 MHC 09 06 54.8 C

BKS OCT 04 10 22 13.0 24 27  
 JAS 10 21 51.0 D 23 37 \*E 22 15  
 MHC 10 22 07.5 D 23 58  
 MIN 10 22 06.1 D \*E 23 24  
 ARC 10 22 \*E 22 34 \*F 25 22  
 USCGS 10 20 14.0, 38.5N, 112.1W, H= 18 KM, M=5.2  
 UTAH.

BKS OCT 04 17 34 11.4 C 44 30 PP 37 34 PPS 45 56 SS 50 40  
 SSS 54 18 \*E 57 48 \*E 59 32  
 LR 61 14  
 JAS 17 34 17.1 D \*E 34 36 \*E 37 50 P\*P\* 59 59  
 MHC 17 34 12.5 C \*E 37 39 \*F 59 59  
 USCGS 17 21 20.7, 5.7S, 153.9E, H= 52 KM, M= .  
 NEW IRELAND REGION. FELT AT SOHANO, PIVA  
 AND RUIN.

PRI OCT 04 17 51 47.0 D  
 JAS 17 51 50.9 D  
 MHC 17 51 43.6 D

PRI OCT 05 04 20 37.7 D  
 JAS 04 20 32.6 D \*E 24 23  
 MHC 04 20 34.6 C

BKS OCT 05 09 52 23.0 D  
 MICRON PERIOD  
 PZ 0.08 0.8  
 MAGNITUDE 5.3 - 5.5

PRI 09 52 09.6 D \*E 52 28  
 JAS 09 52 16.1 D \*E 52 34  
 MHC 09 52 18.9 D \*E 52 37  
 USCGS 09 41 31.4, 14.5S, 75.4W, H=100 KM, M=5.6  
 NEAR COAST OF PERU.

PRI OCT 05 16 05 38.9 C \*E 05 49  
 JAS 16 05 32.1 C \*E 05 43  
 MHC 16 05 29.5 C  
 USCGS 15 55 02.8, 45.4N, 150.7E, H= 33 KM, M=5.3  
 KURILE ISLANDS.

BKS OCT 05 18 39 18.0 C  
 MICRON PERIOD  
 PZ 0.05 1.0  
 PRI 18 39 18.0 C \*PP 40 10  
 JAS 18 39 24.0 C \*PP 40 16  
 MHC 18 39 18.4 C \*PP 40 10  
 LOYALTY ISLAND REGION  
 MAGNITUDE 5.2 - 5.6

BKS OCT 06 04 19 38.2 C \*E 19 46 \*E 67 30  
 PRI 04 19 42.6 C \*E 19 51 \*E 20 30  
 JAS 04 19 36.6 C \*E 19 45 \*F 20 34  
 MHC 04 19 41.5 C  
 USCGS 03 59 51.0, 10.3S, 66.4E, H= 33 KM, M=5.1  
 MID-INDIAN RISE.

PRI OCT 06 07 54 59.0 C  
 JAS 07 54 56.8 C  
 MHC 07 54 53.5 C  
 NW NEW GUINEA

BKS OCT 07 01 26 24.0 C  
 MICRON PERIOD  
 PZ 0.07 1.3  
 MAGNITUDE 4.4 - 4.8  
 PRI 01 26 12.8 C \*PP 26 29  
 JAS 01 26 18.2 C \*PP 26 34 \*E 27 32  
 MHC 01 26 20.4 D \*PP 26 37  
 USCGS 01 14 04.1, 29.6S, 71.1W, H= 42 KM, M=5.3  
 NEAR COAST OF CENTRAL CHILE. SLIGHT DAMAGE  
 AT LA SERENA. FELT AT ILLAPEL.

BKS OCT 07 08 37 55.8  
 PRI 08 37 55.5 C \*E 38 07  
 JAS 08 37 56.1 C \*E 38 07  
 MHC 08 37 55.5 C \*E 38 07  
 ARC 08 37 28.4 D  
 USCGS 08 28 01.2, 49.2N, 156.3E, H= 33 KM, M=5.3



MIN 05 28 17.4 C  
 PRI OCT 10 06 39 09.2 C  
 JAS 06 39 14.2 C \*E 39 38  
 MHC 06 39 09.1 C  
 MIN 06 39 15.2 D  
 USCGS 06 26 46.3, 18.1S, 171.8E, H= 63 KM, M=5.2  
 NEW HEBRIDES ISLANDS REGION.

JAS OCT 10 06 57 43.6 C \*E 58 35 \*E 58 48  
 MIN 06 57 20.6 C \*I 58 36  
 USCGS 06 46 58.5, 36.9N, 141.0E, H= 25 KM, M=5.0  
 OFF EAST COAST OF HONSHU, JAPAN.

PRI OCT 10 19 18 03.4 C \*E 18 10 \*E 18 32  
 JAS 19 18 00.0 C  
 MHC 19 17 56.8 C

JAS OCT 11 08 02 46.5 C \*E 03 12  
 MIN 08 02 23.7 D \*E 02 50

PRI OCT 11 16 04 10.7 C  
 JAS 16 04 07.5 C  
 MHC 16 04 04.4 C  
 MIN 16 04 56.7 D  
 USCGS 15 52 16.8, 30.4N, 142.6E, H= 32 KM, M=5.5  
 BONIN ISLAND REGION.

BKS OCT 11 16 36 44  
 PRI 16 36 47.0  
 JAS 16 36 51.2 D  
 MHC 16 36 48.2 D  
 USCGS 16 25 00.5, 30.5N, 142.6E, H= 33 KM, M=5.0  
 SOUTH OF HONSHU, JAPAN.

BKS OCT 11 20 38 12.2 \*PP 40 13  
 PRI 20 37 59.7 D \*PP 39 56 \*E 40 06  
 JAS 20 38 05.0 D \*PP 39 59 \*E 40 08  
 MHC 20 38 08.3 D \*PP 40 05  
 USCGS 20 28 10.2, 10.3S, 71.2W, H=585 KM, M=5.0  
 PERU-BRAZIL BORDER REGION.

JAS OCT 12 04 02 34.9 C  
 MIN 04 02 24.3 C

BKS OCT 12 06 46 11.0 D SKKS 55 24  
 MICRON PERIOD

PRI 06 46 11.2 D PKPZ 0.32 1.1  
 JAS 06 46 16.8 D \*PP\* 46 37 SKKS 55 30  
 MHC 06 46 11.5 D \*PP\* 46 44 SKKS 55 35  
 MIN 06 46 19.9 D \*I 46 33 \*PP\* 46 41 SKKS 56 44  
 USCGS 06 35 06.7, 21.1S, 179.2W, H=636 KM, M=5.6  
 FIJI ISLANDS REGION.  
 \*I 74 24

BKS OCT 12 13 02 58.3 C 10 29  
 MICRON PERIOD  
 PZ 0.28 1.35  
 MAG 5.5-5.8, DIST DEG 54  
 PRI 13 03 13.0 C 10 58 \*PP 04 37  
 JAS 13 03 05.1 D 10 42 \*PP 04 40 P\*P\* 32 27  
 MHC 13 03 03.3 C 10 38 \*PP 04 39  
 MIN 13 02 49.1 C 10 17 \*I 04 24 \*I 05 06  
 ARC 13 02 37.8 C  
 USCGS 12 53 46.9, 52.2N, 152.5E, H=476 KM, M=5.5  
 NORTHWEST OF KURILE ISLANDS.

BKS OCT 12 18 46 08.7 C \*PP 50 08 \*E 59 40  
 PRI 18 46 07.8 C \*PP 50 07 \*E 50 49  
 JAS 18 46 06.5 C \*PP 50 06 \*E 50 49  
 MHC 18 46 02.7 C \*PP 50 05 \*E 50 47  
 USCGS 18 31 37.1, 7.1S, 129.8E, H= 45 KM, M=6.2  
 BANDA SEA.

JAS OCT 12 19 01 09.4 C \*E 01 20 \*E 04 15  
 MIN 19 01 25.1 C

JAS OCT 13 01 22 30.5 C \*E 23 54

JAS OCT 13 02 28 52.2 D \*E 29 21

PRI OCT 13 20 26 54.3 D \*E 27 22  
 JAS 20 27 10.4 D \*E 27 16  
 MHC 20 27 06.2 C

PRI OCT 14 03 40 41.0 C \*E 40 56 \*E 41 04  
 JAS 03 40 41.0 C  
 MHC 03 40 48.5 C  
 MIN 03 40 49.7 D \*I 40 58  
 USCGS 03 31 04.5, 17.3N, 60.8W, H= 29 KM, M=5.3  
 LEEWARD ISLANDS.

BKS OCT 15 08 08 23.4 C 14 29 \*E 08 41 PCP 10 20 \*E 13 56  
 SCS 18 14 \*E 21 54 \*E 25 56  
 MICRON PERIOD

		PZ	1.6	1.2					
		MAG 6.6-6.9, DIST DEG 41							
PRI	08 08	07.4	C	PCP	10 14	SCP	13 49	SCS	18 03
JAS	08 08	13.2	D	PCP	10 15	SCP	13 51	SCS	18 07
MHC	08 08	18.3	C	PCP	10 18	SCP	13 54		
MIN	08 08	29.3	C	*I	09 05	PCP	10 17	SCP	13 59
ARC	08 08	46.4	C	*E	09 16				
		USCGS 08 00 50.3, 11.9N, 86.0W, H=162 KM, M=6.2 NEAR COAST OF NICARAGUA.							
JAS	OCT 15	08 39	00.3 C	*E	39 40				
PRI	OCT 15	17 45	41.5 C						
JAS		17 45	50.5 C	*F	46 05				
PRI	OCT 15	18 41	18.6 D						
JAS		18 41	25.9 D	*E	41 40				
MHC		18 41	29.0 D						
JAS	OCT 15	21 57	14.5 C						
MIN		21 57	03.2 D						
		USCGS 21 43 55. , 36.8N, 105.0E, H= 33 KM, M=5.1 NORTHERN CHINA.							
BKS	OCT 15	23 14		LR	42 00				
PRI		23 14	46 D						
JAS		23 14	50.3 D	*E	15 00	*E	15 12		
MHC		23 14	53 D						
MIN		23 14	54.3 C						
BKS	OCT 16	13 30	32.2 D	32 42	*E 30 42	*F 31 58	*E 32 48		
				MICRON	PERIOD				
				PZ	0.7	2			
				MAGNITUDE	4.8-5.0				
PRI		13 31	00.5 D	*E	33 47				
JAS		13 30	39.3 D	*E	30 51	*F 33 23			
MHC		13 30	41.1 D	*E	30 50	*F 33 23			
MIN		13 30	05.9 D	*I	30 26	*I 31 09			
ARC		13 29	47.3 C						
		USCGS 13 27 35.6, 49.3N, 129.1W, H= 33 KM, M=5.2 VANCOUVER ISLAND REGION.							
JAS	OCT 16	17 27	36.6 C	*E	27 53				
PRI	OCT 16	20 37	44.0 C						
JAS		20 37	29.6 C						
MHC		20 37	30.5 C						
		USCGS 20 16 56.1, 17.3S, 66.6E, H= 18 KM, M=5.2							

MASCARENE ISLANDS REGION.

JAS	OCT 16	21 25	09.2 D	*E	26 10				
BKS	OCT 17	02 01	11.6 D						
JAS		02 01	00.7 C	*E	01 11				
MHC		02 01	07.9 C	*E	01 17				
MIN		02 01	08.9 C						
BKS	OCT 17	05 17	05.5 C						
				MICRON	PERIOD				
				PZ	0.05	1.0			
				MAG	4.4-4.6, DIST DEG	90			
PRI		05 17	15.3 C						
JAS		05 17	06.8 C						
MHC		05 17	08.7 C						
MIN		05 16	54.3 C						
		USCGS 05 03 58.0, 49.8N, 78.1E, H= 0 KM, M=5.7 EASTERN KAZAKH SSR.							
BKS	OCT 17	09 45		*E	49 32	LR	51 00		
PRI		09 45	05.2 C						
JAS		09 45	19.5 C						
MHC		09 45	19.1 C						
MIN		09 45		*E	45 48				
		R FROM S.E. OFF W COAST OF MEXICO							
JAS	OCT 17	13 00	50.3 C						
MIN		13 00	54.3 C						
BKS	OCT 17	14 20	02 D						
PRI		14 20	02.7 C						
JAS		14 20	08.5 C	PP	22 16				
MHC		14 20	03.2 C	*E	20 21	PP	22 21		
MIN		14 20	12.1 D	PP	22 16				
BKS	OCT 17	14 58	32						
PRI		14 58	52.3 C						
JAS		14 58	34.6 C						
MHC		14 58	37.1 C						
BKS	OCT 17	21 19	01 C						
PRI		21 19	10.2 C	*E	19 18				
JAS		21 19	05.7 C	*E	19 14	*E	22 19		
MHC		21 19	03.8 C						
		USCGS 21 05 22.5, 17.2N, 121.8E, H= 33 KM, M=5.4 LUZON, PHILLIPINE ISLANDS.							

