Bulletin of the Seismographic Stations

Vol. 36, No. 1, pp. 1 - 69

ARCATA--BERKELEY--CONCORD--FRESNO--GRANITE CREEK

JAMESTOWN--LLANADA--MANZANITA LAKE--MINERAL

MOUNT HAMILTON--OROVILLE--PARAISO

PILARCITOS--PRIEST--UKIAH--VINEYARD

Earthquakes and the Registration of Earthquakes

From January 1, 1966 to March 31, 1966

by

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Don Pershing

and

Lawrence Drake

University of California

Berkeley

1967

BULLETIN OF THE SEISMOGRAPHIC STATIONS
of the University of California

Volume 36, Number 1
January 1, 1966 to March 31, 1966

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INTRODUCTION

Each quarterly issue of the Bulletin includes determinations 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 every 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 (September 1967)

Station Director	Bruce A. Bolt
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Associate	Don Tocher (Earthquake Mechanism Laboratory, ESSA, San Francisco)
Associate Engineer	Walter Marion
Full-time Technical Staff	G. Mitchell, R. Sell, M. Hilger
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THE BYERLY SEISMOGRAPHIC STATION (BKS)

Standardized equipment 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 3,000 at 30 sec.

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

HISTORY OF THE UNIVERSITY OF CALIFORNIA STATIONS

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

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

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

Since 1942, the number of seismographic stations associated with the University of California has increased from six to seventeen in 1965. 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 nine 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 - MARCH 1966

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
Vineyard	36° 45!0	121° 23.1	330	Alluvium	VIN	W.A. Taylor and Co., 1959
Harris Ranch	36° 45!9	121° 24!8	230	Weathered sandstone	HRC	Transferred from Vineyard, 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	1080	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
Ukiah	39° 08!2	123° 12!6	199	Alluvium	UKI	U.S. Coast and Geodetic Survey, 1965
Pilarcitos Creek	37° 30!0	122° 22!9	91	Granodiorite (weathered)	PCC	Sare Ranch, 1965

STATION INSTRUMENTATION

January-March 1966

Station	Type of Instrument	T_o sec	T_g 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
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
VIN	#Benioff 14 kg	1.0	0.2	Z
CNC	#Benioff 100 kg	1.0	0.2	Z
GCC	#*Benioff 14 kg	1.0	0.2	Z
PRS	#*Benioff 14 kg	1.0	0.2	Z
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
UKI	Benioff 14 kg	1.0	0.2	Z

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

Vineyard ceased operation March 9 and was transferred to Harris Ranch March 17.

A Willmore seismometer, 4.75 kg, T_o=3.5 sec, Z, operated at Jamestown February 22 to March 15, in place of the Benioff.

Also, three Willmore seismometers were operated near Pilarcitos Creek during this period. Consult the Director for details.

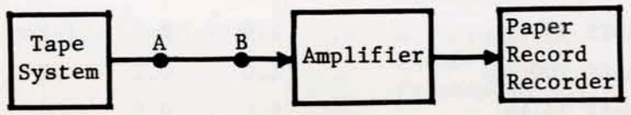
Direction of motion: In the "Component" column, each horizontal component seismograph is designated by the direction of ground motion corresponding to upward trace motion on the seismogram when it is oriented so that time increases from left to right. On all vertical component (Z) instruments, upward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

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

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

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

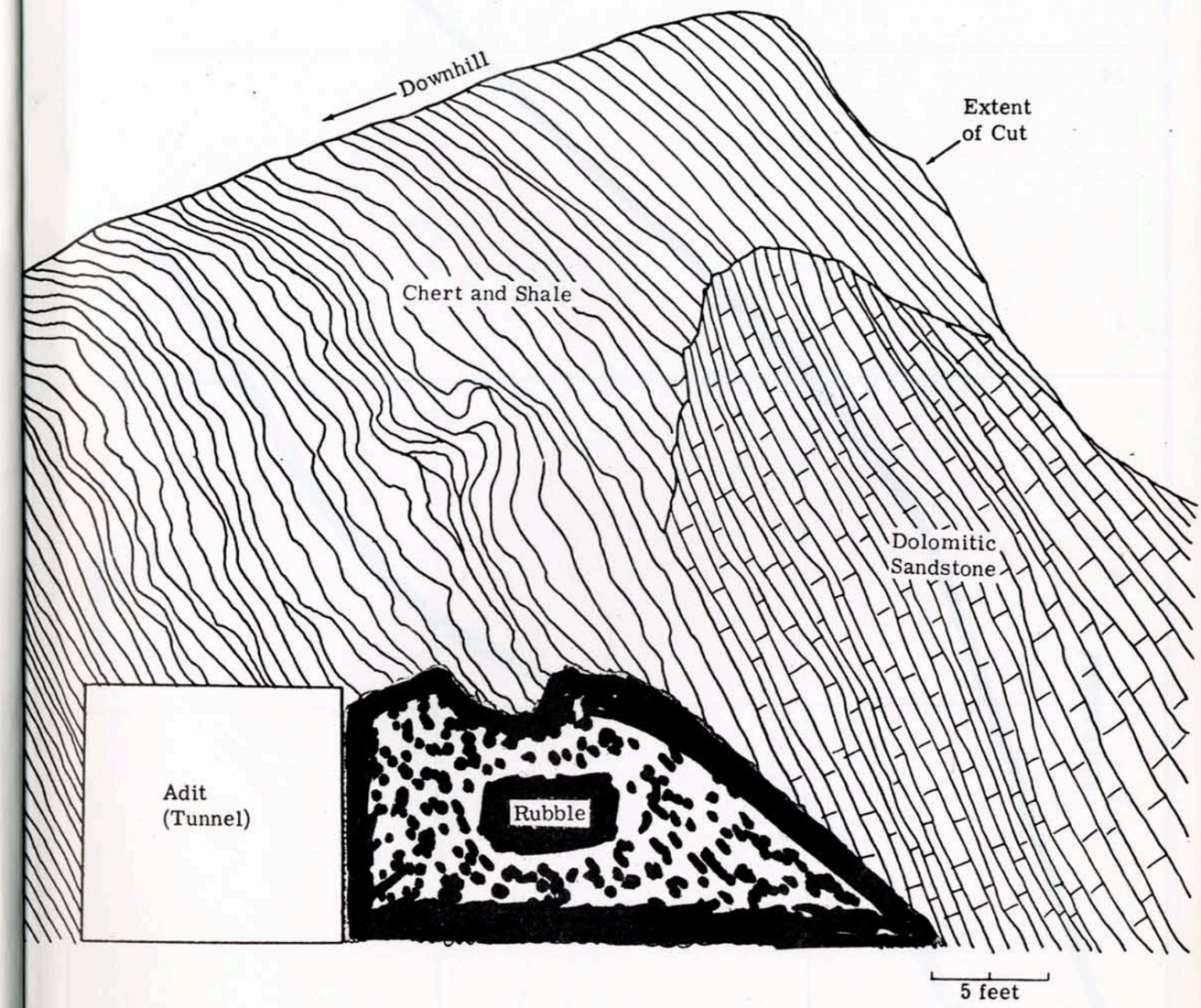
All paper records requested will show known positive voltages applied at point B, in order to scale the paper records at the particular amplifier settings. The seismometers record motion in the vertical, N45°W, and N45°E, directions.



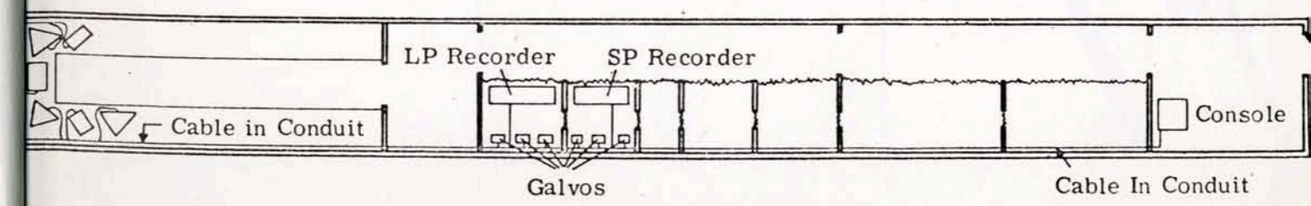
Phase curve: Phase of voltage at tape system terminals with respect to ground displacement; versus frequency of earth displacement.

BYERLY SEISMOGRAPHIC STATION (BKS)

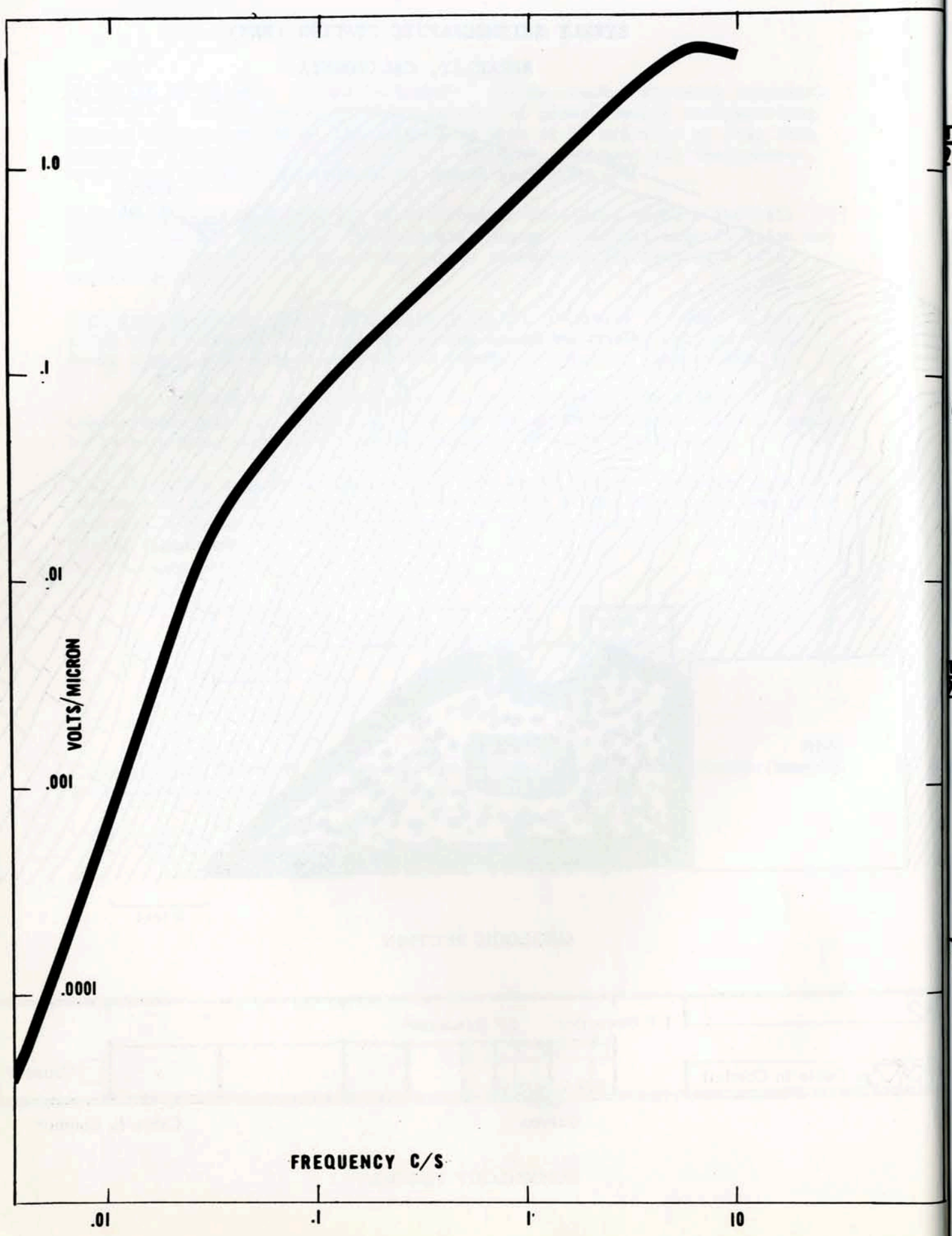
BERKELEY, CALIFORNIA

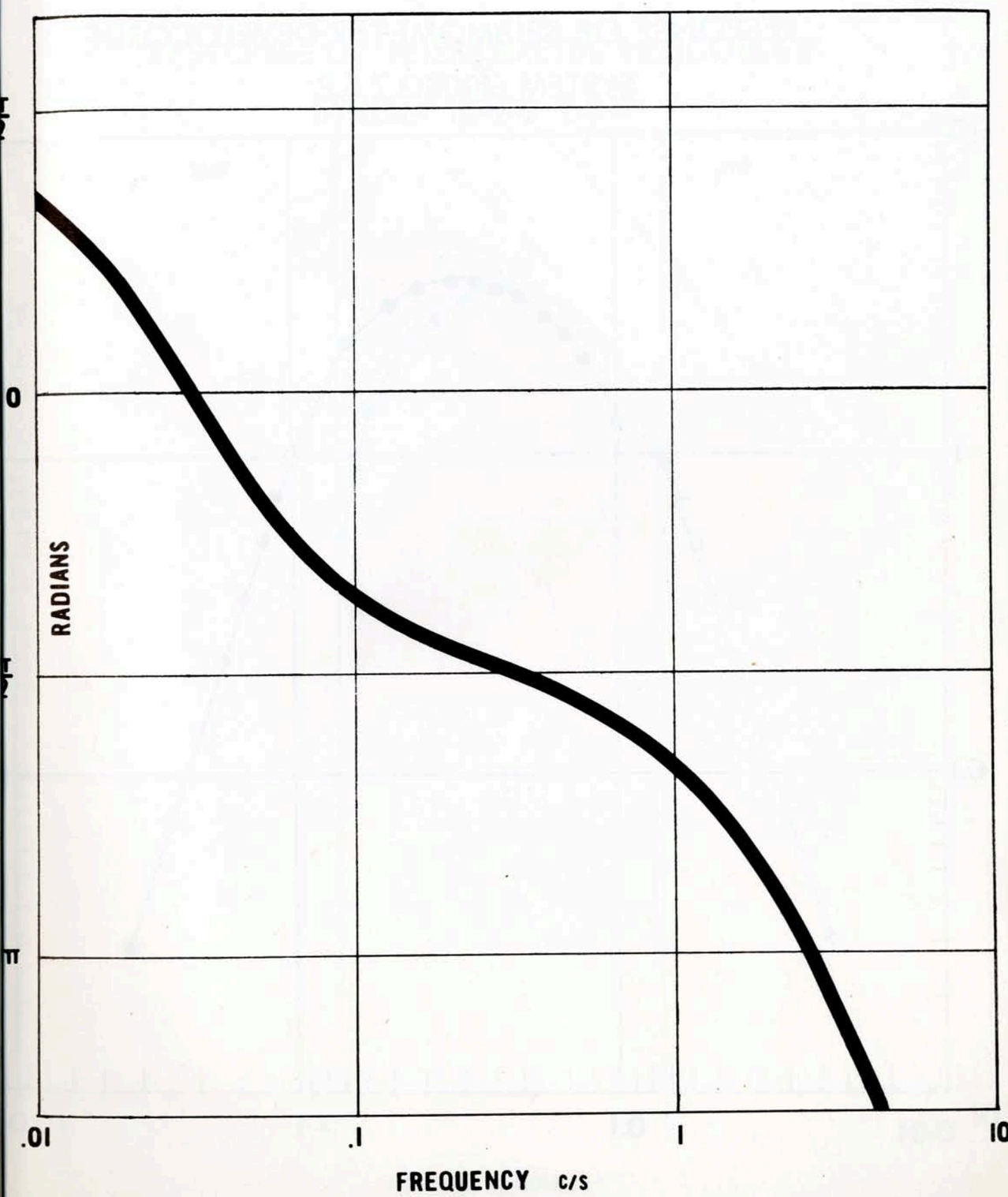


GEOLOGIC SECTION

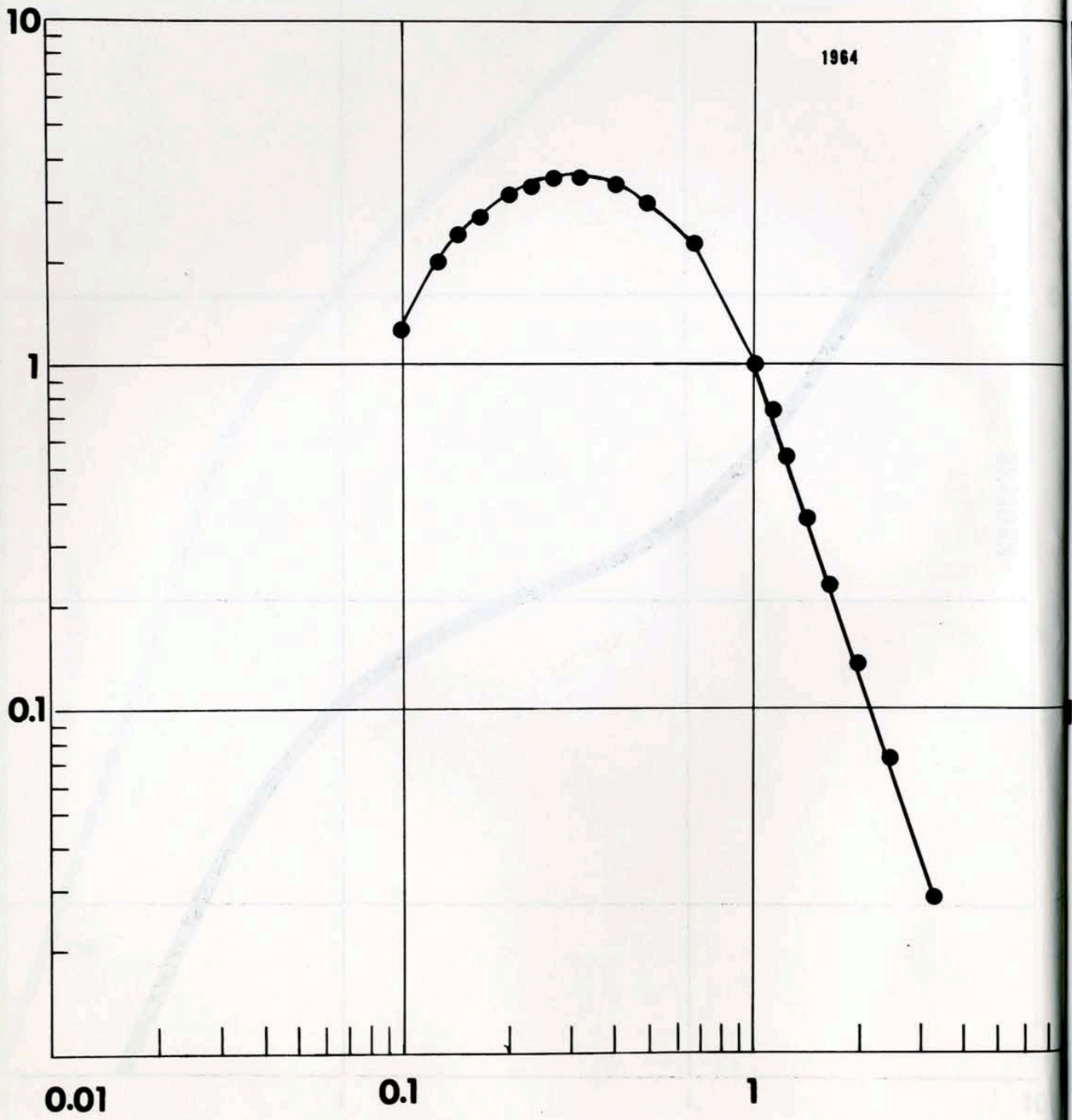


SEISMOLOGY TUNNEL

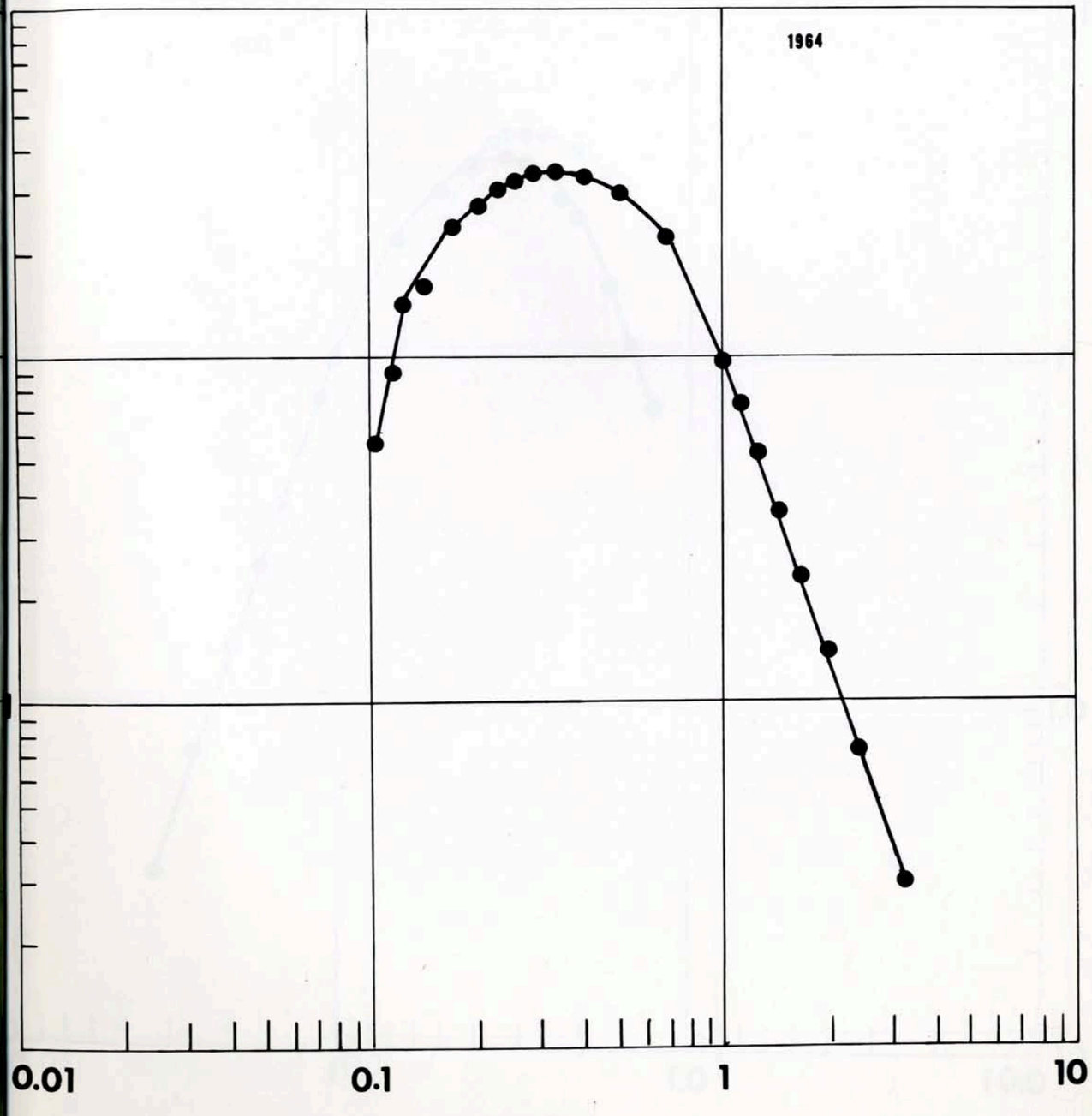




RESPONSE OF SEISMOMETER-DEVELOCORDER SYSTEM 100KG Z.S.P.

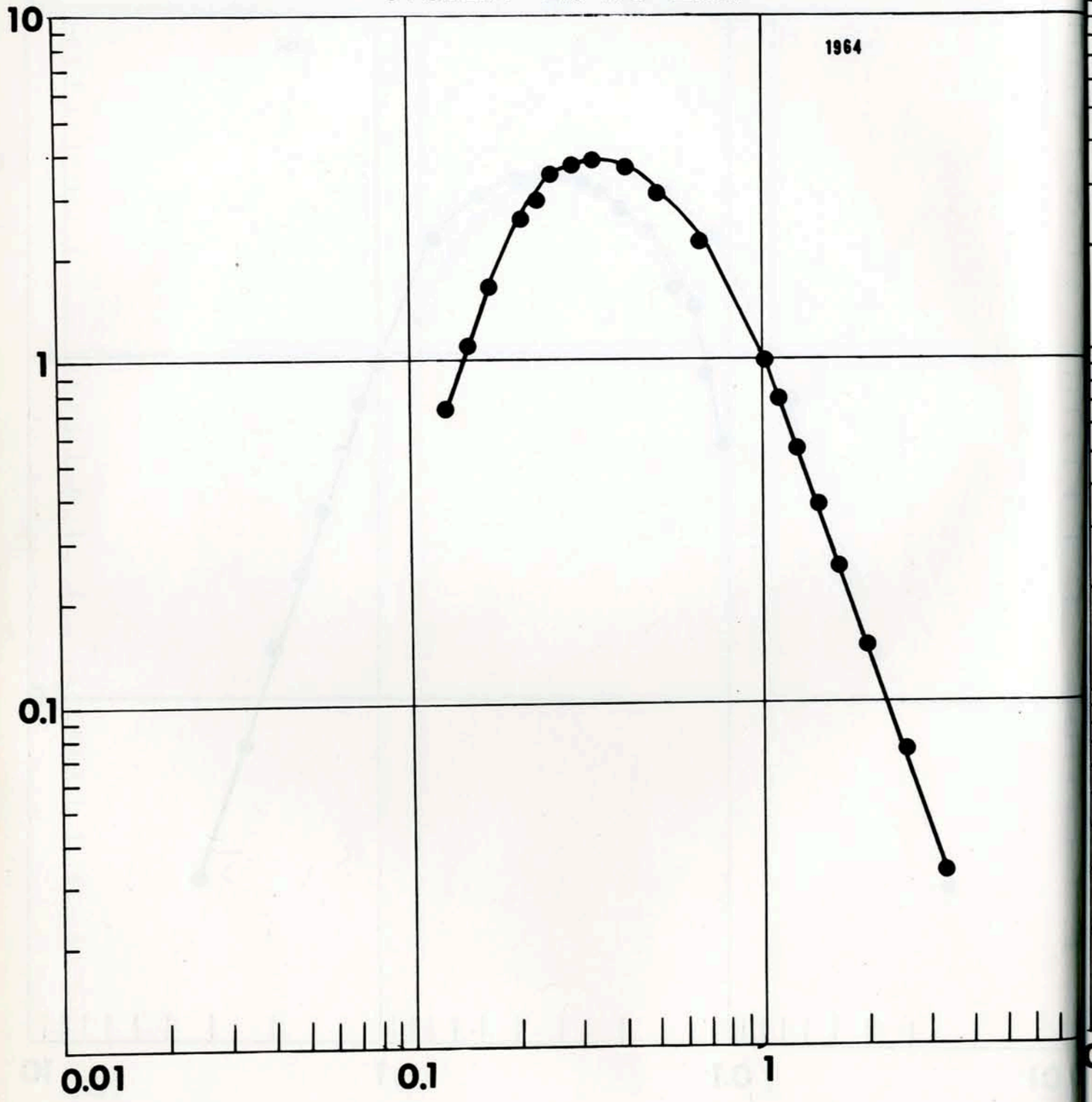


RESPONSE OF SEISMOMETER-HELICORDER SYSTEM 100KG Z.S.P.



RESPONSE OF SEISMOMETER-HELICORDER

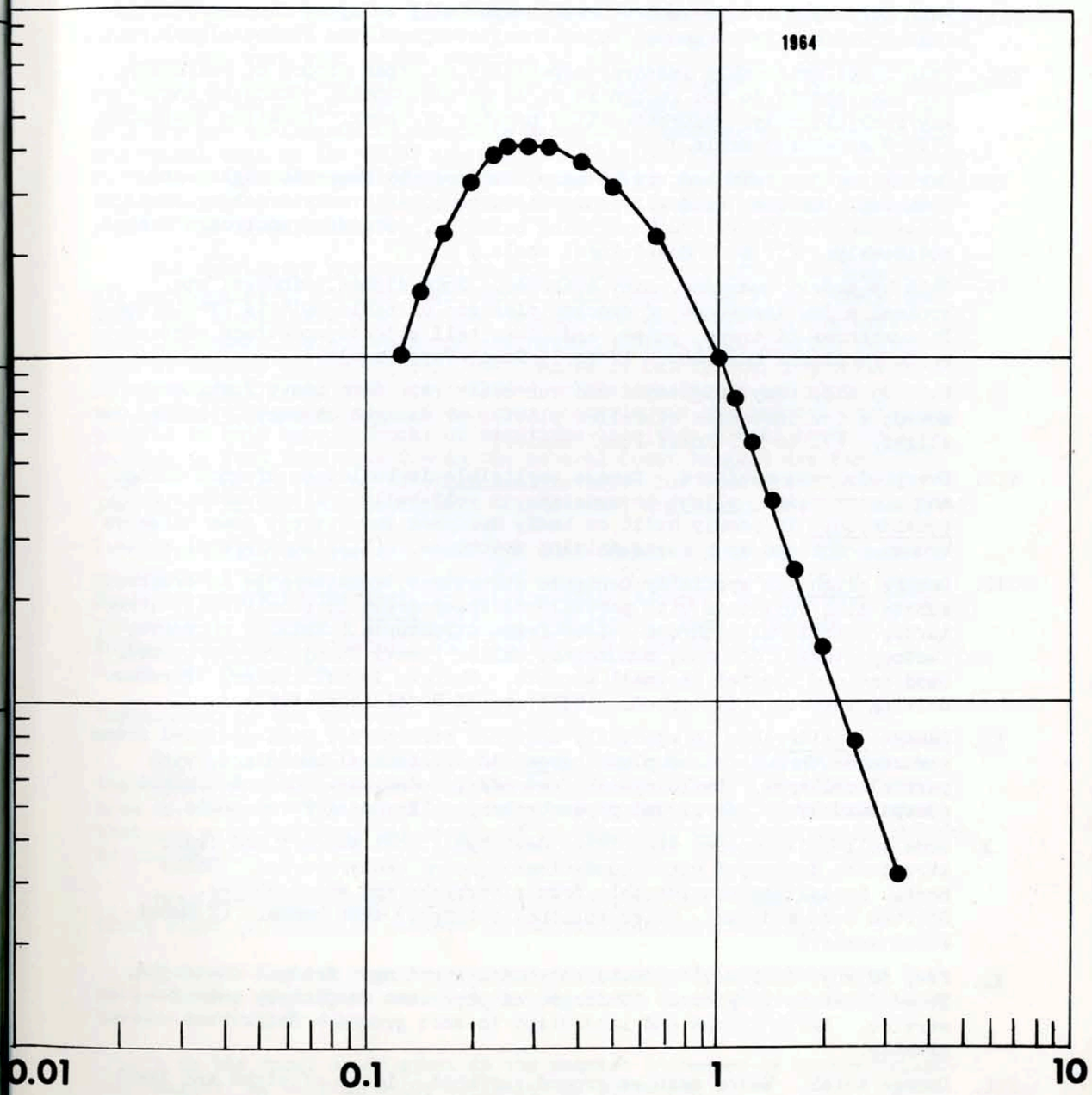
SYSTEM 14.7KG Z.S.P.



PERIOD IN SECONDS

RESPONSE OF SEISMOMETER-DEVELOCORDER

SYSTEM 14.7KG Z.S.P.



PERIOD IN SECONDS

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 Ross-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 such as Reno) 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 an IBM 7090 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.

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.

No. of Stas. is the number of stations used by the computer program or used for constructing S-P arcs in locating the epicenter. If the USCGS data are used for the epicenter this column then gives the number of stations in the Berkeley net recording the earthquake.

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

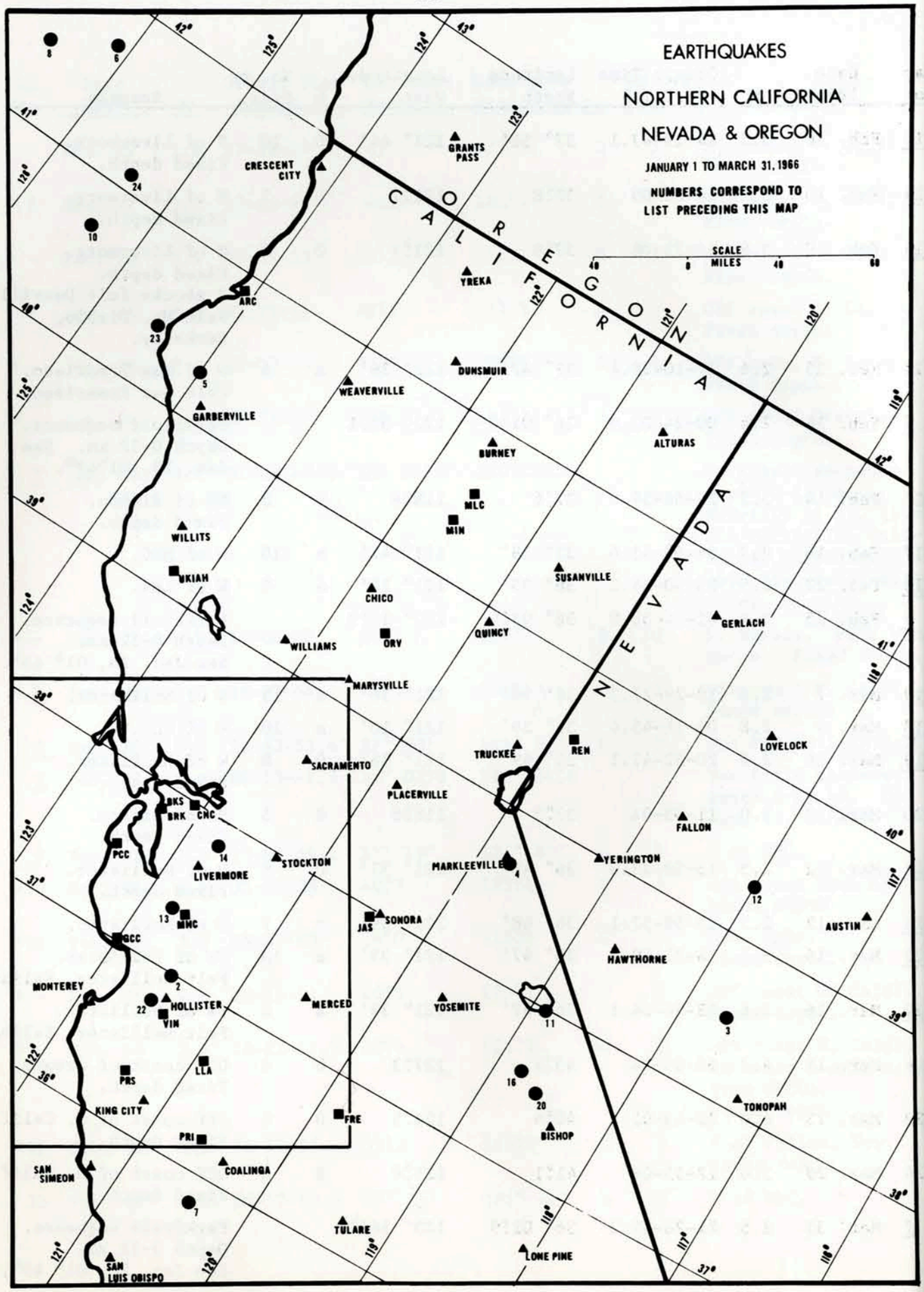
Information on maximum intensities of shocks reported felt is also included under Remarks. Reports on felt earthquakes may be obtained from the Seismological Field Survey of the U.S. Coast and Geodetic Survey, which publishes a more complete summary in "Abstracts of Earthquake Reports for the Pacific 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.

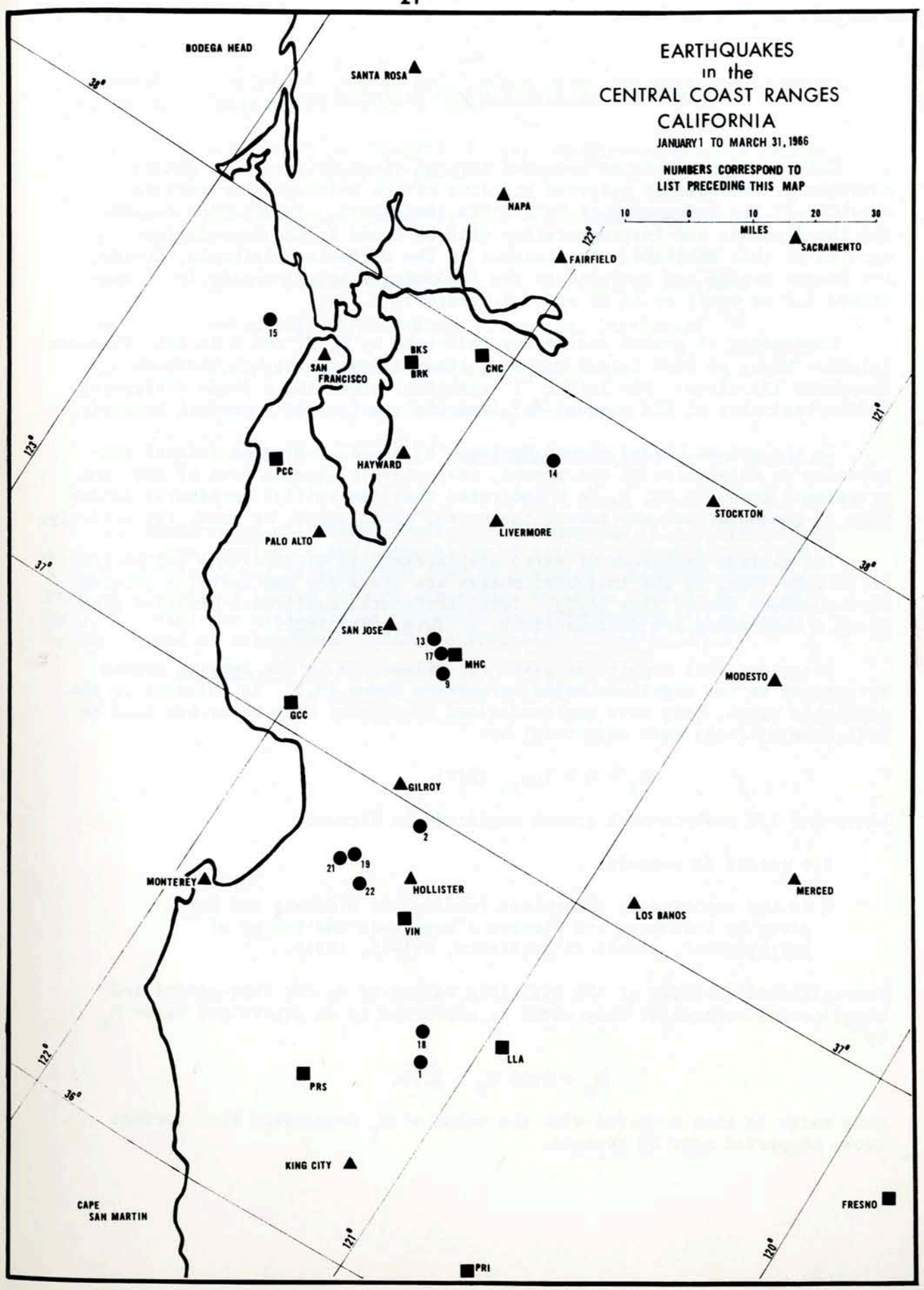
EARTHQUAKES IN NORTHERN CALIFORNIA, NEVADA, AND OREGON

Map No.	Date 1966	M	Origin Time (G.C.T.)	Latitude North	Longitude West	h	No. of Stas.	Remarks
1	Jan. 2	2.5	07-59-27.2	36° 31'	121° 08'	0	9	SW of LLA. Fixed depth.
2	Jan. 3	2.2	15-38-38.6	36° 58'	121° 28'	a	8	N of Hollister. San Felipe Lake series.
1	Jan. 3	2.6	23-49-52.6	36° 31'	121° 10'	b	8	SW of LLA.
2	Jan. 5	2.9	05-55-06.4	36° 59'	121° 28'	a	9	San Felipe Lake series. Felt Hollister.
* 3	Jan. 8	3.5	11-04-02	38°.5	117°.7	0	5	NW of Tonopah, Nev. Fixed depth.
2	Jan. 9	2.5	00-03-20.6	36° 58'	121° 28'	a	13	San Felipe Lake series. Felt Hollister.
2	Jan. 9	3.3	00-08-00.9	36° 58'	121° 28'	a	14	San Felipe Lake series. Felt Hollister.
* 4	Jan. 10	3.1	02-48-38	38°.7	119°.8	0	13	Near Markleeville. Fixed depth.
* 5	Jan. 10	3.4	21-10-01	40°.3	124°.0	0	10	NW of Garberville. Fixed depth.
2	Jan. 14	2.6	00-30-12.0	36° 58'	121° 29'	b	10	San Felipe Lake series.
2	Jan. 17	3.3	01-48-08.1	36° 59'	121° 29'	0	13	San Felipe Lake series. Fixed depth.
2	Jan. 17	4.1	02-03-20.0	36° 59'	121° 29'	a	16	Main shock of San Felipe Lake series. Felt Hollister, Oakland, San Francisco.
2	Jan. 17	3.1	02-23-37.3	36° 59'	121° 29'	b	12	San Felipe Lake series.
2	Jan. 17	3.0	02-48-37.6	37° 00'	121° 28'	a	13	San Felipe Lake series.
2	Jan. 17	2.8	06-22-56.5	37° 00'	121° 30'	b	13	San Felipe Lake series.
* 2	Jan. 17	2.6	10-36-17	37°.0	121°.5	0	9	San Felipe Lake series. Fixed depth.
2	Jan. 19	2.4	15-04-48.8	36° 58'	121° 27'	0	9	San Felipe Lake series. Fixed depth.
2	Jan. 19	2.4	19-51-15.7	36° 58'	121° 29'	b	9	San Felipe Lake series.
2	Jan. 19	2.7	20-02-34.3	36° 58'	121° 29'	b	11	San Felipe Lake series.
2	Jan. 21	3.5	04-10-36.0	36° 59'	121° 28'	a	14	San Felipe Lake series. Felt Hollister.
* -	Jan. 22	3.6	13-50-29	41°.6	117°.3	0	4	NE of Lovelock, Nev. Fixed depth.
* -	Jan. 22	4.1	15-17-04	36°.5	114°.7	0	4	SE Nevada. Fixed depth.

Map No.	Date 1966	M	Origin Time (G.C.T.)	Latitude North	Longitude West	h	No. of Stas.	Remarks
* -	Jan. 22	3.6	17-18-37	41°5	127°3	0	5	Off coast N. Calif. Fixed depth.
* 6	Jan. 22	3.3	17-23-49	41°7	126°1	0	6	Off coast N. Calif. Fixed depth.
* -	Jan. 23	3.9	07-41-13	41°2	126°7	0	5	Off coast N. Calif. Fixed depth.
* -	Jan. 24	3.8	02-21-32	41°2	127°2	0	5	Off coast N. Calif. Fixed depth.
* -	Jan. 24	3.8	02-32-24	41°7	126°7	0	5	Off coast N. Calif. Fixed depth.
* -	Jan. 24	3.3	08-26-37	42°5	127°3	0	5	Off coast Oregon. Fixed depth.
7	Jan. 28	3.0	01-49-47.4	35° 50!3	120° 27!5			Parkfield sequence. Depth 0-12 km. McEvilly et al. (1967) The Parkfield, California Earthquakes of 1966,(in press) Bull. Seism. Soc. Am.
* -	Jan. 28	4.8	18-00-07	41°7	118°2	0	10	N. Nevada. Felt Winemucca. Fixed depth.
* 8	Jan. 29	3.8	16-09-04	41°5	126°6	0	5	Off coast N. Calif. Fixed depth.
2	Jan. 29	2.3	18-43-52.4	37° 00'	121° 30'	b	10	San Felipe Lake series
7	Feb. 01	2.9	00-20-44.3	36° 02!0	120° 34!6			Parkfield sequence. Depth 0-12 km. See Jan. 28, 01^h49^m.
9	Feb. 02	2.8	13-07-56.1	37° 18'	121° 40'	a	11	S of MHC.
*10	Feb. 04	3.9	02-43-16	40°7	125°4	0	5	Off coast from ARC. Fixed depth.
*11	Feb. 06	3.8	05-03-25	38°0	118°9	0	12	Mono Lake. Fixed depth.
* -	Feb. 06	4.8	10-16-14	40°3	127°1	0	5	Off coast N. Calif. Fixed depth.
* -	Feb. 06	3.7	20-21-12.3	40°4	126°1	33	9	Off coast N. Calif. Location & origin tim from USCGS. Fixed depth.
*12	Feb. 07	3.2	16-20-22	39°3	118°0	0	5	E of Fallon, Nev. Fixed depth.
13	Feb. 08	3.0	06-57-02.0	37° 21'	121° 45'	a	11	W of MHC.

Map No.	Date 1966	M	Origin Time (G.C.T.)	Latitude North	Longitude West	h	No. of Stas.	Remarks
14	Feb. 10	3.3	14-19-47.1	37° 51'	121° 44'	0	10	N of Livermore. Fixed depth.
*14	Feb. 10	3.3	14-20-09	37°8	121°7	0	2	N of Livermore. Fixed depth.
*14	Feb. 10	3.9	14-21-08	37°8	121°7	0	8	N of Livermore. Fixed depth. 3 shocks felt Danville. Felt Mt. Diablo, Berkeley.
15	Feb. 13	2.6	17-10-28.4	37° 47'	122° 39'	a	5	W of San Francisco. Felt San Francisco.
7	Feb. 14	2.4	00-24-03.9	36° 01!4	120° 34!1			Parkfield sequence. Depth 0-12 km. See Jan. 28, 01^h49^m.
*16	Feb. 14	3.3	20-58-59	37°6	118°8	0	8	NW of Bishop. Fixed depth.
17	Feb. 16	2.7	04-53-43.6	37° 18'	121° 42'	a	10	W of MHC.
18	Feb. 22	2.5	03-50-34.2	36° 35'	121° 10'	a	9	W of LLA.
7	Feb. 25	2.4	01-34-38.0	36° 03!6	120° 37!9			Parkfield sequence. Depth 0-12 km. See Jan. 28, $01^h\ 49^m$.
19	Mar. 7	2.8	18-29-27.3	36° 50'	121° 36'	a	13	W of Hollister.
18	Mar. 9	2.8	04-11-45.4	36° 36'	121° 10'	a	10	W of LLA.
19	Mar. 10	2.6	20-52-47.1	36° 49'	121° 36'	0	8	W of Hollister. Fixed depth.
*20	Mar. 12	3.0	11-03-04	37°5	118°6	0	5	NW of Bishop. Fixed depth.
21	Mar. 12	2.5	16-59-23.0	36° 48'	121° 37'	0	9	W of Hollister. Fixed depth.
21	Mar. 12	2.5	16-59-57.1	36° 48'	121° 39'	c	7	W of Hollister.
22	Mar. 16	3.4	18-21-09.9	36° 47'	121° 33'	a	13	SW of Hollister. Felt Hollister, Salinas.
22	Mar. 16	3.6	18-24-04.1	36° 47'	121° 33'	a	8	SW of Hollister. Felt Hollister, Salinas.
* -	Mar. 18	4.3	18-05-24	43°7	127°3	0	6	Off coast of Oregon. Fixed depth.
*23	Mar. 23	4.0	22-48-01	40°4	124°5	0	6	Off coast of N. Calif. Fixed depth.
*24	Mar. 29	3.6	12-55-08	41°1	125°4	0	6	Off coast of N. Calif. Fixed depth.
7	Mar. 31	2.5	21-28-45.2	36° 02!9	120° 36!2			Parkfield sequence. Depth 0-12 km. See Jan. 28, $01^h\ 49^m$.





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). Information regarding the 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.

Components of ground motion are indicated by N, E, and Z in the Component column. Where no such letter appears, the reading is for the vertical component (Z) alone. The letter "i" (impetus) preceding a phase designates sudden beginning of the motion; "e" (emersio) designates a gradual beginning.

In the column headed Ground Motion, "c" or "d" indicates initial compression or dilatation of the ground, respectively, from a wave of the compressional type. N, E, S, or W indicates that the initial horizontal direction of ground motion was toward the north, east, south, or west, respectively.

The maximum amplitude of earth displacement in microns (mu) and periods in seconds (sec) in the indicated phases are given for the Berkeley station in the column headed Time (GCT). Total horizontal amplitudes combined from N and E components are designated by "H" (e.g., PH, PPH).

Berkeley (BKS) magnitudes given for teleseisms in the Remarks column 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.

Frequently quoted sources of information regarding epicenters, origin times, or shock magnitudes are as follows:

USCGS - U.S. Coast and Geodetic Survey, Washington Science Center, Rockville, Maryland

BCIS - Bureau Central International de Seismologie, Strasbourg, France

PAL - Lamont Geological Observatory, Palisades, New York

PAS - Seismological Laboratory, Pasadena, California

WMSO - Wichita Mountains Observatory, Oklahoma

BKS - Byerly Seismographic Station, Berkeley

BRK - indicates the average magnitude determined by the Berkeley network.

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 five listed (BKS, JAS, MHC, PRI, MIN) are available on request. Requests for additional data or for copies of seismograms should be addressed to the Director.

Date	Sta.	Phase Component	Time (GCT) h m s	Ground Motion	Remarks
1966					
Jan. 1	MHC	eP	12 37 35.0	d	USCGS: 9°7 S, 154°7 E, 0 = 12 24 30.1.
	JAS	eP	39.0	(d)	D'Entrecasteaux Islands region.
	PRI	eP	37.7	(c)	h = 33 km, restrained.
Jan. 2	BKS	eP	03 45 10.8	c	USCGS: 16°0 S, 174°1 W, 0 = 03 33 54.4.
	MHC	eP	11.1	d	Tonga Islands. h about 111 km.
	JAS	eP	17.2	d	
	MIN	iP	46 21.5	c	
	PRI	eP	45 10.5	d	
Jan. 2	BKS	eP	04 16 04.3	c	USCGS: 31°1 N, 138°2 E, 0 = 04 04 45.4.
	MHC	eP	07.9	c	South of Honshu, Japan.
	JAS	eP	10.2	c	h about 394 km.
	MIN	e	09.3	c	
	PRI	e	15.2	c	
Jan. 2	BKS	eP	04 58 47.0	(c)	USCGS: 54°3 N, 164°5 W, 0 = 04 52 17.1.
	MHC	e(P)	59 03.6	(d)	Unimak Island region.
	JAS	eP	58 57.5	d	h about 57 km.
	MIN	iP	37.6	c	
Jan. 2	BKS	eP	14 58 27.5	c	USCGS: 17°1 S, 172°0 W, 0 = 14 47 06.3.
	MHC	eP	27.7	d	Tonga Islands region.
		e	36.0	(c)	h about 39 km.
	JAS	eP	33.9	d	
		e	42.0	c	
	MIN	iP	39.0	c	
	PRI	eP	27.4	(d)	
Jan. 2	BKS	eP	18 53 20.3	(d)	USCGS: 23°4 S, 180°0 W, 0 = 18 41 56.3.
	MHC	eP	20.7	d	South of Fiji Islands.
	JAS	eP	25.9	d	h about 525 km.
	MIN	iP	29.1	d	
	PRI	e(P)	20.5	c	
Jan. 3	BKS	eP	13 44 39.5	(d)	USCGS: 20°3 S, 178°5 W, 0 = 13 33 32.6.
	MHC	eP	39.5	(c)	Fiji Islands region. h about 537 km.
	JAS	eP	45.0	c	
	MIN	eP	48.0	c	
	PRI	eP	39.2	c	
Jan. 3	BKS	iP	15 56 56.8	c	USCGS: 18°9 S, 169°4 E, 0 = 15 44 44.9.
			mu sec		New Hebrides Islands.
		PZ	0.12 1.0		h about 249 km.
	MHC	eP	15 56 57.7	c	
	JAS	eP	57 02.5	c	
	MIN	iP	04.3	d	
	PRI	eP	56 58.6	c	
Jan. 4	JAS	e(P)	06 41 11.8	c	USCGS: 22°3 S, 70°2 W, 0 = 06 29 27.
					Near coast of northern Chile.
					h about 52 km.
Jan. 4	BKS	iP	12 59 17.5	(d)	USCGS: 15°4 S, 70°9 W, 0 = 12 48 13.2.
	MHC	eP	13.4	(c)	Southern Peru. h about 189 km.
	JAS	eP	10.3	c	

Date	Sta.	Phase Component	Time (GCT) h m s	Ground Motion	Remarks
1966					
Jan. 5	JAS	e(P)	07 09 58.9	d	USCGS: 51°2 N, 178°1 W, 0 = 07 01 58.
					Andreanof Islands, Aleutian Islands.
					h = 33 km, restrained.
Jan. 5	BKS	iP	18 21 56.1	c	USCGS: 21°8 N, 146°6 E, 0 = 18 10 00.0.
		i	22 06.5	d	Mariana Islands region.
			mu sec		h = 34 km, restrained.
		PZ	0.1 1.0		
	MHC	eP	18 21 59.4	d	
		e	22 10.0	d	
	JAS	eP	03.0	d	
		e	13.8	d	
	MIN	iP	21 53.2	c	
		ipP	22 04.2	d	
	PRI	eP	05.8	d	
		e	16.3	c	
Jan. 6	BKS	iP	04 29 10.3	c	USCGS: 6°8 N, 73°1 W, 0 = 04 19 59.3.
	MHC	eP	05.5	d	Northern Colombia. h about 168 km.
	JAS	eP	28 59.8	d	Felt at Bogota.
		e	29 10.0	c	
		e	30 07.3	d	
	PRI	eP	28 56.4	(d)	
		e	29 08.0	c	
Jan. 7	MHC	eP	07 54 55.2	(c)	USCGS: 52°6 N, 160°0 E, 0 = 07 45 27.3.
	JAS	eP	51.4	c	Off east coast of Kamchatka.
		e	55 01.7	d	h about 92 km.
	MIN	iP	54 34.6	d	
	PRI	eP	55 00.0	(d)	
Jan. 8	BKS	iP	04 19 23.3	c	USCGS: 25°4 S, 179°1 W, 0 = 04 07 41.3.
	MHC	eP	23.5	c	South of Fiji Islands.
	JAS	eP	28.5	c	h about 387 km.
	PRI	eP	22.9	c	
Jan. 8	JAS	eP	05 32 03.2	(d)	USCGS: 30°5 N, 113°9 W, 0 = 05 29 52.
		e(S)	34 01.0		Gulf of California. h = 33 km, re-
					strained.
Jan. 8	BKS	eP	22 33 48.5	c	USCGS: 31°7 N, 137°7 E, 0 = 22 22 32.8.
	MHC	eP	52.4	c	South of Honshu, Japan.
	JAS	eP	54.9	c	h about 423 km.
		e	05.2	c	
	MIN	eP	43.5	c	
	PRI	eP	34 00.0	d	
Jan. 8	BKS	eP	22 50 59.5	d	USCGS: 37°3 N, 138°3 E, 0 = 22 39 17.9.
	MHC	eP	51 03.0	c	Near west coast of Honshu, Japan.
	JAS	eP	05.5	c	h about 10 km. Felt at Nagano,
	PRI	eP	11.3	(c)	Takada and Tokyo.
	MIN	eP	50 52.9	c	
Jan. 9	MHC	eP	09 21 13.7	d	USCGS: 11°5 N, 62°3 W, 0 = 09 11 30.3.
		e	27.5	c	Windward Islands. h about 156 km.
	JAS	eP	08.0	c	
		e	21.3	c	

Date	Sta.	Phase Component		Time (GCT) h m s	Ground Motion	Remarks
1966						
Jan. 9	MIN	eP		09 21 16.9	c	Felt at Port of Spain and eastern
(Cont.)		e		54.4	c	Venezuela.
	PRI	eP		04.9	d	
Jan. 9	JAS	e(P)		09 59 24.5	c	USCGS: 54°.1 N, 165°.0 W, 0 = 09 52 52.
	MIN	eP		05.1	d	Unimak Island region.
	PRI	e(P)		29.2		h about 153 km.
Jan. 10	JAS	e		11 21 03.0	c	USCGS: 7°.4 N, 72°.4 W, 0 = 11 13 07.5.
		i		13.9	d	Northern Colombia. h about 87 km.
		e		22 19.9	d	
	MIN	eP		29.8	c	
Jan. 11	BKS	e	NZ	10 30.4		
		e(R)	NZ	30.8		
	JAS	eP		27 22.5	(c)	
		e		28 24.0	c	
		eS		29 58.0	d	
	PRI	eP		27 14.3	c	
		e		29 22.6	(c)	
Jan. 11	BKS	eP		14 18 15.3		USCGS: 34°.0 N, 137°.0 E, 0 = 14 06 20.5.
	JAS	e(P)		16.1	c	Near south coast of Honshu, Japan.
		e		54.8	c	
Jan. 11	BKS	eP		14 28 24.0	d	USCGS: 33°.7 N, 137°.2 E, 0 = 14 16 32.2.
		e		47.5	c	Near south coast of Honshu, Japan.
		e		29 30.5	c	h = 33 km restrained.
		e(S)	NE	38 12.0	NE	Magnitude 5.3 - 5.5 (BKS)
		eSS	NE	43 06.0	NE	
		e(G)	NE	48.6		
		e(R)		50.3		
				mu sec		
		MaxH		2.56 18.0		
	MHC	e(P)		14 28 30.0	c	
	JAS	eP		32.9	c	
		e		39.1	d	
	PRI	e(P)		40.0	c	
Jan. 12	BKS	e(L)	E	12 45.3		USCGS: 15°.3 N, 94°.4 W, 0 = 12 29 29.1.
		eR		48.3		Near coast of Oaxaca, Mexico.
	MHC	eP		35 59.2	d	h about 51 km.
	JAS	eP		55.0	c	
	MIN	eP		16.4	c	
	PRI	eP		47.0	c	
Jan. 13	BKS	eP		10 49 43.0	c	USCGS: 52°.9 N, 172°.0 E, 0 = 10 41 11.0.
		e		51 14.9	d	Near Islands, Aleutian Islands.
		eS	NE	56 28.0		h about 14 km.
		eL	NE	59.0		
		eR		11 01.7		Magnitude 4.4 - 4.5 (BKS).
				mu sec		
		PZ		0.037 0.8		
		SH		1.83 20		
		MaxH		4.4 24		

Date	Sta.	Phase Component		Time (GCT) h m s	Ground Motion	Remarks
1966						
Jan. 13	MHC	eP		10 49 48.3	d	
(Cont.)		e		50 13.8	d	
		e		51 18.0	c	
	JAS	eP		49 50.3	c	
		e		50 14.5	d	
	MIN	iP		49 33.6	d	
		i		41.8	d	
	PRI	eP		58.7	c	
		e		50 25.0	d	
		e		51 24.0	d	
Jan. 14	BKS	eP		20 53 49.5	c	USCGS: 17°.4 S, 166°.7 E, 0 = 20 41 07.5.
	MHC	eP		49.5	d	New Hebrides Islands.
	JAS	eP		54.4	d	h = 33 km, restrained.
	MIN	iP		56.7	d	
	PRI	eP		51.6	(d)	
Jan. 14	MHC	e(P)		22 02 50.6	c	USCGS: 51°.4 N, 169°.0 W, 0 = 21 55 49.6.
	JAS	eP		53.0	c	Fox Islands, Aleutian Islands.
	PRI	eP		03 01.1	(c)	h = 33 km, restrained.
Jan. 15	BKS	e(P)		11 19 34.0	(c)	USCGS: 19°.7 N, 108°.8 W, 0 = 11 16 19.
		e		20 30.0	(d)	Revilla Gigedo Islands.
		e	NEZ	25 22.0	NEc	h = 33 km, restrained.
		e		27.0		
	MHC	e(P)		20 51.5	(c)	
	JAS	e(P)		58.6	(d)	
	PRI	e(P)		46.4	(c)	
	MIN	iP		21 26.2	c	
Jan. 15	JAS	e(P)		11 45 10.2	c	USCGS: 18°.8 S, 169°.2 E, 0 = 11 32 48.1.
	MIN	eP		11.7	c	New Hebrides Islands. h about 212 km.
Jan. 15	BKS	e(P)		12 05 30.0		USCGS: 59°.5 N, 144°.6 W, 0 = 11 59 58.6.
		e(S)	NEZ	10 18.0	SEd	Gulf of Alaska. h = 33 km, re-
		e		11 15.0		strained.
		e(R)	NEZ	12.2		
				mu sec		Magnitude 5.3 - 5.5 (BKS).
		PZ		2.0 9		
		SH		4.8 11		
	MHC	eP		12 05 36.8	(c)	
	JAS	eP		31.4	c	
	MIN	iP		11.7	d	
		i		18.2	d	
		i		50.4	c	
	PRI	eP		50.8	(c)	
Jan. 15	BKS	e(P)		19 42 09.5	d	USCGS: 33°.6 S, 70°.1 W, 0 = 19 28 56.2.
	MHC	eP		06.7	(c)	Chile-Argentina border region.
	JAS	eP		06.1	d	h = 33 km, restrained.
		e		36.0		
	MIN	eP		20.2	d	
	PRI	eP		00.4	d	
Jan. 16	BKS	eR	Z	00 55.0		

Date	Sta.	Phase Component	Time (GCT) h m s	Ground Motion	Remarks
1966					
Jan. 16	BKS	eP	09 20 17.0		USCGS: 52°9 N, 171°9 E, 0 = 09 11 50.0.
		eR	33.5		Near Islands, Aleutian Islands.
	JAS	eP	20 28.1	d	h about 25 km.
	MIN	iP	11.1	d	
		i	16.7		
Jan. 16	JAS	eP	19 53 44.3	d	USCGS: 54°9 N, 165°8 E, 0 = 19 44 39.5.
	MIN	iP	26.5	d	Komandorsky Islands region.
					h about 15 km.
Jan. 17	BKS	iP	02 03 39.6	c	37°00' N, 121°28' W,
	PRI	eP	40.3	d	0 = 02 03 20.0. h 0-5 km.
		eS	56.1		Magnitude 4.1. North of Hollister, Calif.
	JAS	iP	42.8	d	Felt in Hollister, Oakland, San Fran-
	MHC	iP	28.0	c	cisco (BRK).
	MIN	iP	04 13.3	d	
		eS E	52.1		
Jan. 17	BKS	eP	18 01 07.8	d	USCGS: 20°8 S, 178°5 W, 0 = 17 49 59.3.
		e	19.8	c	Fiji Islands region.
	MHC	eP	08.3	d	h about 543 km.
		e	03 10.7	c	
	JAS	eP	13.6	d	
		e	03 16.3	c	
	PRI	eP	01 07.9	d	
		e	03 10.6	c	
Jan. 17	MHC	e(P)	19 03 26.3	c	USCGS: 52°0 N, 171°2 W, 0 = 18 56 15.6.
	JAS	eP	29.4	d	Fox Islands, Aleutian Islands.
	PRI	e(P)	36.0	(c)	h about 46 km.
Jan. 18	MHC	eP	01 25 51.7	(d)	USCGS: 29°3 N, 130°4 E, 0 = 01 13 15.8.
		e	26 00.3	c	Ryukyu Islands. h = 33 km, re-
	JAS	eP	25 54.1	c	strained.
		e	26 02.8	c	
	MIN	eP	25 43.4	d	
	PRI	eP	59.0	(c)	
		e	26 06.7	d	
Jan. 18	BKS	eP	06 38 26.0	c	USCGS: 18°6 S, 177°8 W, 0 = 06 27 12.7.
		e	40.3		Fiji Islands region.
			mu sec		h about 364 km.
		PZ	0.08 1.2		
	MHC	eP	06 38 27.3	c	Magnitude 5.3 - 5.6 (BKS).
	JAS	eP	32.9	c	
	MIN	iP	36.7	d	
	PRI	eP	27.1	c	
Jan. 19	BKS	eP	04 55 58.0	c	USCGS: 17°8 S, 71°3 W, 0 = 04 44 28.9.
	MHC	eP	54.0	d	Near coast of Peru. h = 50 km, re
	JAS	eP	51.3	d	strained. Felt at Arequipa.
	PRI	eP	45.5	d	
Jan. 19	JAS	eP	09 16 59.5	(d)	USCGS: 41°6 N, 141°8 E, 0 = 09 05 47.3.
		e	17 17.7	(d)	Hokkaido, Japan. h about 69 km.
		e	18 48.7	d	
	MIN	eP	16 45.0	c	

Date	Sta.	Phase Component	Time (GCT) h m s	Ground Motion	Remarks
1966					
Jan. 19	MHC	eP	13 57 06.3	d	USCGS: 20°7 S, 178°5 W, 0 = 13 46 02.2.
	JAS	eP	12.0	d	Fiji Islands region. h about 593 km.
	MIN	iP	16.0	c	
	PRI		06.3	d	
Jan. 19	JAS	e(P)	21 18 37.1	d	USCGS: 22°6 N, 143°2 E, 0 = 21 06 33.0.
		e	19 08.1	c	Volcano Islands region.
					h about 127 km.
Jan. 20	BKS	eP	01 56 26.5	d	USCGS: 37°9 N, 138°0 E, 0 = 01 44 49.5.
	MHC	eP	30.1	(c)	Near west coast of Honshu, Japan.
	JAS	eP	32.3	c	Felt on west coast of central Japan
	MIN	iP	19.9	c	and on Sado Island.
	PRI	eP	40.0	c	
Jan. 20	BKS	eP	04 40 17.0	c	USCGS: 15°1 S, 168°0 E, 0 = 04 27 44.9.
		e	29.5	c	New Hebrides Islands.
		e	SE 50 40.0		h about 28 km.
		e	E 55 26.0		
		eR	NE 05 05.4		
			mu sec		
		MaxH	3.3 16		
	JAS	eP	04 40 20.8	c	
	MIN	eP	24.6	c	
		e	38.9	c	
	PRI	eP	17.2	c	
Jan. 20	JAS	eP	07 24 57.7	d	USCGS: 14°9 S, 75°6 W, 0 = 07 14 04.6.
	PRI	eP	51.5	(d)	Near coast of Peru. h about 49 km.
Jan. 20	BKS	eP	11 15 37.0	d	USCGS: 25.5 S, 179.9 E, 0 = 11 04 03.
	MHC	eP	36.8	c	South of Fiji Islands.
	JAS	eP	42.4	c	h = 500 km, restrained.
	PRI	eP	37.0	c	
Jan. 20	JAS	eP	14 54 45.0	c	USCGS: 53°0 N, 171°8 E, 0 = 14 46 06.2.
	MIN	iP	27.7	d	Near Islands, Aleutian Islands.
		i	35.5	c	h about 29 km.
	PRI	e(P)	54.8	(c)	
Jan. 20	JAS	e(P)	15 13 13.1	d	USCGS: 15°3 S, 173°0 W, 0 = 15 01 53.4.
		e	37.5	c	Samoa Islands region.
	MIN	iP	23.4	c	h = 33 km, restrained.
	PRI	e(P)	28.5	(d)	Felt at Apia.
Jan. 20	MHC	e(P)	16 39 26.0	d	USCGS: 52°4 N, 169°6 W, 0 = 16 32 19.9.
	JAS	eP	29.1	c	Fox Islands, Aleutian Islands.
	PRI	e(P)	19.0	c	h about 19 km.
Jan. 20	MHC	e(P)	19 55 10	(c)	USCGS: 51°8 N, 130°2 W, 0 = 19 51 26.
	JAS	e(P)	04.0	(c)	Queen Charlotte Islands region.
		e	44.0	(c)	h = 33 km, restrained.
	MIN	eP	54 29.0	d	
	PRI	e(P)	55 19.0	(c)	
Jan. 22	MHC	e(P)	04 07 20.5	c	USCGS: 28°9 S, 176°8 W, 0 = 03 54 52.8.
	JAS	eP	25.6	c	Kermadec Islands. h = 33 km, re-
		e	39.0	d	strained.

Date 1966	Sta.	Phase Component	Time (GCT) h m s	Ground Motion	Remarks
Jan. 22 (Cont.)	MIN	eP	04 07 31.4	c	
		i	46.1	c	
	PRI	e(P)	13.7	c	
Jan. 22	BKS	e	NEZ04 33.2		
		e(R)	37.1		
Jan. 22	BKS	e(P)	07 43 04.7	d	USCGS: 17°4 N, 94°1 W, 0 = 07 36 49.3.
		e(PcP)	45 50.7	c	Chiapas, Mexico.
	MHC	eP	42 59.1	d	h about 139 km.
		e	43 31.2	c	
		e(PcP)	45 48.5	(c)	
	JAS	eP	42 54.2	d	
		e	43 27.0	d	
		e(PcP)	45 47.3	c	
	MIN	iP	43 13.6	c	
		e	44.8	d	
	PRI	eP	42 47.7	c	
		e	43 20.0	d	
		e(PcP)	45 45.8	(c)	
Jan. 22	BKS	iP	11 11 58.2	d	USCGS: 17°9 S, 178°5 W, 0 = 11 01 05.3.
		e	12 07.8	c	Fiji Islands region.
			mu sec		h about 598 km.
		PZ	0.074 1.0		
	MHC	eP	11 12 58.0	c	Magnitude 5 - 5.4 (BKS).
	JAS	eP	03.4	c	
		e	11.5	d	
	MIN	iP	06.5	d	
		i	10.9	d	
		i	18.5	c	
	PRI	eP	11 57.9	c	
		e	12 06.9	c	
Jan. 22	BKS	eP	14 32 54.0	d	USCGS: 56°0 N, 153°7 W, 0 = 14 27 07.9.
		e	33 06.0	d	South of Alaska. h = 33 km, re-
		e	34 15.0	c	strained.
		eS	NE 37 42.0	SE	
		eL	38.9		Magnitude 6.2 (BKS).
		eR	40.0		
			mu sec		
		PZ	0.092 1.4		
		SH	14.7 15		
		MaxH	48.7 18		
	MHC	eP	14 33 52.9	(d)	
	JAS	eP	02.8	d	
	MIN	iP	32 41.0	d	
		i	33 02.6	d	
	PRI	e(P)	14.1		
Jan. 22	PRI	eP	15 18 17.3	c	36°5 N, 114°7 W, 0 = 15 17 04.
	JAS	eP	16.7	d	Southeastern Nevada. h = 0, fixed.
		eS	19 12.5		Magnitude 4.1 (BRK).

