Bulletin of the Seismographic Stations

Vol. 47, No. 1, pp. 1 - 55

ARCATA--BERKELEY--FICKLE HILL--FRIANT--GRANITE

CREEK--JAMESTOWN--LLANADA--MINA--MINERAL--MOUNT HAMILTON

OROVILLE--PARAISO--PILARCITOS CREEK--PRIEST

SAN ANDREAS GEOPHYSICAL OBSERVATORY--WHISKEYTOWN

WALKER RIDGE

Earthquakes and the Registration of Earthquakes

From January 1, 1977 to June 30, 1977

by

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BULLETIN OF THE SEISMOGRAPHIC STATIONS

of the University of California

Volume 47, Number 1

January 1, 1977 to June 30, 1977

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INTRODUCTION

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

Information items regarding the seismographic stations which comprise the Berkeley network are repeated in each issue.

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 Berkeley 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.

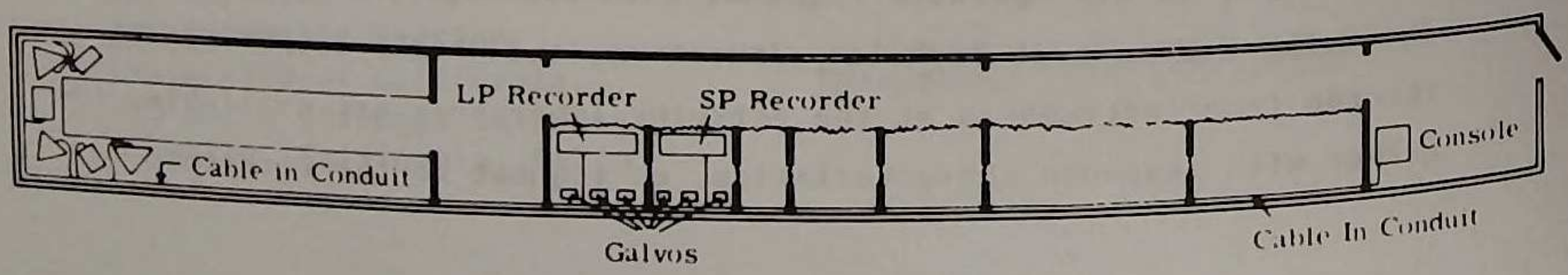
A plan of the tunnel is shown in the diagram below. Piers are constructed of reinforced concrete with no isolation from floor and walls. The temperature is stable. A ventilating and dehumidifying system is connected to all rooms.

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.

Geology

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



STATIONS IN OPERATION: January 1, 1977 to June 30, 1977

Station (From N to S)	North Latitude	West Longitude	Elev. Meters	Foundation Material	Symbol	Present Auspices and Date Established
Arcata	40° 52!6	124° 04!5	60	Sandstone (loose)	ARC	Humboldt State Univ. 1948
Fickle Hill	40° 48!1	123° 59!1	610	Siltstone over graywacke	FHC	Humboldt State Univ. Sept. 4, 1968
Whiskeytown	40° 34!8	122° 32!4	300	Pre-Devonian meta-volcanic	WDC	National Park Service March 8, 1973
Mineral	40° 20!7	121° 36!3	1495	Volcanic	MIN	National Park Service 1938
Oroville	39° 33!3	121° 30!0	360	Basalt	ORV	Dept. of Water Resources 1963
Mina (Nevada)	38° 26!0	118° 09!2	1524	Limestone	MNV	Lawrence Livermore Lab. 1969
Jamestown	37° 56!8	120° 26!3	457	Metamorphic (serpentine)	JAS	Dept. of Water Resources 1964
Berkeley (Byerly)	37° 52!6	122° 14!1	276	Claremont shales & cherts	BKS	University of Calif. 1962
Berkeley	37° 52!4	122° 15!6	81	Franciscan sandstone	BRK	University of Calif. 1887
Pilarcitos Creek	37° 30!0	122° 22!9	91	Grano-diorite (weathered)	PCC	Sare Ranch, 1965
Mt. Hamilton	37° 20!5	121° 38!5	1282	Franciscan formation (greenstone)	MHC	Lick Observatory 1887
Granite Creek	37° 01!8	121° 59!8	122	Granite	GCC	Richard E. Randolph Santa Cruz, 1965
Friant	36° 59!5	119° 42!5	119	Alluvium overlying granite	FRI	Bureau of Reclamation March 9, 1971
San Andreas Geophysical Observatory	36° 45!9	121° 26!7	350	Granite	SAO	University of Calif. 1966
Llanada	36° 37!0	120° 56!6	475	Alluvium overlying sandstone	LLA	Charles McCullough Ranch 1961
Paraiso	36° 19!9	121° 22!2	363	Grano-diorite	PRS	Paraiso Hot Springs 1961
Priest	36° 08!5	120° 39!9	1187	Greenstone basic metamorphic	PRI	Federal Aviation Agency 1961
Walker Ridge	40° 23!6	124° 17!3	226	Undivided cretaceous marine	WKC	Pacific Gas & Electric Co October 1976

STATION INSTRUMENTATION

January 1, 1977 to June 30, 1977

Station	Type of Instrument	T_o sec	T_g sec	Component	Mag at T_o	1	2	3	4	5	6
ARC	Wood-Anderson torsion	0.8	-	S, W	2,000	x					
BKS	Benioff 100 kg	1.0	0.75	N, E, Z	25,000	x					
	Sprengnether S-5007	15	100	N, E, Z	3,000	x					
	Wood-Anderson torsion	0.8	-	S, W	2,000	x					
	Sprengnether ULP S-5100	100	300 Filter	N45°W, N45°E, Z	500	x					
	Filtered Displacement				- - -				x		
	Displacement				- - -				x		
BRK	Benioff 100 kg	1.0	0.2	Z	25,000			x			
	Benioff 100 kg	1.0	8.0	Z	Variable						x
	14000X torsion	0.8	-	N, E	14,000 max		x				
	700X torsion	0.8	-	N, E	700 max		x				
	100X torsion	0.8	-	N, E	100 max	x					
	4X torsion	0.8	-	N, E	4 max	x					
	Press-Ewing	15	30	Z	1,000		x				
	Press-Ewing	30	BB	N45°W, N45°E, Z	- - -				x		
FHC	Benioff 14 kg	1.0	0.2	Z	50,000			x			
FRI	Benioff 14 kg	1.0	0.33 Filter	Z	150,000			x			
GCC	Benioff 14 kg	1.0	0.2	Z	50,000			x			
JAS	Benioff 100 kg	1.0	0.75	N, E, Z	250,000	x					
	Benioff 14 kg	1.0	0.2	Z	600,000		x	x	x		
	Sprengnether S-5100	40	-	Z							
	BB velocity								x		
	Displacement								x		
	Filtered Displacement								x		

1 Signals recorded on photographic paper.
2 Signals recorded on heat sensitive paper.
3 Signals telemetered to Berkeley. Magnifications using 20X viewer.
4 Signals recorded on magnetic tape, Berkeley.
5 Signals recorded on magnetic tape at SAO.
6 Ink recording.

STATION INSTRUMENTATION

January 1, 1977 to June 30, 1977

Station	Type of Instrument	T_o sec	T_g sec	Component	Mag at T_o	1	2	3	4	5	6
LLA	Benioff 14 kg	1.0	0.2	Z	50,000			x			
MHC	Benioff 14 kg	1.0	0.2	Z	50,000		x	x			
	Wood-Anderson torsion	0.8	-	S, E	2,000	x					
MIN	Wood-Anderson torsion	0.8	-	S, E	2,000	x					
	Teledyne S-13	1.0	0.2 Filter	Z	150,000			x			
MNV	Broadband instrument to give short-period response	filtered		Z	600,000 at 1 sec			x			
ORV	Benioff 100 kg	1.0	0.2	Z	220,000			x			
PCC	Benioff 14 kg	1.0	0.2	Z	50,000			x			
PRI	Benioff 14 kg	1.0	0.2	Z	50,000		x	x	x		
PRS	Benioff 14 kg	1.0	0.2	Z	50,000			x			
SAO	Benioff 14 kg	1.0	0.2	Z	- - -				x		
	Sprengnether 0.70 kg	0.2	0.05 Filter	Z	1,500,000		x	x		x	
	Sprengnether 0.70 kg	0.44	0.05 Filter	N, E, Z						x	
	Sprengnether S-5007 Displacement	30	BB	N, E, Z						x	
	Strainmeter									x	x
SAO(E)	Sprengnether S-5007 Displacement	15	BB	N, E						x	
WDC	Sprengnether S-5100	40	-	Z							
	BB Velocity				- - -				x		
	Displacement								x		
	Filtered Displacement								x		
	Short Period (Filter)				500,000		x	x	x		
WKC	Kinemetrics SS-2 Ranger	1.0	0.2	Z	- - -		x				

1 Signals recorded on photographic paper
2 Signals recorded on heat sensitive paper.
3 Signals telemetered to Berkeley. Magnifications using 20X viewer.
4 Signals recorded on magnetic tape, Berkeley.
5 Signals recorded on magnetic tape at SAO.
6 Ink recording.