RKS OCT 18 01 21 40 D 29 46 \*E 22 35 \*F 23 12 \*E 23 53  
 \*E 30 36 \*E 33 37 \*E 34 23  
 LQ 36 00 LR 39 00 \*E 43 00

MICRON PERIOD  
 PZ 0.09 1.1  
 MAXH 4.7 20  
 MAG 5.8-6.2, DIST DEG 61  
 \*E 22 02  
 LR 44 37 P\*P\* 51 14  
 \*E 21 52  
 \*I 21 44  
 PRI 01 21 51.3 D  
 JAS 01 21 37.5 D  
 MHC 01 21 43.7 D  
 MIN 01 21 23.3 D  
 ARC 01 21 21.0 D  
 USCGS 01 11 44.3, 79.8N, 2.4E, H= 33 KM, M=5.7  
 GREENLAND SEA.

PRI OCT 18 02 59 10.8 C  
 JAS 02 58 57.6 D  
 MIN 02 58 16.2 C

RKS OCT 18 10 42 38  
 PRI 10 42 45.8 \*E 43 12  
 JAS 10 42 43.2 D  
 MHC 10 42 41.1 D  
 MIN 10 42 32.8 D  
 USCGS 10 29 48.5, 25.6N, 128.7E, H= 33 KM, M=5.2  
 RYUKYU ISLANDS.

RKS OCT 18 10 58 19.5  
 PRI 10 58 21.5 D \*E 60 04  
 JAS 10 58 27.4 D  
 MHC 10 58 21.7 D  
 MIN 10 58 30.8 C

JAS OCT 18 16 44 35.9 D

RKS OCT 18 22 19 18.1 C 28 52 LQ 42 00 LR 46 25  
 MICRON PERIOD  
 PZ 0.06 1.0  
 SH 0.0 20  
 MAXH 2.4 20  
 MAG 5.2-5.4, DIST DEG 88  
 \*E 19 25  
 \*E 19 30 \*F 22 55  
 \*E 19 26  
 PRI 22 19 16.7 D  
 JAS 22 19 22.3 D  
 MHC 22 19 17.9 D  
 MIN 22 19 27.8 D  
 USCGS 22 06 23.5, 33.9S, 179.6W, H= 26 KM, M=5.4  
 SOUTH OF KERMADEC ISLANDS.

JAS OCT 18 23 15 55.6 D \*E 16 14 \*E 16 31  
 MHC 23 15 51.1 D

RKS OCT 18 23 47 40.6  
 PRI 23 47 39.0 C  
 JAS 23 47 41.4 C \*E 47 59  
 MHC 23 47 40.7 C  
 USCGS 23 35 11.0, 13.9S, 166.5F, H= 37 KM, M=5.0

PRI OCT 19 15 16 17.8 C  
 JAS 15 16 19.6 C  
 MHC 15 16 20.3 C  
 USCGS 14 57 23.7, 58.6S, 24.8W, H= 33 KM, M=5.3  
 SOUTH SANDWICH ISLANDS REGION.

RKS OCT 19 15 58 08.3 C \*E 58 20  
 PRI 15 58 05.1 C  
 JAS 15 58 06.4 C \*E 58 19 \*E 60 46 \*E 66 39  
 MHC 15 58 07.1 D \*E 58 19 \*E 60 46  
 MIN 15 58 10.2 C  
 USCGS 15 39 10.3, 58.7S, 25.0W, H= 33 KM, M=5.1  
 SOUTH SANDWICH ISLANDS REGION.

RKS OCT 19 19 39 56 D  
 PRI 19 39 52.4 C  
 JAS 19 39 54.3 C  
 MHC 19 39 55.0 C  
 USCGS 19 20 57.7, 58.7S, 24.9W, H= 33 KM, M=5.4  
 SOUTH SANDWICH ISLANDS REGION.

RKS OCT 20 01 21 45.6 D SKSP 35 06 \*E 40 46 SS 44 44  
 \*E 49 14 \*E 49 40  
 PRI 01 21 41.7 C  
 JAS 01 21 43.4 C \*E 21 53 \*E 24 07 \*E 25 12  
 MHC 01 21 44.4 C \*E 21 53  
 USCGS 01 02 43.8, 58.6S, 25.0W, H= 12 KM, M=5.6  
 SOUTH SANDWICH ISLANDS REGION.

PRI OCT 20 01 31 33.7 D  
 JAS 01 31 37.6 C  
 MHC 01 31 32 D

PRI OCT 20 15 44 27.9 D  
 JAS 15 44 28.7 D  
 MHC 15 44 29.6 D

RKS OCT 20 16 07 37.8 D \*E 07 59  
 PRI 16 07 38.0 C \*E 09 47



JAS 16 07 43.4 C \*E 09 50  
MHC 16 07 38.0 C  
MTN 16 07 48.0 C  
USCGS 15 56 33.4, 20.6S, 179.1W, H=556 KM, M=5.0  
FIJI ISLANDS REGION.

BKS OCT 21 02 47 21.5 C 57 19 \*E 47 33 \*PP 47 42 PP 50 33  
PS 58 25 SS 63 07 SSS 66 42  
LP 73 52

R FROM S.F.  
MICRON PERIOD  
PZ 0.05 1.0  
MAXH 2.2 20  
MAG 5.7, DIST DEG 85  
\*E 47 28  
\*F 47 34  
\*E 47 36  
\*I 47 46 \*I 47 58  
02 35 12.3, 27.7S, 71.8W, H= 13 KM, M=5.4  
NEAR COAST OF NORTHERN CHILE.

PRI 02 47 15.0 D  
JAS 02 47 20.7 D  
MHC 02 47 22.7 D  
MTN 02 47 33.8 C  
USCGS

BKS OCT 21 05 11 07.5 C \*F 11 36  
PRI 05 11 18.8 C P\*P\* 39 13  
JAS 05 11 06.6 C P\*P\* 39 14  
MHC 05 11 10.9 C P\*P\* 39 15  
MTN 05 11 51.5 C \*I 10 59 \*I 13 13 P\*P\* 39 14  
USCGS 05 59 58.1, 73.4N, 54.8E, H= 0 KM, M=5.0  
NOVAYA ZEMLYA.

BKS OCT 21 17 14 32.5 C  
PRI 17 14 40.2 C  
JAS 17 14 38.1 C  
MHC 17 14 34.9 C  
MTN 17 14 31.3 D  
USCGS 17 01 46.0, 11.8N, 141.2E, H= 52 KM, M=5.1  
WEST CAROLINE ISLANDS.

PRI OCT 21 18 51 44.6 D  
JAS 18 51 50.3 D  
MHC 18 51 44.2 D

BKS OCT 21 20 15 32.0 D \*E 15 45 \*F 22 32  
PRI 20 15 36.0 C \*F 16 46  
JAS 20 15 35.6 C  
MHC 20 15 31.5 C  
MTN 20 15 28.7 D

BKS OCT 22 01 03 53.1 D \*E 13 34 \*F 15 32  
MICRON PERIOD  
PZ 0.04 1.0

MAG 4.8-5.2, DIST DEG 100  
PRI 01 03 42.2 D \*E 04 48  
JAS 01 03 47.2 D \*E 04 53  
MHC 01 03 49.4 C \*E 04 54  
MTN 01 03 58.6 C \*I 04 06  
USCGS 00 52 10.9, 22.3S, 65.7W, H=259 KM, M=5.2  
JUJUY PROVINCE, ARGENTINA.

BKS OCT 22 18 59 \*E 85 14  
JAS 18 59 14.1 C  
MTN 18 59 15.1 C

BKS OCT 22 23 17 08.0 D \*E 17 19  
JAS 23 17 05.0 C  
USCGS 23 04 14.2, 27.4N, 128.3E, H= 34 KM, M=5.2  
RYUKYU ISLANDS.

JAS OCT 23 03 04 21.8 C \*E 04 36  
MTN 03 04 07.8 D  
USCGS 02 53 30.7, 43.4N, 146.9E, H= 33 KM, M=5.0  
KURILE ISLANDS.

BKS OCT 23 08 38 23.0 D 47 42 \*E 38 33 \*E 38 48 \*E 40 09  
SS 53 08 LR 61 05  
MICRON PERIOD  
PZ 0.1 0.6  
MAG 5.5-5.7, DIST DEG 76  
PRI 08 38 33.8 D \*E 40 19  
JAS 08 38 29.5 D \*E 40 15 \*E 41 39  
MHC 08 38 26.8 D \*E 40 12  
MTN 08 38 19.1 D \*I 40 09  
USCGS 08 27 06.2, 28.9N, 139.1E, H=463 KM, M=5.3  
BONIN ISLANDS REGION.

PRI OCT 23 11 03 38.4 D  
JAS 11 03 43.8 D \*E 03 53  
MHC 11 03 46.0 D  
MTN 11 03 55.7 C  
DISTANCE DEG 84  
JAN FERNANDEZ ISLANDS

PRI OCT 23 18 37 05.0 D  
JAS 18 37 17.2 D \*E 37 36  
MHC 18 37 15 D

BKS OCT 24 03 25 46.1 D  
PRI 03 25 45.6 D  
JAS 03 25 51.0 D  
MHC 03 25 46.3 D  
MTN 03 25 55.5 D

USCGS 03 13 26.5, 31.3S, 179.7W, H=250 KM, M=5.4  
KERMADEC ISLANDS.

PRI OCT 24 06 38 55.9 C  
JAS 06 38 48.3 C  
MHC 06 38 48.7 C  
MIN 06 38 32.0 C

RKS OCT 24 11 10 17.5 D  
PRI 11 10 18.0 D  
JAS 11 10 16.8 D  
MHC 11 10 16.0 C  
MIN 11 10 12.8 D

\*E 10 30  
\*F 10 37  
\*E 10 35

USCGS 10 51 15.1, 3.1S, 101.5E, H=63 KM, M=5.5  
SOUTHERN SUMATRA.

RKS OCT 24 15 27 19.5 C  
PRI 15 27 12.3 C  
JAS 15 27 17.5 C

USCGS 15 17 54.0, 2.4S, 79.0W, H=123 KM, M=5.0  
NEAR COAST OF ECUADOR.

RKS OCT 25 01 12 32.5 C 23 36 \*E 12 38 \*PP 12 52 PD 16 00  
SS 28 34 LQ 38 01 LR 43 00

MICRON PERIOD  
P7 0.1 0.7  
MAXH 24 23  
SH 24 28  
MAG 6.2-6.5, DIST DEG 95

PRI 01 12 42.4 C  
JAS 01 12 37.5 C  
MHC 01 12 35.9 C  
MIN 01 12 27.6 C  
ARC 01 12 19.5 C

\*I 12 41 \*E 15 29 \*F 37 24  
\*I 12 48

USCGS 00 59 22.6, 24.5N, 122.2E, H=65 KM, M=6.0  
TAIWAN REGION. 2 KILLED, 3 INJURED AND  
MAJOR PROPERTY DAMAGE.

PRI OCT 25 01 44 15.5 C  
JAS 01 44 20.7 D  
MHC 01 44 13.7 D  
MIN 01 44 23.4 D

PRI OCT 25 02 10 42.5 C  
JAS 02 10 37.0 C  
MHC 02 10 36.2 C  
MIN 02 10 29.0 D

\*E 10 45

USCGS 01 57 23.1, 24.3N, 122.2E, H=67 KM, M=5.3  
TAIWAN REGION.

RKS OCT 25 09 07 50.8 D  
MICRON PERIOD  
PZ 0.01 0.7  
PRI 09 08 00.2 C  
JAS 09 07 55.4 C  
MHC 09 07 53.8 C  
MIN 09 07 45.5 C

USCGS 08 54 40.2, 24.5N, 122.2E, H=60 KM, M=5.2  
TAIWAN REGION.

PRI OCT 25 09 29 12.1 C  
JAS 09 29 14.5 D  
MHC 09 29 10.2 D  
MIN 09 29 17.0 D

USCGS 09 16 16.0, 37.1S, 177.5E, H=189 KM, M=5.1  
OFF E. COAST OF NORTH ISLAND, NEW ZEALAND.

BKS 09 29 58.9 D 37 27 \*E 30 11 LQ 50 12 LR 54 28  
MICRON PERIOD  
PZ 0.01 0.6  
MAXH 0.5 20  
MAG 3.6-4.0, DIST DEG 54

PRI 09 30 13.7 C \*E 30 27  
JAS 09 30 06.7 C \*E 30 20  
MHC 09 30 03.5 C \*E 30 16  
MIN 09 29 49.2 D \*I 30 02

RKS OCT 25 15 43 16.5 D 49 40 LQ 53 00 LR 55 16  
MICRON PERIOD  
MAXH 3.2 20  
MAG 5.0-5.2, DIST DEG 45

PRI 15 42 52.0 C  
JAS 15 42 58.5 D  
MHC 15 43 03.1 D

RKS OCT 26 00 35 32 C \*E 46 33 LQ 59 00 LR 65 00  
R FROM WNW  
MICRON PERIOD  
SH 0.57 1.8

PRI 00 35 41.4 C  
JAS 00 35 36.6 C  
MHC 00 35 34.7 C  
MIN 00 35 27.7 D

USCGS 00 22 21.6, 24.5N, 122.2E, H=63 KM, M=5.6  
TAIWAN REGION. FELT AT TAIPEI.