Date 1966	Sta.	Phase Component	Time (GCT) h m s	Ground Motion	Remarks
Jan. 22		e	15 19 26.1		
(Cont.)	MIN	eP	18 44.7	c	
		i	20 15.7		
Jan. 22	BKS	e	19 48 31.0	d	USCGS: 21°0 S, 174°2 W, 0 = 19 36 32.4.
	JAS	eP	45 55.0	(c)	Tonga Islands. h = 33 km, re-
		eS	48 26.0		strained.
Jan. 22	MHC	eP	22 13 23.5	c	USCGS: 62°1 N, 141°3 W, 0 = 22 07 35.
	JAS	eP	18.1	c	Central Alaska. h about 46 km.
	MIN	iP	12 55.0	c	
		e	13 19.4	c	
	PRI	e(P)	13 33.5	(c)	
Jan. 23	BKS	e(S)	NEZ01 09 13	NWd	USCGS: 16.3°N, 94.9 W, 0 = 00 57 22.
		e	NE 11.6		Oaxaca, Mexico. h about 32 km.
		eR	NZ 12.5		
			mu sec		
		MaxH	13.1 17.0		
	MHC	eP	01 03 47.2	d	
		e	52.5	c	
	JAS	eP	40.8	d	
		e	48.2	d	
	PRI	eP	33.4	d	
		e	40.7	c	
Jan. 23	BKS	eP	01 59 33.0	c	USCGS: 37°0 N, 106°9 W, 0 = 01 56 38.0.
		e	43.0	d	New Mexico. h about 10 km.
		e(S)	E 02 01 07.0		
		e	N 02 24.0		Magnitude 4.3 - 4.9 (BKS),
		e(Q)	NE 34		5 - 5 1/4 (PAL).
		e(R)	NE 56.0		Moderate damage at Dulce, slight damage
			mu sec		at Lumberton and Edith. Felt widely in
		PZ	0.095 1.5		northern New Mexico. Felt in southern
		MaxH	14.7 14		Colorado.
	MHC	eP	01 59 30.5	d	
		e	02 02 40.0	d	
	JAS	eP	01 59 16.2	c	
		e	18.4	c	
		e	02 02 11.8	d	
	MIN	iP	01 59 33.8	d	
		i	44.4	c	
		iR	02 02 53.5		
	PRI	eP	01 59 22.9	(c)	
		e	02 00 05	c	
		e	02 26.0	d	
Jan. 23	PRI	e(P)	23 51 06.7	c	USCGS: 36°9 N, 107°0 W, 0 = 23 48 09.0.
	JAS	e(P)	50 48.5	c	New Mexico. h about 10 km.
	PRI	e	53 44.6		Felt severely at Dulce, Lumberton
					and Edith.

Date	Sta.	Phase Component	Time (GCT) h m s	Ground Motion	Remarks
1966					
Jan. 26	BKS	eP'	01 19 10.8	c	USCGS: 59°6 S, 26°3 W, 0 = 01 00 15.2.
		e	27.5	c	South Sandwich Islands region.
	MHC	e(P')	00.3	d	h about 80 km.
	JAS	eP'	05.4	(d)	
		e	26.0	c	
	PRI	e(P')	03.5	(d)	
Jan. 26	MHC	e(P')	01 22 35.1	d	
	JAS	e(P')	35.2	c	
	PRI	e(P')	31.8	c	
Jan. 27	BKS	i	02 12 29.5	d	USCGS: 17°9 S, 178°6 W, 0 = 02 01 36.7.
	MHC	eP	29.7	c	Fiji Islands region. h about 600 km.
	JAS	eP	35.0	c	
		e	13 37.0	d	
	MIN	iP	12 38.6	d	Magnitude 5.0 - 5.5 (BKS).
	PRI	eP	29.8	c	
Jan. 27	BKS	eP	19 47 09.4	d	USCGS: 51°1 N, 178°1 E, 0 = 19 39 04.5.
		e	35.0	c	Rat Islands, Aleutian Islands.
	MHC	eP	10.7	(c)	h about 41 km.
		e	43.2	c	
	JAS	eP	13.8	(c)	
		e	44.5	c	
	MIN	iP	46 56.7	d	
		i	47 18.6	c	
	PRI	eP	23.0	(c)	
		e	52.8	c	
Jan. 28	BKS	iP	04 47 57.0	d	USCGS: 17°5 S, 176°9 E, 0 = 04 36 46.1.
		e	48 05.7	d	Fiji Islands region. h about 558 km.
			mu sec		
		PZ	0.05 0.8		Magnitude 4.8 - 5 (BKS).
	MHC	eP	04 47 57.1	c	
		e	49 54.4	c	
	JAS	eP	48 02.5	c	
		e	50 03.6	d	
	MIN	iP	48 05.1	d	
		i	17.0	d	
		i	50 06.0	c	
	PRI	eP	47 57.7	c	
		e	49 57.1	c	
Jan. 28	BKS	eP	05 54 51.0	d	USCGS: 17°1 S, 168°4 E, 0 = 05 42 16.4.
		e	55 13.0	c	New Hebrides Islands.
		eS	NE 06 05 22.0	(N)W	h about 24 km.
		eG	17.0		
		eR	20.6		Magnitude 5.6 - 5.8 (BKS)
			mu sec		6 1/2 (PAS).
		PZ	0.11 1.2		Felt on Tonga and at Port Vila.
		SH	5.8 22		
		MaxH	41.3 32		
	MHC	eP	05 54 51.6	c	
	JAS	eP	56.4	c	

Date	Sta.	Phase Component	Time (GCT) h m s	Ground Motion	Remarks
1966					
Jan. 28	MIN	iP	05 54 57.0	d	
(Cont.)	PRI	eP	53.2	c	
Jan. 28	MHC	eP	08 07 50.7	(c)	USCGS: 2°7 N, 95°3 W, 0 = 07 59 58.0.
		e	08 10.8	d	Galapagos Islands region.
	JAS	eP	07 49.0	c	h = 33 km, restrained.
		e	08 12.3	d	
	MIN	eP	18.6	d	
	PRI	eP	07 38.8	c	
		e	08 06.2	d	
Jan. 28	BKS	eP	09 38 28.0	c	USCGS: 17°9 S, 178°5 W, 0 = 09 27 34.3.
			mu sec		Fiji Islands. h about 579 km.
		PZ	0.16 1.1		
	MHC	eP	09 38 28.7	c	Magnitude 5.5 - 5.8 (BKS).
	JAS	eP	34.3	c	
		e	50.4	d	
		e	41 40.3	c	
	MIN	iP	38 37.6	d	
		i	49.3	d	
		e	41 43.9	c	
	PRI	eP	38 28.8	c	
Jan. 28	BKS	iP	10 16 45.0	d	USCGS: 43°6 N, 127°2 W, 0 = 10 15 06.6.
	MHC		56.5	c	Off coast of Oregon.
	JAS		58.4	c	h = 33 km, restrained.
	MIN		17 26.2	c	
	PRI		16.2	c	
Jan. 28	BRK	eP	18 01 31.3	(c)	41°7 N, 118°2 W, 0 = 18 00 07.
	BKS	eS	NE 02 38		Northern Nevada. h = 0,fixed.
	PRI	eP	01 38.4	c	
		e	03 10.0		Magnitude 4.8 (BRK).
	JAS	eP	01 10.3	c	
		e	02 14.2		Felt Winnemucca.
	MHC	eP	01 21.9		
		e	02 32.6		
	MIN	iP	00 53.8	c	
		iS	01 39.2		
Jan. 28	BKS	eP	19 15 32.5	c	USCGS: 51°7 N, 177°0 W, 0 = 19 07 14.4.
		e	16 05.7	d	Andreanof Islands, Aleutian Islands.
	MHC	eP	15 04.1	c	h about 54 km.
	JAS	eP	14 58.0	c	
		e	15 13.9	c	Felt at Adak.
	MIN	iP	14 44.0	d	
		i	53.0	d	
	PRI	eP	15 04.7	d	
Jan. 28	BKS	eP	EZ 22 47 42.8	Ec	USCGS: 51°6 N, 157°0 E, 0 = 22 38 12.2.
		e	48 07.0	c	Near east coast of Kamchatka.
		e	40.0	d	h about 107 km.
			mu sec		
		PZ	0.15 1.0		Magnitude 5.1 - 5.3 (BKS).
	MHC	eP	22 47 48.1	c	

Date	Sta.	Phase Component	Time (GCT) h	m	s	Ground Motion	Remarks
1966							
Jan. 28		e	22	48	14.5	c	
(Cont.)	JAS	eP		47	50.1	c	
		e		48	15.6	c	
		e		49	54.2	d	
	MIN	iP		47	34.0	c	
		i			58.9	d	
		i		49	34.1	d	
	PRI	eP		47	58.1	c	
		e		48	26.4	c	
Jan. 29	JAS	eP	06	37	03.0	d	USCGS: 16°9 S, 168°4 E, 0 = 06 24 22.7. New Hebrides Islands. h = 33 km, restrained. Felt at Port Vila.
Jan. 29	MHC	eP	14	47	12.2	c	USCGS: 16°6 N, 91°2 W, 0 = 14 40 26.5.
	JAS	eP			07.2	(c)	Mexico-Guatemala border region.
	PRI	eP		46	59.7	(c)	h about 7 km.
Jan. 30	MHC	eP	13	45	05.3	(c)	USCGS: 16°9 S, 168°3 E, 0 = 13 32 28.8.
	JAS	eP			09.5	c	New Hebrides Islands.
	PRI	e(P)			13.0	(d)	h about 21 km.
Jan. 31	MHC	eP	14	03	47.3	d	USCGS: 1°5 S, 78°1 W, 0 = 13 54 23.1.
	JAS	eP			43.2	d	Ecuador. h = 155 km, restrained.
	PRI	e(P)			34.8	(d)	
Jan. 31	BKS	iP	14	13	46.4	d	USCGS: 24°8 S, 64°4 W, 0 = 14 01 25.4.
		e			53.2	c	Lalta Province, Argentina.
			mu		sec		h about 43 km.
		PZ	0.18		1.5		
	MHC	eP	14	13	42.5	c	Magnitude 5.5 - 5.7 (BKS).
	JAS	eP			40.0	c	
		e			48.2	c	
	MIN	iP			51.6	d	
	PRI	eP			35.7	c	
		e			44.0	c	
Feb. 1	JAS	e(P)	14	36	36.0	c	USCGS: 35°2 S, 113°0 W, 0 = 14 25 05.
		e			48.0	d	Easter Island Cordillera. h = 33 km, restrained.
Feb. 2	BKS	eP	05	45	31.5	c	USCGS: 17°6 S, 69°8 W, 0 = 05 38 36.
	MHC	eP			31.7	d	Peru-Bolivia border region.
	JAS	eP			37.5	d	h about 150 km.
		e		46	04.6	d	
	MIN	iP		45	41.9	c	
		i			53.9	d	
	PRI	eP			31.1	d	
Feb. 2	JAS	e(P)	13	39	11.1	c	USCGS: 17°3 N, 147°8 E, 0 = 13 17 57. Mariana Islands region. h = 33 km, restrained.
Feb. 3	BKS	eP	00	59	07.0	d	USCGS: 21°7 S, 68°4 W, 0 = 00 47 19.2.
		eP			36.5	(d)	Chile-Bolivia border region.
			mu		sec		h = 116 km, restrained.
		PZ	0.10		1.3		

Date	Sta.	Phase Component	Time (GCT) h	m	s	Ground Motion	Remarks
1966							
Feb. 3	MHC	eP	00	59	03.3	d	Magnitude 4.5 - 4.9 (BKS).
(Cont.)	JAS	eP			01.9	d	
		e			26.5	c	
	MIN	iP			12.9	c	
		i			39.1	c	
	PRI	eP		58	55.6	d	
		e		59	25.2	c	
Feb. 3	BKS	e(P)	02	18	21.5	(d)	USCGS: 33°8 S, 70°1 W, 0 = 02 05 54.8.
		e			40.5	(c)	Chile-Argentina border region.
	JAS	eP			35.0	d	h about 6 km. Felt at Santiago.
	PRI	eP			36.8	c	
Feb. 3	BKS	e(P')	06	06	13.5	(c)	USCGS: 0°1 N, 123°5 E, 0 = 05 48 06.1.
	MHC	eP'			23.2	c	Northern Celebes. h about 131 km.
	MIN	e(P')			17.0	c	
	JAS	eP'			25.2	c	
	PRI	e(P')			25.0	c	
Feb. 3	MHC	e(P)	06	17	27.7	c	
	JAS	eP			27.3	d	
		e			37.6	c	
Feb. 4	BKS	eL	05	40	.5		USCGS: 21°4 S, 174°1 W, 0 = 05 04 24.
	MHC	e(P)		16	17.0	c	Tonga Islands. h about 26 km.
	JAS	e(P)			16.5	c	
	PRI	e(P)			16.0	(c)	
Feb. 4	BKS	iP	10	51	26.8	(d)	USCGS: 15°9 S, 167°9 E, 0 = 10 39 12.2.
		e			43.4	d	New Hebrides Islands.
		e		52	14.6	(c)	h about 190 km.
		e(S)	NE 11	01	30	SW	
		e(G)			14.0		
		e(R)			17.8		
	MHC	e(P)	10	51	26.0	(c)	
	JAS	eP			31.6	c	
		e			56.1	d	
	MIN	e			32.8	d	
	PRI	eP			28.2	c	
		e			52.7	d	
Feb. 4	BKS	e(P)	15	48	19.5	(d)	USCGS: 21°3 S, 174°3 W, 0 = 15 36 31.
	MHC	eP			21.5	d	Tonga Islands. h about 27 km.
	JAS	eP			26.2	d	
		e			46.5	c	
	PRI	e(P)			18.0	d	
Feb. 5	MHC	eP	02	15	17.5	d	USCGS: 39°2 N, 22°0 E, 0 = 02 01 48.3.
	JAS	eP			12.8	d	Greece. h about 38 km.
		e			22.1	d	Klistos and Krenti destroyed, one
	MIN	eP			42.6	c	killed, 50 injured, and 8,500 home-
		i		16	05.4	c	less in the towns of Alestia and
	PRI	e(P)		15	17.5	c	Fourna.
		e			32.8	c	Magnitude 6 1/4 (PAS).

Date	Sta.	Phase Component		Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Feb. 5	BKS	e(P)		02	31	59.0	c	
		e			32	33.5	d	
		e(PP)	N		33	14	N	
		e	N		36	38	S	
		e(S)	N		37	45		
		e(L)			47.5			
		e(R)	NE		50.0			
	MHC	eP			31	58.7	c	
	JAS	eP			32	00.7	c	
Feb. 5	MHC	eP		14	34	17.3	(c)	USCGS: 52°8 N, 158°8 E, 0 = 14 24 45.
	JAS	eP				19.5	c	Near eastern coast of Kamchatka.
		e				36.8	c	h about 44 km.
	MIN	iP				13.1	d	
	PRI	eP				30.5	(c)	
Feb. 5	BKS	e(PS)	EZ	15	39	55	(c)	USCGS: 26°1 N, 103°1 E, 0 = 15 12 29.1.
		e(SS)			46.0			Yunnan Province of China.
		e(L)			56.0			h about 15 km.
	JAS	e(P)			29	53.5	c	
		e			30	44.5	c	
Feb. 5	BKS	eP	EZ	16	25	43.0	Ec	USCGS: 50°2 N, 155°1 E, 0 = 16 16 01.
		ipP			26	11.5	c	Kurile Islands. h about 98 km.
				mu		sec		
		PZ		0.10		1.0		
	MHC	eP		16	25	48.0	d	
		e				55.7	d	
		epP			26	17.8	c	
	JAS	eP			25	50.5	d	
		e				57.7	d	
		epP			26	19.6	d	
	MIN	iP			25	34.6	d	
		i				42.4	d	
		i			26	04.2	c	
		ipP				06.7	d	
	PRI	eP			25	58.8	d	
		e			26	05.5	d	
Feb. 5	BKS	eP		23	46	03.3	c	USCGS: 19°6 S, 69°6 W, 0 = 23 34 24.7.
		e(pP)				25.7		Northern Chile. h about 87 km.
	MHC	eP			45	59.5	c	
		e(pP)			46	22.4	c	
	JAS	eP			45	57.0	c	
		e(pP)			46	19.6		
	MIN	e(P)				03.1	c	
		i				32.4	d	
	PRI	eP			45	51.4	c	
		e(pP)			46	14.2	c	
Feb. 6	MHC	eP		04	18	53.0	c	USCGS: 15°9 N, 93°6 W, 0 = 04 12 26.9.
		e			19	15.0	d	Near coast of Chiapas, Mexico.
	JAS	eP			18	48.3	c	h about 92 km.

Date	Sta.	Phase Component		Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Feb. 6 (Cont.)	MIN	iP		04	19	07.1	d	
		i				39.4	c	
	PRI	eP			18	42.3	c	
Feb. 6	BKS	eP'		10	11	30.8	(d)	USCGS: 56°8 S, 25°4 W, 0 = 09 52 30.2.
	MHC	eP'				29.7	d	South Atlantic Ocean. h about 13 km.
	JAS	eP'				29.0	d	
	MIN	iP'				32.5	d	
	PRI	eP'				25.0	d	
Feb. 6	BKS	e(P)		10	17	07.0	d	
	MHC	e(P)				06.0	d	
	JAS	e(P)				05.5	d	
	PRI	e(P)				03.6	d	
Feb. 6	BKS	iP		10	17	25.3	d	40°3 N, 127°1 W, 0 = 10 16 14.
		iS	NE		18	15.8		Off coast of northern California.
	PRI	eP			17	54.8	c	h = 0, fixed.
	JAS	eP				44.2	c	Magnitude 4.8 (BRK).
		iS			18	54.1		
	MHC	eP			17	34.9	c	
		eS			18	32.5		
	MIN	iP			17	21.5	d	
		iS			18	09.1		
Feb. 6	BKS	eP		23	34	05.0	c	USCGS: 60°4 N, 152°3 W, 0 = 23 28 07.8.
	MHC	eP				10.8	d	Southern Alaska. h about 91 km.
		e				30.5	c	
	JAS	eP				10.7	d	
	MIN	e			33	47.7	c	
		e			34	07.6	c	
	PRI	e				24.3	d	
Feb. 7	BKS	e(S)	N	04	52	41	N	USCGS: 29°8 N, 69°7 E, 0 = 04 26 13.9.
		e			53	18	(d)	West Pakistan. h = 33 km, restrained.
		ePS	NEZ			55.0		Felt at Bahawalpur, Fort Munro and
		eSS	N	05	01	.0		Lahore. Twelve dead, and extensive
		e(SSS)	NEZ			05.4		damage at Barkhan and nearby villages.
		e	NEZ		09	18		
		e(L)				11.8		
		e(R)				18.0		
	JAS	eP		04	44	21.2	d	
		e			45	23.5	d	
	MIN	eP			43	52.5	c	
	PRI	e			45	23	(c)	
Feb. 7	JAS	eP		07	45	11.8	d	USCGS: 19°0 N, 108°3 W, 0 = 07 40 22.
		e				44	c	Revilla Gigedo Islands region.
	MIN	iP				38.9	c	h = 33 km, restrained.
	PRI	e(P)				03.5	(d)	
Feb. 7	BKS	i(P)		08	52	06	(d)	USCGS: 51°2 N, 130°0 W, 0 = 08 48 35.
	MHC	e(P)				07.5	c	Queen Charlotte Islands region.
	JAS	e(P)				06.6	c	h about 25 km.
	MIN	eP			51	31.4	c	
		i				43.9	c	
		i			52	36.4	c	
	PRI	e(P)				29.8		

Date	Sta.	Phase Component		Time (GCT) h m s	Ground Motion	Remarks
1966						
Feb. 7	JAS	eP		14 06 32.8	c	USCGS: 51°.9 N, 128°.4 W, 0 = 14 03 04.
	MIN	iP		05 56.7	d	Vancouver Island region.
						h = 33 km, restrained.
Feb. 7	BKS	eP'		23 24 20	c	USCGS: 30°.2 N, 69°.8 E, 0 = 23 06 34.5.
		e		28 32	c	West Pakistan. h about 10 km.
		e(SKS)		30 36	d	Felt in Loralai district, Bahawalpur,
		ePS	NE	35 32	NE	Fort Munro and Multan.
		eSS	E	41 20	E	
		e(P'P')	E	43 42	E	Magnitude 6 1/4 - 6 1/2 (PAL).
		eL	E	52.4		
		eR	NZ	59.1		
	JAS	e(P')		24 50	(c)	
		e		25 53	d	
	MIN	e(P')		24 29		
		e		25 28	d	
Feb. 8	BKS	eP		10 13 20.3	d	USCGS: 21°.2 S, 178°.5 W, 0 = 10 02 09.0.
				mu sec		Fiji Islands region.
		PZ		0.04 0.7		h about 525 km.
	MHC	eP		10 13 20.6	d	
	JAS	eP		26.0	d	Magnitude 4.2 - 4.8 (BKS)
	MIN	iP		29.6	c	
		i		42.6	c	
	PRI	eP		20.5	d	
Feb. 8	JAS	e(P)		16 15 06	c	USCGS: 18°.7 N, 106°.5 W, 0 = 16 10 06.
		e		31.9	d	Off coast of Jalisco, Mexico.
						h = 33 km, restrained.
Feb. 8	BKS	eP		17 11 23	d	USCGS: 18°.8 N, 106°.8 W, 0 = 17 06 45.6.
		e		12 24	c	Off west coast of Mexico.
		eS	NZ	15 04	Nd	h = 33 km, restrained.
		e	N	58	N	
		eR	NEZ	18.2		
	MHC	eP		11 36.3	d	
		e		12 30.7	d	
	JAS	eP		11 43.3	d	
		e		12 15.3	d	
		e		37.0	d	
	MIN	iP		11 11.1	c	
	PRI	eP		34.5	d	
Feb. 8	MHC	e(P)		23 46 54.4	(c)	
	JAS	e(P)		54.7	c	
Feb. 9	BKS	eP	EZ	01 02 10	c	USCGS: 14°.3 N, 93°.0 W, 0 = 00 55 19.8.
		ePP		03 36	d	Near coast of Chiapas, Mexico.
		eS	NE	07 50	SW	h about 53 km.
		eL_q	NE	12.0		
		eR		15.4		Magnitude 5.1 - 5.5 (BKS).
				mu sec		
		PZ		1.14 8		
		PPZ		1.28 8		

Date	Sta.	Phase Component		Time (GCT) h m s	Ground Motion	Remarks
1966						
Feb. 9	MHC	e(P)		01 02 07.3	d	
(Cont.)	JAS	e(P)		08.0	d	
	MIN	eP		27.1	c	
	PRI	e(P)		01 55 .	(c)	
Feb. 9	BKS	eP'		04 59 26.2	d	USCGS: 56°.7 S, 25°.7 W, 0 = 04 40 28.4.
		e(PP)		05 01 03	d	South Sandwich Islands region.
		e	NZ	09 04	(Sc)	h about 27 km.
		e(PS)	NEZ	12 30		
		e(SS)	NE	19 12		Magnitude 6 1/4 - 6 1/2 (PAL).
		eG	NE	32 12		
		eR		40.0		
				mu sec		
		P'Z		0.07 0.8		
		MaxH		8.1 22		
	MHC	eP'		04 59 22	(c)	
	JAS	eP'		21.5	c	
	MIN	eP'		28.7	c	
		i		44.0	d	
	PRI	eP'		19.5	c	
Feb. 9	MHC	eP'		07 37 40	(d)	USCGS: 9°.9 S, 116°.3 E, 0 = 07 18 47.8
	JAS	eP'		41.2	d	Java region. h about 32 km.
	MIN	iP'		38.8	d	
		i		56.2	c	
	PRI	eP'		42.9	(d)	
Feb. 9	BKS	e(P)		11 05 53	c	USCGS: 56.6°S, 25°.3 W, 0 = 10 46 56.3.
	MHC	e(P)		51.8	d	South Sandwich Islands region.
	JAS	e(P)		51.0	d	h = 33 km, restrained
		e		06 09.3	c	
	MIN	eP		05 55.5	c	
		i		06 37.6	c	
	PRI	e(P)		05 50.0	(d)	
Feb. 9	BKS	eP		14 09 36	(c)	USCGS: 35°.3 S, 106°.0 W, 0 = 13 57 48.7.
	MHC	e(P)		33	(c)	Easter Island Cordillera.
	JAS	eP		23.7	c	h = 33 km, restrained.
	MIN	iP		52.7	c	
	PRI	eP		18.4	d	
Feb. 9	BKS	iP		14 55 37.2	d	USCGS: 37°.2 N, 134°.9 E, 0 = 14 44 23.2.
	MHC	e(P)		43.0	c	Honshu, Japan. h about 357 km.
	JAS	eP		43.9	c	
	MIN	eP		31.4	c	
	PRI	eP		49.6	c	
Feb. 9	BKS	eP		15 24 31.7	c	USCGS: 15°.2 S, 75°.2 W, 0 = 15 13 30.1.
		eR	NEZ	47.3		Near coast of Peru. h about 54 km.
				mu sec		
		PZ		0.065 1.0		Magnitude 5 1/2 - 5 3/4 (PAL).
	MHC	eP		15 24 28.0	c	
	JAS	eP		25.3	c	
		e		44.2	d	

Date	Sta.	Phase Component		Time (GCT) h m s	Ground Motion	Remarks
1966						
Feb. 9	MIN	iP		15 24 39.1	d	
(Cont.)		i		50.7	c	
	PRI	eP		18.8	c	
		e		37.7		
Feb. 9	BKS	eP		20 15 50.5	c	USCGS: 56°6 S, 25°5 W, 0 = 19 56 51.9
		e		16 00.1	d	South Sandwich Islands.
		e		09.5	d	h = 33 km, restrained.
	MHC	e(P)		15 52.0	c	
	JAS	e(P)		45.0	(c)	
	MIN	iP		53.2	d	
Feb. 10	MHC	e(P)		01 37 02.5	d	USCGS: 29°9 S, 178°5 W, 0 = 01 24 15.
	JAS	e(P)		04.0	d	Kermadec Islands region.
	MIN	eP		11.4	d	h = 33 km, restrained.
Feb. 10	BKS	iP		05 41 11.0	c	USCGS: 31°1 N, 141°6 E, 0 = 05 29 13.3.
		e(S)	NE	50 42	NE	South of Honshu, Japan.
		e(R)	EZ	06 03.8		h = 33 km, restrained.
	JAS	eP		41 05.0	d	
		e		31.5	d	
	MIN	eP		40 54.9	d	
	PRI	eP		41 04.4	(d)	
Feb. 10	BKS	eP		14 33 10.5	d	USCGS: 20°8 N, 146°3 E, 0 = 14 21 10.9.
		e		24.0	d	Mariana Islands region.
		ePP		36 24.0	d	h about 43 km.
		eS	N	43 06	S	
		ePPS	NE	56	NE	Magnitude 6.5 (BKS)
		eSS	NE	47 24	NE	6 1/2 (PAS)
		eSSS		51 20		6 1/4 - 6 1/2 (PAL)
		eG		53.0		
		eR		56.0		
				mu sec		
		PZ		0.23 0.8		
		SH		6.6 13		
		MaxH		27.1 22		
	MHC	eP		14 33 14.1	d	
		e		24.0	c	
	JAS	eP		17.6	d	
		e		27.2	c	
	MIN	eP		08.6	c	
		i		24.1	d	
		i		45.7	c	
	PRI	eP		20.5	d	
		e		30.9	c	
Feb. 10	JAS	e(P)		20 23 42.7	c	USCGS: 47°2 N, 150°8 E, 0 = 20 13 33.0
						Kurile Islands region.
						h about 162 km.
Feb. 12	BKS	eP		11 50 45.5	d	USCGS: 18°3 S, 174°8 W, 0 = 11 39 25.5
		epP		54.7	d	Tonga Islands region.
	MHC	e(P)		45.0		h about 190 km.
	JAS	eP		51.9	d	

Date	Sta.	Phase Component	Time (GCT) h m s	Ground Motion	Remarks
1966					
Feb. 12	JAS	epP	11 51 02.0		
(Cont.)	MIN	eP	50 55.9	d	
	PRI	e(P)	46.5		
Feb. 13	BKS	e(P)	05 11 05.5	c	USCGS: 49°8 N, 78°1 E, 0 = 04 57 57.7.
	MHC	eP	08.3	c	Eastern Kazakh SSR.
		e	34.0	d	
	JAS	eP	06.2	c	
		e	33.7	d	Magnitude 5 1/2 - 5 3/4 (BKS).
	MIN	iP	10 53.9	c	
		i	11 04.7	d	Russian Nuclear test.
	PRI	eP	06.2	c	
		e	33.7	d	
Feb. 13	MHC	e(P)	06 16 56.9	(d)	USCGS: 14°1 N, 61°4 W, 0 = 06 07 24.1.
	JAS	eP	53.5	d	Windward Islands. h about 192 km.
		e	17 37.5	d	
	MIN	eP	02.8	c	
	PRI	e(P)	16 53.4	(d)	
Feb. 13	MHC	e(P)	10 06 55	(d)	USCGS: 10°5 N, 104°2 W, 0 = 10 00 45.3.
	JAS	eP	07 05.5	c	Off coast of Mexico. h = 33 km,
		e	12.5	c	restrained.
	MIN	eP	28.4	d	
	PRI	e(P)	06 54.3	c	
Feb. 13	BKS	e(P)	11 08 52	d	
		eS	18 14		
		e E	21 36	(E)	
		e	24 48	c	
		e NE	26 12		
		e(R)	34.8		
Feb. 14	MHC	eP	08 44 46.5	c	USCGS: 22°3 S, 171°3 E, 0 = 08 32 12.2.
	JAS	eP	51.5	c	Loyalty Islands region.
	MIN	iP	53.6	d	h about 98 km.
	PRI	eP	47.0	c	
Feb. 14	JAS	eP	17 18 50.5	c	
		e	19 28.5	d	
	PRI	eP	18 42.5	c	
Feb. 15	BKS	eP	10 08 28.7	(c)	USCGS: 22°7 S, 176°2 W, 0 = 09 56 29.8.
		e(S) NE	18.6		South of Fiji Islands.
		e(L) NE	28.2		h = 33 km, restrained.
		e(R)	32.4		
	MHC	eP	08 28.3	(c)	
	JAS	eP	38.3	c	
	MIN	e	42.4	c	
		i	51.9	c	
	PRI	eP	29.0	(c)	
Feb. 15	MHC	eP	22 26 18.8	(c)	USCGS: 26°6 S, 178°3 E, 0 = 22 14 43.2.
	JAS	eP	23.6	c	South of Fiji Islands.
	MIN	eP	27.9	d	h about 595 km.
	PRI	e(P)	16.7	(c)	

Date	Sta.	Phase Component		Time (GCT) h m s	Ground Motion	Remarks
1966						
Feb. 15	JAS	e(P)		22 45 46.2	c	USCGS: 26°5 S, 178°2 E, 0 = 22 34 05.4.
	MIN	iP		51.2	d	South of Fiji Islands.
						h about 593 km.
Feb. 16	BKS	eP		03 31 04.4	c	USCGS: 17°7 S, 167°9 E, 0 = 03 18 27.2.
		e		33 18.0	d	New Hebrides Islands.
		ePP		34 10.0	d	h about 31 km.
		e		37 12.0	c	
		eS	NE	41 22.0	SW	Magnitude 6.5 (BKS).
		ePS		42 25		
		eSS		46 25		Felt at Luganville, Norsup and
		eSSS		50 52	d	Port Vila.
		eG	NE	53.3		
		eR		57.2		
				mu sec		
		PZ		0.16 1.2		
		SH		8.6 20		
		MaxH		28.8 22		
	MHC	eP		03 31 05.5	c	
		epP		15.8		
	JAS	eP		10.6	c	
		epP		20.9	c	
		eP'P'		57 03.5	(d)	
	MIN	eP		31 11.2	c	
		i		47.1	c	
		eP'P'		57 08.3	c	
	PRI	eP		31 06.7	c	
		e		18.5	d	
Feb. 16	JAS	e(P)		05 34 04.3	c	USCGS: 17°7 S, 167°9 E, 0 = 05 21 19.
		e		15.2	d	New Hebrides Islands.
						h about 16 km.
Feb. 16	BKS	e(P)		07 52 07.0	c	USCGS: 18°7 S, 169°7 E, 0 = 07 40 01.
	MHC	e(P)		08.0	(c)	New Hebrides Islands.
	JAS	eP		13.1	c	h about 284 km.
	MIN	iP		14.7		
Feb. 16	BKS	e(P)		12 05 10.8	c	USCGS: 52°4 N, 169°6 W, 0 = 11 58 14.2.
		e		27.4	c	Fox Islands, Aleutian Islands.
	MHC	e(P)		14.6	d	h about 47 km.
	JAS	e(P)		18.0	d	
		e		38.5	c	
	MIN	eP		08.5	c	
	PRI	e(P)		21.0	c	
Feb. 16	BKS	eP		23 48 35.7	d	USCGS: 18°1 S, 173°8 W, 0 = 23 37 05.
		i		38.9	d	Tonga Islands. h = 33 km, re-
				mu sec		strained.
		PZ		0.047 0.8		
	MHC	eP		23 48 38.9	c	Magnitude 4.2 - 4.6 (BKS).
	JAS	eP		45.0	c	
		e		49 01.5	c	

Date	Sta.	Phase Component		Time (GCT) h m s	Ground Motion	Remarks
1966						
Feb. 16	MIN	iP		23 48 49.0	c	
(Cont.)	PRI	eP		38.3	c	
		e		54.0	c	
Feb. 17	MIN	eP		00 50 13.5	c	USCGS: 24°5 N, 108°9 W, 0 = 00 45 50.
						Gulf of California.
						h = 33 km, restrained.
Feb. 17	JAS	iP		02 21 03.2	d	USCGS: 19°4 S, 177°0 W, 0 = 02 09 40.
	MIN	eP		07.1	c	Fiji Islands region. h about 338 km.
Feb. 17	BKS	eP'		12 08 01.8	c	USCGS: 32°2 S, 78°9 E, 0 = 11 48 00.8.
		e		08 09.5	c	Mid-Indian Rise. h = 33 km, re-
		esP'	EZ	46.5	Ec	strained.
		ePP	EZ	11 33.0	Ed	
		e(sPP)		12 25.5	(d)	Magnitude 6.2 - 6.6 (BKS),
		eSKKS		17 56	c	6 1/4 (PAS),
		e(SS)		20 12	d	6 1/2 (PAL).
		e(SSS)	NE	32 46	SE	
		e(P'P'P')	NE	46.0		
		eG	NE	59.1		
				mu sec		
		MaxH		10.9 24		
	MHC	eP'		12 08 02.5	c	
		esP'		49.0	d	
		e(sPP)		12 27	c	
	JAS	eP'		08 02.0	c	
		esP'		52.0	d	
		e(sPP)		12 34.0	c	
	MIN	iP'		08 00.7	c	
		isP'		45.1	c	
		i(sPP)		12 26.1	d	
	PRI	eP'		08 02.4	d	
		esP'		53.5	d	
		e(sPP)		12 40.8	c	
Feb. 17	BKS	eP'		13 02 52		USCGS: 32°2 S, 79°0 E, 0 = 12 43 01.1.
		e		03 37		Amsterdam-Naturaliste Ridge.
		e		46.5		h = 33 km, restrained.
	MHC	e(P')		02.0	c	
		e(pP')		48.1	c	
	JAS	eP'		02.5	c	
		e(pP')		51.8	c	
		e(PP)		07 32.2	d	
	MIN	eP'		03 00.2	c	
		epP'		45.3	c	
	PRI	eP'		03.6	c	
		epP'		53.0		
Feb. 17	BKS	e(P)		15 08 47	d	USCGS: 1°1 N, 90°7 W, 0 = 15 00 17.
	MHC	e(P)		45.1	d	Galapagos Islands region.
	JAS	e(P)		41.7	c	h = 33 km, restrained.
Feb. 18	JAS	e(P)		00 39 27.8	c	USCGS: 36°7 N, 140°4 E, 0 = 00 27 53.6.
	PRI	e(P)		34.8	(c)	Near east coast of Honshu, Japan.
						h about 65 km. Felt at Tokyo.

Date	Sta.	Phase Component		Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Feb. 18	BKS	eP		07	17	27	c	USCGS: 6°9 N, 124°0 E, 0 = 06 59 05.0.
		e(PP)			20	45	(d)	Mindanao, Philippine Islands.
		e(SS)	E		31	54		h about 57 km.
		e	E		39	.0		
		e(L)	E		44	.3		
		e(R)	NZ		47	.3		
Feb. 18	MHC	e(P)		12	18	28.5	c	
	JAS	eP				23.7	c	
		e				32.4		
	MIN	eP				31.6	c	
	PRI	e(P)				24.7	(c)	
Feb. 18	BKS	eP'		12	54	04.2	d	USCGS: 52°8 S, 19°7 E, 0 = 12 34 16.4.
		e				10.7	c	Southwest of Africa.
	MHC	e(P')				02.8	d	h = 33 km, restrained.
	JAS	eP'			53	57.8	d	
		e			54	08.5	d	
	MIN	eP'				00.6	c	
		i				06.0	d	
	PRI	e(P')			53	57.0	c	
Feb. 18	BKS	eP		19	13	26.5	d	USCGS: 44°3 N, 143°1 E, 0 = 19 02 51.5.
		epP			14	17.2	c	Hokkaido, Japan. h about 225 km.
	MHC	eP			13	30.4	c	
		epP			14	23.4	c	
	JAS	eP			13	33.0	c	
		epP			14	25.5	c	
	MIN	iP			13	18.9	c	
		e				37.5	c	
		i			14	11.8	d	
	PRI	eP			13	39.4	c	
		epP			14	32.1		
Feb. 18	MHC	e(P)		19	48	50.2	(c)	
	JAS	eP				45.9	c	
	MIN	iP				48.3	d	
	PRI	eP				51.2	(c)	
Feb. 19	JAS	eP		22	59	37.0	c	USCGS: 43°9 N, 147°0 E, 0 = 22 48 55.0.
								Kurile Islands. h about 98 km.
Feb. 20	JAS	eP		02	14	43.2	c	USCGS: 60°8 N, 152°2 W, 0 = 02 08 40.
	PRI	e(P)				48	(c)	Southern Alaska. h about 105 km.
Feb. 20	JAS	eP		06	07	39.0	d	USCGS: 53°1 N, 159°8 E, 0 = 05 58 09.6.
		e				50.8	c	Near east coast of Kamchatka.
								h about 44 km.
Feb. 20	MHC	eP		06	22	48.3	c	USCGS: 17°9 S, 178°5 W, 0 = 06 11 54.4.
	JAS	eP				53.8	c	Fiji Islands region.
	MIN	eP				57.6	c	h about 583 km.
	PRI	eP				48.2	(c)	
Feb. 20	JAS	eP		19	05	40.5	d	USCGS: 16°9 N, 99°9 W, 0 = 18 59 57.
		e				52		Near coast of Guerrero, Mexico.
	PRI	eP				34.8	d	h = 33 km, restrained.
		e				45.7	c	

Date	Sta.	Phase Component		Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Feb. 20	BKS	e(P)		20	06	31.8	c	USCGS: 22°3 N, 143°0 E, 0 = 19 54 51.
	JAS	e(P)				38.7	d	Volcano Islands region.
	MIN	iP				29.5	c	h about 283 km.
	PRI	eP				43.0	(c)	
Feb. 20	BKS	eP		20	15	55.8	d	USCGS: 25°9 S, 178°8 W, 0 = 20 04 09.4.
	MHC	eP				55.6	c	South of Fiji Islands.
	JAS	eP			16	00.7	c	h about 353 km.
	MIN	iP			15	55.1	d	
	PRI	eP				55.0	c	
Feb. 21	BKS	eP'		00	41	24.5	d	USCGS: 55°6 S, 26°9 W, 0 = 00 22 29.7.
		epP'				37.4	c	South Sandwich Islands region.
	MHC	e(P')				21.0	c	h = 33 km, restrained.
		epP'				34.7	d	
	JAS	eP'				21.7	c	Magnitude 5 3/4 - 6 (PAL).
		epP'				33.9	d	
		ePP			42	57.0	d	
	MIN	iP'			41	28.4	c	
		ipP'				38.3	c	
	PRI	eP'				22.5	c	
		e				34.0	c	
Feb. 21	BKS	eP'		00	47	25.9	d	USCGS: 55°7 S, 26°7 W, 0 = 00 28 27.
		esP'	NE		48	12	(SW)	South Sandwich Islands region.
		e(PP)	NEZ		52	28	NEc	h about 9 km.
		e(S)	NEZ		59	34	(SW)d	
		e(PSPS)	NZ	01	08		Sd	
		e(L)	NE		13	.9		
		eR			21	.5		
				mu		sec		
		MaxH		2	.4	20		
	MHC	eP'		00	47	25.2	c	
	JAS	eP'				23.1	d	
		e				41.5	d	
	MIN	eP'				28.9	d	
	PRI	eP'				13.8	d	
		e				33.2		
Feb. 21	BKS	eP		13	31	36.7	c	USCGS: 26°3 N, 125°7 E, 0 = 13 18 47.0.
	MHC	eP				40.0	d	Northeast of Taiwan. h about 103 km.
	JAS	eP				41.5	d	
		e				53.4	c	
		e			35	15.3		
	MIN	eP			31	30.9	d	
	PRI	eP				46.2	d	
		e				54.0	c	
Feb. 21	JAS	eP		14	23	42.0	c	USCGS: 55°6 N, 162°9 E, 0 = 14 14 29.6
		e				59.8	d	Near east coast of Kamchatka.
								h = 33 km, restrained.
Feb. 21	JAS	eP		17	29	58.0	c	

Date	Sta.	Phase Component		Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Feb. 22	BKS	eP		05	15	37.5	c	USCGS: 5°.4 S, 151°.5 E, 0 = 05 02 37.2.
		i(PcP)	NZ			40.9	Nd	New Britain region. h about 28 km.
		e(SP)			16	58	d	
		e(PP)			19	00	c	Magnitude 6.6 - 6.8 (BKS),
		e	E		25	14	E	6 3/4 (PAS),
		eSKS	NE		26	04	NE	6 3/4 - 7 (PAL).
		eSS	NEZ		32	21	SEd	
		eSS	NEZ		35	56		
		eG	NE		39.3			
		eR	EZ		43.0			
				mu		sec		
		PZ		0.09		0.9		
		PPZ		3.95		26		
		MaxH		42.6		28		
	MHC	eP		05	15	39.3	c	
		e				49.6	d	
	JAS	eP				43.7	c	
		ePcP				52.9	d	
		ePP			19	24.3	c	
		eSKS			26	20.0	d	
	MIN	iP			15	40.3	c	
		i				43.8	c	
		e(PP)			19	23.8	d	
	PRI	eP			15	43.1	c	
		e				52.8	d	
Feb. 22	BKS	e(P)		05	41	16.7	(c)	
	JAS	eP				11.2	c	
		e				31.3	c	
		e			42	12.7		
	PRI	e(P)			41	13.7	(c)	
Feb. 22	MHC	eP		06	10	21.1	d	USCGS: 5°.5 S, 151°.8 E, 0 = 05 57 10.1.
	JAS	eP				14.3	d	New Britain region. h about 55 km.
		e				25.5	d	
	PRI	e(P)				14.6	c	
Feb. 22	BKS	eP		18	31	34.5	(d)	USCGS: 5°.6 S, 151°.5 E, 0 = 18 18 36.4.
		eR		19	00	08		New Britain region. h about 58 km.
	MHC	eP		18	31	37.0	c	
	JAS	eP				41.3	d	
		e				56.6	d	
	PRI	eP				40.5	d	
Feb. 23	JAS	i(P)		13	05	27.1	d	
Feb. 24	JAS	iP		19	59	07.2	d	USCGS: 60°.1 N, 147°.7 W, 0 = 19 53 15.4
		i				11.8	c	Southern Alaska. h about 25 km.
	MIN	iP			58	44.7	c	
		i				51.0	c	
Feb. 25	BKS	e(P)		02	57	19	d	USCGS: 37°2 S, 95°3 W, 0 = 02 45 11.
	JAS	eP				10.7	c	Southern Pacific Ocean.
	MIN	eP				24.0	d	h = 33 km, restrained.
	PRI	eP				02.2	d	

Date	Sta.	Phase Component		Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Feb. 25	BKS	iP		23	02	11.8	d	USCGS: 15°.1 S, 173°.2 W, 0 = 22 50 47.1.
		ipP				26.0	d	Tonga Islands. h = 33 km, restrained.
		e(PcP)	N		03	18.0	S	
		eS	NEZ		11	26.0	NWd	Magnitude 5.6 - 5.8 (BKS).
		e	NEZ		12.0		SWc	
		eG	NEZ		20.1			
		eR	NEZ		23.0			
				mu		sec		
		PZ		0.06		1.2		
		SH		3.1		12		
		MaxH		8.1		24		
	MHC	e(P)		23	02	09.5	c	
	JAS	e(P)				18.5	d	
	MIN	i(P)				23.2	c	
		i				41.8	d	
	PRI	e(P)				09.2	c	
Feb. 26	BKS	e	NE	00		51.5		USCGS: 6°.3 N, 77°.5 W, 0 = 00 30 44.
		eR	EZ			55.0		Near west coast of Colombia.
				mu		sec		h about 35 km.
		MaxH		2.6		22		
	MHC	e(P)		00	42	27.1	d	
	JAS	e(P)				27.4	d	
	MIN	eP				04.6	d	
		i				21.9	c	
		e			43	54.1	c	
	PRI	e(P)			42	39.0	c	
Feb. 26	JAS	iP		11	33	09.4	d	USCGS: 15°.4 S, 173°.4 W, 0 = 11 21 57.
		i				29.9	d	Tonga Islands. h about 127 km.
		i				45.7	c	
	MIN	eP				16.5	d	
Feb. 27	JAS	iP		03	07	55.1	d	
Feb. 27	BKS	e(P)		16	38	42.0	c	USCGS: 30°.7 S, 179°.5 E, 0 = 16 26 37.5.
		eL	NE		49.5			Kermadec Islands. h about 502 km.
		e(R)	EZ		51.2			
	MHC	e(P)			38	38.3	(d)	
	JAS	iP				42.0	d	
		i				50.7	c	
		i			39	49.5	c	
		i(S)	E		44	29.5		
	MIN	eP			38	25.2	d	
		i				34.2	c	
		i				50.1	d	
	PRI	e(P)				48.0	(c)	
Feb. 27	BKS	eP		20	50	39.5	d	USCGS: 18°.8 N, 102°.6 W, 0 = 20 44 59.0.
	MHC	eP				14.5	d	Michoacan, Mexico. h about 94 km.
		e				28.2	c	
	JAS	iP				11.6	d	
		i				25.9	d	
	MIN	eP				34.0	c	

Date	Sta.	Phase Component		Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Feb. 27	MIN	e		20	51	11.8	c	
(Cont.)	PRI	eP			50	01.5	d	
		epP				20.3	d	
		e				33.5	c	
Feb. 27	JAS	iP		20	53	48.0	c	
		i			54	02.4	d	
Feb. 28	BKS	eP	EZ	02	13	03.5	Ec	USCGS: 43°7 N, 139°6 E, 0 = 02 02 13.6.
		epP				13.4	c	Eastern Sea of Japan.
	MHC	eP				07.8	c	h = 225 km, restrained.
		e				18.0	c	
	JAS	iP				09.8	c	
		ipP				18.4	d	
		i			14	02.1	c	
	MIN	iP			12	56.1	c	
		ipP			13	08.3	d	
	PRI	eP				16.4	c	
		e				23.5	c	
Feb. 28	BKS	eP		13	48	13.8	c	USCGS: 29°2 N, 130°1 E, 0 = 13 35 39.0.
		e				25.8	d	Ryokyn Island. h = 33 km, re-
	MHC	eP				16.6	d	strained.
	JAS	eP				18.6	(c)	
	MIN	eP				08.2	d	
	PRI	eP				23.5	d	
Feb. 28	BKS	eP		21	50	57.2	d	USCGS: 26°0 S, 70°4 W, 0 = 21 38 52.4.
		e			51	06.0	d	Near coast of Northern Chile.
		e				45.0	d	h = 67 km, restrained.
	MHC	eP			50	53.7	d	Felt at Copiapo.
		e			51	11.1	c	
	JAS	iP			50	51.4	d	Magnitude 4 3/4 - 5 (PAL).
		i				56.2	c	
		ipP			51	09.4	c	
		i				17.4	d	
	MIN	iP				03.1	d	
		i				29.1	d	
	PRI	eP			50	45.9	d	
		e			51	03.2	c	
Mar. 1	JAS	iP		12	33	40.7	d	USCGS: 23°3 S, 68°1 W, 0 = 12 21 51.4.
		i			34	35.7	c	Northern Chile. h about 120 km.
Mar. 1	BKS	eP'		23	27	33.0	c	USCGS: 56°9 S, 26°8 W, 0 = 23 08 39.8.
				mu		sec		South Sandwich Islands region.
		PZ		0.075		0.8		h = 33 km, restrained.
	MHC	eP'		23	27	32.3	c	
	JAS	eP'				31.8	c	
	MIN	iP'				35.8	d	
	PRI	eP'				29.6	(c)	
Mar. 2	JAS	iP		02	50	41.9	c	USCGS: 43°0 N, 45°8 E, 0 = 02 37 02.3.
	MIN	iP				30.1	d	Eastern Caucasus mountains.
								h about 24 km. Slight damage at
								Grozny.

Date	Sta.	Phase Component		Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Mar. 2	JAS	iP		11	59	59.8	c	USCGS: 52°4 N, 172°3 E, 0 = 11 51 20.7.
	MIN	eZ				51.6	c	Near Islands, Aleutian Islands.
								h about 40 km.
Mar. 3	BKS	eP		03	35	25.0	c	USCGS: 48°3 N, 154°3 E, 0 = 03 25 28.0.
		epP				37.3	c	Kurile Islands. h = 45 km, restrained.
		ePcP			36	03.2	d	
		e(G)	NEZ		50	.0		
		e(R)			52	.5		
				mu		sec		
		PZ		0.07		1.0		
	MHC	eP		03	35	30.0	c	
		epP				42.5	c	
	JAS	eP				32.6	d	
		epP				43.7	c	
	MIN	iP				16.8	c	
		ipP				28.5	c	
		i				35.3	c	
	PRI	eP				40.4	d	
		epP				52.5	c	
Mar. 3	MIN	eP		10	23	15.4	d	
Mar. 3	BKS	e(R)		10	49	.8		USCGS: 20°0 N, 45°7 W, 0 = 10 17 50.6.
	MIN	eP			28	41.4	c	North Atlantic Ridge.
								h = 33 km, restrained.
Mar. 4	JAS	iP		03	59	32.2	c	USCGS: 25°2 S, 178°9 W, 0 = 03 47 44.6.
	MIN	eP				36.4	d	South of Fiji Islands.
								h about 370 km.
Mar. 4	JAS	iP		14	25	27.9	c	USCGS: 57°0 N, 153°4 W, 0 = 14 19 31.
		i				35.4	d	Kodiak Island region.
	PRI	eP			26	38.0	d	h = 33 km, restrained.
Mar. 5	BKS	e(S)	NE	00	23	31	NW	USCGS: 38°8 S, 177°9 E, 0 = Mar. 4,
		eL	NE		36	.5		23 58 55.9. North Island, New Zealand.
		eR	EZ		42	.5		h about 27 km.
				mu		sec		Slight damage at Gisborne.
		MaxH		3.2		18		
	MHC	eP		00	12	14.0	d	
		e				24.3	d	
	JAS	eP				18.5	d	
	PRI	eP				11.8	d	
		e				20.8	c	
Mar. 5	JAS	iP		15	57	20.7	d	USCGS: 17°6 S, 176°2 E, 0 = 15 45 05.
								Fiji Islands region.
								h = 33 km, restrained.
Mar. 5	BKS	eP		23	01	28.5	c	USCGS: 21°5 S, 175°3 W, 0 = 22 49 34.9.
		epP				37.5	d	Tonga Islands. h about 40 km.
		esP			02	11.5	c	
		e(L)	NE		21	.3	(NW)	
		e(R)	NEZ		25	.0		
	MHC	eP		23	01	28.2	(c)	
		epP				41.2	d	

Date	Sta.	Phase Component		Time (GCT) h m s	Ground Motion	Remarks
1966						
Mar. 5 (Cont.)	JAS	iP		23 01 32.9	c	
		ipP		46.5	c	
	MIN	eP		38.6	d	
		i		48.4	c	
	PRI	eP		27.8	d	
		epP		40.3	d	
Mar. 6	BKS	ePP		02 34 41	d	USCGS: 31°6 N, 80°5 E, 0 = 02 15 56.7.
		eSKS	NE	40 55	(SE)	Tibet. h about 44 km.
		ePPS		45 32	(d)	
		eSS	EZ	49.5		Magnitude 6.5 - 7 (BKS),
		e(SSS)	NEZ	53.6	(SEc)	6 1/2 (PAS),
		eL		03 01.0		6 1/2 - 6 3/4 (PAL).
		e(R)		05.9		
				mu sec		
		PPZ		1.9 6		
		MaxH		12.5 23		
	MHC	e(P')		34 24	(d)	
		e		50.5	c	
		ePPS		45 31.5	(d)	
	JAS	i(P)		02 29 47.4	c	
		iP'		32 59.7	d	
		iPP		34 21.8	d	
		iPPP		36 44.9	c	
		ePPS		45 29.2	d	
		i	E	40.4		
		i	E	53.6		
	MIN	eP		30 10.2	d	
		e		34 05.5	c	
		ePP		29.1	c	
	PRI	e(P')		29.8	(c)	
		e		47.3	d	
		ePPS		45 31.9	(d)	
Mar. 6	BKS	eP		18 14 00.5	d	USCGS: 24°1 S, 176°9 W, 0 = 18 01 50.0.
		e(PcP)		06.0	c	South Fiji Islands.
		eS	NE	24 09.0	SE	h = 33 km, restrained.
		ePPS		25 00	d	
		eG	NE	34.7		
		eR		38.2		
				mu sec		
		MaxH		3.1 28		
	MHC	eP		18 14 00.8	c	
		e		06.6	c	
	JAS	iP		05.2	c	
		iPcP		11.4	d	
		iPP		17 19.4	d	
	MIN	eP		14 09.6	d	
		iPcP		16.6	d	
Mar. 7	JAS	iP		02 46 35.9	d	USCGS: 20°5 S, 178°4 W, 0 = 02 35 28.
		i		56.0	c	Fiji Islands region.
	MIN	eP		42.5	c	h about 601 km.

Date	Sta.	Phase Component		Time (GCT) h m s	Ground Motion	Remarks
1966						
Mar. 7	BKS	eL	NE	09 27.3		USCGS: 14°5 N, 93°2 W, 0 = 09 10 54.5.
		eR		31.1		Near coast of Chiapas, Mexico.
				mu sec		h about 22 km.
		MaxH		3.3 20		
	MHC	e(P)		09 17 39.5	c	
	JAS	iP		35.3	c	
		i		44.8	c	
		i		20 14.8	c	
	MIN	eP		17 54.2	c	
		e		18 02.2	c	
	PRI	eP		17 25.7	c	
Mar. 7	BKS	e(P)		18 12 39.0	(d)	USCGS: 46°1 N, 111°4 W, 0 = 18 09 43.6.
		e		14 06.0	d	Montana. h = 33 km, restrained.
		e(S)	NEZ	15 41.5		Felt widely in SW Montana.
				mu sec		
		SH		1.1 3.0		Magnitude 6.4 - 6.6 (BKS).
	MHC	eP		18 12 34.8	c	
		e(S)		15 54.0		
	JAS	eP		18 12 28.3	(c)	
		e		14 12.5	(d)	
		eS		15 12.0	(c)	
	MIN	iP		12 01.3	d	
		i		37.1	c	
		e(S)		14 50.3		
	PRI	eP		12 37.0	c	
		e(S)		16 04	(d)	
Mar. 7	JAS	iP		20 27 12.2	c	USCGS: 56°8 N, 151°3 W, 0 = 20 21 33.
						Kodiak Island region.
						h = 33 km, restrained.
Mar. 7	BKS	eP	EZ	21 42 05.0	Ec	USCGS: 37°2 N, 114°8 E, 0 = 21 29 17.0.
		e		10.0	c	Northeastern China. h = 33 km, re-
		e(PcP)		14.8	c	strained. Moderate to heavy damage
		epP		25.0	d	and injuries in Hopeh Province.
		e		56.0	d	Felt widely.
		eSKS	NE	52 20	E	
		eS		57	d	Magnitude 6.3 - 6.5 (BKS),
		e	N	55 42	S	6 3/4 (PAS),
		e		56	d	7 - 7 1/4 (PAL).
		eSS	NE	58 52	SW	
		eG	NE	22 07.2		
		eR		11.0		
				mu sec		
		PZ		1.27 5		
		SH		7.8 21		
		MaxH		16.5 26		
	MHC	eP		21 42 12.2	c	
	JAS	iP		21 42 13.0	d	
		i		19.9	d	
		i		47.5	d	

Date	Sta.	Phase	Component	Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Mar. 7 (Cont.)	JAS	i		21	46	13.8	d	
		iSKS	E		52	54.2		
		iS	E		53	41.2		
	MIN	eP			42	02.5	c	
		i				23.4	d	
		i			43	13.9	c	
	PRI	eP			42	20.8	c	
		e				34.2	c	
Mar. 8	BKS	eP		00	29	45.8	c	USCGS: 18°9 S, 173°3 W, 0 = 00 18 09.8.
		e(pP)			30	10.7	d	Tonga Islands. h = 33 km, re-
		eS	NE		39	15	(SE)	strained.
		eG	NE		48.6			
		eR	NEZ		51.2			
	MHC	eP			29	45.3	(c)	
	JAS	iP			29	50.1	d	
		i			30	01.3	d	
		i			31	32.2	c	
	MIN	iP			29	57.0	c	
	PRI	eP				44.8	c	
Mar. 8	BKS	eP		01	26	13	d	USCGS: 13°9 S, 166°6 E, 0 = 01 13 42.3.
		epP				35.5	d	New Hebrides Islands.
		eS	NE		36	34.0	NE	h about 37 km.
		e(SS)	EZ		41	06	c	
		eSSS			45	30	d	Magnitude 5.9 - 6.3 (BKS).
		eG	NE		48.2			
		eR			51.7			
				mu		sec		
		SH		2.7		22		
		MaxH		27.2		24		
	MHC	eP		01	26	17.1	d	
	JAS	iP			26	18.2	d	
		ipP				40.2	c	
	MIN	eP				19.7	c	
		ipP				32.8	d	
	PRI	eP				17.2	d	
Mar. 8	MHC	eP		02	45	11.5	c	USCGS: 31°3 S, 68°6 W, 0 = 02 32 52.7.
	JAS	iP				14.4	d	San Juan Province, Argentina.
	PRI	eP				06.5	d	h about 102 km.
Mar. 8	BKS	e(P)		05	55	17.5	(d)	USCGS: 1°9 N, 126°4 E, 0 = 05 41 04.5.
		e(PP)			59	34.5	(c)	Molucca Passage. h = 33 km, re-
		eSKS	NE	06	01	00	(N)E	strained.
		eSS	E		14.0			
		eLq	N		23.6			Magnitude 4.7 - 5.2 (BKS).
		eR	EZ		28.3			
				mu		sec		
		PPZ		0.71		12		
		MaxH		5.8		26		
	MHC	ePP		05	59	39	c	
	JAS	iP			55	25.7	d	

Date	Sta.	Phase	Component	Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Mar. 8 (Cont.)	JAS	iPP		05	59	46.9	d	
		i(sPP)		06	00	51.3	c	
	MIN	eP		05	55	23.8	c	
		e(PP)			59	50.8	d	
Mar. 8	JAS	i(P)		06	10	51.7	d	
		i			11	03.0	d	
		i			14	57.8	c	
Mar. 8	JAS	i(P)		06	30	04.3	c	
Mar. 8	MIN	e(P)		19	46	29.1	c	
Mar. 8	BKS	iP		20	57	51.4	d	USCGS: 20°0 S, 68°9 W, 0 = 20 46 12.0.
		e				57.8	c	Chile-Bolivia border region.
		epP			58	31.1	c	h about 122 km.
				mu		sec		Felt Copiapo and Iquique
		PZ		0.15		1.2		
	MHC	eP		20	57	47.8	d	Magnitude 5.2 - 5.5 (BKS).
		e			58	16.0	c	
		epP				27.6	c	
	JAS	iP	NEZ		57	44.9	SEd	
		ipP			58	24.2	c	
		iS	E	21	07	18.0		
		iPS	E		08	18.8		
	MIN	eP		20	57	58		
		i			58	31.9	c	
	PRI	eP			57	49.4	d	
		e			58	07.3	d	
		epP				21.2	c	
Mar. 8	JAS	iP		23	28	58.0	d	USCGS: 21°5 S, 175°2 W, 0 = 23 15 45.
								Tonga Islands. h = 33 km, restrained.
Mar. 9	BKS	eP		14	05	02.0	d	USCGS: 27°6 N, 115°0 W, 0 = 14 02 12.8.
		e(S)	NE		07.4			Baja, California.
		eR			07.9			h = 33 km restrained.
	MHC	eP			04	53.7	d	
	JAS	iP				54.7	c	
		i			05	17.2	c	
		iS	N		07	50.8		
		i			08	02.5		
	MIN	iP			05	30.4	c	
		i				37.0	c	
		i				50.3	c	
	PRI	eP			04	31.8	d	
Mar. 9	JAS	e(P)		14	15	55.4	c	
	MIN	e(P)				43.9	c	
Mar. 9	MHC	e(P)		15	56	21.0	(d)	USCGS: 55°2 S, 126°7 W, 0 = 15 43 11.1.
	JAS	eP				21.2	c	Easter Island Cordillera.
		i				34.8	d	h = 33 km, restrained.
	PRI	eP				15.5	c	
Mar. 9	MHC	eP'		23	32	33.7	c	USCGS: 7°4 S, 108°4 E, 0 = 23 13 52.
	JAS	iP'				41.2	d	Java. h about 148 km.
	PRI	eP'				42.3	d	

Date	Sta.	Phase Component		Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Mar. 10	BKS	iP		04	37	39.5	c	USCGS: 32°2 N, 137°5 E, 0 = 04 26 19.6.
		i				47.0	d	South Honshu, Japan.
				mu		sec		h = 382 km, restrained.
		PZ		0.29		0.8		
	MHC	eP		04	37	42.5	c	Magnitude 5.5 - 5.9 (BKS).
	JAS	iP	EZ			45.4	Ec	
		i			39	14.1	c	Felt in Tokyo.
		iPP			40	49.2	d	
	MIN	iP			37	33.5	c	
		i				43.9	d	
	PRI	eP				50.3	c	
		e				57.1	c	
Mar. 10	BKS	eP		12	26	37.6	d	USCGS: 19°3 S, 177°0 W, 0 = 12 15 19.4.
		epP			27	56.8	d	Fiji Islands region.
	MHC	eP			24	38.2	d	h about 320 km.
	JAS	iP			26	43.8	d	
		ipP				57.6	c	
		i			28	31.0	c	
	MIN	iP			26	47.0	c	
		epP			28	04.6	c	
	PRI	eP			26	38.0	d	
		epP			27	51.0	c	
Mar. 11	BKS	e	NE	01	44.9			USCGS: 15°4 N, 104°5 W, 0 = 01 32 31.
		e			45.7			Off coast of Michoacan, Mexico.
	JAS	iP			38	04.3	d	h about 56 km.
		i				10.3	c	
		i				36.0	d	
	MIN	e(P)				26.3	d	
		e				40.6	d	
Mar. 11	BKS	eP		02	00	11.2	d	USCGS: 19°5 S, 69°2 W, 0 = 01 48 34.8.
		epP				39.8	d	Northern Chile. h about 115 km.
				mu		sec		
		PZ		0.05		0.8		
	MHC	eP		02	00	07.5	d	Magnitude 4.7 - 5.2 (BKS).
		epP				35.6	d	
	JAS	iP				04.9	SEd	
		i				33.0	c	
		i			01	00.4	d	
	MIN	iP			00	17.2	c	
		i				37.2	c	
	PRI	eP		01	59	59.3	d	
		epP		02	00	27.6	d	
Mar. 11	BKS	eP		08	07	19	c	USCGS: 55°2 S, 126°6 W, 0 = 07 54 17.0.
		e			12	45		Easter Island Cordillera.
		e(S)	E		18	31	W	h = 33 km, restrained.
		e(Lq)	E		31.7			
		e(R)	NE		37.0			
	MHC	eP			07	25.8	d	

Date	Sta.	Phase Component		Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Mar. 11	JAS	iP		08	07	27.8	c	
(Cont.)		i				36.0	d	
		e			11	11.7	c	
	PRI	eP			07	20.7	d	
Mar. 11	BKS	eP		09	42	41.0	c	USCGS: 23°7 S, 69°2 W, 0 = 09 30 42.0.
		i			43	04.7	d	Northern Chile. h about 67 km.
		eLq	NE		59.9			Felt at Antofagasta.
		eR		10	02.4			
				mu		sec		
		MaxH		3.2		14		
	MHC	e(P)		09	42	36	c	
	JAS	iP				35.0	d	
		epP				56.2	d	
	MIN	eP				46.9	c	
		e			43	15.9	c	
	PRI	eP			42	16.5	c	
Mar. 11	MHC	eP		09	55	04.4	d	USCGS: 15°3 N, 104°5 W, 0 = 09 49 27.
	JAS	iP	NEZ			05.0	SEd	Off coast of Michoacan, Mexico.
		i				12.8	d	h = 33 km, restrained.
	MIN	eP				28.2	c	
	PRI	eP			54	53.3	d	
Mar. 11	JAS	eP		10	29	59.2	c	USCGS: 21°7 N, 95°4 W, 0 = 10 24 20.
	MIN	eP			30	17.0	c	Gulf of Mexico. h about 46 km.
Mar. 11	JAS	iP		23	23	55.2	c	USCGS: 28°4 N, 43°8 W, 0 = 23 13 27.2.
		i			24	00.4	c	North Atlantic Ridge.
	MIN	iP			23	56.7	d	h = 33 km, restrained.
		i			24	01.9	d	
Mar. 11	BKS	eP		23	26	16.5	c	USCGS: 28°2 N, 43°9 W, 0 = 23 15 42.3.
	MHC	e(P)				18.5	c	North Atlantic Ridge.
	JAS	iP				09.8	d	h = 33 km, restrained.
	MIN	iP				10.9	d	
		i				16.9	d	
Mar. 11	JAS	iP		23	30	17.4	c	USCGS: 28°3 N, 44°0 W, 0 = 23 18 50.0.
		i				22.7	d	North Atlantic Ridge.
	MIN	iP			29	18.7	c	h = 33 km, restrained.
Mar. 11	JAS	iP		23	47	09.2	d	USCGS: 28°5 N, 44°0 W, 0 = 23 36 42.7.
		i				15.0	d	North Atlantic Ridge.
	MIN	iP				10.8	c	h = 33 km, restrained
Mar. 12	BKS	eP		01	18	07.0	d	USCGS: 30°8 S, 178°5 W, 0 = 01 05 34.6.
				mu		sec		Kermadec Islands region.
		PZ		0.065		1.0		h about 94 km.
	MHC	eP		01	18	07.0	d	
	JAS	iP				11.6	d	Magnitude 4.5 - 5.0 (BKS).
		i				32.3	d	
	MIN	eP				16.8	c	
		e				46.9	c	
	PRI	eP				06.0	d	

Date	Sta.	Phase Component		Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Mar. 12	MHC	eP		07	11	03.0	c	USCGS: 31°6 S, 67°1 W, 0 = 06 58 37.5.
		epP				35.5	c	San Juan Province, Argentina.
	JAS	iP				00.5	d	h about 128 km.
		i				07.3	c	
		ipP				33.5	d	
	MIN	eP				11.7	c	
	PRI	eP			10	55.9	c	
		epP			11	28.5	c	
Mar. 12	JAS	iP		14	31	01.9	c	USCGS: 15°0 S, 173°6 W, 0 = 14 19 38.0.
		i				17.7	c	Samoa Islands region.
	MIN	iP				08.3	d	h about 35 km.
Mar. 12	JAS	iP		14	38	24.2	d	USCGS: 15°7 S, 173°0 W, 0 = 14 26 57.6.
		e				45.2	d	Tonga Islands. h = 33 km, re-
	MIN	iP				29.5	d	strained.
Mar. 12	BKS	eP	EZ	16	44	32.0	Ec	USCGS: 24°1 N, 122°6 E, 0 = 16 31 21.8.
		epP	NEZ			43.3	NEc	Taiwan region. h about 63 km.
		ePP			48	01	d	
		e			52	28.8	d	
		eS	NE		55	02.5	NE	Magnitude 7 - 7.5 (BKS).
		ePS				39.5	d	
		eL		17	06.1			Seven killed and several injured.
		e(R)			11.1			Major damage on Taiwan and Okinawa.
				mu		sec		
		PZ		0.63		1.8		
		SH		2.8		4.0		
		PPZ		43		25		
	MHC	eP		16	44	35.5	c	
		e				45.4	d	
	JAS	iP				37.1	c	
		iPP			48	19.2	c	
		iS			55	08.5		
	MIN	eP			44	27.8	c	
		i				36.9	d	
		i			48	59.9	d	
		eS	E		55	33		
	PRI	eP			44	41.8	c	
Mar. 12	BKS	eP		18	12	47.0	c	USCGS: 24°4 N, 122°8 E, 0 = 17 59 39.
	MHC	e(P)				41.3	c	Taiwan region. h about 83 km.
	JAS	iP				52.9	d	
	MIN	eP				42.7	c	
		i				58.2	c	
	PRI	e(P)				57.1	c	
		e			13	06.5	d	
Mar. 12	JAS	iP		18	39	05.5	c	
		i				12.6	c	
Mar. 12	JAS	iP		18	43	05.3	c	
		i				13.2	d	
Mar. 13	JAS	eP		01	47	01.7	d	USCGS: 28°3 N, 43°8 W, 0 = 01 36 34.0.
		i				07.7	c	North Atlantic region.
								h = 33 km, restrained.