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 photographically and through the telemeter system are listed on pages 11 and 12. Absolute magnification may be obtained by use of calibration pulses recorded daily from each station.

A network of broadband seismographs is now operated by the University of California at seismographic stations at Berkeley (BKS), Jamestown (JAS), San Andreas Geophysical Observatory (SAO), and Whiskeytown (WDC). The instrumentation at Whiskeytown was installed in January 1973 and at Jamestown in November 1973. The Jamestown and Whiskeytown seismographs are closely matched and consist of a single vertical seismometer, a Sprengnether S-5100, operating with a free period of 40 seconds and a damping ratio of 0.70. Signals from these seismometers are telemetered to Berkeley via FM telemetry components and leased telephone lines where they are recorded on analog magnetic tape recorders. Low- (± 2mm) and high- (± 0.01mm) gain displacement signals from JAS and WDC and a short period high-gain channel from WDC are recorded along with BKS and SAO strain on the 0.03 ips tape recorder. Velocity signals from JAS (one level) and WDC (two levels) are recorded at Berkeley on the 0.06 ips tape recorder. The seismometers at JAS and WDC are operated in sealed pressure vessels identical to those used with high-gain long-period (HGLP) instruments. At Berkeley, broadband instrumentation has been gradually developed, starting with the installation in June 1964 of Press-Ewing seismometers operating at a free period of 30 seconds. Recently, a 3-component set of special ultra-long period seismometers has been installed in the Byerly Seismographic Vault. The seismometers are Sprengnether S-5100 operated at a free period of 100 seconds and utilize electronic recentering feedback for long term stability and temperature/barometric feedback also for the vertical component. Low- (± 2.0mm) and high- (± 0.020mm) gain displacement signals from each of the three components are telemetered to the laboratory and recorded on 0.03 ips, 0-10 Hz, magnetic tape. High-gain displacement signals from BRK, JAS, and WDC are high-pass filtered at 500 sec to reduce tidal signals. The Berkeley ultra-long period system also generates photographic paper records equivalent to a 100 second pendulum with a velocity transducer recorded by a 300 second galvanometer.

At SAO, the central vault is instrumented with Sprengnether S-5000 (WWSSN-type) 3-component long period (30 sec) seismometers with displacement transducers recording 0-10 Hz on 0.06 ips magnetic tape at SAO with 10 mm full-scale displacement; Sprengnether S-7000 3-component short period (0.44 sec) seismometers recording on SAO magnetic tape (0-20 Hz) at two gain levels separated by a factor of 100; and a single vertical component S-7000 (5 Hz) telemetered to Berkeley and recorded on Develocorders ('William' channel). At the SAO-East vault, two S-5000 horizontal instruments at 15 sec period with displacement transducers are recorded on SAO magnetic tape (0-10 Hz) with 10 mm full-scale sensitivity. The south vault, a tunnel 300 m SW of the San Andreas fault zone, houses a quartz-tube strainmeter 19 m long, operating with full-scale sensitivity of 2×10^{-7} and recorded on 0.03 ips FM tape (0-10 Hz) at Berkeley.

Response curves for these broadband instruments are shown on pages 11 and 13.

UNIVERSITY OF CALIFORNIA ACCELEROGRAPH STATIONS

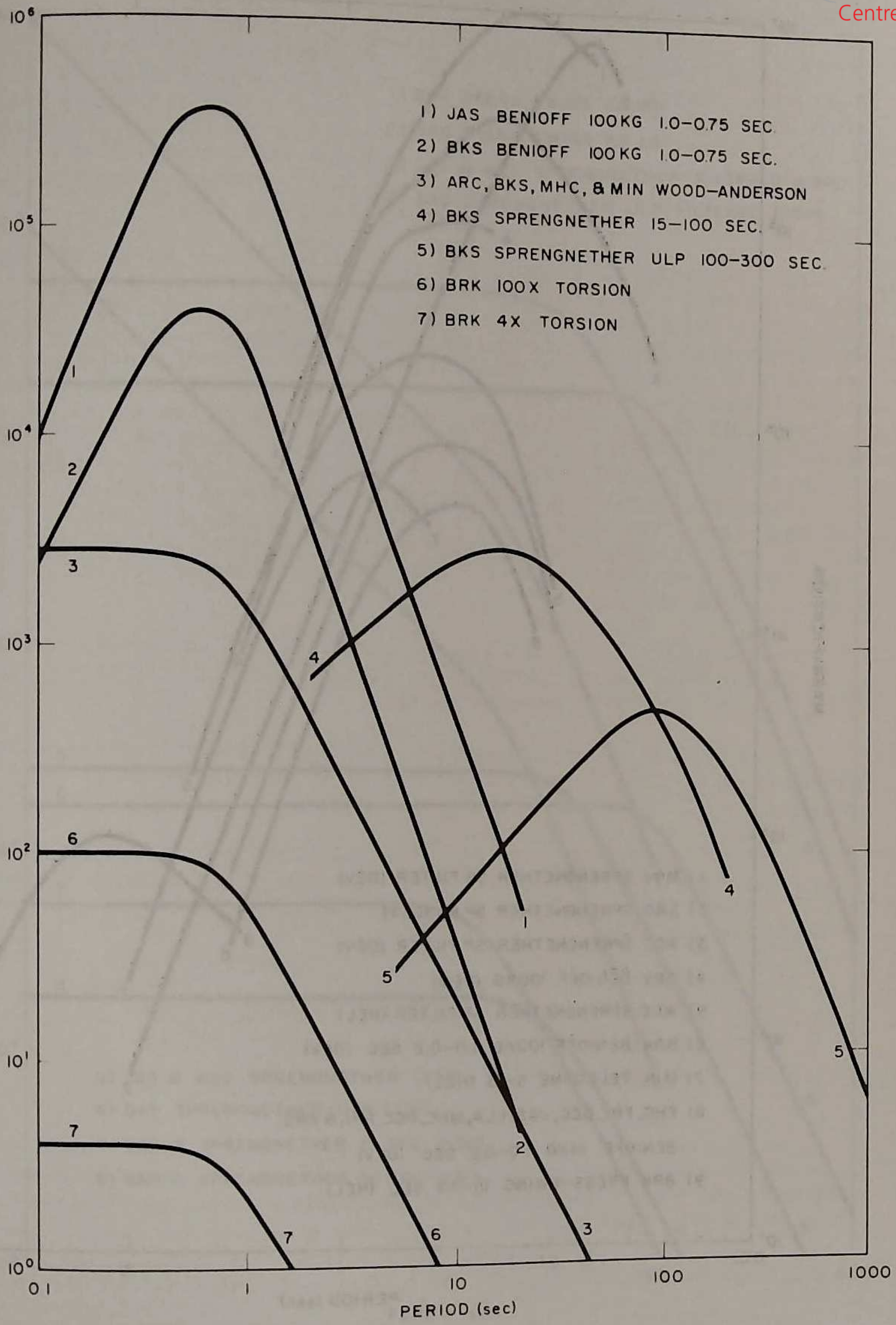
Station Name	Coordinates	Installation Date	Instrument S.N.	Component	Sensitivity (cm/g)	Period (sec)	Damping % of Critical	Structure	Location in Structure
BERKELEY MEMORIAL STADIUM	37.87 N 122.25 W	3 Aug 76	CRA-1 #148 (Recorder) FBA-3 downhole	V L unknown T unknown	1.79 1.82 1.83	.018 .019 .018	.64 .62 .66	4" I.D. cased borehole (163m deep)	Downhole (163m)
			FBA-3 uphole	V Down L North T East	1.90 1.83 1.82	.019 .018 .018	.63 .63 .65	Metal Box	Ground Level
BERKELEY UNIVERSITY LIBRARY	37.87 N 122.26 W	3 May 76	MO-2 trace #6	A Up B S45W C S45E	1.65 1.66 2.40	.03 .03 .03	.6 .6 .6		Ground Level