BKS OCT 26 00 38 11.5 C  
JAS 00 38 27.6 C 38 44  
MHC 00 38 16.2 C 38 24

PRI OCT 26 11 36 49.0 C \*E 38 10  
 JAS 11 36 48.2 C  
 MAGNITUDE 4

BKS OCT 26 12 31 PPP 39 18 p\* 50 26 LQ 52 31  
 LR 68 28

MICRON PERIOD  
 MAXH 1.7 20  
 MAG 4.3, DIST DEG 57  
 12 31 23.5 D \*E 31 19  
 12 31 25.8 D \*E 31 22  
 12 31 13.5 D  
 12 31 14.6 D  
 USCGS 12 21 33.0, 17.7N, 60.9W, H= 33 KM, M=5.2  
 LEEWARD ISLANDS.

BKS OCT 26 13 54 26.0 C 62 19 \*E 58 01 \*E 64 28 \*E 67 16  
 \*F 75 58

MICRON PERIOD  
 MAXH 2.6 20  
 MAG 4.3, DIST DEG 58  
 13 54 21.5 C \*E 54 29  
 13 54 18.5 C \*E 54 32  
 13 54 25.7 C  
 13 54 36.3 D  
 USCGS 13 44 45.1, 17.6N, 61.0W, H= 37 KM, M=5.3  
 LEEWARD ISLANDS.

BKS OCT 26 17 40 50 16 \*E 47 41 \*E 70 28

MICRON PERIOD  
 SH 0.6 24  
 MAXH 0.57 20  
 MAG 4.6, DIST DEG 75  
 17 40 50.3 C  
 17 40 55.0 C  
 17 40 53.2 C  
 USCGS 17 22 05.3, 0.2S, 125.2E, H= 42 KM, M=5.6  
 MOLUCCA SEA.

PRI OCT 27 00 47 11.8 C  
 JAS 00 47 17.3 C  
 MHC 00 47 34 C

BKS OCT 27 21 19 \*E 21 19  
 PRI 21 19 56.9 C  
 JAS 21 20 07.2 C  
 MHC 21 19 52.5 C

JAS OCT 28 00 22 50.8 D

PRI OCT 28 04 56 47.9 D  
 JAS 04 56 51.6 D  
 MHC 04 56 54.2 D

BKS OCT 28 18 52 LQ 19 13 LR 19 15  
 R FROM N.W.

MICRON PERIOD  
 MAXH 2.5 20  
 18 52 50.3 C \*E 52 50  
 18 52 42.1 C \*E 52 58  
 18 52 50.6 C  
 18 52 46.8 C  
 USCGS 18 42 13.7, 24.9N, 45.9W, H= 33 KM, M=5.1  
 NORTH ATLANTIC RIDGE.

JAS OCT 28 19 29 29.3 C  
 MIN 19 29 37.7 C

BKS OCT 28 19 31 \*E 54 00  
 PRI 19 31 58.5 D  
 JAS 19 31 56.0 D \*E 32 03  
 MHC 19 32 03.9 D \*E 32 10  
 MIN 19 31 58.9 C

JAS OCT 29 03 10 48.9 C \*E 11 03  
 MIN 03 10 54.6 C

BKS OCT 29 05 36 31.8 D  
 JAS 05 36 37.6 C \*E 37 01

BKS OCT 29 22 41 29.4 D  
 PRI 22 41 27.0 D  
 JAS 22 41 28.8 D  
 MHC 22 41 26.5 D  
 MIN 22 41 33.2 C

JAS OCT 30 02 49 34.6 C \*E 50 08  
 MIN 02 49 42.4 C

BKS OCT 30 06 17 05.8 D  
 PRI 06 17 15.1 C  
 JAS 06 17 06.3 C  
 MIN 06 16 53.4 C  
 USCGS 06 03 57.9, 49.8N, 78.1E, H= 0 KM, M=5.5  
 EASTERN KAZAKH, SSR.

PRI OCT 31 10 26 56.0 D \*E 27 15  
 JAS 10 27 01.1 D  
 MHC 10 26 55.6 D  
 MIN 10 27 03.3 D  
 USCGS 10 14 43.8, 19.7S, 177.3E, H= 40 KM, M=5.4  
 SOUTH OF FIJI ISLANDS.

JAS OCT 31 20 15 44.0 C \*E 16 25  
 MHC 20 15 \*E 16 32  
 MIN 20 15 25.8 C

BKS NOV 01 05 28 LR 31 30  
 R FROM N. E.  
 PRI 05 28 38.1 C \*E 30 37  
 JAS 05 28 22.4 C  
 NORTHERN UTAH

PRI NOV 01 09 08 32.5 C \*E 08 49  
 JAS 09 08 36.6 C  
 MIN 09 08 19.4 C

JAS NOV 01 13 14 32.0 C  
 MIN 13 14 36.5 C

BKS NOV 01 15 11 51.1 D  
 MICRON 0.04 PERIOD 0.9  
 PZ 0.04  
 MAG 4.9-5.1, DIST DEG 87

PRI 15 11 51.0 D \*E 12 06  
 JAS 15 11 57.0 C  
 MHC 15 11 51.5 C \*I 12 14  
 MIN 15 12 00.6 D  
 USCGS 14 59 58.9, 23.0S, 176.8W, H=140 KM, M=5.3  
 SOUTH OF FIJI ISLANDS.

BKS NOV 01 16 19 14.1 D  
 MICRON 0.03 PERIOD 0.7  
 PZ 0.03  
 MAG 3.9-4.3, DIST DEG 53  
 PRI 16 19 27.6 C \*E 19 54  
 JAS 16 19 20.7 C \*E 19 55  
 MHC 16 19 17.9 C \*E 19 54  
 MIN 16 19 16.2 D  
 USCGS 16 09 16.7, 48.2N, 154.4E, H= 47 KM, M=5.3  
 KURILE ISLANDS.

BKS NOV 01 16 40 54.7 D  
 MICRON 0.04 PERIOD 0.7  
 PZ 0.04

MAGNITUDE 4.6-5.0  
 PRI 16 41 08.9 C \*E 41 47  
 JAS 16 41 02.0 C \*E 41 47  
 MHC 16 40 59.3 C \*E 41 46  
 MIN 16 40 46.1 C \*I 40 53  
 USCGS 16 30 57.1, 48.3N, 154.4E, H= 40 KM, M=5.5  
 KURILE ISLANDS.

BKS NOV 01 16 57 LR 60 32  
 MICRON PERIOD  
 MAXH 5.5 20  
 PRI 16 57 42.0 C  
 JAS 16 57 58.8 C \*E 60 40  
 MAG 4.1, DIST DEG 8

BKS NOV 01 17 33 41 D  
 PRI 17 33 39.0 C  
 JAS 17 33 46.6 C  
 MHC 17 33 40.5 C

PRI NOV 01 19 10 52.5 D LR 43 00  
 R FROM W  
 MICRON PERIOD  
 PZ 0.05 0.9  
 MAG 5.8-6.2, DIST DEG 104

JAS 19 10 58.8 D  
 MHC 19 10 55.0 D  
 MIN 19 10 55.5 C  
 USCGS 18 56 54.8, 4.8S, 135.7E, H= 14 KM, M=5.8  
 WEST NEW GUINEA REGION.

BKS NOV 01 19 49 \*E 74 00  
 PRI 19 49 29.1 C  
 JAS 19 49 39.2 C \*E 49 51  
 MHC 19 49 34.5 C \*E 49 42

BKS NOV 02 03 44 41.5 D  
 MICRON PERIOD  
 PZ 0.03 0.6  
 MAG 4.8-5.2, DIST DEG 84  
 PRI 03 44 30.8 D \*E 45 13  
 JAS 03 44 36.5 D \*E 45 19  
 MHC 03 44 38.5 D \*E 45 21  
 MIN 03 44 48.2 C

USCGS 03 32 24.7, 28.8S, 69.5W, H= 79 KM, M=5.3  
 CHILE-ARGENTINA BORDER REGION.

BKS NOV 03 07 45 04.4 D 55 18 \*PP 45 58 \*SS 56 52 L 68 00  
 LR 73 30  
 MICRON PERIOD

PZ 0.14  
MAG 4.7-5.0, DIST DEG 85  
PRI 07 45 06.3 D \*E 46 00 \*E 48 33  
JAS 07 45 10.3 D \*E 46 04 \*E 45 59  
MHC 07 45 05.3 D \*I 45 21 \*I 46 06  
MIN 07 45 11.5 C  
ARC 07 45 03.6 D  
USCGS 07 32 50.1, 18.7S, 169.0E, H=230 KM, M=5.3  
NEW HEBRIDES REGION. FELT AT PORT VILA.

PRI NOV 03 08 25 22.3 D \*E 25 54 \*E 26 21  
JAS 08 25 29.8 D \*E 25 56 \*E 26 21  
MHC 08 25 32.3 D \*F 26 23  
MIN 08 25 44.8 D  
USCGS 08 15 34.4, 7.6S, 81.4W, H= 14 KM, M=5.2  
OFF COAST OF NORTHERN PERU.

PRI NOV 03 16 01 53.0 D  
JAS 16 01 29.0 D  
MHC 16 01 40.6 D

JAS NOV 03 21 46 43.6 C

BKS NOV 03 22 56 29.5 D \*E 56 58 \*E 59 49  
PRI 22 56 24.8 C \*E 57 00 \*E 59 51  
JAS 22 56 26.0 C \*E 57 01 \*E 59 51  
MHC 22 56 27.0 C  
USCGS 22 37 49.6, 56.1S, 27.2W, H=155 KM, M=5.4  
SOUTH SANDWICH ISLAND REGION.

PRI NOV 04 05 20 36.8 C \*E 20 47  
JAS 05 20 32.0 C  
MHC 05 20 30.0 C  
MIN 05 20 21.8 C  
USCGS 05 07 18.0, 24.3N, 122.2E, H= 76 KM, M=5.0  
TAIWAN REGION.

BKS NOV 04 10 28 10.8 C \*PP\* 28 35 \*E 30 10 \*E 57 54  
PRI 10 28 09.5 C \*PP\* 28 38 \*E 30 16 P\*P\* 57 55  
JAS 10 28 15.5 C \*E 30 10 \*E 57 56  
MHC 10 28 10.0 C \*E 30 20 \*F 37 33 P\*P\* 57 56  
MIN 10 28 18.8 D  
USCGS 10 17 14.7, 17.8S, 170.0W, H=573 KM, M=5.4  
FIJI ISLANDS REGION.

PRI NOV 04 12 04 11.1 C  
JAS 12 04 20.8 C  
MHC 12 04 24.0 C  
MIN 12 04 42.5 C

DISTANCE DEG 38  
OFF COAST OF GUATEMALA

BKS NOV 04 13 38 11.5 D  
PRI 13 38 23.3 C \*E 38 30  
JAS 13 38 17.2 C \*E 38 26 \*E 41 10  
MHC 13 38 15.0 C  
MIN 13 38 05.0 C  
USCGS 13 26 47.7, 37.4N, 141.6E, H= 46 KM, M=5.7  
NEAR E. COAST OF HONSHU, JAPAN. FELT AT TOKYO.

BKS NOV 04 14 41 32.5 D 50 32 LQ 58 18  
MICRON PERIOD  
PZ 0.13 1.2  
SH 5.2 10  
MAXH 16.1 20  
MAG 5.7-6.0, DIST DEG 68  
PRI 14 41 45.4 C \*PP 41 53  
JAS 14 41 38.9 C \*PP 41 48  
MHC 14 41 36.4 C \*PP 41 47  
MIN 14 41 24.8 C \*I 41 36  
USCGS 14 30 37.5, 43.5N, 144.1E, H= 30 KM, M=5.8  
HOKKAIDO, JAPAN REGION.

BKS NOV 04 14 56 57.0 D  
PRI 14 57 10.2 C  
JAS 14 57 03.8 C \*E 57 56  
MHC 14 57 01.7 C  
MIN 14 56 49.6 C  
USCGS 14 46 01.9, 43.5N, 144.0E, H= 33 KM, M=5.4  
HOKKAIDO, JAPAN REGION.

BKS NOV 04 16 07 52 C  
PRI 16 08 11.5 D  
JAS 16 07 56.8 D \*E 08 06  
MHC 16 07 54.7 D

BKS NOV 04 16 36 31.2 D \*E 36 57 \*E 37 23  
MICRON PERIOD  
PZ 0.32 1.1  
MAG 5.5-5.9, DIST DEG 57  
PRI 16 36 16.7 D \*E 36 41 \*F 37 15 \*F 66 23  
JAS 16 36 22.7 D \*E 36 46 \*E 37 18 P\*P\* 66 11  
MHC 16 36 26.5 D P\*P\* 66 10  
MIN 16 36 37.2 D \*I 37 35 \*I 38 54  
USCGS 16 26 48.2, 2.9S, 77.7W, H= 30 KM, M=6.0  
PERU-ECUADOR BORDER REGION.