Date	Sta.	Phase Component		Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Mar. 13	BKS	eP		18	11	26	d	USCGS: 55°0 S, 126°4 W, 0 = 17 58 36.
		e(pP)				46.5	d	Easter Island Cordillera.
		e(S)	EZ		22	55	d	h = 33 km, restrained.
		e	NZ		24	12	c	
		e(SS)	NE		29	12	NE	Magnitude 6 - 6.4 (BKS).
		eG	NE		35.4			
		eR	NE		41.0			
				mu		sec		
		PZ		1.12		6		
		MaxH		2.9		16		
	MHC	eP		18	11	44.4	c	
	JAS	iP				46.6	c	
		i			12	24.5	d	
	PRI	eP			11	39.2	c	
Mar. 13	BKS	eP		18	52	28.5	d	USCGS: 20°9 S, 175°4 W, 0 = 18 40 40.7.
		e				36.3	c	Tonga Islands.
		e				45.7	d	h = 65 km, restrained.
	MHC	eP				28.5	c	
		e				46.6	c	
	JAS	iP				34.2	c	
		i(PcP)				51.6	d	
		i				39.9	c	
	MIN	iP				48.5	d	
	PRI	eP				28.3	d	
		e				42.2	d	
Mar. 14	JAS	iP		06	49	38.0	c	USCGS: 37°1 N, 140°8 E, 0 = 06 38 06.5.
		ipP				53.5	c	Honshu, Japan. h about 63 km.
Mar. 14	JAS	iP		11	55	19.3	c	USCGS: 8°5 N, 103°7 W, 0 = 11 48 41.
								Off coast of Mexico. h = 33 km, re-
								strained.
Mar. 15	BKS	e(P)		11	27	11.0	c	USCGS: 24°2 N, 122°7 E, 0 = 11 14 00.9.
	MHC	e(P)				14	(c)	Taiwan region. h about 65 km.
	JAS	iP				05.8	d	
	MIN	eP				04.6	c	
	PRI	e(P)				21	(d)	
Mar. 15	JAS	iP'		16	00	55.4	c	USCGS: 26°2 S, 28°0 E, 0 = 15 40 59.9.
	MIN	iP'				55.2	d	South Africa. h = 33 km, restrained.
Mar. 15	JAS	iP		23	45	13.1	d	USCGS: 24°4 N, 122°7 E, 0 = 23 31 46.1.
								Taiwan region. h about 22 km.
Mar. 16	BKS	eP		12	24	47.3	d	USCGS: 21°2 S, 174°3 W, 0 = 12 13 02.4.
		e			25	06.6	c	Tonga Islands. h about 66 km.
				mu		sec		
		PZ		0.13		1.3		
	MHC	eP		12	24	47.4	c	
		e			25	05.8	d	
	JAS	iP			24	53.1	c	
		iPcP			25	15.2	c	
	MIN	iP			24	57.7	d	
		iPcP				13.2	d	

Date	Sta.	Phase Component		Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Mar. 16	PRI	eP		12	24	46.5	c	
(Cont.)		e			25	06.7	c	
Mar. 17	MHC	eP		11	50	00.2	(c)	USCGS: 41°.8 N, 111°.4 W, 0 = 11 47 49.
		eS			52	28.7	c	Felt in Cache Valley and at
	JAS	iP			49	41.8	c	Salt Lake City.
		i				42.3	d	
		i	NE		51	51.8		
	MIN	eP			49	42.9	c	
		e			50	03.0	c	
	PRI	eP				03.5	d	
		eS			52	28.1		
Mar. 17	BKS	eP	NEZ	16	01	36.4	SWc	USCGS: 21°.1 S, 179°.2 W, 0 = 15 50 32.2.
		iPcP				47.0	d	Fiji Islands region.
		epP			03	44.6	c	h = 626 km, restrained.
		esP			04	43.0	c	
		eScS	NEZ		10	50	SEc	Magnitude 5.8 - 6.2 (BKS).
		eSKS			11	12		
		esPS			15	21		
				mu		sec		
		PZ		1.88		1.0		
	MHC	eP		16	01	37.5	d	
		epP			03	47		
		e(S)			10	50		
	JAS	iP			01	42.7	d	
		i			02	05.6	d	
		iSKS	N		11	03.1		
		i	N			18.2		
		iP'P'			28	21.1		
	MIN	iP			01	46.0	d	
		iPcP				59.7	d	
		ipP			04	02.3	c	
		iScS			11	07.2		
		e			30	49.0		
	PRI	eP			01	37.1	d	
		e(S)			10	53.0		
		eP'P'			28	26.3	c	
Mar. 18	JAS	iP		01	20	53.8	c	USCGS: 28°.4 N, 43°.9 W, 0 = 01 10 26.
	MIN	iP				54.0	c	North Atlantic Ridge.
								h = 33 km, restrained.
Mar. 18	BKS	eP		18	07	02.8	(c)	43°.7 N, 127°.3 W, 0 = 18 05 24.
		eS	NE		08	16		Off coast of Oregon. h = 0, fixed.
	PRI	eP			07	31.1	d	
	JAS	eP				16.0	c	Magnitude 4.3 (BRK).
	MHC	eP				12.3	c	
	MIN	iP			06	46.2	c	
		i(S)			07	32.2		
Mar. 18	BKS	eP		18	16	51.5	d	USCGS: 60°.3 N, 146°.6 W, 0 = 18 11 09.
	MHC	eP				59.4	(d)	Southern Alaska. h about 34 km.
	JAS	eP				57.7	d	
	MIN	iP				32.6	d	
	PRI	eP			17	06.4	c	

Date	Sta.	Phase Component	Time (GCT) h	m	s	Ground Motion	Remarks
1966							
Mar. 18	BKS	eP	20	58	55.0	d	USCGS: 20°.7 S, 169°.7 E, 0 = 20 46 19.4.
	MHC	eP			56.0	d	New Hebrides Islands. h about 78 km.
	JAS	iP		59	11.0	d	
		i			30.9	c	
	PRI	eP		58	56.1	c	
Mar. 18	JAS	e(P)	22	40	01.0	d	
Mar. 19	MHC	e(P)	01	25	45.7	(d)	USCGS: 44°.2 N, 129°.2 W, 0 = 01 23 36.8.
	JAS	iP			48.9	d	Off coast of Oregon.
		i		26	05.1	d	h = 33 km, restrained.
	PRI	e(P)			05.5	(d)	
Mar. 19	MHC	eP	08	22	37.0	c	USCGS: 43°.3 N, 145°.8 E, 0 = 08 11 40.
	JAS	eP			39.4	c	Hokkaido, Japan. h about 11 km.
	PRI	e(P)			41.9	c	
Mar. 19	MHC	e(P)	08	35	14	(d)	
	JAS	e(P)			18.4	d	
	PRI	e(P)			45.5	c	
Mar. 19	BKS	eP	13	55	11.5	(c)	USCGS: 9°.4 S, 159°.2 E, 0 = 13 42 27.2.
	MHC	e(P)			24	c	Solomon Islands. h = 33 km, re-
	JAS	eP			18.0	c	strained. Felt, Honiara.
		e			27.5	d	
		e			39.4	(d)	
	PRI	e(P)			10.5	c	
		e			27.5	c	
		e			39.8	d	
Mar. 19	JAS	eP	15	11	34.7	(c)	USCGS: 23°.8 N, 122°.5 E, 0 = 14 59 37.
		e			56.3	(d)	Taiwan region. h about 42 km.
	PRI	eP			32.8	(c)	
Mar. 19	MHC	eP	16	40	40.5	c	USCGS: 24°.4 S, 179°.9 E, 0 = 16 29 10.3.
	JAS	eP			45.6	c	South of Fiji Islands.
	MIN	iP			49.8	d	h = 510 km, restrained.
	PRI	eP			40.0	c	
Mar. 19	BKS	e(P')	17	28	52.5	(d)	From SW.
	MHC	eP'			52.3	c	
	JAS	eP'			47.6	c	
		e		29	06.7		
		e			32.0	d	
	MIN	eP'		28	57.3	d	
	PRI	eP'			46.5	c	
Mar. 19	MHC	eP'	17	30	16.3	(c)	
	JAS	iP'			16.4	c	
		i			20.0	c	
	MIN	eP'			24.7	c	
	PRI	eP'			14.2	(c)	
		e			51.0	c	
Mar. 19	MHC	e(P)	17	32	06.2	c	
	JAS	e(P)			09.5	c	
		e			35.7	c	
	PRI	e(P)			08.5	c	

Date	Sta.	Phase Component		Time (GCT) h m s	Ground Motion	Remarks
1966						
Mar. 19	BKS	e(P')		17 36 29.7	c	USCGS: 52°7 S, 19°9 E, 0 = 17 16 40.9.
	MHC	eP'		25.0	(c)	Southwest of Africa.
	JAS	eP'		23.3	c	h = 33 km, restrained.
		e		48.9		
	PRI	eP'		21.0	c	
	MIN	eP'		26.3	c	
Mar. 20	BKS	eP'		02 02 10.5	c	USCGS: 0°6 N, 30°2 E, 0 = 01 42 49.9.
		ePP	NE	04 47	SW	Uganda. h = 36 km, restrained.
		eSKP	NEZ	05 34	SWd	
		eSKKS		11 22	d	Magnitude 6.4 - 6.6 (BKS),
		eSKSP	EZ	14 20	Wd	6 3/4 - 7 (PAS),
		ePP		16 20		7 - 7 1/4 PAL.
		eSS	NE	22.5	NE	
		eSSS	NE	27 14	NE	More than 100 dead. Extensive damage at
		e(L)	NE	38.0		Fort Portal and nearby areas. Felt in
		e(R)	NE	44.0		western Uganda.
				mu sec		
		PPZ		3.0 8		
	MHC	eP'		02 02 00.8	(d)	
		e		10.5	c	
	JAS	eP'		01 57.8	c	
		e		02 07.9	c	
		e		04 24.5	c	
	MIN	iP'		02 04.7	c	
		i		27.7	c	
		ePP		04 24.7	c	
	PRI	eP'		02 01.6	(c)	
		e		11.7	c	
		e		04 31.7	c	
Mar. 20	BKS	eP		06 03 05.0	c	USCGS: 50°N, 80°E, 0 = 05 50 00.
				mu sec		Russian blast at Semipalatinsk
		PZ		0.058 0.8		Testing Site, Eastern Kazakh, SSR.
	MHC	eP		06 03 09.0	c	
	MIN	iP		02 54.4	c	Magnitude 5.1 - 5.3 (BKS).
		i		03 03.4	c	
	PRI	eP		14.9	c	
	JAS	eP		06.6	c	
		i		19.8	c	
Mar. 20	JAS	eP		07 04 51.7	c	USCGS: 12°2 S, 167°1 E, 0 = 06 52 50.1.
	PRI	e(PcP)		05 00	c	Santa Cruz Islands. h about 272 km.
Mar. 20	BKS	eP		07 59 10.8	(c)	USCGS: 17°0 S, 174°3 W, 0 = 07 47 50.2.
		ePcP		19.5	d	Tonga Islands. h = 117 km,
		eL	NE	08 08.5		restrained.
		eR		10.0		
	JAS	eP		07 59 17.5	d	
		epP		47.2	d	
	PRI	eP		59 11.1	(d)	
		epP		40.5	c	
	MIN	iP		21.9	c	
		ipP		51.2	d	

Date	Sta.	Phase Component		Time (GCT) h m s	Ground Motion	Remarks
1966						
Mar. 20	MHC	eP		07 59 12.1	(c)	
(Cont.)		epP		40.2	d	
Mar. 20	BKS	eP		09 16 13.0	(c)	USCGS: 21°0 S, 174°5 W, 0 = 09 04 31.8.
		ePcP		17 20	c	Tonga Islands. h = 95 km, restrained.
		e	NE	20 26	N(W)	
		e	NE	24 52		Magnitude 5.9 - 6.1 (BKS).
		eS	NE	26 08	SE	
		eL	NE	35 38	(NW)	
		eR		39.0		
				mu sec		
		PZ		0.043 1.0		
		PZ		1.18 6.0		
		SH		3.03 10		
		MaxH		6.1 16		
	PRI	eP		09 16 12.7	c	
	JAS	eP		19.0	c	
		epP		44.2	c	
	MHC	eP		13.4	c	
	MIN	iP		24.9	d	
		iPcP		35.5	d	
Mar. 20	BKS	eP		18 21 43.6	d	USCGS: 12°3 S, 167°4 E, 0 = 18 09 09.5.
		e		28 18	d	Santa Cruz Islands. h about 57 km.
		e(ScS)	E	32.5	W	
		eR	NEZ	46.0		Magnitude 5.7 - 5.9 (BKS).
				mu sec		
		MaxH		6.4 18		
	PRI	eP		18 21 35.3	d	
	JAS	eP		34.2	c	
	MHC	eP		30.8	(d)	
	MIN	eP		35.3	c	
Mar. 21	JAS	eP'		01 49 57.7	c	USCGS: 0°8 N, 30°0 E, 0 = 01 30 41.6.
	MHC	eP'		54.7	c	Uganda. h = 33 km, restrained.
Mar. 21	BKS	eP		06 41 48.5	d	USCGS: 26°1 N, 129°1 E, 0 = 06 29 01.3.
	JAS	eP		54.0	d	Ryukyu Islands. h = 33 km, re-
		e		42 17.3	d	strained.
	MHC	eP		41 52.0	(d)	
		e		42 16.7	c	
	MIN	iP		41 44.2	c	
Mar. 21	BKS	eP		13 37 41	(c)	USCGS: 21°1 S, 68°7 W, 0 = 13 26 10.5.
	JAS	eP		53.2	c	Chile-Bolivia border.
						h about 133 km.
Mar. 22	BKS	eP		08 24 28.3	c	USCGS: 37°5 N, 115°0 E, 0 = 08 11 33.7.
	JAS	eP		32.7	d	Northeastern China. h about 11 km.
		e		26 14.2	c	
	PRI	eP		24 34.0	d	Magnitude 5.8 - 6.2 (BKS).
	MHC	eP		30.8	(c)	
	MIN	iP		20.8	c	

Date	Sta.	Phase Component		Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Mar. 24	MHC	eP		04	16	35.0	c	
(Cont.)	MIN	i				44.8	d	
Mar. 24	JAS	eP		07	36	10.7	c	USCGS: 33°0 S, 109°0 W, 0 = 07 24 52.
		e				23.1	c	Easter Island Cordillera.
	MHC	eP				08	c	h = 33 km, restrained.
Mar. 24	BKS	eP		08	40	19	c	USCGS: 13°7 S, 166°8 E, 0 = 08 27 51.3.
		e(S)	EZ		51	32	Wd	New Hebrides Islands.
		eG	N	09	02.3			h about 43 km.
		eR	NEZ		05.7			
				mu		sec		
		MaxH		2.5		24		
	PRI	eP		08	40	21.5	c	
	JAS	eP				24.2	c	
		e				37.0	d	
	MHC	eP				17.2	(d)	
	MIN	eP				25.7	c	
Mar. 24	BKS	eR		11	48.0			USCGS: 12°3 S, 167°3 E, 0 = 11 10 50.0.
	JAS	eP			23	15.0	c	Santa Cruz Islands. h about 50 km.
		e				36.8	d	
	MHC	eP			23	10.5	(d)	
	MIN	eP				15.4	c	
	PRI	eP				11.7	c	
Mar. 25	JAS	eP		12	12	58.5	d	
		i			13	16.5	d	
	MHC	eP			12	54.0	d	
Mar. 25	BKS	eP		13	02	50	(c)	USCGS: 51°5 N, 179°6 W, 0 = 12 54 55.7.
	PRI	eP			03	04	c	Andreanof Islands, Aleutian Islands.
	MHC	eP			02	50.7	d	h = 33 km, restrained.
	JAS	eP				54.3	d	
	MIN	eP				39.9	c	
Mar. 25	BKS	iP'		13	15	23.5	d	USCGS: 58°8 S, 25°2 W, 0 = 12 56 23.7.
				mu		sec		South Sandwich Islands.
		p'Z		0.06		0.8		h about 24 km.
	PRI	eP'				19.4	c	
	JAS	eP'				21.5	c	
	MHC	eP'				22.3	c	
	MIN	iP'				26.4	c	
		e				34.6	c	
Mar. 25	BKS	eP'		14	04	59.0	c	From SE
	PRI	eP'				55.2	(c)	
	JAS	eP'				57.1	c	
	MHC	eP'				57.8	c	
	MIN	iP'			05	01.6	c	
Mar. 25	BKS	eP'		14	30	58.0	(c)	From SE
	PRI	eP'				54.3	c	
	JAS	eP'				56.3	c	
	MHC	eP'				57.0	c	

Date	Sta.	Phase Component		Time (GCT) h	m	s	Ground Motion	Remarks
1966								
Mar. 25	JAS	eP		22	04	11.3	d	USCGS: 56°6 N, 135°4 W, 0 = 21 59 26.4.
	PRI	eP				18.5	d	Southeastern Alaska. h about 22 km.
	MHC	eP				14.0	d	
	MIN	eP			03	43.6	d	Felt: Sitka.
		e(PP)			04	25.7	c	
Mar. 26	BKS	eP'		10	02	01.2	(d)	USCGS: 18°5 S, 26°2 E, 0 = 09 42 17.8.
	PRI	eP'				00.8	d	Southern Rhodesia. h about 16 km.
	JAS	eP'			01	56.6	d	
		e			02	13.5	d	Slight damage in Victoria Falls area.
	MHC	eP'				01.0	d	
	MIN	eP'			01	54.7	d	
		i			02	00.7	c	
Mar. 26	BKS	eP		10	49	05.0	d	USCGS: 43°8 N, 128°0 W, 0 = 10 47 20.
		eS	NEZ		50	36	NEc	Off coast of Oregon. h = 33 km, re-
		e	NE			50		strained.
	PRI	eP			49	36.1	d	
	JAS	eP				18.9	d	
		i				36.9	c	
	MHC	eP				15.0	d	
	MIN	iP			48	48.0	c	
Mar. 26	JAS	eP		13	45	08.7	c	USCGS: 50°9 N, 175°9 E, 0 = 13 36 48.
	MIN	eP			44	52.1	c	Rat Islands, Aleutian Islands.
								h about 44 km.
Mar. 26	JAS	eP		15	27	28.3	d	USCGS: 37°8 N, 114°9 E, 0 = 15 14 34.
	MHC	eP				28.5	(d)	Northeastern China. h = 33 km, re-
	MIN	eP				17.1	d	strained.
Mar. 26	BKS	eP		15	31	52.3	c	USCGS: 37°6 N, 115°2 E, 0 = 15 19 03.2.
		eS	NE		42	22	NE	Northeastern China. h = 33 km, re-
		e	N		48	30	S	strained.
		eLq	NE		54.5			
		eR			58.5			Magnitude 5.4 - 5.6 (BKS)
		e		16	02.5			6 - 6 1/4 (PAL).
				mu		sec		
		MaxH		3.2		20		
	PRI	eP		15	32	03.9	d	
		e				11.2	d	
	JAS	eP			31	57.4	d	
		e			32	04.8	d	
		e				48.6	d	
	MHC	eP			31	56.5	(d)	
		e			32	03.9	d	
	MIN	eP			31	45.4	d	
Mar. 26	BKS	eP		18	27	13.2	c	USCGS: 37°7 N, 114°9 E, 0 = 18 14 23.
	PRI	eP				25.1	c	Northeastern China. h = 33 km, re-
	JAS	eP				16.1	d	strained.
	MHC	eP				17.5	c	
	MIN	eP				05.1	c	Magnitude 5 1/2 - 5 3/4 (PAL).

Date	Sta.	Phase Component		Time (GCT) h m s	Ground Motion	Remarks
1966						
Mar. 27	PRI	eP		10 51 03.5	(c)	USCGS: 11°4 S, 166°6 E, 0 = 10 38 58.9.
	JAS	eP		08.9	c	Santa Cruz Islands. h about 190 km.
	MHC	eP		03.0	c	
	MIN	eP		08.4	c	
Mar. 27	BKS	eP		15 05 26	d	USCGS: 23°7 S, 66°8 W, 0 = 14 53 33.9.
	PRI	eP		14.5	d	Jujuy Province, Argentina.
	JAS	eP		19.5	d	h about 201 km.
	MHC	eP		21.9	d	
	MIN	eP		30.6	c	
Mar. 27	JAS	eP		15 50 33.5	c	USCGS: 60°4 N, 146°1 W, 0 = 15 44 43.5.
	MIN	iP		10.4	c	Southern Alaska. h about 13 km.
Mar. 27	BKS	iP		19 01 58.3	d	USCGS: 8°9 N, 83°4 W, 0 = 18 53 41.3.
		e		02 38	c	Costa Rica. h about 40 km.
		e(PcP)		03 15	c	
		ePcP		29.5	d	Magnitude 5.5 - 6.0 (BKS),
		eS	NE	08 44	SW	5 1/4 - 5 1/2 (PAL).
		eScS	NE	11 46	SE	
		e(L)	NE	14.2		
		e	NE	18.0		
		e(R)		19.5		
				mu sec		
		PZ		0.81 2.0		
		PZ		1.82 8		
		SH		2.36 12		
		MaxH		5.3 20		
	PRI	eP		19 01 41.9	c	
	JAS	eP		48.4	c	
		e		02 08.4	c	
		e		03 33.6	c	
	MHC	eP		01 52.8	c	
	MIN	eP		02 04.0	c	
		i		18.5	d	
		ePcP		03 39.5	c	
Mar. 27	JAS	eP		21 10 12.7	c	USCGS: 37°7 N, 114°8 E, 0 = 20 57 20.
	MIN	eP		02.8	d	Northeastern China. h = 33 km, restrained.
Mar. 28	PRI	e(P')		05 05 02	(d)	USCGS: 32°1 S, 78°9 E, 0 = 04 44 12.0.
	JAS	eP'		03.5	d	Mid-Indian Rise. h = 33 km, restrained.
	MHC	e(P')		05	(d)	
Mar. 28	BKS	eP		15 39 04	(c)	USCGS: 3°9 S, 80°9 W, 0 = 15 29 18.4.
		eS	NE	46 53	NE	Peru-Ecuador border. h about 19 km.
		e	NZ	51 16	Nc	
		eL	NE	53.0		Magnitude 4.7 - 5.3 (BKS),
		eR	EZ	57.6		5 - 5 1/4 (PAL).
				mu sec		
		SH		1.77 20		
		MaxH		3.3 20		
	PRI	eP		15 38 47.8	c	
		e		58.2	d	

Date	Sta.	Phase Component		Time (GCT) h m s	Ground Motion	Remarks
1966						
Mar. 28 (Cont.)	JAS	eP		15 38 54.5	c	
		e		39 05.3	d	
	MHC	eP		38 58.0	c	
		e		39 11.7	d	
	MIN	iP		08.0	d	
		i		27.7	c	
Mar. 28	BKS	iP		15 58 02.0	d	USCGS: 17°4 N, 145°6 E, 0 = 15 46 08.9.
		i		14.5	c	Mariana Islands. h about 218 km.
		e		47.7	c	
		epP		59 20.5	c	
	PRI	eP		58 11.0	c	
		e		56.5	c	
	JAS	eP		08.5	(c)	
		e		53.9	c	
	MHC	eP		05.2	c	
		e		54.1	c	
	MIN	iP		00.6	c	
		i		50.2	c	
Mar. 28	BKS	eP		17 52 30.0	d	USCGS: 4°0 S, 80°8 W, 0 = 17 42 47.6.
		ePcP		53 15.3	d	Peru-Ecuador border. h about 52 km.
		eS	NE	18 00 20	(NE)	
		eSS	NZ	04 18	S(c)	Magnitude 4.8 - 5.2 (BKS)
		e(L)	(N)E	07.0		5 (PAL).
		eR	NEZ	10.8		
				mu sec		
		SH		1.52 20		
		MaxH		2.8 22		
	PRI	eP		17 52 13.7	c	
		e		23.3	d	
		e		45.5	c	
	JAS	eP		20.8	(c)	
		e		28.8	d	
		e		46.5	d	
	MHC	eP		24.0	c	
		e		32.9	c	
	MIN	eP		35.7	c	
		e		44.9	c	
		iPcP		53 47.6	c	
Mar. 29	BKS	eP		02 29 41.5	c	USCGS: 23°7 N, 142°1 E, 0 = 02 17 38.5.
		iPcP	EZ	42.5	Wd	Volcano Islands. h = 79 km, restrained.
		i		51.5	c	
		e		57	c	
		i		30 44.6	d	Magnitude 5 1/2 (PAL).
		eS	NEZ	39 32	SWd	
		e	E	44 15	W	
		eR	NEZ	53.0		
	PRI	eP		29 51.8	c	
	JAS	eP		48.2	c	
		iPcP		49.2	d	
		i		57.8	d	

Date	Sta.	Phase Component	Time (GCT) h m s	Ground Motion	Remarks
1966					
Mar. 29 (Cont.)	MHC	eP	02 29 45.1	c	
		iPcP	46.0	d	
		e	55.2	c	
	MIN	eP	41.1	c	
		iPcP	42.1	d	
		i	30 03.9	c	
Mar. 29	PRI	eP	06 25 02	c	USCGS: 37°4 N, 114°9 E, 0 = 06 12 00.4.
	JAS	eP	24 55.8	c	Northeastern China. h about 34 km.
	MHC	eP	56	(c)	
	MIN	eP	43.8	c	
		e	25 16.8	d	
Mar. 29	BKS	eP	10 53 55.0	c	USCGS: 20°0 S, 175°3 W, 0 = 10 42 15.1.
	PRI	eP	54.6	c	Tonga Islands. h = 95 km, re-
		e	54 12.0	c	strained.
	JAS	eP	00.7	c	
		e	18.2	c	
	MHC	eP	53 55.3	c	
	MIN	eP	54 04.9	c	
		e	29.4	d	
Mar. 29	PRI	eP	20 32 19.7	c	USCGS: 57°4 N, 139°7 W, 0 = 20 26 59.
	JAS	eP	03.3	d	Off coast of southeastern Alaska.
		e	13.3	c	h = 33 km, restrained.
	MIN	iP	31 37.0	c	
		i	48.8	d	
Mar. 29	JAS	eP	23 04 03.5	c	USCGS: 53°8 N, 165°7 W, 0 = 22 57 16.
	MIN	iP	03 57.0	c	Fox Islands, Aleutian Islands.
					h = 33 km, restrained.
Mar. 30	BKS	eP	01 39 10.5	(c)	USCGS: 10°3 S, 161°6 E, 0 = 01 26 34.8.
	PRI	eP	14.9	c	Solomon Islands. h = 40 km, re-
	JAS	eP	17.2	c	strained.
		e	29.5	c	Felt: Kirakira.
	MHC	eP	10.7	(c)	
	MIN	eP	15.4	c	
Mar. 30	BKS	eS	05 16 20		USCGS: 29°9 S, 71°4 W, 0 = 04 53 41.0.
		eSSS E	25 30		Near coast of Central Chile.
		e(L)	26 52		h about 87 km. Felt at La Serena.
		e(R)	31.5		
	PRI	eP	06 04.5	d	
	JAS	eP	10.3	d	
	MHC	eP	10.3	c	
Mar. 30	PRI	e(P)	05 57 24.7	(c)	USCGS: 51°9 N, 170°6 W, 0 = 05 46 31.
	JAS	e(P)	26.0	c	Fox Islands, Aleutian Islands.
					h = 33 km, restrained
Mar. 30	BKS	e(P)	08 29 48.5	(d)	USCGS: 29°2 N, 131°3 E, 0 = 08 15 03.7.
	PRI	e(P)	57.3	(d)	Ryukyu Islands. h about 20 km.
	JAS	iP	30 01.8	c	
	MHC	e(P)	29 55.3	(d)	
	MIN	e(P)	23.6	c	

Date	Sta.	Phase Component	Time (GCT) h m s	Ground Motion	Remarks
1966					
Mar. 30	BKS	eP NEZ	12 43 08.7	SEc	USCGS: 49°8 N, 129°7 W, 0 = 12 40 01.0.
		e	23.5	(c)	Vancouver Island region. h = 33 km,
		e	48.5	c	restrained.
		eS E	45 39		
		e(PcP)	47.5		Magnitude 5.8 - 6.2 (BKS),
			mu sec		5 1/2 - 5 3/4 (PAS),
		PZ	0.47 2.0		6 1/4 (PAL).
		PZ	5.8 9		
		PH	4.7 9		
		SH	19.1 20		
		MaxH	47.5 12		
	PRI	eP	12 43 34.7	d	
	JAS	eP	12.5	c	
		e	44 00.8	d	
		eS	43.9	d	
	MHC	eP	43 13.1	c	
		e	44 11.6	c	
	MIN	eP	42 39.7	c	
		i	44.7	c	
		i	43 17.0	d	
		i	30.7	c	
Mar. 30	PRI	eP	20 53 45.5	d	USCGS: 32°5 S, 178°0 W, 0 = 20 40 44.1.
	JAS	eP	33.0	d	South of Kermadec Islands.
		e	46.8	d	h about 16 km.
	MHC	eP	31.0	d	
Mar. 31	BKS	eS E	05 29.0		USCGS: 17°3 S, 167°8 E, 0 = 05 05 54.7.
		eR	44.0		New Hebrides Islands. h about 34 km.
	PRI	eP	18 33.6	d	Felt at Port Vila.
		e	19 02.2	d	
	JAS	eP	18 36.4	c	
		e	47.2	c	
		e	19 03.0	c	
		e	22 09.0	d	
	MHC	eP	18 22.3	d	
	MIN	eP	37.2	c	
		ePP	21 53.6	c	
Mar. 31	PRI	e(P)	23 51 50.2	d	USCGS: 36°4 N, 70°8 E, 0 = 23 38 00.5.
	JAS	e(P)	48.3	d	Hindu Kush region. h about 200 km.
	MHC	e(P)	46.4	d	

BRK.

Bulletin of the Seismographic Stations

Vol. 36, No. 2, pp. 70-135

ARCATA--BERKELEY--CONCORD--FRESNO--GRANITE CREEK

JAMESTOWN--LLANADA--MANZANITA LAKE--MINERAL

MOUNT HAMILTON--OROVILLE--PARAISO

PILARCITOS--PRIEST--UKIAH--HARRIS RANCH

Earthquakes and the Registration of Earthquakes

From April 1, 1966 to June 30, 1966

by

B.A. Bolt,

Luz Chuaqui

and

Lawrence Drake

University of California

Berkeley

1967

CONTENTS

INTRODUCTION

Each quarterly issue of the Bulletin includes determinations 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 every 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 (October 1967)

Station Director	Bruce A. Bolt
Director Emeritus	Perry Byerly
Associate Research Seismologist	Mansour Niazi (Cinna Lomnitz on leave)
Post Graduate Research Seismologist	John Filson
Associate	Don Tocher (Earthquake Mechanism Laboratory, ESSA, San Francisco)
Associate Engineer	Walter Marion
Full-time Technical Staff	G. Mitchell, R. Sell, M. Hilger
Research Assistants	L. Chuaqui, J. Derr, L. Drake, J. Dewey, A. Eisenberg, A. Qamar, M. Somerville, J. Zanetti
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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 3,000 at 30 sec.

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

HISTORY OF THE UNIVERSITY OF CALIFORNIA STATIONS

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

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

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

Since 1942, the number of seismographic stations associated with the University of California has increased from six to seventeen in 1966. 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 nine 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: APRIL - JUNE 1966

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
Harris Ranch	36° 45!9	121° 24!8	230	Weathered sandstone	HRC	Transferred from Vineyard, 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
Ukiah	39° 08!2	123° 12!6	199	Alluvium	UKI	U.S. Coast and Geodetic Survey, 1965
Pilarcitos Creek	37° 30!0	122° 22!9	91	Granodiorite (weathered)	PCC	Sare Ranch, 1965

STATION INSTRUMENTATION

April - June 1966

Station	Type of Instrument	T_o sec	T_g 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
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
HRC	#Benioff 14 kg	1.0	0.2	Z
CNC	#Benioff 100 kg	1.0	0.2	Z
GCC	#*Benioff 14 kg	1.0	0.2	Z
PRS	#*Benioff 14 kg	1.0	0.2	Z
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
UKI	Benioff 14 kg	1.0	0.2	Z

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

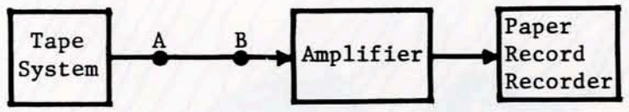
Direction of motion: In the "Component" column, each horizontal component seismograph is designated by the direction of ground motion corresponding to upward trace motion on the seismogram when it is oriented so that time increases from left to right. On all vertical component (Z) instruments, upward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

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

Tape-recorded long-period seismometers (BRK): On pages 77 and 78 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.

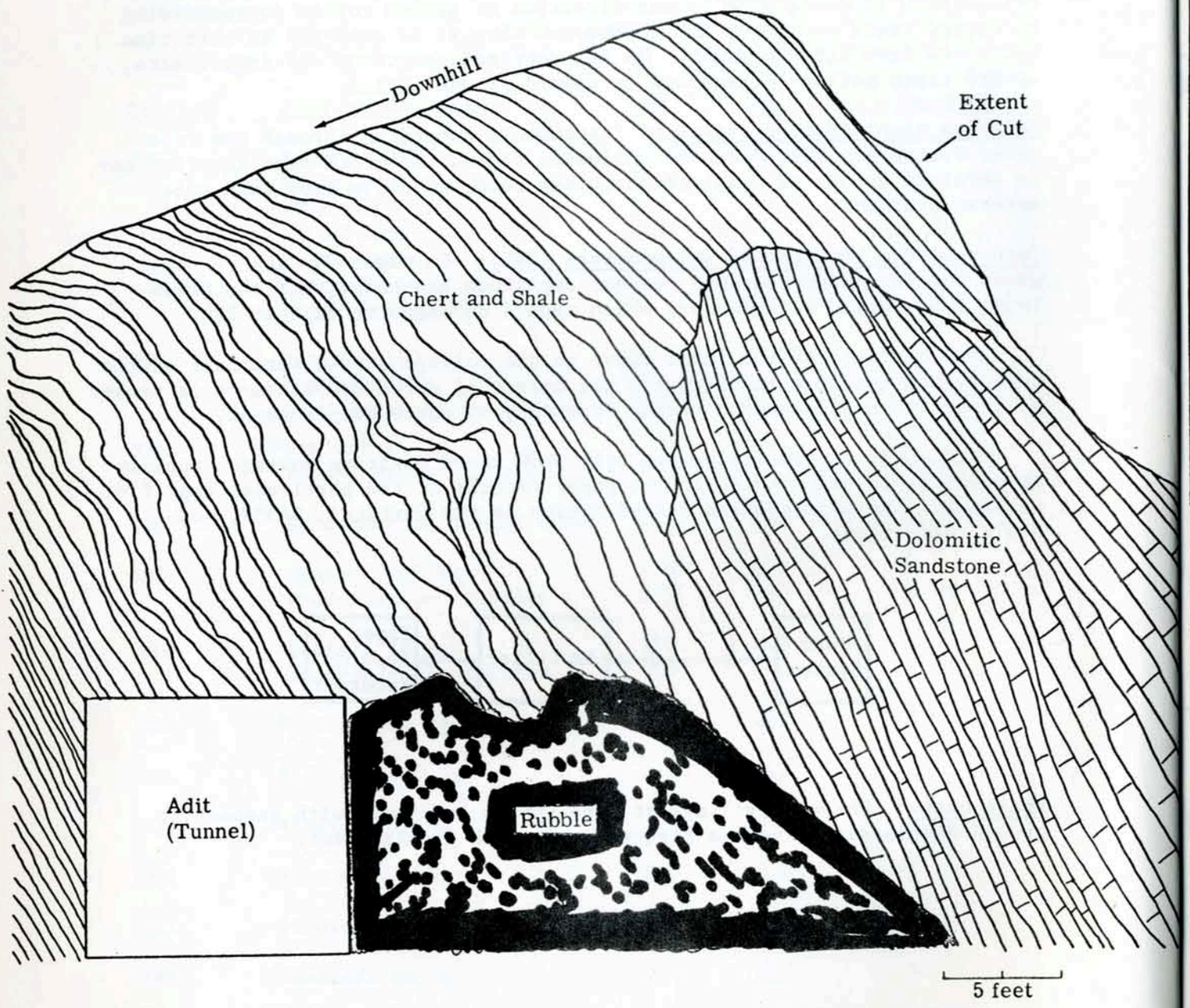
All paper records requested will show known positive voltages applied at point B, in order to scale the paper records at the particular amplifier settings. The seismometers record motion in the vertical, N45°W, and N45°E, directions.



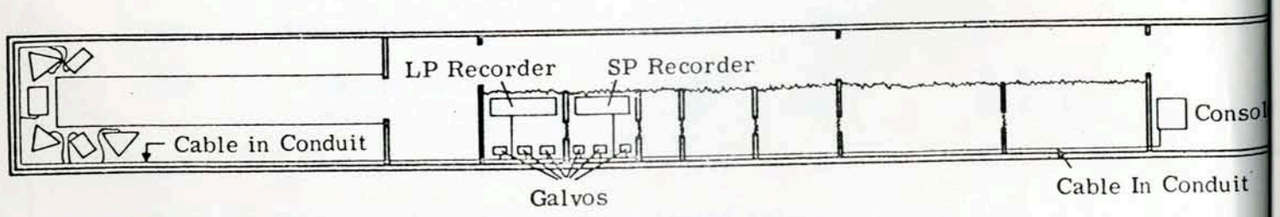
Phase curve: Phase of voltage at tape system terminals with respect to ground displacement; versus frequency of earth displacement.

BYERLY SEISMOGRAPHIC STATION (BKS)

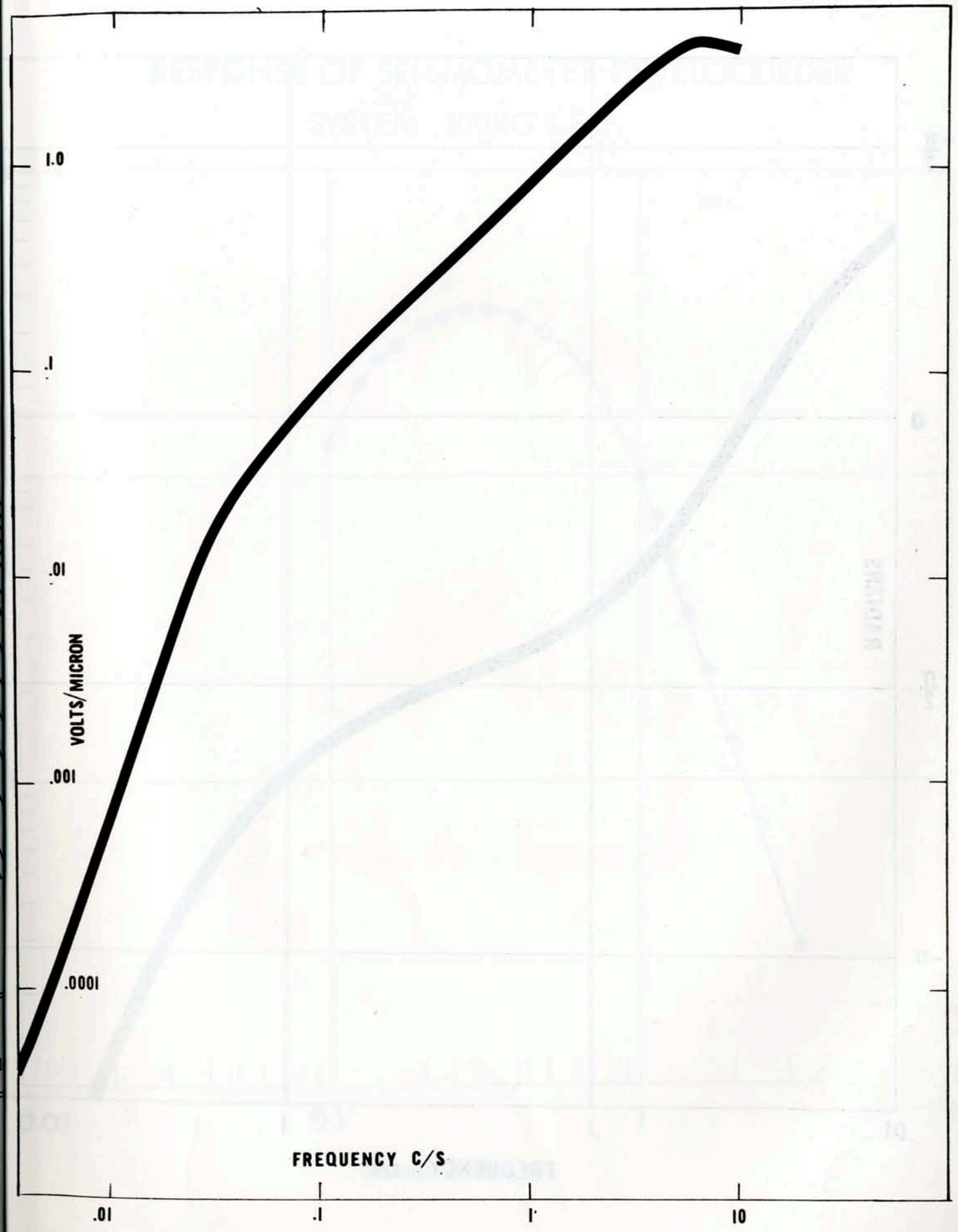
BERKELEY, CALIFORNIA

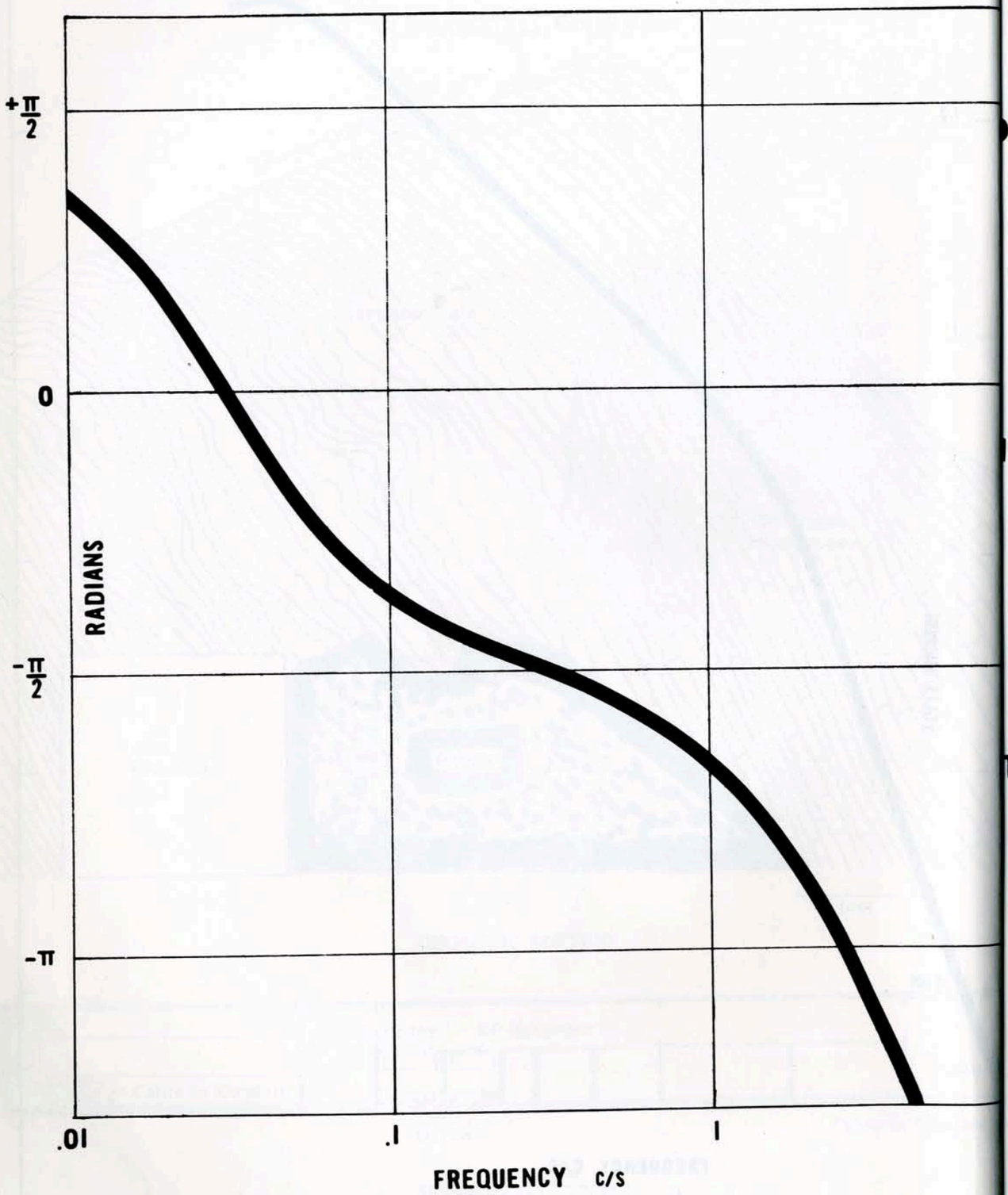


GEOLOGIC SECTION

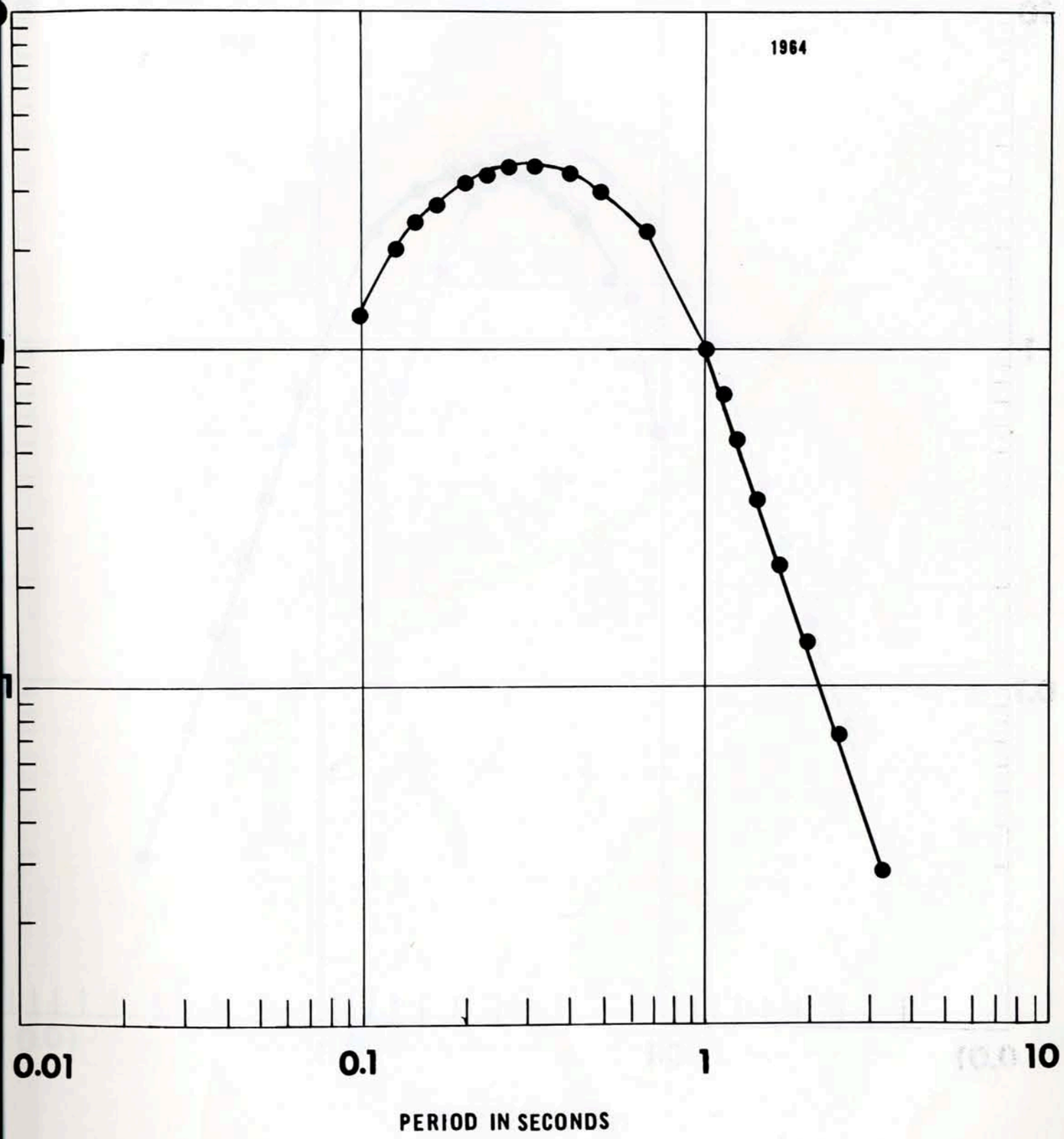


SEISMOLOGY TUNNEL



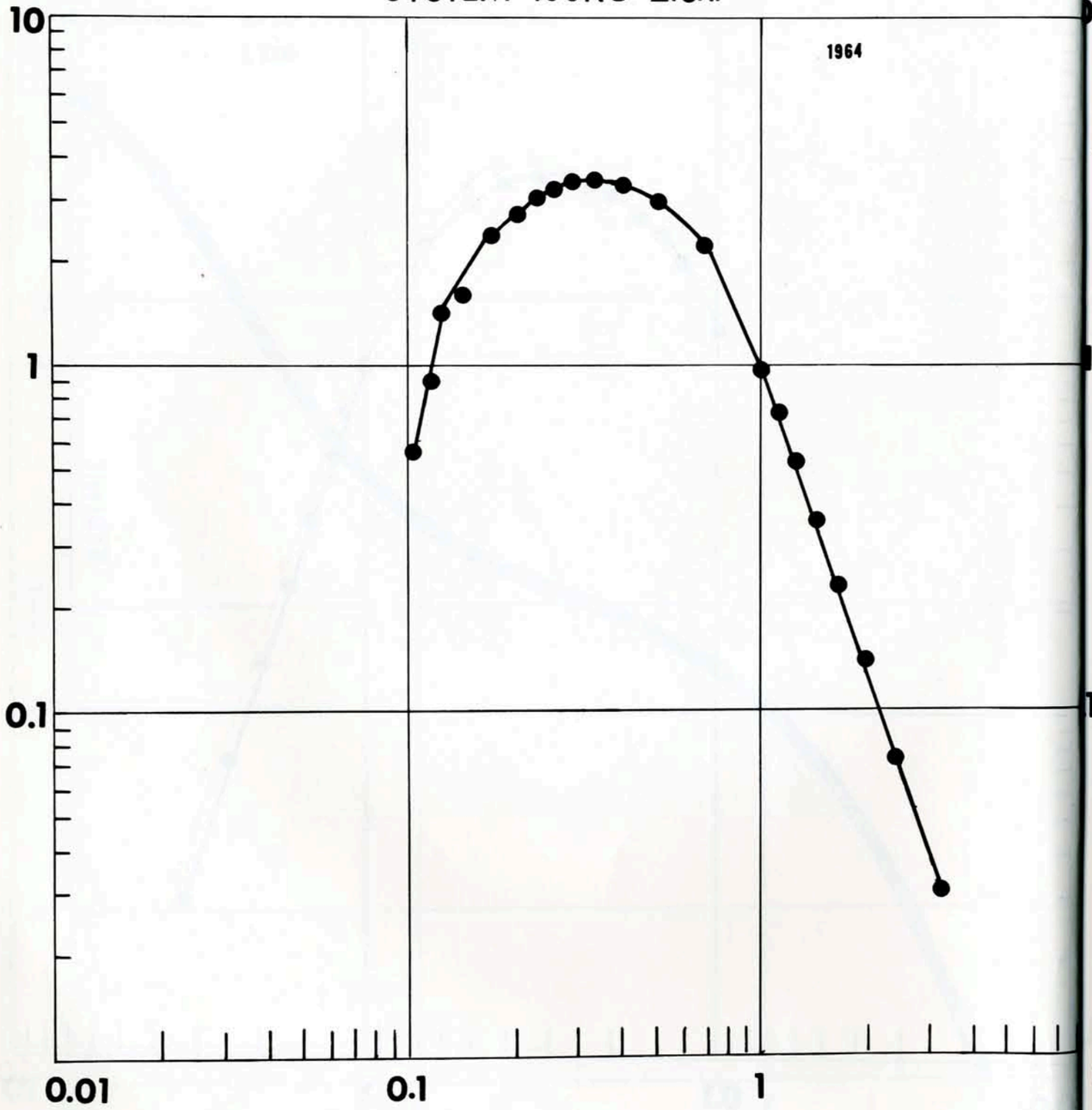


RESPONSE OF SEISMOMETER-DEVELOCORDER SYSTEM 100KG Z.S.P.



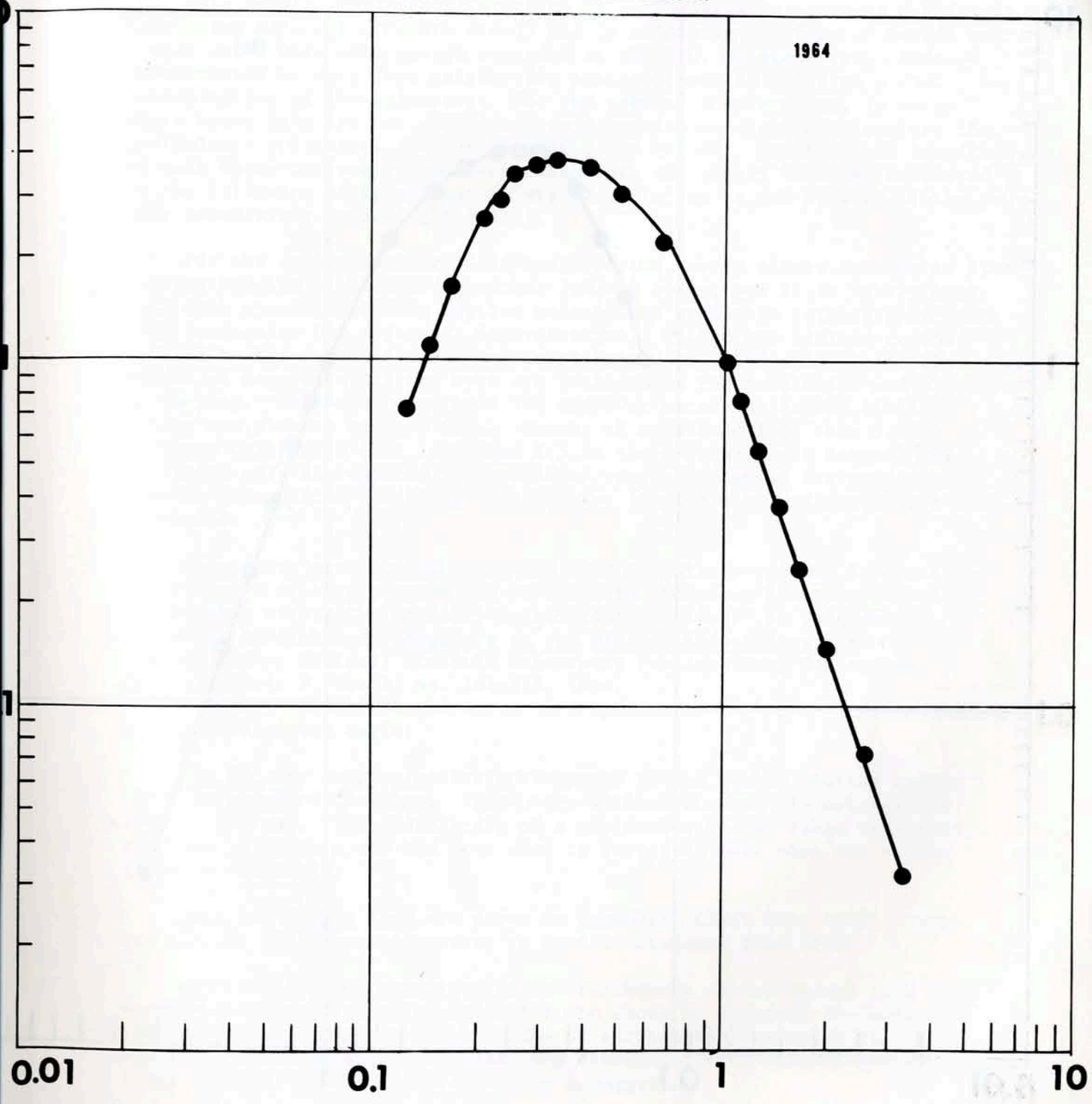
RESPONSE OF SEISMOMETER-HELICORDER

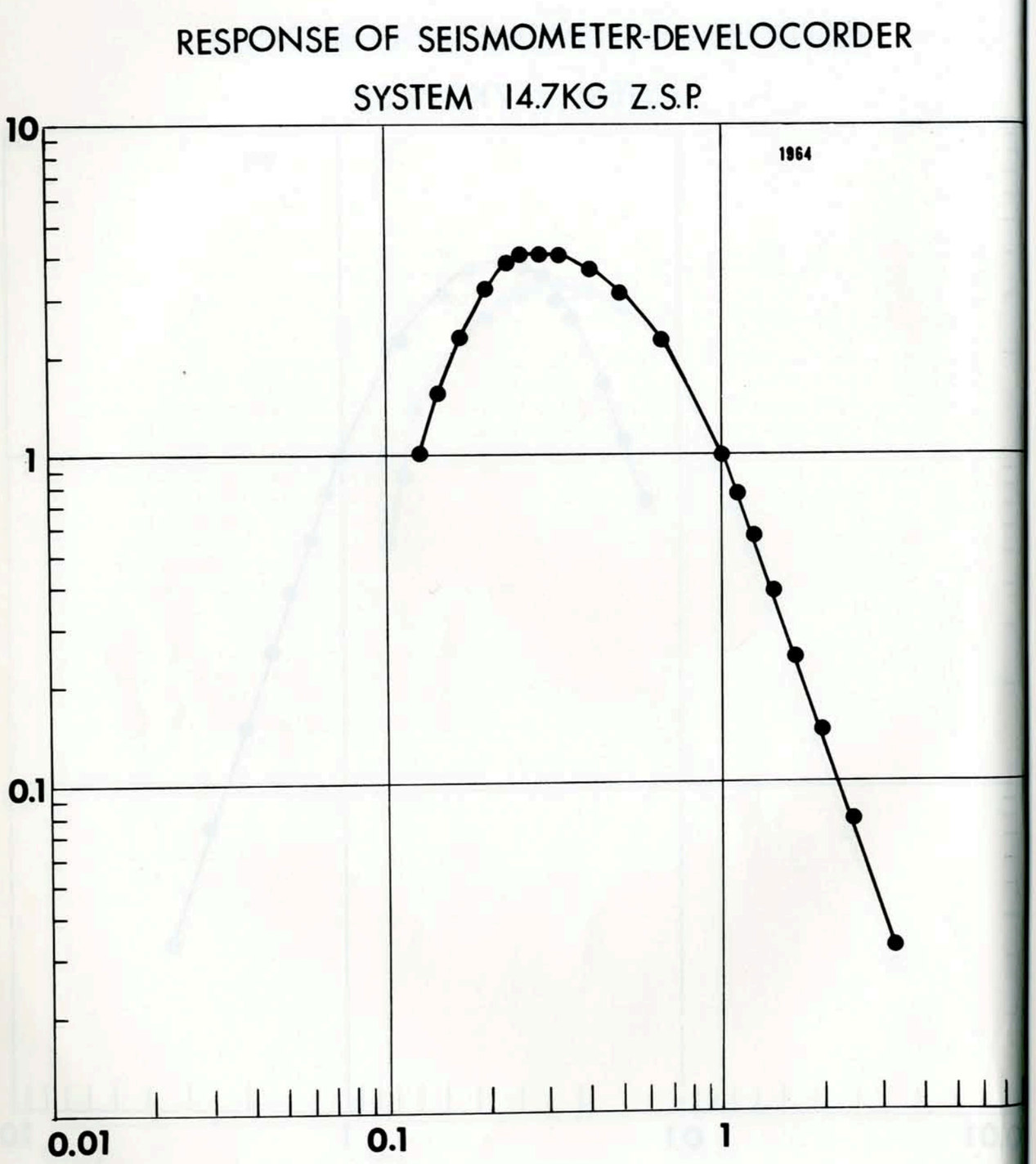
SYSTEM 100KG Z.S.P.



RESPONSE OF SEISMOMETER-HELICORDER

SYSTEM 14.7KG Z.S.P.





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 such as Reno) 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, and are preceded by a dagger.

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.

No. of Stas. is the number of stations used by the computer program or used for constructing S-P arcs in locating the epicenter. If the USCGS data are used for the epicenter this column then gives the number of stations in the Berkeley net recording the earthquake.

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 1966	M	Origin Time (G.C.T.)	Latitude North	Longitude West	h	No. of Stas.	Remarks
* 1	Apr. 02	4.8	12-48-38	38°.7	118°.1	0	14	NE of Hawthorne, Nev. Depth fixed.
* 2	Apr. 02	+3.3	15-40-40	37°.7	118°.4	0	7	N of Bishop. Depth fixed.
3	Apr. 03	2.6	21-17-58.5	37° 00'	121° 46'	a	11	W of Gilroy.
4	Apr. 05	2.7	20-44-58.7	36° 14'	120° 51'	a	9	10 km NW of PRI.
* 5	Apr. 07	3.7	11-00-50	38°.8	119°.4	0	12	W Nevada. Depth fixed.
6	Apr. 09	2.6	15-32-40.5	36° 48'	121° 37'	b	7	30 km W of HRC.
* 7	Apr. 10	4.5	22-27-01.8	41°.4	125°.5	33	6	Off coast N Calif. Location and origin time from USCGS. Depth fixed.
8	Apr. 15	2.5	17-19-18.4	36° 57'	121° 26'	a	9	30 km N of HRC.
9	Apr. 15	2.8	19-50-56.5	36° 35'	121° 14'	a	9	NE of PRS.
*10	Apr. 17	4.1	07-04-19	37°.4	118°.5	0	12	NW of Bishop. Preceded by foreshock 15.5^{s} earlier. Depth fixed. Felt at Bishop. Awakened a few.
*11	Apr. 17	+3.0	07-20-17	37°.7	118°.3	0	12	N of Bishop. Aftershock of previous. Depth fixed.
*12	Apr. 18	3.3	06-49-30	36°.5	118°.3	0	9	W of Lone Pine. Depth fixed.
*13	Apr. 21	3.2	09-43-28	40°.5	125°.0	0	7	Off coast from ARC. Depth fixed.
14	Apr. 24	3.6	00-47-01.5	39° 39'	120° 20'	a	11	NE of Truckee.
15	Apr. 29	3.8	08-09-27.2	36° 37'	121° 15'	a	10	15 km SE of Hollister. Felt by many; awakened some. Aftershocks: 08-14-10 (M = 0.9) 08-14-50 (M = 1.8) 08-17 (M = 1.6)
16	Apr. 29	3.0	10-01-52.3	37° 25'	119° 25'	b	11	25 km SW of Yosemite.
*17	Apr. 29	3.2	10-58-22	40°.3	124°.7	0	5	SW of ARC. Depth fixed.

Map No.	Date 1966	M	Origin Time (G.C.T.)	Latitude North	Longitude West	h	No. of Stas.	Remarks
*18	May 01	3.5	09-13-14	41°.2	125°.1	0	3	Off coast from ARC. Depth fixed.
9	May 02	2.5	12-18-27.5	36° 36'	121° 13'	a	10	NE of PRS.
*19	May 03	+3.3	18-25-27	37°.3	118°.4	0	5	S of Bishop. Depth fixed.
*20	May 04	3	00-17-59	39°.6	120°.5	0	5	15 km NW of Truckee. Depth fixed.
9	May 04	2.5	06-32-44.8	36° 34'	121° 15'	b	8	NE of PRS.
21	May 05	2.5	15-07-10.5	36° 56'	122° 13'	a	7	Off coast from GCC.
*22	May 11	3.4	14-04-00	41°.4	119°.4	0	4	NW Nevada. Depth fixed.
23	May 13	4.5	17-25-55.9	36° 55'	121° 34'	b	12	S of Gilroy. Felt at Salinas.
23	May 13	3.2	19-46-09.7	36° 56'	121° 33'	b	10	S of Gilroy.
24	May 24	4.6	03-49-55.1	39° 47'.0	121° 46'.2	20	8	NE of Chico. Felt at Chico, Oroville, Paradise.
*25	May 30	+3.5	09-39-02	38°.4	118°.1	0	12	SW Nevada. Aftershock at 15-11. Depth fixed.
21	June 02	2.9	13-12-20.4	36° 58'	122° 12'	a	7	Off coast from GCC.
26	June 03	2.5	14-22-58.4	37° 53'	122° 17'	a	5	Felt at Albany.
27	June 05	+2.5	20-49-51.8	37° 19'	121° 40'	a	7	W of MHC. Foreshock of June 6 at 07-23. Aftershocks at 20-15; 20-52; 20-53.
27	June 06	3.7	07-23-13.9	37° 19'	121° 44'	b	14	W of MHC. Felt at San Jose (UPI). Foreshock June 5 at 20-49. Aftershocks: 07-25; 07-27; 07-28; 07-29; 07-35; 08-04; 08-14; 08-29.
28	June 11	2.8	10-08-59.4	37° 42'	122° 34'	a	8	SW of San Francisco.
29	June 14	3.2	12-45-14.0	39° 59'	120° 28'	a	8	E of Quincy.
30	June 18	3.5	06-03-53.5	40° 17'	121° 12'	a	14	E of MIN.
31	June 19	2.8	16-05-31.4	38° 19'	122° 40'	a	8	S of Santa Rosa.
* 1	June 20	3.4	18-45-42	38°.6	118°.1	0	11	NE of Hawthorne, Nev. Depth fixed.
*32	June 20	3.4	19-58-57	38°.5	118°.4	0	11	E of Hawthorne, Nev. Aftershock at 20-08-55 (M=2.9). Depth fixed.
33	June 20	2.8	23-19-18.6	36° 20'	120° 58'	a	9	NE of King City.

≠cf. C. Lomnitz and B.A. Bolt (1967). Evidence on Crustal Structure in California from the Chase V Explosion and the Chico Earthquake of May 24, 1966, Bull. Seism. Soc. Am. 57, 1093-1114.

Map No.	Date 1966	M	Origin Time (G.C.T.)	Latitude North	Longitude West	h	No. of Stas.	Remarks
* 1	June 21	3.1	05-55-00	38°.6	118°.2	0	8	NE of Hawthorne, Nev. Depth fixed.
34	June 24	3.1	21-42-50.4	36° 30'	120° 51'	a	10	SE of LLA.
35	June 27	3.1	06-04-28.7	38° 29'	122° 50'	b	9	NE of Santa Rosa.
*36	June 27	3.6	07-40-17	38°.9	119°.3	0	15	Near Woodfords, Calif. Aftershocks: 07-51; 07-53; 08-07; 08-20; Magnitudes 1.7 to 2.4. Also 08-42; 09-07 (M about 1.8). Depth fixed.
*37	June 29	3.1	07-23-40	40°.9	125°.2	0	6	Off coast from ARC. Depth fixed.

PARKFIELD SEQUENCE

April 1, 1966 to June 30, 1966.
McEvilly et al. (1967). The Parkfield, California Earthquakes of 1966, Bull. Seism. Soc. Am., 57, 1221-1244.