Station Name	Coordinates	Installation Date	Instrument S.N.	Component	Sensitivity (g/F.S.)	Bandwidth (Hz)	Structure	Location in Structure
RICHMOND FIELD STATION	37.92 N 122.33 W	12 May 76	Columbia Research Force Balance Accelerometer SA-107 (+2g units) (0-50Hz)	Z,H_1^*,H_2^{**} Z,H_1,H_2	±0.010 ±0.50	.05-50 0-50	5" I.D. uncased backfilled borehole (43.8m deep)	Downhole (43.7m)
				Z,H_1,H_2 Z,H_1,H_2	±0.010 ±0.50	.05-50 0-50		Midhole (15.7m)
				Z,H_1,H_2 Z,H_1,H_2	±0.010 ±0.50	.05-50 0-50	Metal Box	Ground Surface Level

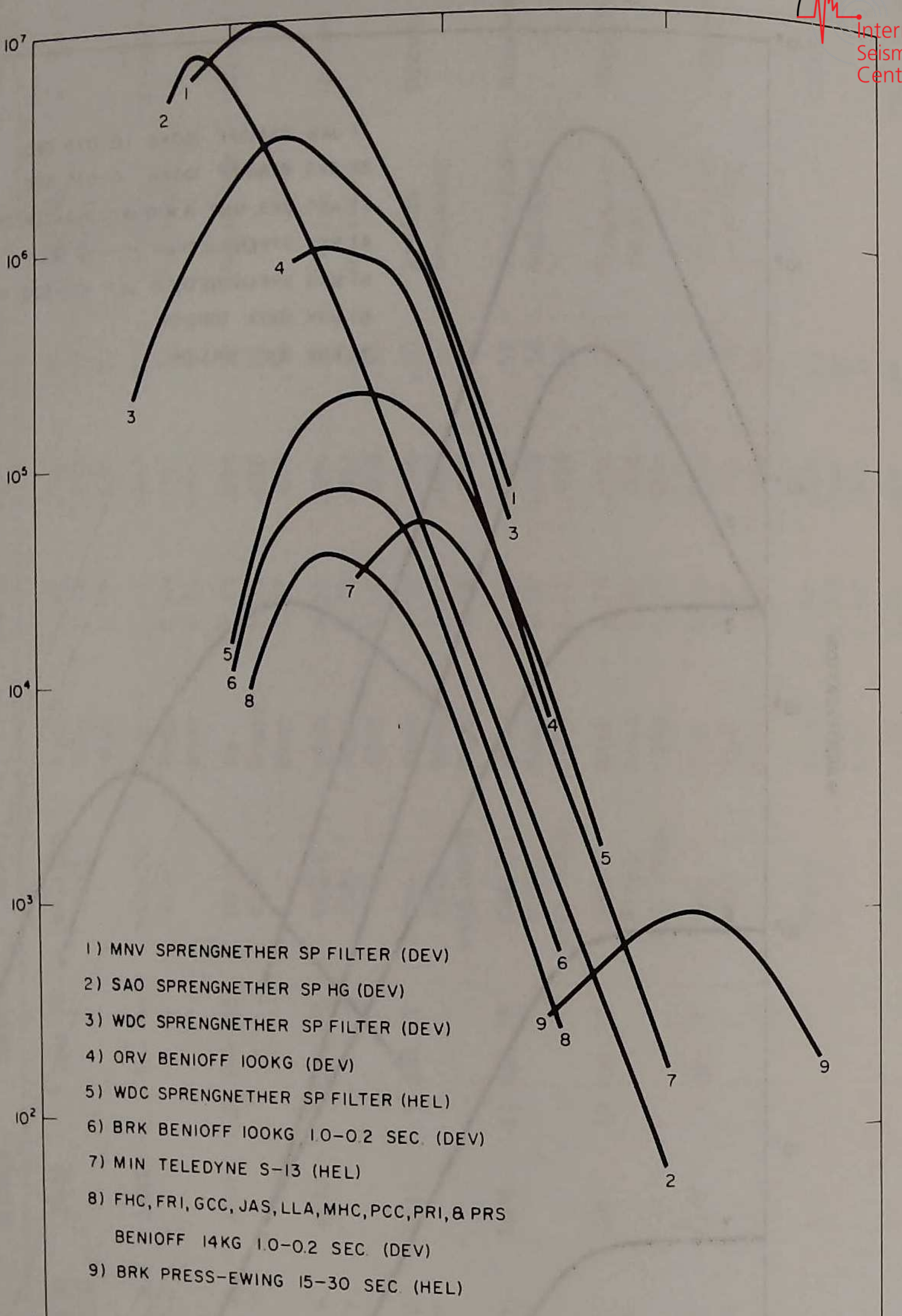
* - accelerometer aligned S45W
** - accelerometer aligned S45E
\+ - recorded on magnetic tape

UNIVERSITY OF CALIFORNIA ACCELEROGRAPH STATIONS MAINTAINED BY USGS

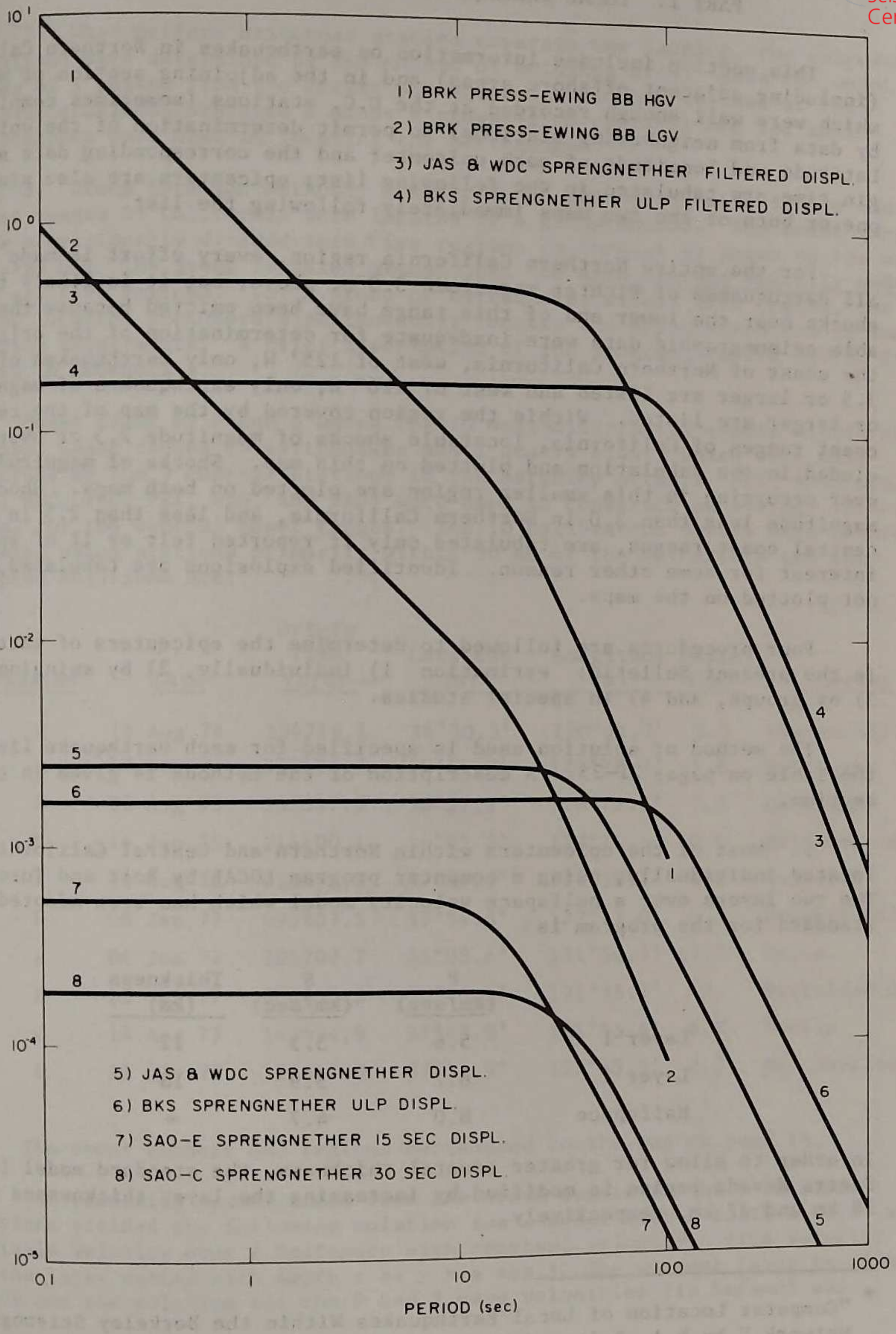
Station Name	Coordinates	USGS Number	Installation Date	Instrument S.N.	Component	Sensitivity (cm/g)	Period (Sec.)	Damping % of Critical	Structure	Location in Structure
CENTRAL	36.76 N 121.45 W	1032	5 Mar 73	RFT-250 #343	North Down West	1.82 2.14 1.89	.042 .045 .045	.57 .57 .57	Concrete vault	Ground level
SAGO EAST	36.81 N 121.41 W	1033	5 Mar 73	RFT-250 #347	North Down West	1.89 2.14 1.74	.045 .045 .045	.57 .57 .57	One-story building	Ground level
REEVES RANCH	36.74 N 121.47 W	1034	18 Dec 68	MO-2 #182	Up South West	2.75 1.73 1.77	.030 .030 .030	.59 .59 .59	Metal box	Ground level
UTLER VALLEY TA. 1 (RANCH)	40.77 N 123.90 W	1110	9 Jul 71	SMA-1 #314	S66W Down S24E	4.24 3.72 4.10	.054 .057 .058	.57 .57 .55	Prefab building	Ground level
TLER VALLEY 2 (ABUTMENT)	40.79 N 123.88 W	1112	9 Jul 71	SMA-1 #319 with WWVB	S66W Down S24E	1.96 1.76 1.86	.040 .039 .038	.60 .60 .60	Prefab building	Ground level
ERKELEY VILAND HALL	37.87 N 122.26 W	1006	15 Apr 76	SMA-1 #2500 with WWVB	N45W Down S45W	1.74 1.70 1.71	.038 .038 .039	.59 .58 .60	Four-story building	Basement
ELEY YERLY SEIS. STATION	37.87 N 122.24 W	1005	29 Apr 76	SMA-1 #2503 with WWVB	N45W Down S45W	1.79 1.79 1.73	.038 .039 .039	.60 .55 .57	Concrete vault	Ground level
ERKELEY VANS HALL	37.87 N 123.90 W	1182	7 Jan 72	SMA-1 #411	S12E Down N78E	1.64 1.83 1.92	.040 .040 .040	.59 .59 .59	Ten-story building	Basement
				SMA-1 #412	S12E Down N78E	1.67 1.96 1.92	.040 .038 .040	.61 .61 .59		Fifth floor
				SMA-1 #413	S12E Down N78E	2.01 1.88 1.85	.038 .037 .037	.60 .53 .55		Tenth floor