JAS NOV 05 08 13 55.8 C

MIN 08 13 37.9 C

PRI NOV 05 08 56 35.5 C  
 JAS 08 56 28.8 C  
 MHC 08 56 26.5 C  
 MIN 08 56 19.3 C

PRI NOV 06 21 43 54.0 D  
 JAS 21 43 53.5 D  
 MHC 21 43 54.0 D

PRI NOV 07 03 37 13.8 C  
 JAS 03 37 26.6 C  
 MHC 03 37 26.2 C  
 MIN 03 37

BKS NOV 07 04 00 31.2 D  
 R FROM S.W.  
 JAS 04 00 37.9 D  
 MHC 04 00 31.9 D  
 MIN 04 00 41.8 D  
 USCGS

\*E 45 54  
 \*E 45 58  
 \*E 45 54

\*E 37 28  
 \*E 37 36  
 \*E 37 57

\*PP 00 45 \*E 10 08 \*E 18 20

\*PP 00 51 \*E 03 16  
 \*PP 00 44  
 \*I 00 56

03 49 17.4, 14.9S, 173.0W, H= 43 KM, M=5.6  
 SAMOA ISLANDS REGION. FELT AT APIA.

BKS NOV 07 08 47 19.0 C  
 PRI 08 47 15.4 C  
 JAS 08 47 17.0 C  
 MHC 08 47 17.8 C  
 MIN 08 47 21.8 D  
 USCGS

08 28 25.1, 56.2S, 26.8W, H= 33 KM, M=5.1  
 SOUTH SANDWICH ISLANDS REGION.

JAS NOV 07 22 14 40.7 C  
 MIN 22 14 22.0 C

\*I 14 41

PRI NOV 08 02 47 40.8 D  
 JAS 02 47 27.3 D  
 MHC 02 47 26.9 D  
 MIN 02 47 05.1 C  
 ALASKAN PENINSULA

\*E 47 35  
 \*I 47 26

BKS NOV 08 03 18 13.3 C  
 MICRON  
 P7 0.28  
 MAG 5.5-5.7, DIST DEG 40

\*E 24 08  
 PERIOD 1.1

PRI 03 17 56.5 C  
 JAS 03 18 01.9 C  
 MHC 03 18 08.0 C

\*PP 18 08 \*E 19 18  
 \*PP 18 12 \*E 19 24  
 \*PP 18 18

MIN 03 18 17.1 C  
 ARC 03 18 34.1 C  
 USCGS

\*PP 18 29

03 10 53.3, 16.8N, 85.9W, H= 28 KM, M=5.4  
 CARIBBEAN SEA.

PRI 03 20 27.2 C  
 JAS 03 20 32.6 C  
 MHC 03 20 35.5 C

JAS NOV 08 06 21 28.6 C  
 BRK 06 21 24 C  
 MHC 06 21 28.1 C  
 MIN 06 21 24.6 C  
 USCGS

06 07 21.4, 5.3S, 134.0E, H= 33 KM, M=5.9  
 AROE ISLANDS REGION.

PRI NOV 08 07 23 34.6 C  
 JAS 07 23 44.0 C  
 MHC 07 23 42.7 C

\*E 23 44  
 \*E 23 52  
 \*E 23 51

SE OF EASTER ISLANDS

PRI NOV 08 10 59 14.6 C  
 JAS 10 59 20.0 C  
 MHC 10 59 24.0 C

\*E 59 27  
 \*E 59 31  
 \*E 59 36

PRI NOV 08 17 11 22.6 C  
 JAS 17 11 10.5 C  
 MHC 17 11 03.0 C

\*E 11 20

BKS NOV 08 17 17 28.4 D 23 52  
 MICRON PERIOD  
 SH 2.78  
 MAXH 6.9  
 MAG 5.2-5.5, DIST DEG 44

\*E 27 32 LR 29 00

PRI 17 17 43.4 C  
 JAS 17 17 35.4 C  
 MHC 17 17 32.5 C  
 MIN 17 17 19.4 C  
 USCGS

SCP 23 15  
 \*E 17 45 \*E 18 10 SCP 23 09  
 \*E 18 14  
 \*I 17 26

17 09 27.1, 51.1N, 178.5E, H= 29 KM, M=5.3  
 RAT ISLANDS, ALEUTIAN ISLAND.

BKS NOV 08 17 30 35.0 D  
 PRI 17 30 51.8 C  
 JAS 17 30 44.5 D  
 MHC 17 30 41.0 D  
 USCGS

\*E 30 52 \*E 31 02

17 22 32.1, 51.1N, 178.4E, H= 10 KM, M=5.2  
 RAT ISLANDS, ALEUTIANS.

PRI NOV 08 18 39 00 C

JAS		18 38 55	C		*E 39 47
PRI NOV 08		20 02 12.1	D		
JAS		20 02 04.1	C		
MIN		20 01 47.6	D		
PRI NOV 09		02 32 39.0	C		*E 32 52
JAS		02 32 43.4	C		*E 32 57
MHC		02 32 37.5	C		*E 32 52
MIN		02 32 50.0	C		
BKS NOV 09		02 36 22.4	C		
				MICRON	PERIOD
				P7	1.0
PRI		02 36 25.5	D		*E 37 18 *F 38 16
JAS		02 36 24.2	D		*E 37 15 *E 38 07
MHC		02 36 23.2	D		*I 37 21
MIN		02 36 21.0	C		
				USCGS	02 18 45.5, 7.2S, 123.6E, H=560 KM, M=5.8
					BANDA SEA.
JAS NOV 09		02 47 00.4	C		*E 47 04 *E 47 12
MIN		02 47 07.6	C		
PRI NOV 09		07 54 00.8	D		*E 54 06
JAS		07 53 47.3	D		*E 54 04
MHC		07 54 03.0	D		
MIN		07 53 25.9	C		
BKS NOV 09		18 31 08.2	C		
PRI		18 31 19.3	C		
JAS		18 31 15.4	C		
MHC		18 31 12.7	C		
MIN		18 31 07.2	C		
				USCGS	*I 31 17
					18 19 35.0, 35.5N, 140.1E, H= 68 KM, M=5.3
					NEAR E. COAST OF HONSHU, JAPAN. FELT AT
					TOKYO.
PRI NOV 09		20 22 45.3	C		
JAS		20 22 53.0	C		
MHC		20 22 40.7	C		
MIN		20 22 57.7	C		
PRI NOV 10		03 39 22.2	C		
JAS		03 39 26.0	C		
MHC		03 39 20.5	C		
MIN		03 39 31.0	C		

JAS NOV 10		04 12 33.1	C		
MIN		04 12 27.9	D		
JAS NOV 10		04 30 43.7	C		*E 31 20
MIN		04 30 19.0	D		
PRI NOV 10		04 51 07.8	D		
JAS		04 50 59.3	D		*E 51 17
MHC		04 50 53.0	C		
MIN		04 50 55.0	D		
BKS NOV 10		13 22 11.5			
PRI		13 22 11.9	C		
JAS		13 22 17.4	C		*E 22 34
MHC		13 22 11.9	C		
MIN		13 22 20.7	D		
				USCGS	13 11 18.1, 18.0S, 178.5W, H=592 KM, M=5.0
					FIJI ISLAND REGION.
BKS NOV 10		18 36 02.6	C		
				MICRON	PERIOD
				P7	0.05
				DISTANCE DEG	28
PRI		18 36 21.8	D		*E 36 47
JAS		18 36 07.5	D		*E 36 32
MHC		18 36 08.5	D		
MIN		18 36 45.0	D		*E 36 15
					EAST CENTRAL ALASKA
BKS NOV 10		18 58 16.0	D		*E 58 27 L 86 20
				MICRON	PERIOD
				PZ	0.04
				MAG	5.8-6.0
				DIST DEG	101
PRI		18 58 28.1	D		*E 58 33
JAS		18 58 17.8	D		*E 58 29 *E 61 39
MHC		18 58 18.7	D		*E 58 29
MIN		18 58 18.5	D		
				USCGS	18 38 37.6, 6.0S, 71.4E, H= 32 KM, M=5.4
					CHAGOS ARCHIPELAGO REGION.
PRI NOV 11		02 48 04.2	C		
JAS		02 48 00.5	C		
MHC		02 48 02.9	C		
MIN		02 47 58.1	C		
				USCGS	02 28 45.6, 2.0N, 31.5E, H= 33 KM, M=5.1
					UGANDA.
BKS NOV 11		05 52 38.0	C		*E 53 10
PRI		05 52 28.1	C		
JAS		05 52 17.2	C		
MHC		05 52 31.4	C		*E 53 01 *F 53 32
MIN		05 52 51.0	D		*I 53 43 *I 53 51

JAS NOV 11 10 49 47.5 C  
 MHC 10 49 47.7 C  
 MIN 10 49 19.5 C

JAS NOV 11 11 18 55.0 D  
 MIN 11 18 51.0 D

BKS NOV 11 12 15 34.0 D  
 PRI 12 15 40.8 D  
 JAS 12 15 35.3 D  
 MHC 12 15 36.2 D  
 MIN 12 15 26.9 C

\*E 19 13 \*E 20 58  
 \*I 19 00 \*I 19 53 \*I 20 25  
 \*F 43 25  
 \*E 15 47  
 \*E 15 42 \*F 18 51  
 \*E 15 42  
 \*E 18 41  
 USCGS 11 55 55.6, 6.0S, 71.4E, H= 37 KM, M=5.6  
 CHAGOS ARCHIPELAGO REGION.

PRI NOV 11 12 23 25.8 C  
 JAS 12 23 20.3 C  
 MHC 12 23 20.8 C

BKS NOV 11 12 34 35.8 D

PP 38 02 \*E 57 00 \*E 62 40  
 LR 25 30  
 MICRON PERIOD  
 PZ 1.2  
 MAXH 1.7 20  
 MAG 5.5 DIST DEG 140  
 \*E 38 09  
 \*E 37 58  
 \*E 37 57  
 USCGS 12 14 57.3, 6.0S, 71.3E, H= 34 KM, M=5.7  
 CHAGOS ARCHIPELAGO REGION.

PRI 12 34 42.1 C  
 JAS 12 34 36.3 C  
 MHC 12 34 37.1 C  
 MIN 12 34 28.3 C

PRI NOV 11 13 41 27.9 D  
 JAS 13 41 30.7 D  
 MHC 13 41 27.0 C  
 MIN 13 41 12.4 C

\*E 41 41  
 \*I 41 23

BKS NOV 11 15 24 49 C  
 PRI 15 24 55.0 D  
 JAS 15 24 50.0 D  
 MHC 15 24 50.9 C  
 MIN 15 24 41.9 C

\*E 24 59  
 USCGS 15 05 10.3, 6.1S, 71.3E, H= 33 KM, M=5.3  
 CHAGOS ARCHIPELAGO REGION.

PRI NOV 11 18 02 04.5 C  
 JAS 18 01 58.6 D  
 MHC 18 02 03.6 D  
 MIN 18 01 50.3 C

\*E 02 19

USCGS 17 42 18.4, 6.1S, 71.5E, H= 33 KM, M=5.  
 CHAGOS ARCHIPELAGO REGION.

BKS NOV 11 18 19 40.0 C  
 PRI 18 19 44.9 C  
 JAS 18 19 39.5 C  
 MIN 18 19 32.3 C

\*E 19 58  
 \*E 19 51 \*E 21 07

PRI NOV 11 19 27 20 C  
 JAS 19 27 14.7 C  
 MHC 19 27 16.5 C

USCGS 18 00 00.7, 6.1S, 71.4E, H= 33 KM, M=5.  
 CHAGOS ARCHIPELAGO REGION.  
 \*E 27 31

BKS NOV 11 20 37 50.6 C  
 PRI 20 37 58.0 D  
 JAS 20 37 52.7 D  
 MHC 20 37 53.5 D  
 MIN 20 37 43.8 C

\*E 38 04  
 \*E 37 59 \*E 38 33 \*E 41

JAS NOV 12 02 37 50.5 C  
 MHC 02 37 49.1 C  
 MIN 02 37 58.8 C

USCGS 20 18 11.1, 6.0S, 71.3E, H= 20 KM, M=5.  
 CHAGOS ARCHIPELAGO REGION.  
 \*E 38 13  
 USCGS 02 27 16.6, 44.8N, 149.8E, H= 41 KM, M=5.5  
 KURILE ISLANDS.

BKS NOV 12 10 48 14.0 C

57 34 \*I 48 25 \*I 48 34 \*F 65  
 LQ 66 00 LR 69 20

PRI 10 48 14.1 C  
 JAS 10 48 20.9 C  
 MHC 10 48 14.8 C  
 MIN 10 48 25.1 C

MICRON PERIOD  
 PZ 0.2 1.2  
 MAXH 6.4  
 MAG 5.6-5.8, DIST DEG 73  
 \*E 48 23  
 \*E 48 31 \*E 49 34  
 \*E 48 24  
 \*I 48 35

BKS NOV 12 17 37

USCGS 10 36 52.0, 17.2S, 172.0W, H= 34 KM, M=5.6  
 TONGA ISLANDS REGION. FELT IN SAMOA ISLANDS.

PRI 17 37 18.0 C  
 JAS 17 37 22.5 C  
 MHC 17 37 17.2 C

\*E 52 22 L 61 00 LR 65  
 R FROM WSW  
 MICRON PERIOD  
 MAXH 2.6 20  
 MAG 5.5, DIST DEG 90  
 \*E 37 27  
 \*E 37 31  
 \*E 37 27



MIN 17 37 24.8 D  
USCGS 17 24 31.9, 22.8S, 170.7E, H= 26 KM, M=5.1  
LOYALTY ISLANDS REGION.