Date 1966	Magnitude	Time (GMT) h m s	Latitude (N) Deg. Min.	Longitude (W) Deg. Min.	Depth
Apr. 12	2.3	15-31-39.8	36 06.4	120 42.2	--
May 11	2.3	17-37-01.1	35 59.5	120 34.0	--
May 23	2.5	08-07-37.6	36 01.0	120 34.0	--
May 23	2.2	08-11-07.0	36 01.0	120 34.0	--
May 27	2.7	15-36-03.7	35 58.9	120 30.7	--
June 18	2.0	16-32-17.6	35 57.6	120 31.6	--
June 28	3.1	01-00-31.5	35 56.9	120 30.7	--
*June 28	1.8	01-14-55	- -	- -	--
June 28	5.1	04-08-56.2	35 57.6	120 30.3	--
***June 28	-	04-09-53	- -	- -	--
June 28	2.6	04-18-34.0	35 56.6	120 31.5	--
June 28	5.5	04-26-13.4	35 57.3	120 29.9	--
***June 28	-	04-26-28	- -	- -	--
***June 28	-	04-26-34	- -	- -	--
***June 28	-	04-27-37	- -	- -	--
***June 28	-	04-27-58	- -	- -	--
***June 28	-	04-28-19	- -	- -	--
***June 28	-	04-28-36	- -	- -	--
*June 28	4.5	04-28-38	- -	- -	--
***June 28	-	04-28-46	- -	- -	--

Date 1966	Magnitude	Time (GMT) h m s	Latitude (N) Deg.	Min.	Longitude (W) Deg.	Min.	Depth
***June 28	-	04-29-13	-	-	-	-	--
*June 28	3.0	04-31-55	-	-	-	-	--
*June 28	3.5	04-32-50	-	-	-	-	--
June 28	3.0	04-34-59.1	35	49.3	120	23.5	--
*June 28	3.0	04-39-08	-	-	-	-	--
June 28	2.4	04-42-33.6	35	50.0	120	22.8	--
June 28	2.7	04-43-54.8	35	56.6	120	33.5	--
*June 28	3.0	04-46-22	-	-	-	-	--
*June 28	2.4	04-51-43	-	-	-	-	--
June 28	3.1	05-00-59.5	35	50.6	120	23.5	--
June 28	2.4	05-03-44.7	35	53.4	120	27.4	--
June 28	2.5	05-09-48.3	35	38.5	120	07.5	--
June 28	2.9	05-12-42.5	35	55.0	120	28.2	--
*June 28	2.1	05-17-05	-	-	-	-	--
*June 28	2.0	05-21-05	-	-	-	-	--
June 28	2.1	05-29-14.9	35	55.2	120	28.5	--
June 28	2.5	05-37-04.6	35	52.4	120	26.1	--
June 28	2.7	05-40-19.4	35	55.9	120	29.4	--
June 28	3.2	05-45-59.1	35	44.7	120	19.5	1.6
*June 28	2.2	05-48-26	-	-	-	-	--
June 28	2.1	05-51-34.0	35	52.1	120	25.7	--
*June 28	2.3	05-52-06	-	-	-	-	--
*June 28	2.4	05-52-58	-	-	-	-	--
*June 28	2.1	05-56-00	-	-	-	-	--
June 28	2.6	06-11-03.5	35	48.6	120	21.2	--
June 28	3.4	06-32-17.9	35	56.2	120	31.0	--
June 28	3.0	06-35-11.4	35	47.6	120	22.9	--
June 28	2.2	06-39-31.2	35	53.7	120	27.8	--
June 28	2.2	07-01-03.8	35	54.5	120	28.9	--
June 28	2.7	07-33-52.7	35	54.2	120	27.1	--
*June 28	2.3	07-41-43	-	-	-	-	--
June 28	3.0	07-45-48.3	35	53.5	120	27.6	--
June 28	2.4	08-14-48.6	35	50.4	120	24.8	--
June 28	2.0	08-47-52.4	35	51.4	120	24.7	--

Date 1966	Magnitude	Time (GMT) h m s	Latitude (N) Deg.	Min.	Longitude (W) Deg.	Min.	Depth
June 28	2.3	08-54-49.5	35	54.8	120	30.4	--
June 28	2.5	08-59-52.3	35	50.8	120	25.4	--
June 28	2.4	09-31-26.6	35	46.1	120	20.9	--
June 28	2.2	09-33-54.3	35	46.2	120	21.6	--
June 28	2.5	09-56-00.7	35	49.5	120	23.8	--
June 28	2.1	10-16-53.3	35	55.4	120	32.2	--
June 28	2.3	10-20-16.4	35	50.8	120	25.4	--
June 28	2.5	10-23-22.8	35	55.6	120	29.0	--
June 28	2.0	10-46-22.9	35	55.5	120	30.2	--
June 28	2.0	11-15-13.9	35	50.7	120	25.2	--
June 28	2.0	11-28-41.4	35	51.1	120	22.8	--
June 28	2.2	11-30-14.0	35	53.8	120	27.9	--
June 28	2.5	12-31-52.1	35	55.3	120	28.5	--
June 28	2.3	12-52-22.0	35	58.4	120	31.5	--
June 28	2.1	12-54-28.2	35	57.7	120	31.7	--
*June 28	2.7	13-48-22	-	-	-	-	--
June 28	2.6	14-13-09.3	35	55.5	120	28.8	--
June 28	2.2	14-21-36.3	35	55.4	120	28.7	--
June 28	2.3	14-51-53.6	35	53.9	120	28.0	--
June 28	2.3	18-12-19.4	35	55.3	120	29.9	--
*June 28	2.0	18-22-32	-	-	-	-	--
June 28	2.5	18-54-55.3	35	52.8	120	26.5	--
June 28	2.8	19-59-37.8	35	55.7	120	27.6	--
June 28	2.5	20-00-36.7	35	54.8	120	29.2	--
June 28	3.1	20-46-56.4	35	46.0	120	23.9	--
June 28	2.0	22-01-18.9	35	51.1	120	25.7	--
June 28	2.0	22-37-56.7	35	52.5	120	24.7	--
June 28	2.5	23-57-22.3	35	46.2	120	21.5	--
June 29	2.3	00-17-32.6	35	51.1	120	25.7	--
June 29	3.6	02-19-39.9	35	54.6	120	31.3	--
June 29	2.8	04-06-40.3	35	55.6	120	32.4	--
June 29	2.3	07-28-59.4	35	55.6	120	28.9	--
June 29	2.9	08-55-52.4	35	53.0	120	26.6	--
June 29	2.5	09-20-50.1	35	47.2	120	22.3	--
June 29	2.3	10-13-44.0	35	58.4	120	30.1	--

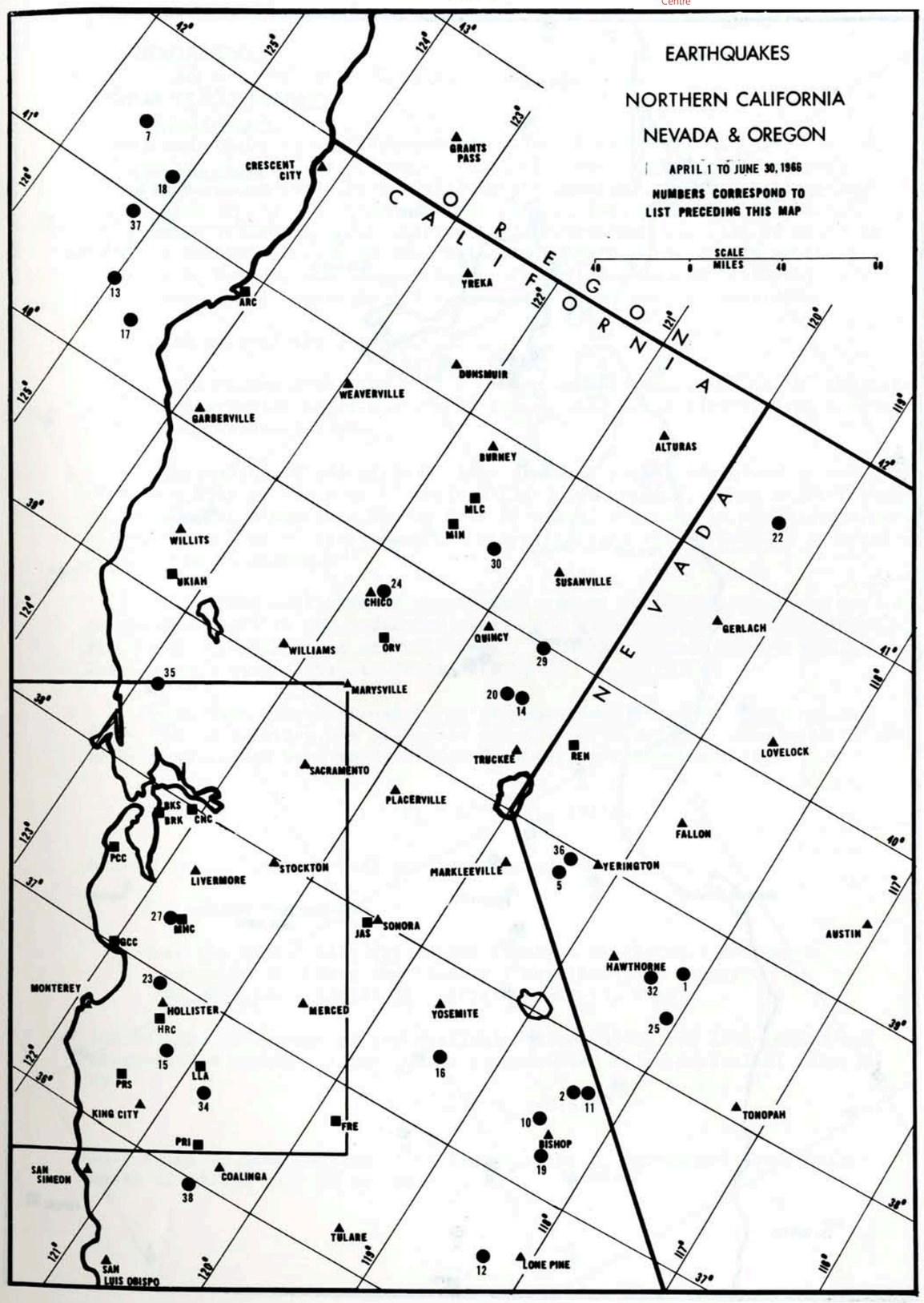
Date 1966	Magnitude	Time (GMT) h m s	Latitude (N) Deg. Min.	Longitude (W) Deg. Min.	Depth
June 29	3.0	10-56-58.8	35 45.1	120 20.1	--
June 29	2.4	12-30-09.0	35 56.1	120 29.6	--
June 29	3.1	13-11-59.7	35 48.7	120 22.9	--
June 29	2.0	15-18-38.9	35 57.1	120 20.3	--
June 29	2.3	15-34-22.2	35 55.7	120 29.1	--
June 29	2.1	16-03-30.1	35 51.9	120 26.9	--
June 29	2.0	17-10-28.3	35 48.9	120 21.6	--
June 29	5.0	19-53-25.9	35 56.6	120 31.5	--
June 29	2.5	20-44-40.0	35 43.8	120 17.0	--
*June 29	2.3	23-48-12	- -	- -	--
June 30	4.1	01-17-36.1	35 51.9	120 26.9	--
June 30	2.6	03-36-16.8	35 54.7	120 27.7	--
June 30	2.0	05-04-12.9	35 53.2	120 27.2	--
June 30	2.4	06-07-21.5	35 56.4	120 28.6	--
June 30	2.1	06-23-32.4	35 53.8	120 27.9	--
June 30	2.0	07-37-12.1	35 54.0	120 28.2	--
June 30	2.9	08-01-38.4	35 53.8	120 27.9	--
June 30	2.8	11-07-55.1	35 46.9	120 19.8	12.2
June 30	2.3	13-26-05.7	35 46.8	120 20.8	4.0
June 30	2.0	13-29-56.6	35 51.5	120 24.4	7.7
June 30	2.1	13-40-50.9	35 49.9	120 22.6	3.5
June 30	2.3	16-05-02.7	35 57.8	120 30.5	10.3
June 30	2.1	19-06-17.5	35 51.9	120 25.1	4.8

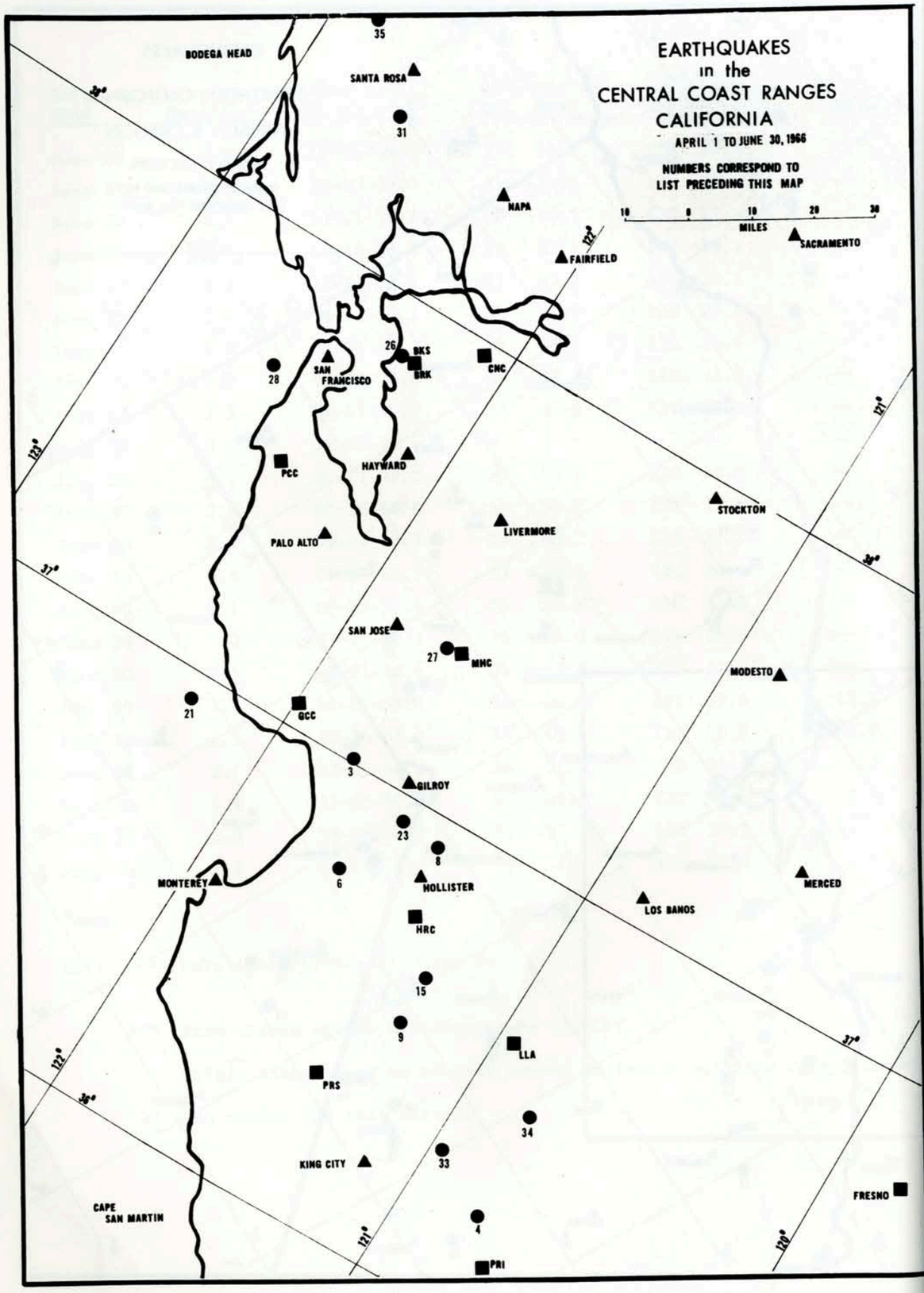
KEY: * Data insufficient for location.

*** From strong motion accelerographs (USCGS).

Origin times given to nearest second estimated accurate to ± 3 seconds

38 Map number for this series.





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.

Distances are given in degrees from the Berkeley station, BRK.

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 9472?
APR 01 THROUGH APR 30 1966

* PRECEDING ALPHABET INDICATES LOWER CASE

			P OR P'		S	OTHER PHASES
PRI	APR	C1	02 59 33.3	C	*PP 59 43	
MHC			02 59 2?.3	D	*PP 59 38	
BKS			02 59 14.C	C	*PP 59 31	
JAS			02 59 23.C	C	*PP 59 42	
MIN			02 59 C4.8	C	*I 59 24	
PRI	APR	C1	03 45 23.5	C		
MHC			03 45 C4.7	C		
JAS			03 45 C9.8	C		
MIN			03 44 47.7	C		
JAS	APR	C1	03 52 44.5	D	*E 52 5o	
BKS	APR	C1	04 .		*E 29 18 *E 35 18 *E 39 18	
BKS			04 .		LR 47 48	
JAS	APR	C1	08 25 55.8	C		
PRI	APR	C2	01 58 36.4	C	*E 61 43	
MHC			01 58 44.6	C		
BKS			01 58 38.	D 63 52	*E 66 24 LR 69 18	
			R FROM S.E.			
				MICRON	PERIOD	
			SH	1.87	18	
			MAXH	6.3	20	
JAS			01 58 41.3	C	*E 61 45 *E 68 30	
MIN			01 59 C1.7	C		
			MAGNITUDE 4.5 - 5			
PRI	APR	C2	12 49 29.2	C		
MHC			12 49 26.9	D 50 10		
BKS			12 49 3C.5	D 50 19		
JAS			12 49 1C.2	C		
MIN			12 49 3C.7	C	*I 5C 15 *I 50 24	
JAS	APR	C2	22 54 47.6	C	*E 54 59	
MIN			22 54 44.C	C		
BKS			22 54 .		LR 7o 66	
PRI	APR	C3	04 55 16.6	C	*PP 55 32	
MHC			04 55 11.3	C	*PP 55 24	
BKS			04 55 C6.8	C 64 3C	*PP 55 2C LR 77 0C	
				MICRON	PERIOD	
			P?	0.03	0.8	
JAS			04 55 13.5	C	*PP 55 27	
MIN			04 55 C1.0	C	*I 55 14	

```
ARC                 04 55 04.1  C
                          MAG 4-4.3 DIST(DEG) 73

MHC  APR  03    16 06 59.3  D
JAS             16 07 02.9  D
PRI  APR  03    16 24 01.5  D    24 28
MHC             16 24 18.0  D
JAS             16 24 11.8  D    24 46

MHC  APR  03    19 33 47.5  C
JAS             19 33 45.0  C

PRI  APR  03    19 47 17.   C
BKS             19 47  .                  *E  49 24  LR   50 18
JAS             19 46 49.5  D    49 13

PRI  APR  04    06 30 47.2  C
BKS             06 30 42.5  C
JAS             06 30 49.5  D

JAS  APR  04    09 34 01.4  C

JAS  APR  04    10 43 30.5  C
BKS             10 43  .        55 12   LR   72 36
                     R FROM W
                          MICRON        PERIOD
                     MAXH   1.3          20

PRI  APR  04    19 56 57.1  C            P'   59 25   *E  63 05
MHC             19 57 08.5  C            P'   59 28   *E  63 08
BKS             19 57 14.5  C            P'   59 31   PP  63 12  SKS   66 36
BKS             19 57 14.5  C            SKKS 68 42   *E  74 42
                          MICRON        PERIOD
                     PZ     0.08          0.8
JAS             19 57 03.7  C            P'   59 26   *E  63 08

JAS  APR  04    20 35 51.5  C

PRI  APR  04    20 59 41.2  C
MHC             20 59 43.3  C
JAS             20 59 32.8  C

PRI  APR  04    23 44 54.1  D
MHC             23 44 51.7  D
BKS             23 44 50.   D    54 36   SS   60 37   SSS  63 47   LQ   66 24
BKS             23 44 50.   D    54 36   LR   70 00
                     R FROM WSW
JAS             23 44 55.8  D
MIN             23 44 55.2  C

PRI  APR  05    06 27 52.1  D
MHC             06 27 51.7  D
JAS             06 27 47.7  D
MIN             06 27 45.5  D

PRI  APR  05    09 03 12.0  C
```



```
MHC             09 03 04.0  C
BKS             09 03 00.0  C
JAS             09 03 06.5  C

MIN             09 02 53.9  C            *E  03 10

JAS  APR  05    10 55 44.0  D
MIN             10 55 36.4  D

JAS  APR  05    14 16 46.5  D
MIN             14 16 24.2  C

PRI  APR  05    18 46 12.8  D
MHC             18 46 20.6  D
BKS             18 46 23.5  D
JAS             18 46 22.8  D

PRI  APR  06    03 18 49.1  C            *E  19 12
MHC             03 18 48.6  C
BKS             03 18 52.7  D            *E  19 01   *E  21 06   PP   22 22
BKS             03 18 52.7  D       SKSP 32 56   SS   41 40   SSS  47 56
BKS             03 18 52.7  D            *E  53 00   LQ   62 00   LR   69 00
                     R FROM S.W.
JAS             03 18 50.2  C            *E  19 15   *E  20 56
MIN             03 18 57.6  D            *I  20 28
ARC             03 18 49.3  C

PRI  APR  06    05 15 40.8  D
MHC             05 15 40.2  D
JAS             05 15 45.2  D

MIN  APR  06    13 49 20.7  D

PRI  APR  06    17 57 38.8  D    58 47
MHC             17 57 48.6  D
JAS             17 57 33.5  D    58 37   *E  58 42

PRI  APR  06    18 19 15.0  C            *E  19 24
JAS             18 19 21.0  C

PRI  APR  06    19 58 21.4  D            *E  58 41
MHC             19 58 18.   C
JAS             19 58 25.0  D            *E  58 52

JAS  APR  06    22 34 38.5  D            *E  35 30
BKS             22 34  .                 LR  39 39
MIN             22 34 18.9  D            *E  34 28   *I  34 38

PRI  APR  07    01 05 59.   D            *E  06 12
JAS             01 05 43.5  D            *E  05 58
MIN             01 05 22.8  C

PRI  APR  07    05 14 23.0  D
MHC             05 14 20.5  C
JAS             05 14 26.9  C
MIN             05 14 32.5  C
```

PRI	APR	C7	09	55	32.8	C		*PP	55	46		
MHC			09	55	26.4	C		*PP	55	39		
BKS			09	55	22.8	C	66 14	*PP	55	36	LQ 79 00	LR 83 30

R FROM W

	MICRON	PERIOD
PZ	0.07	1.0

JAS			09	55	28.0	C		*PP	55	41		
MIN			09	55	18.5	C		*I	55	31		
ARC			09	56	09.7	C		*PP	56	23		
PRI	APR	C7	13	26	50.	C						
JAS			13	26	46.5	C						
MIN			13	26	38.7	C						
PRI	APR	C7	14	48	32.1	D						
MHC			14	48	33.3	D						
BKS			14	48	33.1	D		*E	78	00		
JAS			14	48	38.7	D						
MIN			14	48	43.5	C						
PRI	APR	C8	01	56	34.4	C		*E	56	54		
MHC			01	56	25.0	C		*E	56	38		
BKS			01	56	19.0	C	64 07	*PP	56	32	*E 56 56	*E 57 36
BKS			01	56	19.0	C	64 07	L	59	54	LR 72 00	

	MICRON	PERIOD
PZ	0.35	1.5
SH	10.7	14
MAXH	29.6	28

MAG 6.1 DIST(DEG) 57

JAS			01	56	26.9	C	64 21	*I	56	40	P'P'	85 48
MIN			01	56	10.6	C		*PP	56	24	*I 57	24
ARC			01	55	58.1	C		*I	56	11		
PRI	APR	C8	02	56	15.2	C	57 16					
MHC			02	56	.			*E	56	31		
JAS			02	56	06.0	D	57 05					
MIN			02	56	48.7	D		*E	58	00		
PRI	APR	C8	05	34	34.3	C		*PP	34	48		
MHC			05	34	23.2	C		*PP	34	37		
BKS			05	34	19.0	C		*PP	34	33		
JAS			05	34	26.5	C		*PP	34	40	*E 34	55
MIN			05	34	10.1	C		*PP	34	23		
PRI	APR	C8	06	02	52.7	D						
MHC			06	02	49.	D		*E	02	57		
JAS			06	02	40.4	D		*E	02	52	*E 03	05
MIN			06	02	33.6	D		*I	02	45		
PRI	APR	C8	09	25	13.0	D						
JAS			09	24	59.5	D		*E	25	12		
MIN			09	24	37.8	C		*I	24	44	*E 25	37
PRI	APR	C8	11	21	48.0	C						
MHC			11	21	47.0	C						

BKS			11	21	46.5	D		*E	22	08	LR 42	42
JAS			11	21	52.5	C		*E	22	15		
MIN			11	21	57.7	C		*E	22	19		
PRI	APR	C8	14	18	16.2	C						
MHC			14	18	25.6	C						
BKS			14	18	29.5	C		*E	18	41	*E 19	16
JAS			14	18	27.6	C		*E	18	48		
MIN			14	18	45.0	D						
PRI	APR	C8	22	17	01.8	C						
MHC			22	16	47.0	C						
BKS			22	16	40.2	D	21 10	*E	17	05	LQ 22 12	LR 23 48

R FROM N.W.

	MICRON	PERIOD
PZ	0.03	1.3
MAXH	3.1	16

MAG 3.8 DIST(DEG) 27

JAS			22	16	48.5	D		*E	16	58		
MIN			22	16	26.0	C		*I	17	02		
PRI	APR	08	23	55	28.	C						
JAS			23	55	20.6	C		*E	55	44		
MIN			23	56	02.9	D						
PRI	APR	09	02	42	14.7	D		*E	44	10		
MHC			02	42	27.2	C						
BKS			02	42	33.2	C		*I	44	17		
JAS			02	42	22.0	C		*E	44	12		
MIN			02	42	39.0	C						
PRI	APR	09	02	50	03.5	D		PP	51	58		
MHC			02	50	13.5	C						
BKS			02	50	20.0	D	56 46	*PP	50	41	PP 52	04 LQ 62 12
BKS			02	50	20.0	D	56 46	LR	65	00		

R FROM S.E.

	MICRON	PERIOD
PZ	0.04	0.8
MAXH	6.9	20

MAG 5.5 - 5.7 DIST(DEG) 52

JAS			02	50	08.6	C		PP	51	59		
MIN			02	50	25.0	D						
MHC	APR	09	04	18	29.5	D						
JAS			04	18	32.8	D						
JAS	APR	09	07	22	07.1	D						
MIN			07	21	44.6	D						
PRI	APR	09	15	01	54.9	C						
MHC			15	01	50.3	D						
BKS			15	01	50.7	C		*PP	02	11	LR 28	48

R FROM S. W.

JAS			15	01	57.6	D						
MIN			15	01	59.0	D		*E	02	36		

```
BKS APR 09   18 57 24.5  D
JAS          18 57 34.7  D          *E  57 54
MIN          18 57 12.0  D          *I  57 22

PRI APR 09   20 14 40.9  D
MHC          20 14 27.2  D
BKS          20 14 23.5  D   19 10  LQ  20 30  LR  21 24
                  R FROM N.W.
JAS          20 14 28.7  D          *E  14 43
MIN          20 14 14.

MHC APR 09   20 23 35.2  D
JAS          20 23 35.5  D
MIN          20 23 13.6  C

PRI APR 10   10 42 32.2  D
MHC          10 42 42.1  D
BKS          10 42 46.5  D          *E  43 40
                          MICRON     PERIOD
                  PZ      0.04         0.8
JAS          10 42 36.4  D          *E  42 52
MIN          10 42 48.2  D

PRI APR 10   16 48 29.5  D          *PP 48 46   *E  49 10
MHC          16 48 36.3  C          *PP 48 54
BKS          16 48 39.5  C   58 57  *PP 48 57  PPP 54 48  PS 59 45
BKS          16 48 39.5  C   58 57  SS  64 24  L   71 24  LR 76 12
                          MICRON     PERIOD
                  PZ      0.46         2.5
                  SH      3.36          11
                  MAG 5.9 DIST(DEG) 85
JAS          16 48 34.8  C          *PP 48 52   *E  49 17
MIN          16 48 46.3  C          *PP 49 03   *I  49 37

PRI APR 10   22 28 30.1  D
MHC          22 28 12.4  C   29 06
BKS          22 28 33.5  D   28 48
JAS          22 28 17.0  D

PRI APR 11   17 22 44.4  C          *E  22 58   *E  26 25
MHC          17 22 57.0  C          *E  23 11   *E  26 28
BKS          17 23 03.4  C   27 36  PCP 26 30  L   29 14  LR 30 36
                  R FROM S. E.
                          MICRON     PERIOD
                  PZ      0.15         1.3
                  SH      1.26          12
                  MAXH    3.7           20
                  MAG 4.8 - 5.2 DIST(DEG) 27
JAS          17 22 54.3  C          *E  23 08   *E  26 27
MIN          17 23 15.4  C          PCP 23 30   *E  26 32
ARC          17 23 31.6  D          *E  23 45

PRI APR 11   18 32 22.5  D
BKS          18 32   .              LR  39 24
JAS          18 32 10.0  D
MIN          18 31 47.9  D
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PRI APR 11   23 06 26.3  D          SCP 13 12
MHC          23 06 12.6  D          SCP 13 07
BKS          23 06 06.5  D   09 48  L   10 34  LR  11 56
                  R FROM N.W.
                          MICRON     PERIOD
                  PZ      0.18         1.5
                  MAXH    1.1          13.5
                  MAG 4.5 - 4.8 DIST(DEG) 22
JAS          23 06 14.0  D          *E  06 29  SCP 13 07
MIN          23 05 51.9  D          *I  06 20
ARC          23 05 38.2  C

PRI APR 12   23 28 09.3  C
MHC          23 28 08.5  C
JAS          23 28 13.5  C
MIN          23 28 13.7  C

PRI APR 12   23 50 21.7  C          *E  50 49
MHC          23 50 28.7  C          *E  50 52
BKS          23 50 18.5  C          *E  50 29   *E  50 32   *I  50 59
BKS          23 50 18.5  C          *E  51 29   PP  54 06   SKS 60 54
BKS          23 50 18.5  C          SS  66 40   SSS 70 28   L   75 00
BKS          23 50 18.5  C          LR  78 48
                  R FROM S.W.
                          MICRON     PERIOD
                  PZ      0.52         2.3
                  SH      12.5          26
                  MAG 6.4 DIST(DEG) 92
JAS          23 50 25.4  C          *E  50 52   *E  55 38
MIN          23 50 42.1  C

PRI APR 13   03 47 55.0  C
MHC          03 48 02.5  C
BKS          03 48 07.5  C   58 35  PP  52 30  PS  60 00  *E  64 30
BKS          03 48 07.5  C   58 35  SS  68 20  L   72 36  LR  76 48
                  R FROM S.E.
                          MICRON     PERIOD
                  PZ      1.15          10
                  SH      2.7           20
                  MAXH    3.8           18
                  MAG 5.9 DIST(DEG) 93
JAS          03 48 01.5  C          *E  48 50
MIN          03 48 12.7  D          *I  48 21

PRI APR 13   04 39 17.1  D
MHC          04 39 17.5  D
BKS          04 39 17.3  D
                          MICRON     PERIOD
                  PZ      0.12         1.0
JAS          04 39 22.5  D          *E  39 29   *E  39 56   *E  41 25
MIN          04 39 25.8  D          *I  39 32   *I  41 30

PRI APR 13   12 51 57.   C
MHC          12 52 03.7  C
BKS          12 52   .              *E  56 12
```

JAS			12 52 02.5	C									
MIN			12 52 31.6	C									
PRI	APR	13	13 11 03.8	C									
MHC			13 11 14.3	C									
BKS			13 11 28.0	D			LR	15 42					
			R FROM S.E.										
JAS			13 11 12.8	C									
MIN			13 11 44.5	C			*I	11 57					
JAS	APR	15	05 06 34.8	C									
MIN			05 06 15.6	C									
MHC	APR	15	06 46 25.5	D									
JAS			06 46 27.7	D			*E	46 43					
MIN			06 46 30.6	C									
MHC	APR	15	06 51 48.	D									
BKS			06 51 43.2	C	58 42		LR	67 18					
			R FROM S.E.										
					MICRON		PERIOD						
				MAXH	1.55		30						
JAS			06 51 32.4	C									
MIN			06 51 49.6	C									
PRI	APR	16	01 33 25.9	D			*E	40 05					
MHC			01 33 12.4	D			*E	33 24					
BKS			01 33 05.8	D	37 54		*I	33 33	*E	33 52	*I	34 18	
BKS			01 33 05.8	D	37 54		*E	35 51	L	39 18	LR	40 30	
					MICRON		PERIOD						
				PZ	0.24		2.0						
				SH	7.7		14						
				MAXH	44.7		20						
				MAG 5.6	DIST(DEG)		30						
JAS			01 33 13.7	D			*I	33 25	*E	40 00			
MIN			01 32 51.6	C			*I	33 13	*I	39 53			
PRI	APR	16	10 25 14.3	D									
MHC			10 25 06.7	D									
BKS			10 24 55.7	C	34 28		*E	25 14	L	44 16	LR	47 48	
JAS			10 25 04.2	D									
MIN			10 24 51.0	C									
PRI	APR	16	11 40 46.6	D									
MHC			11 40 47.4	D									
JAS			11 40 32.6	D			*E	40 40	*E	42 03	*E	42 12	
MIN			11 40 59.1	D									
PRI	APR	16	15 34 41.9	D									
MHC			15 34 42.2	D									
BKS			15 34 41.6	D			*E	34 53					
JAS			15 34 47.4	D			*E	35 06					
MIN			15 34 41.5	C			*I	35 04					
PRI	APR	16	22 54 53.0	C									
MHC			22 54 24.3	D									

JAS			22 54 30.7	D									
MIN			22 54 03.5	D									
PRI	APR	17	00 50 15.5	C									
JAS			00 50 20.7	C									
PRI	APR	17	07 04 54.2	D	05 23								
MHC			07 04 59.4	D	05 29								
BKS			07 05 06.7	D	05 42								
JAS			07 04 46.0	C									
MIN			07 05 17.4	C			*I	05 26	*I	06 14	*I	06 19	
PRI	APR	17	16 51 25.8	D									
MHC			16 51 06.6	D									
BKS			16 51 06.3	C	54 30		LG	57 12	LR	59 00			
					MICRON		PERIOD						
				SH	3.1		23						
				MAXH	3.2		16						
			DISTANCE (DEG) 18										
JAS			16 51 06.6	D									
MIN			16 50 39.6	C			*E	50 46					
PRI	APR	18	01 02 10.4	C									
MHC			01 02 11.0	C									
JAS			01 02 27.6	C									
PRI	APR	18	08 33 26.8	D									
MHC			08 33 20.0	D									
BKS			08 33 16.0	D									
JAS			08 33 22.5	D									
MIN			08 33 18.5	C									
PRI	APR	18	09 21 03.2	D									
JAS			09 20 57.3	D									
PRI	APR	18	09 22 22.4	D	23 23								
MHC			09 22 38.7	D									
JAS			09 22 35.8	C	23 51								
PRI	APR	19	10 45 57.5	D									
MHC			10 45 36.5	D									
BKS			10 45 34.8	D									
JAS			10 45 43.0	D									
MIN			10 45 20.4	D			*I	46 11					
PRI	APR	19	20 36 20.3										
MHC			20 36 10.2										
BKS			20 36 04.2	D									
JAS			20 36 12.2	C									
MIN			20 35 55.6	D									
PRI	APR	19	22 29 25.1	C									
MHC			22 29 25.5	D									
BKS			22 29 25.3	D									
JAS			22 29 30.7	C									
MIN			22 29 34.1	D									

```
PRI APR 20   02 45 08.5
MHC          02 45 02.4  C
BKS          02 45 04.5  D    54 52   LG   65 00   LR   68 30
                    R FROM N.W.
                          MICRON      PERIOD
                    MAXH   2.4          18
JAS          02 45 06.2  C
MIN          02 44 59.8  C

PRI APR 20   06 12 55.5
MHC          06 12 49.6  C
BKS          06 12 45.7  C    20 20    *E  13 02   *E  16 32   *E  21 32
BKS          06 12 45.7  C    20 20    *E  32 42   LR  36 12
                    R FROM N.W.
JAS          06 12 51.3  C
MIN          06 12 42.8  C              *I  13 08

MHC APR 20   06 55 06.
BKS          06 55 03.0  D
JAS          06 55 11.8  C
MIN          06 55 01.6  D              *E  57 53

PRI APR 20   14 13 41.
MHC          14 13 35.   D
BKS          14 13 32.3  D
JAS          14 13 38.5  C
MIN          14 13 30.3  C

JAS APR 20   16 31 54.2
MIN          16 31 29.2  C

PRI APR 20   16 38 33.1  D
MHC          16 38 26.3  C
BKS          16 38 23.7  D    48 16   PCP  39 23   SS   53 10   L    58 18
BKS          16 38 23.7  D    48 16   LR   62 06
                    R FROM WSW
                          MICRON      PERIOD
                    SH     1.5          24
                    MAXH   4.1          18
                    MAGNITUDE 5.2 - 5.4
JAS          16 38 30.2  C
MIN          16 38 21.5  C              *I  38 52
ARC          16 38 24.7  C

PRI APR 21   04 11 15.6  D
MHC          04 11 08.3  C
JAS          04 11 06.3  C
MIN          04 10 53.9  C

PRI APR 21   09 00 00.3  C
MHC          08 59 59.4  C
JAS          09 00 04.0  C              *E  00 18
MIN          09 00 00.0  D

MHC APR 21   09 28 41.8  C
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JAS          09 28 43.5  C
MIN          09 28 34.6  D

PRI APR 21   15 56 03.5  C              *E  57 14
MHC          15 55 58.3  C              *E  57 03
BKS          15 55 54.7  D    66 20     *E  56 17   *E  57 04 PPS  67 07
BKS          15 55 54.7  D    66 20     SS  71 12   LG  75 54
                          MICRON      PERIOD
                    SH     1.7          12
                    DISTANCE (DEG) 78
JAS          15 56 01.6  C              *E  57 03
MIN          15 55 54.3  C              *E  56 57

PRI APR 21   16 23 52.4  D
MHC          16 23 52.8  C
JAS          16 23 58.2  D
MIN          16 24 01.8  C

PRI APR 21   17 48 32.3  C
MHC          17 48 22.2  C
BKS          17 48 14.   D    57 48     *E  52 10   LG   67 00   LR   70 54
                    DISTANCE (DEG) 76
JAS          17 48 24.9  C

PRI APR 22   03 19 11.5  C
MHC          03 19 05.   C
BKS          03 19 15.0  C    29 46     *E  19 32   SS   35 34   L    42 48
BKS          03 19 15.0  C    29 46     LR  48 18
                    R FROM S.E.
                          MICRON      PERIOD
                    PZ     0.91         8
                    SH     2.54         20
                    MAXH   2.77         16
                    DIST(DEG) 86 MAG 5.2 - 5.6
JAS          03 19 17.2  C              *E  19 26   *E  19 46
MIN          03 19 28.4  C

PRI APR 22   07 29 32.3  D
JAS          07 29 31.6  C
MIN          07 29 19.7  C

PRI APR 22   10 21 39.2  D
BKS          10 21 35.7  C    28 42     *PP 21 47   SS   31 54   LR   34 00
JAS          10 21 39.8  D
MIN          10 21 17.5  D

PRI APR 22   12 36 30.7  D
MHC          12 36 35.   D
BKS          12 36 36.0  D
JAS          12 36 33.0  D
MIN          12 36 37.3  C

PRI APR 22   23 33 29.8  D              *E  33 37
MHC          23 33 16.1  D              *E  33 23
BKS          23 33 09.8  D    37 47     *PP 33 17   *I  33 59   PP   34 04
BKS          23 33 09.8  D    37 47     L   39 00   LR  40 19
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						MICRON	PERIOD								
					PZ	0.38	1.5								
					SH	5.3	10								
					MAXH	18.5	16								
					MAG 5.6	DIST (DEG)	29								
JAS			23	33	17.0	D		*I	33	24					
MIN			23	32	54.9	D		*I	33	14	*I	34	30		
ARC			23	32	32.3	C		*I	32	49					
PRI	APR	23	00	28	03.5	D									
MHC			00	28	10.3	C									
BKS			00	28	21.3	D		PP	29	13	SKKS	35	48	PS	38 12
BKS			00	28	21.3	D		SS	44	08	*E	46	46	*E	49 12
BKS			00	28	21.3	D		*E	52	00	L	54	40	LR	60 12
						MICRON	PERIOD								
					MAXH	44.5	40								
JAS			00	28	10.0	C		*PP'	28	28	PP	29	08		
MIN			00	28	06.6	C									
PRI	APR	23	00	39	02.3	C									
MHC			00	39	14.2	D									
BKS			00	39	26.3	D									
JAS			00	39	04.1	C		*E	41	34					
MIN			00	39	15.4	D									
MHC	APR	23	00	42	34.3	C									
BKS			00	43	23.	D									
JAS			00	42	37.3	C									
PRI	APR	23	03	40	31.7	D									
MHC			03	40	15.7	C									
JAS			03	40	31.8	D		*E	40	44					
MIN			03	40	36.8	C									
PRI	APR	23	05	57	18.5	C									
MHC			05	57	19.0	C									
BKS			05	57	18.5	D									
JAS			05	57	24.0	C									
PRI	APR	23	07	07	19.5	D									
MHC			07	07	16.0	D									
BKS			07	07	18.0	D	17 46	*E	16	00	L	30	00	LR	34 00
					R FROM S.W.										
						MICRON	PERIOD								
					MAXH	2.7	24								
JAS			07	07	20.2	D		*E	07	30					
BKS	APR	23	09	05	34.3	D		P'	09	32					
PRI	APR	23	09	15	16.4	C		*E	15	57	*E	26	14		
MHC			09	15	05.5	C		*E	15	58					
BKS			09	15	09.0	C		PP	15	42	SKS	21	44	PS	25 06
BKS			09	15	09.0	C		SS	31	22	L	41	52	LR	46 42
					R FROM N.W.										
						MICRON	PERIOD								
					PPZ	0.12	1.7								

						MAXH	6.4	35							
JAS			09	15	14.5	C		*E	15	54	*E	18	09	*E	26 15
MIN			09	15	12.2	C		*I	15	46	*E	26	12	*E	26 30
PRI	APR	23	18	12	19.1	D									
JAS			18	12	10.5	C		*E	12	26					
PRI	APR	23	20	23	13.0	C									
MHC			20	22	57.4	D									
JAS			20	23	08.8	C									
JAS	APR	24	03	40	08.8	D									
PRI	APR	24	06	13	33.8	D									
JAS			06	13	20.3	D									
JAS	APR	25	02	21	46.8	D		*I	22	23					
MIN			02	22	09.0	C									
PRI	APR	25	10	53	06.6	C									
MHC			10	53	07.1	C									
BKS			10	53	07.0	C									
JAS			10	53	12.4	C									
MIN			10	53	20.5	D		*E	55	18					
PRI	APR	28	00	29	06.5	C									
MHC			00	29	00.7	C									
JAS			00	29	06.0	C									
MIN			00	29	09.5	C									
PRI	APR	28	10	45	24.3	C		*E	45	35					
MHC			10	45	30.5	C									
BKS			10	45	.			*E	54	30	*E	58	12		
JAS			10	45	32.2	C									
MIN			10	45	51.4	C									
PRI	APR	28	17	08	05.4	D									
MHC			17	08	00.3	D									
BKS			17	08	.			*E	08	24	*I	17	36	L	27 06
BKS			17	08	.			*I	30	09					
JAS			17	08	04.3	C									
PRI	APR	28	17	25	09.7	D									
MHC			17	25	10.6	D									
BKS			17	25	10.0	D									
JAS			17	25	15.9	C		*E	25	26					
MIN			17	25	20.7	C									
PRI	APR	28	22	32	19.2	D		*E	32	31					
MHC			22	32	00.5	D		*E	32	10					
BKS			22	31	49.0	D	33 21	*I	31	56	*I	33	42		
JAS			22	32	04.1	D		*I	32	13					
MIN			22	31	32.8	C		*E	32	50					
PRI	APR	29	00	10	06.0	D									
MHC			00	09	45.0	D									

BKS			00 09 52.2	D												
JAS			00 09 48.9	D												
MIN			00 09 18.1	D												
PRI	APR	29	01 53 00.7	C												
MHC			01 52 47.4	C												
BKS			01 52 41.0	C			*I	57 51	*E	58 54	*E	60 06				
JAS			01 52 50.3	C												
MIN			01 52 29.4	C			*I	52 46								
PRI	APR	29	02 36 41.3	C												
MHC			02 36 33.5	C												
BKS			02 36 27.2	D			*I	37 28								
JAS			02 36 36.2	C			*I	37 08								
MIN			02 36 24.1	C												
JAS	APR	29	03 44 52.7	C												
PRI	APR	29	23 13 34.5	C												
JAS			23 13 14.8	C												
JAS	APR	30	08 22 27.2	D	22 37											
MIN			08 22 39.5	C												
PRI	APR	30	13 06 01.5	C												
MHC			13 06 15.9	C												
BKS			13 06 22.5	C	10 54		*I	06 34	PP	07 36	LQ	11 42				
BKS			13 06 22.5	C	10 54		LR	12 42								

R FROM S.E.

	MICRON	PERIOD
P7	0.41	2.0
MAXH	10.8	15

MAG 5.2-5.6 DIST(DEG) 27

JAS			13 06 12.6	C												
MIN			13 06 38.5	D			*I	06 52								

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SEISMOGRAPHIC STATIONS
BERKELEY, CALIFORNIA 94720
MAY 01 THROUGH MAY 31 1966

* PRECEDING ALPHABET INDICATES LOWER CASE

			P OR P'		S		OTHER PHASES					
PRI	MAY	01	16 33 02.3	C								
MHC			16 33 11.8	D								
BKS			16 33 16.0	D	42 48		*E	33 38	*E	33 48	*E	34 00
BKS			16 33 16.0	D	42 48		PP	36 24	*E	41 44	SS	47 00
BKS			16 33 16.0	D	42 48		*E	49 06	*E	52 00	LR	54 42

	MICRON	PERIOD
PZ	0.35	1.2
PPZ	1.7	14

MAG 5.8-6.2 DIST (DEG) 72

JAS			16 33 08.3	D	41 29		*PP	33 46	*I	42 38	*I	44 57				
MIN			16 33 21.7	D			*I	33 46	*E	35 40						
ARC			16 32 34.2	D			*I	33 11								
JAS	MAY	01	17 02 40.													
MIN			17 02 46.7	C												
JAS	MAY	01	18 42 31.0	C												
MIN			18 42 20.0	C												
BKS	MAY	01	22 33	.					LQ	54 00	LR	58 24				
JAS			22 33 57.3	D			*I	34 13								
MIN			22 34 07.4	D												
PRI	MAY	02	10 05	.					*E	06 25						
MHC			10 05	.					*E	06 24						
BKS			10 05 50.	C	16 32		*E	18 00	SS	23 06	*E	30 30				
BKS			10 05 52.	C	16 32		LR	34 00								

R FROM W

	MICRON	PERIOD
P7	0.17	24
SH	1.3	26
MAXH	7.7	26

MAG 4.8-5.2 DIST(DEG) 89

JAS			10 06 06.8	C			*I	06 16	*I	07 07						
PRI	MAY	02	11 04 26.0	D												
MHC			11 04 26.0	D												
BKS			11 04 25.5	D												
JAS			11 04 31.7	D												
MIN			11 04 35.2	C			*I	04 48								
BKS	MAY	02	15 12	.					*E	15 06	LR	15 54				
JAS			15 12 39.4	D	15 04		*I	12 54	*I	13 35						
PRI	MAY	02	16 58 31.7	D												
MHC			16 58 29.2	D												

BKS			16 58 23.1	D						
JAS			16 58 30.0	D			*E	58 53		
MIN			16 58 26.3	C						
PRI	MAY	02	23 30 02.8	C						
MHC			23 29 55.6	C						
JAS			23 29 58.8	C						
MIN			23 30 01.6	C						
PRI	MAY	03	01 28 35.6	D						
MHC			01 28 31.4	D						
BKS			01 28 38.1	D						
JAS			01 28 37.1	D						
MIN			01 28 46.2	C						
PRI	MAY	03	05 30 08.8	D						
BKS			05 30 .				*E	32 30	*E	33 00
JAS			05 30 16.1	D	32 40					
MIN			05 30 .				*E	31 02	*E	34 40
PRI	MAY	03	08 18 51.	C						
BKS			08 18 .				*E	21 48		
JAS			08 19 09.3	D	21 28					
MIN			08 19 .				*E	23 38		
PRI	MAY	C4	07 57 44.5	C						
MHC			07 57 44.5	C						
BKS			07 57 44.6	D						
JAS			07 57 50.0	C						
MIN			07 57 .				*I	57 50		
PRI	MAY	04	13 27 33.2	C						
MHC			13 27 .				*E	31 38		
JAS			13 27 37.2	C			*I	29 47		
PRI	MAY	C4	18 21 09.0	C						
MHC			18 21 19.7	C						
BKS			18 21 25.4	C						
JAS			18 21 15.2	C						
MIN			18 21 31.3	C			*I	21 48		
ARC			18 21 .				*E	21 48		
PRI	MAY	04	18 23 24.2	C						
BKS			18 23 30.0	C						
JAS			18 23 26.1	C						
MIN			18 23 57.5	D						
PRI	MAY	C4	18 27 06.2	C						
BKS			18 27 14.3	D						
JAS			18 27 08.5	C						
PRI	MAY	C4	18 56 09.4	C						
BKS			18 56 39.6	D						
JAS			18 56 32.6	C						
BKS	MAY	C4	20 30 18.9	C						

JAS			20 30 25.9	C						
MIN			20 30 30.3	D						
BKS	MAY	C5	00 28 41.1	C						
JAS			00 29 32.8	D						
MIN			00 29 14.4	C						
JAS	MAY	C5	06 24 59.7	C						
MIN			06 24 42.7	C			*I	25 02		
PRI	MAY	C5	06 47 32.2	C						
MHC			06 47 20.8	D						
BKS			06 47 15.7	C			*I	47 39	*E	62 42
JAS			06 47 23.7	C						
MIN			06 47 06.6	D			*I	47 25		
PRI	MAY	C5	14 34 44.8	C						
MHC			14 34 35.3	C						
BKS			14 34 34.9	C	45 41		*E	35 12	*E	58 00 LR 64 00
					MICRON	PERIOD				
				PZ	0.13	1.5				
				SH	2.3	18				
				MAXH	8.1	36				
				MAG 5.4-5.8 DIST(DEG) 90						
JAS			14 34 39.9	C	45 14		*I	34 47	*I	34 57 *I 38 38
MIN			14 34 31.7	C						
ARC			14 34 23.3	D						
PRI	MAY	C5	15 26 45.0	C						
JAS			15 26 30.3	C						
MIN			15 26 18.6	C						
JAS	MAY	C5	15 34 51.3	C			*I	35 10		
PRI	MAY	C5	16 02 52.1	C						
MHC			16 02 47.0	C						
BKS			16 02 .				*I	12 11	*E	24 12
JAS			16 02 38.0	C						
PRI	MAY	C5	18 52 53.3	C						
JAS			18 53 17.8	C			*I	55 03		
PRI	MAY	C6	02 56 48.8	C						
MHC			02 56 47.9	C						
BKS			02 56 47.5	C						
JAS			02 56 41.3	C						
MIN			02 56 38.6	D						
PRI	MAY	C6	07 25 47.3	C						
MHC			07 25 48.5	C						
BKS			07 25 48.6	D						
JAS			07 25 53.6	C						
MIN			07 25 57.1	C						
PRI	MAY	C6	16 20 [illegible].2	C						
MHC			16 19 53.9	D						

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BKS              16 19 51.0  C
                                MICRON        PERIOD
                          PZ     0.04           0.8
                          DISTANCE (DEG) 88
JAS              16 19 57.2  D
MIN              16 19 49.3  D

MHC MAY  06      20 05 24.7  C
JAS              20 05 23.3  C

PRI MAY  07      03 28 18.7  D    29 15
MHC              03 28 39.2  C    30 43
BKS              03 29 05.6  C
JAS              03 28 36.8  D    30 06   LR   30 30
MIN              03 29 18.3  C             *E   31 46

MHC MAY  08      01 35 48.2  D
BKS              01 35 37.   D
JAS              01 35 50.3  C

JAS MAY  08      10 27 57.8  D
MIN              10 27 59.2  D

PRI MAY  08      12 38 13.   D
MHC              12 38 04.6  D
JAS              12 38 07.   C
MIN              12 38 04.5  D

PRI MAY  09      01 13 11.1  D
BKS              01 12 28.2  C              *E   12 32   *E   13 24   *E   15 42
BKS              01 12 28.2  C         LQ   25 00   LR   31 30
                                MICRON        PERIOD
                          MAXH   7.35           25
JAS MAY  09      03 47 58.8  D
MIN              03 48 12.7  C

JAS MAY  09      15 26 42.5  C
MIN              15 26 50.2  C

PRI MAY  09      20 17 41.9  C
BKS              20 17   .               *E   27 12   LQ   29 18   LR   38 18
JAS              20 17 48.3  C           *E   18 07

PRI MAY  09      21 42 10.3  D
JAS              21 42 11.2  D

JAS MAY  10      10 20 10.7  D
MIN              10 20 14.0  C

JAS MAY  10      11 50 53.2  C
MIN              11 50 40.8  C

JAS MAY  10      13 18 50.0  D

PRI MAY  10      20 34 04.6  C
BKS              20 34   .          LR   55 00
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JAS              20 33 51.7  D              *E   34 08
MIN              20 34 00.4  C

PRI MAY  10      21 16 51.2  C
JAS              21 16 45.0  C

PRI MAY  11      01 30 55.5  D
BKS              01 30   .                  LQ   36 30
JAS              01 31 03.3  D

PRI MAY  11      01 32 45.2  C              *E   33 07
JAS              01 32 32.4  C              *E   32 52   *E   33 03
MIN              01 32 09.6  D              *I   32 40

PRI MAY  11      04 07 59.3  D
MHC              04 07 59.5  D
JAS              04 07 58.2  C
MIN              04 08 03.1  C

PRI MAY  11      14 27 41.2  C
MHC              14 27 31.0  C
BKS              14 27 27.5  C    35 30      *I   27 39   *E   28 48   *E   38 03
BKS              14 27 27.5  C    35 30   L      41 54   LR   44 00
                          R FROM N.W.
                                MICRON        PERIOD
                          PZ     0.96           10
                          SH     7.24           18
                          MAXH   5.2            14
                          MAGNITUDE 5.4 - 5.8
JAS              14 27 32.2  C    36 35
MIN              14 27 17.1  D                  *I   27 45

PRI MAY  11      21 09 56.7  C
MHC              21 09 58.   C
JAS              21 10 02.8  C
MIN              21 10 08.3  D

PRI MAY  11      21 49 36.5  C
MHC              21 49 32.4  C
BKS              21 49 24.   C    57 28      *E   59 50   L    63 54   LR   66 24
                          R FROM S.W.
                                MICRON        PERIOD
                          PZ     0.86           8
                          SH     3.2            20
                          MAG 5.1-5.3 DIST(DEG) 60
JAS              21 49 31.8  D
MIN              21 49 16.0  D                  *I   49 34

PRI MAY  12      06 44 33.   C
BKS              06 44 43.5  D
JAS              06 44 29.2  C                  *E   44 43
MIN              06 44 21.2  D

PRI MAY  13      17 26 15.5
MHC              17 26 04.5  D
BKS              17 26 15.1  D    26 31
```

JAS			17	26	19.3	D							
MIN			17	26	50.5	D			*I	27	38		
PRI	MAY	13	19	19	36.5	C							
MHC			19	19	44.0	C							
BKS			19	19	.				*E	41	12		
JAS			19	19	48.6	C							
JAS	MAY	14	17	11	43.7	C			*I	12	00		
MIN			17	11	32.6	C			*I	11	43		
JAS	MAY	14	17	15	48.1	D							
MIN			17	15	36.7	C							
JAS	MAY	14	19	49	04.4	D							
MIN			19	49	03.9	C							
PRI	MAY	14	20	37	22.0	D							
MHC			20	37	28.6	D							
BKS			20	37	32.2	D			*E	57	30	LR	64 48
JAS			20	37	22.1	D			*E	38	03		
MIN			20	37	30.9	C			*I	37	53		
JAS	MAY	15	04	41	10.1	C							
MIN			04	40	50.9	C							
PRI	MAY	15	14	54	07.5	C							
MHC			14	53	56.0	C			*PP	54	05		
BKS			14	53	51.2	D	59	40	*PP	53	59	PCP	56 08 *E 60 04
BKS			14	53	51.2	D	59	40	*E	63	00	L	63 18 LR 65 12

R FROM N.W.

	MICRON	PERIOD
PZ	0.9	1.0
SH	9.9	19
MAXH	17.0	22

MAG 5.5-5.7 DIST(DEG) 37

JAS			14	53	59.6	C			*PP	54	08		
ARC			14	53	26.1	C			*PP	53	36	PCP	55 37
JAS	MAY	16	03	15	53.0	C			*I	16	05		
MIN			03	15	57.3	D			*E	16	10		
JAS	MAY	16	06	15	52.3	C			*I	16	00		
MIN			06	15	18.7	D							
JAS	MAY	16	06	39	51.3	C							
MIN			06	39	55.6	D							
JAS	MAY	16	06	52	45.3	C							
MIN			06	52	14.1	D							
JAS	MAY	16	07	28	49.4	D							
MIN			07	28	18.3	D							
JAS	MAY	16	13	18	08.0	C							
MIN			13	18	57.8	C							

JAS	MAY	16	23	23	37.1	C			*I	24	01		
JAS	MAY	17	00	29	05.4	C							
PRI	MAY	17	01	10	51.5	D							
BKS			01	10	37.0	C							
JAS			01	10	44.0	D							
JAS	MAY	17	07	22	50.7	D							
MIN			07	22	45.3	D							
JAS	MAY	17	09	46	17.9	C							
MHC	MAY	17	17	08	48.9	D							
JAS			17	08	54.1	D			*E	09	05		
PRI	MAY	17	17	11	11.1	D			*E	11	24		
MHC			17	11	24.	C							
BKS			17	11	.				*E	41	36		
JAS			17	11	20.8	D			*E	11	56		
PRI	MAY	18	07	35	37.5	D			*E	35	54		
MHC			07	35	51.5	D							
BKS			07	36	04.5	D	39	20	*E	36	16	*E 36 39	*E 37 10
BKS			07	36	04.5	D	39	20	*E	39	30		

R FROM S. E.

	MICRON	PERIOD
PZ	0.67	2.0
SH	15.5	22
MAXH	43	16

MAG 5 - 5.4DIST(DEG) 18

JAS			07	35	53.7	D			*E	36	08	*E 38 07	*I 39 47
MIN			07	36	24.4	D			*I	40	20	*E 43 13	
ARC			07	36	23.5	D							
JAS	MAY	18	08	08	12.7	D							
MIN			08	09	20.8	C							
PRI	MAY	19	07	13	18.4	C			*E	13	31		
MHC			07	13	07.	D			*E	13	17		
BKS			07	13	00.	D	18	15	*E	13	40	*E 14 46	PCP 15 44
BKS			07	13	00.	D	18	15	LQ	20	12	LP 21 12	

R FROM N.W.

	MICRON	PERIOD
PZ	2.13	8
SH	8.95	20
MAXH	35.3	20

MAG 5.6-6.0 DIST(DEG) 34

JAS			07	13	08.0	D			*E	13	21	*E 18 21	*E 18 31
JAS			07	13	08.0	D			*I	18	53	*I 23 29	
ARC			07	13	48.8	C							
PRI	MAY	19	23	20	20.3	D							
MHC			23	20	19.5	C							
BKS			23	20	18.0	D			*E	20	30		

```
JAS             23 20 24.3  D
MIN             23 20 24.5  C

PRI MAY  20     03 06 46.2  D
MHC             03 06 39.8  D
BKS             03 06 26.6  D          *E  06 36
JAS             03 06 41.7  D
MIN             03 06 31.3  D

PRI MAY  20     07 41 22.7  D
MHC             07 41 23.0  C
JAS             07 41 28.5  D          *I  41 46
MIN             07 41 32.9  D

PRI MAY  20     08 20 22.7  D
MHC             08 20 11.5  D
BKS             08 20 05.3  D          *I  20 22
JAS             08 20 15.1  D
MIN             08 19 57.8  C

PRI MAY  20     09 27 17.2  C          *E  27 42
MHC             09 27 11.5  C
BKS             09 27 08.5  C   37 27  *I  27 18  *I  27 51  *E  28 00
BKS             09 27 08.5  C   37 27  *E  38 06  *E  41 08  L    48 18
BKS             09 27 08.5  C   37 27  LR  53 54
                R FROM WNW
                          MICRON      PERIOD
                PZ          0.28        1.2
                SH          4.7         12
                MAXH        5.2         18
                MAG 6-6.4 DIST(DEG) 84
JAS             09 27 15.2  C          *E  27 41  *E  28 12
MIN             09 27 07.3  C          *I  27 33  *I  27 51

PRI MAY  20     11 53 39.3  D
MHC             11 53 27.   D
BKS             11 53 19.3  C   60 40  *E  67 00  LR  68 00
JAS             11 53 28.9  D
MIN             11 53 10.7  C          *I  53 29

PRI MAY  20     12 46 47.5  D
MHC             12 46 41.8  D
JAS             12 46 45.7  D
MIN             12 46 38.1  C

PRI MAY  20     13 42 43.8  C   44 37
MHC             13 42 42.3  D   44 43
JAS             13 42 25.5  C   44 15
MIN             13 42 42.2  D

PRI MAY  21     00 02 28.7  D
MHC             00 02 11.6  D
BKS             00 02 02.   D          *E  04 18  *E  04 42
JAS             00 02 09.7  D          *E  02 18
MIN             00 01 35.6  D
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PRI MAY  21     02 48 19.0  D
MHC             02 48 04.2  C
JAS             02 47 57.8  D
MIN             02 47 18.2  C          *E  47 34

PRI MAY  21     08 19 59.2  C
MHC             08 19 59.8  C
BKS             08 19 59.4  C
JAS             08 20 04.6  C
MIN             08 20 08.3  D

PRI MAY  21     11 02 45.3  C
MHC             11 02 46.0  C          *E  03 06
BKS             11 02 45.1  C
JAS             11 02 51.8  C          *E  03 13
MIN             11 02 55.9  C

PRI MAY  21     22 51 29.0  C
MHC             22 51 28.3  C
BKS             22 51 28.0  D
JAS             22 51 33.1  D
MIN             22 51 35.0  D

PRI MAY  22     00 04 46.6  C
MHC             00 04 46.5  C
BKS             00 04 45.7  C
JAS             00 04 52.1  C          *E  05 09
MIN             00 04 55.6  D

PRI MAY  22     06 10 42.0  D
BKS             06 12  .        15 05  LQ  15 54  LR  16 54
                R FROM S.E.
JAS             06 11 00.2  D
MIN             06 11 27.0  C

PRI MAY  22     07 47 00.9  D
MHC             07 47 17.3  C
BKS             07 47 23.8  C   51 19  PP  47 48  LQ  51 50  LR  52 54
                          MICRON      PERIOD
                PZ          0.14        1.5
                SH          9.3         16
                MAXH       15.8         14
                MAGNITUDE 4.2 - 4.6
JAS             07 47 14.0  C   51 05  *I  47 40
MIN             07 47 43.4  D          *I  48 08

PRI MAY  22     09 33 35.1  C
MHC             09 33 50.   C
BKS             09 33 58.4  C   37 52  *E  38 52  LR  39 27
                R FROM S.E.
                          MICRON      PERIOD
                PZ          0.11        1.5
                SH          4.9         18
                MAXH        3.3         16
                MAGNITUDE 4.4-4.8
JAS             09 33 49.3  C          *E  34 42
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MIN          09 34 15.3  D                *E  34 34

PRI MAY 23   06 10 22.0  C
MHC          06 10 22.C  C
BKS          06 10 12.1  D                *I  10 30   *E  20 12   *E  31 42
JAS          06 10 27.2  D                *I  10 56
MIN          06 10 31.7  D                *I  10 48

PRI MAY 23   08 51 53.0  D                *PP 52 01
MHC          08 51 45.6  D                *PP 51 54
BKS          08 51 42.1  D                *PP 51 51   *E  62 12   LR  75 06
                  R FROM WNW
                          MICRON    PERIOD
                  PZ        0.1       0.8
                  MAXH      2.8        36
                  MAG 5.7-6.1 DIST(DEG) 77
JAS          08 51 48.4  D                *PP 51 57
MIN          08 51 37.0  D                *I  51 46

PRI MAY 23   11 55 38.1  D
MHC          11 55 53.3  D
BKS          11 56 07.3  C   59 56        *E  57 36   *I  60 40   *I  61 42
                          MICRON    PERIOD
                  PZ        0.33      1.6
                  SH       13.6       16
                  MAXH     25.5       15
                  MAG 4.6-5.0 DIST(DEG) 22
JAS          11 55 53.9  D
MIN          11 56 22.8  C

PRI MAY 23   14 35 03.2  C                *E  35 19
MHC          14 34 58.4  C                *E  35 14
BKS          14 34 51.4  C   45 15   L    56 12   LR  62 06
                          MICRON    PERIOD
                  PZ        0.2       1.2
                  SH        1.37       11
                  MAXH      1.9        18
                  MAG 5.5-5.7 DIST(DEG) 85
JAS          14 35 01.6  C                *E  35 18   *I  36 21
MIN          14 34 55.5  C

PRI MAY 23   18 11 48.6
MHC          18 11 54.7  D
JAS          18 11 52.0  D

PRI MAY 23   20 58 02.5
MHC          20 58 51.2
BKS          20 57 51.5
JAS          20 57 50.7                   *E  57 58
MIN          20 57 47.5  C

PRI MAY 24   03 50 51.2
MHC          03 50 32.2
BKS          03 50 24.4  D
JAS          03 50 28.5
MIN          03 50 05.8
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ARC          03 50 29.5  D   51 05    *I  51 08

PRI MAY 24   05 50 23.9
MHC          05 50 04.8
BKS          05 49 55.0
JAS          05 50 12.9
MIN          05 49 57.7  C            *I  50 49   *I  51 20
ARC          05 49 37.4  C            *I  50 32   *I  50 47   *I  50 56

JAS MAY 24   15 41 25.8  C

PRI MAY 24   20 23 50.1  C
MHC          20 24 08.2  D
BKS          20 24 10.4  D   28 07    *PP 24 20   *E  25 25   LQ  28 41
BKS          20 24 10.4  D   28 07    LR  29 36
                  R FROM S.E.
                          MICRON    PERIOD
                  PZ        0.19      2.0
                  SH        5.3        16
                  MAXH     11.5        14
                  MAG 4.3-4.7 DIST(DEG) 21
JAS          20 24 05.5  D

PRI MAY 25   12 19 49.0  C
MHC          12 19 48.5  C
BKS          12 19 49.0  D   30 22    PPS 31 44   L   43 00   LR  46 54
                  R FROM S.W.
                          MICRON    PERIOD
                  MAXH      1.7        25
                  DISTANCE(DEG) 87
JAS          12 19 53.5  C
MIN          12 19 55.9  D            *I  19 33

BKS MAY 25   13 40 20.0  D            *E  40 32   LQ  66 54   LR  72 00
JAS          13 39 28.2  D            *I  40 18   *I  40 33

PRI MAY 25   13 50 34.
MHC          13 50 29.
BKS          13 50 00.   D   56 00    *E  50 54   SCS 60 06   LQ  63 30
                          MICRON    PERIOD
                  PZ        1.9        10
                  SH        3.7        18
                  MAG 5.1-5.5 DIST(DEG) 38
JAS          13 50 24.9  C

PRI MAY 25   14 10 47.2  C
MHC          14 10 47.7  C
BKS          14 10 42.0  C
JAS          14 10 52.7  C

PRI MAY 25   23 14 29.0  C
MHC          23 14 20.9  C
BKS          23 14 36.8  C   14 51
JAS          23 14 29.4  C

JAS MAY 26   00 11 07.4  C            *I  11 12   *I  11 22
```

JAS	MAY	26	04	46	30.5	C			*I	46	55				
JAS	MAY	26	07	58	25.0	C									
MIN			07	58	24.4	D									
JAS	MAY	26	10	50	13.3	D									
MIN			10	49	54.0	C									
PRI	MAY	26	12	38	07.6	C									
JAS			12	38	07.7	C			*E	38	25	*I	38	50	
BKS			12	38	.		47	24	PCP	38	43	SS	52	32	*E 53 00
BKS			12	38	.		47	24	SSS	56	CC	LQ	56	18	LR 60 00
MIN			12	38	11.3	D			*E	39	56				
PRI	MAY	26	18	41	42.3	C									
MHC			18	41	42.9	C									
BKS			18	41	42.0	C			*E	42	02				
JAS			18	41	48.5	C			*I	42	33	PP	44	48	
MIN			18	41	52.3	C			*I	42	08				
JAS	MAY	26	20	57	47.9	D									
PRI	MAY	26	23	24	25.0	C									
MHC			23	24	25.6	C									
BKS			23	24	24.5										
JAS			23	24	30.6	C			*I	24	55				
JAS	MAY	27	22	15	36.5	C			*I	15	45				
PRI	MAY	28	00	17	20.0	C									
MHC			00	17	12.8	C									
BKS			00	17	11.9	C			LR	47	00				
JAS			00	17	15.1	C			*I	17	26				
MIN			00	17	05.6	D			*I	17	22				
PRI	MAY	28	02	21	05.7	C									
MHC			02	21	06.1	C									
JAS			02	21	11.2	C			*I	21	29				
MIN			02	20	15.1	D									
PRI	MAY	28	21	57	59.6										
MHC			21	58	07.										
BKS			21	57	56.5	C									
JAS			21	58	04.2	C			*I	58	14				
PRI	MAY	29	13	55	46.7										
MHC			13	55	46.3	C			*E	57	40				
BKS			13	55	46.8	C									
JAS			13	55	51.5	C			*I	55	14	*PP	57	45	*I 58 09
MIN			13	55	56.9	C			*I	56	09	*PP	57	50	*E 57 57
PRI	MAY	30	03	18	18.3	C									
MHC			03	18	29.5										
BKS			03	18	34.2	C			LR	37	48				
JAS			03	18	23.7	D			*I	19	46				

MIN			03	18	37.8	D									
BKS	MAY	31	07	50	13.3										
JAS			07	50	12.8	C									
MIN			07	50	00.3	D									
BKS	MAY	31	10	25	44.5	D									
MHC			10	25	33.										
JAS			10	25	33.4							*I	25	43	
MIN			10	26	02.0	C									
PRI	MAY	31	19	03	46.										
BKS			19	03	44.										
JAS			19	03	50.6	D						*I	04	02	*I 04 11

UNIVERSITY OF CALIFORNIA
SEISMOGRAPHIC STATIONS
BERKELEY, CALIFORNIA 94720
JUN C1 THROUGH JUN 30 1966

* PRECEDING ALPHABET INDICATES LOWER CASE

			P OR P'		S		OTHER PHASES					
PRI	JUN	C1	02 42 26.3	C								
JAS			02 42 18.2	C								
BKS			02 42 14.									
MIN			02 42 CC.4	D								
PRI	JUN	C1	11 59 33.7	D								
MHC			11 59 34.7	D								
BKS			11 59 34.5	D								
JAS			11 59 4C.C	D			*I	60 01	*I	86 38		
MIN			11 59 44.5	D			*I	60 C5				
JAS	JUN	C1	12 47 03.5	C			*I	47 23				
BKS			12 46 55.									
MIN			12 47 03.8	C								
BKS	JUN	02	02 57 39.2	C								
JAS			02 57 45.5	D			*I	58 C6				
MIN			02 57 46.2	D								
PRI	JUN	C2	03 36 21.2	D								
MHC			03 36 1C.C	D								
BKS			03 36 C4.C	D								
JAS			03 36 13.4	D	43	C2	*I	36 26	*I	38 02	*I	43 12
MIN			03 35 55.7	D			*I	36 10				
ARC			03 35 41.6	D			*I	35 56				
JAS	JUN	C2	17 05 37.9	C								
MIN			17 05 46.6	D								
JAS	JUN	C2	17 16 4C.6	D								
PRI	JUN	C3	10 55 1C.									
MHC			10 55 19.6	D								
BKS			10 55 16.2	D								
JAS			10 55 18.3	D			*I	55 46				
JAS	JUN	C4	12 16 42.				*I	14 C4				
MIN			12 17 03.6	C								
BKS	JUN	C4	13 04 34.6									
JAS			13 C3 37.									
BKS	JUN	C4	14 19 56.5									
JAS			14 19 57.									
MIN			14 20 14.4	C								
ARC			14 20 28.4	C								

PRI	JUN	C4	18 18 29.8	D								
MHC			18 18 37.3	D								
BKS			18 18 45.									
JAS			18 18 34.5	D								
PRI	JUN	C4	23 58 43.9	C								
MHC			23 58 34.4	C								
BKS			23 58 29.7	C							*PP	58 44
JAS			23 58 36.9	C								
MIN			23 58 22.2	D							*I	58 36
ARC			23 58 24.									
JAS	JUN	C5	00 27 3C.									
PRI	JUN	C5	18 56 31.									
BKS			18 56 51.									
JAS			18 56 39.								*E	57 17
MIN			18 57 11.2	C								
PRI	JUN	C5	01 58 16.4	C								
MHC			01 58 14.6	C								
BKS			01 58 13.7	C								
JAS			01 58 19.9	C								
MIN			01 58 19.8	C								
PRI	JUN	C6	08 00 09.8	C								
BKS			08 00 .								*E	0C 54
JAS			08 00 01.1	C								
MIN			07 59 49.3	C							*I	62 25 *I 63 C6
ARC			07 59 48.9	C							*E	6C 39
PRI	JUN	C6	08 16 32.0	C								
MHC			08 16 35.8	C								
BKS			08 16 37.2	C								
JAS			08 16 36.7	C								
MIN			08 16 43.4	C								
JAS	JUN	C6	09 35 34.5	C							*I	35 53
MIN			09 36 16.6	C								
MHC	JUN	C6	10 08 51.									
JAS			10 08 49.6	D								
MIN			10 09 C0.6	C								
JAS	JUN	C6	21 01 06.								*I	01 17
BKS	JUN	C6	21 05 10.4									
JAS			21 05 1C.								*I	05 2C
PRI	JUN	C7	01 10 31.5	C								
BKS			01 10 44.7	C								
JAS			01 10 38.2	C								
MIN			01 10 51.7	C								
JAS	JUN	C7	01 59 04.									