Response curves for photographically recording seismographs. The BKS Benioff and Sprengnether 15-100 second instruments are the WWSSN system.



Response curves for Helicorder (HEL) and Develocorder (DEV) channels when viewed at 20X enlargement. The Benioff 14KG curve (8) represents several different stations and is normalized to 10,000 magnification at 1 second period. (See station instrumentation for actual magnification at 1 second period).



Response curves for broadband seismographs recorded on slow-speed FM magnetic tape at BRK and SAO. Displacement sensitivity (magnification) in volts/micrometer when reproduced on Honeywell LAR 7400 system ($\pm$ 4 volts output).

PART I. LOCAL EARTHQUAKES IN NORTHERN CALIFORNIA

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

For the entire Northern California region, every effort is made to list all earthquakes of Richter magnitude 3.0 or above, but it is likely that some shocks near the lower end of this range have been omitted because the available seismographic data were inadequate for determination of the origin. Off the coast of Northern California, west of 125° W, only earthquakes of magnitude 3.5 or larger are listed and west of 126° W, only earthquakes of magnitude 4.0 or larger are listed. Within the region covered by the map of the central coast ranges of California, locatable shocks of magnitude 2.5 or over are included in the tabulation and plotted on this map. Shocks of magnitude 3.0 or over occurring in this smaller region are plotted on both maps. Shocks of magnitude less than 3.0 in Northern California, and less than 2.5 in the central coast ranges, are tabulated only if reported felt or if of special interest for some other reason. Identified explosions are tabulated, but are not plotted on the maps.

Four procedures are followed to determine the epicenters of earthquakes in the present Bulletin: estimation 1) individually, 2) by swinging arcs, 3) by groups, and 4) in special studies.

The method of solution used is specified for each earthquake listed in the Table on pages 21-25. A description of the methods is given in the next section.

1. Most of the epicenters within Northern and Central California were located individually, using a computer program LOCAL by Bolt and Turcotte.* The two layers over a halfspace velocity model which has been adopted as standard for the program is

	P (km/sec)	S (km/sec)	Thickness (km)
Layer 1	5.6	3.3	12
Layer 2	6.7	3.9	18
Halfspace	8.0	4.7	∞

In order to allow for greater crustal thickness, the standard model for the Sierra Nevada region is modified by increasing the layer thicknesses to 18 km and 27 km, respectively.

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* "Computer Location of Local Earthquakes Within the Berkeley Seismographic Network," by B.A. Bolt and T. Turcotte, Computers in the Mineral Industries, Part 2 (G. Parks, ed.), Stanford University Publications, Geological Sciences, Vol. 9, No. 2, pp. 561-576, 1964.

2. When uniform azimuthal station coverage was lacking, the epicentral locations were determined by the method of swinging arcs. When the onset times of S phases from the larger earthquakes could not be read at the closest stations, averaged S minus P travel-time observations for small aftershocks were used in locating the earthquakes.

3. Group Location Method: A majority of the earthquakes in the central coast ranges of California were located by a group method. The coast ranges were provisionally divided into five regions (a through e) shown on the map on page 16. The group location method uses the same average velocity model for all five regions. For a group of earthquakes within each region, the group location procedure simultaneously locates the hypocenters and estimates station adjustments. A brief description of the program, called GHYP2, is given in Appendix A.

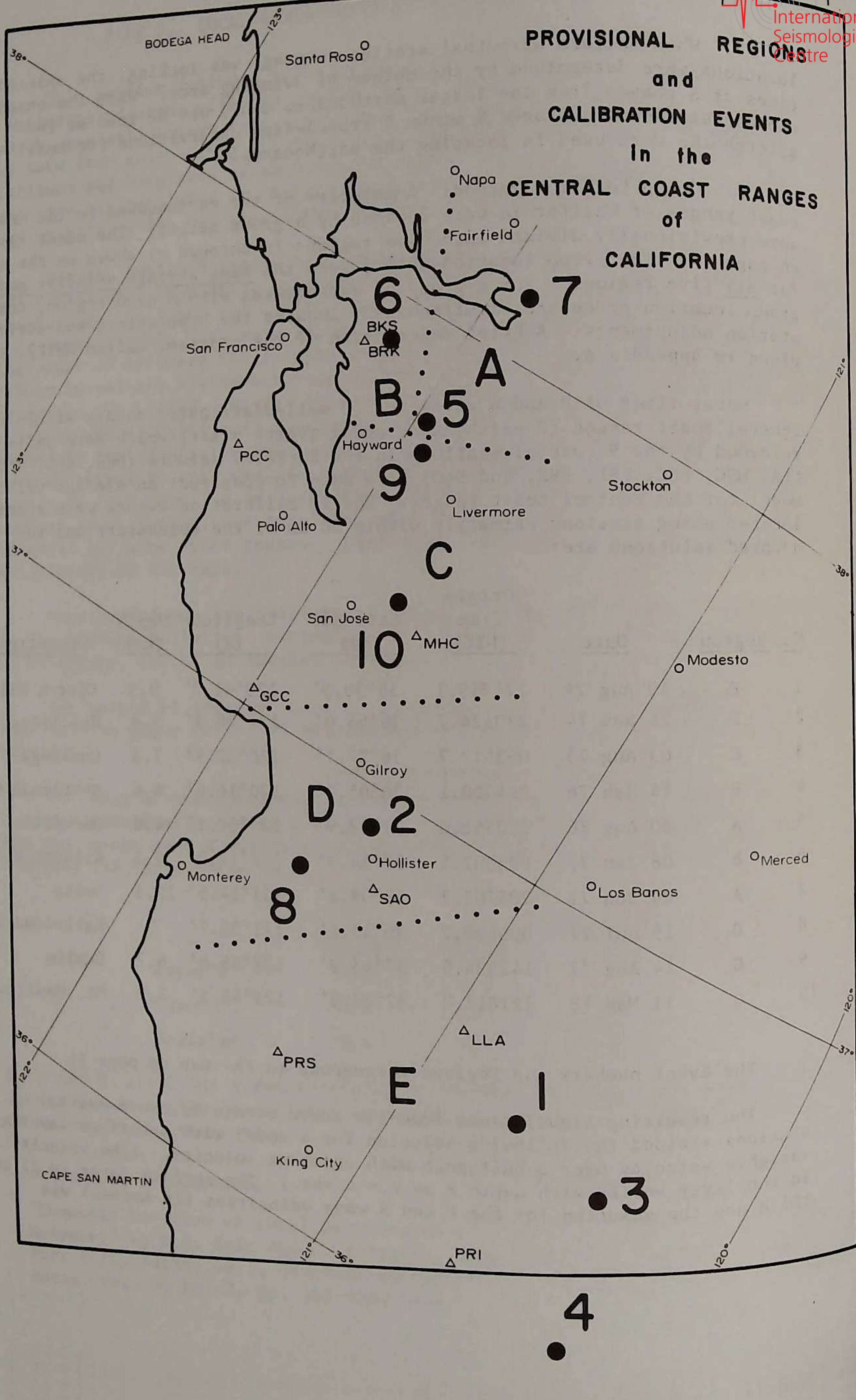
Onset times of P and S waves for 10 well-distributed events within the central coast ranges (9 earthquakes and 1 quarry blast) which were well-recorded by the 9 coastal stations in the Berkeley network (BKS, BRK, GCC, LLA, MHC, PCC, PRI, PRS, and SAO) were used to construct an average velocity model for the central coast ranges. The 10 calibration events were accurately located using stations primarily within 30 km of the epicenters and the adopted solutions are:

No.	Region	Date	Origin Time (UTC)	Latitude (N)	Longitude (W)	Depth (km)	Location
1	E	19 Aug 74	124719.1	36°30.5'	120°41.7'	9.3	Ciervo Hills
2	D	28 Nov 74	230124.7	36°55.0'	121°28.7'	5.8	Hollister
3	E	03 Aug 75	063517.7	36°27.1'	120°22.9'	7.2	Coalinga
4	E	14 Jan 76	214400.1	36°05.2'	120°16.6'	8.6	Kettleman Hills
5	A	20 Aug 76	220552.0	37°47.9'	121°58.1'	4.8	Danville
6	B	08 Jan 77	093807.5	37°54.3'	122°11.0'	9.5	Briones Hills
7	A	04 Jun 77	205707.7	38°08.6'	121°54.5'	17.5	Delta
8	D	15 Jul 77	000630.2	36°45.1'	121°35.7'	0	Natividad Quarry
9	C	14 Aug 77	142534.9	37°43.9'	121°55.6'	6.7	Dublin
10	C	11 May 78	121812.0	37°22.9'	121°45.5'	2.2	Mt. Hamilton

The event numbers and regions correspond to the map on page 16.

The resulting travel times from the above events to the 9 coastal stations yielded the following solution for a model with a surface layer with variable velocity over a halfspace with constant velocity. (The velocity in the layer varied with depth z as $v = a + bz$.) The surface layer is 25 km thick and the solution for the P and S wave velocities (in km/sec) was

PROVISIONAL REGIONS and CALIBRATION EVENTS In the CENTRAL COAST RANGES of CALIFORNIA



$$\alpha_1 = (5.28 \pm .018) + (0.075 \pm .015)\ z$$

and $$\beta_1 = (2.98 \pm .019) + (0.043 \pm .0042)\ z$$

and the corresponding halfspace velocities are

$$\alpha_2 = (7.70 \pm .080)$$

and $$\beta_2 = (4.36 \pm .20).$$

Seventy-three observed times for P and 23 for S were used in the least-squares estimation procedure and the standard error of a single observation was 0.36 sec.

The station adjustments (in seconds) for each of the 5 regions (see map on page 16) into which the central coast ranges were provisionally divided are:

Station	Region A P/S	B P/S	C P/S	D P/S	E P/S
BKS	-.2/-.2	-.1/0	0/0	-	-
BRK	-	0/.4	-	-	-
GCC	-	-	-.1/-	0/0	-
LLA	-	-	-	0/-	-.1/-
MHC	-.3/.3	0/-.2	-.1/0	-.1/0	-.1/-
PCC	.1/-	0/-.2	-	-	-
PRI	-	-	-	-	-.2/-
PRS	-	-	-	0/-	0/-
SAO	-	-	.1/0	.1/0	-.1/-

These station adjustments are to be added to the calculated travel times.

4. Some earthquakes are of particular interest and a special study is done to locate their hypocenters. When these solutions are used in the Bulletin, the source is referenced.

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 Universal Coordinated Time (UTC). To obtain local time, subtract 8 hours for Pacific Standard Time (PST) and 7 hours for Pacific Daylight Time (PDT).

In selecting input for the computer, we sought the best possible distribution of stations, both in azimuth and distance. Where possible, both P and S phases were used. However, the number of P arrivals greatly outnumbered the S arrivals. Geographic coordinates are quoted to tenths of a minute for computer located epicenters. Uncertainties of up to five minutes exist in determinations where the depth has been restricted, or where the epicenters lie outside the network. Those epicenters located by the arc method have their coordinates expressed to tenths of a degree. This is the accuracy to which the arc method allows.

The Magnitude of the earthquake is determined on the Richter scale from the maximum trace amplitudes recorded for the shock by standard Wood-Anderson torsion seismographs. The magnitudes of earthquakes for which no Wood-Anderson records are available are determined from Benioff seismograph trace amplitudes, and are listed in parentheses.

Depth of focus (h) for each earthquake is given to the nearest kilometer. If the depth has been restrained, it is indicated by "(R)".

Solution indicates the number of stations and the method used in determining the epicenter. The lower case letter indicates the method of solution as follows:

Letter	Method
a	group - delta region
b	group - Berkeley
c	group - Mt. Hamilton
d	group - Hollister
e	group - Llanada
m	individual - modified model for Sierra Nevada region
r	arc
s	individual - standard model
x	special study - Briones Hills*
y	special study - Farallon Escarpment**

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* "The Briones Hills earthquake swarm of January 8, 1977, Contra Costa County, California," B.A. Bolt, J. Stifler, and R. Uhrhammer, Bull. Seism. Soc. Am., 67, No. 6, pp. 1555-1564, December 1977.

** "Seismicity in the vicinity of the Farallon Escarpment," R. Uhrhammer, Geophys. Res. Letters, 4, No. 10, October 1977.

Under Remarks will be found a short descriptive location of the epicenter.

Recent Rate of Seismicity

A plot of the cumulative number of earthquakes versus local Richter magnitude (M_L) is given in the figure on page 20. The data set consists of 895 earthquakes ($3.0 \leq M_L \leq 5.9$) listed in the U.C. Bulletin of the Seismographic Stations, in a 180,000 km^2 region in northern and central California during the decade of January 1, 1967, to December 31, 1976. The region is bounded on the north and east by the California border, on the southeast by the dashed line on the map on page 26, on the southwest by a line connecting 35°N-121°W and 39°N-125°W, and on the west by 125°W longitude.

The earthquakes are grouped into 20 consecutive 6-month intervals for analysis and the average cumulative number of earthquakes (N) (total number with a magnitude $\geq M_L$) in a 6-month interval is given by