BKS NOV 12 22 11 43.5 C  
MICRON PERIOD  
PZ 0.05 1  
MAG 4.4-4.8, DIST DEG 80  
PRI 22 11 41.6 C  
JAS 22 11 47.1 C \*F 11 54 \*E 12 11  
MHC 22 11 42.7 C  
MIN 22 11 53.7 C  
FIJI-TONGA ISLANDS AREA

PRI NOV 13 16 50 26.5 D \*E 51 38  
JAS 16 50 13.7 D 51 27  
MHC 16 50 34.8 D

PRI NOV 13 17 46 16 C  
JAS 17 46 01.0 C  
MHC 17 45 57.9 C

BKS NOV 14 05 41 33.7 D \*E 53 06 \*F 64 00 LR 68 00  
MICRON PERIOD  
PZ 0.07 0.7  
MAG 4.9-5.3, DIST DEG 85  
PRI 05 41 39.3 C  
JAS 05 41 39.6 C \*E 42 18 \*E 45 30  
MHC 05 41 33.8 C \*E 45 24  
MIN 05 41 36.3 D \*I 41 48  
USCGS 05 28 36.9, 5.4S, 147.1E, H=201 KM, M=5.8  
FAST NEW GUINEA REGION.

BKS NOV 14 13 45 59.8 D  
MICRON PERIOD  
PZ 0.04 0.8  
MAG 4.1-4.5, DIST DEG 45  
PRI 13 46 16.8 C \*E 47 54  
JAS 13 46 08.2 C \*E 47 50  
MHC 13 46 05.1 C \*E 47 49  
MIN 13 45 50.1 C  
ALEUTIAN ISLANDS AREA

BKS NOV 14 19 55 59.2 D \*I 56 12  
PRI 19 55 58.5 C  
JAS 19 56 04.4 C  
MHC 19 55 59.0 C  
MIN 19 56 09.3 D

JAS NOV 15 18 46 53.2 D \*E 47 14

BKS NOV 15 21 44 11.6 C 54 16 PP 47 16 SS 60 00 SSS 63 24  
L 66 24 LR 69 56

MICRON PERIOD  
PZ 0.32 1.5  
MAXH 5.2 20  
MAG 5.7, DIST DEG 81  
PRI 21 44 00.6 C \*E 44 16  
JAS 21 44 06.3 C \*E 44 22 \*E 45 40 P\*P\* 70 48  
MHC 21 44 08.1 C \*E 44 25  
MIN 21 44 41.9 D \*I 44 56  
ARC 21 44 26.8 C

USCGS 21 31 51.5, 28.7S, 71.2W, H= 15 KM, M=6.2  
NEAR COAST OF CENTRAL CHILE. SLIGHT DAMAGE  
AT COQUIMBO. FELT IN CENTRAL AREA.

JAS NOV 15 22 02 15.4 C \*E 02 43  
MHC 22 02 \*E 02 46

PRI NOV 16 13 35 16 D  
JAS 13 35 17.2 C \*E 35 42  
MHC 13 35 13 D  
MIN 13 35 \*E 35 35

JAS NOV 16 14 25 26.7 D  
MHC 14 25 28.3 C

PRI NOV 16 22 30 33.3 C  
JAS 22 30 37.2 C  
MHC 22 30 31.1 C

PRI NOV 17 01 43 02.7 C  
JAS 01 43 06.9 C  
MHC 01 43 01.8 C

BKS NOV 17 05 09 34.2 C 18 28 \*I 09 42 \*E 10 14 \*E 25 48  
LR 29 24

MICRON PERIOD  
MAXH 5.4 20  
MAG 5.5-5.7, DIST DEG 66  
PRI 05 09 31.3 D  
JAS 05 09 24.1 D \*E 09 32 \*E 10 01 P\*P\* 39 43  
MIN 05 09 24.9 D \*I 09 32  
USCGS 04 58 56.8, 28.5N, 43.8W, H= 33 KM, M=5.2  
NORTH ATLANTIC RIDGE.

PRI NOV 17 08 00 50.3 D

JAS 08 00 55.7 D  
 MHC 08 00 58.0 D  
 MIN 08 01 06.9 D

BKS NOV 17 09 32 02.8 D \*I 32 24 LR 59 00  
 MICRON PERIOD  
 PZ 0.01 0.7  
 MAG 4.6-5.0, DIST DEG 87  
 PRI 09 32 12.7 C \*E 32 30  
 JAS 09 32 13.7 C \*E 32 31 \*E 33 04  
 MHC 09 32 09.3 C \*E 32 26  
 MIN 09 32 16.2 C \*I 32 30  
 USCGS 09 19 21.0, 6.3S, 154.9E, H= 60 KM, M=5.1  
 SOLOMON ISLANDS.

BKS NOV 17 10 22 10.5 D  
 PRI 10 22 13.6 C  
 JAS 10 22 16.6 C  
 MHC 10 22 11.7 C  
 MIN 10 22 16.9 C

PRI NOV 17 17 14 55.5 C  
 JAS 17 14 48.9 C \*E 14 54  
 MHC 17 14 57.0 C  
 MIN 17 14 49.6 C

PRI NOV 17 18 42 49.0 D \*PP 43 21  
 JAS 18 42 54.2 D \*PP 43 25  
 MHC 18 42 56.7 D \*PP 43 27  
 BOLIVIA-ARGENTINA AREA

BKS NOV 18 12 24 11.0 D LQ 34 00 LR 38 00 \*I 41 32  
 MICRON PERIOD  
 PZ 0.04 1.0  
 PH 0.03 1.0  
 MAGNITUDE 4 - 4.4  
 PRI 12 23 53.0 C \*E 26 12 \*F 30 02  
 JAS 12 23 59.7 C \*E 26 20 \*E 30 05  
 MHC 12 24 04.6 C \*E 26 21 \*E 30 07  
 MIN 12 24 17.3 D \*I 24 42 \*I 26 27  
 USCGS 12 16 55.4, 13.4N, 89.1W, H= 78 KM, M=5.1  
 EL SALVADOR. FELT AT SAN SALVADOR.

PRI NOV 18 12 33 09.0 C \*E 33 24 \*F 35 33  
 JAS 12 33 14.4 C \*E 33 29 \*E 35 34  
 MHC 12 33 19.2 C \*E 33 37 \*F 35 36  
 MIN 12 33 34.1 C

BKS NOV 18 18 13 05.5 C 13 09

PRI 18 13 41.1 C \*E 14 14  
 JAS 18 13 23.9 C 13 42  
 MHC 18 13 13.7 D 13 22

PRI NOV 18 21 53 14.2 C  
 JAS 21 53 19.5 C  
 MHC 21 53 14.3 C  
 MIN 21 53 23.0 C

BKS NOV 19 12 18 LR 38 00  
 PRI 12 18 42.0 D \*E 18 53  
 JAS 12 18 35.5 C \*E 18 49  
 MHC 12 18 32.7 C \*E 18 47  
 MIN 12 18 23.2 D \*E 18 37  
 USCGS 12 06 59.5, 36.4N, 141.1E, H= 41 KM, M=5.5  
 NEAR E. COAST OF HONSHU, JAPAN. FELT AT  
 TOKYO.

BKS NOV 19 17 42 04 C 52 36 \*E 45 20 LQ 65 30 LR 69 34  
 MICRON PERIOD  
 PZ 5.4 10  
 MAXZ 25 20  
 MAXH 25 20  
 MAG 6.3-6.5, DIST DEG 89  
 PRI 17 42 04.2 C \*E 42 23  
 JAS 17 42 09.2 C \*E 42 27  
 MHC 17 42 02.6 C  
 MIN 17 42 13.1 D  
 USCGS 17 29 20.9, 22.6S, 170.9E, H= 33 KM, M=5.2  
 LOYALTY ISLANDS REGION.

BKS NOV 20 02 22 \*E 44 00  
 JAS 02 22 54.0 D  
 MIN 02 22 58.4 C

PRI NOV 20 10 25 20.9 C  
 JAS 10 25 12.5 C  
 MHC 10 25 10.4 C  
 MIN 10 24 56.5 C

PRI NOV 20 11 00 20.7 C \*E 00 32  
 JAS 11 00 20.3 C \*E 00 30  
 MHC 11 00 14 C

USCGS 10 48 31.8, 32.0N, 140.9E, H= 65 KM, M=5.0  
 SOUTH OF HONSHU, JAPAN.

BKS NOV 21 05 31 10.5 C \*I 31 23  
 MAG 4.3, 25KM N. OF BISHOP CA.  
 PRI 05 30 59.5 D  
 JAS 05 30 50.7 C

MHC 05 31 04.1 C  
 MIN 05 31 22.0 D \*I 32 09

BKS NOV 21 17 13 02 C \*E 31 00 \*E 33 00  
 PRI 17 13 11.3 C  
 JAS 17 12 58.4 C  
 MHC 17 13 04.6 C  
 USCGS 17 02 25.0, 72.7N, 8.5E, H= 33 KM, M=5.5  
 NORWEGIAN SEA.

JAS NOV 21 20 12 03.4 C

JAS NOV 21 22 01 00.2 D  
 USCGS 21 50 24.3, 48.2N, 27.8W, H= 33 KM, M=5.0  
 NORTH ATLANTIC RIDGE.

PRI NOV 22 03 38 13.9 D  
 JAS 03 38 18.4 D  
 MHC 03 38 13.5 D  
 NEW HEBRIDES REGION

JAS NOV 22 06 17 25.9 C \*E 18 16  
 MHC 06 17 26.5 C \*E 18 16

PRI NOV 22 14 59 44.0 C  
 JAS 14 59 53.8 C  
 USCGS 14 43 11.1, 9.9S, 120.5E, H= 18 KM, M=5.1  
 SUMBA ISLAND REGION.

BKS NOV 22 15 32 14 D L 55 50 LR 59 40  
 MICRON PERIOD  
 PZ 1.74 8  
 MAXH 11.6 20  
 MAG 6.1-6.3, DIST DEG 88  
 PRI 15 32 10.5 C \*E 32 21  
 JAS 15 32 14.7 C \*E 32 27  
 MHC 15 32 09.7 C \*E 32 20  
 MIN 15 32 16.1 C  
 USCGS 15 19 26.8, 22.7S, 170.9E, H= 42 KM, M=5.2  
 LOYALTY ISLANDS REGION.

BKS NOV 23 08 55 02 C \*E 57 10 \*E 67 06 \*E 68 22  
 \*E 68 46 SS 74 40 \*E 78 36  
 \*E 79 28 LR 79 35  
 MICRON PERIOD  
 PKPZ 0.04 0.9  
 MAXH 30 20  
 MAG 6.5-6.7, DIST DEG 127  
 PRI 08 55 07.1 D

JAS 08 54 58.3 D \*E 55 06 PP 57 10  
 MHC 08 55 02.7 D  
 MIN 08 54 55.0 C \*I 54 58 \*E 56 42  
 USCGS 08 35 49.5, 14.5N, 52.1E, H= 3 KM, M=5.8  
 EASTERN GULF OF ADEN.

BKS NOV 23 13 51 55.5 D 59 58 \*E 55 00 SS 63 40 LQ 67 00  
 MICRON PERIOD  
 PZ 0.27 1.5  
 SH 6.55 18  
 MAG 6.1-6.3, DIST DEG 60  
 PRI 13 52 06.0 D  
 JAS 13 51 52.4 D  
 MHC 13 51 58.6 D  
 MIN 13 51 46.8 D \*I 53 39  
 USCGS 13 42 01.6, 80.2N, 1.0W, H= 10 KM, M=5.8  
 NORTH OF SVALBARD.

JAS NOV 24 00 33 44.0 D  
 MHC 00 33 41.2 D

BKS NOV 24 05 53 13.0 D  
 MICRON PERIOD  
 PZ 0.14 0.8  
 MAG 4.8-5.2, DIST DEG 77  
 PRI 05 53 14.1 D \*E 53 37  
 JAS 05 53 19.5 D \*E 53 43 \*PP 54 55  
 MHC 05 53 14.0 D  
 MIN 05 53 22.3 D \*E 54 55  
 USCGS 05 42 14.0, 16.4S, 177.9W, H=428 KM, M=5.4  
 FIJI ISLANDS REGION.

BKS NOV 24 22 17 42.9 D \*E 18 32  
 PRI 22 17 43.8 C  
 JAS 22 17 49.4 C \*E 17 59  
 MHC 22 17 44.5 C  
 MIN 22 17 53.6 D

PRI NOV 25 02 13 54.2 D  
 JAS 02 13 54.7 D

PRI NOV 25 10 43 59.5 C  
 JAS 10 44 05.4 C  
 MHC 10 44 00.3 C  
 MIN 10 44 09.3 D

PRI NOV 25 22 10 46.0 D  
 JAS 22 10 49.0 D \*E 10 58  
 MHC 22 10 44.9 D

USCGS 21 51 58. , 55.3S, 29.1W, H= 33 KM, M=5.4  
SOUTH SANDWICH ISLANDS REGION.