MIN			01 39 22.8	D								
BKS	JUN	07	03 35 18.6	C								
JAS			03 35 12.									
PRI	JUN	07	11 58 13.3	D								
BKS			11 58 04.5	D								
JAS			11 58 08.6	D								
MIN			11 57 59.0	C		*I	58 12					
PRI	JUN	07	14 12 39.0	C								
MHC			14 12 33.7	C								
BKS			14 12 29.9	C								
JAS			14 12 37.0	C								
MIN			14 12 29.5	C								
ARC			14 12 20.8	C		*I	12 44					
JAS	JUN	07	14 30 03.6	D								
PRI	JUN	07	15 25 30.									
JAS			15 25 33.5	C		*I	25 46					
MIN			15 25 49.0	C								
JAS	JUN	07	19 17 01.2	D								
MIN			19 17 04.5	C								
PRI	JUN	07	20 05 12.									
JAS			20 05 04.5	C								
JAS	JUN	08	15 13 43.0	C								
MIN			15 13 54.1	C								
JAS	JUN	08	20 05 04.3	D		*E	10 22					
MIN			20 04 47.0	D		*I	06 13					
JAS	JUN	09	01 09 21.									
MIN			01 08 40.6	D								
JAS	JUN	09	02 08 01.8	C								
MIN			02 07 56.9	D								
JAS	JUN	09	07 07 30.1	D								
MIN			07 07 12.2	D								
PRI	JUN	09	11 33 08.4	C								
JAS			11 33 10.0	C		*I	33 25					
MIN			11 32 59.1	D								
JAS	JUN	09	13 19 30.2	D								
MIN			13 20 16.7	C								
PRI	JUN	09	15 50 10.8	D								
MHC			15 50 10.8	D								
BKS			15 49 57.1	D								
JAS			15 50 14.2	D								
MIN			15 49 48.8	D								

PRI	JUN	09	22 28 12.2	C								
MHC			22 28 12.5	C								
BKS			22 28 .			*E	51 36	*E	56 36			
JAS			22 28 19.2	C		*E	28 36					
PRI	JUN	10	04 33 33.	D								
MHC			04 33 42.	D								
BKS			04 33 .			LR	46 36					
JAS			04 33 40.8	D		*E	33 52					
MIN			04 33 28.5	C		*E	33 48					
PRI	JUN	10	08 24 08.2	C								
JAS			08 24 19.0	C								
PRI	JUN	10	10 43 23.8	C								
MHC			10 43 25.7	C								
JAS			10 43 30.3	C								
JAS	JUN	10	10 57 35.1	D								
PRI	JUN	10	14 18 32.2	D								
MHC			14 18 24.8	D								
BKS			14 18 13.0	C								
JAS			14 18 21.2	D		*E	18 38					
MIN			14 17 59.2	D								
PRI	JUN	10	22 25 14.5	C								
BKS			22 25 .			*E	46 00					
JAS			22 25 13.0	D								
MIN			22 25 12.5	C								
PRI	JUN	11	02 42 11.5	D								
MHC			02 42 26.8	C								
BKS			02 42 34.5	C	46 46	*E	42 43	LQ	47 25	LR	48 24	
			R FROM S.E.									
				MICRON	PERIOD							
			PZ	1.1	8							
			SH	2.5	13							
			MAXH	6.2	15							
			MAG 4.4-4.8	DIST(DEG)	24							
JAS			02 42 25.0	D		*E	43 04					
MIN			02 42 54.1	D		*I	43 13					
PRI	JUN	11	08 47 11.8	C								
MHC			08 47 08.3	D								
BKS			08 47 .			*E	53 18					
JAS			08 47 05.2	D								
MIN			08 47 32.7	D		*I	48 00					
PRI	JUN	11	11 25 34.5	D								
JAS			11 25 44.0	D		*E	26 27					
MIN			11 25 .			*E	26 12					
PRI	JUN	11	11 28 42.5	C								
MHC			11 28 48.	C								
BKS			11 28 45.7	D		*E	36 36					

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JAS              11 28 52.4  D
MIN              11 28 34.7  D

PRI JUN  11      18 21 39.C  C
MHC              18 21 26.8  C
BKS              18 21 21.5  D   27 30   LQ   30 30  LR   32 42
JAS              18 21 30.3  C                *E  21 4C
MIN              18 21   .                    *I  21 47

MHC JUN  12      00 4C 46.0  D
JAS              00 4C 4C.2  C
MIN              00 4C 42.1  D

MHC JUN  12      02 09 47.8  C
JAS              02 09 46.5  D

PRI JUN  12      03 2C 30.C  C
MHC              03 20 21.7  C
JAS              03 2C 25.5  C
MIN              03 20   .                    *E  25 35

PRI JUN  13      07 45 40.5  C                *E  45 54
MHC              07 45 40.0  C                *E  45 53
BKS              07 45 39.0  C   56 1C  PPP  51 CC  SS   61 18  L    67 36
BKS              07 45 39.0  C   56 1C   LR  71 CC
                      R FROM S. W.
                           MICRCN      PERIOD
                      PZ     1.2          5
                      SH     3.2          16
                      MAXH  13.4          20
                      MAG 5.8-6.2 DIST(DEG) 84
JAS              07 45 45.1  C                *E  45 58
MIN              07 45 47.8  D

PRI JUN  13      18 2C 37.5                   *PP 21 35
MHC              18 2C 37.C  C                *PP 21 39
BKS              18 2C 35.3  C   3C 34   *PP  21 37  PP   23 44   *SS 31 46
BKS              18 2C 35.3  C   3C 34    *E  33 C4   L    42 00
                           MICRCN      PERIOD
                      PZ     C.17         0.5
                      SH     8.C          20
                      MAG 6.1-6.4 DIST(DEG) 83
JAS              18 2C 42.9  C                *PP 21 44
MIN              18 2C 41.5  C                 *I 23 58
ARC              18 2C 34.6  C                *PP 21 36

PRI JUN  13      18 32 49.7  C
MHC              18 32 47.   C
JAS              18 32 52.4  C

PRI JUN  13      18 46 56.6  C                PP   5C 56
MHC              18 47 03.5  D                PP   5C C8
JAS              18 46 56.C  C                 *E  47 C7  PP   5C 03

MHC JUN  13      19 C7 26.2  C
JAS              19 37 04.8  C                *E  C7 21
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JAS JUN  14      12 07 C4.7  C
MIN              12 07 C7.C  D                *E  C7 29

PRI JUN  14      21 15 17.5  D
BKS              21 15 C8.C  D                PP   16 12
JAS              21 15 12.7  D                PP   16 42   *E  25 16
MIN              21 15 02.8  C

PRI JUN  15      01 12 31.C  C
MHC              01 12 27.2  C
BKS              01 12 26.3  C   23 03
                           MICRCN      PERIOD
                      PZ     9.1          11
                      MAG 7-7.3 DIST(DEG) 86
JAS              01 12 26.5  D   23 24
MIN              01 12 31.3  C

PRI JUN  15      01 44 53.C  C
MHC              01 44 5C.5  C
BKS              01 44 48.6  C
JAS              01 44 54.9  D
MIN              01 44 54.C  D

PRI JUN  15      01 45 37.3  C
MHC              01 45 34.7  C
BKS              01 45 33.3  D
JAS              01 45 39.5  C
MIN              01 45 39.8  C

PRI JUN  15      01 47 45.   D
MHC              01 47 42.7  D
BKS              01 47 41.C  D
JAS              01 47 47.C  C
MIN              01 47 45.7  D

PRI JUN  15      03 16 18.5  D
MHC              03 16 15.2  C
BKS              03 16 14.C  D
JAS              03 16 2C.4  C
MIN              03 16 21.4  D

PRI JUN  15      04 39 36.C  C
MHC              04 39 33.5  C
BKS              04 39 33.C  C
JAS              04 39 3E.C  C
MIN              04 39 39.7  D

PRI JUN  15      06 26 34.6  C                *E  26 45
MHC              06 26 32.C  C
BKS              06 26 3C.1  C   36 5C   PP   29 48   *E  32 2C   *E  35 12
BKS              06 26 3C.1  C   36 50   LQ   49 CC   LR  52 3C
                           MICRCN      PERIOD
                      PZ     0.29         1.8
                      MAXH   5.7          18
                      MAG 5.8-6.2 DIST(DEG) 85
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JAS              06 26 36.8  C
MIN              06 26 34.8  C

PRI JUN  15      16 29 57.5  C
MHC              16 29 56.7  C
JAS              16 29 59.6  C                *E  30 04   *E  30 08
MIN              16 30 01.7  D                *E  30 27

PRI JUN  15      16 49 10.3  C                *E  49 21
MHC              16 49 08.0  C
BKS              16 49 06.0  C   59 32   LQ   72 30   LR   75 00
                       R FROM S.W.
                            MICRON      PERIOD
                       PZ     0.04         1.0
                       SH     1.08          22
                       MAXH   1.7           20
                       MAG 4.8-5.2 DIST(DEG) 85
JAS              16 49 12.7  C                *E  49 23
MIN              16 49 11.4  D                *I  19 23

PRI JUN  15      20 11 40.3  C
MHC              20 11 40.6  C
JAS              20 11 45.3  C                *I  11 55
MIN              20 11 52.3  C

PRI JUN  15      21 01 28.5  C
MHC              21 01 27.7  C
BKS              21 01 30.   C                *E  02 42 PPS   12 32   LR   25 48
                       R FROM S.W.
JAS              21 01 32.6  D                *I  02 11
MIN              21 01 34.6  C

PRI JUN  15      22 55 52.0  C
MHC              22 55 52.5  C
BKS              22 55   .        66 00   LR   80 12
                       R FROM S.W.
JAS              22 55 53.5  C                *E  56 05
MIN              22 55 56.1  C                *E  56 11

PRI JUN  16      00 16 32.3  C
MHC              00 16 29.6  C
BKS              00 16 28.0  D   27 06   LQ   39 00   LR   42 30
                       R FROM S.W.
JAS              00 16 34.3  C

PRI JUN  16      09 59 47.0  C
MHC              09 59 44.4  C
JAS              09 59 52.5  D

PRI JUN  16      10 19 31.0  C
MHC              10 19 31.7  D
BKS              10 19   .                LQ   24 36   LR   27 00
JAS              10 19 40.7  C
MIN              10 20 03.2  C

PRI JUN  16      12 13 13.5  D
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```
MHC              12 13 12.2  C
JAS              12 13 08.0  C

PRI JUN  16      13 30 31.5  C
MHC              13 30 25.5  C
JAS              13 30 30.3  C

PRI JUN  16      14 44 12.5  D
MHC              14 44 06.0  D
BKS              14 44 04.   C   54 34   LR   70 12
                       R FROM S.W.
JAS              14 44 14.4  D

PRI JUN  17      00 57 46.8  C                *E  57 57
MHC              00 57 44.4  C                *E  57 53
BKS              00 57 45.7  C   68 00   LR   84 24
                       R FROM S.W.
                            MICRON      PERIOD
                       PZ     0.052        1.0
                       MAXH   1.0           18
                       MAG 4.8-5.2 DIST(DEG) 85
JAS              00 57 48.5  C                *E  57 59
MIN              00 57 50.4  C

JAS JUN  17      08 59 40.2  C

JAS JUN  17      12 00 24.9  C
MIN              12 00 34.7  D

PRI JUN  17      22 38 46.9  C
MHC              22 38 44.5  C
BKS              22 38 43.6  D
JAS              22 38 48.6  D                *E  39 00

PRI JUN  18      08 23 56.0  C
JAS              08 23 56.3  C
MIN              08 24 02.9  C

JAS JUN  18      19 28 17.5  D                *E  29 07

JAS JUN  18      20 48 04.9  C

JAS JUN  18      22 06 02.9  D

PRI JUN  19      00 13 31.0  C
JAS              00 13 15.1  C                *I  13 26
MIN              00 12 48.0  C                *I  12 58

PRI JUN  19      00 27 10.2  C                *E  27 23
JAS              00 27 05.5  C

JAS JUN  19      06 42 08.8  C

JAS JUN  19      07 42 42.9  D

JAS JUN  19      08 05 51.7  C
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MIN			08	05	48.4	C						
MHC	JUN	19	19	06	48.	C						
JAS			19	06	51.5	C						
PRI	JUN	19	19	36	30.5	C						
MHC			19	36	17.8	C						
BKS			19	36	22.0	D	42 16					
JAS			19	36	21.9	C		*E	36 35			
MIN			19	36	.			*E	36 11	*I	36 21	
PRI	JUN	20	01	31	58.	C						
MHC			01	32	03.	C						
BKS			01	32	06.8	C						
JAS			01	32	05.5	C		*E	32 16	*E	32 42	
MIN			01	31	49.4	C						
PRI	JUN	20	09	03	25.3	D						
BKS			09	03	20.5	D						
JAS			09	03	32.4	D						
MIN			09	03	35.8	C						
PRI	JUN	20	09	46	12.3	C						
JAS			09	46	25.8	C		*I	47 05			
MIN			09	46	52.3	C						
JAS	JUN	20	21	49	48.1	C						
JAS	JUN	20	22	12	54.5	C						
PRI	JUN	21	00	55	41.2	C						
MHC			00	55	39.0	C						
BKS			00	55	42.5	D	66 10	L	77 06	LR	81 06	
					R FROM WSW							
						MICRON	PERIOD					
					PZ	0.05	0.8					
					SH	0.77	20					
					MAXH	4.1	38					
					MAG 4.9-5.3 DIST(DEG) 84							
JAS			00	55	45.8	C		*I	55 57			
MIN			00	55	47.3	D		*I	56 00			
PRI	JUN	21	04	02	24.0	C						
MHC			04	02	04.8	C						
JAS			04	02	18.7	C						
MIN			04	02	17.							
PRI	JUN	21	06	02	54.1	C						
JAS			06	03	20.0	D						
PRI	JUN	21	09	46	44.5	D	47 09					
MHC			09	47	09.1	D	47 51					
BKS			09	47	18.7	C		*I	48 15			
					MAGNITUDE 4.3 - 4.7							
JAS			09	47	15.0	D						
MIN			09	47	53.3	C						

PRI	JUN	21	13	17	56.3	C						
MHC			13	17	59.2	C						
BKS			13	18	00.4	D				LR	78 36	
JAS			13	17	58.2	C						
MIN			13	18	03.7	C						
JAS	JUN	21	15	58	51.5	D						
PRI	JUN	21	18	18	00.0	C						
MHC			18	18	12.3	D						
BKS			18	18	.					LG	23 00	LR 28 36
					R FROM S.E.							
JAS			18	18	11.3	C						
PRI	JUN	21	23	16	22.6	C				*E	16 36	
MHC			23	16	12.5	C				*E	16 27	
BKS			23	16	07.5	C	24 20			LG	29 54	LR 32 06
					R FROM N.W.							
JAS			23	16	15.2	C				*E	16 30	
ARC			23	15	59.4	C						
PRI	JUN	22	02	02	38.1	D						
MHC			02	02	36.3	D						
BKS			02	02	36.	C						
JAS			02	02	41.5	D						
MIN			02	02	42.4	C						
MHC	JUN	22	06	03	14.7	C						
JAS			06	03	25.2	C						
PRI	JUN	22	07	17	33.1	D						
MHC			07	17	44.7	D				*E	17 57	
BKS			07	17	50.	D	23 26			*E	19 22	*E 25 14 L 27 30
BKS			07	17	50.	D	23 26			LR	30 36	
JAS			07	17	40.0	D				*E	17 57	
MIN			07	17	58.4	D				*E	18 28	
ARC			07	18	14.9	C						
PRI	JUN	22	11	45	03.4	D						
MHC			11	44	49.8	D						
BKS			11	44	44.0	D				*E	44 56	LR 52 00
					R FROM N.W.							
JAS			11	44	48.7	D						
MIN			11	44	26.1	D				*I	44 53	
MHC	JUN	22	20	43	04.8	D						
BKS			20	43	00.	D				*E	44 42	
JAS			20	43	11.5	C						
MHC			20	45	03.0	C						
BKS			20	45	14.0	C				*E	45 38	
JAS			20	45	39.7	C						
MIN			20	44	59.	C						
PRI			20	46	47.9	C						

MHC			20	46	45.4	C									
BKS			20	46	44.3	C	56	22	*PP*	47	36	*SPP	50	00	*E 52 14
BKS			20	46	44.3	C	56	22	SKKS	54	40	SP	58	40	*E 59 30
BKS			20	46	44.3	C	56	22	SS	65	54	SSS	69	50	
JAS			20	46	46.7	C	56	36							
MIN			20	46	43.9	C			*I	48	09				
ARC			20	46	40.4	D									
PRI	JUN	22	20	57	31.7	D									
MHC			20	57	34.7	D			*E	57	46				
JAS			20	57	31.0	D			*E	57	42				
MIN			20	57	39.7	D			*I	57	48				
PRI	JUN	23	05	12	44.5	D			*E	12	52				
MHC			05	12	35.7	D									
BKS			05	12	31.5	D			*I	12	44	*E	12	53	
JAS			05	12	37.8	D			*E	12	46	*E	13	33	
MIN			05	12	24.3	D			*I	12	36				
PRI	JUN	23	22	03	26.4	C									
MHC			22	03	13.0	C									
JAS			22	03	16.1	C									
PRI	JUN	24	08	29	57.5	C									
MHC			08	29	58.0	D									
JAS			08	30	02.9	C									
MIN			08	30	06.0	C			*I	30	18	*I	30	45	
JAS	JUN	24	13	59	18.2	C									
JAS	JUN	24	21	29	14.1	D									
PRI	JUN	25	01	58	11.1	C									
MHC			01	58	06.2	D									
BKS			01	58	00.8	D	67	25	SCS	68	18	LQ	77	36	LR 81 00

R FROM W

	MICRON	PERIOD
PZ	0.09	1.0
SH	1.78	14
MAXH	2.2	20
MAG	5.1-5.4	DIST(DEG) 75

JAS			01	58	04.7	D									
MIN			01	57	53.4	D									
PRI	JUN	25	10	44	28.6	C									
MHC			10	44	27.7	C									
BKS			10	44	26.6	C									
JAS			10	44	32.6	C									
MIN			10	44	34.0	C									
PRI	JUN	25	16	14	00.1	C									
MHC			16	13	56.3	C									
JAS			16	14	01.3	C									
PRI	JUN	25	17	33	56.6	D									
MHC			17	33	58.2	D									

BKS			17	34	01.8	D									
JAS			17	33	57.0	D									
JAS	JUN	25	18	51	30.7	C									
BKS	JUN	25	23	24	44.	C	28	47	LQ	32	00	LR	34	54	

R FROM S.E.

	MICRON	PERIOD
MAXH	1.9	20
MAGNITUDE	4.5	

JAS	JUN	25	23	32	49.	D									
MIN			23	24	.							*E	37	59	
MHC	JUN	26	07	01	06.3	D									
BKS			07	01	07.5	D									
JAS			07	01	11.5	D									
MIN			07	01	23.1	D									
MHC	JUN	27	04	18	55.5	C									
JAS			04	18	53.5	C						*E	19	05	
MIN			04	18	41.5	C						*I	18	54	
PRI	JUN	27	08	34	11.	D									
MHC			08	34	15.3	C									
JAS			08	34	19.7	D									
MIN			08	34	48.0	D						*E	34	57	
MHC	JUN	27	08	50	42.7	C									
JAS			08	50	48.2	C						*E	50	58	
MIN			08	50	52.9	D									
BKS	JUN	27	10	55	36.4	C	70	52	P*	59	36	PP	60	03	PPP 62 27
BKS			10	55	36.4	C	70	52	PS	69	19	SS	78	00	*E 86 24
BKS			10	55	36.4	C	70	52	LR	90	00				
JAS			10	55	.				P*	59	32	*E	60	33	
MHC			10	55	.				*E	59	37				
MIN			10	55	.				*E	56	04				
JAS	JUN	27	11	17	09.2	D			*E	17	37				
MIN			11	17	.				*E	17	23				
JAS	JUN	27	11	28	50.3	C									
MIN			11	28	.				*E	28	58				
PRI	JUN	27	22	00	17.1	C			*E	00	53				
MHC			22	00	18.2	C			*E	00	53				
BKS			22	00	18.5	D			*E	00	44				
JAS			22	00	22.6	C			*E	00	55				
MIN			22	00	.				*E	00	27				
PRI	JUN	28	01	00	36.8	C									
MHC			01	01	00.2	D	01	22							
BKS			01	01	10.0	C	01	35							
JAS			01	01	05.4	D									
MIN			01	01	09.5	C	01	54							

JAS	JUN	28	01	12	01.3	C								
PRI	JUN	28	04	09	01.5	C								
MHC			04	09	24.7	C								
BKS			04	09	34.3	C	10 06							
JAS			04	09	29.8	D								
MIN			04	10	05.4	D								
PRI	JUN	28	04	18	39.4	D								
MHC			04	18	.		*E	19 03						
JAS			04	19	08.3	D								
PRI	JUN	28	04	26	19.0	C								
MHC			04	26	42.1	C								
BKS			04	26	51.0	C	27 24							
JAS			04	26	47.0	D								
MIN			04	27	22.8	D								
ARC			04	27	40.8	C								
MHC	JUN	28	11	51	42.2	C								
BKS			11	51	40.2	C	*E	52 08	LR	78 18				
JAS			11	51	46.7	C								
MIN			11	51	35.3	C								
MHC	JUN	28	23	29	09.5	C								
JAS			23	29	13.3	C								
PRI	JUN	29	03	52	45.	C								
MHC			03	52	46.5	D								
BKS			03	52	29.0	C								
JAS	JUN	29	07	11	06.4	C								
MIN			07	10	54.0	D								
PRI	JUN	29	19	53	31.2	C								
MHC			19	53	54.0	D								
BKS			19	54	03.3	C								
JAS			19	53	59.0									
MIN			19	54	35.0	D								
PRI	JUN	29	21	59	46.	C								
BKS			21	59	07.	D	PP	02 07	PPS	70 58	SS	75 12		
BKS			21	59	07.	D	SSS	78 50	L	81 24	LR	85 00		
			R FROM S.W.											
					MICRON		PERIOD							
			PZ		0.86		16							
			MAXH		6.3		20							
			MAG 5.4-5.8 DIST(DEG) 85											
JAS			21	59	47.7	D								
MIN			21	59	47.8	C								
PRI	JUN	30	01	17	43.3	C								
MHC			01	18	05.6	D								
BKS			01	18	15.4	C	18 45							
JAS			01	18	10.0	D								
MIN			01	18	46.8	C								

JAS	JUN	30	09	10	46.4	C			*E	12 32				
MIN			09	10	32.9	C								
BKS	JUN	30	12	54	43.	C			*E	60 26	*E	73 36	LR	75 36
			R FROM W											

Bulletin of the Seismographic Stations

Vol. 36, No. 3, pp. 136-247

ARCATA--BERKELEY--CONCORD--FRESNO--GRANITE CREEK

JAMESTOWN--LLANADA--MANZANITA LAKE--MINERAL

MOUNT HAMILTON--OROVILLE--PARAISO

PILARCITOS--PRIEST--UKIAH--HARRIS RANCH

Earthquakes and the Registration of Earthquakes

From July 1, 1966 to December 31, 1966

by

M. Niazi

and

A. Eisenberg

University of California

Berkeley

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CONTENTS

INTRODUCTION

Each issue* of the Bulletin includes determinations 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 every issue. Information of a general nature, such as the Modified Mercalli Intensity Scale, will be found only in the first number of each volume.

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* Starting with this issue, the publication of the Bulletin will be changed from quarterly to semi-annual basis.

PERSONNEL (April 1968)

Station Director	Bruce A. Bolt
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	G. Mitchell, R. Sell, M. Hilger
Research Assistants	K. Casaday, J. Derr, 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.

HISTORY OF THE UNIVERSITY OF CALIFORNIA STATIONS

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

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

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

Since 1942, the number of seismographic stations associated with the University of California has increased from six to seventeen in 1966. 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 nine 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 - DECEMBER 1966

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
Harris Ranch	36° 45!9	121° 24!8	230	Weathered sandstone	HRC	Transferred from Vineyard, 1966
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
*Ukiah	39° 08!2	123° 12!6	199	Alluvium	UKI	U.S. Coast and Geodetic Survey, 1965
Pilarcitos Creek	37° 30!0	122° 22!9	91	Granodiorite (weathered)	PCC	Sare Ranch, 1965

*Since December 6, 1966 has been operated by U.S. Coast and Geodetic Survey.

STATION INSTRUMENTATION

July - December 1966

Station	Type of Instrument	T_o sec	T_g 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
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
HRC	#Benioff 14 kg	1.0	0.2	Z
SAO	#Benioff 14 kg	1.0	0.2	Z
	#Sprengnether 0.70 kg	6.8c/s	20c/s filter	Z (from Sept. 16, 1966)
CNC**	#Benioff 100 kg	1.0	0.2	Z
GCC	#*Benioff 14 kg	1.0	0.2	Z
PRS	#*Benioff 14 kg	1.0	0.2	Z
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
UKI	Benioff 14 kg	1.0	0.2	Z (Discontinued after Nov. 6, 1966)

Signals telemetered to Berkeley via leased telephone lines.

* Signals recorded on magnetic tape at Berkeley.

**Removed from telemetry network December 7, 1966 (to local recording).

HRC transferred to SAO on July 11, 1966.

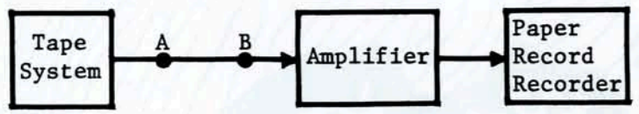
Direction of motion: In the "Component" column, each horizontal component seismograph is designated by the direction of ground motion corresponding to upward trace motion on the seismogram when it is oriented so that time increases from left to right. On all vertical component (Z) instruments, upward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

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

Tape-recorded long-period seismometers (BRK): On pages 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.

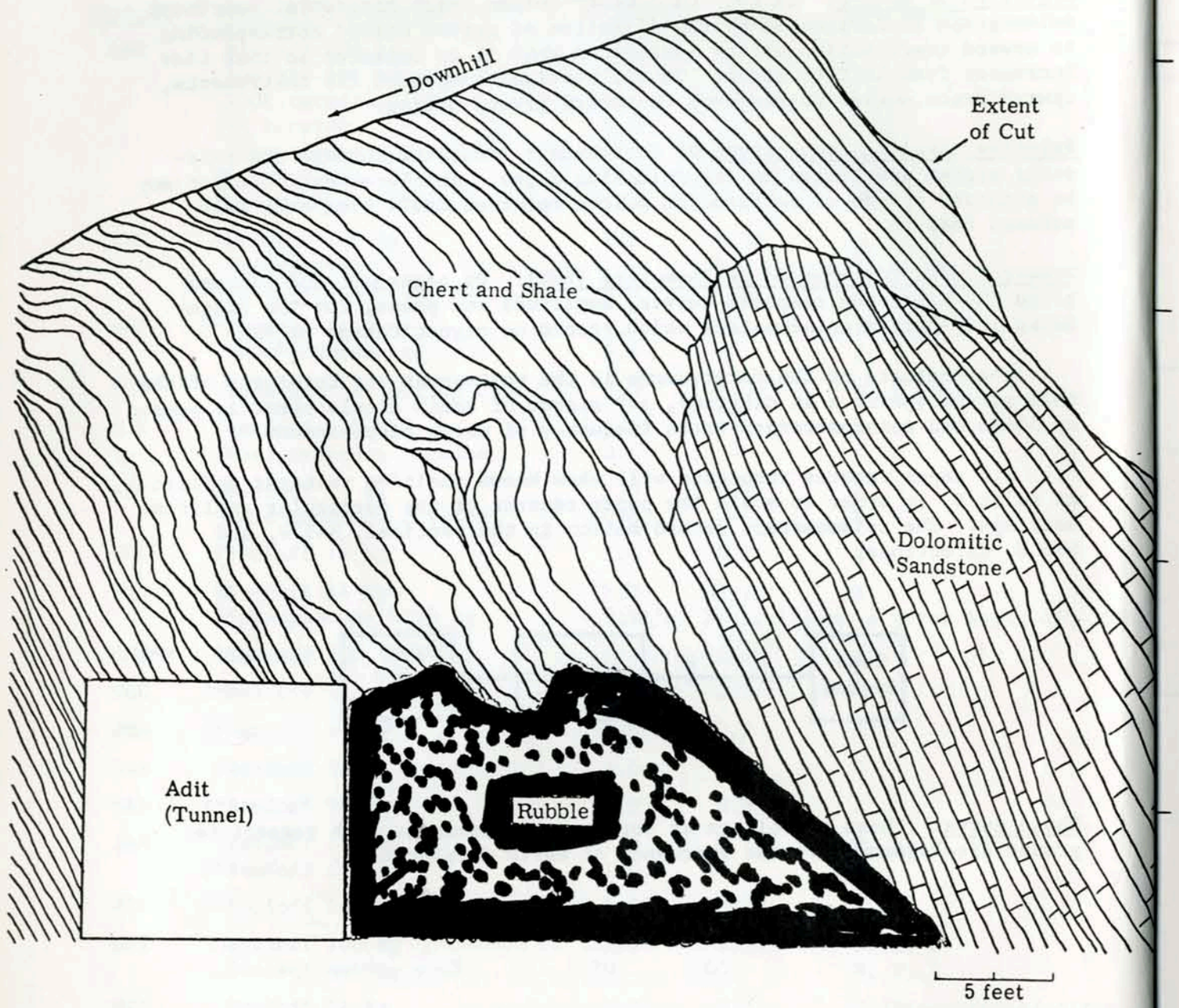
All paper records requested will show known positive voltages applied at point B, in order to scale the paper records at the particular amplifier settings. The seismometers record motion in the vertical, N45°W, and N45°E, directions.



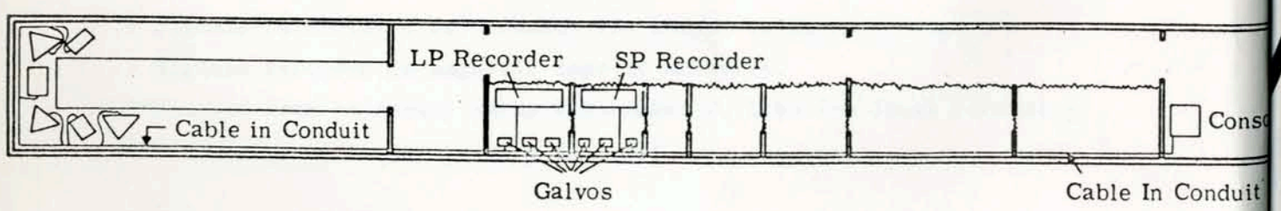
Phase curve: Phase of voltage at tape system terminals with respect to ground displacement; versus frequency of earth displacement.

BYERLY SEISMOGRAPHIC STATION (BKS)

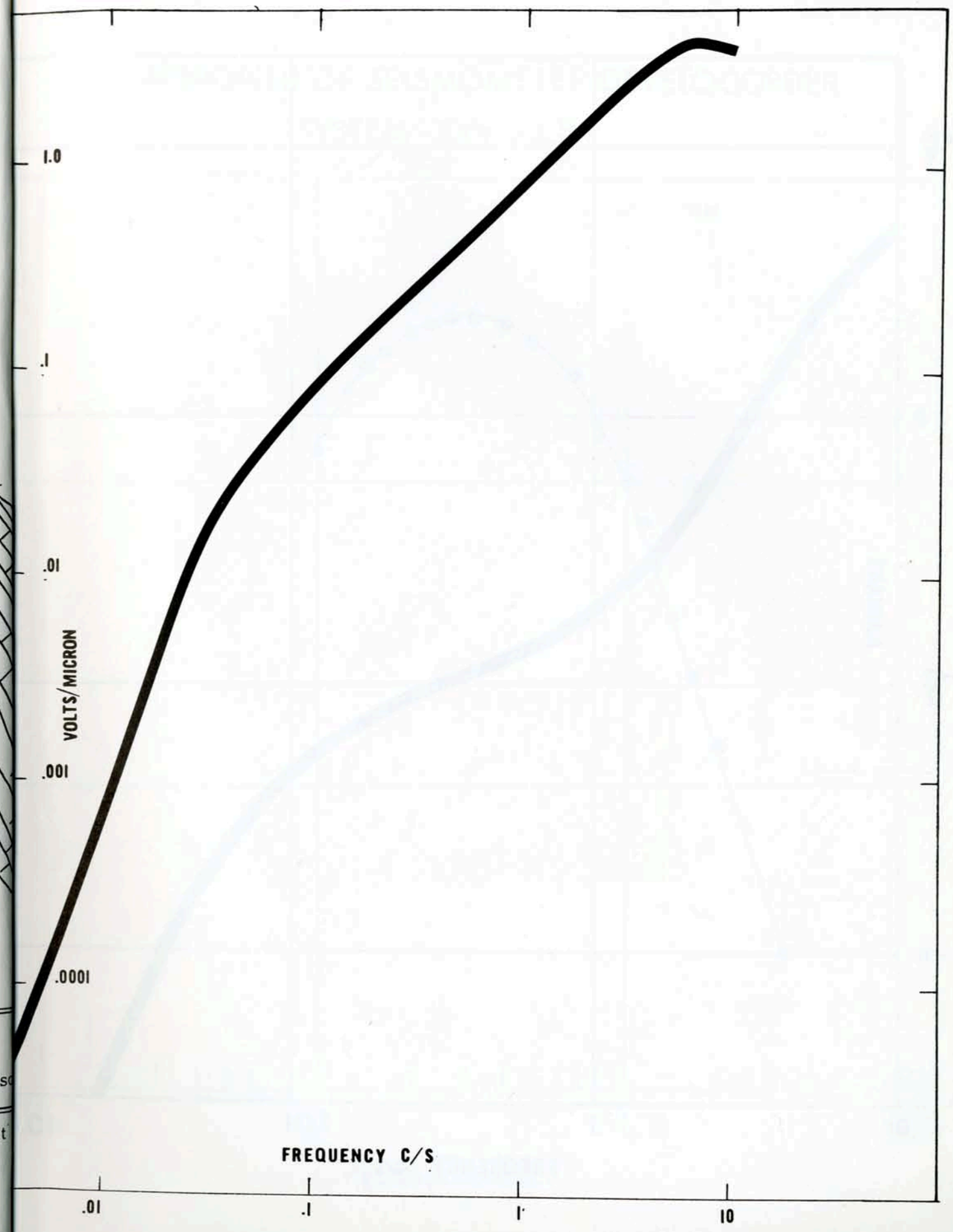
BERKELEY, CALIFORNIA

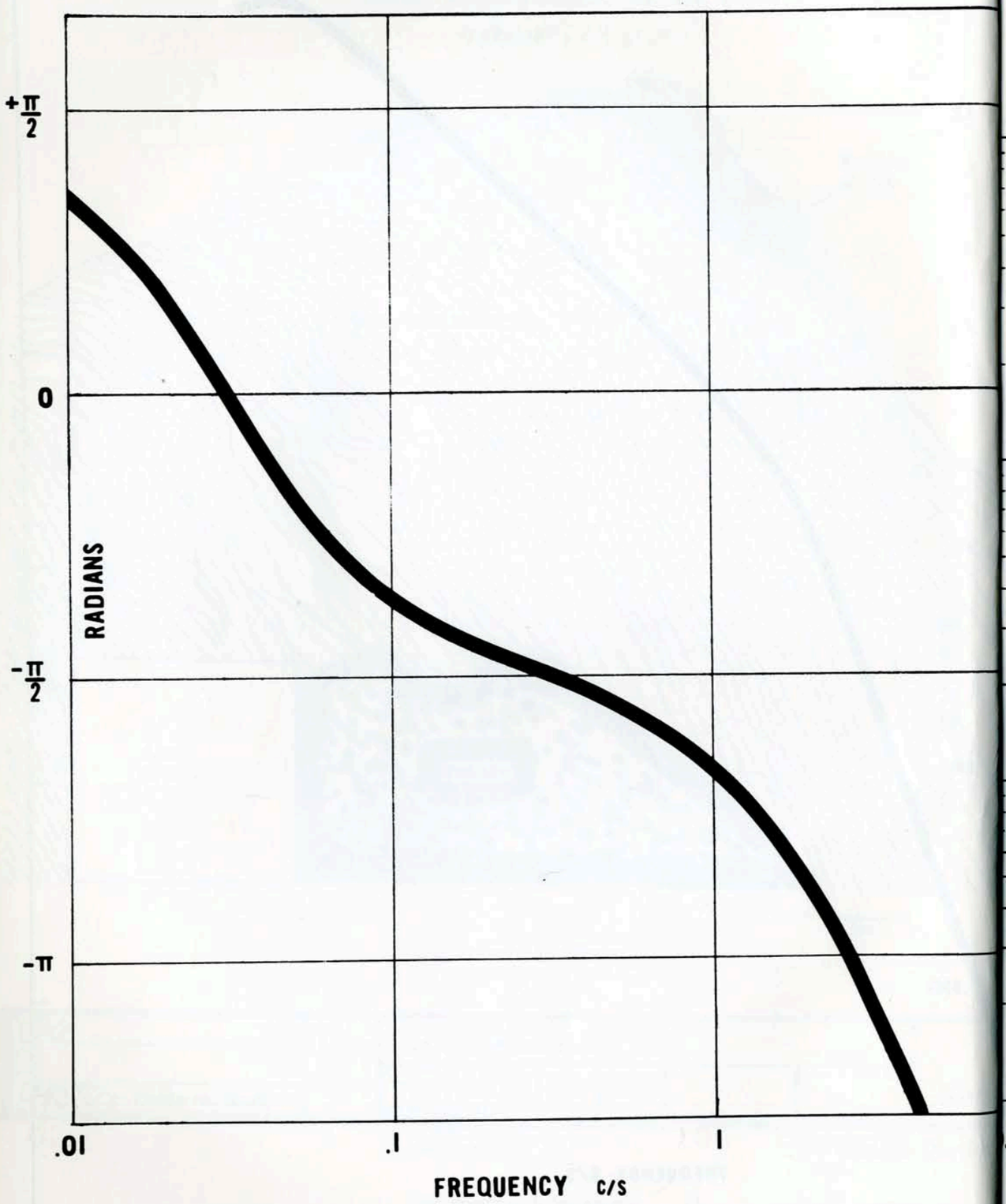


GEOLOGIC SECTION

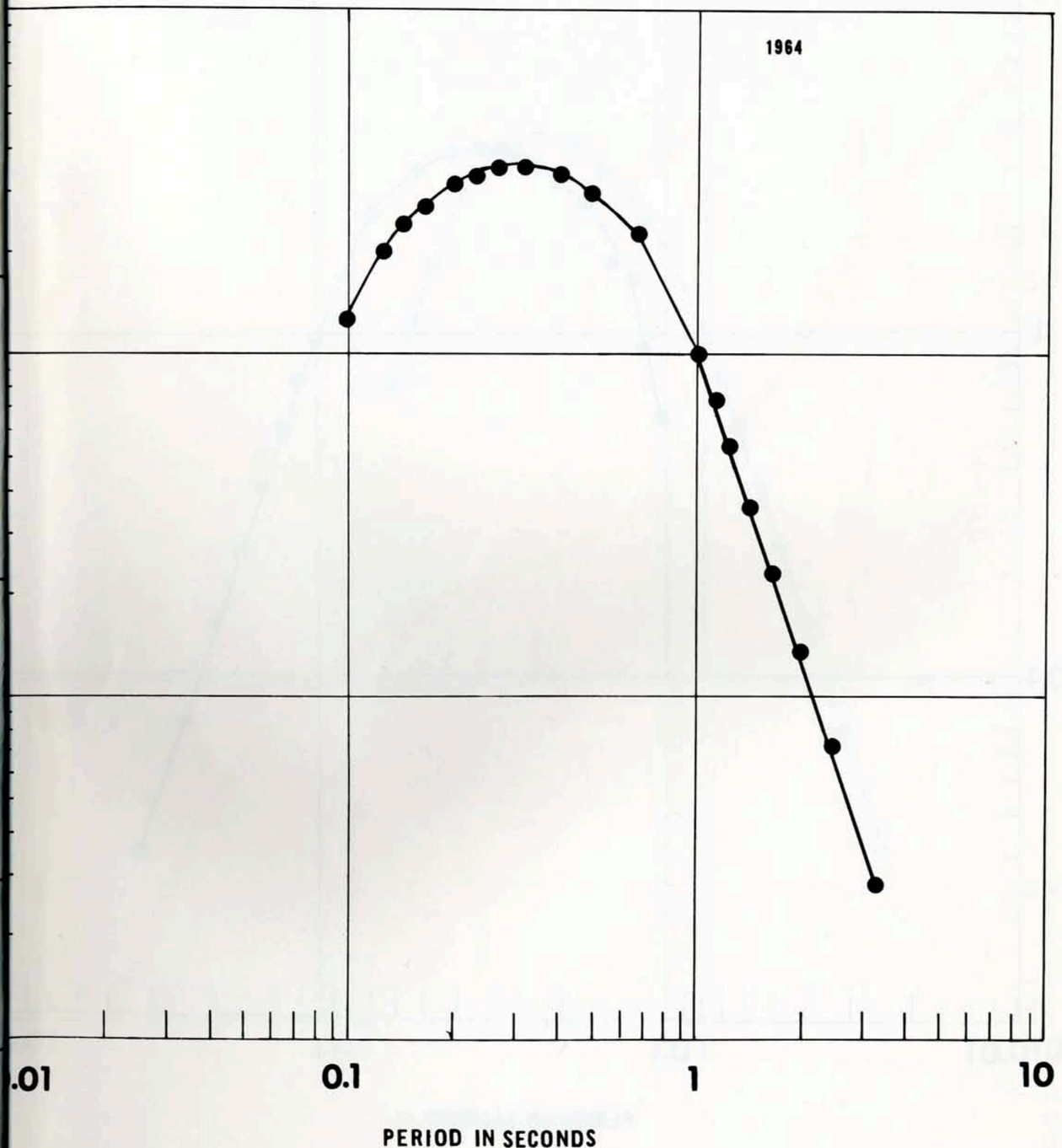


SEISMOLOGY TUNNEL

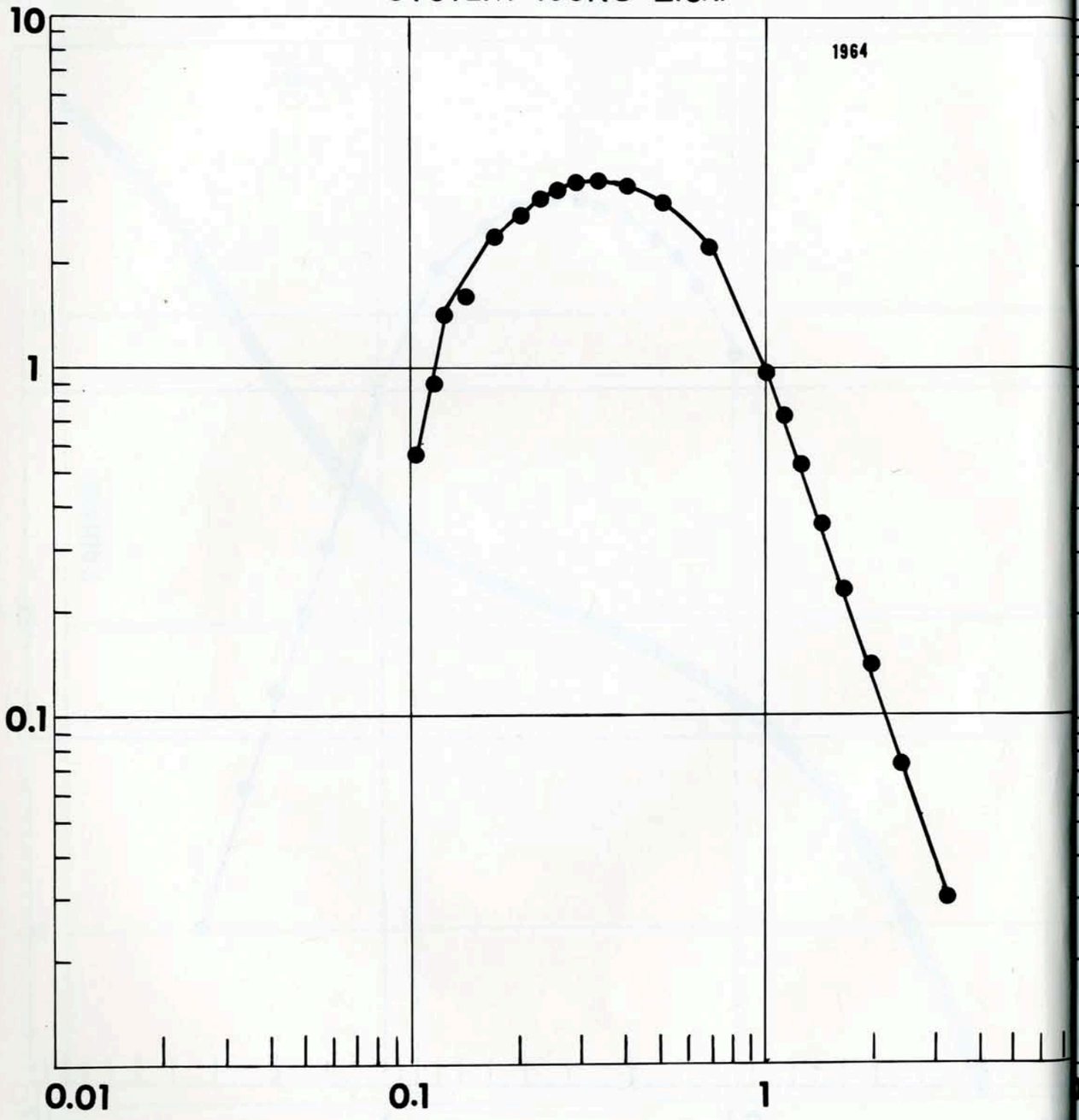




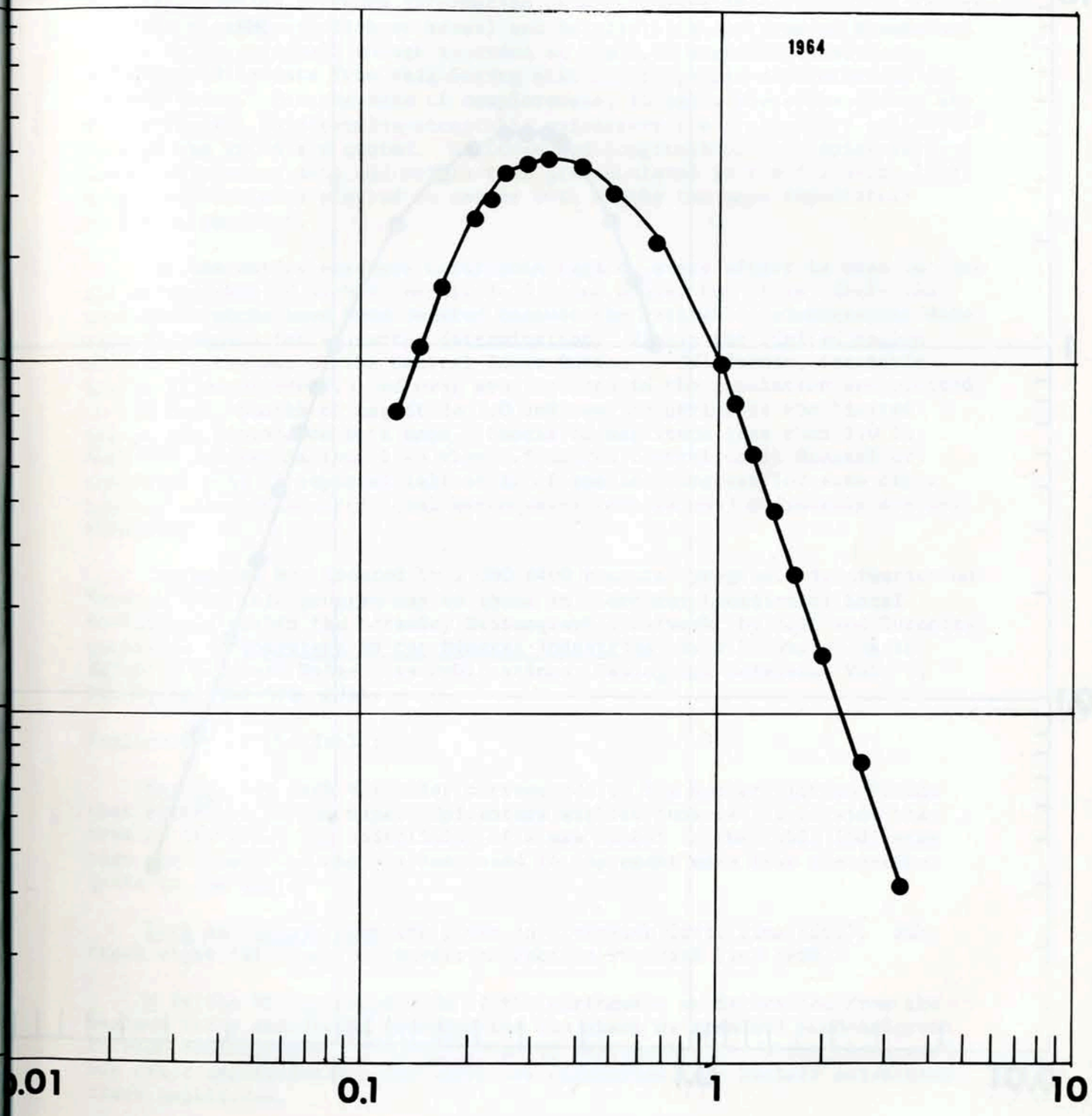
RESPONSE OF SEISMOMETER-DEVELOCORDER SYSTEM 100KG Z.S.P.



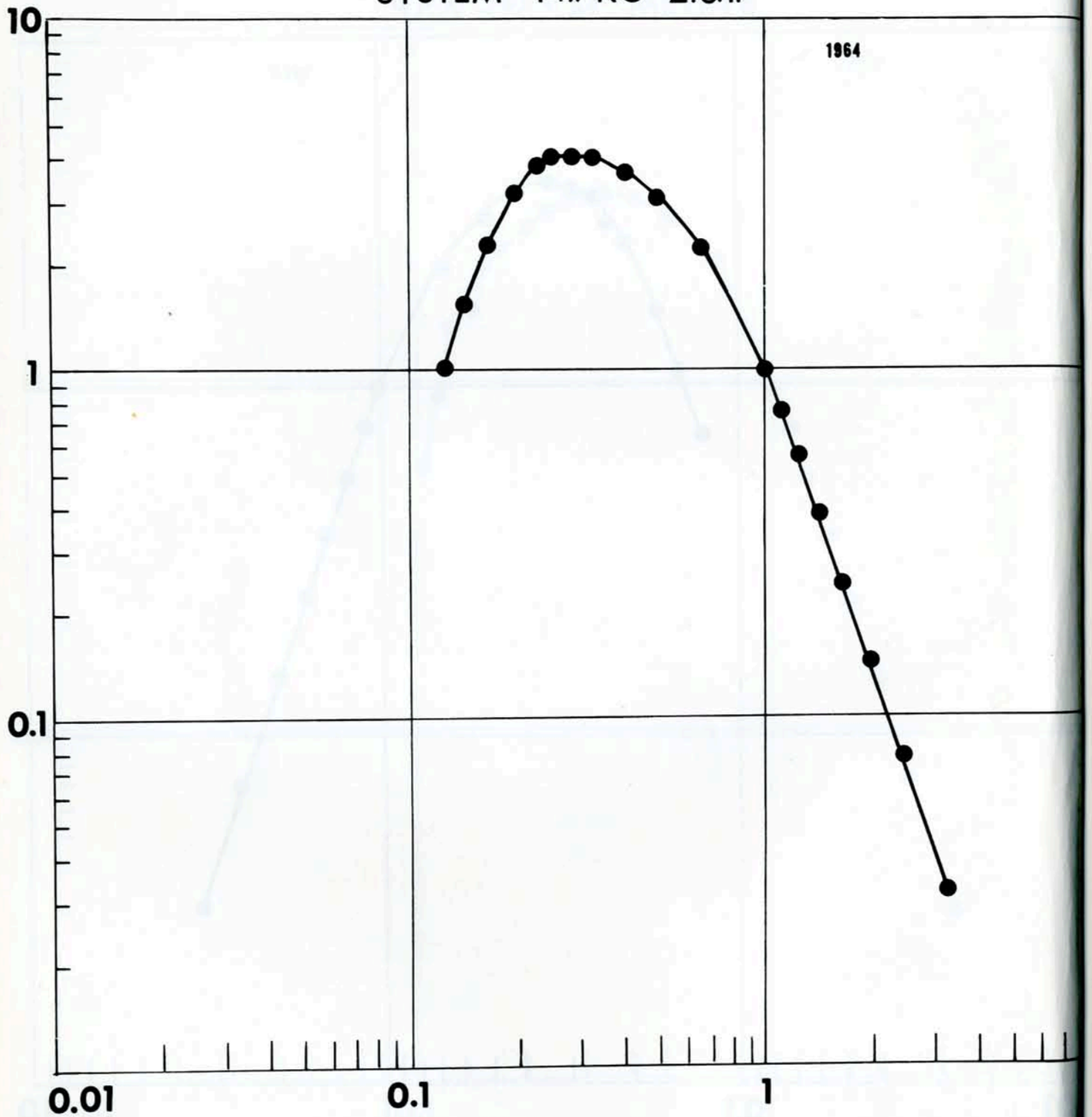
RESPONSE OF SEISMOMETER-HELICORDER SYSTEM 100KG Z.S.P.



RESPONSE OF SEISMOMETER-HELICORDER SYSTEM 14.7KG 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.

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.

No. of Stas. is the number of stations used by the computer program or used for constructing S-P arcs in locating the epicenter. If the USCGS data are used for the epicenter this column then gives the number of stations in the Berkeley net recording the earthquake.

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 1966	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
1	July 01	09-41-21.9	35° 55!8	120° 30!5	3.2	-	-	Parkfield sequence.
2	July 02	12-08-34.8	35° 47!0	120° 20!0	3.7	-	-	" "
2	July 02	12-16-15.8	35° 48!5	120° 21!0	3.4	-	-	" "
2	July 02	12-25-06.8	35° 47!5	120° 20!5	3.1	-	-	" "
3	July 03	08-22-57.7	37° 16'	121° 40!3	3.2	a	12	SE from Mt. Hamilton.
* 4	July 03	18-21-48	40°!4	125°!1	3.6	a	5	Mendocino Escarpment.
1	July 05	18-54-54.5	35° 54!9	120° 28!9	3.0	-	-	Parkfield sequence.
* 5	July 10	09-41-10	37°!3	118°!3	3.2	-	5	S from Bishop, Nev.
6	July 11	16-22-23.4	36° 46!4	121° 36!5	3.0	a	10	San Juan Bautista area.
7	July 14	19-27-22	37° 01'	121° 05'	2.6	a	9	Near San Felipe Lake.
* 8	July 15	09-05-25	37°!7	116°!4	3.4	-	4	SE of Tonopah, Nev.
9	July 17	02-33-26	37° 39!6	121° 36!1	3.2	b	9	SE of Livermore.
10	July 19	10-44-18	36° 48!7	121° 18!6	2.7	-	11	Focal depth fixed.
9	July 19	12-57-41	37° 39'	121° 37'	3.3	a	10	SW from Hollister. E of Livermore.
*11	July 25	22-49-39	36°!4	120°!3	2.5	a	4	NE of Coalinga.
12	July 27	08-12-00.2	35° 53!7	120° 27!8	3.0	-	-	Parkfield sequence.
*13	Aug. 03	02-26-20	39°!5	123°!2	3.4	-	-	Focal depth fixed. N of Ukiah.
14	Aug. 03	12-39-05.8	35° 47!9	120° 23!4	3.4	-	-	Parkfield sequence.
15	Aug. 04	00-54-24.5	35° 43!5	121° 21!0	3.0	a	8	NW of San Simeon.
16	Aug. 05	05-54-43.3	36° 34!8	121° 13!4	2.5	b	7	South of Hollister.
1	Aug. 07	17-03-24.9	35° 56!2	120° 33!0	3.0	-	-	Parkfield sequence.
17	Aug. 18	11-36-55.8	36° 49!5	121° 33!3	2.5	a	9	NW from Hollister.
12	Aug. 19	22-51-20.1	35° 53!8	120° 26!6	3.3	-	-	Parkfield sequence.
	Aug. 20	00-29-40	-	-	3.2	-	-	Calif.-Nev. border. Data not sufficient for accurate location.

Map No.	Date 1966	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
*18	Aug. 21	20-45-02	40°.0	119°.8	3.1	a	4	Focal depth fixed. Pyramid Lake area.
19	Aug. 29	17-30-10.8	37° 48'.7	121° 55'.5	3.0	a	5	Focal depth fixed. NW from Livermore.
19	Aug. 29	17-32-42	37° 47'	121° 54'	2.6	a	5	NW of Livermore.
20	Sept. 07	00-20-50.5	35° 50'	119° 56'	3.2	c	9	SE of Coalinga.
*21	Sept. 10	15-39-07.5	40°.5	123°.6	3.0	a	5	SE of Arcata. Focal depth fixed.
*22	Sept. 11	19-25-24	37°.5	118°.6	3.5	a	9	NW of Bishop. Focal depth fixed.
*23	Sept. 11	20-36-18	39°.6	120°.2	3.4	a	8	N of Truckee. Focal depth fixed.
24	Sept. 12	16-41-01.9	39° 25'	120° 09'	6.0	a	10	N of Truckee. Felt widely in northern Calif., Nev. and as far east as Salt Lake City, Utah. Damage at Truckee, Boco, Ver and Reno.
25	Sept. 13	06-31-45.5	36° 55'	121° 16'	2.7		8	NE of Hollister.
26	Sept. 18	15-09-55.7	35° 44'.4	120° 20'.9	3.1	-	-	Parkfield sequence.
27	Sept. 20	04-14-54.8	37° 32'.0	121° 29'.3	3.3	a	12	NE of Mt. Hamilton.
28	Sept. 25	13-05-39.9	39° 36'.7	122° 06'.7	3.0	a	6	SW of Chico.
29	Sept. 28	08-51-36.8	37° 32'.0	121° 24'.4	2.7	a	9	SE of Livermore.
30	Sept. 28	08-56-01.2	37° 32'.7	121° 26'.8	2.8	a	11	SE of Livermore.
*31	Oct. 01	02-57-58	38°.1	118°.3	3.7	-	-	USCGS location. Calif.-Nev. border region.
27	Oct. 02	21-46-30	37° 33'	121° 27'	2.5	a	10	NE of Mt. Hamilton.
16	Oct. 10	06-53-46	36° 35'.4	121° 13'.2	4.1	b	12	Bear Valley, San Benito County. Felt in Hollister.
32	Oct. 14	20-34-28.9	36° 59'.5	121° 44'.6	4.2	b	12	Near Corralitos. Felt in Hollister.
*33	Oct. 15	22-59-14	40°.5	124°.4	4.2	-	6	Focal depth fixed. Mendocino coast.
34	Oct. 20	08-00-10.4	36° 37'.0	121° 16'.2	2.7	a	10	SE of Hollister.
34	Oct. 20	14-58-31.4	36° 37'.9	121° 18'.7	2.6	a	9	SE of Hollister.

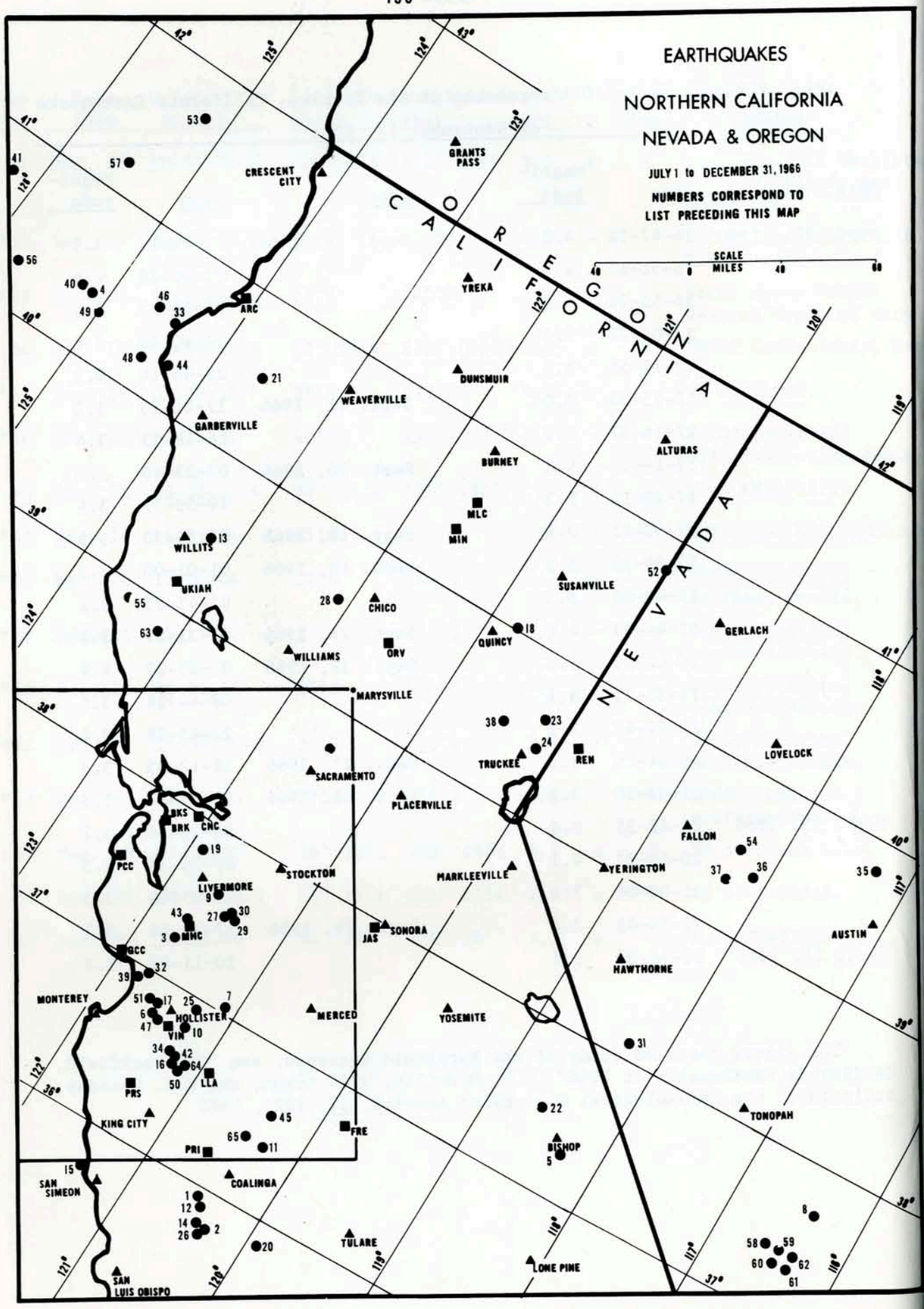
Map No.	Date 1966	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
34	Oct. 20	15-10-31.9	36° 38'.0	121° 17'.9	2.7	a	9	SE of Hollister.
*35	Oct. 22	08-19-29	39°.8	117°.3	3.4	-	-	Focal depth fixed. NW of Austin, Nev.
*36	Oct. 22	15-20-43	39°.4	118°.1	3.9	-	-	USCGS location, Nev.
*37	Oct. 22	15-35-36	39°.3	118°.3	3.8	c	5	Nevada.
38	Oct. 24	06-03-20.0	39° 28'.5	120° 38'.6	3.3	b	6	NW of Truckee.
39	Oct. 25	20-54-42.5	36° 55'.8	121° 48'.2	2.9	b	7	Near Watsonville.
1	Oct. 27	12-06-03.9	35° 55'.8	120° 30'.4	3.8	-	-	Parkfield sequence.
34	Oct. 31	18-47-50.9	36° 36'.3	121° 16'.3	2.9	a	10	SE of Hollister.
*40	Nov. 01	19-50-16	40°.4	125°.2	3.6	-	11	Focal depth fixed. Mendocino Escarpment.
*41	Nov. 02	11-02-41.7	40°.7	126°.2	3.7	b	7	Mendocino Escarpment.
42	Nov. 04	04-53-36.7	36° 36'.4	121° 14'.5	3.3	b	11	Bear Valley.
43	Nov. 04	16-53-36.4	37° 24'.4	121° 43'.7	2.6	b	9	NW of Mt. Hamilton.
1	Nov. 05	13-31-31.2	35° 55'.6	120° 30'.3	3.3	-	-	Parkfield sequence.
44	Nov. 07	11-47-13	40° 16'	124° 29'	3.6	b	7	SW of Ferndale.
45	Nov. 15	05-36-27.7	36° 35'.7	120° 21'.0	3.2	a	9	SW of Fresno.
45	Nov. 15	05-44-41.2	36° 34'.7	120° 20'.2	3.4	a	10	SW of Fresno.
26	Nov. 18	23-39-42.3	35° 45'.1	120° 20'.0	3.3	-	-	Parkfield sequence.
*46	Nov. 21	23-13-23	40°.5	124°.6	3.9	-	4	Focal depth fixed. W of Ferndale.
47	Nov. 22	20-34-08.7	36° 45'.4	121° 31'.4	2.6	a	10	SW of Hollister.
*48	Nov. 24	19-17-33	40°.2	124°.5	3.2	-	-	Focal depth fixed. Off coast of Mendocino.
*	Nov. 26	04-30-50.6	40°.5	126°.0	4.8	-	9	Focal depth fixed. Off coast of Mendocino. (Not on the map.)
*	Nov. 26	05-56-29	40°.5	126°.1	4.7	-	9	Focal depth fixed. Off coast of Mendocino. (Not on the map.)
*49	Nov. 27	10-05-32	40°.3	125°.0	3.4	-	-	Focal depth fixed. Mendocino Escarpment.
50	Nov. 29	13-08-18.8	36° 32'.8	121° 09'.9	2.6	a	9	N of King City.

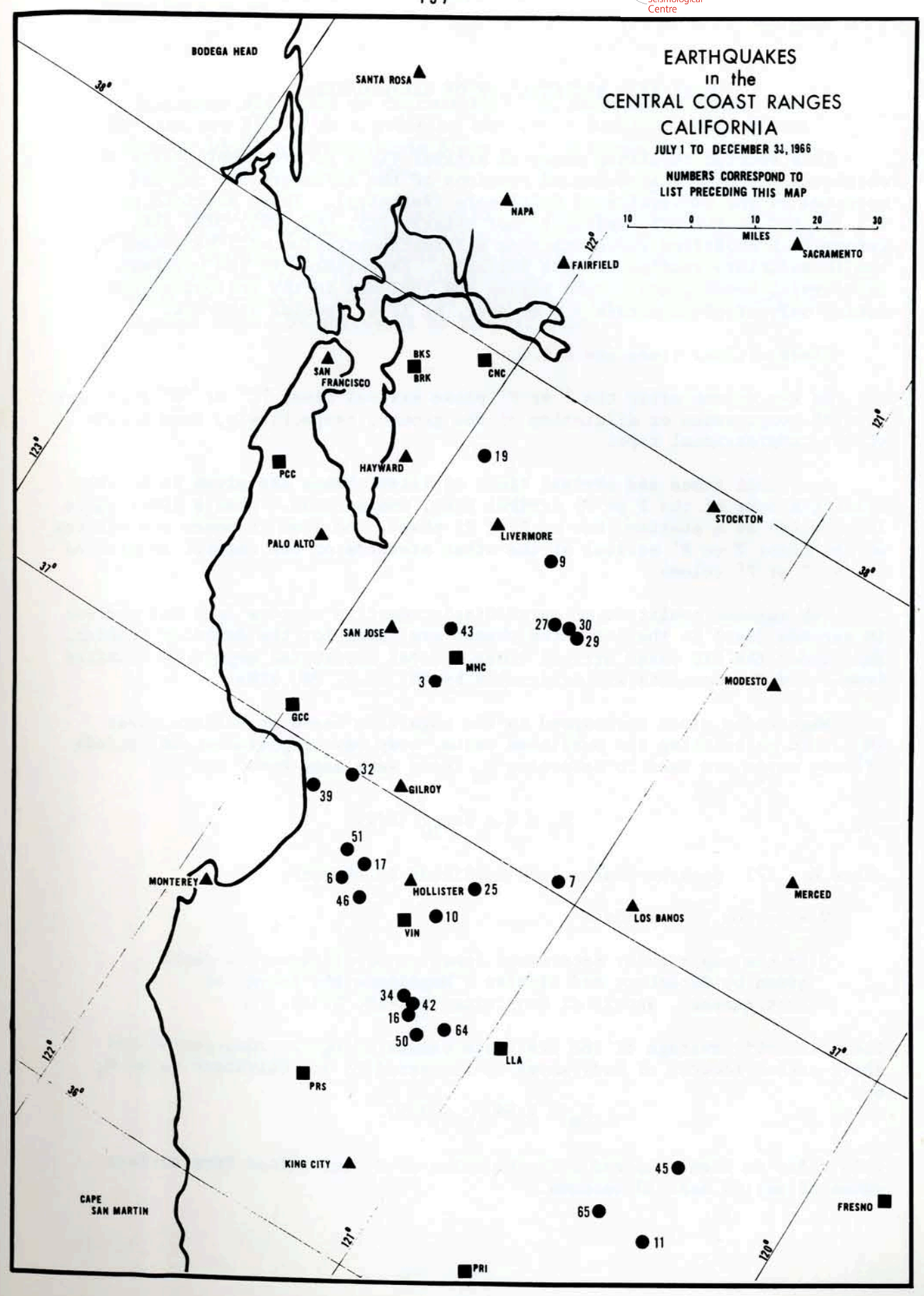
Map No.	Date 1966	Origin Time (G.C.T.)	Latitude North	Longitude West	Magnitude	h	No. of Stas.	Remarks
51	Dec. 06	10-34-30.1	36° 50!0	121° 37!5	3.3	a	9	Near San Juan Bautista. Felt in Salinas and Hollister.
*52	Dec. 07	20-43-59.8	40°8	120°0	4.3	-	-	USCGS location, Calif.-Nev. border.
*53	Dec. 08	17-17-45	41°7	125°2	3.7	-	5	Focal depth fixed. West of Crescent City.
54	Dec. 10	11-50-32.3	39° 30!9	120° 18!8	3.2	a	7	NW of Carson City, Nev.
*55	Dec. 16	07-32-36	38°9	123°5	3.1	-	-	SW of Ukiah.
*56	Dec. 17	15-16-31	40°3	125°7	4.5	-	-	USCGS location. Off coast of Mendocino.
50	Dec. 18	03-52-25.4	36° 33!2	121° 09!3	2.5	a	8	N of King City.
*57	Dec. 18	14-39-24	41°2	125°5	3.9	b	6	Off coast of Mendocino.
*58	Dec. 20	18-04-04	37°4	116°6	3.7	-	-	USCGS location, southern Nevada.
*59	Dec. 21	02-14-27	37°4	116°5	3.5	-	-	USCGS location, southern Nevada.
*60	Dec. 21	06-02-06	37°3	116°5	4.1	-	-	USCGS location, southern Nevada.
*61	Dec. 21	14-37-29.6	37°3	116°4	3.8	-	-	USCGS location, southern Nevada.
*62	Dec. 22	12-59-15	37°4	116°4	3.6	-	-	USCGS location, southern Nevada.
63	Dec. 23	02-23-37	38° 51!1	123° 09!9	3.5	a	8	SW of Clear Lake.
64	Dec. 24	20-57-06.1	36° 36!1	121° 07!4	2.6	a	8	NE of Soledad.
65	Dec. 30	10-23-48	36° 28'	120° 24'	2.5	a	4	N of Coalinga.