$$\log (N) = 4.412 - 0.912\ M_L$$

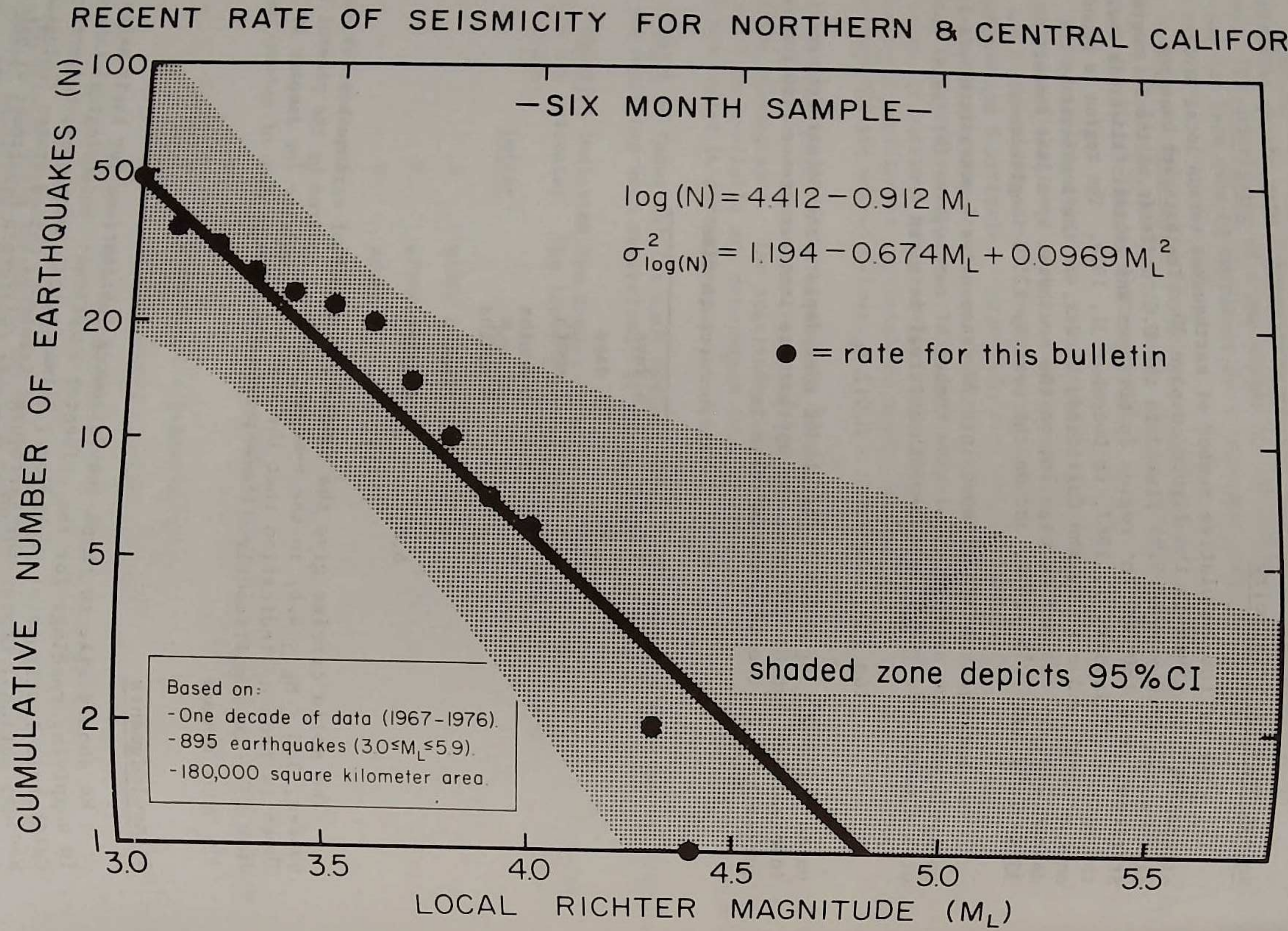
valid for $3.0 \leq M_L \leq 5.9$. The shaded zone depicts the 95 per cent confidence interval for log(N). Hence, the approximate interoccurrence time for earthquakes $\geq M_L$ in the 180,000 km^2 area is

$M_L \geq$	Interoccurrence Time
3.0	4 days
3.5	11 days
4.0	1 month
4.5	3 months
5.0	8 months
5.5	2 years
6.0	5 years

The solid circles give the cumulative number of earthquakes (49 earthquakes, $3.0 \leq M_L \leq 4.4$) in the 6-month interval covered by the present Bulletin. There is thus no indication that the rate of seismicity for January 1977 to June 1977 is significantly different from the average rate of seismicity over the past decade.

Acknowledgments

We should like to thank the following institutions for their assistance in supplying readings for the epicenter locations: Seismological Laboratory, California Institute of Technology; Seismological Laboratory, University of Nevada; National Center for Earthquake Research, United States Geological Survey; Pacific Gas and Electric Company; California Department of Water Resources; Oregon State University; and Woodward-Clyde Consultants.



EARTHQUAKES IN NORTHERN CALIFORNIA

Map No.	Date 1977	Origin Time (U.T.C.)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
	Jan 01	07 20 51	40.4°	127.2°	3.8	2(R)	7r	Off the coast 270 km SW of Eureka.
1	Jan 02	02 09 37.7	37°02.4'	121°29.3'	2.5	9	7d	22 km NNW of Hollister.
2	Jan 03	03 23 21.1	36°47.4'	121°17.9'	2.6	10	6d	12 km SE of Hollister.
3	Jan 04	13 51 49.6	35°53.3'	121°22.6'	2.8	2	5s	43 km SW of King City.
4	Jan 06	08 55 15.1	36°36.6'	120°51.4'	2.7	9	8e	56 km SE of Hollister. Panoche.
5	Jan 06	09 28 01.4	39°38.1'	121°17.8'	3.1	2	10e	26 km SE of Hollister. Stone Canyon.
6	Jan 08	06 55 50.6	37°54.2'	122°11.1'	2.6	12	6x	7 km ENE of Berkeley. Briones Hills.
6	Jan 08	07 17 33.9	37°53.8'	122°11.3'	3.0	9	6x	Briones Hills.
6	Jan 08	08 58 13.9	37°53.9'	122°11.1'	4.0	10	6x	Briones Hills. Felt in San Francisco Bay area..
6	Jan 08	09 38 07.5	37°54.3'	122°11.0'	4.3	9	6x	Briones Hills. Felt in San Francisco Bay area..
6	Jan 08	09 39 34	37°54'	122°11'	2.8	9	6x	Briones Hills.
6	Jan 08	09 39 41	37°54'	122°11'	3.8	9	6x	Briones Hills. Felt in San Francisco Bay area..
6	Jan 08	09 41 02.7	37°54.7'	122°11.4'	2.7	9	6x	Briones Hills.
6	Jan 08	09 43 59	37°55'	122°11'	3.0	9	6x	Briones Hills.
6	Jan 08	09 45 36	37°55'	122°11'	2.5	9	6x	Briones Hills.
6	Jan 08	09 51 55.6	37°54.5'	122°11.3'	3.0	8	6x	Briones Hills.
6	Jan 08	09 54 57	37°55'	122°11'	2.6	8	6x	Briones Hills.
6	Jan 09	05 34 16.7	37°53.3'	122°11.1'	3.2	9	6x	Briones Hills. Felt in San Francisco Bay area.
6	Jan 09	05 46 40.4	37°53.2'	122°10.7'	2.5	8	6x	Briones Hills.
7	Jan 09	23 24 39.5	39°30.1'	121°38.6'	3.4	2	5s	5 km SW of Oroville. Felt in Oroville.
8	Jan 10	05 08 07.8	37°54.5'	122°18.0'	3.0	4	10b	6 km NW of Berkeley. El Cerrito. Felt.
9	Jan 13	20 09 53.4	41°01.4'	122°08.8'	3.7	2	5s	Mt. Shasta area. Felt in Dunsmuir.
	Jan 16	03 09 51	40.7°	127.6°	3.5	2(R)	7r	Off the coast 300 km W of Eureka.
10	Jan 16	22 28 23.8	36°24.8'	117°48.8'	4.1	12	7m	115 km SE of Bishop. Owens Lake area.
11	Jan 18	21 05 46.4	36°55.6'	121°27.1'	3.5	8	8d	10 km NW of Hollister.. Felt in Hollister.
11	Jan 19	02 12 19.8	36°55.6'	121°27.4'	3.9	9	9d	10 km NW of Hollister.. Felt in Hollister, Gilroy and San Juan Bautista.