BKS NOV 26 00 20 47.7 D 31 00 LQ 43 30 LR 48 00  
MICRON PERIOD  
PZ 0.04 1.0  
PRI 00 20 57.8 C \*E 21 15  
JAS 00 20 53.3 C \*E 21 12 \*E 24 05  
MHC 00 20 50.2 C \*E 21 12  
MIN 00 20 42.5 C \*I 20 58

USCGS 00 08 09.8, 28.6N, 130.0E, H= 33 KM, M=5.7  
RYUKYU ISLANDS, JAPAN. FELT ON AMAMI OSHIMA.

PRI NOV 26 03 12 48.3 C \*E 13 45  
JAS 03 12 48.3 C  
MHC 03 12 41.5 C \*I 13 28  
MIN 03 12 44.5 D  
USCGS 02 53 57.8, 8.1S, 112.9E, H= 80 KM, M=5.7  
JAVA.

BKS NOV 26 08 16 50.2 D 24 00 \*E 28 00 LR 30 12  
MICRON PERIOD  
PZ 0.09 1.2  
PRI 08 17 08.8 C \*E 17 04 \*E 18 08  
JAS 08 16 57.7 C \*I 17 57  
MIN 08 17 35.6 C  
DISTANCE DEG 50

PRI NOV 26 12 08 33.7 C \*E 08 42  
JAS 12 08 38.0 C \*E 08 48  
MHC 12 08 34.6 C \*E 08 44  
MIN 12 07 41.6 C

JAS NOV 27 00 18 04.6 C  
MIN 00 18 03.5 C

PRI NOV 27 04 32 46.3 C \*E 33 11  
JAS 04 32 35.0 C  
MHC 04 32 47.0 C  
MIN 04 32 10.9 C  
ARCTIC OCEAN, N OF SIBERIA

JAS NOV 27 05 12 24.0 C  
MHC 05 12 38 C  
MIN 05 12 41.1 C  
USCGS 05 09 22.7, 40.0N, 104.7W, H= 5 KM, M=5.2  
COLORADO. SLIGHT DAMAGE AT DENVER. FELT IN  
WESTERN KANSAS AND LARAMIE, WYOMING.

BKS NOV 27 05 25 35.2 D \*PP 25 52  
PRI 05 25 24.5 D \*PP 25 41  
JAS 05 25 30.3 D \*PP 25 47  
MHC 05 25 32.0 D \*PP 25 49  
MIN 05 25 43.7 C \*I 26 01 \*I 26 08

USCGS 05 13 12.6, 30.8S, 71.0W, H= 62 KM, M=5.4  
NEAR COAST OF CENTRAL CHILE.

BKS NOV 27 08 30 31.3 C  
PRI 08 30 30.7 C  
JAS 08 30 37.1 C  
MHC 08 30 31.5 C  
MIN 08 30 42.2 D

USCGS 08 18 42.4, 21.3S, 174.3W, H= 33 KM, M=5.4  
TONGA ISLANDS.

MIN NOV 27 11 06 53.9 C  
USCGS 10 46 49. , 13.0S, 67.1E, H= 33 KM, M=5.2  
MID-INDIAN RISE.

PRI NOV 27 11 20 54.0 C  
JAS 11 20 57.5 C  
MHC 11 20 52.7 C  
SOLOMON-NEW HEBRIDES ISLANDS

PRI NOV 28 02 41 39.5 D \*E 44 13  
JAS 02 41 35.2 D \*E 44 07  
USCGS 02 21 55.8, 6.1S, 71.4E, H= 33 KM, M=5.1  
CHAGOS ARCHIPELAGO REGION.

BKS NOV 28 02 49 05.4 D \*PP 49 37  
MICRON PERIOD  
PZ 0.13 1.2  
MAG 5.0-5.2, DIST DEG 75  
PRI 02 49 16.6 D \*PP 49 49 PP 53 04  
JAS 02 49 11.2 D \*PP 49 44 PP 52 53  
MHC 02 49 09.2 D \*PP 49 42 PP 52 49  
MIN 02 48 59.5 D \*I 49 32  
ARC 02 49 \*E 49 24

USCGS 02 36 54.1, 32.1N, 130.8E, H=125 KM, M=5.6  
KYUSHU, JAPAN.

BRK NOV 28 03 30 56.5 C  
JAS 03 30 52.7 C \*E 31 02  
MHC 03 30 56.8 C \*E 31 05  
MIN 03 31 00.4 D

USCGS 03 21 31.4, 18.4N, 62.4W, H= 45 KM, M=5.0  
LEeward ISLANDS.

JAS NOV 28 20 25 28.9 D \*E 25 36  
 MIN 20 25 26.8 D

BKS NOV 29 01 33 06.0 D \*E 33 55  
 PRI 01 32 53.7 D  
 JAS 01 32 54.5 D \*E 33 11  
 MHC 01 33 01.8 D  
 MIN 01 33 02.1 D

USCGS 01 23 34.5, 18.4N, 62.4W, H= 58 KM, M=5.1  
 LEWARD ISLANDS.

BKS NOV 29 13 36 11.5 D  
 MICRON PERIOD  
 PZ 0.08 1.0

PRI 13 36 11.0 C  
 JAS 13 36 16.6 C \*E 36 28  
 MHC 13 36 11.6 C \*E 36 24  
 MIN 13 36 20.5 D

MAG 5.1-5.3, DIST DEG 82  
 TONGA ISLANDS AREA

BKS NOV 30 07 07 08.8 C  
 PRI 07 06 53.3 C  
 JAS 07 06 59.3 D  
 MHC 07 07 04.1 D  
 MIN 07 07 18.2 D

BKS NOV 30 07 37 10.6 D 48 13 PP 39 44 PPP 43 24 \*E 43 33  
 PS 49 52 \*E 52 48 SS 54 38  
 \*E 67 42

MICRON PERIOD  
 PZ 0.19 1.4  
 SH 80 22  
 MAXH 66

MAG 6.6-6.8, DIST DEG 95

PRI 07 37 13.1 C \*E 37 34  
 JAS 07 37 05.1 C \*E 37 28 \*E 38 30  
 MHC 07 37 10.4 C \*E 37 31  
 MIN 07 36 57.2 C

USCGS 07 23 51.5, 41.5N, 20.5E, H= 29 KM, M=6.0  
 ALBANIA. 18 KILLED, 174 INJURED IN PESHKOPI  
 ALBANIA - DEBAR YUGOSLAVIA AREA.

PRI NOV 30 15 58 33.5 C  
 JAS 15 58 39.2 C  
 MHC 15 58 33.9 C

BKS NOV 30 18 15 \*E 15 33

PRI 18 15 11.6 D \*PP 15 24  
 JAS 18 15 18.6 D \*PP 15 32  
 MHC 18 15 20.4 D \*PP 15 33  
 MIN 18 15 45.9 C

USCGS 18 05 19.2, 8.1S, 80.2W, H= 45 KM, M=5.1  
 OFF COAST OF NORTHERN PERU.

BKS DEC 01 07 59 03.6 C  
 PRI 07 59 03.0 C  
 JAS 07 59 08.6 C  
 MHC 07 59 03.8 C

BKS DEC 01 14 06 46.2 D 14 41 \*E 07 08 \*I 15 36 \*I 16 07  
 L 21 20 LR 24 25

MICRON PERIOD  
 PZ 0.11 0.9  
 MAG 5.4-5.6, DIST DEG 60

PRI 14 07 00.8 C \*E 07 33  
 JAS 14 06 53.7 C \*E 07 26 \*E 35 50  
 MHC 14 06 50.8 C \*E 07 24  
 MIN 14 06 36.9 C \*I 17 17

USCGS 13 57 02.4, 49.5N, 154.4E, H=136 KM, M=5.9  
 KURILE ISLANDS.

JAS DEC 01 17 07 19.4 C \*E 07 29  
 MIN 17 07 09.2 C

JAS DEC 01 22 52 19.4 D \*E 52 28  
 MHC 22 52 14.5 D  
 MIN 22 52 57.1 D

BKS DEC 02 00 35 28.7 D 39 06 LQ 39 30 LR 40 00  
 R FROM S

MICRON PERIOD  
 PZ 0.98 1.8  
 PH 4.2 3.5  
 SH 6.1 16  
 MAXH 27.4 20

MAG 5.8-6.0, DIST DEG 20

PRI 00 35 02.0 D \*E 36 08 \*E 36 50  
 JAS 00 35 16.1 C \*E 36 04 \*E 36 48  
 MHC 00 35 13.0 C \*E 36 04 \*E 36 53  
 MIN 00 35 40.6 C \*I 36 07  
 ARC 00 36 09.5 C

USCGS 00 31 18.9, 24.1N, 108.6W, H= 33 KM, M=5.1  
 GULF OF CALIFORNIA.

PRI DEC 02 12 58 06.0 D  
 MHC 12 58 03.8 D  
 MIN 12 57 51.0 C

USCGS 12 44 42.7, 41.3N, 20.3E, H= 17 KM, M=5.4  
ALBANIA. FELT.

PRI DEC 02 20 18 58.8 C \*E 19 04  
JAS 20 18 49.4 C  
MIN 20 18 40.6 D  
USCGS 20 05 52.4, 37.8N, 115.2E, H= 13 KM, M=5.2  
NORTHEASTERN CHINA.

BKS DEC 04 08 25 14.6 C  
MICRON PERIOD  
PZ 0.06 1.1  
MAG 4-4.5, DIST DEG 25  
PRI 08 25 34.1 C \*E 25 31  
JAS 08 25 19.3 C  
MHC 08 25 19.8 C  
MIN 08 24 57.0 D \*I 26 27  
OFF COAST OF ALASKA

PRI DEC 04 08 31 50.6 D  
JAS 08 31 44.8 D  
MHC 08 31 46 D

BKS DEC 04 08 50 25.0 D 51 44  
PRI 08 50 54.5 C \*E 50 51 \*E 52 13  
JAS 08 50 38.5 D \*I 50 55  
MIN 08 50 07.9 D  
MAGNITUDE 5 - 5.3  
OFF COAST OF OREGON

PRI DEC 04 14 08 21.5 D  
JAS 14 08 27.8 D

BRK DEC 04 22 25 56.5 C \*E 26 08  
PRI 22 26 16.2 C \*E 26 17  
JAS 22 26 06.5 C

JAS DEC 05 07 38 16.2 D

BKS DEC 05 09 12 30.3 D  
PRI 09 12 48.5 D \*E 12 49 \*E 13 05  
JAS 09 12 39.9 C  
USCGS 09 05 13.1, 51.6N, 173.4W, H= 36 KM, M=5.3  
ANDREANOF ISLANDS, ALEUTIANS.

BKS DEC 05 11 11 14 23  
PRI 11 11 33.2 C \*E 13 36

JAS 11 11 47.0 C \*E 13 53  
MIN 11 11 \*E 16 55  
USCGS 11 09 37.4, 30.8N, 114.1W, H= 33 KM, M=5.0  
GULF OF CALIFORNIA.

JAS DEC 05 17 39 37.5 C  
MHC 17 39 28.5 C  
MIN 17 39 41.0 C

BKS DEC 05 18 06 09 50  
JAS 18 06 36.2 D \*E 09 19  
DISTANCE DEG 15

PRI DEC 05 18 29 39.0 C \*E 30 14  
JAS 18 29 21.9 D 29 43  
MHC 18 29 39.6 C \*E 30 15  
MIN 18 29 57.2 C

BKS DEC 05 18 37 40 06  
MICRON PERIOD  
SH 13.3 32  
PRI 18 37 33.7 C \*E 39 07  
JAS 18 37 48.5 C  
MHC 18 37 51.5 C  
MIN 18 37 \*E 41 38  
GULF OF CALIFORNIA

BKS DEC 06 03 00 37.2 C  
MICRON PERIOD  
PZ 0.12 1.2  
PRI 03 00 20.8 C PCP 02 35 SCP 06 18  
JAS 03 00 26.6 D PCP 02 36 SCP 06 19  
MHC 03 00 31.4 D PCP 02 38 SCP 06 22  
MIN 03 00 43.9 C \*E 02 25  
USCGS 02 53 06.9, 12.5N, 87.2W, H= 87 KM, M=5.3  
NEAR COAST OF NICARAGUA. FELT AT SAN SALVADOR.

MIN DEC 06 05 00 04.6 C  
USCGS 04 41 08.6, 4.2S, 103.0E, H= 81 KM, M=5.4  
SOUTHERN SUMATRA.

PRI DEC 06 05 14 50.7 D  
JAS 05 14 56.3 D  
MHC 05 14 51.1 D  
MIN 05 15 00.2 C \*I 15 15  
USCGS 05 03 40.8, 21.3S, 178.8W, H=559 KM, M=5.1  
FIJI ISLANDS REGION.

RRK DEC 06 08 13 39.3 D  
 PRI 08 13 50.0 D  
 JAS 08 13 45.7 D  
 MHC 08 13 43.0 D  
 MIN 08 13 35.4 D

JAS DEC 06 09 53 32.3 D \*E 54 01  
 MHC 09 53 27.5 C  
 MIN 09 53 32.7 C

USCGS 09 41 06.4, 14.9S, 167.3E, H=124 KM, M=5.3  
 NEW HEBRIDES ISLANDS. FELT AT LUGANVILLE.

JAS DEC 07 07 31 25.3 D

JAS DEC 07 09 52 39.1 C \*E 53 09  
 MHC 09 52 37.7 C \*E 53 05

USCGS 09 41 14.1, 16.7S, 174.1W, H=120 KM, M=5.0  
 TONGA ISLANDS.