List of Magnitude > 3.0 Aftershocks of the Truckee, California Earthquake of September 12, 1966

Date	Time	Magnitude	Date	Time	Magnitude
Sept. 12, 1966	16-47-31	4.1	Sept. 14, 1966	21-20-37	3.1
	16-51-12	4.4		22-00-28	4.6
	16-53-29	4.3		22-15-57	3.5
	17-02-22	3.4		22-40-28	4.6
	17-14-56	3.2		23-48-14	3.3
	17-15-30	3.0	Sept. 15, 1966	12-04-20	3.2
	17-16-57	4.3		14-18-03	3.4
	17-19-23	4.2	Sept. 16, 1966	07-23-46	3.0
	17-20-11	5.3		19-59-37	3.4
	17-30-02	3.2	Sept. 18, 1966	07-39-50	3.3
	17-39-36	3.3	Sept. 19, 1966	01-01-00	3.3
	17-43-01	3.3		02-45-23	3.2
	17-44-39	4.1	Sept. 21, 1966	08-31-27	3.1
	18-02-29	3.5	Sept. 22, 1966	07-01-27	4.4
	18-35-11	3.1		08-44-14	3.5
	18-42-47	3.5		22-45-08	3.8
	19-04-29	3.5	Sept. 27, 1966	18-12-35	3.3
	22-08-59	3.2	Sept. 28, 1966	04-55-47	3.6
Sept. 13, 1966	08-42-55	3.6		06-38-34	3.7
	20-16-22	4.1		07-39-33	3.3
	21-00-04	3.2		16-37-49	3.5
	22-24-03	3.4	Sept. 29, 1966	17-11-24	3.1
Sept. 14, 1966	20-43-02	3.1		20-11-45	3.3

For a more detailed study of the Parkfield sequence, see "The Parkfield, California Earthquakes of 1966", T.V. McEvilly, W.H. Bakun, and K.B. Casaday, Bulletin of the Seismological Society of America, 57, 1221, 1967.





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.

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 DEC 31 1968
PRELIMINARY READINGS AT
BKS, BRK, PRI, JAS, MHC, MIN, ARC

* PRECEDING ALPHABET INDICATES LOWER CASE

			P OR P*		S		OTHER PHASES					
PRI	JUL	01	01 34 40.4	C								
MHC			01 34 47	D								
JAS			01 34 32.7	C								
BKS			01 35 02.0	D								
MIN			01 34 59.3	D			*I 35 26					
PRI	JUL	01	05 01 44.8	D								
MHC			05 01 31	C								
JAS			05 01 33.7	D								
MIN			05 01	C			*I 01 15		*I 01 22			
PRI	JUL	01	06 03 51.0	C			*E 04 00					
MHC			06 03 44.4	C			*E 03 57					
BKS			06 03 41.0	C	14 52		*E 03 53	PP	07 22	SKS	14 06	
							PPS 16 40	SSS	25 30	LQ	28 24	
							LR 33 42					
			R FROM WNW									
				MICRON	PERIOD							
			PZ	0.56	1.0							
			SH	3.6	14							
			MAXH	13	40							
			MAG 6.5-6.9 DIST DEG		95							
JAS			06 03 46.4	C	14 54		*I 03 56		*E 05 47		*I 07 13	
MIN			06 03 36.3	C			*E 03 50					
ARC			06 03 29.3	C								
			USCGS	05 50 39.2, 24.8N, 122.5E, H=117 KM, M=6.4								
			SOUTH OF RYUKYU ISLANDS.									
JAS	JUL	01	06 21 21.6	D			*E 21 51					
BKS	JUL	03	04 02				LR 10 24					
JAS			04 02 21.6	C								
MIN			04 02 03.5	D								
PRI	JUL	03	04 21 21.5	D								
MHC			04 21 18.5	D								
BKS			04 21 18.5	D	31 10		*E 25 44	LQ	40 42	LR	44 00	
			R FROM S. W.									
JAS			04 21 23.7	D								
MIN			04 21 28.7	C								
			USCGS	04 09 30.0, 21.1S, 174.2W, H= 33 KM, M=5.0								
			TONGA ISLANDS REGION.									

PRI	JUL	03	15 29 47.8	C								
MHC			15 29 32.7	C								
JAS			15 29 32.0	C								
MIN			15 29 20.4	C								
PRI	JUL	03	17 13 29.7	C								
MHC			17 13 31.2	D								
JAS			17 13 27.7	C								
			USCGS	17 03 15.2, 23.3S, 115.2W, H= 33 KM, M=4.8								
			EASTER ISLAND CORDILLERA.									
JAS	JUL	03	17 53 32.6	C								
MIN			17 53 20.8	C								
			USCGS	17 45 32.7, 51.8N, 180.0E, H= 33 KM, M=4.4								
			RAT ISLANDS, ALEUTIAN ISLANDS.									
JAS	JUL	03	19 03 32.7	C								
PRI	JUL	04	03 04 03.4	D								
MHC			03 03 52.1	D			*E 03 11					
BKS			03 03 46.8	C			*I 04 06	LQ	14 18	LR	16 00	
JAS			03 03 54.7	C			*E 04 14					
MIN			03 03 36.9	D								
ARC			03 02 58.6	C								
			R FROM N.W.									
PRI	JUL	04	03 22 31.4	C			*E 22 45					
MHC			03 22 25.0	D								
JAS			03 22 24.3	D			*E 22 36					
MIN			03 22 05.5	D			*I 22 17					
PRI	JUL	04	07 34 38.5	C								
MHC			07 34 38.5	C								
JAS			07 34 43.8	C								
MIN			07 34 46.5	D								
			USCGS	07 22 25.6, 22.1S, 179.6W, H=600 KM, M=4.7								
PRI	JUL	04	12 26 58.9	C								
MHC			12 26 55.4	C								
JAS			12 26 50.0	C								
MIN			12 26 46.1	D								
			USCGS	12 15 28.1, 37.5N, 24.8W, H= 33 KM, M=5.5								
			AZORES ISLANDS REGION.									
PRI	JUL	04	18 41 48.8	C			*E 47 22					
MHC			18 41 37.5	C			*E 47 18					
BKS			18 41 32.0	C			*E 47 18		*E 48 00	LR	51 30	
				MICRON	PERIOD							
			PZ	0.78	2.0							
			MAXH		20							
			MAG 6.5-6.7 DIST DEG		35							
JAS			18 41 40.0	C			*E 47 20					
MIN			18 41 23.4	C			*E 47 40					
ARC			18 41 09.3	D			*E 47 12					
			USCGS	18 33 35.7, 51.7N, 179.9E, H= 13 KM, M=6.2								

RAT ISLANDS, ALEUTIAN ISLANDS. FELT ADAK.

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PRI  JUL  04    18 58 33.1  C          *E  60 17
MHC             18 58 21.9  C          *E  60 08
BKS             18 58 15.7  D
JAS             18 58 20.5  C          *E  60 10
MIN             18 58 06.8  C
ARC             18 57 56.1  C
                      USCGS   18 50 25.2, 51.7N, 179.0W, H= 33 KM, M=5.4
                              ANDREANOF ISLANDS, ALEUTIAN ISLANDS.

MHC  JUL  04    20 02 36.9  C
BKS             20 02 36.8  D
JAS             20 02 41.0  C

MHC  JUL  04    21 10 01.1  C
JAS             21 10 03.3  C

PRI  JUL  04    22 22 21.7  C
MHC             22 22 06    C
JAS             22 22 13.6  C

PRI  JUL  05    02 29 41.2  D          *E  29 52 SCP   35 25
MHC             02 29 29.1  C          *E  29 41 SCP   35 19
BKS             02 29 34.8  C  35 50   *E  29 43  PP   31 24  L  39 00
                                       LR  41 48
                          MICRON   PERIOD
                      PZ    0.39      1.5
                      SH    2.42       26
                      MAXH 11.6        30
                      MAG 4.5-5.3 DIST DEG  43
JAS             02 29 32.6  C          *E  29 44 SCP   35 20
MIN             02 29 24.8  D             SCP   35 19
ARC             02 29 11.7  D
                      USCGS   02 21 43.8, 52.2N, 178.4W, H= 66 KM, M=4.9
                              ANDREANOF ISLANDS, ALEUTIAN ISLANDS.

PRI  JUL  05    03 33 45.1  C
MHC             03 33 46.5  D
BKS             03 33 45.5  C
JAS             03 33 52.6  D
MIN             03 33 46.1  C
                      USCGS   03 22 45.2, 15.2S, 174.9W, H=252 KM, M=5.1
                              TONGA ISLANDS.

PRI  JUL  05    03 59 44.6  C
MHC             03 59 55    D
JAS             03 59 50.2  C

PRI  JUL  05    05 20 38.5  C
MHC             05 20 39.2  C
JAS             05 20 29.5  C          *E  70 46
MIN             05 20 25.1  C

MHC  JUL  05    20 26 35.8  C
JAS             20 26 24.7  C
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MHC  JUL  06    00 01 22.5  D
JAS             00 01 16.9  C
MIN             00 01 19.8  C          *I  01 33   *I  01 38

JAS  JUL  06    00 16 52.4  D
BKS             00 16                  LR  41 30

PRI  JUL  06    19 31 35.4  C
MHC             19 31 47.2  C
BKS             19 31 42    D  38 40   L   42 18  LR  43 42
                          MICRON   PERIOD
                      MAXH  5.0       18
                      SH    1.55      14
JAS             19 31 48.4  C
                      MAG 5.8-6.2 DIST DEG  47
                      USCGS   19 23 37.8,  4.4S, 104.9W, H= 33 KM, M=4.8
                              NORTHERN EASTER ISLAND CORDILLERA.

PRI  JUL  07    09 59 17.1  C
JAS             09 59 14.1  D
MIN             09 59 05.9  C

PRI  JUL  07    23 33 39.6  C          *E  33 55
MHC             23 33 40.2  C          *E  33 55
BKS             23 33 40.3  D
JAS             23 33 46.3  C          *E  34 00
MIN             23 33       D          *I  33 00   *E  33 50
                      USCGS   23 22 07.3, 17.8S, 173.6W, H= 26 KM, M=5.3
                              SAMOA ISLANDS REGION.

MHC  JUL  08    22 24 07.9  C
BKS             22 24 07.1  D          *E  24 18
JAS             22 24 13.8  C
MIN             22 24       D          *I  24 18
                      USCGS   22 12 23.2, 19.0S, 174.5W, H=  5 KM, M=5.3
                              TONGA ISLANDS REGION.

PRI  JUL  09    00 33 38    C
JAS             00 33 46.2  C

PRI  JUL  09    08 04 33.2  C
MHC             08 04 34.4  C
BKS             08 04 34.4  D          LR  32 00
JAS             08 04 38.8  C           *E  04 52

MHC  JUL  09    08 35 36.0  C
JAS             08 35 24.7  C

PRI  JUL  09    09 35 36.2  C
MHC             09 35 36.0  C
JAS             09 35 24.6  C
MIN             09 35 31.7  C

PRI  JUL  09    14 25 44.9  D
MHC             14 25 45.2  D
```

```
BKS              14 25 45.1  C
JAS              14 25 5C.7  D
MIN              14 25 53.4  D

PRI JUL  10      02 C1 39.C  D
MHC              02 C1 39.2  C
BKS              02 C1 39.2                *E  02 53
JAS              C2 C1 44.2  C
MIN              C2 C1 48.3  C
                       USCGS   C1 50 11.3, 24.8S, 179.7E, H=550 KM, M=4.2
                               SOUTH OF FIJI ISLANDS.

PRI JUL  10      10 13 13.6  C
MHC              10 13 14.8  C                *E  13 24
BKS              10 13 14.6  C    23 40       *E  13 24    *E  13 42  SS   28 22
                                              LQ   35 12  LR   39 12
                       R FROM S.W.
                             MICRON      PERIOD
                       PZ      0.07         1.5
                       SH      1.75          16
                       MAXH    2.4           26
                       MAG 5-5.4 DIST DEG  85
JAS              10 13 19.8  C                *E  13 31
MIN              10 13 24.0  C                *I  13 52
                       USCGS   10 0C 39.1, 30.5S, 177.8W, H= 40 KM, M=5.8
                               KERMADEC ISLANDS REGION.

PRI JUL  10      16 25 57.9  C
MHC              16 25 51.0  C
BKS              16 25 47.6  C    36 48       *E  25 54 SKS   36 20  SS   42 52
                                               *E  45 48  LQ   48 24  LR   53 18
                       R FROM N.W.
                             MICRON      PERIOD
                       PZ      C.C7         1.5
                       SH      4.9           26
                       MAXH    4.9           26
                       MAG 4.5-4.9 DIST DEG  90
JAS              16 25 53.3  C                *E  26 02    *E  29 44
MIN              16 25 43.3  C
ARC              16 25 35.9  D
                       USCGS   16 12 41.5, 24.2N, 125.2E, H= 28 KM, M=5.9
                               SOUTHWESTERN RYUKYU ISLANDS.

PRI JUL  10      22 17 35.2  D
MHC              22 17 28.8  D
JAS              22 17 29.5  D

PRI JUL  11      01 18 26.2  D
MHC              C1 18 16.5  D
BKS              C1 18 05.3  C                LR   28 12
JAS              01 18 17.4  D                 *E  18 35
MIN              C1 17 56.4  C
                       USCGS   01 11 17.8, 53.6N, 167.6W, H= 23 KM, M=5.1
                               FOX ISLANDS, ALEUTIAN ISLANDS.

PRI JUL  11      05 18 54.5  D
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MHC              05 19 08    D
JAS              05 19 07.9  D

PRI JUL  11      22 57 32.5  C
MHC              22 57 33.3  C
BKS              22 57 33.0  C    67 10       *E  58 04    *E  72 05  L    76 30
                                               *E  79 36
                       R FROM S.W.
                             MICRON      PERIOD
                       PZ      0.04         1.0
                       SH      1.55          20
                       MAXH    2.7           18
                       MAG 4.9-5.3 DIST DEG  75
JAS              22 57 39.3  C                *E  58 07
MIN              22 57 42.9  C
                       USCGS   22 46 05.7, 19.2S, 173.6W, H=120 KM, M=5.6
                               TONGA ISLANDS REGION.

PRI JUL  12      08 13 11.5  D                *E  13 39
MHC              08 13 19.5  D
JAS              08 13 17.0  D                *E  13 43
MIN              08 13 28.7  D
                       USCGS   08 01 37.0, 21.3S,  68.9W, H= 99 KM, M=4.9
                               CHILE BOLIVIA BORDER REGION.

BKS JUL  12      19 06 29.5  C    19 00       *E  06 40  PP   11 52 SKS   17 00
                                               *E  24 18   *E  28 36  SSS  31 24
                                              LQ   36 36  LR   42 30
                       R FROM N.E.
JAS              19 C6 32.8  C
                       USCGS   18 53 08.5, 44.6N,  37.4E, H= 26 KM, M=5.9
                               WESTERN CAUCASUS.

MHC JUL  12      21 51 42.5  D
BKS              21 51                        *E  77 30
JAS              21 51 5C.7  D

PRI JUL  13      01 15 00.5  C
JAS              01 15 03.2  C                *E  16 49

MHC JUL  13      04 15 31.7  D
JAS              04 15 36.5  C
MIN              04 15 37.7  D

PRI JUL  13      C5 59 58.5  D
MHC              C6 CC CC.8  D
BKS              06 CC 00.3  C                *E  01 52
JAS              06 CC 06.C  D
MIN              06 CC 10.9  C
                       USCGS   C5 47 44.3, 28.0S, 177.6W, H=119 KM, M=5.1
                               KERMADEC ISLANDS.

PRI JUL  13      06 58 21.3  C
MHC              06 58 19.2  C
BKS              06 58 19.5  D
JAS              C6 58 24.4  C
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MIN             06 58 28.6  D
ARC             06 58 22.3  D

PRI JUL  13     08 28 12.3  D              *E  30 28
MHC             08 28 23.4  D              *E  30 31
BKS             08 28 29.4  D   34 32      *E  30 34 PPP   30 49 PCP   30 26
                                           SS  38 15  LQ   39 10  LR   40 48
                                  MICRON      PERIOD
                            MAXH   3.8          24
JAS             08 28 18.5  D              *E  30 30   *E  34 15
MIN             08 28 35.2  D              *I  28 54   *I  30 58
                      USCGS   C8 20 59.4, 12.6N,  87.7W, H= 61 KM, M=5.3
                              NEAR COAST OF NICARAGUA. FELT SAN SALVADOR.

PRI JUL  13     14 58 48    D
MHC             14 59 16    D
JAS             14 59 11    D

JAS JUL  14     06 30 26.3  C
MIN             06 30 14.2  C

PRI JUL  14     07 35 06.6  C
MHC             07 35 10.6  C
JAS             07 35 16.5  D
MIN             07 35 20.1  C

PRI JUL  14     10 08 37.5  C
MHC             10 C8 34.4  C
JAS             10 C8 36.1  C
MIN             10 C8       D              *E  08 09   *E  08 22

PRI JUL  14     12 23 50.3  C
MHC             12 24 05    C
BKS             12 23 47.2  D   28 00      *E  24 12 PCP   27 22  LR   30 15
                                  MICRON      PERIOD
                            MAXH   3.5          24
JAS             12 23 55.5  C              *E  27 16
                      USCGS   12 18 17.0, 56.2N, 149.8W, H= 33 KM, M=5.2
                              GULF OF ALASKA.

BKS JUL  14     18 16 C4.8  D              LR  30 00
JAS             18 15 45.7  C              *E  17 30
MIN             18 15 29.C  D              *I  15 36   *I  17 16

PRI JUL  14     20 19 49.7  C              *E  19 56
MHC             20 19 51.4  D              *E  19 59
BKS             20 20 00.3  D
JAS             20 19 50.5  D              *E  19 58
                      USCGS   20 00 02.5, 52.9S,  27.5E, H= 33 KM, M=5.4
                              SCUTH OF AFRICA.

PRI JUL  15     C8 C9 31.3  C              *E  09 44
MHC             C8 09 36.1  C              *E  09 49
BKS             C8 C9 39.4  C              SS  24 00  SSS  25 24  LR   29 24
JAS             08 C9 28.8  C              *E  09 41
MIN             C8 C9 36.2  C
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ARC             08 09 50.6  C              *I  09 03
                      USCGS   C8 CC 00.7, 16.9N,  61.5W, H= 89 KM, M=5.4
                              LEEWARD ISLANDS.

PRI JUL  15     C8 48 30.8  C
MHC             C8 48 36    C
BKS             C8 48 35.7  D
JAS             08 48 41.2  C
MIN             08 48 44.9  D

PRI JUL  15     09 48 00.3  C              *E  48 41
MHC             09 48 16.C  C
JAS             C9 48 14.8  C   49 00
MIN             09 48 53.7  C

PRI JUL  15     10 10 22.5  C   11 03
MHC             10 10 40.7  D   11 36
JAS             10 1C 35.8  D
BKS             10 1C 52.C  C   11 53
MIN             10 11 15.6      12 41      *I  11 30

PRI JUL  16     07 32 17.7  C              *E  32 31
MHC             07 32 15.6  C              *E  32 28 PCP   32 47
BKS             07 32 14.4  D   42 36      *E  32 22  PS   43 14  SS   47 30
                                           L   53 48  LR   57 24
                      R FRCM S.W.
                                  MICRON      PERIOD
                            MAXH   1.2          30
JAS             07 32 20.6  C              *E  32 33 PCP   32 47   *E  35 51
MIN             07 32 20.3  C
                      USCGS   07 19 55.8, 10.9S, 165.9E, H= 68 KM, M=5.2
                              SCLCMON ISLANDS REGION.

MHC JUL  16     2C 18 58.7  C
JAS             20 1d 5C.9  C
MIN             20 18 59.2

PRI JUL  17     01 00 24.8  D   CC 55      *E  00 49
MHC             01 CC 31.2  C              *E  01 06   *E  01 09
JAS             01 00 16.8  C   CC 39

JAS JUL  17     01 10 02.2  C
MIN             01 C9 41.8  C
ARC             01 09 27.1  C

MHC JUL  17     08 52 58.5  C
JAS             08 52 33.5  C              *E  52 58
MIN             08 52 11.6                  *I  52 35

JAS JUL  17     19 19 27.2  C

PRI JUL  18     CC 59 28.6  D
MHC             CC 59 29.2  C
BKS             CC 59 30    C
JAS             CC 59 34.2  C
MIN             00 59 38.7  D
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JAS JUL  18   03 34 19.0  D
MIN           03 33 57.7  D

BKS JUL  18   05 48 37    D
JAS           05 48 41.0  C
MIN           05 48 32.3  C

JAS JUL  18   06 17 16.8  C

PRI JUL  18   22 27 36.4  D              *E  27 48   *E  28 18
MHC           22 27 43.7  D              *E  28 26
BKS           22 27 47.5  D   38 03      *E  28 30   L   49 30   LR   53 30
                    R FROM SSE
JAS           22 27 44.5  D              *E  27 57   *E  28 27
MIN           22 27 55.1  D
                    USCGS   22 15 38.3, 38.3S,  93.7W, H= 33 KM, M=5.1
                            WEST CHILE RISE.

PRI JUL  18   22 47 13.6  C
MHC           22 47 21.5  C
BKS           22 47 25.0  D
JAS           22 47 22.1  C

PRI JUL  19   01 50 08.6  C              *E  50 32
MHC           01 49 57.7  C              *E  50 23
BKS           01 49 53    C   57 06      *E  50 22 PCP   51 20   SS   60 36
                                      LQ   62 24  SSS   62 40   LR   64 00
                    R FROM N.W.
                                 MICRON      PERIOD
                          PZ      0.94          6
                          SH      9.6          24
                          MAXH    8.5          30
                          MAG 6- 6.3 DIST DEG  50
JAS           01 49 59.6  C              *E  50 20
MIN           01 49 41.3  C              *I  50 13   *I  51 10
ARC           01 49 36.1  C
                    USCGS   01 40 53.9, 56.2N, 164.9E, H= 33 KM, M=5.4
                            KOMANDORSKY ISLANDS REGION.

PRI JUL  19   07 37 07.5  D
MHC           07 37 15.0  D
JAS           07 37 12.8  D              *I  37 39
MIN           07 37 19.2  C
                    USCGS   07 25 27.6, 23.2S,  66.8W, H=183 KM, M=5.2
                            JUJUY PROVINCE, ARGENTINA.

PRI JUL  19   19 28 07.5  C
MHC           19 27 51.6  C
BKS           19 27 50    C   33 40      *I  28 14   *E  28 50   PP   29 25
                                      SS   36 32   L   36 35   LR   38 00
                    R FROM N.W.
                                 MICRON      PERIOD
                          PZ      0.71          6
                          SH      1.83         18
                          MAXH    6.4          16
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```
                    MAG 5 - 5.4 DIST DEG  49
JAS           19 27 58.0  C              *E  28 10   *E  28 25
MIN           19 27 50.6  C
                    USCGS   19 20 33.4, 51.7N, 173.3W, H= 47 KM, M=5.5
                            ANDREANOF ISLS., ALEUTIAN ISLS. FELT ADAK.

MHC JUL  20   08 05 37.5  C
JAS           08 05 37.9  D
MIN           08 05 27.1  D

PRI JUL  20   09 41 30.5  D
BKS           09 41                    LR   69 50
JAS           09 41 21.1  C              *E  41 35

PRI JUL  20   11 04 06.3  C
MHC           11 04 11.8  D
BKS           11 04       C   10 28      *E  07 26   LQ   14 12   LQ   15 48
                           MICRON       PERIOD
BKS           11 04       C   10 28      *E  07 26   LQ   14 12   LQ   15 48
                           MICRON       PERIOD
                    MAXH    7.35          20
JAS           11 04 04.8  C              *E  04 35
MIN           11 04       D              *E  04 36

JAS JUL  20   13 32 00.7  D
BKS           13 32       C   39 36      *E  43 16   L   44 48   *E  46 30
                                         LR   47 00
                    R FROM S.W.
                                 MICRON      PERIOD
                          SH      3.7          22
                          MAXH    7.0          24
                          MAG 5.2-5.6 DIST DEG  54
                    USCGS   13 22 54.0, 13.3S, 111.4W, H= 33 KM, M=5.0
                            NORTHERN EASTER ISLAND CORDILLERA.

PRI JUL  20   20 11 31.4  C
MHC           20 11 38    C

PRI JUL  21   04 11 15.3  C
MHC           04 11 08.5  C
BKS           04 11 06.0  D
JAS           04 11 06.5  C
MIN           04 10 54.1  C
BKS           04 12       D              *E  12 18   LQ   19 00   LR   24 00

JAS JUL  21   05 21 42.2  C              *E  21 52
MIN           05 21 33.7  C

PRI JUL  21   05 36 00.8  C
JAS           05 36 03.8  C

PRI JUL  21   05 40 14.6  D
MHC           05 40 22.5  D
BKS           05 40       D   47 16   PP   42 04   LQ   50 36   LR   51 54
                    R FROM SSW
                                 MICRON      PERIOD
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                    SH      1.0          16
                    MAXH    3.8          20
                    MAG 4.9-5.3 DIST DEG  58
JAS             05 40 26.9  D            *E  40 43   *E  42 13
MIN             05 40       D            *E  40 48
                    USCGS   05 32 18.2,  3.9S, 104.3W, H= 33 KM, M=5.1
                            NORTHERN EASTER ISLAND CORDILLERA.

BKS JUL  21     09 09 31    C          LQ   17 56  LR   19 26
JAS             09 09 44.0  C            *E  09 53
                    USCGS   09 02 27.2, 52.0N, 170.0W, H= 30 KM, M=5.3
                            FOX ISLANDS, ALEUTIAN ISLANDS.

PRI JUL  21     10 10 33.4  D
MHC             10 10 16.3  C
BKS             10 10 20.5  C            *E  10 48   *E  19 10  LR   21 18
JAS             10 10 12.1  C            *E  10 31
MIN             10 09 56.3  D

PRI JUL  21     13 39 45.2  D
MHC             13 39 44.6  C
BKS             13 39 25.2  C
JAS             13 39 47.8  D
MIN             13 39 46.6  D

PRI JUL  21     18 41 08.6  C            *E  43 12
MHC             18 41 08.5  C            *E  43 12
BKS             18 41 07.8  C   50 08  PCP   41 18  *PP  43 08  PP   44 06
                                          *E  53 50  L    61 40
                          MICRON       PERIOD
                    PZ     0.67          1.2
                    PPZ    1.00          7
                    SH    12             1.62
                    MAG 5 - 5.3 DIST DEG  77
JAS             18 41 13.9  C            *E  43 16
MIN             18 41 16.8               *E  43 22
ARC             18 41 11.4  C
                    USCGS   18 30 14.9, 17.8S, 178.6W, H=591 KM, M=5.6
                            FIJI ISLANDS REGION.

PRI JUL  22     07 54 27.6  C
MHC             07 54 26.4  C
BKS             07 54 25.0  C
JAS             07 54 30.9  D
MIN             07 54 32.1  C
                    USCGS   07 41 42.7, 18.3S, 167.2E, H= 33 KM, M=5.1
                            NEW HEBRIDES ISLANDS.

PRI JUL  22     08 38 11.1  C            *E  41 28
MHC             08 38 10.3  C            *E  41 25
BKS             08 38 08.5  D   48 18     *E  38 54   *E  39 07  L    60 54
                                        LR   64 42
JAS             08 38 14.8  D            *E  39 01   *E  41 37
MIN             08 38 14.9  D            *I  39 02
                    USCGS   08 25 54.7, 16.0S, 168.0E, H=187 KM, M=5.5
                            NEW HEBRIDES ISLANDS.
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PRI JUL  22     10 24 56.1  C
MHC             10 24 44.0  D            *E  30 40
BKS             10 24 40.8  D   30 26    *I  24 53   *I  25 06   *E  25 38
                                         *E  26 21  L    33 24 SCS  34 28
                          MICRON       PERIOD
                    PZ     1.2           6
                    SH     3.5          16
                    MAXH   1.6          16
                    MAG 5.1-5.5 DIST DEG  38
JAS             10 24 47.2  C            *E  25 02   *E  30 42
MIN             10 24 29.0  C            *I  24 37   *I  24 43
ARC             10 24 27.4  D            *I  24 40
                    USCGS   10 17 22.5, 51.7N, 173.5W, H= 56 KM, M=5.6
                            ANDREANOF ISLS., ALEUTIAN ISLS. FELT ADAK.

PRI JUL  22     19 57 18.9  D
MHC             19 57 17.9  D
JAS             19 57 25.8  D

PRI JUL  23     03 45 31.0  C
MHC             03 45 18.5  C            *E  45 31
BKS             03 45 12.0  C   51 14    *E  45 20   *E  45 28  LQ   54 00
                                        LR   55 24
JAS             03 45 22.6  D            *E  45 35
MIN             03 45 04.3  C            *I  45 17

PRI JUL  23     08 33 45.5  D
MHC             08 33 33.7  C            *E  33 50
BKS             08 33 44.0  D   39 28    *E  33 58   *E  42 18   *E  43 54
                          R FROM N.W.
JAS             08 33 36.4  D            *E  33 54
MIN             08 33 23.9  C            *I  33 35

JAS JUL  23     11 55 16.8  C            *E  55 35

PRI JUL  23     14 39 21.5  D
MHC             14 39 12.1  D            *E  39 24
BKS             14 39 05.3  D   44 58    *E  39 18   *E  39 32   *E  47 10
                                        LQ   47 54  LR   49 18
                          R FROM WNW
                          MICRON       PERIOD
                    PZ     0.06          1.0
                    SH     2.3          19
                    MAXH   9.7          16
                    MAG 4.5-4.9 DIST DEG  40
JAS             14 39 15.9  D            *E  39 28   *E  45 09
                    USCGS   14 31 51.2, 51.7N, 173.5W, H= 33 KM, M=4.7
                            ANDREANOF ISLANDS, ALEUTIAN ISLANDS.

BKS JUL  23     15 33 45.7  D
JAS             15 33 42.0  D

PRI JUL  23     19 39 38.3  C
JAS             19 39 20.7  C
MIN             19 38 50.7  C            *E  39 04
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PRI JUL  23   20 19 35.5  C
MHC           20 19 23.3  D
BKS           20 19 17.5  C    25 12     *E  19 29    *E  28 00   LR   29 30
                    R FROM N.W.
JAS           20 19 27.0  D               *E  19 39
MIN           20 19 09.5  D               *E  19 20

BKS JUL  24   07 57                     LQ   65 00   LR   66 00
JAS           07 57 08.0  C
MIN           07 56 48.2  C

PRI JUL  24   08 21 52.3  C
JAS           08 21 58.8  C
MIN           08 22 02.6  D

PRI JUL  24   08 57 12.0  C
MHC           08 57 25.6  C
BKS           08 57            61 38    LR   63 30
JAS           08 57 24.2  C
MIN           08 57 51.3  C

PRI JUL  24   09 03 33.2  C
MHC           09 03 34.9  C
BKS           09 03 33.3  C    12 56    LQ   21 50    *E  22 24   LR   25 24
                                        *E   28 00
                    R FROM S. h.
                          MICRON       PERIOD
                    SH     C.94          18
                    MAXH   1.57          16
JAS           09 03 38.5  C               *E  03 57
MIN           09 03 44.7  D
                    USCGS   08 52 13.4, 16.3S, 172.8W, H= 49 KM, M=4.8
                            SAMOA ISLANDS REGION.

PRI JUL  24   17 29 58.3  D
MHC           17 29 59.2  C               *E  30 31
BKS           17 30 34.8  D
JAS           17 30 04.5  D               *E  30 37
                    USCGS   17 18 17.6, 20.4S, 175.8W, H=112 KM, M=5.2
                            TONGA ISLANDS.  FELT.

PRI JUL  25   08 54 33.0  C
MHC           08 54 40.3  C
JAS           08 54 38.5  C
MIN           08 54 49.4  C

BKS JUL  25   09 25 46    C    31 24    LQ   34 00   LR   35 24
                    R FROM WNW
JAS           09 25 47.4  C
MIN           09 25 38.2  C

JAS JUL  25   11 53 35.0  C

JAS JUL  25   21 03 20.8  C
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PRI JUL  26   03 57 43.9  D               *E  57 52
MHC           03 57 32.2  D
JAS           03 57 35.0  D               *E  57 42   *E  57 55
MIN           03 57 15.5  C

PRI JUL  26   05 55 23.9  C
MHC           05 55 23.8  C
JAS           05 55 29.5  C

JAS JUL  26   06 34 48.7  C
BKS           06 34          41 36    LQ   45 00   LR   47 24
                          MICRON       PERIOD
                    MAXH   2.5           17

PRI JUL  26   12 57 52.1  C
MHC           12 57 44.7  C
JAS           12 57 44.8  C
MIN           12 57 32.2  C

PRI JUL  26   22 52 00.6  D
MHC           22 52 01.5  D
BKS           22 52 00.9  D
                          MICRON       PERIOD
                    PZ     C.08          0.9
JAS           22 52 06.5  D               *E  52 38   *E  53 11
MIN           22 52 10.4  D               *I  52 49
                    USCGS   22 39 47.8, 27.5S, 177.9W, H=143 KM, M=5.2
                            KERMADEC ISLANDS.

PRI JUL  27   05 00 49.1  C               *E  01 00   *E  01 15
MHC           05 00 57.0  C               *E  01 08
BKS           05 00 00.5  D    1C 57      *E  01 11   PP   04 07   SS   16 12
                                        L    22 06   LR   26 36
                    R FROM ESE
                          MICRON       PERIOD
                    PZ     1.2            7
                    SH     1.75          16
                    MAXH   2.8           28
                    MAG 5.4-5.8 DIST DEG  78
JAS           05 00 54.8  C               *E  01 06   *E  01 21
MIN           05 01 06.6  C               *I  01 17
                    USCGS   04 48 59.4, 24.2S,  70.3W, H= 35 KM, M=6.0
                            NEAR COAST OF NORTHERN CHILE.  FELT IN
                            ANTOFAGASTA.

PRI JUL  28   01 30 55.2  C               *E  31 05   *E  34 29
BKS           01 29 40.0  D    41 30      *E  31 06   *E  40 18   *E  42 50
                                        SS   47 30   L    53 24   LR   57 06
                    R FROM S.W.
                          MICRON       PERIOD
                    MAXH   2.4           18
JAS           01 31 12.1  C               *E  31 23   *E  34 36
MIN           01 31 12.7  C
                    USCGS   01 18 27.4, 17.2S, 167.7E, H= 17 KM, M=5.3
                            NEW HEBRIDES ISLANDS.
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PRI JUL  28   02 50 37.6  C    51 07
MHC           02 50 47.0  D
JAS           02 50 32.7  D    50 59
MIN           02 50       C                *E   51 13

PRI JUL  28   07 24 23.0  C
MHC           07 24 22.5  C
BKS           07 24 23.1  D
JAS           07 24 27.7  C

PRI JUL  28   12 20 18.8  C                *E   20 32
MHC           12 20 19.8  C
BKS           12 20 19.7  C    30 42      *SP  20 59  LQ   42 18  LR   46 00
                  R FROM S.w.
                        MICRON       PERIOD
                  PZ      0.06         1.0
                  DISTANCE DEG  84
JAS           12 20 24.7  C                *E   20 39
MIN           12 20 29.9  D                *I   20 45
                  USCGS    12 07 52.5, 29.0S, 177.5W, H= 59 KM, M=5.4
                           KERMADEC ISLANDS REGION.

PRI JUL  28   15 34 31.4  C    35 33
                  MAGNITUDE 4
                  SOUTHEASTERN , NEVADA
MHC           15 34 44.5  D
JAS           15 34 26.7  D    35 22      *E   35 34
MIN           15 34       C                *E   34 52   *I   35 15

MHC JUL  28   23 33 48.0  D                *E   34 24
JAS           23 33 53.0  D                *E   34 28
MIN           23 33 58.4  C

JAS JUL  29   04 43 34.6  C

PRI JUL  29   06 38 30.2  C
MHC           06 38 18.2  C
BKS           06 38 03    C
JAS           06 38 20.1  C
MIN           06 38 09.9  C

MHC JUL  29   07 19 00    C
JAS           07 19 02.5  C
MIN           07 18 48.1  C
                  USCGS    07 08 14.6, 44.0N, 145.3E, H= 96 KM, M=5.2
                           HOKKAIDO, JAPAN.

PRI JUL  29   11 58 46.5  D
MHC           11 58 44.5  C
BKS           11 58 43    D    14 38      *E   62 15  L    80 42  LR   84 36
                  R FROM S.w.
JAS           11 58 49.2  D                *E   62 05
MIN           11 58 48.1  D
                  USCGS    11 46 15.6, 10.5S, 162.8E, H= 75 KM, M=5.4
                           SOLOMON ISLANDS.
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PRI JUL  29   19 58 51.6  C
MHC           19 58 47    C                *E   58 53
JAS           19 58 42.4  C                *E   58 49

PRI JUL  30   17 53 10.5  C
MHC           17 53 10.5  C
BKS           17 53                        LR   85 30
JAS           17 53 13.0  C
                  USCGS    17 39 18.8,  9.1N, 126.6E, H= 36 KM, M=5.4
                           MINDANAO, PHILIPPINE ISLANDS.

PRI JUL  30   20 41 51.    C                *E   42 03
JAS           20 41 40.8  C                *E   41 49
MIN           20 41 23.2  C

PRI JUL  31   12 01 54.5  C
MHC           12 01 51.   C
BKS           12 01                        *E   24 08  LR   27 30
                  R FROM S.w.
JAS           12 01 55.2  C
MIN           12 01       C                *E   02 01

PRI AUG  01   03 35 41.5  C
MHC           03 35 38.9  C
BKS           03 35 37.2  C    45 22      *PP  35 48   *E   47 10  LR   62 00
                        MICRON       PERIOD
                  PZ      0.15         0.7
                  DISTANCE DEG  83
JAS           03 35 43.6  C                *E   35 57
MIN           03 35 41.9  C
                  USCGS    03 23 03.1, 10.2S, 161.1E, H= 70 KM, M=5.7
                           SOLOMON ISLANDS.

PRI AUG  01   06 34 18.0  D                *E   34 32
MHC           06 34 06.7  D
BKS           06 34 00.9  D                *E   40 33  LR   45 42
                        MICRON       PERIOD
                  PZ      0.06         0.8
                  DISTANCE DEG  37
JAS           06 34 09.3  D                *E   34 24
MIN           06 33 51.5  D                *I   34 01   *I   34 10
                  USCGS    06 25 57.6, 51.5N, 177.6E, H= 43 KM, M=5.2
                           RAT ISLANDS, ALEUTIAN ISLANDS.

JAS AUG  01   09 57 28.2  C
MHC           09 57 26.5  C
MIN           09 57 42.7  C

PRI AUG  01   10 01 48.2  D
MHC           10 01 48.2  D
JAS           10 01 55.7  D
MIN           10 02 08.0  C

PRI AUG  01   12 02 05.2  C
MHC           12 01 58.9  C
BKS           12 01 51.3  D
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JAS                 12 02 02.0  C
MIN                 12 01 52.8  D

PRS AUG  01         12 05 43.0  C    05 49
                          MAG 3 PARKFIELD SERIES
MHC                 12 06 05.2  D
JAS                 12 06 08.7  C    06 34

PRI AUG  01         19 28 42.5  D
MHC                 19 28 36.6  D
BKS                 19 28       C              PP    29 14 PKS    30 47  PS    38 47
                                                PPS   39 50  SS    45 00   *E    53 18
                                                LQ    56 00  LR    61 24
                                    MICRON      PERIOD
                                PPZ   0.36        11
                                MAXH  6.8         26
JAS                 19 28 38.0  C               *E    29 03
MIN                 19 28                       *E    28 59
                          USCGS    19 09 55.1, 29.9N,  68.8E, H= 33 KM, M=5.8
                                   WEST PAKISTAN.

PRI AUG  01         19 56 50.8  D
JAS                 19 57 05.1  D
                          USCGS    19 45 17.3, 19.7S, 174.3W, H= 33 KM, M=5.0
                                   TONGA ISLANDS.

PRI AUG  01         20 42 43    C
MHC                 20 42 36.2  C               *E    42 50
BKS                 20 42 40.7  C               *E    42 48
JAS                 20 42 36.2  D               *E    42 50
                          USCGS    20 32 01.3, 44.6N, 150.4E, H= 24 KM, M=5.2
                                   KURILE ISLANDS REGION.

PRI AUG  01         20 49 38.0  C
MHC                 20 49 34.0  C
JAS                 20 49 40.3  C               *E    50 15
MHC                 20 04 11.5  C
JAS                 20 04 07.1  D

JAS AUG  01         21 17 41.5  C               *E    17 56

PRI AUG  01         21 21 08    C               *E    22 08
MHC                 21 21 02.5  C               *E    22 07   *E   22 24
BKS                 21 21 56.5  C    32 00      *E    22 15 PPP   27 12  SS   38 00
                                                LQ    44 00  LR    48 00
                                    MICRON      PERIOD
                                SH    7.1         18
                                MAXH  98          30
JAS                 21 20 56.4  C    32 34      *E    21 18   *E   22 24   *E   32 34
                          USCGS    21 02 59.6, 30.0N,  68.7E, H= 33 KM, M=6.2
                                   WEST PAKISTAN.  2 KILLED, 15 INJURED,
                                   45 VILLAGES DESTROYED.

JAS AUG  02         02 44 02.3  D
MIN                 02 43 44.9  C
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JAS AUG  02         04 59 02.3  C

JAS AUG  02         18 37 59.6  C               *E    38 09
                          USCGS    18 25 22.6, 14.0S, 165.9E, H= 50 KM, M=5.1
                                   NEW HEBRIDES ISLANDS.

MHC AUG  02         19 00 25.1  D
JAS                 19 00 26.5  D               *E    00 36
                          USCGS    18 48 33.8, 36.5N, 138.1E, H=  2 KM, M=4.9
                                   HONSHU, JAPAN. SLIGHT DAMAGE AT MATSUSHIRO.

JAS AUG  03         03 17 10.6  C               *E    17 51   *E   17 56

MHC AUG  03         03 32 37.0  C
JAS                 03 32 35.8  C

JAS AUG  03         16 09 24.2  D               *E    11 07

PRI AUG  03         19 02 13.4  C
JAS                 19 02 04.2  C

JAS AUG  03         23 14 00.3  C

PRI AUG  04         03 33 41.1  D
MHC                 03 33 51.5  D
BKS                 03 33 20    D                    LR    45 48
JAS                 03 33 47.3  D               *E    34 03

PRI AUG  05         04 11 14.6  C
MHC                 04 11 06.0  C
BKS                 04 11 05.5  D
JAS                 04 11 06.2  C
                          USCGS    03 57 58.1, 49.9N,  78.0E, H= 0R KM, M=5.7
                                   EASTERN KAZAKH, SSR.

JAS AUG  05         04 36 50.7  C

PRI AUG  05         04 45 40.1  C
MHC                 04 45 38.0  C
BKS                 04 45 36.0  C    56 06      *E    45 56   *E   47 52   PP   48 50
                                                PPS   57 15  SS    61 52  LQ    67 00
                                                LR    70 54
                                    MICRON      PERIOD
                                MAXH  2.0         16
JAS                 04 45 42.4  C               *E    45 50   *E   46 07
MIN                 04 45 41.6  C               *I    45 49
                          USCGS    04 33 19.4, 10.9S, 162.3E, H= 93 KM, M=5.7
                                   SOLOMON ISLANDS.

JAS AUG  06         08 14 39.6  C               *E    14 54
MIN                 08 14 25.1  D

PRI AUG  06         08 33 06.5  C
MHC                 08 33 06.7  C               *E    33 34
JAS                 08 33 09.3  C               *E    33 46
MIN                 08 33       D               *E    34 13
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PRI AUG  06    14 48 43.2  D
MHC            14 48 52.8  D
BKS            14 48 57.5  C              *PP   49 36
JAS            14 48 49.3  D
MIN            14 49 03.1  D
                    USCGS    14 38 41.4,  7.8S,  75.1W, H=149 KM, M=5.4
                             NORTHERN PERU.

PRI AUG  06    21 13 04.0  C              *E   14 36
MHC            21 12 54.2  D              *E   14 22
BKS            21 13 18.5  D              *E   14 28  LR    26 00
                          MICRON      PERIOD
                    PZ      0.09        1.3
                    DISTANCE  DEG  54
JAS            21 12 55.8  C              *E   14 31
                    USCGS    21 04 32.5, 51.9N, 175.3E, H= 30 KM, M=5.3
                             RAT ISLANDS, ALEUTIAN ISLANDS.

PRI AUG  07    02 20 28.2  D
MHC            02 20 16.5  D              *I   20 24
BKS            02 20 10.3  D   25 58      *I   20 27  PP    21 40   *E   25 36
                                 LQ    28 18  LR    30 00
                    PZ      0.83        1.2
                    SH     23.6          17
                    MAG 7.0 DIST DEG  38
JAS            02 20 20.2  D              *I   20 35   *I   21 48
MIN            02 20 02.5  D              *I   22 34
ARC            02 19 47.2  D              *I   20 03
                    USCGS    02 13 05.1, 50.6N, 171.3W, H=39R KM, M=6.5
                             ALEUTIAN ISLANDS.  FELT AT ADAK.

PRI AUG  07    03 19 58.5  D
MHC            03 19 56.2  D
BKS            03 19 54.0  C
JAS            03 20 00.7  D              *E   20 17
MIN            03 19 59.5  D
                    USCGS    03 07 16.2, 10.6S, 161.0E, H= 48 KM, M=5.5
                             SOLOMON ISLANDS.

PRI AUG  07    05 40 37.5  D
MHC            05 40 46.8  D
JAS            05 40 42.1  C
MIN            05 41 01.9  D

PRI AUG  07    13 53 32.8  D
MHC            13 53 32.4  D
BKS            13 53 33.4  C
JAS            13 53 38.5  D              *E   55 38
MIN            13 53 42.6  C

PRI AUG  07    14 17 49.8  C
MHC            14 17 36.2  C
BKS            14 17 33.2  D   22 18      *E   17 57 PCP    19 53  LQ    23 00
                                 LR    24 00
                          MICRON      PERIOD
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                    PZ      0.89        10
                    SH      1.0         10
                    MAXH    2.5         20
                    MAG 4.4-4.8 DIST DEG  27
JAS            14 17 32.2  C              *E   17 55
MIN            14 17 09.2  D
                    USCGS    14 11 51.2, 59.6N, 144.4W, H=  4 KM, M=5.5
                             GULF OF ALASKA.

BKS AUG  07    17 38 35.0  C   40 20      *I   41 00
                          MICRON      PERIOD
                    PZ      0.35        0.7
                    MAGNITUDE 6.6-7.0
PRI            17 38 04.4  C
JAS            17 38 22.8  D
MHC            17 38 24.9  D
MIN            17 38 57.0  D              *E   40 36
ARC            17 39 21.1  C   42 51      *I   39 27
                    USCGS    17 36 26.7, 31.8N, 114.5W, H= 33 KM, M=6.3
                             GULF OF CALIFORNIA.

JAS AUG  07    20 29 47.8  C
MIN            20 29 33.8  C
                    USCGS    20 18 41.5, 42.3N, 143.0E, H= 66 KM, M=5.1
                             HOKKAIDO, JAPAN, REGION.

JAS AUG  08    00 49 07.8  C

PRI AUG  08    07 36 47.6  D
MHC            07 36 45.2  D
BKS            07 36 47.5  C                   LR    62 00
                          MICRON      PERIOD
                    PZ      0.05        1.0
JAS            07 36 49.9  C              *E   40 05   *E   40 10
MIN            07 36 53.2  D
                    USCGS    07 24 13.8, 10.5S, 164.3E, H= 16 KM, M=5.3
                             SANTA CRUZ ISLANDS REGION.

PRI AUG  08    08 07 20.3  C
MHC            08 07 34.0  C
BKS            08 07 42.8  C   11 52      *E   07 57   *E   08 45 PCP    10 08
                                 LQ    12 36  LR    13 30
                    R FROM S. E.
                          MICRON      PERIOD
                    PZ      0.24        1.5
                    SH     13.1          12
                    MAXH   20.0          12
                    MAG 5.5-5.9 DIST DEG  24
JAS            08 07 32.8  D
MIN            08 07 57.6  D              *I   08 07   *I   08 50
ARC            08 08 19.7  C
                    USCGS    08 02 45.8, 19.3N, 108.1W, H= 33 KM, M=5.4
                             REVILLA GIGEDO ISLANDS REGION.

PRI AUG  08    10 09 32.0  D
MHC            10 09 39.2  C
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BKS             10 09 43.3  C
                          MICRCN      PERIOD
                    PZ      0.04        0.7
                    DISTANCE DEG  90
JAS             10 09 37.5  D             *E  10 19
MIN             10 09 48.3  D             *I  09 58
                    USCGS   09 57 29.7, 27.7S,  69.0W, H= 83 KM, M=5.6
                            NORTHERN CHILE.

JAS AUG  08     12 53 32.7  C
MIN             12 53       C             *E  53 26

PRI AUG  08     23 15 48.2  C
MHC             23 16 08.7  C
BKS             23 16 07    C   20 24     *E  22 16  LR   24 12
                          MICRCN      PERIOD
                    MAXH    1.9         16
JAS             23 15 51.3  C             *E  16 02

PRI AUG  09     11 20 43.0  D
JAS             11 20 42.5  C
MIN             11 21 05.5  C
                    USCGS   11 12 39.4,  9.3N,  83.8W, H= 35 KM, M=5.0
                            COSTA RICA.

PRI AUG  09     17 42 25.5  C
MHC             17 42 25.7  C
JAS             17 42 32.3  D

PRI AUG  09     22 38 22.2  C
MHC             22 38 21    D
BKS             22 38           49 54     *E  65 00  LR   67 48
JAS             22 38 25.8  C             *E  38 40
                    USCGS   22 25 42.3, 17.2S, 167.5E, H= 33 KM, M=5.2
                            NEW HEBRIDES ISLANDS.

PRI AUG  10     05 12 49.1  C             *PP 13 14
MHC             05 12 49.4  C             *E  13 14
BKS             05 12 49.5  D   22 30     *PP 13 14  PP   15 54  SS   27 52
                                          SSS 31 12  LQ   32 30  LR   35 30
                    R FROM S.W.
                          MICRCN      PERIOD
                    PZ      0.06        0.7
                    SH      2.8         20
                    MAXH    6.2         32
                    MAG 5.2-5.6 DIST DEG  77
JAS             05 12 55.5  C             *PP 13 20  *E  15 45
MIN             05 12 59.7  C             *PP 13 08  *I  13 25  *I  16 16
                    USCGS   05 01 09.4, 20.1S, 175.3W, H=96R KM, M=5.8
                            TONGA ISLANDS.

PRI AUG  10     12 46 46.0  C
MHC             12 46 48.5  C
BKS             12 46 41    C   57 24     *E  47 17  *E  47 54  PS   58 47
                                          SS  63 26  L    70 42  LR   74 42
                    R FROM WSW
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                          MICRCN      PERIOD
                    PZ      0.06        1.2
                    SH      1.1         17
                    MAXH    6.2         20
                    MAG 5-  5.5 DIST DEG  90
JAS             12 46 46.2  C
MIN             12 46 44.0  D             *I  47 10  *I  47 19
                    USCGS   12 33 42.2,  5.5S, 151.8E, H= 40 KM, M=5.3
                            NEW BRITAIN REGION,  FELT AT RABAUL

PRI AUG  10     13 17 02.5  D   18 08
MHC             13 17 19.7  C             *E  17 26  *E  18 12  *E  18 21
JAS             13 16 54.6  C   17 56
MIN             13 16       C             *I  17 28

PRI AUG  10     17 20 43.6  D
MHC             17 20 51.1  C
BKS             17 20 42    D         LR  23 58
JAS             17 20 38.8  C           *E  22 42  *E  23 15

BKS AUG  10     17 50 35.3  D
JAS             17 50 30.7  C

PRI AUG  10     17 54 57.0  C
JAS             17 54 32.0  C           *E  55 08

PRI AUG  11     05 24 20.6  C
MHC             05 24 21.6  C
BKS             05 24 21.3  C   34 00   *E  25 30  PP   27 46  SS   38 18
                                        L   43 18  LR   46 36
                    R FROM S. W.
                          MICRCN      PERIOD
                    PZ      0.05        0.9
                    SH      2.3         20
                    MAXH    3.7         16
                    MAG 4.7-5.2 DIST DEG  75
JAS             05 24 26.6  C           *E  24 33  *E  26 07  *E  27 07
MIN             05 24 32.0  C           *I  24 45
                    USCGS   05 12 42.2, 19.3S, 173.9W, H= 33 KM, M=5.5
                            TONGA ISLANDS.

PRI AUG  11     10 53 15.2  C           *E  53 34  *E  53 48 SCP  59 10
MHC             10 53 03.9  C           *E  55 24 SCP  59 05
BKS             10 52 56.0  C   58 30   *I  53 19 SCP  59 30  LQ   60 54
                                        LR  62 18
                          MICRCN      PERIOD
                    MAXH    6.9         22
                    DISTANCE  DEG  36
JAS             10 53 04.8  C           *E  53 28  *E  53 35  *E  53 52
                                        *E  55 25 SCP  59 06
MIN             10 52 44.6  C           *I  53 33  *I  56 18 SCP  58 57
                    USCGS   10 45 59.6, 52.8N, 169.7W, H= 61 KM, M=5.3
                            FOX ISLANDS, ALEUTIAN ISLANDS.

PRI AUG  11     13 30 04.5  C           *E  30 24
MHC             13 30 17.0  C
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BKS              13 30                34 30    LR    36 30
JAS              13 30 16.8   C                  *E   30 25    *E   30 32    *E   36 40

PRI AUG  11      14 51 29.4   C
MHC              14 51 44.3   C
BKS              14 52 07.0   C    55 48    LR    58 24
JAS              14 51 42.2   C
MIN              14 52 09.9   D

PRI AUG  11      15 03 59.8   C
MHC              15 04 15.4   C
BKS              15 04 18.0   C    08 30     *E   04 37    *E   05 15    LR    10 30
                      R FROM S.E.
                              MICRON       PERIOD
                      MAXH     1.9           16
JAS              15 04 12.3   C                  *E   04 43

PRI AUG  11      20 51 58.0   C
BKS              20 51                         *E   77 42
JAS              20 52 04.8   C                  *E   52 17
                      USCGS    20 39 55.9, 23.5S, 175.9W, H= 32 KM, M=5.3
                               TONGA ISLANDS REGION.

PRI AUG  11      23 37 39.8   C
MHC              23 37 41.3   D
BKS              23 37 41     C    47 44   PPS    48 30    SS    52 18    LQ    57 24
                                           LR     61 24
                      R FROM S.W.
                              MICRON       PERIOD
                      PZ       0.8           8
                      SH       1.87          20
                      MAXH     7.9           20
                      MAG 5.4-5.8 DIST DEG   79
JAS              23 37 46.0   C                  *E   38 11    *E   41 09
MIN              23 37 52.4   D
                      USCGS    23 25 37.9, 23.4S, 175.9W, H=37R KM, M=5.3
                               TONGA ISLANDS REGION.

PRI AUG  12      02 00 31     C
MHC              02 00 31.2   C
JAS              02 00 36.6   C
MIN              02 00 41.5   D

PRI AUG  12      04 11 38.5   C                 *PP   12 11
MHC              04 11 39.2   C                 *PP   12 11
BKS              04 11 39.5   D                 *PP   12 11    *E   14 26
                              MICRON       PERIOD
                      PZ       0.04          0.8
                      DISTANCE  DEG  88
JAS              04 11 44.7   C                 *PP   12 17
MIN              04 11 49.3   D                  *I   12 23
                      USCGS    03 59 50.1, 22.4S, 176.2W, H=128RKM, M=5.4
                               SOUTH OF FIJI ISLANDS.

JAS AUG  12      05 15 33.2   D
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PRI AUG  12      14 50 05.6   D
MHC              14 50 03.5   C
JAS              14 50 06.3   C

MHC AUG  12      19 44 06     D
JAS              19 43 52.8   D                  *E   44 10

PRI AUG  12      20 23 36.2   D                 *PP   23 46 PCP   26 18 *PPCP 26 27
MHC              20 23 23.7   D                 *PP   23 32 PCP   26 14 *PPCP 26 23
BKS              20 23 17.0   D    28 28        *PP   23 26 PCP   26 12 *PPCP 26 22
                                                *E   30 00  LR    30 36
                      R FROM N.W.
                              MICRON       PERIOD
                      PZ       0.08          0.8
                      MAXH     5.9           11
                      MAG 4.5-4.9 DIST DEG   29
JAS              20 23 26.2   D                 *PP   23 36 PCP   26 15 *PPCP 26 25
                                                *E   29 56
MIN              20 23 08.0   C                 *PP   23 32 PCP   26 09 *PPCP 26 20
ARC              20 22 51.7   C                  *E   23 00
                      USCGS    20 16 59.8, 52.9N, 161.6W, H=31R KM, M=5.6
                               SOUTH OF ALASKA.

MHC AUG  14      05 04 04.6   C
BKS              05 04                15 28    L     27 30    LR    31 12
                      R FROM S.W.
JAS              05 03 57.5   D
                      USCGS    04 51 04.5, 21.9S, 170.0E, H= 18 KM, M=5.1
                               LOYALTY ISLANDS REGION.

PRI AUG  15      02 23 42.1   D
MHC              02 23 42.2   D
BKS              02 23 41.6   D
JAS              02 23 47.5   C
MIN              02 23 51.3   D

JAS AUG  15      02 34 23.9   C

JAS AUG  15      02 59 32.0   C

BKS AUG  15      03 03        D                  *E   03 22    *E   09 42    *E   12 40
                                                *E   16 30    *E   18 12    *E   27 36
                                               LR    31 36
                              MICRON       PERIOD
                      MAXH     3.0           20
JAS              03 03 18.5   D
                      USCGS    02 45 32.3, 13.3N, 121.3E, H= 14 KM, M=5.7
                               MINDORO, PHILIPPINE ISLANDS.  FELT.

PRI AUG  15      10 40 03.0   D                  *E   42 22
MHC              10 40 05     C
BKS              10 40 06     D                  *E   55 06    *E   62 06
JAS              10 40 06.8   D                  *E   40 45    *E   42 49
MIN              10 40 03.3   C
                      USCGS    10 20 42.2,  3.8N,  64.0E, H= 37 KM, M=5.6
                               CARLSBERG RIDGE.
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PRI AUG  15   11 05 05.4  C
BKS           11 C5       D            *E  05 18   *E  06 30   *E  26 00
                                       *E  27 00
JAS           11 C4 52.3  C            *E  05 04
MIN           11 04 30.6  D            *I  04 45

PRI AUG  15   13 42 28.C  D
MHC           13 42 14.4  D            *E  42 20
BKS           13 42 08.4  D   46 22    PP  42 57   *E  43 10   LR  49 20
                    R FRCM N.h.
                          MICRCN      PERIOD
                    PZ     0.11         1.2
                    PPZ    C.73         8
                    MAXH   5.C         20
                    MAG 4.6-5 DIST DEG  25
JAS           13 42 13.4  D            *E  42 36
MIN           13 41 50.5  D            *I  42 08
ARC           13 41 49.6  C
                    USCGS   13 26 23.7, 60.4N, 146.0W, H=  9 KM, M=5.3
                            SCUTHERN ALASKA.

JAS AUG  15   19 43 13.3  C            *I  43 29

JAS AUG  16   01 28 21.S  C
BKS           01 28                  LR  53 00

JAS AUG  16   02 30 C6.6  C
MIN           02 29 49                 *E  33 54
                    USCGS   02 16 19.7, 36.4N,  70.8E, H=199 KM, M=5.7
                            HINDU KUSH REGION. FELT AT PESHEWAR.

PRI AUG  16   04 45 30.0  D            *E  47 28   *E  48 44
MHC           04 45 47.1  C
BKS           04 45       D            *E  46 26   *E  48 08   *E  48 48
                                       LR  48 50
                          MICRCN      PERIOD
                    MAXH   11.7         18
JAS           04 45 43.C  D   48 36    *I  47 18   *E  47 32   *E  47 49
                                       *I  48 11   *E  52 27
MIN           04 46 17.8  D            *E  49 49   *E  50 16

PRI AUG  16   17 59 50.3  D
MHC           17 59 51.C  C
BKS           17 59 51.2  C
JAS           17 59 55.8  C

PRI AUG  16   18 C3 55.5  D
MHC           18 C3 C3.9  D
JAS           18 C3 50.2  D
BKS           18 C4 10.3  D   C5 24    *E  04 32   *I  05 59
                    FELT IN LAS VEGAS
                    MAGNITUDE 5.7 - 6.1
MIN           18 04 11.6  C            *I  04 41   *I  05 58
                    USCGS   18 02 19.6, 37.4N, 114.2W, H=32R KM, M=6.1
                            SCUTHERN NEVADA.
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PRI AUG  16   19 51 30.6  C            *E  51 46
MHC           19 51 40.6  C            *E  53 36
BKS           19 51 41.5  C   53 07    *E  52 07   *E  53 30
                    MAGNITUDE 4.2 - 4.6
JAS           19 51 24.2  D   52 24    *E  51 42   *E  52 42
MIN           19 51 59.7  C            *I  52 13   *I  53 33

PRI AUG  16   19 58 15.7  C
MHC           19 58 17.4  C
BKS           19 58 17.0  D   66 56    *E  58 38   *E  60 44   *E  65 26
                                       *E  72 48   *E  76 00   L   80 54
                                       LR  84 24
                    R FRCM S.h.
                          MICRCN      PERIOD
                    PZ     1.37         7
                    SH     2.52        17
                    MAXH  22.2         37
                    MAG 5.6-6 DIST  DEG  86
JAS           19 58 22.2  C            *E  61 47
MIN           19 58 25.4  D
                    USCGS   19 45 38.4, 21.4S, 171.3E, H= 36 KM, M=5.3
                            LOYALTY ISLANDS REGION.

JAS AUG  16   23 15 37.2  C

PRI AUG  17   04 15 15.5  C
JAS           04 15 18.C  D            *E  15 34   *E  16 34
MIN           04 15 38.3  C
                    MAGNITUDE 4.4
JAS           04 15 55.6  D   49 18    *E  48 14

PRI AUG  17   04 48 17.C  D
JAS           04 47 55.6  D            *E  48 14   *E  49 18
                    MAGNITUDE 4

PRI AUG  17   20 11 47.8  C            *E  12 40   *E  14 30
MHC           20 11 45.3  D            *E  12 32
JAS           20 11 46.7  C            *E  12 36   *E  14 29
MIN           20 11 44.8  C

PRI AUG  17   21 C7 11.5  C
MHC           21 C6 55.9  C            *E  07 09
BKS           21 C6 48    C   13 30   LQ  16 30   *E  17 00   LR  19 24
                          MICRCN      PERIOD
                    MAXH   4.5         24
JAS           21 C7 00.3  D            *E  07 12   *E  08 16
                    USCGS   20 58 35.9, 52.3N, 174.9E, H=32R KM, M=5.6
                            NEAR ISLANDS, ALEUTIAN ISLANDS.  FELT.

PRI AUG  17   23 C9 22.C  C            *E  09 36   *E  C9 40   *E  10 54
MHC           23 C9 29.5  C   11 06    *E  09 51   *E  11 10
BKS           23 C9 36.C  C            *E  09 55   *E  11 20
JAS           23 C9 13.9  D   10 32    *E  09 24
MIN           23 C9 35.5  D            *I  09 58   *I  11 24
                    MAGNITUDE 5
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                    USCGS   23 07 58.9, 37.3N, 114.1W, H= 33 KM, M=5.2
                            SOUTHERN NEVADA.

PRI AUG  18    06 16 17.6  D              *E  16 36    *E  16 51
MHC            06 16 30.5  D              *E  17 55
BKS            06 16 58.0  D              *E  18 17
                      MAGNITUDE 4.3 - 4.7
JAS            06 16 15.6  D              *E  16 32    *E  17 38
MIN            06 16 37.6  C              *E  17 07    *E  18 26

PRI AUG  18    06 46 24.5  C
MHC            06 46 12.0  C
BKS            06 46 05.5  D              *E  52 24    *E  57 30  LR   58 18
                      R FROM WNW
JAS            06 46 15.1  C   52 50      *I  46 25    *I  46 36   *E  47 04
                                           *I  53 02
MIN            06 45 55.7  C
                    USCGS   06 38 03.5, 51.5N, 177.8E, H= 44 KM, M=5.3
                            RAT ISLANDS, ALEUTIAN ISLANDS.

PRI AUG  18    09 16 57.5  D              *E  17 14    *E  18 18
MHC            09 17 06.4  D   18 45
BKS            09 17 13.0  C   18 59      *E  17 40
                      MAGNITUDE 5- 5.4
JAS            09 16 51.5  C
MIN            09 17 13.1  D              *I  17 22    *I  19 04
                    USCGS   09 15 34.9, 37.3N, 114.1W, H=  9 KM, M=5.1
                            SOUTHERN NEVADA.

PRI AUG  18    10 39 53.3  C
MHC            10 40 04.2  C               *E  40 21
BKS            10 40 10.0  C   45 32      *PP  40 26    *E  41 31   *E  41 48
                                           *E  43 28    *E  45 48  LQ   47 42
                                          LR   50 48
                          MICRON      PERIOD
                    PZ     1.17         2.8
                    MAXH   49           30
                    MAG 5.9-6.2 DIST DEG  35
JAS            10 39 59.7  C              *E  40 00    *E  42 54
MIN            10 40 17.0  C              *I  40 33    *I  46 25
ARC            10 40 34.3  C              *E  40 49
                    USCGS   10 33 16.5, 14.6N,  91.7W, H= 76 KM, M=5.9
                            GUATAMALA.  FELT AT SAN SALVADOR.

PRI AUG  18    10 44 57.8  C   46 14
                      MAGNITUDE 4.3
JAS            10 45 07.4  D   46 11

PRI AUG  18    12 01 55.6  D
MHC            12 02 04.2  D
BKS            12 02 16.8  C               *E  02 48
JAS            12 01 48.5  D   03 11      *E  02 06
MIN            12 01       D               *I  02 11    *I  03 51
                      MAGNITUDE 4.4

PRI AUG  18    13 34 42.2  D              *E  34 57    *E  36 04
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MHC            13 34 50.6  C
BKS            13 35 13.2  C               *E  35 32    *E  36 42
JAS            13 34 35.1  C   35 58       *E  34 50
                      MAGNITUDE 4.4
MIN            13 34       D               *I  34 58    *I  35 14

MHC  AUG  18   14 48 22.5  D
BKS            14 48 49.8  C
JAS            14 48 25.1  D
                    USCGS   14 33 59.8,  0.2S, 125.1E, H= 56 KM, M=6.3
                            MOLUCCA SEA.

PRI  AUG  18   14 52 21.8  C               *E  52 31
MHC            14 52 15.7  D               *E  52 27
BKS            14 52 13    C             PPP   56 40    *E  58 47   *E  61 53
                                           *E  65 58    *E  68 03   *E  72 00
                                          LQ   76 30  LR   82 24
                          MICRON      PERIOD
                    MAXH   4.1          26
JAS            14 52 18.9  D               *E  52 27
MIN            14 52       D               *E  52 24
                    USCGS   14 37 57. ,  0.1S, 125.1E, H= 33 KM, M=6.3
                            MOLUCCA SEA.

PRI  AUG  18   14 56 19.8  D
MHC            14 56 21.0  D
BKS            14 56 24.0  D
JAS            14 56 22.5  D
MIN            14 56       D               *E  56 46

PRI  AUG  18   15 03 35.3  C               *E  03 45    *E  07 40
MHC            15 03       C               *E  03 41
BKS            15 03 49.8  C
JAS            15 03 36.0  C               *E  03 46    *E  07 41
BKS            15 03 49.8  C

PRI  AUG  18   17 36 27.1  C
MHC            17 36 31.0  D   38 18       *E  36 57
BKS            17 36 43.5  C               *E  37 06    *E  38 29
JAS            17 36 21.3  D   37 44       *E  36 39
MIN            17 36 42.7  D               *I  37 09    *I  38 34
                      MAGNITUDE 4.5- 5

PRI  AUG  19   00 20 24.7  D   21 48       *E  20 36
JAS            00 20 07.8  C   21 32       *E  20 28
                      MAGNITUDE 4.3

BKS  AUG  19   03 15 35.3  D   20 14       *E  16 39    *E  23 00
PRI            03 15 54.7  D
JAS            03 15 41.2  C               *E  15 50    *I  16 31
MHC            03 15 41.8  C
MIN            03 15 17.2  D               *I  15 57

BKS  AUG  19   10 53 19.5  C               *E  53 42    *E  55 02
                      MAGNITUDE 4.8 - 5.1
PRI            10 53 01.7  C               *E  53 16    *E  54 32
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JAS              10 52 55.5  C    54 14     *E   53 11
MHC              10 53 09.8  C
MIN              10 53 16.3  D               *I   53 35    *E   54 59

BKS AUG  19      11 30 02.8  D               LQ   38 06    LR   39 06
PRI              11 30 19.5  D
JAS              11 30 10.0  D               *E   30 53
MHC              11 30 07.0  D
MIN              11 29 50.4  D               *E   32 32
                    USCGS    11 23 13.5, 53.6N, 167.6W, H= 54 KM, M=5.1
                             FOX ISLANDS, ALEUTIAN ISLANDS.