Map No.	Date 1977	Origin Time (U.T.C.)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
								10 km NW of Hollister.
11	Jan 19	14 03 36.5	36°54.8'	121°27.4'	2.5	12	8d	30 km S of Livermore.
12	Jan 20	02 11 14.0	37°26.7'	121°44.7'	2.5	13	8c	75 km SE of Eureka.
13	Jan 20	21 28 00.0	40°34.2'	123°22.0'	3.0	5(R)	5s	Off the coast 250 km NW of Eureka.
	Jan 21	17 52 03.2	41°51.6'	126°41.9'	3.6	10(R)	6s	33 km SE of Hollister. Bear Valley.
14	Jan 22	12 18 26.6	36°35.3'	121°13.4'	2.6	3	5e	15 km N of Livermore.
15	Jan 22	15 21 17.4	37°49.7'	121°45.3'	2.8	13	6c	21 km NW of Hollister.
16	Jan 23	13 18 50.3	36°54.0'	121°36.8'	2.5	7	8d	Berkeley. Felt.
17	Jan 23	17 45 50.5	37°51.5'	122°15.2'	2.7	8	8b	Berkeley. Felt.
17	Jan 24	15 55 46.5	37°51.5'	122°14.9'	2.8	8	8b	64 km NE of San Luis Obispo. Parkfield.
18	Jan 24	18 05 16.6	35°47.6'	120°21.2'	3.7	9	9s	46 km SE of King City.
19	Jan 28	07 37 23.6	36°01.0'	120°41.0'	2.7	2	7s	Off the coast 260 km WSW of Eureka.
	Feb 01	14 33 10	40.4°	127.1°	5.0	2(R)	7r	Off the coast 260 km WSW of Eureka.
	Feb 01	14 33 26	40.4°	127.1°	4.8	2(R)	7r	Off the coast 260 km WSW of Eureka.
	Feb 01	15 25 47	40.4°	127.1°	4.3	2(R)	7r	Lake Tahoe. Felt in S. Lake Tahoe, Carson City and Placerville.
20	Feb 01	18 47 57.8	39°04.6'	119°59.9'	4.0	5	5m	Off the coast 100 km WSW of Eureka.
	Feb 03	05 35 18.2	40°40.1'	125°21.0'	4.0	10	7s	Off the coast 65 km SW of Eureka.
21	Feb 05	19 25 53.1	40°25.7'	124°48.7'	4.0	29	6s	42 km NNW of Santa Rosa. Cobb Mt. Felt.
22	Feb 10	19 18 52.0	38°49.1'	122°48.7'	3.0	2	7s	14 km S of Hollister.
23	Feb 12	23 49 26.7	36°43.8'	121°21.4'	2.8	12	6d	100 km SE of Hollister. Peach Tree Valley.
24	Feb 16	18 32 28.9	36°07.6'	120°48.2'	2.6	15	7e	Off the coast 100 km SW of Eureka.
	Feb 17	09 58 32.0	40°24.4'	125°13.0'	3.7	24	5s	Willits. Felt in Willits area.
25	Feb 21	11 09 15.3	39°22.5'	123°18.0'	3.2	20	10s	Off the coast 90 km W of Eureka.
	Feb 22	00 57 36.6	40°45.0'	125°13.9'	4.4	20(R)	7s	95 km SE of Lake Tahoe. Felt in Bridgeport.
26	Feb 22	06 24 06.1	38°28.8'	119°17.0'	4.8	22	7m	95 km SE of Lake Tahoe.
26	Feb 22	06 31 04.4	38°29.9'	119°15.9'	3.0	13	7m	42 km S of Eureka. Felt.
27	Feb 25	03 57 37.1	40°25.3'	124°13.1'	3.0	18	5s	18 km E of Berkeley. Felt in San Francisco Bay area.
28	Mar 01	21 08 46.2	37°49.9'	122°03.3'	3.0	6	8b	

Map No.	Date 1977	Origin Time (U.T.C.)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
29	Mar 05	23 55 43.4	40°49.1'	123°23.3'	3.3	35	9s	68 km E of Eureka.
30	Mar 06	00 32 33.9	36°41.3'	121°08.4'	2.9	6	7e	30 km SE of Hollister.
31	Mar 12	05 55 31.2	36°33.5'	120°44.0'	3.2	10	8e	50 km SE of Hollister.
11	Mar 12	09 19 06.7	36°53.6'	121°28.7'	3.6	9	10d	10 km NW of Hollister. Felt in Hollister area.
11	Mar 16	07 54 56.2	36°55.2'	121°27.6'	3.6	9	10d	10 km NW of Hollister. Felt in Hollister area.
11	Mar 16	07 56 30.5	36°55.1'	121°27.8'	2.7	9	9d	10 km NW of Hollister.
	Mar 16	13 06 38	40.4°	126.0°	3.4	2(R)	7r	Off the coast 170 km SW of Eureka.
	Mar 17	09 14 49	40.4°	127.1°	4.1	2(R)	7r	Off the coast 260 km SW of Eureka.
32	Mar 19	22 56 47.6	37°25.5'	121°38.3'	3.4	8	8c	30 km SSE of Livermore.
33	Mar 26	19 13 06.4	38°28.1'	122°13.0'	2.9	7	8s	20 km NE of Napa.
34	Mar 27	11 24 58.4	38°20.6'	122°37.7'	2.5	2	6s	12 km SE of Santa Rosa.
35	Apr 02	06 09 11.9	40°33.9'	123°54.0'	3.6	14	6s	35 km SE of Eureka. Felt.
36	Apr 03	10 20 43.8	39°34.7'	123°02.2'	3.0	5(R)	9s	50 km NNE of Ukiah.
	Apr 08	08 59 53	42.0°	127.2°	4.0	2(R)	7r	Off the coast 300 km NW of Eureka.
37	Apr 09	00 14 18.1	40°27.0'	123°14.0'	3.1	5(R)	5s	90 km SE of Eureka.
	Apr 11	23 48 18.0	40°24.8'	125°18.1'	4.1	21	5s	Off the coast 105 km SW of Eureka.
	Apr 11	23 53 38.4	40°23.2'	125°11.0'	3.5	24	5s	Off the coast 100 km SW of Eureka.
5	Apr 21	18 00 03.1	36°38.7'	121°18.8'	3.0	6	10e	24 km SE of Hollister. Stone Canyon.
5	Apr 21	19 58 55.5	36°38.8'	121°18.8'	2.9	6	10e	Stone Canyon.
38	Apr 30	13 11 16.7	40°09.3'	124°06.7'	3.0	5(R)	5s	70 km S of Eureka.
39	Apr 30	19 03 16.6	37°44.3'	123°18.2'	2.6	2(R)	6y	98 km W of Berkeley. Farallon Islands area.
	May 02	05 56 59.3	40°36.2'	125°38.6'	3.1	2	5s	Off the coast 130 km WSW of Eureka.
40	May 04	06 04 58.1	36°32.6'	120°32.6'	2.8	5	5s	85 km SE of Hollister.
41	May 04	06 59 10.5	39°24.3'	121°29.7'	3.6	7	7s	15 km SSE of Oroville. Felt in Oroville.
42	May 04	19 43 34.0	38°10.6'	121°57.6'	3.2	21	10a	Delta area 42 km NE of Berkeley. Felt in Fairfield and Vacaville.
42	May 05	22 40 32.1	38°11.3'	121°57.3'	3.3	21	10a	Delta area 43 km NE of Berkeley. Felt in Antioch and Pittsburg.
	May 10	00 09 28.8	41°41.3'	125°59.1'	3.9	20(R)	5s	Off the coast 160 km W of Eureka.
43	May 15	19 58 50.1	37°19.3'	120°02.8'	2.7	8	7s	38 km E of Merced.

Map No.	Date 1977	Origin Time (U.T.C.)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
44	May 21	00 28 19.7	37°32.9'	118°44.8'	3.4	12	5m	37 km NW oF Bishop. Mammwth Lakes area.
5	May 28	06 26 53.6	36°38.9'	121°19.1'	3.0	1	10e	24 km SE of Hollister. Stone Canyon.
45	May 31	16 40 24.2	40°52.7'	122°20.0'	3.6	15	6m	30 km N of Redding. Shasta Lake. Felt at Shasta Lake, Whiskey. town and in Mt. Shasta area.
42	May 31	22 56 50.3	38°09.8'	121°57.8'	2.6	20	10a	Delta area 41 km NE of Berkeley.
46	Jun 03	01 40 38.0	41°06.5'	123°14.8'	3.3	46	8s	85 km NE of Eureka.
42	Jun 04	20 57 07.7	38°12.3'	121°58.2'	3.8	20	10a	Delta area 44 km NE of Berkeley. Felt in Napa, Milpitas and Walnut Creek.
42	Jun 04	21 06 55.0	38°12.1'	121°57.9'	2.6	20	10a	Delta area 44 km NE of Berkeley.
	Jun 05	14 08 31.9	36°32.1'	116°24.6'	3.7	2	5m	115 km NW of Las Vegas.
42	Jun 06	16 38 51.7	38°12.5'	121°57.9'	2.6	22	10a	Delta area 45 km NE of Berkeley.
47	Jun 07	01 14 22.0	41°00.0'	123°52.5'	3.8	28	11s	32 km NE of Eureka. Felt from Orick to Garberville.
48	Jun 09	19 05 41.2	40°16.5'	124°37.3'	3.7	29	6s	Off the coast 70 km SW of Eureka.
49	Jun 09	19 13 59.7	40°12.6'	124°09.5'	3.5	5(R)	6s	70 km S of Eureka. Felt.
	Jun 11	04 13 55.3	41°19.3'	125°13.5'	3.1	20(R)	5s	Off the coast 100 km SW of Eureka.
50	Jun 11	19 25 02.1	36°24.4'	121°01.3'	2.5	10	8e	60 km SE of Hollister.
51	Jun 14	04 37 03.8	37°08.5'	118°02.4'	3.1	12	5m	38 km SE of Bishop.
42	Jun 17	19 38 48.9	38°11.4'	121°57.0'	3.6	20	10a	Delta area 44 km NE of Berkeley. Felt in Fairfield.
52	Jun 17	23 31 58.2	40°50.6'	120°22.9'	3.0	4	6m	48 km NNE of Susanville.
53	Jun 18	03 06 13.8	37°50.8'	121°49.3'	2.7	17	7a	37 km E of Berkeley.
53	Jun 18	03 21 19.2	37°51.1'	121°49.3'	2.6	18	7a	37 km E of Berkeley.
16	Jun 19	00 07 01.1	36°55.4'	121°37.7'	2.5	10	8d	23 km NW of Hollister.
54	Jun 21	02 43 06.6	37°39.9'	121°40.2'	4.4	11	7c	10 km E of Livermore. Felt in Livermore and San Francisco Bay area.
55	Jun 21	15 29 15.6	36°27.4'	121°09.2'	3.0	2(R)	7e	49 km SE of Hollister.
56	Jun 22	09 44 42.3	40°29.1'	124°56.4'	3.7	23	6s	Off the coast 85 km SW of Eureka.
21	Jun 23	04 03 53.3	40°26.0'	124°49.1'	3.2	34	6s	Off the coast 65 km SW of Eureka.
54	Jun 23	19 36 25.0	37°40.0'	121°40.0'	2.5	11	7c	10 km E of Livermore.