PRI DEC 07 10 01 55.9 D \*E 02 15 \*E 04 19  
 JAS 10 01 59.1 D \*E 04 14  
 MHC 10 01 54.1 D

USCGS 09 49 37.0, 14.6S, 167.3E, H=151 KM, M=5.3  
 NEW HEBRIDES ISLANDS. FELT AT LUGANVILLE.

BKS DEC 08 02 13 09.8 C  
 PRI 02 13 13.8 D  
 JAS 02 13 16.1 D  
 MHC 02 13 11.3 D  
 MIN 02 13 15.6 C

MICRON PERIOD  
 0.16 1.5

USCGS 02 00 27.9, 10.6S, 161.5E, H= 14 KM, M=5.4  
 SOLOMON ISLANDS.

JAS DEC 08 06 17 06.0 C  
 MIN 06 16 53.7 D

USCGS 06 03 57.1, 49.8N, 78.2E, H= 0 KM, M=5.4  
 EASTERN KAZAKH, SSR.

BKS DEC 09 05 39 51.8 C \*E 42 03  
 PRI 05 39 52.6 D  
 JAS 05 39 57.4 D  
 MIN 05 39 59.9 D

BKS DEC 09 08 05 43.6 C  
 PRI 08 05 41.8 C

JAS 08 05 46.2 D \*E 06 13  
 MHC 08 05 37.5 D  
 MIN 08 06 08.0 D

USCGS 07 54 19.8, 15.2S, 173.3W, H= 33 KM, M=5.0  
 TONGA ISLANDS.

BKS DEC 09 11 03 12.6 D \*E 04 05 \*E 06 33  
 PRI 11 03 15.5 C  
 JAS 11 03 22.0 C  
 MHC 11 03 11.0 C  
 MIN 11 03 21.2 C

USCGS 10 50 46.6, 10.9S, 164.2E, H= 33 KM, M=5.5  
 SANTA CRUZ ISLAND REGION.

BKS DEC 09 18 34 31.3 D  
 PRI 18 35 02.7 D  
 JAS 18 34 46.4 D  
 MHC 18 34 46.3 D  
 MIN 18 34 12.1 D

JAS DEC 10 08 20 36.6 C  
 MIN 08 20 05.3 C

BKS DEC 10 12 07 42.5 D \*I 08 11 \*I 08 16 \*I 08 21  
 PRI 12 08 12.5 C OFFSHORE CAPE MENDOCINO  
 JAS 12 07 56.0 C  
 MHC 12 07 52.4 C  
 MIN 12 07 30.3 C

BKS DEC 10 19 33 05 C \*I 07 59  
 PRI 19 32 43.3 C  
 JAS 19 32 36.2 C  
 MHC 19 32 49.2 \*E 33 16  
 MIN 19 32 52.8 C \*I 33 02

MAGNITUDE 4.4 - 4.8  
 F OF FARMINGTON, NEW MEXICO

BKS DEC 10 23 10 18.0 D  
 PRI 23 10 23.0 C  
 JAS 23 10 19.9 C  
 MHC 23 10 19.1 C  
 MIN 23 10 19.3 C

MICRON PERIOD  
 0.18 1.7

MAXH 18 25.5  
 MAG 6.4-6.6, DIST DEG 120

USCGS 22 51 24.3, 17.7N, 73.9E, H= 33 KM, M=6.0  
 INDIA. ABOUT 100 KILLED, 1300 INJURED,  
 MAJOR DAMAGE AT KOYNA NAGAR AND FELT IN A

WIDE AREA OF SOUTHWESTERN INDIA.

JAS DEC 11 10 28 32.6 D

PRI DEC 11 19 52 38.4 C  
 JAS 19 52 44.7 C  
 MHC 19 52 39.5 C  
 MIN 19 52 49.6 D

USCGS 19 40 53.3, 20.6S, 174.3W, H= 33 KM, M=5.3  
 TONGA ISLANDS.

PRI DEC 11 22 49 15.2 C  
 JAS 22 49 09.9 C

\*E 49 27  
 USCGS 22 30 18.3, 13.6N, 51.6E, H= 33 KM, M=5.6  
 EASTERN GULF OF ADEN.

BKS DEC 12 08 19 02 29 47 L 42 18 LR 46 24

MICRON PERIOD  
 PZ 1.1 8.2  
 SH 1.7 9  
 MAXH 4.5 20  
 MAG 5.5 - 5.9, DIST DEG 79

PRI 08 19 05.0 D  
 JAS 08 19 05.2 C  
 MHC 08 18 57.7 D  
 MIN 08 18 09.8 D  
 JAPAN

JAS DEC 13 10 48 28.0 C

\*F 49 02  
 USCGS 10 38 23.4, 47.6N, 152.6E, H=124 KM, M=5.5  
 KURILE ISLANDS.

PRI DEC 13 11 08 19.6 D  
 JAS 11 08 12.5 D  
 MHC 11 08 07.3

\*E 08 57  
 \*E 08 53  
 USCGS 10 58 21.6, 49.4N, 154.5E, H=138 KM, M=5.1  
 KURILE ISLANDS.

BKS DEC 13 19 19 51.9 D LR 46 24

MICRON PERIOD  
 PZ 0.09 0.9  
 MAGNITUDE 5.6, DIST DEG 87

PRI 19 19 53.9 C  
 JAS 19 19 57.8 C  
 MHC 19 19 53.0 C

PP 23 21  
 PP 23 22  
 USCGS 19 07 14.4, 19.1S, 168.7E, H= 51 KM, M=5.7  
 NEW HEBRIDES ISLANDS. FELT AT PORT VILA.

JAS DEC 14 01 04 23.8 D

MHC 01 04 17.5 D

BKS DEC 14 03 32 49.0 C  
 PRI 03 32 38.4 C  
 JAS 03 32 43.2 C  
 MHC 03 32 45.0 C

USCGS \*E 33 04  
 \*E 33 07  
 03 20 47.8, 24.0S, 69.3W, H= 53 KM, M=5.1  
 NORTHERN CHILE.

BKS DEC 14 18 34 33.5 C  
 PRI 18 34 49.8 C  
 JAS 18 34 41.2 C  
 MHC 18 34 39.3 C  
 MIN 18 34 23.8 C

USCGS \*E 35 09  
 18 25 16.6, 54.6N, 160.4E, H= 33 KM, M=5.5  
 NEAR F. COAST OF KAMCHATKA.

BKS DEC 14 20 39  
 JAS 20 39 59.7 C

\*E 40 18

JAS DEC 14 23 39 33.3 C  
 MIN 23 39 30.4 C

USCGS 23 26 39.7, 5.1S, 151.2E, H=150 KM, M=5.1  
 NEW BRITAIN REGION.

PRI DEC 15 19 51 43.7 D  
 JAS 19 51 46.4 D  
 MHC 19 51 41.4 D

USCGS 19 39 06.3, 11.4S, 163.2E, H= 37 KM, M=5.2  
 SOLOMON ISLANDS.

BKS DEC 15 19 59 41.5 D

\*E 59 58  
 MICRON PERIOD  
 0.06 1.0

PRI 19 59 40.1 C  
 JAS 19 59 45.9 C  
 MHC 19 59 41.3 C  
 MIN 19 59 50.8 D

\*E 59 56  
 \*I 60 03  
 \*E 59 58

USCGS 19 47 13.5, 29.1S, 177.6W, H= 61 KM, M=5.3  
 KERMADEC ISLANDS REGION.

BKS DEC 16 03 28 57.8 C

\*E 29 48  
 MICRON PERIOD  
 PZ 0.05 1.0

PRI 03 28 43.6 C  
 JAS 03 28 49.0 D  
 MHC 03 28 53.1 D  
 MIN 03 29 01.7 D

MAG 4.6-4.8, DIST DEG 58



USCGS 03 19 13.4, 2.9S, 77.0W, H=121 KM, M=5.0  
PERU-ECUADOR BORDER REGION.

JAS DEC 16 13 26 10.6 C

JAS DEC 16 15 13 39.2 C

BKS DEC 16 21 03 37.3 D 11 25 \*E 03 50 LQ 17 43 \*E 18 30

LR 20 00  
MICRON PERIOD  
PZ 0.03 0.7  
SH 10 18  
MAG 5.5 - 5.7, DIST DEG 57

PRI 21 03 52.1  
JAS 21 03 43.8 C  
MHC 21 03 41.4  
MIN 21 03 27.6 C

USCGS 20 53 58.3, 51.2N, 157.7E, H= 24 KM, M=5.5  
NEAR E. COAST OF KAMCHATKA. FELT.

JAS DEC 18 01 03 40.3 D

JAS DEC 18 13 24 48.7 D

PRI DEC 18 14 17 10.8  
JAS 14 17 07.8  
MHC 14 17 05.1

BKS DEC 18 17 24 48.4 D 25 02  
MAG 5.3 N. OF WATSONVILLE CA.

PRI 17 24 54.0 D  
JAS 17 24 55.9 D  
MHC 17 24 38.8 D

PRI DEC 19 08 54 28.6 C  
JAS 08 54 34.5 C  
MHC 08 54 36.7 C

R FROM S.W.  
USCGS 08 42 27.7, 28.5S, 71.0W, H= 18 KM, M=5.3  
NEAR COAST OF CENTRAL CHILE.

MIN DEC 20 02 21 28.7 D

JAS DEC 20 11 53 14.8 C  
MHC 11 53 14.5  
MIN 11 53 10.2 D

\*E 55 14

\*I 54 29

R FROM N.W.  
USCGS 11 34 25.9, 11.8N, 93.0E, H= 61 KM, M=5.4  
ANDAMAN ISLANDS REGION.

JAS DEC 20 17 20 14.4 D

USCGS 17 07 49.1, 15.1S, 167.4E, H=135 KM, M=5.1  
NEW HEBRIDES ISLANDS. FELT AT LUGANVILLE  
AND NORSUP.

BKS DEC 21 02 37 14.0 C 47 04 PP 40 24 PPP 41 58 SS 52 16

SSS 55 48 L 58 12  
MICRON PERIOD  
PZ 24 21  
PPZ 12.7 10  
MAG 7.0-7.2, DIST DEG 74

PRI 02 37 02 C  
JAS 02 37 07.9 C  
MHC 02 37 10.3 C  
MIN 02 37 19.5 C  
ARC 02 37 29.9 C

\*I 37 45

USCGS 02 25 21.6, 21.8S, 70.0W, H= 33 KM, M=6.3  
NEAR COAST NORTH CHILE. FELT IN S. BOLIVIA  
AND NORTH CHILE. 1 KILLED, 30 INJURED,  
AND MAJOR PROPERTY DAMAGE AT QUILLAGUA  
AND TOCOPILLA.

PRI DEC 21 05 29 08.4 D  
JAS 05 29 13.0 D  
MIN 05 30 02.7 C

BKS DEC 21 08 01 47.0  
PRI 08 01 33.7 C  
JAS 08 01 40.1 C  
MHC 08 01 42.7 C  
MIN 08 01 57.3 D

\*E 01 52

\*E 01 59

\*E 02 01

\*I 02 12

USCGS 07 50 34.8, 16.4S, 72.6W, H= 99 KM, M=5.0  
NEAR COAST OF PERU. FELT AT AREQUIPA.

BKS DEC 21 11 46 51.0  
PRI 11 46 34.9 D  
JAS 11 46 41.7 D  
MHC 11 46 46.7 C  
MIN 11 46 53.3 C

\*I 46 21

USCGS 11 37 22.5, 7.0N, 72.1W, H= 33 KM, M=5.4  
NORTH COLOMBIA.

JAS DEC 21 14 22 53.5  
MIN 14 23 35.9 D

JAS DEC 21 14 52 17.4

BKS DEC 21 17 58 46.1 D LR 87 00

MICRON PERIOD

PZ 0.06 0.9

MAG 5.0, DIST DEG 86

PRI 17 58 35.8 \*E 58 45

JAS 17 58 44.4 C \*I 58 51

MHC 17 58 41.2 C

MIN 17 58 49.9 C \*I 58 56

USCGS 17 45 54.4, 31.7S, 179.1W, H= 23 KM, M=5.1  
KERMADEC ISLANDS.

BKS DEC 22 05 30 07.7 D

PRI 05 30 03.7

JAS 05 30 05.8 C

MHC 05 30 06.4

MIN 05 30 10.2 C

BKS DEC 22 23 21 33.2 C \*E 48 00 \*E 51 00

R FROM S.W.

MICRON PERIOD

PZ 0.08 1.2

MAXH 3.1 17

MAG 5.2-5.7, DIST DEG 95

PRI 23 21 31.8 D

JAS 23 21 37.7 D

MHC 23 21 32.9 D

MIN 23 21 42.2 D

USCGS 23 08 58.0, 29.9S, 177.4W, H= 22 KM, M=5.4  
KERMADEC ISLANDS.

BKS DEC 23 02 50 37.8 D

MICRON PERIOD

PZ 0.05 0.8

MAG 4.7-5.2, DIST DEG 62

PRI 02 50 24.1 D

JAS 02 50 30.0 D

MHC 02 50 33.4 D

MIN 02 50 44.0 C

USCGS 02 40 08.3, 9.9S, 74.7W, H=126 KM, M=5.1  
PERU.