BKS AUG  19      12 36 09.0  C    47 50      PP   40 12 SKS    46 42  PS   49 32
                                              *E   51 36  SS    55 04   *E   59 24
                                              *E   67 22   *E   69 12   *E   73 00
                                  MICRON      PERIOD
                             PZ     0.1          1.7
                             PPZ    0.4          2.5
                             SH     6.3          19
                             MAXH  67.5          22
                             MAG 6.7-6.9 DIST DEG  101
PRI              12 36 13.4  D               SP   49 51
JAS              12 36 03.4  C               *E   36 20  PP   40 09  SP   49 26
MHC              12 36 13.0  D
MIN              12 35 56.5  D               *E   38 45  PP   40 01
                    USCGS    12 22 09.6, 39.2N,  41.7E, H= 26 KM, M=6.1
                             TURKEY. OVER 3000 KILLED, MAJOR PROPERTY
                             DAMAGE IN ERZURUM, BINGOL, MUS, AND
                             BITLIS PROVINCES.

BKS AUG  19      12 57 53.2  C               *E   58 09   *E   62 00   *E   62 36
                                              *E   67 20
                                  MICRON      PERIOD
                             PZ     0.08         1.3
PRI              12 58 04.8  C               *PP  58 14   *E   60 27
JAS              12 57 59.3  C               *PP  58 08   *E   60 28
MHC              12 57 57.0  D               *PP  58 11   *E   60 24
MIN              12 57 46.6  D               *I   58 17   *E   60 32

BKS AUG  20      07 53 13.0  D               *PP  53 38 PCP   54 29   *E   72 48
                                  MICRON      PERIOD
                             PZ     0.06         0.8
PRI              07 52 58.5  D               *E   52 27
JAS              07 53 04.8  D               *I   53 28  *PP  53 32   *E   53 36
                                            PCP   54 28
MHC              07 53 08.6  D
MIN              07 53 18.4  D               *I   53 46
ARC              07 53 32.4  C
                    USCGS    07 43 27.6,  3.2S,  77.2W, H=116 KM, M=5.6
                             PERU ECUADOR BORDER REGION.

BKS AUG  20      09 43 27.0  C    52 26      *E   43 38   *E   44 27   LQ   60 00
                                  MICRON      PERIOD
                             PZ     0.13         0.7
PRI              09 43 37.5  D               *E   43 40
JAS              09 43 33.5  C               *I   43 36   *E   43 48   *I   44 14
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MHC              09 43 31.8  C
MIN              09 43 19.4  C               *I   43 43   *I   43 49
ARC              09 43 09.0  C
                    USCGS    09 32 31.7, 43.1M, 140.6E, H=161 KM, M=5.8
                             HOKKAIDO, JAPAN, REGION.  FELT.

JAS AUG  20      10 50 38.0  C
MIN              10 50 17.6  D

PRI AUG  20      11 38 36.3  C
JAS              11 38 03.0  D    39 26      *E   38 21
                    MAGNITUDE 4.3

BKS AUG  20      12 16 36    C               *E   20 04   *E   24 02   *E   26 08
                                              *E   30 48   *E   31 50   *E   36 00
                                             LQ    41 36  P'P'  43 48   LR   45 36
                             R FROM N.W.
                                  MICRON      PERIOD
                             MAXH  14.5          30
MIN              12 16       C               *E   16 36   *E   16 48   *I   18 19

BKS AUG  20      23 07 04.0  C    17 05      *E   07 24  PPS   18 26   SS   21 30
                                             SSS   25 30   L    27 24   LR   31 00
                             R FROM S.W.
                                  MICRON      PERIOD
                             PZ     0.10         1.5
                             SH     2.94         16
                             MAXH   7.5          20
                             MAG 5.6-5.8 DIST DEG  79
PRI              23 07 03.7  C               *E   07 14
JAS              23 07 08.8  C               *E   07 21   *I   07 50   *E   10 10
MHC              23 07 04    C               *E   07 16
MIN              23 07 14.5  C               *I   07 27
                    USCGS    22 55 03. , 23.4S, 176.0W, H= 57 KM, M=5.6
                             SOUTH OF FIJI ISLANDS.

PRI AUG  21      02 24 36.8  D    24 52
JAS              02 24 58.3  C    25 30
MHC              02 24 56.6  D               *E   25 30
MIN              02 24       D               *I   25 43   *I   25 54   *E   26 27

BKS AUG  21      05 14 16.5  D               *E   14 25 SKS    24 50  PS   27 16
BKS              05 14 16.5  D              SS    32 20  LQ    42 36  LR   46 06
                             R FROM NNW
                                  MICRON      PERIOD
                             PZ     0.93         5
                             SH     2.04         8
                             MAXH   7.5          30
                             MAGNITUDE 6.6-6.9
PRI              05 14 20.7  C
JAS              05 14 17.8  C               *E   14 30   *E   18 38
MHC              05 14 15.5  C               *E   14 27
MIN              05 14 10.3  D               *E   14 19
                    USCGS    05 00 26.8,  8.5N, 126.7E, H= 67 KM, M=6.0
                             MINDANAO, PHILIPPINE ISLANDS.
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PRI AUG  21   05 30 19.3  D              *E  30 38
JAS           05 30 18.9  C              *E  30 40   *E  34 35
MHC           05 30 22.8  C              *E  30 43
MIN           05 30 24.7  C              *I  30 47

PRI AUG  21   07 30 29.3  D              *E  30 44
JAS           07 30 24.0  C              *E  30 40   *E  31 41
                    MAGNITUDE 4
MIN           07 30 44.7  C              *I  31 14   *E  32 24

PRI AUG  21   20 38 14.7  C
JAS           20 38 10.8  D              *E  38 28
MHC           20 38       C              *E  38 43
MIN           20 38       C              *E  38 11   *I  38 21

BKS AUG  22   08 29 04.7  C              *E  29 24   *E  30 44
PRI           08 28 50.6  C              *E  29 11   *E  30 18
JAS           08 28 44.2  D   30 03      *E  29 04
                    MAGNITUDE 4.6
MHC           08 28 58.9  C              *E  29 20   *E  30 35
MIN           08 29 05.9  C              *I  29 27   *I  30 39

BKS AUG  22   14 30 36.8  C              *I  30 43   *E  30 50  *PP  30 57
                                         *SP 31 10   PP   32 45
                      MICRON      PERIOD
                PZ     0.14         0.8
                MAG 5.2-5.6 DIST DEG  64
PRI           14 30 50.7  C
JAS           14 30 43.4  C              *E  32 46   *I  38 30
MHC           14 30 41.6  C
MIN           14 30 28.3  C              *I  30 42
ARC           14 30 17.5  C
                    USCGS   14 21 13.7, 50.3N, 147.6E, H=628 KM, M=5.2
                            SEA OF OKHOTSK.

BKS AUG  22   17 12                      *E  43 54   *E  48 00
JAS           17 12 42.5  C              *E  13 06

BKS AUG  22   17 55 03.1  C   65 30      *E  55 39   PP  58 30 PPS  66 52


BKS           17 55 03.1  C   65 30      SS  70 48   *E  78 30  LR   82 00
                      MICRON      PERIOD
                PZ     11.4         12
                MAXH   36           17
                MAG 6.7-7.1 DIST DEG  86
PRI           17 54 55.0  C
JAS           17 54 59.0  C              *E  55 09   *E  61 13  LR   26 04
MHC           17 54 54.2  C              *E  55 04
                    USCGS   17 42 10.6, 22.4S, 170.6E, H= 39 KM, M=5.5
                            LOYALTY ISLANDS REGION.

JAS AUG  23   06 51 45.8  D              *I  52 04
MIN           06 51 11.0  D              *I  51 19
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PRI AUG  23   18 35 38.6  C              *E  35 46
JAS           18 35 34.3  C              *E  33 44   *E  39 25
MHC           18 35 32.0  C
                    USCGS   18 22 16.7, 23.8N, 123.2E, H= 37 KM, M=5.6
                            RYUKYU ISLANDS.

PRI AUG  23   22 46 25.5  D              *E  46 35
JAS           22 46 32.3  D              *E  46 48
MHC           22 46 26.1  D
                    USCGS   22 35 02.0, 16.3S, 173.2W, H= 33 KM, M=5.0
                            TONGA ISLANDS.

JAS AUG  24   02 03 48.6  D

JAS AUG  24   02 32 02.7  C
MIN           02 32 06.4  C

BKS AUG  24   07 28 56.8  D              *PP 29 22   *SP  29 34
                      MICRON      PERIOD
                PZ     0.13         1.3
                MAG 4.7-5.1 DIST DEG  75
PRI           07 28 45.3  D              *PP 29 10
JAS           07 28 50.8  D   38 54      *PP 29 16   *I  29 28   *E  32 16
MHC           07 28 53.5  D              *PP 29 28
MIN           07 29 02.5  D              *E  29 28
ARC           07 29 14.5  D              *E  29 39
                    USCGS   07 17 17.8, 19.9S,  69.2W, H=100 KM, M=5.5
                            NORTHERN CHILE.  FELT.

BKS AUG  25   23 30 41.5  C              *E  30 56
PRI           23 30 30.3  C              *PP 30 59
JAS           23 30 35.2  D              *E  31 02   *E  31 29
MHC           23 30 37.8  D
                    USCGS   23 18 50.8, 22.4S,  68.6W, H=112 KM, M=5.3
                            NORTHERN CHILE.  FELT.

BKS AUG  26   00 11 32.5  C
PRI           00 11 36.2  D
JAS           00 11 38.8  D
MHC           00 11 33.8  D
MIN           00 11 37.7  C
                    USCGS   23 58 55.7, 10.4S, 161.7E, H= 32 KM, M=5.2
                            SOLOMON ISLANDS.

BKS AUG  26   01 04 12.0  C   14 30      *PP 04 27   SS  20 00  L    26 06
                                         LR  29 06
                R FROM S.W.
                      MICRON      PERIOD
                PZ     0.13         1.3
                MAXH   1.1           30
                MAG 5.7-6.1 DIST DEG  93
PRI           01 04 11.1  C              *PP 04 28
JAS           01 04 17.1  C              *PP 04 34   *SP  04 50
MHC           01 04 12.0  C
MIN           01 04 21.8  C              *I  04 52
                    USCGS   00 51 51.3, 27.7S, 177.3W, H= 59 KM, M=5.7
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KERMADEC ISLANDS.

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BKS AUG  26   09 19 39.8  D   3C CC    *E  20 04 PPS   31 20   *E  34 48
                                  L      42 36  LR    46 30
                R FROM S.h.
                      MICRON      PERIOD
                PZ      1.1          8
                SH      1.2         12
                MAXH    4.7         17
                MAG 5.4-5.8 DIST DEG  87
PRI             09 19 34.5  C
JAS             09 19 43.2  C           *I  20 46
MHC             09 19       D           *E  19 47
MIN             09 19 48.1  C
                USCGS   09 06 50.4, 22.1S, 170.0E, H= 33 KM, M=5.6
                        LOYALTY ISLANDS REGION.

BKS AUG  26   10 26 43.0  D
PRI           10 26 50.5  D
JAS           10 26 47.8  D           *I  27 02   *I  27 44
MHC           10 26 53.7  D
MIN           10 26 25.5  D           *I  26 13
                USCGS   10 19 34.8, 67.1N, 161.9W, H= 14 KM, M=5.2
                        ALASKA.  FELT.

JAS AUG  27   03 14 39.5  C
BKS           03 14       .           *E  40 12
MIN           03 14 56.5  D

BKS AUG  27   10 38 46.0  D
PRI           10 38 44.1  C
JAS           10 38 51.6  C
MHC           10 38 45.4  C
MIN           10 38 54.2  C

BKS AUG  28   04 20       D   27 54   *E  28 30   *E  40 48   *E  46 00
JAS           04 20                   *E  21 12
MIN           04 20 51.0  C

BKS AUG  28   07 42 32.0  C
                      MICRON      PERIOD
                PZ      0.C8         1.0
                DISTANCE  DEG  88
PRI           07 42 31.0  C
JAS           07 42 36.3  C           *I  42 47   *E  46 15
MHC           07 42 31.8  C
MIN           07 42 40.3  C
ARC           07 42 36.1  C
BKS           07 43 17.2  C           *E  46 26   *E  47 24   *E  48 24
PRI           07 43 18.6  D
JAS           07 43 13.4  C           *I  43 28
MIN           07 43 04.9  D           *E  43 22
                USCGS   07 29 34.7, 35.8S, 178.5E, H= 94 KM, M=5.8
                        OFF COAST OF NORTH ISLAND, NEW ZEALAND.

BKS AUG  28   10 14 54.0  C           *PP  16 47 SKS   24 35  SP   25 46
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                                    *SS 28 12
                      MICRON        PERIOD
                PZ      C.C9          1.0
PRI           10 15 00.7  D           *E  16 52
JAS           10 15 01.5  D           *E  15 21   *E  16 53   *E  19 52
                                    SKS   24 42   *E  25 07
MHC           10 14 55.7  C           *E  15 49
MIN           10 14 56.8  D           *I  14 04   *I  16 51
ARC           10 14 50.9  D           *E  16 43
                USCGS   10 03 03.0,  4.6S, 155.2E, H=509 KM, M=5.6
                        SOLOMON ISLANDS.

JAS AUG  28   13 32 45.3  D
MHC           13 32 40.5  D
MIN           13 32 49.5  C

JAS AUG  28   15 48 07.0  C
MHC           15 48 05.7  C
MIN           15 47 55.4  C
                USCGS   15 36 18.5, 36.6N, 138.2E, H= 17 KM, M=5.0
                        HONSHU, JAPAN.

JAS AUG  28   16 55 45.5  C
MIN           16 55 51.5  D

PRI AUG  29   05 59 46.5  C

BKS AUG  29   13 38           45 32   *E  56 12  LR   61 42
                R FROM S.h.
JAS           13 38       D           *E  38 34   *E  38 48
MIN           13 38       C           *E  38 30

BKS AUG  29   19 39           47 00   *E  53 00   *E  55 00
JAS           19 39 52.0  D
MHC           19 39 54.9  D
MIN           19 40 07.1  C
                USCGS   19 31 23.7,  6.8N,  82.2W, H= 28 KM, M=5.1
                        SOUTH OF PANAMA.

JAS AUG  29   22 36 15.5  C           *E  36 24   *E  36 34
MIN           22 35 54.8  D           *I  36 03

JAS AUG  30   06 22 54.6  D           *E  23 04   *E  23 15
MIN           06 22 43.1  D           *E  22 51
                USCGS   06 10 33.4, 51.7N, 104.4E, H= 33 KM, M=5.0
                        LAKE BAIKAL.  FELT.

JAS AUG  30   08 49 07     D           *E  49 19   *I  49 59   *I  50 07

JAS AUG  30   13 49 15.5  D           *E  49 25   *E  49 41
MHC           13 49 13.4  D
MIN           13 49 23.2  C

JAS AUG  30   15 15 32.8  C

JAS AUG  30   17 C6 10.3  C
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MHC              17 06 04.5  C
MIN              17 06       D          *I  06 16

JAS AUG  30      18 32 29.2  C
BKS              18 32                  *E  53 24
MIN              18 32       D          *E  33 19

BKS AUG  30      20 26 46.3  D          *I  26 58   *I  27 13   *E  31 16
                                       LQ  33 24  LR  34 00
                 R FROM N.W.
                       MICRON      PERIOD
                 PZ      0.16        1.1
                 SH      1.7          24
                 MAXH    7.0          26
                 MAG 4.9-5.3 DIST DEG  28
JAS              20 26 51.4  D
MHC              20 26 52.6  D
MIN              20 26 26.5  D          *I  26 37   *I  27 12
ARC              20 26 17.5  C
                 USCGS   20 20 54.0, 61.5N, 147.5W, H= 36 KM, M=5.9
                         SOUTHERN ALASKA.  FELT.

BKS AUG  30      20 29 11.0  D          *E  29 24   *E  29 42   *E  37 00
                       MICRON      PERIOD
                 PZ      0.15        1.2
                 MAG 4.8 - 5.2 DIST DEG  28
JAS              20 29 16.1  D
MHC              20 29 17.2  D
MIN              20 28 53.1  D          *I  29 07
ARC              20 28 41.4  D
                 USCGS   20 23 18.2, 61.5N, 147.5W, H= 33 KM, M=5.4
                         SOUTHERN ALASKA.

BKS AUG  30      23 42 23.0  D   46 38  *E  43 54  LQ  47 36  LR  48 36
                       MICRON      PERIOD
                 PZ      1.6         3.5
                 SH      9.4          15
                 MAXH   14.8          24
                 MAG 5.7-6.1 DIST DEG  25
JAS              23 42 15.0  D
MIN              23 42 39.8  D          *I  42 54
                 USCGS   23 37 19.4, 18.7N, 107.0W, H= 54 KM, M=5.3
                         OFF COAST OF JALISCO, MEXICO.

MIN AUG  31      09 50 43.3  D          *I  50 59
JAS              09 50 38.5  C          *I  51 28

JAS AUG  31      14 16 56.1  C
MIN              14 16 33.2  C

BKS AUG  31      15 42 12.5  C
PRI              15 42 31.1  C
JAS              15 42 21.5  C          *I  42 36
MHC              15 42 18.6  C
MIN              15 41 55.2  D
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BKS AUG  31      18 26                  *E  45 30   *E  48 48   *E  52 30
JAS              18 26 02.5  C
                 USCGS   18 15 39.5, 71.6N,   2.7W, H= 33 KM, M=5.1
                         JAN MAYEN ISLAND REGION.
PRI AUG  31      19 51 56.1  C
JAS              19 52 02.5  C
                 USCGS   19 39 09.5, 37.6S,  73.0W, H= 33 KM, M=5.0
                         CENTRAL CHILE

BKS SEP  01      14 15       C          *E  16 28   *E  17 18   *E  17 42
PRI              14 15 10.3  C
JAS              14 14 46.3  C          *I  15 40

BKS SEP  01      14 27 53.8  D       SCS  38 24  SS  41 54  LR  49 48
                       MICRON      PERIOD
                 PZ      0.03        0.6
                 DISTANCE DEG  78
PRI              14 28 05.1  D
JAS              14 28 00.4  D          *I  27 15   *I  27 31
MHC              14 27 57.4  D
                 USCGS   14 16 14.1, 31.8N, 142.4E, H= 42 KM, M=5.5
                         SOUTH OF HONSHU, JAPAN.

PRI SEP  01      14 36 40.3  C
JAS              14 36 31.2  C
                 USCGS   14 22 57.0, 37.5N,  22.1E, H= 17 KM, M=5.3
                         SOUTHERN GREECE.

PRI SEP  01      15 36 48.6  D
JAS              15 36 55.5  C
MHC              15 36 50.3  D
                 USCGS   15 24 59.2, 20.6S, 175.4W, H= 33 KM, M=5.2
                         TONGA ISLANDS REGION.

JAS SEP  01      18 17 01.3  D

BKS SEP  01      23 25 06.5  D         *PP  25 17   *E  25 26   *E  33 24
                       MICRON      PERIOD
                 PZ      0.08        0.7
                 DISTANCE  DEG  27
PRI              23 25 26.0  D          *E  25 42
JAS              23 25 11.9  D          *E  25 33   *I  28 13
MHC              23 25 12.9  D          *E  25 32
                 USCGS   23 19 09.8, 61.8N, 149.6W, H= 77 KM, M=5.2
                         SOUTHERN ALASKA.  FELT AT ANCHORAGE.

BKS SEP  02      01 02 32.0  D   09 19  *E  12 45   *E  16 00
                 R FROM N.W.
                       MICRON      PERIOD
                 SH      0.86         18
                 MAXH    1.6          20
                 MAG 4.7-5.1 DIST DEG  46
PRI              01 03 02.8  C
JAS              01 02 40.7  C          *I  02 59   *I  03 24
MHC              01 02 52.3  C
                 USCGS   00 54 40.7, 51.0N, 177.9E, H= 14 KM, M=5.2
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RAT ISLANDS, ALEUTIAN ISLANDS.

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BKS SEP 02   08 07 19.0  D   14 C4    *E  07 29   *E  08 31   PP   09 18
                                      *E  10 36   SS  17 26   *E   17 36
                                      *E  19 42
                  R FROM S.E.
                        MICRON      PERIOD
                  PZ     1.65         10
                  SH     9.6          22
                  MAXH  27.8          26
                  MAG 5.7-6.1 DIST DEG  47
PRI               08 07 02.0  C
JAS               08 07 14.6  C   14 00    *E  08 26   *E  14 23   *E   15 15
MHC               08 07 13.0  C
                  USCGS   07 59 05.7,  4.5S, 105.9W, H= 33 KM, M=5.1
                          NORTHERN EASTER ISLAND CORDILLERA.

PRI SEP 02   21 23 12.8  C
JAS               21 23 32.3  C             *E  28 29
MHC               21 23 35.0  C
MIN               21 24 06.0  C

PRI SEP 02   22 52 42.6  D
JAS               22 52 28.5  D             *E  52 45
MHC               22 52 34    D

BKS SEP 03   12 27 36.5  D                 *PP  27 52   *E  28 10
                        MICRON      PERIOD
                  PZ     0.05         1.0
PRI               12 27 32.7  C             *E  27 44
JAS               12 27 34.5  C             *E  27 45   *I  27 50
MHC               12 27 35.4  C
MIN               12 27 38.2  C             *I  27 55

BKS SEP 03   16 30 43.0  D   35 56    *E  31 12  LQ   38 00  LR   39 30
                  R FROM S.E.
                        MICRON      PERIOD
                  SH     1.8          14
                  MAXH   6.0          15
                  MAGNITUDE 4.4-4.8
PRI               16 30 25.0  C             *E  30 38
JAS               16 30 37.7  C             *E  30 50   *I  31 19   *E  33 34
                                            *I  33 39
MHC               16 30 38.3  C             *E  30 55
MIN               16 31 01.7  C             *I  31 17
                  USCGS   16 24 20.7, 10.2N, 104.2W, H= 47 KM, M=5.3
                          OFF COAST OF MEXICO.

BKS SEP 03   19 56 52.2  C
PRI               19 56 52.2  C
JAS               19 56 57.3  D
MHC               19 56 52.6  C

BKS SEP 04   05 49 15.0  C
PRI               05 49 02.2  D
JAS               05 49 08.4  D             *E  49 25   *I  49 34
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MHC               05 49 10.8  D
                  USCGS   05 37 49.7, 17.8S,  74.0W, H=  8 KM, M=5.1
                          OFF COAST OF PERU.

BKS SEP 04   09 50                        *E  65 06   *E  65 40   *E   67 54
                                          *E  73 24   *E  81 18   LR   85 24
                  R FROM S.E.
JAS               09 50 44.0  D
                  USCGS   09 41 23.8,  2.5S, 138.8E, H= 39 KM, M=6.0
                          WEST NEW GUINEA.

BKS SEP 04   11 25 05.5  C               *E  25 20   *E  26 35
                  MAGNITUDE 4.6 - 5
PRI               11 24 37.6  D           *E  24 53
JAS               11 24 31.8  C   25 51   *E  24 48
MHC               11 24 47.2  D
MIN               11 24 53.9  D           *I  25 09   *I  25 13
                  USCGS   11 23 17.5, 37.3N, 114.2W, H= 33 KM, M=4.7
                          SOUTHERN NEVADA.

BKS SEP 04   22 21 26    C               PP  24 06   *E  31 00  LQ   39 30
                                          LR  42 00
                  R FROM S.W.
                        MICRON      PERIOD
                  PZ     0.59         6.0
                  MAXH   1.6          28
                  DISTANCE DEG  70
MIN               22 21       C           *E  21 34   *E  22 34

BKS SEP 04   22 24 25.3  D
PRI               22 24 11.5  C
JAS               22 24 14.9  C
MHC               22 24       C           *E  24 20
MIN               22 24       C           *E  24 34
ARC               22 24       C           *E  24 44

PRI SEP 05   00 19 42.2  D
JAS               00 19 48.2  D
MHC               00 19 43.0  D
MIN               00 19 52.1  D

PRI SEP 05   11 21 06.7  C
JAS               11 21 13.4  C
MHC               11 21 06    C
MIN               11 21 17.3  D

PRI SEP 05   11 29 04.3  C
JAS               11 29 11.3  C

PRI SEP 05   18 11 05.7  D
JAS               18 11 09.2  D           *I  11 22   *I  11 36   *E   14 31
MHC               18 11 04.1  D
                  USCGS   17 58 31.0, 15.9S, 167.4E, H= 38 KM, M=5.4
                          NEW HEBRIDES ISLANDS.  FELT.

BKS SEP 05   23 10                    LQ  10 30  LR  11 36
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                    R FROM S.E.
JAS                 23 10          C                *E  10 18

PRI SEP  06         07 13
JAS                 07 13          D                *E  13 38   *E  15 51
MIN                 07 13          C                *E  13 54   *E  14 02   *E  16 05
                                                    *E  14 42

PRI SEP  06         08 08 21.5     C                *E  08 31   *E  09 26
JAS                 08 08 29.6     C                *E  08 39   *E  09 34
MHC                 08 08 29.0     C
MIN                 08 08          C                *E  08 43

PRI SEP  06         08 53 08.2     D                *E  53 18
JAS                 08 53 16.4     D                *E  53 27
MHC                 08 53          D                *E  53 10
MIN                 08 53 30.3     D                *E  53 49
                    USCGS   08 41 05. , 38.8S,  92.3W, H= 33 KM, M=5.0
                    WEST CHILE RISE.

PRI SEP  06         20 35 52.4     C
JAS                 20 36 00.5     C
MHC                 20 35 56.5     C                *E  36 09
                    USCGS   20 25 06.4, 29.4S, 112.3W, H= 33 KM, M=5.2
                    EASTER ISLAND REGION.

PRI SEP  07         11 10 36.7     C
JAS                 11 10 51.9     C
MHC                 11 11 24.3     C                *E  12 12
                    MAGNITUDE 4.2
                    NORTHERN BAJA, CALIF. AREA

BKS SEP  07         14 48          D                *E  50 27   *E  51 20
PRI                 14 48 28.5     C                *E  48 44
JAS                 14 48 07.8     C                *E  48 25
MHC                 14 48 08.4     C                *E  48 08
MIN                 14 47 34.4     C                *I  47 47

BKS SEP  07         16 07          D                *E  07 57
PRI                 16 07          D                *E  08 00
JAS                 16 07          D                *E  08 00   *E  08 25
MHC                 16 07          C                *E  07 56
MIN                 16 07          D                *E  08 12

BKS SEP  08         08 40          C                *I  40 43
PRI                 08 40          D                *E  40 32
JAS                 08 40          C                *E  40 37   *E  40 48
MHC                 08 40          D                *E  40 39
MIN                 08 40          D                *E  40 48   *I  40 58
                    USCGS   08 28 52.1, 23.5S,  66.6W, H=204 KM, M=5.4
                    JUJUY PROVINCE, ARGENTINA.

BKS SEP  08         21 29 13.5     C                PP  33 07
                                          MICRON    PERIOD
                          PZ              0.13        1.0
PRI                 21 29 13.1     D
JAS                 21 29 19.2     D
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MHC                 21 29 13.5     D
MIN                 21 29 23.6     C
ARC                 21 29          C                *E  29 38   *E  33 46
                    USCGS   21 17 21.4, 21.7S, 173.3W, H= 80 KM, M=5.7
                    FIJI ISLANDS REGION.

BKS SEP  08         21 29 47.8     C                *E  34 04 SKS   40 24   *E  41 17
                                                    PS  43 08  SS   48 30   L   58 12
                                                    LR  62 18
                    R FROM N.W.
                                          MICRON    PERIOD
                    PZ                    0.83        2.5
                    MAXH  36                         32
                    MAG 7-7.1 DIST DEG  103
PRI                 21 29 49.0     C                *E  34 18
JAS                 21 29 53.2     C                *I  30 15   *E  34 14   *I  40 29
MHC                 21 29 49.6     C                *E  34 02
MIN                 21 29 47.2     D                *I  30 01
                    USCGS   21 15 52.8,  2.4N, 128.4E, H= 96 KM, M=6.9
                    HALMAHERA.

BKS SEP  08         21 45 39       C
PRI                 21 45 34.0     C                *E  45 51
JAS                 21 45 34.6     C                *E  45 52   *I  46 02   *E  47 48
MHC                 21 45 36.2     C                *E  45 56
MIN                 21 45          C                *E  45 33

BKS SEP  08         22 06 03.0     C
PRI                 22 06 17.0     C
JAS                 22 06 10.5     C
MHC                 22 06 07.5     C
MIN                 22 05 55.7     C                *I  06 37

PRI SEP  09         04 14 10.8     C
JAS                 04 14 16.7     C
MHC                 04 14 19.5     D
MIN                 04 14 30.1     C
ARC                 04 14 43.1     C
                    USCGS   04 04 03.7,  8.2S,  74.2W, H=156 KM, M=5.1
                    PERU BRAZIL BORDER REGION.

PRI SEP  09         07 05 49.5     C
JAS                 07 05 31.7     D   06 51        *E  05 48
MIN                 07 05          D                *I  05 49   *E  07 31

JAS SEP  09         12 29 58.7     D                *E  30 09
MIN                 12 29 35.7     D                *E  29 47

JAS SEP  09         15 42 53.5     D                *I  43 08

BKS SEP  09         18 36 49.5     D   39 19        *E  37 34   LQ  39 40   LR  40 00
                                          MICRON    PERIOD
                          PZ              0.8           9
                          SH              1.7          12
                          MAXH            3.4          12
                          MAG 5.2-5.6 DIST DEG  14
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PRI                 18 37 18.1  D
JAS                 18 36 57.5  D
MHC                 18 36 59.0  D
MIN                 18 36 23.9  D
ARC                 18 36 04.7  C
                          USCGS   18 33 52.8, 49.2N, 129.5W, H= 33 KM, M=4.9
                                  VANCOUVER ISLAND REGION.

BKS SEP  09         18 49 27.0  C
JAS                 18 49 16.7
MIN                 18 49 28.2  C
ARC                 18 49       C                *E  49 43

JAS SEP  09         23 26 01.7  C
BKS                 23 26                      LR   52 54
MIN                 23 26 02.4  C
                          USCGS   23 13 19.8, 17.6S, 168.0E, H= 36 KM, M=5.2
                                  NEW HEBRIDES ISLANDS.  FELT.

BKS SEP  10         02 37 59.7  C
PRI                 02 38 12.8
JAS                 02 38 06.3  C
MHC                 02 38 04.2  C
ARC                 02 37 40.0  C
                          USCGS   02 27 47.7, 46.6N, 144.1E, H=335 KM, M=5.2
                                  SEA OF OKHOTSK.

JAS SEP  10         14 25 10.8  C
MIN                 14 25 26.5  C

BKS SEP  10         17 43 25.7  C
PRI                 17 43 25.3  C
JAS                 17 43 30.7  C
MHC                 17 43 25.6  C
MIN                 17 43 33.4  C
                          USCGS   17 32 03.0, 23.3S, 179.8E, H=550 KM, M=5.0
                                  SOUTH OF FIJI ISLANDS.

PRI SEP  11         01 44 51.0  D
JAS                 01 45 12.7  D

BKS SEP  11         01 48                    *E  49 18   *E  51 27
PRI                 01 48       C            *E  48 48   *E  49 24
JAS                 01 48       C            *E  49 02   *E  49 39

BKS SEP  11         17 47 15.0  C            *I  47 47
                                 MICRON      PERIOD
                            PZ     0.23        0.9
                            MAG 5-5.4 DIST DEG  60
PRI                 17 47 00.7  C          PCP  47 15  *PP  48 11
JAS                 17 47 04.7  C          PCP  47 21  *PP  48 13   *E  51 54
MHC                 17 47 10.6  C            *E  47 26
ARC                 17 47 32.7  C            *E  47 43   *I  48 10
                          USCGS   17 38 04.2,  6.8N,  72.9W, H=167 KM, M=5.9
                                  NORTHERN COLOMBIA.  FELT.
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BKS SEP  12         11 42 24.8  D    52 50   *PP  42 36   *E  42 41   *E  45 58
                                             SCS  53 34   PS  54 03   L   65 16
                                             LR   69 42
                            R FROM S.W.
                                 MICRON      PERIOD
                            PZ     0.66        2.5
                            SH     6.3         12
                            MAXH   52          17
                            MAG 6.4-6.7 DIST DEG  86
PRI                 11 42 26.0  D                *E  42 36
JAS                 11 42 30.5  D                *E  42 42   *E  45 42   *E  52 51
                                                 *I  53 18
MHC                 11 42 25.6  D                *E  42 37
ARC                 11 42 31.9  D
                          USCGS   11 29 40.3, 23.1S, 170.6E, H= 49 KM, M=6.1
                                  LOYALTY ISLANDS REGION.

BKS SEP  13         01 03 28    D                *E  03 47   *E  04 47   *E  12 15
                                             L    27 18   LR   30 48
                            R FROM WSW
                                 MICRON      PERIOD
                            PZ     0.75        7
                            MAXH   1.8         30
                            DISTANCE DEG  89
PRI                 01 03 30.0  D
JAS                 01 03 34.5  D                *I  04 26
MHC                 01 03 29.6  D

BKS SEP  13         06 32 08.5  C    32 25
                            ABOUT 6 MILES N OF HOLLISTER
                             MAGNITUDE 2.6
PRI                 06 32 03.5  C    32 19
JAS                 06 32 06.7                   *E  32 24
MHC                 06 31 57.0  D
                          USCGS   00 50 42.8, 23.0S, 170.6E, H= 28 KM, M=5.0
                                  LOYALTY ISLANDS REGION.
BKS SEP  13         23 06 00.5  C                *PP  06 13   *E  23 00   LR   32 00
                            R FROM S.W.
PRI                 23 06 00.0  C
JAS                 23 06 06.5  C                *I  06 18
MHC                 23 06 01.0  C
                          USCGS   22 53 57.9, 24.1S, 175.4W, H= 46 KM, M=5.5
                                  SOUTH OF TONGA ISLANDS.

BKS SEP  14         23 37 38.8  D              *PP  38 17   *E  39 22   *E  52 16
                                             SS   57 16   L   72 24   LR   79 00
PRI                 23 37 35.5  C
JAS                 23 37 35.6  C                *E  38 15
MHC                 23 37 36.7
                          USCGS   23 18 41.6, 60.1S,  27.0W, H= 33 KM, M=6.2
                                  SOUTH SANDWICH ISLANDS REGION.

PRI SEP  15         02 05 22.1
JAS                 02 05 25.0                   *I  05 35
MHC                 02 05 26
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BKS SEP  15    02 43 49.5  D
PRI            02 43 45.6  C
JAS            02 43 47.C  C              *I   44 03
MHC            02 43 48

BKS SEP  15    04 19 15.8  D    2S C4     *E   19 24    *E   19 30  LQ    39 08
                                          LR   43 30
                    R FRCM S.W.
                          MICRCN      PERIOD
                    PZ      0.75        7
                    MAXH    4.3         20
                    MAG 5.4-5.8 DIST DEG  80
PRI            04 19 03.6
JAS            04 19 09.C  C              *I   19 25
MHC            04 19 03.3  C
                    USCGS    04 07 04.8, 23.6S, 175.8W, H= 67 KM, M=5.3
                             TONGA ISLANDS REGION.

BKS SEP  15    10 42 15.6  D
PRI            10 41 54
JAS            10 42 06.4              *I   42 34
MHC            10 42 09.1  D

BKS SEP  15    12 10 55.3  C          *PP'   11 10    *E   12 36  PS    23 26
                                        SS    30 16  L     45 12  LR    51 18
                          MICRCN      PERIOD
                    PPZ     2.2         16
                    MAXH    9.C         20
PRI            12 10 51.5  C
JAS            12 10 51.2  C              *E   11 23
MHC            12 10 52.4  C
                    USCGS    11 51 55.7, 60.3S,  26.7W, H= 33 KM, M=5.7
                             SOUTH SANDWICH ISLANDS REGION.

BKS SEP  15    17 24 07.0  C
PRI            17 24 12.7  C
JAS            17 24 11.2  C              *I   24 31
MHC            17 24 09.3  C
                    USCGS    17 10 46.8, 22.8N, 121.4E, H= 47 KM, M=5.5
                             TAIWAN REGION.

JAS SEP  15    17 28 01.0  C

BKS SEP  16    02 54 49.8  C              LR   63 06
                    R FRCM W
PRI            02 55 04.1  C
JAS            02 54 55.C  D              *E   55 08
MHC            02 54 56.0  D
                    USCGS    02 48 21.8, 54.1N, 163.5W, H= 39 KM, M=5.3
                             UNIMAK ISLANDS REGION.

PRI SEP  16    13 24 44.9  D
JAS            13 24 45.5  D              *E   24 56    *E   25 16
MHC            13 24 39    D
                    USCGS    13 11 54.5, 23.0S, 170.6E, H= 33 KM, M=5.1
                             LCYALTY ISLANDS REGION.
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JAS SEP  16    17 17 15.C  D              *E   17 46
MHC            17 17 11.8  D              *E   17 41
PRI            17 18 34.5  C    20 08     *E   18 54
JAS            17 18 32.2  C              *E   18 48    *E   19 54

BKS SEP  17    20 29 48.5  D              *E   30 04    *E   39 54    *E   51 30
                                          *E   55 30
                    R FRCM  SW
                          MICRCN      PERIOD
                    MAXH    4.C         16
PRI            20 29 46.3  D              *E   30 06
JAS            20 29 53.2  D              *I   30 12
MHC            20 29 48.0  D              *E   30 07
                    USCGS    20 17 26.0, 27.7S, 176.6W, H= 37 KM, M=5.2
                             KERMADEC ISLANDS REGION.

BKS SEP  17    21 16 58.5  C              *E   17 13
PRI            21 16 56.6  C             *PP   17 14
JAS            21 17 04.6  C             *PP   17 20
MHC            21 17 59.1  C             *PP   17 14

BKS SEP  18    06 50 21.2  D
PRI            06 50 11.6  D              *E   50 28
JAS            06 50 24.C  D              *E   50 41
MHC            06 50 18.6  D              *E   50 36    *I   50 41
                    USCGS    06 40 36.8, 18.4S, 132.8W, H= 33 KM, M=5.1
                             SOUTH PACIFIC OCEAN.

PRI SEP  18    15 33 22.C  C
JAS            15 33 21.1  C

PRI SEP  18    18 17 11    D
JAS            18 17 15.2  D
MHC            18 17 12.2  D

PRI SEP  18    21 02 35    C
JAS            21 02 31.1  C                        *I   03 20
MHC            21 02 32.4  C

PRI SEP  18    21 13 08.2  D
JAS            21 13 13.5  D

JAS SEP  18    21 49 33.8  D

JAS SEP  19    04 34 C9.8  D              *E   34 28
MHC            04 34 07.2  D
                    USCGS    04 24 05.1, 47.6N, 153.8E, H= 80 KM, M=5.1
                             KURILE ISLANDS.

BKS SEP  19    C5 C4 26.6  C
PRI            05 C4 37.5  C
JAS            05 C4 32.8  C
MHC            05 C4 30.2  C

BKS SEP  19    07 13 17.3  D
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PRI                07 13 17.2   D
JAS                07 13 23.1   D
MHC                07 13 17.6   D
                        USCGS    07 02 12.8, 20.7S, 178.4W, H=580 KM, M=5.3
                                 FIJI ISLANDS REGION.

PRI SEP  20        00 17 56.3   D
JAS                00 17 50.4   C


BKS SEP  20        09 43 06.7   C
JAS                09 43 00.7   C          *I   43 21

BKS SEP  20        17 44        C          *E   54 52   *E   65 36   LR   71 36
                        R FROM SW
PRI                17 44 25.5   C
JAS                17 44 31.9   C          *E   45 12
MHC                17 44 26.5   C

PRI SEP  21        07 43 41.6   D
JAS                07 43 54.3   D

JAS SEP  22        00 13 58.3   D          *I   14 55

JAS SEP  22        04 27 11.5   C

BKS SEP  22        18 58 17.2              *E   60 54
PRI                18 58 00.8   C          *E   58 17   *E   59 09
JAS                18 57 50.6   D          *I   58 12   *I   59 04
MHC                18 58 02.5   C          *E   58 12   *I   59 24
MIN                18 58                   *E   58 36
ARC                18 58        C          *E   59 12   *E   62 03
                        USCGS    18 56 40.9, 37.3N, 114.1W, H= 33 KM, M=5.0
                                 SOUTHERN NEVADA.  FELT.

BKS SEP  22        20 01 16.7   D          *E   01 36   *E   02 52
PRI                20 00 54.7   D          *E   01 15   *E   02 30
JAS                20 00 54.1   C          *I   01 12   *I   02 05
MHC                20 00        D          *E   01 11   *E   01 27   *E   02 46

BKS SEP  22        21 46                   *E   56 09   *E   65 12   LR   70 30
                        R FROM S.W.
JAS                21 46 51.4   C          *E   47 24
MHC                21 46 44.3   C

JAS SEP  23        01 40 20.4   D          *E   40 34
MHC                01 40 19.0   D          *E   40 31

BKS SEP  23        11 57             59 29
PRI                11 57 29.3   C          *E   57 44   *E   58 51
JAS                11 57 23.8   D   58 46  *E   57 41
MHC                11 57        C          *E   57 39

PRI SEP  23        18 44 45.9   C
JAS                18 44 47.8   C          *I   45 08
MHC                18 44 48.6   C
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BKS SEP  24        09 02 51.0   C          *E   03 28
PRI                09 02 41.0   C
JAS                09 02 55.0   C
MHC                09 02 48.1   C
                        USCGS    08 57 10.2, 12.0N, 130.8W, H= 33 KM, M=5.3
                                 NORTH PACIFIC OCEAN.

PRI SEP  24        17 01 02.7   D
JAS                17 01 06.5   C
MHC                17 01 02.3   C
                        USCGS    16 48 31.7, 22.4S, 171.6E, H=127 KM, M=5.1
                                 LOYALTY ISLANDS REGION.

BKS SEP  25        05 01 33.8   D          *E   02 22
PRI                05 01 43.5   D
JAS                05 01 40.9   D
MHC                05 01 36.8   D
                        USCGS    04 49 36.9, 19.2N, 145.7E, H=133 KM, M=5.5
                                 MARIANA ISLANDS.

BKS SEP  25        06 08 05.7   C   12 37  *E   06 26   PP   08 43   *E   09 20
                                          PCP  11 17   LQ   14 24   LR   16 06
                        R FROM S.E.
                                 MICRON     PERIOD
                        PZ       1.92       10
                        SH       3.6        17
                        MAXH     15.3       24
                        MAG 4.7-5.1 DIST DEG  26
PRI                06 07 46.5   D
JAS                06 07 53.4   C
MHC                06 07 59.0   D
                        USCGS    06 02 26.4, 18.3N, 100.8W, H= 60 KM, M=6.1
                                 GUERRERO, MEXICO.

BKS SEP  25        08 49 05.7   D          *E   49 15
JAS                08 49 11.0   C

BKS SEP  26        05 29 37     D          *E   39 00   *E   62 30   *E   67 18
JAS                05 29 41.4   C
                        USCGS    05 10 58.1, 27.5N,  92.6E, H= 33 KM, M=5.6
                                 INDIA CHINA BORDER REGION.

BKS SEP  26        06 22 52     D          *E   26 30   *E   29 08   *E   30 26
                                          LQ   39 30   LR   43 00
                        R FROM S.W.
JAS                06 22 31.8   C

PRI SEP  27        03 32 25.5   D
JAS                03 32 22.4   C
MHC                03 32 20.5   C
                        USCGS    03 19 58.2, 13.9N, 146.4E, H= 65 KM, M=5.0
                                 SOUTH OF MARIANA ISLANDS.

PRI SEP  27        08 31 19.4   D
JAS                08 31 00.0   D          *E   32 21
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```
MHC              08 31 27.8  C

PRI SEP  28      12 00 42.6  C
JAS              12 00 48.0  C
MHC              12 00 42.3  C

BKS SEP  28      14 14       D              *E  18 44   *E  20 40   *E  27 54
                                            *E  33 42  LQ   47 00  LR   51 24
                       R FROM N.W.
                            MICRON      PERIOD
                       MAXH  12.4         24
PRI              14 14       C              *E  18 52
JAS              14 14 30.0  C              *E  14 46   *E  18 43
                     USCGS   14 00 27.9, 27.4N, 100.1E, H= 33 KM, M=6.2
                             YUNNAN PROVINCE, CHINA.

JAS SEP  29      02 55 51.1  D              *I  54 05

PRI SEP  29      14 46 32.3  C
JAS              14 46 27.5  D   47 26      *E  46 37
MHC              14 46 48.0  C

BKS SEP  30      09 40 39.5  C
PRI              09 40 27.6  D
JAS              09 40 33.5  D              *E  41 04   *I  41 18
MHC              09 40 36.2  D              *E  41 07
                     USCGS   09 29 11.6, 18.3S,  69.7W, H=122 KM, M=5.2
                             NORTHERN CHILE.  FELT.

PRI SEP  30      18 20 43.4  C              *E  20 53   *E  21 11
JAS              18 20 51.2  C   22 15      *E  21 07
MHC              18 20 52.1  C              *E  21 12

PRI OCT  01      02 37 11.2  C
JAS              02 37 02.0  D              *E  37 23

BKS OCT  01      02 58 48.3      59 30
                       WALKER LAKE, NEVADA MAG 4.0
PRI              02 58 42.4      59 21
JAS              02 58 24.2      58 48
MHC              02 58 40.6  C   59 16

PRI OCT  01      10 37 58.5  C
JAS              10 37 53.2  C   38 54
MHC              10 38 11.2  D

PRI OCT  02      02 37 11.2  C
JAS              02 37 02.0  D              *E  37 23   *I  38 19   *I  39 24

PRI OCT  02      05 13 21.3  D              *E  13 36
JAS              05 13 40.7  D   14 34
MHC              05 13 41.0  D

BKS OCT  02      07 31 03.7  C   36 56      *E  31 13  LQ   39 54  LR   41 24
                       R FROM N.W.
                            MICRON      PERIOD
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```
                       SH      2.64        20
                       MAXH    6.5         20
                       MAG 4.9-5.3 DIST DEG  40
PRI              07 31 17.5  C              *E  31 32
JAS              07 31 07.6  C              *E  31 24   *E  32 12
MHC              07 31 06.0  C
                     USCGS   07 23 35.3, 51.6N, 174.5W, H= 34 KM, M=5.1
                             ANDREANOF ISLS., ALEUTIAN ISLS., FELT ADAK.

PRI OCT  02      12 15 45    C
JAS              12 15 31.2  C              *E  15 46
MHC              12 15 27.6  C              *E  15 42

JAS OCT  02      15 40 55.5  D   42 17      *E  41 13   *I  42 18
PRI              15 40           42 22      *E  41 15
MHC              15 41 10.8  D   42 48      *E  41 28

JAS OCT  02      22 06 45.6  D

PRI OCT  03      02 29 33.0  C              *E  33 08   *E  33 15
JAS              02 29 21.0  C              *E  31 54   *E  32 45   *E  33 05
MHC              02 29       C              *E  31 56

PRI OCT  04      01 57 11.7  C
JAS              01 57 14.1  C
MHC              01 57 09.6  D
                     USCGS   01 44 31.1, 11.1S, 162.3E, H= 33 KM, M=5.4
                             SOLOMON ISLANDS.

PRI OCT  04      07 35 45.8  C
JAS              07 35 43.7  C              *E  35 51
MHC              07 35 40.3  C
                     USCGS   07 22 54.6, 12.0N, 142.1E, H= 47 KM, M=5.2
                             SOUTH OF MARIANA ISLANDS.

PRI OCT  04      23 49 13.4  C
JAS              23 49 18.6  C
MHC              23 49 13.6  C
                     USCGS   23 37 34.5, 26.1S, 179.4E, H=486 KM, M=5.3
                             SOUTH OF FIJI ISLANDS.

PRI OCT  05      03 07 31.5  C
JAS              03 07 22.4  D
MHC              03 07 18.9  C
MIN              03 07 04.5  C

BKS OCT  05      05 37 38.8  C
PRI              05 37 42.2  C              *E  38 46
JAS              05 37 45.6  C              *E  38 49
MHC              05 37 40.3  C
MIN              05 37 45.6  D              *E  38 09

PRI OCT  05      08 54 08.3  C
JAS              08 53 55.8  C
MHC              08 53 57    C
MIN              08 53 54.5  C
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```
PRI OCT  05    12 30 52.5  C
JAS            12 31 01.7  C    32 16     *E   31 15

JAS OCT  06    13 58 09.7  C

MIN OCT  07    12 14 51.2  C
JAS            12 14 26.7  C

BKS OCT  07    16 07 37.8  D    18 00    *PP   07 50    *I   08 19    *I   08 33
                                          PP    11 31    *SS  18 47    *E   22 04
                                          SS    23 40    *E   26 24  LQ    30 30
BKS            16 07 37.8  D    18 00   P'P'   33 42  LR    34 36
                    R FROM S.W.
                          MICRON       PERIOD
                    PZ      0.21         1.3
                    SH     18.5           16
                    MAXH   43             30
                    MAG 6.0 DIST DEG   86
PRI            16 07 38.6  C           P'P'   33 36
JAS            16 07 43.2  C    17 53   *SP   08 24    *I   11 19   PP   11 59
                                         *SS   18 13    *E   19 15 P'P'   33 33
MHC            16 07 38.2  C           P'P'   33 33
MIN            16 07 46.5  D             *E   33 20
                    USCGS    15 55 10.8, 21.6S, 170.5E, H=161 KM, M=6.4
                             LOYALTY ISLANDS REGION.

BKS OCT  07    21 01 55.8  C             *E   02 09    *E   09 54
PRI            21 02 15.4  C
JAS            21 02 01.5  C
MHC            21 02 02.5  C
MIN            21 01 39.2  D             *I   01 56
                    USCGS    20 55 56.0, 61.6N, 150.1W, H= 56 KM, M=5.7
                             SOUTHERN ALASKA.  FELT AT ANCHORAGE,
                             VALDEZ, AND KENAI.

BKS OCT  08    00 24 04.1  C    33 36     *E   24 29    *E   25 12  SS    38 10
                                        LQ    42 30  L     43 00  LR    46 00
                    R FROM S.W.
                          MICRON       PERIOD
                    SH     2.05           18
                    MAXH  12.6            28
                    MAG 6.6-6.9 DIST DEG  75
PRI            00 23 59.7  C
JAS            00 24 05.4  C
MHC            00 23 59.6  C
                    USCGS    00 12 18.1, 16.4S, 177.6W, H= 33 KM, M=5.7
                             FIJI ISLANDS REGION.

BKS OCT  08    02 33 32    C             *E   44 00
PRI            02 33 17.2  D             *E   33 55
JAS            02 33 23.4  D             *E   34 00
MHC            02 33 17.0  D             *E   33 54
MIN            02 33 27.8  C
                    USCGS    02 21 56.4, 19.4S, 175.4W, H=241 KM, M=5.0
                             TONGA ISLANDS.
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BKS OCT  08    02 45                                *E   55 26   *E   64 30   *E   65 00
                                                    *E   68 00
                    R FROM S.W.
                          MICRON       PERIOD
                    MAXH   9.7            28
PRI            02 45 53.6  C             *E   46 08
JAS            02 45 59.6  C             *E   46 14
MHC            02 45 52.8  C             *E   46 09

BKS OCT  08    03 12 32.5  D
PRI            03 12 53.2  C
JAS            03 12 39.9  C
MIN            03 12 17.5  C             *I   12 25

JAS OCT  08    04 02 38.5  C
MIN            04 02 42.2  D             *I   04 29

MIN OCT  08    12 13 36.4  D
JAS            12 13 48.7  C

PRI OCT  08    12 37 51.1  C
JAS            12 37 44.3  C    38 51
MIN            12 37 50.9  C

BKS OCT  08    14 54 49.8  C
PRI            14 54 50.8  D
JAS            14 54 56.3  C
MHC            14 54 50.6  C
MIN            14 54 59.3  C

BKS OCT  08    17 51 16.0  C    57 00    *E   51 26   *E   51 43  LQ    60 00
                                        LR    61 24
PRI            17 51 31.3  D             *E   51 46
JAS            17 51 25.1  D             *E   51 38
MHC            17 51 21.1  C             *E   51 34
MIN            17 51 06.5  D             *E   51 19   *E   53 38
                    USCGS    17 43 56.1, 51.6N, 173.8W, H= 35 KM, M=5.5
                             ANDREANOF ISLANDS, ALEUTIAN ISLANDS.

BKS OCT  09    02 17 18.8  D
PRI            02 17 22.9  D            *PP   18 16
JAS            02 17 28.8  D            *PP   18 22
MHC            02 17 23.3  D            *PP   18 16
MIN            02 17 32.3  C             *E   18 25

BKS OCT  09    07 15       C             *E   15 58   *E   18 20   *E   20 56
                                         *E   26 56   *E   32 20   *E   37 26
                                        LQ    40 42  LR    48 00
                    R FROM N

BKS OCT  09    08 12 40.7  C             *E   13 19   *E   15 22  LR    15 42
                          MICRON       PERIOD
                    MAXH  32.4            16
                    DISTANCE DEG  12
PRI            08 12 12.3  C
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```
JAS              08 12 30.4  D    14 45     *E   14 40
MHC              08 12 34.3  D
MIN              08 13 07.4  D
                       USCGS    08 10 28.0, 31.3N, 114.3W, H= 33 KM, M=5.0
                                GULF OF CALIFORNIA.

JAS OCT  09      23 05 18.9  C

JAS OCT  10      20 40 09.4  C              *I   40 21

PRI OCT  10      21 22 45.5  C
JAS              21 22 27.6  D              *I   22 43
MHC              21 22 30.8  D

JAS OCT  11      00 09 50.8  D              *I   10 14    *I   11 12

PRI OCT  11      05 51 19.3  C
JAS              05 51 23.6  C              *I   51 33
MHC              05 51 28.6  C
MIN              05 51 37.5  C
                       USCGS    05 39 07.1, 29.8S,  71.2W, H= 33 KM, M=5.3
                                NEAR COAST OF CENTRAL CHILE.

BKS OCT  11      06 44 54.8  D              *I   45 08    *E   46 40    *E   48 11
                                           SS   64 24  L     80 00  LR    85 18
                       R FROM S.W.
PRI              06 44 50.8  D              *E   45 02
JAS              06 44 52.6  C              *E   45 04    *E   45 14    *I   46 43
MHC              06 44 53.5  C              *E   45 14
MIN              06 44 56.9  D              *I   45 24
                       USCGS    06 25 55.1, 60.3S,  26.0W, H= 37 KM, M=5.9
                                SOUTH SANDWICH ISLANDS REGION.

JAS OCT  11      06 54       D              *E   54 39    *I   58 12    *I   58 42
BKS              06 54       C              *E   58 16

BKS OCT  11      08 18 41.2  C             *PP   18 54
PRI              08 18 37.5  C             *PP   18 51
JAS              08 18 39.2  C             *PP   18 52
MHC              08 18 39.9  C             *PP   18 53
MIN              08 18 44.9  C

BKS OCT  11      17 00 25.0  C              *E   01 28
PRI              16 59 57.7  D
JAS              17 00 11.5  C    00 60
MHC              17 00 15.8  C    01 06
MIN              17 00 59.1  C              *I   01 21    *I   02 35

BKS OCT  11      20 53 27.1  C    64 08     *E   53 41  LQ    76 00  LR    81 00
                       R FROM S.W.
                       PZ        0.03          0.7
                       SH        1.6           18
                       MAXH      3.8           16
                       MAG 4.8-5.2 DIST DEG  87
PRI              20 53 26.0  C
JAS              20 53 31.5  C              *I   53 45
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MHC              20 53 26.9  C
MIN              20 53 36.2  D
                       USCGS    20 40 39.8, 32.6S, 178.7W, H= 33 KM, M=5.1
                                SOUTH OF KERMADEC ISLANDS.

BKS OCT  12      00 25 25.6  C              PS   36 24  SS    42 46  LQ    54 30
                                           LR   60 42
                                    MICRON      PERIOD
                                MAXH   3.0       32
PRI              00 25 27.6  D
JAS              00 25 26.3  D
MHC              00 25 25.2  D
MIN              00 25 23.7  D

JAS OCT  12      03 25 06.4  D              *I   25 17    *I   28 55
MIN              03 24 43.4  D              *I   24 53

BKS OCT  12      04 34 58.8  C    45 15     *E   35 38 PPS    47 06  L     57 36
                                           LR   61 24
                       R FROM S. W.
                                    MICRON      PERIOD
                                PZ     0.04      1.0
                                SH     1.46      22
                                MAXH   4.2       16
                                MAG 4.5-4.9 DIST DEG  86
PRI              04 34 54.2  C
JAS              04 35 01.4  C              *E   35 13    *E   38 29
MHC              04 34 54.7  C
MIN              04 35 04.9  C
                       USCGS    04 22 14.0, 31.2S, 177.8W, H= 14 KM, M=5.2
                                KERMADEC ISLANDS.

BKS OCT  12      08 09 35.2  C              *E   09 50
PRI              08 09 38.2  D
JAS              08 09 40.8  D              *I   09 57    *I   10 12
MHC              08 09 35.8  D
MIN              08 09 38.0  C
                       USCGS    07 56 59.4, 11.0S, 162.3E, H= 41 KM, M=5.0
                                SOLOMON ISLANDS.

JAS OCT  12      08 26 23.0  C              *I   27 02
BKS              08 26       C              *E   34 00
MIN              08 25 59.7  D              *I   26 10

PRI OCT  12      09 10 15.1  C
JAS              09 10 20.7  C
MHC              09 10 15.0  C
MIN              09 10 23.2  D

BKS OCT  12      16 08       D              *E   08 20
JAS              16 08 04.9  C              *I   08 16    *I   08 28

BKS OCT  12      20 27 55.5  C    34 12     *I   28 04 PCP    29 51 SCS    37 28
                                           LQ   39 30  LR    43 18
                       R FROM S.E.
PRI              20 27 39.3  D          PCP   29 46
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JAS              20 27 45.6  D          PCP   29 46    *E  29 56
MHC              20 27 50.3  D          PCP   29 47
                   USCGS    20 20 06.8, 11.2N,  86.2W, H= 43 KM, M=5.6
                            NEAR COAST OF NICARAGUA.

BKS OCT  13      02 21 22.2  C            *E  21 32    *E  22 10  LQ   27 04
                                          LR  28 06
                          R FROM N.h.
                               MICRON      PERIOD
                          PZ     1.0          7
                          DISTANCE DEG  31
PRI              02 21 38.5  D
JAS              02 21 26.8  D            *I  21 40    *I  21 54
MHC              02 21 26.5  D
MIN              02 21 03.4  D            *I  22 15
                   USCGS    02 15 45.2, 59.5N, 145.2W, H= 10 KM, M=5.0
                            GULF OF ALASKA.

JAS OCT  13      05 32 24.7  C
MIN              05 32 01.7  C

BKS OCT  13      15 55 37.8  D
PRI              15 55 24.1  D
JAS              15 55 29.8  D            *I  56 12
MHC              15 55 33.7  D
                   USCGS    15 45 15.6,  8.8S,  74.3W, H=155 KM, M=5.3
                            PERU BRAZIL BORDER REGION.

JAS OCT  13      18 52 46.4  C
MIN              18 52 38.8  D
BKS              18 52          *E  52 42    *E  53 10 PPP   55 12
JAS              18 52 46.4  C  *E  59 21 LR  66 00  LQ   70 18
MIN              18 52 38.8  D

JAS OCT  14      02 44 07.9  D
BKS              02 44          53 36  LQ    62 54 LR   64 30

PRI OCT  14      02 46 03.1  C
JAS              02 46 09.0  C
MHC              02 46 03.8  C
MIN              02 46 12.7  D

BKS OCT  15      08 41 45.2  C
PRI              08 41 45.2  C
JAS              08 41 51.5  C
MHC              08 41 43.3  C
MIN              08 41 54.7  D          *E  42 08

JAS OCT  15      18 11 26.2  C
MHC              18 11 23.6  C
MIN              18 11 02.5  D

BKS OCT  16      07 00 21.2  C
PRI              07 00 08.0  C
JAS              07 00 12.2  C          *I  00 38
                   USCGS    06 48 38.6, 19.7S,  70.4W, H= 45 KM, M=5.0
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                   NEAR COAST OF NORTHERN CHILE.

BKS OCT  16      09 25 17.0  D
PRI              09 25 26.5  D
JAS              09 25 22.7  C          *E  25 33
MHC              09 25 20.7  D
MIN              09 25 12.1  C
                   USCGS    09 13 31.0, 29.6N, 142.4E, H= 56 KM, M=5.5
                            SOUTH OF HONSHU, JAPAN.

BKS OCT  16      13 14 16.6  C          *E  14 36
                               MICRON      PERIOD
                          PZ     0.13        0.8
                          DISTANCE DEG  90
PRI              13 14 13.4  C
JAS              13 14 15.0  C          *I  14 41    *I  17 41
MHC              13 14 15.8  C
MIN              13 14 18.7  D          *I  14 41

BKS OCT  17      04 10 09.0  C          *E  11 12    *E  11 36   *E  21 18
                                        LR  34 36
                          R FROM S.h.
PRI              04 10 12.5  C
JAS              04 10 15.6  C        PCP   10 23    *I  10 41
MHC              04 10 10.6  C
MIN              04 10 12.8  C          *E  10 22    *I  10 28

BKS OCT  17      10 27 56.0  C  38 15   *I  28 15  PS   39 06  SS   43 00
                                        LR  52 18
                          R FROM S.h.
                               MICRON      PERIOD
                          PZ     0.07        1.0
                          SH     1.19         22
                          MAXH  10.2          24
                          MAG 4.6-5.0 DIST DEG  81
PRI              10 28 01.2  C
JAS              10 28 04.4  C        PCP   28 18    *E  28 25   *I  31 02
MHC              10 27 59.4  C
MIN              10 28 03.6  C          *I  28 50
                   USCGS    10 15 40.6, 11.0S, 166.7E, H= 55 KM, M=5.5
                            SANTA CRUZ ISLANDS.

BKS OCT  17      12 48 34.0  D          *E  48 51
PRI              12 48 37.9  C
JAS              12 48 40.0  C          *I  48 50
MHC              12 48 35.2  C
MIN              12 48 38.8  D          *E  49 12
                   USCGS    12 35 59.8, 10.4S, 161.1E, H= 77 KM, M=5.1
                            SOLOMON ISLANDS.

PRI OCT  17      13 16 24.6  C
JAS              13 16 17.8  C
MHC              13 16 15.8  C
MIN              13 16 01.2  C
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BKS OCT  17    14 01 16.7  D              *E  11 52   *E  25 24
                R FROM  SW
                      MICRON       PERIOD
                MAXH   1.5          20
                DISTANCE DEG  87
PRI            14 01 17.1  C
JAS            14 01 19.6  D              *I  01 40
MHC            14 01 15.7  C
MIN            14 01 19.8  D

BKS OCT  17    18 31 22.0  D
PRI            18 31 22.3  D
JAS            18 31 27.8  D              *I  33 42
MHC            18 31 22.5  D
MIN            18 31 31.3  C
                USCGS   18 20 07.8, 22.3S, 179.1E, H=635 KM, M=5.0
                        SOUTH OF FIJI ISLANDS.

BKS OCT  17    21 52 23.5  C   61 00      *I  52 41  L    68 18
                      MICRON       PERIOD
                PZ     6.0          9
                SH     91           29
                MAXH  170           20
                MAG 7.5 DIST DEG  63
PRI            21 52 09.2  C
JAS            21 52 16.2  C
MHC            21 52 18.5  C
MIN            21 52 27.7  C              *I  52 37
                USCGS   21 41 56.3, 10.7S,  78.7W, H= 38 KM.
                        NEAR COAST OF PERU.  ABOUT 125 KILLED, OVER
                        3000 INJURED, AND MAJOR PROPERTY DAMAGE.
                        TSUNAMI OF 11.3 FT. AT LA PUNTA, PERU AND
                        OF 1.6 FT. AT VALPARAISO, CHILE.

BKS OCT  17    22 03 42.0  C              *E  03 53
PRI            22 03 29.2  C
JAS            22 03 34.9  C              *E  03 46
MHC            22 03 37.8  C              *E  03 52

BKS OCT  17    22 21 29.0  D
PRI            22 21 44.6  D
JAS            22 21 34.0  C
MHC            22 21 31.0  D
MIN            22 21 26.5  D

JAS OCT  17    23 14 43.6  C

BKS OCT  17    23 43 16.3  C              *E  43 30
PRI            23 43 00.0  C
JAS            23 43 06.9  C
MHC            23 43 09.6  C
                USCGS   23 32 37.7, 10.6S,  78.8W, H= 33 KM, M=5.0
                        NEAR COAST OF PERU.

BKS OCT  17    23 57 13.0  C              *E  57 29
PRI            23 56 59.2  C
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JAS            23 57 06.5  C
MHC            23 57 07    C

JAS OCT  18    00 26 35.2  C

JAS OCT  18    02 50 13.1  C              *E  50 30
MIN            02 50 12.9  C

BKS OCT  18    04 14 35.0  D
PRI            04 14 35.9  D
JAS            04 14 40.7  D
MHC            04 14 35.6  D

BKS OCT  18    08 36 32.5  C
PRI            08 36 27.9  C
JAS            08 36 35.1  C
MHC            08 36 37.1  C
MIN            08 36 39.3  D

BKS OCT  18    21 02 15.0  D              *E  27 00
PRI            21 02 22.0  C
JAS            21 02 22.6  C
MHC            21 02 13.0  D

BKS OCT  18    23 27 28.0  D
PRI            23 27 45.3  D
JAS            23 27 36.1  C
MHC            23 27 40    C
MIN            23 27 18.5  D

BKS OCT  19    04 11 05.7  C
                      MICRON       PERIOD
                PZ     0.04         0.8
                MAG 4.6-5.0 DIST DEG  85
PRI            04 11 15.3  C
JAS            04 11 06.4  C              *I  11 25
MHC            04 11 08.7  C
MIN            04 10 53.5  C
                USCGS   03 57 57.7, 49.7N,  78.0E, H=  0 KM, M=5.6
                        EASTERN KAZAKH, SSR.

BKS OCT  19    06 42 22.5  C
                      MICRON       PERIOD
                PZ     0.05         0.8
                MAG 4.6-5.0 DIST DEG  83
PRI            06 42 32.2  C
JAS            06 42 29.1  C          PCP   42 39  PP   45 41
MHC            06 42 26.0  C
MIN            06 42 09.4  C
                USCGS   06 30 34.9, 22.5N, 142.0E, H=250 KM, M=5.0
                        VOLCANO ISLANDS REGION.

BKS OCT  19    08 19 58.5  D          PP   20 12 SKS   26 27  LQ   44 42
                                      LR   50 18
                      MICRON       PERIOD
                PPZ    1.3          3.0
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                    MAXH  59          24
                    MAG 6.8-7.2 DIST DEG  108
PRI             08 15 37.7  C           *E  15 54  PP   20 06
JAS             08 15 36.0  C          *PP  15 48   *E  15 51  P'   19 47
                                       PP   20 04   *I  32 16
MHC             08 15 41.5  D          *PP  15 53  PP   20 09
MIN             08 15 37.1  D           *I  15 48  P'   20 05  PP   20 18
                    USCGS   08 01 33.8,  1.6S,  15.5W, H= 33 KM, M=6.8
                            NORTH OF ASCENSION ISLAND.

BKS OCT  19     08 31 38.1  C
PRI             08 31 43.0  D
JAS             08 31 40.5  C           *E  32 17
MIN             08 31 39.3  D

BKS OCT  19     11 34 16.2  C          *PP  35 10
                          MICRON       PERIOD
                    PZ      0.04         0.9
                    DISTANCE DEG  82
PRI             11 34 20.1  C          *PP  35 14
JAS             11 34 23.4  C          *PP  35 17
MHC             11 34 18.4  C          *PP  35 12
MIN             11 34 23.1  D          *PP  35 16
                    USCGS   11 22 14.7, 12.6S, 167.2E, H=218 KM, M=5.1
                            SANTA CRUZ ISLANDS.

BKS OCT  19     19 46 11.9  D
JAS             19 46 02.0  D           *I  46 31

BKS OCT  20     13 48 09.0  C          *PP  48 44
PRI             13 48 11.4  D          *PP  48 47
JAS             13 48 15.0  D          *PP  48 50
MHC             13 48 09.9  D          *PP  48 46
MIN             13 48 51.6  D

BKS OCT  20     14 26 52.8  C
PRI             14 26 26.0  C  27 15
JAS             14 26 39.3  C  27 37
MHC             14 26 43.0  C  27 43
MIN             14 27 25.4  C           *I  27 35

PRI OCT  21     07 15 48.3  C
JAS             07 15 36.2  D           *E  16 54

PRI OCT  21     10 40 11.0  C
JAS             10 40 16.0  C
MHC             10 40 20.5  C
MIN             10 40 35.0  C
BKS             10 42 45.0  C           *E  43 12   *E  55 36
PRI             10 42 36.8  D           *E  43 03   *E  45 32
JAS             10 42 44.9  D           *E  43 08   *E  43 29   *E  45 37
MHC             10 42 46.8  D           *E  43 12   *E  45 41
MIN             10 43 26.5  D

JAS OCT  21     12 51 51.0  C           *I  52 04
MIN             12 51       C           *E  52 06
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                    USCGS   12 39 41.0, 27.8S,  67.5W, H= 73 KM, M=4.7
                            CATAMARCA PROV., ARGENTINA.  SEVERAL
                            INJURED.  SLIGHT DAMAGE AT BELEN.

PRI OCT  22     08 20 40.9  C           *E  21 33   *E  21 45
JAS             08 20 08.0  C   20 45   *E  21 01
MHC             08 20 34.0  C   21 26
MIN             08 20 17.5  D   21 01
                    MAG 3.8 - N.E. NEVADA

PRI OCT  22     12 56 41.0  C           *E  57 03
JAS             12 56 33.0  C           *E  56 53   *E  57 22
MHC             12 56 31.1  C           *E  56 52
MIN             12 56 14.1  D           *I  56 31
                    USCGS   12 47 18.2, 55.2N, 162.0E, H= 59 KM, M=5.4
                            NEAR EAST COAST OF KAMCHATKA.

BKS OCT  22     15 21 46.2  C   22 35
PRI             15 21 47.3  D
JAS             15 21 19.0  D   21 54
MHC             15 21 36.6  D           *E  22 29
MIN             15 21 27.2  D           *I  21 56

PRI OCT  22     15 36 43.8              *E  37 35
JAS             15 36 12.1  C   36 48
MHC             15 36 29.8  D           *E  37 13
MIN             15 36 20.7  C           *I  37 07

BKS OCT  22     17 17 47.0      19 15   *E  18 04
PRI             17 17 57.8  C   19 24   *E  18 12
JAS             17 17 29.3  D   18 40   *E  17 44
MHC             17 17 45.6  D   19 04   *E  18 00
MIN             17 17 40.5  C           *E  18 32

PRI OCT  23     07 18 03.6  D
JAS             07 18 11.6  D           *E  18 58   *E  19 16
MHC             07 18 03.5  D
MIN             07 18 42.6  C
                    USCGS   07 09 20.9, 51.0N, 159.2E, H= 38 KM, M=5.2
                            OFF EAST COAST OF KAMCHATKA.