BKS DEC 23 13 36 10.8 D LR 63 56

R FROM W

MICRON PERIOD

MAXH 3.3 20

MAG 5.7-6.1, DIST DEG 90

PRI 13 36 16.2

JAS 13 36 17.1 D

MHC 13 36 14.3

MIN 13 36 12.2 C

USCGS 13 23 15.0, 5.2S, 151.8E, H= 61 KM, M=5.5  
NEW BRITIAN REGION. FELT AT RABAU, POMIC,  
AND ULAMONA.

BKS DEC 24 02 36 16.0 D

MICRON PERIOD

PZ 0.05 0.8

MAG 5.0-5.4, DIST DEG 101

PRI 02 36 16.5 D

JAS 02 36 22.3 D

MHC 02 36 16.8 D

MIN 02 36 25.4 D

USCGS 02 24 58.4, 21.0S, 178.0W, H=428 KM, M=5.0  
FIJI ISLANDS REGION.

BKS DEC 24 08 44 42.0 C

PRI 08 44 52

MHC 08 44 46.7

MIN 08 44 27.8 D

USCGS 08 34 13.5, 54.5N, 142.5E, H= 33 KM, M=5.0  
SAKHALIN ISLAND.

JAS DEC 24 15 17 33.5

MIN 15 17 13.0 C

BKS DEC 24 20 12 56.9 C 20 56 \*E 22 50 \*E 26 50 \*E 31 40

MICRON PERIOD

PZ 5.5 6.0

MAG 6.2-6.5, DIST DEG 60

PRI 20 12 46.1 C

JAS 20 12 45.9 D

MHC 20 12 53.3 C

MIN 20 12 52.6 D

ARC 20 13 07.7 C

USCGS 20 03 10.9, 17.4N, 61.1W, H= 24 KM, M=6.4  
LFEWARD ISLANDS.

JAS DEC 24 20 34 25.7

MIN 20 34 09.5 C

R FROM N.W.

BKS DEC 24 21 42 16.8 D \*E 61 20

MICRON PERIOD

PZ 0.13 1.0

MAG 5.5-6.0, DIST DEG 60

PRI 21 42 05.9 D

JAS 21 42 05.9 D

MHC 21 42 13.7 D

MIN 21 42 12.3 D

\*I 42 27



APC 21 42 28.0 D  
 USCGS 21 32 31.3, 17.4N, 61.3W, H= 20 KM, M=5.9  
 LFEWARD ISLANDS.

BKS DEC 25 01 36 24.1 C 46 47 PP 39 46 \*F 59 50 \*E 62 56

MICRON PERIOD  
 PZ 9.6 24  
 MAXH 10 23  
 MAG 6.8-7.2, DIST DEG 86

PRI 01 36 26.8 \*E 36 38  
 JAS 01 36 27.4 \*I 36 38  
 MHC 01 36 25.5  
 MIN 01 36 28.2 D  
 ARC 01 36 19 D

USCGS 01 23 33.6, 5.3S, 153.7E, H= 64 KM  
 NEW IRELAND REGION. FELT ON EASTERN NEW  
 BRITAIN.

JAS DEC 25 01 53 52.5  
 MIN 01 53 43.7 C

PRI DEC 25 02 02 05.7  
 JAS 02 02 08.2 D  
 MIN 02 02 13.1 D

BKS DEC 25 10 53 18.8 D 63 14 LR 77 53

MICRON PERIOD  
 SH 6.3 10  
 MAXH 3.5 20  
 MAG 5.8-6.2, DIST DEG 81

PRI 10 53 07.1 D  
 JAS 10 53 12.6 D  
 MHC 10 53 15.2 D  
 MIN 10 53 24.7 D  
 ARC 10 53 36.9 D

USCGS 10 41 31.6, 21.5S, 70.4W, H= 53 KM, M=5.8  
 NEAR COAST OF NORTH CHILE. FELT AT  
 TOCCOPILLA AND AREQUIPA.

BKS DEC 26 09 31 43.5 D 33 19 \*E 33 07 \*E 33 44 \*E 33 56  
 LR 34 14

MICRON PERIOD  
 MAG 32 10  
 MAG 5.0, DIST DEG 12

PRI 09 32 13.6  
 JAS 09 31 57 D  
 MHC 09 31 52  
 MIN 09 31 26.6 D \*I 31 43

USCGS 09 29 38.5, 44.5N, 129.7W, H= 33 KM, M=5.1  
 OFF COAST OF OREGON.

BKS DEC 26 09 51 58.5 D \*E 53 53 \*E 54 00 \*E 54 20  
 \*E 55 08

MICRON PERIOD  
 MAXH 12.0 9  
 MAG 4.6, DIST DEG 12

PRI 09 52 28  
 JAS 09 52 10  
 MIN 09 52 39.9 C

BKS DEC 26 10 30 07.1 D  
 PRI 10 30 34.6  
 JAS 10 30 18.7  
 MIN 10 29 53.6 D

BKS DEC 26 10 42 45.2 D \*E 43 11 \*E 44 20 \*E 44 26  
 \*E 44 42 \*E 45 16

MICRON PERIOD  
 MAXH 11.4 11  
 MAG 4.6, DIST DEG 12

PRI 10 43 15.0 C  
 JAS 10 42 59.5 C  
 MHC 10 42 55.4 C  
 MIN 10 42 29.1 D

USCGS 10 40 40.6, 44.5N, 129.7W, H= 33 KM, M=5.0  
 OFF COAST OF OREGON.

JAS DEC 26 10 51 40.7 D  
 MIN 10 51 11.4 C

JAS DEC 26 14 47 15.7  
 MIN 14 47 16.9 C

JAS DEC 26 14 49 44.2 C  
 MHC 14 49 37.5 C

JAS DEC 26 22 32 31.7 D \*I 32 44  
 MHC 22 32 33.5 D

JAS DEC 27 02 01 21.7 D  
 MHC 02 01 17.3 D

BKS DEC 27 09 29 39.3 D \*I 39 21 \*I 39 24 \*I 30 10  
 SP 30 23 PP 32 36 \*I 40 09  
 \*SS 40 20 SS 44 36  
 MICRON PERIOD  
 PZ 3.8 1.9  
 PPZ 3.7 8.0

SH 13.3 14  
MAG 6.6-7.0, DIST DEG 80

PRT 09 29 27.8 D  
JAS 09 29 33.2 D 39 13  
MHC 09 29 35.8 D  
MIN 09 29 44.9 D  
APC 09 29 55.7 D

\*I 29 53

USCGS 09 17 55.7, 21.2S, 68.3W, H=135 KM, M=6.4  
CHILE-BOLIVIA BORDER REGION. FELT WIDELY.

BKS DEC 27 10 05 49.1 C  
PRT 10 05 37.7 C  
JAS 10 05 42.7 C  
MIN 10 05 13.6 C

BKS DEC 27 10 39 39.0 C

MICRON PERIOD  
PZ 0.02 0.8

PRT 10 39 43 C  
JAS 10 39 45.6 C  
MHC 10 39 40.8  
MIN 10 39 47.1 C

MAG 4.1, DIST DEG 84

BKS DEC 27 16 34 42.3 C 44 40 \*E 37 55 \*E 54 40 LR 58 16

R FROM SW  
MICRON PERIOD

PZ 4.4 10.0  
SH 8.5 16.0  
MAXH 12.0 20

MAG 6.2, DIST DEG 80

PRT 16 34 41.7 D  
JAS 16 34 48.4 D  
MHC 16 34 42.8 D  
MIN 16 34 56.4 C  
ARC 16 34 44.8 C

USCGS 16 22 48.5, 22.3S, 174.8W, H= 33 KM, M=6.1  
TONGA ISLANDS REGION.

BKS DEC 28 06 28 16.2 C \*I 29 36 \*E 29 48 \*E 29 55

MICRON PERIOD  
PZ 13.5 16.0

MAG 5.6-6.1, DIST DEG 9

PRT 06 28 40.5  
JAS 06 28 25.4 D  
MHC 06 28 21.0 D  
MIN 06 27 55.2 C

\*I 29 16

USCGS 06 26 15.8, 44.2N, 128.8W, H= 33 KM, M=5.4  
OFF COAST OF OREGON.

BKS DEC 28 07 03 34.3 D \*E 05 00

PRI 07 04 05.2  
JAS 07 03 47.7 D  
MHC 07 03 44 C  
MIN 07 03 19.2 D

JAS DEC 28 07 33 32.4 C  
MHC 07 33 28.2 D

PRT DEC 28 07 39 18  
JAS 07 38 59.2 D  
MHC 07 38 59 D  
MIN 07 38 29.3 D

JAS DEC 28 08 50 02.2 C  
MHC 08 50 00.7 D

JAS DEC 28 17 30 56.2 C  
MIN 17 30 30.3 C

BKS DEC 28 17 42 47.9 D

MICRON PERIOD  
PZ 0.05 0.7

MAG 5.1, DIST DEG 60

PRT 17 42 34 D  
JAS 17 42 37.6 D  
MHC 17 42 43.4 D  
MIN 17 42 50.1 D

\*E 43 45

USCGS 17 33 39.8, 6.9N, 72.8W, H=196 KM, M=5.2  
NO. COLOMBIA. FELT AT BOGOTA AND MEDELLIN.

BKS DEC 28 22 13 32.9 D \*E 14 58 \*I 15 06 \*I 15 19  
MAG 5.2, DIST DEG 9

PRT 22 14 02.7 D  
JAS 22 13 44 D  
MHC 22 13 40.7 C  
MIN 22 14 22.3 C  
ARC 22 14 36

USCGS 22 11 33.9, 44.2N, 128.9W, H= 33 KM, M=5.0  
OFF COAST OF OREGON.

BKS DEC 29 00 17 \*E 19 05 \*F 19 20  
PRT 00 17 47.4 D  
MIN 00 17 19.3 D

BKS DEC 29 20 41 31.0 C 51 28 LR 66 16  
MICRON PERIOD  
PZ 0.06 1.2  
SH 1.6 20

MAG 5.4-5.8, DIST DEG 83  
 PRI 20 41 31.1 D  
 MHC 20 41 31.1 D  
 USCGS 20 29 32.2, 22.8S, 175.3W, H= 30 KM, M=5.3  
 TONGA ISLANDS REGION.

BKS DEC 29 22 35 07.5 D LR 61 00  
 MICRON PERIOD  
 PZ 0.05 1  
 MAXH 1.8 20  
 MAG 5.0-5.3, DIST DEG 80  
 PRI 22 35 05.2 D  
 JAS 22 35 09.2 C  
 MHC 22 35 03.8 C  
 MIN 22 35 13.4 C  
 USCGS 22 23 06.0, 22.7S, 175.2W, H= 33 KM, M=5.1  
 TONGA ISLANDS REGION.

PRI DEC 30 02 26 15.3 D  
 JAS 02 26 20.8 D  
 MHC 02 26 17 D  
 MIN 02 26 32.1 C  
 USCGS 02 14 20.2, 25.7S, 70.3W, H= 44 KM, M=5.0  
 NEAR COAST OF NORTH CHILE.

PRI DEC 30 02 54 23.4 C  
 JAS 02 54 28.0 C  
 MHC 02 54 28.5 C

BKS DEC 30 04 31 \*E 70 00  
 MICRON PERIOD  
 MAXH 0.7 20  
 MAG 5.0-5.3, DIST DEG 80  
 PRI 04 32 15.2 C  
 JAS 04 32 06.2 C  
 MHC 04 32 12 D  
 MIN 04 31 58.7 D  
 USCGS 04 19 21.2, 44.7N, 12.2E, H= 33 KM, M=5.3  
 NORTH ITALY. FELT IN NORTH ITALY.

BKS DEC 30 08 05 30.0 D  
 PRI 08 06 01.2 C  
 JAS 08 05 43.2 C  
 MHC 08 05 40.4 D  
 MIN 08 05 16.3 C 05 41 \*I 05 44  
 ARC 08 04 50.8 C  
 MAG 4.6, ARCATA, CALIF.

BKS DEC 31 02 36 49.2 C  
 MICRON PERIOD

PZ 0.04 1  
 MAG 4.0-4.4, DIST DEG 9  
 PRI 02 37 06.4 C  
 JAS 02 36 58.9 C  
 MHC 02 36 54.3 C  
 MIN 02 35 40.4 C

BKS DEC 31 15 18 28.3 D LR 47 00  
 MICRON PERIOD  
 PZ 0.05 3  
 MAG 4.5-5.0, DIST DEG 85-90  
 PRI 15 18 33.6 D  
 JAS 15 18 34.8 D  
 MHC 15 18 30.2 D  
 MIN 15 18 31.8 D  
 \*E 18 44  
 USCGS 15 05 32.3, 7.1S, 154.8E, H= 19 KM, M=5.4  
 SOLOMON ISLANDS.

BKS DEC 31 23 48 53.6 C \*I 49 26  
 MAG 4.3 PARKFIELD CA.  
 PRI 23 48 21.3 C  
 JAS 23 48 48.8 D  
 MHC 23 48 44.2 C  
 MIN 23 49 24.9 C \*I 50 17