JAS OCT  23     12 24 56.0  D           *E  25 12   *E  25 30
MHC             12 25 01.9  D
MIN             12 24 39.8  C           *I  25 35

BKS OCT  24     06 03 55.3  C   04 23
PRI             06 04 13.1  C
JAS             06 03 43.5  D
MHC             06 03 57.6  C
MIN             06 03 43.1  C           *I  04 00

PRI OCT  24     11 07 37.0  C
JAS             11 07 42.8  C           *I  08 06
MHC             11 07 35    C
MIN             11 07 11.3  D
```

```
JAS OCT  24    14 02 46.7  C              *E  03 12
MIN            14 02 28.8  D

PRI OCT  24    15 50 11.8  C
JAS            15 50 08.4  C
MHC            15 50 07.5  C

JAS OCT  25    11 53 14.6  C   53 48
MIN            11 53 26.2  C              *I  54 11

BKS OCT  25    16 41 16.8  D              *E  41 32   *E  42 44
PRI            16 40 54.9  C              *E  41 08   *E  42 23
JAS            16 40 47.6  C              *E  41 04   *E  42 11
MHC            16 41 02.9  C              *E  41 21   *E  42 42

BKS OCT  25    18 15 52.2  C
PRI            18 16 03.9  C
JAS            18 15 58.7  C              *E  16 13   *I  16 32
MHC            18 15 56.2  C
                     USCGS   18 04 11.8, 36.8N, 138.2E, H= 28 KM, M=5.2
                             HONSHU, JAPAN.

JAS OCT  26    05 34 07.2  D
MIN            05 33 54.0  C

JAS OCT  26    13 33 05.7  D
MIN            13 32 23.2  C

PRI OCT  26    13 40 12.2  C
JAS            13 39 47.6  C              *E  40 22
MHC            13 40 04.5  C
MIN            13 39 13.7  D              *I  39 32   *I  39 51

BKS OCT  26    15 19 25.0  C   21 00      *E  19 35
PRI            15 18 59.0  C   20 26      *E  19 17
JAS            15 18 53.0  D   20 16      *E  19 11
MHC            15 19 11.5  C   20 47      *E  19 30

JAS OCT  26    16 43 17.2  C

JAS OCT  26    18 03 10.9  D
MIN            18 02 56.3  D
BKS            18 02                  LQ  06 30  LR  08 24
                     R FROM S.E.

PRI OCT  26    18 41 36.5  C
BKS            18 41 34.0  C              *E  41 47 PPS  53 18  L   64 42
                                          LR  68 12
                           MICRON     PERIOD
                     PZ     0.08        1.0
                     MAG 5-5.4 DIST DEG  86
JAS            18 41 40.4  C              *E  41 54   *E  42 00   *E  42 36
MHC            18 41 35.3  C
                     MAG 5.8-6 DIST DEG  64
MIN            18 41 41.6  D
                     USCGS   18 28 54.1, 18.4S, 167.6E, H= 36 KM, M=5.6
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                     NEW HEBRIDES ISLS.  FELT AT PORT VILA.

BKS OCT  27    02 40 05.0  C
PRI            02 40 14.3  C
JAS            02 40 12.2  C
MHC            02 40 08.4  C
MIN            02 40 03.8  C
                     USCGS   02 27 49.7, 14.1N, 145.3E, H=125 KM, M=5.2
                             MARIANA ISLANDS.

BKS OCT  27    06 09 07.1  C              *PP  09 27   *E  10 12  PP   11 27
                           MICRON     PERIOD
                     PZ     0.34        1.0
JAS            06 09 06.2  C              *I  13 05   *E  17 12
MHC            06 09 10.5  C             *PP  09 35
MIN            06 08 50.9  C              *I  09 05   *I  10 37   *I  11 17
ARC            06 08 48.5  C              *I  09 03   *I  09 13
                     USCGS   05 57 58.0, 73.4N,  54.8E, H=  0 KM, M=6.3
                             NOVAYA ZEMLYA.

BKS OCT  27    06 28 05.5  C
PRI            06 28       D              *E  28 49
JAS            06 27 55.6  C              *E  28 46

BKS OCT  27    06 34       C             PP   36 50 *PPP  37 10
PRI            06 34       D             PP   36 53 *PPP  37 11
JAS            06 34 23    C             PP   36 50 *PPP  37 12   *I  38 20
MHC            06 34       C             PP   36 47 *PPP  31 12
MIN            06 34       D             PP   36 57 *PPP  37 17   *I  37 27
                                          *I  37 48   *I  38 59

BKS OCT  27    07 06 30.7  C
PRI            07 06 39.8  D
JAS            07 06 37.2  D
MHC            07 06 34.0  C
MIN            07 06 27.6  D

BKS OCT  27    09 30 10.7  C              *E  30 38
                           MICRON     PERIOD
                     PZ     0.05        1.0
                     MAGNITUDE 4.1 - 4.5
PRI            09 30 21.6  C
JAS            09 30 18.0  C              *I  30 47
MHC            09 30 14.4  C
MIN            09 30 08.9  C
                     USCGS   09 18 15.5, 20.2N, 145.6E, H=118 KM, M=5.4
                             MARIANA ISLANDS.

PRI OCT  27    12 18 43.5  C
JAS            12 18 50.4  C
MHC            12 18 52.9  C
MIN            12 18 45.7  D

BKS OCT  27    14 33 03.2  D   42 54   *PP  33 12 PCP   33 31   *E  34 36
                                      SCS  43 44  LQ   51 24   *E  52 54
                                       LR  56 00
```

R FROM N.W.

	MICRON	PERIOD
PZ	0.08	0.9
SH	3.9	14
MAXH	16.7	22

MAG 5.8-6.2 DIST DEG 77

```
PRI            14 33 13.4  D
JAS            14 33 10.4  D              *E  33 41   *E  36 11
MIN            14 33 01.2  D              *I  33 31
MHC            14 33 07.0  D
ARC            14 32 52.0  C              *E  33 08
                    USCGS   14 21 04.8, 22.2N, 145.9E, H= 29 KM, M=6.0
                            NORTH PACIFIC OCEAN.

JAS OCT  27    15 00 05.5  C

JAS OCT  27    18 01 31.8  D
MHC            18 01 28.2  D
MIN            18 01 20.8  D

PRI OCT  27    23 58 05    C
JAS            23 57 59.3  C              *E  58 19
MHC            23 57 58.2  C              *E  58 16
                    USCGS   23 46 47.7, 41.7N, 141.9E, H= 71 KM, M=5.3
                            HOKKAIDO, JAPAN REGION.

BKS OCT  28    01 54 00.8  D              *E  04 14   *E  20 00
PRI            01 54 05.0  C
JAS            01 54 07.0  C
MHC            01 54 02.3  C
MIN            01 54 05.9  D              *I  54 25
                    USCGS   01 41 19.1,  9.6S, 159.8E, H= 32 KM, M=5.5
                            SOLOMON ISLANDS.

PRI OCT  28    05 05 37.4  C
JAS            05 05 34.0  C   06 39

JAS OCT  28    13 32 08.2  D
MIN            13 31 55.8  C              *I  32 05

BKS OCT  28    22 24 32.0  C   35 22       *E  24 42   *E  24 49   *E  36 22
                                          L    47 30  LR   51 18
```

R FROM S.W.

	MICRON	PERIOD
PZ	0.05	1.2
SH	0.86	18
MAXH	1.9	20

MAG 4.8-5.2 DIST DEG 87

```
PRI            22 24 33.8  C
JAS            22 24 36.2  C              *E  25 01   *I  25 58   *E  28 18
MHC            22 24 32.5  C
MIN            22 24 39.4  C              *I  24 04
                    USCGS   22 11 47.6, 20.1S, 148.8E, H= 19 KM, M=5.3
                            LOYALTY ISLANDS.

JAS OCT  29    01 01 02.4  C
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BKS OCT  29    01 09 08.5  D              *PP 09 24   *E  19 30   *E  32 42
                                          *E  37 48
JAS            01 08 39.8  C              *E  08 56

BKS OCT  29    02 53 12.0  C   63 32      LQ  81 36   LR  86 24
PRI            02 53 02.5  C
JAS            02 52 53.6  C              *I  53 22   *I  53 44   *I  54 47
MHC            02 52 58.3  C
MIN            02 52 46.6  D              *E  53 35
                    USCGS   02 39 29.4, 39.2N,  21.2E, H= 20 KM, M=5.7
                            GREECE.  1 KILLED, 23 INJURED, AND MAJOR
                            PROPERTY DAMAGE.

BKS OCT  29    03 09 40.7  D
JAS            03 09 42.3  C              *E  10 16
MIN            03 09 46.2  D

PRI OCT  29    10 51 16.3  C
JAS            10 51 20.3  C
MHC            10 51 15.4  C
MIN            10 51 22.1  D

BKS OCT  29    14 43 51.2  D
PRI            14 43 45.2  D
JAS            14 43 47.7  D              *I  43 58   *I  44 38
MHC            14 43 48.2  D
MIN            14 44 34.0  C

BKS OCT  29    15 42 27.2  C   51 20      *E  42 52 SCS  52 34   *E  60 06
                                        LR  63 48
JAS            15 42 32.0  C
                    USCGS   15 32 18.9, 10.7S,  79.0W, H= 22 KM, M=5.0
                            OFF COAST OF PERU.

PRI OCT  30    05 55 58.6  C
JAS            05 56 03.4  C
MHC            05 56 05.2  C

JAS OCT  30    15 28 43.0  C              *I  27 54
MIN            15 28 27.2  C

JAS OCT  30    19 15 55.7  C
MIN            19 15 45.2  D

PRI OCT  31    00 05 17.3  C
JAS            00 05 20.8  C
MHC            00 05 17.2  C

BKS OCT  31    08 32 35.4  D
PRI            08 32 20.7  C
JAS            08 32 30.5  D

BKS OCT  31    09 29 12.3  D
PRI            09 29 05.3  D
JAS            09 29 09.3  D
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```
MHC             09 29 10.5  D
MIN             09 29 15.8  C

PRI OCT 31      17 19 39.5  C                *E  19 58
JAS             17 19 31.2  D    20 57       *E  19 48
MIN             17 19       C                *I  19 57    *I  21 41
MHC             17 19 45.2  C                *E  19 06

JAS OCT 31      20 09 56.8  D
MHC             20 09 53.0  C

BKS NOV 01      07 11 48.5  C                *E  12 21
PRI             07 12 03.1  D
JAS             07 11 55.0  C                *E  12 27
MHC             07 11 52.8  C                *E  12 24
MIN             07 11 41.4  D                *I  11 50    *I  12 27

BKS NOV 01      19 51 10.0      51 48
                        MAGNITUDE 3.5 - 3.8
JAS             19 51 25.9  D   52 15
MHC             19 51 19.9  C
MIN             19 51 00.6  D                *I  51 19
ARC             19 51 35.7  C   50 46

JAS NOV 03      00 59 33.6  D
MIN             00 59 10.0  C

BKS NOV 03      03 41 33.3  C                *E  42 07
PRI             03 41 35.5  C
JAS             03 41 39.1  D                *I  42 13
MHC             03 41 34.1  D
MIN             03 41 39.6  C
                      USCGS   03 29 16.3, 15.1S, 167.4E, H=153 KM, M=5.0
                              NEW HEBRIDES ISLANDS.

PRI NOV 03      09 13 48.0  D
JAS             09 13 53.5  D
MHC             09 13 56.0  D
MIN             09 14 05.7  C

BKS NOV 03      11 46 20.2  D          *PP  46 39   *E  47 08   *E  53 22
                                        LQ   59 30   LR  62 30
PRI             11 46 08.0  C           *E  46 24
JAS             11 46 08.7  C           *E  46 19   *E  47 33
MHC             11 46 13.2  C           *E  46 27
MIN             11 46 17.3  D           *I  46 37

BKS NOV 03      16 33 30.5  C   41 05   *I  33 47   *I  34 12   *E  40 48
                                        *E  43 22   *E  49 48   LR  56 18
PRI             16 33 18.6  C           *E  38 58   *E  54 11
JAS             16 33 19.2  C   40 27   *I  33 37   *E  38 58   SCS 42 11
                                        *E  60 22
MHC             16 33 26.6  C
MIN             16 33 27.5  C
                      USCGS   16 24 31.0, 19.2N,  67.9W, H= 22 KM, M=5.6
                              MONA PASSAGE.  FELT AT CAYEY AND CAGUAS,
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PUERTO RICO.

```
PRI NOV 04      04 06 24.1  C
JAS             04 06 32.8  C                *I  06 55
MHC             04 06 32.0  C

BKS NOV 04      06 11                        *E  22 48   *E  25 18
PRI             06 11 50.3  C
JAS             06 11 56.2  C                *E  14 27   *E  15 30
MHC             06 12 01.5
MIN             06 12 15.9  D

BKS NOV 04      06 43                        LQ  53 24   LR  55 00

                                MICRON      PERIOD
                          MAXH    5.82         18
PRI             06 43 08.0  C
JAS             06 43 15.5  C                *I  45 57
MHC             06 43 19.5  C

BKS NOV 04      14 56 03.5  D
PRI             14 55 38.8  C
JAS             14 55 47.6  C                *I  59 02
MHC             14 55 51.0  C

PRI NOV 04      15 54 38.7  C
JAS             15 54 44.5  C                *E  56 57
MHC             15 54 39.8  C

PRI NOV 04      20 33 34.7  C
JAS             20 33 18.5  D
MHC             20 33 21.0  D
MIN             20 32 41.4  D

PRI NOV 05      02 33 50.7  D                *E  34 41
JAS             02 33 53.0  D                *I  34 04   *I  34 46
MHC             02 34 03.2  C                *E  34 40
MIN             02 34 00.8  D                *E  34 45
                      USCGS   02 13 51.2, 41.8S,  80.1E, H= 33 KM, M=5.5
                              MID-INDIAN RISE.

BKS NOV 05      02 42 51.5      53 40   LQ  64 14   LR  69 00
                        R FROM W
                                MICRON      PERIOD
                          PZ      0.09        1.5
                          MAXH    3.8          19
                          MAG 5.3-5.7 DIST DEG  84
PRI             02 42 55.9  C
JAS             02 42 58.6  C                *E  43 07
MHC             02 42 55.0  C
MIN             02 43 01.3  C
                      USCGS   02 30 15.0, 19.2S, 169.2E, H= 29 KM, M=5.3
                              NEW HEBRIDES ISLANDS.  FELT AT TANNA AND
                              PORT VILA.

BKS NOV 05      05 20 19.0  C
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```
PRI                05 19 48.6  C                *E  20 56
JAS                05 20 10.3  D    21 46       *I  21 28
MHC                05 20 10.0  C
MIN                05 20 47.3  C                *I  23 08

PRI NOV  05        12 31 17    D
JAS                12 31 19.0  D
MIN                12 31 24.9  C

BKS NOV  05        12 56 36.5  D    66 06       *E  66 50  LQ   75 00  L    75 06
                                                 LR  77 48
                        R FROM Sn
                                  MICRON      PERIOD
                        PZ          2.5         3.2
                        SH          9.6        10.0
                        MAXH        2.4        15.0
                        MAG 5.6 DIST DEG  71
PRI                12 56 39.4  D                *E  57 08
JAS                12 56 45.6  D    66 22       *E  57 20   *I  59 40   *E  70 38
MHC                12 56 39.3  D
MIN                12 56 48.3  D          PCP   57 11
                        USCGS   12 45 13.9, 15.3S, 175.2W, H= 38 KM, M=5.3
                                TONGA ISLANDS.

BKS NOV  05        13 54 40.0  C
PRI                13 54 41.8  C
JAS                13 54 45.0  C                *E  54 57   *E  55 24
MHC                13 54 40.0  C

PRI NOV  05        16 16 10.3  D
JAS                16 16 13.3  D
MHC                16 16 08.0  C
MIN                16 16 19.5  C

BKS NOV  06        08 39       C          LQ   57 36  LR   61 00   *E  63 30
                                  MICRON      PERIOD
                        MAXH        2.7         8.0
                        DISTANCE  DEG  44
PRI                08 39 22.2  D
JAS                08 39 07.8  C
MHC                08 39 15.9  C
MIN                08 39 58.4  D

PRI NOV  06        14 54 13.1  C
JAS                14 54 18.6  C                *I  56 19   *I  57 24
MHC                14 54 12.8  C
MIN                14 54 22.0  D

PRI NOV  07        00 01 22.8  C
JAS                00 01 28.8  C

PRI NOV  07        17 48 56.5  C
JAS                17 49 05.9  C                *I  49 22
MHC                17 49 06.4  C
MIN                17 49 10.6  D
                        USCGS   17 37 41.2, 15.1S, 173.6W, H= 45 KM, M=5.0
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```
                        TONGA ISLANDS.
PRI NOV  07        23 30 37.0  D
JAS                23 30 28.7  D
MHC                23 30 23.4  D

BKS NOV  08        03 29 52.0  C
PRI                03 29 41.0  C                *E  30 03
JAS                03 29 31.2  C                *E  29 53
MHC                03 29 28.4  C
                        USCGS   03 19 17.3, 23.4S, 115.2W, H= 33 KM, M=5.0
                                EASTER ISLAND CORDILLERA.

PRI NOV  09        14 12 52.7  C                *E  13 53
JAS                14 12 53.8  D    13 59

BKS NOV  09        14 17 02.2  D                *E  23 00  LQ   25 48  LR   27 24
                                  MICRON      PERIOD
                        MAXH        1.35        20
                        MAG 4.75 DIST DEG  40
PRI                14 17 03.2  C                *E  17 45
JAS                14 17 11.3  C                *E  17 48
MHC                14 17 07.7  C
MIN                14 16 54.1  C                *I  17 12

BKS NOV  10        03 15 02.2  C
                        MAG 5.3 DIST DEG  76
PRI                03 14 50.7  D                *E  15 21
JAS                03 14 56.0  D                *E  15 28  *PP  15 37
MHC                03 14 57.7  D                *E  15 29
MIN                03 15 06.6  D                *I  15 45   *I  15 55
                        USCGS   03 02 32.5, 31.9S,  68.4W, H=113 KM, M=6.0
                                SAN JUAN PROV., ARGENTINA.  FELT AT
                                SAN JUAN AND MENDOZA.

MIN NOV  10        03 33 29.2  D

JAS NOV  10        05 18 11.3  C
MIN                05 18 10.5  C

JAS NOV  11        02 02 40.3  C                *I  03 38
MHC                02 02 35.7  C
MIN                02 02 17.1  D                *I  02 29
ARC                02 02 51.4  C                *I  03 13

JAS NOV  11        03 23 00.0  D                *I  23 21
MHC                03 23 21.9  D
MIN                03 23 31.6  C

MIN NOV  11        04 48 58.9  D
JAS                04 49 25.6  C

PRI NOV  11        10 00 11.6  C
JAS                10 00 13.9  C                *E  00 41   *E  00 54   *E  01 06
MHC                10 00 10.6  C
MIN                10 00 16.9  C
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```
PRI NOV  11    15 38 17.2   C
JAS            15 38 08.5   C              *E   38 25    *I   40 42
MHC            15 38 05.0   C
MIN            15 37 48.9   D              *I   38 06    *I   38 17
                     USCGS    15 31 04.2, 52.3N, 169.1W, H= 38 KM, M=5.4
                              FOX ISLANDS, ALEUTIAN ISLANDS.

JAS NOV  11    16 13 16.3   C              *E   13 29    *I   13 44
MHC            16 12 59.8   C

PRI NOV  11    18 08 48.2   D
JAS            18 08 53.8   D              *I   10 25
MHC            18 08 48.5   D
MIN            18 08 57.8   C

PRI NOV  11    18 22 41.5   C
                     MENDOCINO ESCARPMENT-MAG 4.9
JAS            18 22 30.6   C    23 40
MHC            18 22 22.4   C    23 19
MIN            18 22 07.4   C              *E   22 56
ARC            18 21 41.0   D    22 05

PRI NOV  12    04 15 29     C
JAS            04 15 36.0   D
MHC            04 15 40.3   D

PRI NOV  12    06 27 40.4   D
JAS            06 27 42.9   C
MHC            06 27 38     D

PRI NOV  12    10 03 09.1   D              *E   03 27
JAS            10 03 15.4   D              *E   03 35
MHC            10 03 10.0   D              *E   03 26
                     USCGS    09 50 52.8, 26.5S, 175.7W, H= 19 KM, M=5.2
                              SOUTH OF TONGA ISLANDS.

BKS NOV  12    12 02 29.0   D
                              MICRON       PERIOD
                         PZ     0.09          1.0
                         MAG 5.1-5.5 DIST DEG  80
PRI            12 02 17.7   D
JAS            12 02 13.1   D              *I   02 40
MHC            12 02 25.5   D
MIN            12 02 33.8   D
                     USCGS    11 50 31.6, 23.8S,  67.6W, H= 126KM, M=5.6
                              CHILE ARGENTINA BORDER REGION.

PRI NOV  12    12 14 19.3   D
JAS            12 14 12.4   D              *I   14 25
MHC            12 14 11.8   C

BKS NOV  12    13 00 42.5   D    09 40     *PP  00 54    *I   01 18   PP   03 30
                                           *E   13 00    LQ   17 18   LR   20 48
                              MICRON       PERIOD
                         SH     1.55          20
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                         MAXH   3.1           26
                         MAG 5.3-5.7 DIST DEG  69
PRI            13 00 57.2   C              *E   01 07
JAS            13 00 50.6   D    09 57     *PP  01 01   PCP  01 13   PP   03 20
                                           *I   04 39
MHC            13 00 48.4   C              *E   00 57
MIN            13 00 37.1   C
                     USCGS    12 49 43.6, 41.8N, 144.1E, H= 33 KM, M=5.8
                              HOKKAIDO, JAPAN, REGION.

PRI NOV  12    16 10 10.5   C
JAS            16 10 13.4   C
MHC            16 10 09.5   C
                     USCGS    15 56 04.7,  4.8S, 134.2E, H= 33 KM, M=5.4
                              WEST NEW GUINEA REGION.

BKS NOV  12    18 57 32.3   C    07 48     *E   57 49    *E   58 20    *E   60 53
                                           PPS  69 16    L    79 54    LR   83 06
                         R FROM WSW
                              MICRON       PERIOD
                         PZ     5.0           18
                         SH     9.1           20
                         MAXH  28.3           20
                         MAG 6.4-6.6 DIST DEG  84
PRI            18 57 35.5   C              PP   60 56
JAS            18 57 38.8   C    68 16     *E   57 45    *E   57 52   PP   61 00
MHC            18 57 33.0   C              PP   60 52
MIN            18 57 40.6   C              *I   58 03
ARC            18 57 59.2   C              *I   58 19
                     USCGS    18 45 01.0, 15.6S, 167.3E, H= 40 KM, M=5.2
                              NEW HEBRIDES ISLANDS.

PRI NOV  12    19 23 55.0   D
JAS            19 23 35.1   D

JAS NOV  13    00 01 13.0   D              *I   01 30    *I   01 45
MHC            00 01 11.0   C
MIN            00 00 52.5   C
ARC            00 00 28.7   D              *I   00 42    *I   00 47

JAS NOV  13    01 28 32.6   C
MHC            01 28 31.8   C

BKS NOV  13    03 01 27.8   D              *E   01 58    *E   15 48    *E   19 00
                                           *E   22 00
                              MICRON       PERIOD
                         PZ     0.06          1.0
                         DISTANCE DEG  53
PRI            03 01 16.8   D
JAS            03 01 17.3   D              *E   01 38    *E   02 36    *E   03 55
MHC            03 01 24.5   D              *E   01 45
MIN            03 01 24.5   D              *I   01 34
ARC            03 01 30.0   C
                     USCGS    02 51 50.6, 17.1N,  61.9W, H= 65 KM, M=5.5
                              LEEWARD ISLANDS.  FELT AT ANTIGUA,
                              GUADELOUPE, AND MONTSERRAT.
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BKS	NOV	13	03	15	38.8	C						
PRI			03	15	42.3	D						
JAS			03	15	45.4	D						
MHC			03	15	40.1	D						
MIN			03	15	35.1	C						
BKS	NOV	13	03	29	08.8	C						
PRI			03	29	02.4	D						
JAS			03	29	05.1	D						
MHC			03	29	07.6	D						
MIN			03	29	11.1	D						
PRI	NOV	13	05	14	09.4	C						
JAS			05	14	13.1	C						
MIN			05	14	16.9	C						
BKS	NOV	13	06	11	21.5	D						
PRI			06	11	04.5	D						
JAS			06	11	10.8	D	*E	11	22			
MHC			06	11	15.3	D						
MIN			06	11	28.3	D						
BKS			06	13	36.5	D						
PRI			06	13	30.9	D						
JAS			06	13	32.6	D	*E	13	48			
MHC			06	13	32.7	D						
MIN			06	13	38.8	C						
PRI	NOV	13	11	51	58.5	C						
JAS			11	51	57.2	C						
MHC			11	52	04.5	C						
MIN			11	52	04.4	D						
PRI	NOV	13	14	34	45.0	C						
JAS			14	34	50.8	C	*E	35	54	*E	36	23	*E	36	54
MHC			14	34	54.1	C									
PRI	NOV	13	14	39	21.5	C						
JAS			14	39	24.3	C						
MHC			14	39	31.7	C						
MIN			14	39	32.2	D						
PRI	NOV	14	03	27	16.2	D						
JAS			03	27	15.1	D						
MIN			03	27	58.4	D						
BKS	NOV	14	13	10	06.9	D						
PRI			13	09	54.5	D						
JAS			13	10	00.4	D	*I	10	17	*I	10	25
MHC			13	10	03.0	D						
MIN			13	10	12.6	D						
					USCGS		12 58 36.2, 18.3S, 69.2W, H=123 KM, M=5.4					
							NORTHERN CHILE.					
JAS	NOV	14	14	33	01.0	C	34	32				

PRI	NOV	15	00	16	13.6	C						
JAS			00	16	06.1	C						
MHC			00	16	09.6	C						
					USCGS		00 08 07.1, 51.4N, 179.9W, H= 43 KM, M=5.0					
							ANDREANOF ISLANDS, ALEUTIAN ISLANDS.					
PRI	NOV	15	16	26	56.9	C						
JAS			16	26	49.2	D	*E	27	00	*I	27	14
MHC			16	26	45.9	D						
MIN			16	26	44.5	D						
					USCGS		16 19 07.4, 51.2N, 176.6W, H= 48 KM, M=5.0					
							ANDREANOF ISLANDS, ALEUTIAN ISLANDS.					
JAS	NOV	16	00	41	11.1	D	*I	44	04			
PRI	NOV	16	01	07	18.3	D						
JAS			01	07	18.0	D						
					USCGS		00 54 32.1, 18.3S, 168.1E, H= 18 KM, M=5.0					
							NEW HEBRIDES ISLANDS.					
BKS	NOV	16	06	10			LR	33	18			
					R FROM		S.W.					
JAS			06	10	04.0	C	*I	10	29			
MHC			06	10	03.1	C						
					USCGS		05 58 30.3, 19.5S, 176.3W, H= 48 KM, M=5.0					
							FIJI ISLANDS REGION.					
PRI	NOV	16	08	20	41.2	C						
JAS			08	20	44.0	C	*E	21	18	*E	22	46
MHC			08	20	37.4	C						
JAS	NOV	16	20	54	15.5	D						
PRI	NOV	16	23	08	02.1	C						
JAS			23	08	07.6	C						
MHC			23	08	03.1	C						
BKS	NOV	16	23	23			*E	32	24			
PRI			23	23	25.6	C						
JAS			23	23	17.8	C						
MHC			23	23	25.2	C						
MIN			23	23	03.9	C						
BKS	NOV	17	14	01	35.3	D	*E	07	24	*E	10	48	LR	12	30
PRI			14	01	52.2	D									
JAS			14	01	41.0	D									
MHC			14	01	44.8	D									
MIN			14	01	40.0	C									
BKS	NOV	17	14	49			*E	62	18			
PRI			14	49	44.4	D						
JAS			14	49	23.0	D						
MHC			14	49	34.5	C						
MIN			14	49	33.7	C						
PRI			14	51	02.4	C						
JAS			14	50	51.5	C	*I	51	20			

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MHC             14 50 46.C  C
MIN             14 50 46.3  C

JAS NOV  18     CO 33 31.6  C

BKS NOV  18     09 24 CO.8  D    33 50  PCP    24 12   *PP   24 36    *E   33 56
                                          *E   34 34    *E   38 42  L     44 30
                                          *E   48 00
                                MICRCN       PERIOD
                          PZ     0.C4          0.8
                          SH     1.21          14
                          MAXH   4.85          32
                          MAG 4.6 DIST DEG  79
PRI             09 23 48.2  D
JAS             09 23 57.2  D                *I   24 11    *E   24 22    *E   25 21
MHC             09 23 56.C  D
MIN             09 24 10.3  D                *I   24 39
                          USCGS   09 12 09.9, 36.3S, 100.7W, H= 33 KM, M=5.1
                                  SOUTHERN PACIFIC OCEAN.

PRI NOV  18     1C 58 32.2  C
JAS             1C 58 32.1  C

JAS NOV  18     18 59 18.8  D                *I   59 44
MIN             18 59 C2.6  C

BKS NOV  18     19 53       C              LR    74 12
                                MICRCN       PERIOD
                          MAXH    3.2          20
PRI             19 53 34.2  C
JAS             19 53 52.9  D                *I   54 13    *I   54 25
MHC             19 53 38.7  C

BKS NOV  19     05 31 14.8  C                *E   31 28
                                MICRCN       PERIOD
                          PZ     0.C4          0.7
                          MAG 5.8 DIST DEG  67
PRI             05 31 30.3  D                *E   31 44
JAS             05 31 24.3  C                *E   31 38
MHC             05 31 20.3  C                *E   31 33
MIN             05 31 18.5  D
                          USCGS   05 19 56.1, 37.6N, 141.3E, H= 67 KM, M=5.1
                                  NEAR EAST COAST OF HONSHU, JAPAN.

JAS NOV  19     16 45 C2.5  D

PRI NOV  19     18 3C 53.5  C
JAS             18 31 00.6  C                *E   31 16
MHC             18 30 54.6  C

BKS NOV  20     09 37       C              LR    48 18
PRI             09 37 26.9  C
JAS             09 37 37.5  C                *I   37 50
MHC             09 37 37    C
                          USCGS   C9 29 59.1, 51.4N, 176.6W, H= 54 KM, M=5.1
                                  ANDREANOF ISLS., ALEUTIAN ISLS.  FELT ADAK.
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JAS NOV  20     20 58 41.3  C

BKS NOV  21     11 17 16.5  D
PRI             11 17 06.3  C                *E   17 30
JAS             11 17 17.4  C                *E   17 38
MHC             11 17 20.5  D

BKS NOV  21     12 29 37.5  C
PRI             12 29 51.2  C
JAS             12 29 44.2  C                *E   29 59
MHC             12 29 41.9  C                *E   29 59
MIN             12 29 29.7  C
                          USCGS   12 19 27.3, 46.7N, 152.5E, H= 40 KM, M=5.6
                                  KURILE ISLANDS.
PRI NOV  21     13 49 42.C  C                *E   50 42
JAS             13 49 56.1  C    51 06

BKS NOV  22     06 39 39.7  C
                                MICRCN       PERIOD
                          PZ     C.24          1.0
                          MAG 6.2 DIST DEG  62
PRI             06 39 54.0  C
JAS             06 39 46.9  C    46 49    *PP   39 56    *E   41 27 SCS    47 56
MHC             06 39 44.6  C                *E   39 27
MIN             06 39 32.0  C                *PP  39 40 PCP    40 18
ARC             06 39 21.0  C
                          USCGS   06 29 53.5, 48.2N, 146.7E, H=453 KM, M=5.6
                                  SEA OF OKHOTSK.

BKS NOV  22     07 20 09.0  D
PRI             C7 20 C4.8  C                *E   20 18
JAS             07 20 06.6  C                *E   20 18
MHC             07 20 07.3  C

MIN NOV  22     07 21 10.9  D
PRI             07 22 09.4  D                *E   23 19
                          MAG  4 N.W. ARIZONA
JAS             07 22 03.5  D    23 09

BKS NOV  22     C9 CC       C              LR    12 50
                                MICRCN       PERIOD
                          MAXH    3.95          10
PRI             09 00 58.2  C
JAS             09 CC 51.1  C                *I   02 03
MHC             09 CC 49.1  C

PRI NOV  23     C2 29 31.8  C                *E   30 51
JAS             C2 29 11.7  C    30 31       *E   29 26

BKS NOV  23     02 31 43.C  C    42 02       *E   48 00  LQ    54 00  LR    57 00
                          R FRCM  SW
                                MICRCN       PERIOD
                          PZ     0.06          1.0
                          SH     0.56          20
                          MAXH   8.1           14.5
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                    MAG 5.5-5.9 DIST DEG  83
PRI             02 31 45.3  C           *E  35 04
JAS             02 31 49.7  C           *E  32 23   *E  35 06
MHC             02 31 44.7  C
MIN             02 31 51.3  C           *I  32 26
                    USCGS   02 19 13.8, 14.9S, 166.9E, H= 48 KM, M=5.6
                            NEW HEBRIDES ISLANDS.

BKS NOV  24     06 59 23.5  C           *E  66 42
PRI             06 59 43.0  D
JAS             06 59 31.0  C           *E  59 56
MHC             06 59 29.5  D
MIN             06 59 08.7  D           *I  59 25
ARC             06 58 53.4  C

BKS NOV  24     07 44 32.5  D           *E  44 47   *E  71 18
PRI             07 44 31.1  C           *E  44 47
JAS             07 44 36.9  C           *E  44 53
MHC             07 44 32.2  C           *E  44 49
MIN             07 44 42.0  D
                    USCGS   07 31 51.8, 30.6S, 177.9W, H= 11 KM, M=5.0
                            KERMADEC ISLANDS REGION.

BKS NOV  24     16 58 02    C
PRI             16 57 52.5  C           *E  58 02
JAS             16 57 55.3  C           *E  58 10   *I  61 05   *I  63 00
MHC             16 57 54.5  C
MIN             16 58 14.8  D

BKS NOV  24     19 23 10.2  C          *PP  23 24
PRI             19 23 10.3  D
JAS             19 23 07.4  D          *PP  23 29
MHC             19 23 03.7  D           *E  23 23
MIN             19 22 58.7  C           *I  22 22
                    USCGS   19 10 53.8, 17.2N, 146.0E, H= 88 KM, M=5.1
                            MARIANA ISLANDS.

BKS NOV  25     03 30           40 36   LQ   50 00  LR   53 00
                    R FROM S.W.
                          MICRON      PERIOD
                    MAXH   4.8          24
                    DISTANCE  DEG  73
PRI             03 30 40.8  C
JAS             03 30 45.8  C
MHC             03 30 40.0  C
MIN             03 30 43.1  C

BKS NOV  26     02 30 21.0  D          *PP  30 36   *E  56 36
                          MICRON      PERIOD
                    PZ     0.05         1.0
                    DISTANCE  DEG  89
PRI             02 30 09.7  D          *PP  30 25
JAS             02 30 15.7  D          *PP  30 31   *E  31 17
MHC             02 30 17.7  D          *PP  30 32
MIN             02 30 27.0  D
ARC             02 30 37.2  C
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                    USCGS   02 18 17.0, 25.6S,  70.6W, H= 54 KM, M=5.5
                            NEAR COAST OF NORTHERN CHILE.

BKS NOV  26     03 33                       *E  51 30   *E  54 30
PRI             03 33 49.5  D
JAS             03 33 54    C
MIN             03 33 32.5  C

JAS NOV  26     20 35 58.5  C    36 58

BKS NOV  27     04 16 24.0  D
PRI             04 16 42.9  C
JAS             04 16 29.1  C                *I  16 50
MHC             04 16 31.2  C
MIN             04 16 06.1  C

JAS NOV  27     04 21 19.2  D
MHC             04 21 21.5  D
MIN             04 20 55.8  C

JAS NOV  27     07 10 46.1  C
MIN             07 10 44.0  D

PRI NOV  27     11 11 12.7  D
JAS             11 11 06.5  D

JAS NOV  27     12 58 10.5  C                *I  58 24
MIN             12 58 03.1  C

BKS NOV  27     13 53 13.0  D                *E  54 04
                          MICRON      PERIOD
                    PZ     0.09         1.0
PRI             13 53 22.4  D
JAS             13 53 20.0  D
MHC             13 53 16.5  D
MIN             13 53 11.4  D                *I  54 07
                    USCGS   13 41 19.0, 17.5N, 145.4E, H=214 KM, M=5.5
                            MARIANA ISLANDS.

JAS NOV  27     14 29 29.8  C
MIN             14 29 07.8  C

BKS NOV  27     20 23 06.8  C    31 24     *E  23 16   LQ   37 30  LR   40 12
                          MICRON      PERIOD
                    MAXH   10           20
PRI             20 23 17.8  C
JAS             20 23 04.0  C                *E  23 13   *E  23 36   *E  25 24
MHC             20 23 10.2  C
MIN             20 22 48.9  C
                    USCGS   20 13 01.5, 78.5N,   6.4E, H= 33 KM, M=5.6
                            SVALBARD REGION.

BKS NOV  28     07 41 28.0  C    46 22     *E  41 39   *E  43 04   *E  52 10
                                           LQ   54 00  LR   56 00
                    R FROM S.E.
                          MICRON      PERIOD
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                    PZ      0.03          1.5
                    SH      3.9           20
                    MAXH    6.9           24
                    MAG 5.4-5.8 DIST DEG  48
PRI             07 41 11.1  C
JAS             07 41 17.0  C             *E  41 52
MHC             07 41 21.5  C
                    USCGS   07 32 53.4,  6.6N,  82.7W, H= 33 KM, M=5.5
                            SCUTH OF PANAMA.

BKS NOV  28     10 19 39.5  D
JAS             10 19 34.8  C

JAS NOV  28     15 01 29.1  D

PRI NOV  28     19 40 40.4  D
JAS             19 40 44.1  D

JAS NOV  29     05 14 26.2  C
MIN             05 14 21.9  C             *I  14 32

JAS NOV  29     08 11 14.7  D
MIN             08 11 18.3  D

BKS NOV  29     22 29 44.0  D   39 50     *E  30 24   *E  40 52   *E  45 40
                                SSS 48 40   *E  52 00   *E  55 30
                          MICRON      PERIOD
                    PZ      0.42          2.3
                    SH      2.8           22
                    MAXH    3.86          26
                    MAG 5.4-5.8 DIST DEG  81
PRI             22 29 46.5  C
JAS             22 29 50.6  C             *E  30 34   *E  30 59   *E  33 49
MHC             22 29 43.8  C
MIN             22 29 50.9  D             *I  30 33
                    USCGS   22 17 29.9, 14.7S, 167.4E, H=161 KM, M=5.2
                            NEW HEBRIDES ISLANDS.

PRI NOV  29     23 03 15.2  C
JAS             23 03 28.2  C             *E  03 44
MHC             23 03 30.3  C

JAS NOV  30     00 42 22.4  C
MIN             00 42 24.1  D

BKS DEC  01     04 35 06.0  D
                          MICRON      PERIOD
                    PZ      0.06          1.3
                    DISTANCE  DEG  25
PRI             04 35 24.0  D
JAS             04 35 09.5  D           *PP  35 17  *SP  35 27
MHC             04 35 10.3  D
MIN             04 34 46.8  C             *I  35 00

BKS DEC  01     05 09 14.5  C   19 24     *E  09 48   PP  12 32   *E  12 56
                                PPS 21 00   L   31 06   LR  34 48
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                    R FROM S.A.
                          MICRON      PERIOD
                    PZ      0.31          1.2
                    PH      3.6           13
                    SH      6.8           20
                    MAXH    54            36
                    PPZ     0.26          1.7
                    MAG 6.5 DIST DEG  83
PRI             05 09 18.0  C
JAS             05 09 21.0  C   19 49     *PP  09 54   PP  12 43 PPS   21 34
MHC             05 09 16.0  C
MIN             05 09 21.4  C             *I  09 34   *I  10 09   PP  12 36
                    USCGS   04 56 58.2, 14.0S, 167.1E, H=132 KM, M=6.1
                            NEW HEBRIDES ISLANDS.  FELT.

PRI DEC  01     05 27 30.9  D
JAS             05 27 21.0  C
MHC             05 27 32.0  D
MIN             05 27 30.3  C

BKS DEC  01     05 35 30.8  C
PRI             05 35 28.6  C
JAS             05 35 28.6  C             *E  36 04   *E  38 06   PP  38 53
MHC             05 35 32.9  C
MIN             05 35 28.6  C

PRI DEC  01     05 38 47    C
JAS             05 38 54.1  C
MHC             05 38 54    C

BKS DEC  01     19 07 25.5  C             *I  07 40   *E  08 09
                          MICRON      PERIOD
                    PZ      0.05          0.8
                    DISTANCE  DEG  69
PRI             19 07 38.3  C
JAS             19 07 31.8  C             *E  08 14   *E  10 05
MHC             19 07 29.7  C
MIN             19 07 18.2  C             *I  07 31 PCP   08 00   *E  10 01
                    USCGS   18 56 23.1, 41.6N, 139.6E, H=173 KM, M=5.4
                            HOKKAIDO, JAPAN, REGION.

JAS DEC  01     20 01 33.8  C

JAS DEC  02     09 45 10.6  C
                    USCGS   09 31 17.6,  3.2N, 128.1E, H= 92 KM, M=5.8
                            NORTH OF HALMAHERA.

BKS DEC  03     14 24 57.8  C
PRI             14 24 57.8  C             *E  26 51
JAS             14 25 03.0  C             *E  26 53
MHC             14 24 58.4  C
MIN             14 25 06.7  D
                    USCGS   14 13 25.2, 24.7S, 179.9E, H=492 KM, M=5.1
                            SCUTH OF FIJI ISLANDS.

JAS DEC  04     04 49 18.0  C             *E  49 28
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PRI DEC  04   12 23 12.2  C
JAS           12 23 18.0  D
MHC           12 23 08.4  C

JAS DEC  04   18 09 24.0  C                *E  13 37

JAS DEC  04   23 50 02.5  C

JAS DEC  05   14 22 37.6  C

PRI DEC  06   05 37 40.3  C            PCP   37 46
JAS           05 37 47.5  C            PCP   37 54
MHC           05 37 47.4  C
MIN           05 37 59.1  C
                    USCGS   05 25 07.2, 41.9S,  83.7W, H= 33 KM, M=5.3
                            WEST CHILE RISE.

PRI DEC  06   07 28 08.3  C
JAS           07 28 18.8  D                *I  28 28   *I  28 49
MHC           07 28 16.9  C
MIN           07 28 03.0  C
                    USCGS   07 18 39.9, 50.1N, 159.8E, H= 27 KM, M=5.4
                            KURILE ISLANDS REGION.

PRI DEC  07   01 08 46.0  C   10 04    *E  08 59
                      MAGNITUDE 4.3 - 4.4
JAS           01 08 42.1  C   09 53
MHC           01 09 05.0  C
MIN           01 08 52.2  D

PRI DEC  07   17 12 04.3  C
JAS           17 12 12.9  C                *E  12 58   *E  15 06
MHC           17 12 09.1  C
                    USCGS   16 59 29.2, 11.9N, 142.6E, H= 33 KM, M=5.1
                            SOUTH OF MARIANA ISLANDS.

BKS DEC  07   17 28 05.0  C                *E  36 40   *E  45 30
                          MICRON      PERIOD
                      PZ     0.39         1.8
                      DISTANCE  DEG  65
PRI           17 28 18.5  D
JAS           17 28 11.9  D                *E  28 24
MHC           17 28 09.5  D
MIN           17 27 57.0  D
                    USCGS   17 17 42.0, 44.3N, 151.7E, H= 26 KM, M=5.8
                            KURILE ISLANDS REGION.

JAS DEC  07   22 16 44.9  C                *E  16 57

BKS DEC  08   00 03 24.7  C                *PP 03 55
PRI           00 03 11.9  C                *E  03 46
JAS           00 03 11.4  C                *E  03 44   *E  06 42
MHC           00 03 16.6  C                *E  03 51
MIN           00 03       C                *I  03 53   *I  04 07
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PRI DEC  08   06 33 03.1  C
JAS           06 33 05.8  C
MHC           06 33 00.8  C

PRI DEC  08   07 25 09.4  C   26 51
JAS           07 25 10.3  C   26 55

PRI DEC  08   15 12 13.5  C                *PP  12 24
JAS           15 12 04.3  C                *PP  12 15
MHC           15 12 02.6  C                *PP  12 13
MIN           15 11 47.2  C                 *I  11 56

PRI DEC  08   23 24 04.0  C
JAS           23 23 55.4  C                 *E  24 12
MIN           23 23 32.9  C

PRI DEC  09   01 04 55.2  D
JAS           01 05 01.0  D
MHC           01 04 56.0  D

PRI DEC  09   02 11 42.4  C
JAS           02 11 37.5  D

BKS DEC  09   04 12 56.5  D
PRI           04 12 56.1  C
JAS           04 13 01.0  C                *E  13 15
MHC           04 12 56.4  C
MIN           04 13 05.0  D

BKS DEC  09   10 17 52.5  C
PRI           10 17 39.7  D
JAS           10 17 45.1  D
MHC           10 17 48.2  D

BKS DEC  09   16 52 18.5  C                *I  52 38   *E  58 44   *E  63 30
                                           *E  65 18
                      R FROM N.W.
PRI           16 52 34.8  C                *E  52 44
JAS           16 52 26.5  C   59 17        *E  52 36   *I  52 42   *E  52 59
MHC           16 52 21.8  C                *E  52 33   *E  52 53
MIN           16 51 12.8  D
                    USCGS   16 43 57.7, 51.7N, 174.6E, H= 21 KM, M=5.2
                            NEAR ISLANDS, ALEUTIAN ISLANDS.

PRI DEC  09   17 20 45.2  C
JAS           17 20 36.8  D
MIN           17 20 20.2  D

BKS DEC  10   10 50 38.0  C
                          MICRON      PERIOD
                      PZ     0.22         1.5
                      DISTANCE DEG  78
PRI           10 50 26.9  D                *E  50 51
JAS           10 50 31.7  D                *E  50 56
MHC           10 50 34.4  D
MIN           10 50 43.0  D                *I  50 52
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                    USCGS   10 38 35.6, 24.2S,  67.9W, H= 91 KM, M=5.4
                            CHILE ARGENTINA BORDER REGION.

BKS DEC  10    13 13 28.C  D    19 04     *E  13 42    *E  14 09    *E  15 54
                                          *E  19 09    LQ  21 18    LR  23 24
                          MICRON       PERIOD
                    PZ      0.14         1.4
                    PH      6.3           16
                    SH     24             18
                    MAXH   20.5           28
                    MAG 6.5-6.7 DIST DEG  36
PRI             13 13 08.7  C             *E  13 27
JAS             13 13 15.0  C    18 49    *E  13 32    *E  15 50    *I  19 22
MHC             13 13 20.1  C             *E  13 36
MIN             13 13 34.2  C             *I  13 55    *I  14 06 PCP   16 02
                    USCGS   13 06 32.6, 14.3N,  92.0W, H= 70 KM, M=5.6
                            GUATEMALA.  FELT AT SAN SALVADOR.

BKS DEC  10    18 21 30    C             *E  23 15    *E  23 22    PS  34 00
                                         SS  39 06    L   47 48    LR  50 18
                    R FROM S.h.
                          MICRON       PERIOD
                    PZ      0.24         2
                    MAXH   17.2          15
                    MAG 5.8-6.2 DIST DEG  94
PRI             18 21 39.6  D
JAS             18 21 39.5  D             *E  21 53    *E  22 40    *E  25 18
MHC             18 21 35.6  D
MIN             18 21 36.4  C
                    USCGS   18 08 14.4,  3.6S, 145.4E, H= 33 KM, M=5.7
                            NEAR NORTH COAST OF NEW GUINEA.

JAS DEC  11    19 58 33.4  C             *I  58 48
MIN             19 58 19.7  D

BKS DEC  11    20 04 31.5  D            *SP  05 12    LR  32 40
                          MICRON       PERIOD
                    PZ      0.01         1.0
                    MAXH    3.6          20
                    MAG 5.5-5.9 DIST DEG  89
PRI             20 04 40.7  C
JAS             20 04 38.8  C             *E  05 12
MHC             20 04 33.9  C
MIN             20 04 32.2  C
                    USCGS   19 52 09.4, 13.4N, 145 8E, H= 59 KM, M=5.4
                            MARIANA ISLANDS.

BKS DEC  11    20 08 17.C  D
                          MICRON       PERIOD
                    PZ      C.11         1.0
                    MAG 5.1-5.5 DIST DEG  34
PRI             20 C8 34.3  C             *E  10 08
JAS             20 08 26.7  C             *E  08 53    *E  09 52
MHC             20 08 22.8  C
MIN             20 08 07.2  C             *I  08 20    *I  08 48
                    USCGS   20 01 03.5, 52.9N, 176.1W, H=216 KM, M=5.2
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                            ANDREANOF ISLS., ALEUTIAN ISLS.  FELT ADAK.

BKS DEC  11    20 20 46.5  C            *PP  21 07    LR  47 30
                          MICRON       PERIOD
                    PZ      0.06         1.0
                    MAXH    4.E          8
                    DISTANCE  DEG  87
PRI             20 20 54.3  C
JAS             20 20 52.5  C
MHC             20 20 49.0  C
MIN             20 20 46.4  D
                    USCGS   20 08 22.3, 13.4N, 146.0E, H= 50 KM, M=5.6
                            MARIANA ISLANDS.

MIN DEC  12    11 10 56.7  C
JAS             11 10 52.7  D            *PP  11 02

BKS DEC  13    17 51 34.5  C
PRI             17 51 02.4  C
JAS             17 50 53.7  C    51 44    *E  51 08    *E  51 55
MHC             17 51 12.5  C

BKS DEC  13    21 C1 22.0  D
PRI             21 C1 02.3  D
JAS             21 C0 59.6  C
MHC             21 C1 12.C  C             *E  02 26
MIN             21 C1 27.7  D             *I  03 01

BKS DEC  14    03 51 20.C  C             *E  52 34    *E  53 08
PRI             03 51 37.5  C             *E  53 24
JAS             03 51 28.8  C             *E  53 12
MHC             03 51 26.C  C             *E  53 05
MIN             03 51 10.4  C             *I  52 47
                    USCGS   03 44 C1.9, 52.9N, 177.6W, H=243 KM, M=5.3
                            ANDREANOF ISLS., ALEUTIAN ISLS.  FELT ADAK.

PRI DEC  14    C3 56 47.5  C
JAS             03 56 42.2  C
MHC             03 56 51.7  C
MIN             03 56 34.2  D

JAS DEC  14    06 53 59.3  C
MIN             06 54 11.2  C

JAS DEC  14    06 59 46.7  D
MIN             06 59 48.8  C

BKS DEC  14    21 21 12.5  C             *E  23 32    *E  24 52    PP  25 20
                                        SKS  31 43    PS  33 43    SS  39 06
                                         L   46 06    LR  51 06
                    R FROM h
                          MICRON       PERIOD
                    PZ      0.04         1
                    MAXH   34.C          26
                    MAG 6.3-6.7 DIST DEG  93
PRI             21 21 10.5  C             PP  25 09
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JAS              21 21 18.4  D          PP   25 13
MHC              21 21 14.2  D          PP   25 10
MIN              21 21 18.1  C           *I  21 43  PP   25 33
                       USCGS   21 07 52.1,  4.8S, 143.9E, H= 74 KM, M=6.0
                               NEW GUINEA.

PRI DEC  14      21 37 57.0  D           *E  38 29
JAS              21 37 59.7  C           *E  38 29
MHC              21 37 57.7  D           *E  38 12

BKS DEC  16      07 33 03.0  C    33 28  *E  33 30
JAS              07 33 20.3  C           *E  33 50
MHC              07 33 13.4  C    33 47
MIN              07 33 12.6  C    33 37

BKS DEC  16      21 11 10.0  C
PRI              21 11 23.3  C
JAS              21 11 06.2  C
MIN              21 10 28.9  D

BKS DEC  17      06 09 07.3  C           *E  09 23
PRI              06 09 24.0  C           *E  09 35
JAS              06 09 14.5  C           *E  09 29
MHC              06 09 08.5  C
MIN              06 09 01.2  C
                       USCGS   05 59 10.2, 70.7N,  14.0W, H= 27 KM, M=5.0
                               JAN MAYEN ISLAND REGION.

PRI DEC  17      07 54 02.5  C
JAS              07 54 07.7  D
MHC              07 54 02.9  C
MIN              07 54 11.3  C

JAS DEC  17      12 26 58.6  D           *E  27 10

BKS DEC  17      17 53 11.8  D
PRI              17 53 00.5  D
JAS              17 53 06.0  D
MHC              17 53 08.2  D
MIN              17 54 17.3  D
                       USCGS   17 41 20.4, 22.8S,  68.9W, H=105 KM, M=5.1
                               NORTHERN CHILE.

BKS DEC  18      05 11 05.0  C
                             MICRON      PERIOD
                        PZ     0.08         0.8
                        MAG 5.4-5.6 DIST DEG  89
                        RUSSIAN NUCLEAR TEST
PRI              05 11 14.5  C
JAS              05 11 06.0  C
MHC              05 11 08.2  C
MIN              05 10 53.6  C           *I  11 05
                       USCGS   04 57 57.8, 49.9N,  77.7E, H=  0 KM, M=5.9
                               RUSSIA.

BKS DEC  18      10 01 10.2  C
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PRI              10 01 03.1  C           *E  01 15
JAS              10 01 05.2  C           *E  01 17   *E  01 37
MHC              10 01 00.5  C           *E  01 12
MIN              10 01 01.2  C
                       USCGS   09 48 22.9, 10.5S, 161.4E, H= 50 KM, M=5.3
                               SOLOMON ISLANDS.

PRI DEC  19      00 10 05    C
JAS              00 09 57    C
MHC              00 09 56    C

PRI DEC  19      02 21 30.3  D
JAS              02 21 35.5  D
MHC              02 21 38.9  D

PRI DEC  20      00 33 07.0  C
JAS              00 33 01.7  C           *I  33 22   *E  33 41   *I  34 03
MIN              00 32 39.8  D

JAS DEC  20      01 04 27.0  C           *E  04 51
MIN              01 04 06.7  C

PRI DEC  20      01 49 49.6  C
JAS              01 50 01.7  C           *I  50 24
MHC              01 49 03.0  C
MIN              01 50 24.7  C

BKS DEC  20      02 31 11.8  C           *E  31 28
PRI              02 31 50.1  C           *E  32 11
JAS              02 32 04.8  C           *E  32 22   *E  38 24
MHC              02 32 06.2  C           *E  32 23
MIN              02 32 28.7  D

BKS DEC  20      08 00 47.0  C           *E  01 20   *E  06 45   *E  07 18
                                         *E  08 45
                             MICRON      PERIOD
                        PZ     0.33         2.0
                        DISTANCE  DEG  27
PRI              08 00 25.0  C
JAS              08 00 38.1  C           *E  00 50
MHC              08 00 39.4  C
MIN              08 01 02.1  D           *I  01 36

BKS DEC  20      12 38 27.5  D           *E  40 34
                             MICRON      PERIOD
                        PZ     0.13         1.0
PRI              12 38 17.6  D           *E  40 24
JAS              12 38 22.3  D           *E  40 30   *E  40 42
MHC              12 38 24.5  D           *E  38 31
MIN              12 38 31.8  D           *I  40 41
                       USCGS   12 24 14.7,  2.9S, 129.8E, H= 59 KM, M=5.1
                               CERAM.

PRI DEC  20      12 56 13.7  C           *E  56 41
JAS              12 56 10.9  C           *E  56 37
MIN              12 56 31.1  C           *I  56 42
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PRI DEC  20    13 04 33.1  C
JAS            13 04 37.0  C
MIN            13 04 31.9  D
PRI            13 06 18.8  C                *E  06 34
JAS            13 06 22.1  C                *E  06 37
MHC            13 06 23.2  C
PRI            13 07 09.5  C
JAS            13 07 03.0  C                *E  08 10
MHC            13 07 04.2  C

PRI DEC  20    13 19 57.6  D
JAS            13 19 53.8  D
MHC            13 19 47.7  D
MIN            13 19 43.2  C

BKS DEC  20    15 31 12.0  C
PRI            15 30 57.5  C
JAS            15 30 52.6  C
MHC            15 31 05.7  C
MIN            15 31 18.2  C
ARC            15 31 44.0  C                *I  32 12

BKS DEC  20    15 52 20.3  D
PRI            15 51 55.8  C
JAS            15 51 49.6  C                *E  52 46   *E  52 55
MHC            15 52 11.8  D                *E  53 08
MIN            15 52       D                *I  52 23

BKS DEC  20    16 00 36.5  D
PRI            16 00 18.8  C                *E  00 31   *E  00 42
JAS            16 00 11.5  C    01 36       *E  00 22   *E  01 49
MHC            16 00 25.8  C    01 49       *E  00 35   *E  01 56   *E  02 04
MIN            16 00       C                *E  01 00

PRI DEC  20    17 30 44.7  D
JAS            17 30 52.2  D
MHC            17 30 48.6  D
MIN            17 30 59.9  D

JAS DEC  20    18 53 40.3  C                *E  57 34   *E  57 49
MHC            18 53 31.2  D                *E  57 45
MIN            18 53 31.3  C
                     USCGS   18 39 40.3, 14.3N, 122.1E, H= 37 KM, M=5.4
                             LUZON, PHILIPPINE ISLS.  FELT WIDELY.

PRI DEC  20    20 52 51.8  C
JAS            20 53 04.4  C
MHC            20 52 57.8  C

JAS DEC  20    21 30 18.6  D                *E  30 32
MIN            21 30 26.3  C

BKS DEC  21    09 04 14.6  D    14 32       *E  05 16   *E  05 34   *E  16 42
                                             *E  27 00
                          MICRON      PERIOD
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                          PZ     0.07          0.8
                          DISTANCE  DEG  85
PRI            09 04 16.3  D                *E  05 08   *E  14 32
JAS            09 04 20.3  D                *E  05 10   *E  14 43
MHC            09 04 15.5  D                *E  05 07   *E  14 30
MIN            09 04 20.8  D                *I  04 33   *I  05 55
                     USCGS   08 52 00.2, 20.0S, 169.7E, H=245 KM, M=5.6
                             NEW HEBRIDES ISLANDS.

JAS DEC  21    12 29 08.5  D                *E  29 21

BKS DEC  21    13 18 01.0  D
PRI            13 17 52.8  C
JAS            13 17 55.3  C
MHC            13 17 56.0  C
MIN            13 18 02.1  C                *E  18 26

BKS DEC  22    05 57 16.0  C
PRI            05 57 33.9  C
JAS            05 57 26.0  C                *E  58 42
MHC            05 57 22.7  C

PRI DEC  22    19 34 11.4  D
JAS            19 34 06.8  D                *E  34 26
MHC            19 34 04.0  D
MIN            19 33 50.8  D
                     USCGS   19 24 06.5, 48.6N, 154.3E, H= 77 KM, M=5.2
                             KURILE ISLANDS.

BKS DEC  23    01 22 10.0  C
                          MICRON      PERIOD
                          PZ     0.13          1.2
                          MAG 5- 5.4 DIST DEG  86
PRI            01 22 10.7  C
JAS            01 22 16.1  C
MHC            01 22 10.6  C
MIN            01 22 19.3  D                *I  22 32
                     USCGS   01 11 15.6, 17.9S, 178.6W, H=575 KM, M=5.0
                             FIJI ISLANDS REGION.

PRI DEC  23    01 24 12.0  C
JAS            01 24 18.0  C
MHC            01 24 12    C

BKS DEC  23    16 03 35.7  C                *PP  03 53   *I  04 11 SKS   14 10
                                             LQ   28 00   LR  33 12
                          R FROM W
                                MICRON      PERIOD
                          PZ     0.19          1.2
                          SH     4.0           3.2
                          MAXH   42            28
                          MAG 7.1-7.3 DIST DEG  93
MIN            16 03 38.4  C                *I  03 48   *I  03 60   *E  07 27
                     USCGS   15 50 20.4,  7.1S, 148.3E, H= 43 KM, M=6.4
                             EAST NEW GUINEA REGION.  FELT.
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MIN DEC  23   16 45 24.6  C

BKS DEC  23   19 09 20.5  C
PRI           19 09 06.3  D
JAS           19 09 12.3  D
MHC           19 09 16.1  D
MIN           19 09 26.3  C
                    USCGS   18 59 04.8,  7.4S,  74.8W, H=136 KM, M=5.2
                            PERU BRAZIL BORDER REGION.

PRI DEC  23   23 58 52.9  C
JAS           23 58 44.1  C          *E  58 53
MHC           23 58 35.5  C

JAS DEC  24   06 13 08.3  D
MHC           06 13 05.8  D
MIN           06 12 58.0  C
                    USCGS   06 00 58.6, 25.4N, 142.6E, H= 18 KM, M=5.1
                            VOLCANO ISLANDS REGION.

PRI DEC  24   10 00 13.8  C
JAS           09 59 59.7  D          *E  00 28

PRI DEC  24   20 43 58.9  C          *E  43 13
JAS           20 43 54.7  C
MHC           20 43 46.5  C
MIN           20 43 45.0  C

BKS DEC  24   22 34 56.5  D          *PP 35 22
PRI           22 35 15.8  D          *PP 35 41
JAS           22 35 02.8  D   41 03  *PP 35 28   *E  36 14   *I  39 56
MHC           22 35 02.4  D          *PP 35 28
MIN           22 34 40.2  D          *PP 35 05
                    USCGS   22 28 59.6, 59.9N, 153.4W, H=113 KM, M=5.1
                            SOUTHERN ALASKA.

PRI DEC  24   22 41 36.2  C
JAS           22 41 30.5  C          *E  41 50   *E  42 05
MHC           22 41 30.6  C
MIN           22 41 22.0  C          *I  41 36

BKS DEC  25   23 11 32.8  D          *E  11 52   LQ  21 42   LR  24 42
PRI           23 11 49.7  D          *E  12 05
JAS           23 11 41.3  C          *E  11 51   *E  13 22
MHC           23 11 38.3  C
MIN           23 11 23.7  D          *I  11 36

BKS DEC  26   05 23 40.0  D
PRI           05 23 49.1  D

JAS DEC  26   05 23 46.8  D
MHC           05 23 43.4  D
MIN           05 23 39.2  D          *I  23 45

BKS DEC  26   17 29 04.3  C
PRI           17 29 08.6  D
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JAS           17 29 12.1  D          *E  29 26
MHC           17 29 07.0  D
MIN           17 29 13.5  D
                    USCGS   17 16 36.6, 11.0S, 164.2E, H= 37 KM, M=5.2
                            SANTA CRUZ ISLANDS REGION.

BKS DEC  27   01 33 42.1  C          *E  33 57   *E  34 13
PRI           01 33 49.5  D
JAS           01 33 46.8  D          *E  34 04   *E  36 41   *I  37 15
MIN           01 33 36.6  D          *E  33 51
                    USCGS   01 22 17.3, 37.1N, 141.0E, H= 60 KM, M=5.5
                            HONSHU, JAPAN.

BKS DEC  27   12 02 35.5  C
PRI           12 02 35.8  C
JAS           12 02 41.3  C
MHC           12 02 36.3  C
MIN           12 02 45.1  D

JAS DEC  27   17 43 44.6  C
MHC           17 43 41.1  C
MIN           17 42 35.5  D

BKS DEC  27   21 29 34.5  C   35 28  *E  29 51 PCP  31 46   *E  35 30
                                     LQ  38 18  LR   41 18
                      R FROM S.E.
                            MICRON      PERIOD
                      MAXH   3.3          0.36
PRI           21 29 17.5  C          PCP  31 40   *E  35 22
JAS           21 29 24.2  C          PCP  31 42   *E  35 24
MHC           21 29 28.8  C          PCP  31 44 SCP  35 27
MIN           21 29 41.0  C           *I  29 59 PCP  31 49 SCP  35 31
                                      *E  38 18
ARC           21 29 57.0  C
                    USCGS   21 22 14.8, 13.2N,  88.8W, H= 66 KM, M=5.5
                            EL SALVADOR.  FELT SAN SALVADOR AREA.

BKS DEC  27   21 38                    LR  61 00
                      R FROM S.W.
PRI           21 38 04    D
JAS           21 38 09    D
MHC           21 38 04.8  D
                    USCGS   21 26 07. , 21.3S, 175.6W, H= 14 KM, M=5.0
                            TONGA ISLANDS.

BKS DEC  28   08 30 11.2  D   40 11  *I  30 26   *E  30 50   PP  33 22
                                PPP  35 22   SS  45 28   SSS 49 00
                                L    51 12   LR  55 00
                            MICRON      PERIOD
                      PZ     1.8          2.0
                      SH    33.3          7
                      MAG 7.5-7.8 DIST DEG  80
PRI           08 30 00.0  D   40 03
JAS           08 30 05.7  D   40 22  *E  41 06   *E  45 20   *E  49 34
                                P'P'  56 52
MHC           08 30 07.5  D   40 24
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MIN          08 30 17.7  C          *I  31 22  PP   33 15 P'P'  57 03
ARC          08 30 28.9  D   4C 41
                    USCGS   08 18 07.4, 25.5S,  70.7W, H= 47 KM, M=6.9
                            NEAR COAST OF NORTHERN CHILE.  3 KILLED,
                            6 INJURED.  EXTENSIVE PROPERTY DAMAGE IN
                            TALTAL AREA.  FELT IN NORTHERN AND CENTRAL
                            CHILE, SOUTHERN PERU, NORTHERN ARGENTINA.
                            SEICHE RECORDED AT CALDERA, AMP. = 90 CM.

PRI DEC  29  02 00 23.4  C
JAS          02 00 29.3  C
MHC          02 00 28.5  C
                    USCGS   01 48 28.9, 25.7S,  70.7W, H= 33 KM, M=5.4
                            NEAR COAST OF NORTHERN CHILE.  FELT.

BKS DEC  29  11 39 09.8  C          *E  39 24
PRI          11 38 58.8  C
JAS          11 39 04.5  C          *E  39 19   *I  39 54
MHC          11 39 06.2  C
                    USCGS   11 26 49.8, 28.9S,  71.0W, H= 24 KM, M=5.0
                            NEAR COAST OF CENTRAL CHILE.  FELT.

BKS DEC  29  12 07 40.2  C          *E  08 12   *E  17 30  SSS  25 12
PRI          12 07 26.7  C        L     26 36  LR   30 00
JAS          12 07 37.0  C          *E  07 52
MHC          12 07 34.7  C
MIN          12 07 55.3  C

BKS DEC  29  22 27 40.0  C   36 54  *PP  27 54  SS   41 24  SSS  45 00
                                    L    46 42  LR   49 42
                    R FROM SSH
                            MICRON      PERIOD
                    SH       2.3          22
                    MAXH    12.7          26
                    MAG K-5.4 DIST DEG  74
PRI          22 27 28.3  C          *E  27 37
JAS          22 27 38.8  C          *E  27 47
MHC          22 27 36.4  C
MIN          22 27 53.3  C
                    USCGS   22 16 22.7, 32.8S, 111.7W, H= 33 KM, M=5.4
                            EASTER ISLAND CORDILLERA.

BKS DEC  30  01 11 20.7  C
PRI          01 11 22.4  C
JAS          01 11 27.5  C          *E  13 42
MHC          01 11 22.1  C
MIN          01 11 29.4  C
                    USCGS   01 00 25.4, 17.8S, 178.9E, H=658 KM, M=5.0
                            FIJI ISLANDS.

BKS DEC  30  04 52 53.3  D
                            MICRON      PERIOD
                    PZ       0.43          2.2
JAS          04 52 51.6  C

PRI DEC  30  10 05 23.5  C
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JAS          10 05 32.6  C          *I  05 45   *I  05 57
MIN          10 05 45.0  D
                    USCGS   09 53 33.8, 25.2S,  70.6W, H= 33 KM, M=5.2
                            NEAR COAST OF NORTHERN CHILE.

PRI DEC  30  13 25 54.2  C          *E  26 04
JAS          13 25 51.4  C          *E  26 04
MHC          13 25 46.4  C

PRI DEC  31  00 41 08.9  D          *E  41 47
JAS          00 41 09.3  D          *E  41 47   *E  43 12
MHC          00 41 11.5  D
MIN          00 41 32.8  D

JAS DEC  31  13 12 34.5  C

BKS DEC  31  18 35 27.7  C   44 52  *I  35 39   *E  39 06 PPP   40 16
                                    *E  47 12  SS   50 30  SSS   53 00
                                    *E  57 18   *E  60 36 P'P'   65 40
                            MICRON      PERIOD
                    PH       6.77          40
                    PPH      7.1           42
                    MAXH                   20
                    MAG 7.4 - 7.8 DIST DEG  76
PRI          18 35 30.9  C          P'P'  65 41
JAS          18 35 33.2  C   47 39  *E  35 50   *E  39 05 P'P'   65 44
MHC          18 35 31.8  D
MIN          18 35 35.9  D          *I  35 52 P'P'  35 45
ARC          18 35 40.6  D          *E  47 16   *E  60 52
                    USCGS   18 23 03.9, 11.8S, 166.5E, H= 33 KM, M=7.7
                            SANTA CRUZ ISLANDS.  FELT STRONGLY AT
                            VANIKORO.  LANDSLIDES AND 3 FT. 4 IN.
                            TSUNAMI INSIDE BARRIER LAGOON.

PRI DEC  31  19 51 00.3  D
JAS          19 51 02.6  C
MIN          19 51 06.3  C
                    USCGS   19 38 29.9, 11.6S, 166.0E, H= 33 KM, M=5.1
                            SANTA CRUZ ISLANDS.

BKS DEC  31  22 27 42.8  D   37 10  *I  27 55   *I  28 41  PP   30 26
                                PPS  38 18  SS   42 00   *E  49 00
                                    *E  52 48
                            MAG 7 - 7.6 DIST DEG  75
PRI          22 27 47.0  C
JAS          22 27 45.3  D
MHC          22 27 35.5  C          *E  27 47
MIN          22 27 53.2  D          *I  28 09
ARC          22 27 58.4  D          *E  57 17
                    USCGS   22 15 14.0, 11.3S, 164.8E, H= 33 KM, M=7.3
                            SANTA CRUZ ISLANDS REGION.  FELT AT
                            VANIKORO.  LANDSLIDES AND 2 1/2 FT.
                            TSUNAMI AT VANIKORO.
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