Map No.	Date 1977	Origin Time (U.T.C.)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
57	Jun 25	16 36 45.5	36°46.8'	121°29.3'	2.5	1	6d	11 km SW of Hollister.
54	Jun 28	12 46 40.6	37°35.0'	121°39.9'	3.1	8	7c	10 km E of Livermore. Felt.
58	Jun 29	09 33 21.4	36°56.6'	121°35.3'	2.5	7	7d	20 km NW of Hollister.

EXPLOSIONS AT NEVADA TEST SITE

Date 1977	Origin Time (U.T.C.)	Latitude North	Longitude West	Magnitude	
Feb 16	17 53 00	37.0°	116.0°	4.2	(Berkeley solution)
Apr 05	15 00 00.2	37°07.2'	116°03.7'	5.5	"Marsilly"
Apr 27	15 00 00.1	37°05.7'	116°01.7'	5.2	"Bulkhead"
May 25	17 00 00.1	37°05.7'	116°02.7'	5.1	"Crewline"

NORTHERN CALIFORNIA EARTHQUAKES

JANUARY – JUNE 1977

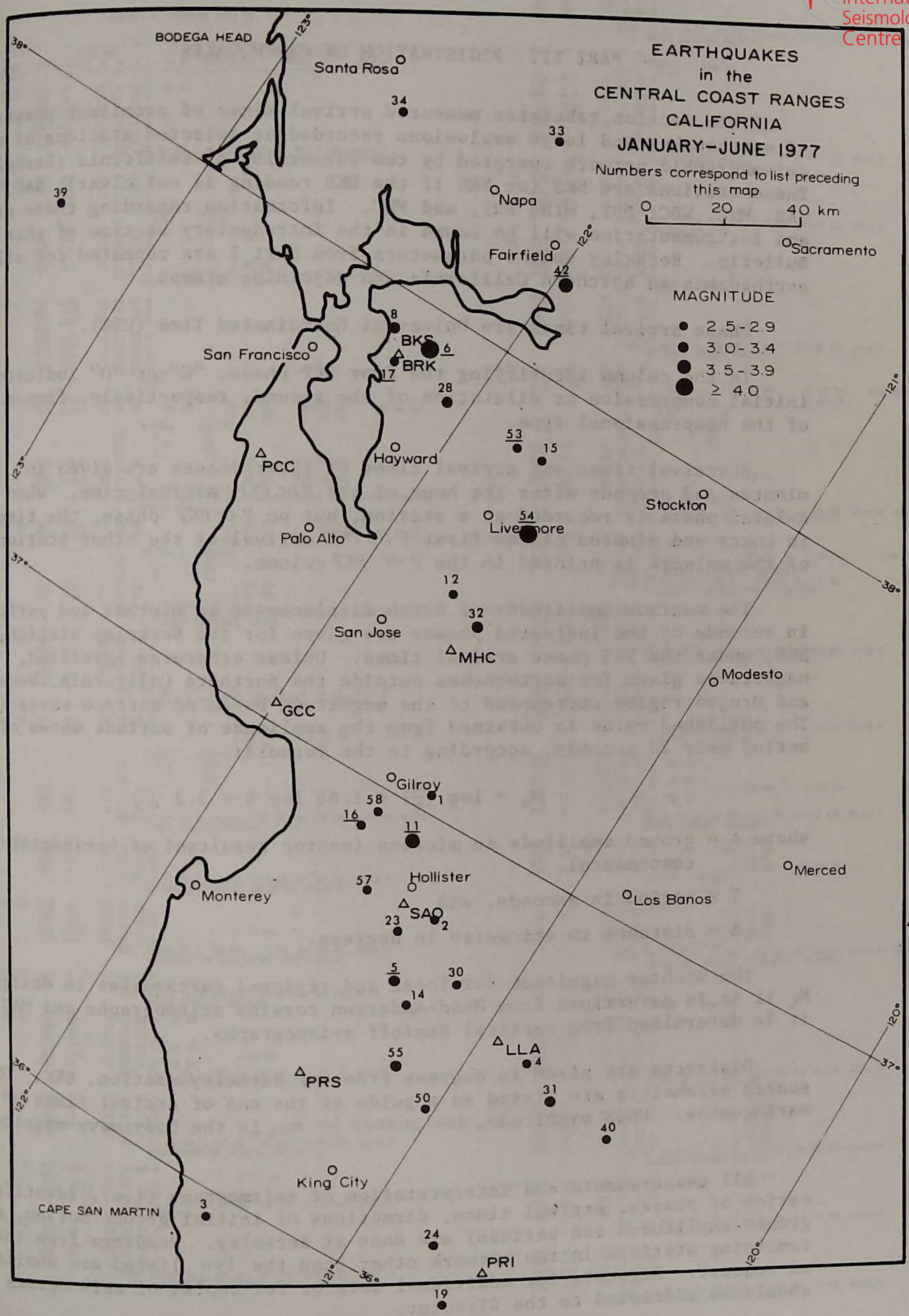
Seismographic Stations
University Of California, Berkeley

MAGNITUDE
- 3.0-3.4
- 3.5-3.9
- ≥ 40

U.C. Seismographic Stations △

Approximate Location Of Principal Faults

KILOMETERS
50 0 50 100



PART II. REGISTRATION OF EARTHQUAKES

This section tabulates measured arrival times of prominent phases of earthquakes and large explosions recorded at selected stations of the seismographic network operated by the University of California (Berkeley). These stations are BKS (or BRK if the BKS reading is not clear), SAO, MNV, JAS, MHC, WDC, PRI, MIN, FRI, and FHC. Information regarding these stations and instrumentation will be found in the introductory section of this Bulletin. Berkeley source parameters from Part I are repeated for all earthquakes in Northern California and adjoining areas.

Phase arrival times are Universal Coordinated Time (UTC).

In the column identifying the P or PKP phase, "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 and seconds after the hour of the P or PKP arrival time. When a later phase is recorded at a station, but no P or PKP phase, the time in hours and minutes of the first P or PKP arrival at the other stations of the network is printed in the P or PKP column.

The maximum amplitudes of earth displacement in microns and periods in seconds of the indicated phases are given for the Berkeley station, BKS, under the BKS phase arrival times. Unless otherwise specified, magnitudes given for earthquakes outside the Northern California, Nevada, and Oregon region correspond to the magnitude based on surface waves (M_S). The published value is obtained from the amplitude of surface waves of period near 20 seconds, according to the formula:

$$M_S = \log\left(\frac{A}{T}\right) + 1.66 \log \Delta + 3.3 \ ,$$

where A = ground amplitude in microns (vector resultant of horizontal components),

T = period in seconds, and

Δ = distance to epicenter in degrees.

The Richter magnitude for local and regional earthquakes is designated M_L if it is determined from Wood-Anderson torsion seismographs and MAG if it is determined from vertical Benioff seismographs.

Distances are given in degrees from the Berkeley station, BRK. USGS source parameters are listed as a guide at the end of arrival times of the earthquakes. USGS magnitude, designated by m_b, is the body wave magnitude.

All measurements 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 ten 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

JANUARY 01 THROUGH JUNE 30, 1977

DATE	STA	P OR PKP (Phase h m s)	S (m s)	OTHER PHASES (Phase m s Phase m s Phase m s)
JAN 01	FHC	eP 07 21 32.5	22 02	
	WDC	eP 07 21 47.5		
	MIN	e(P) 07 21 58		
	BKS	ePn 07 22 02.3	22 56	P• 22 10
	MHC	eP 07 22 12.0		
	SAO	eP 07 22 18.0		
	JAS	eP 07 22 20.7		
		BRK 07 20 51 , 40.4N, 127.2W, H= 2 KM, ML=3.8		
		OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA		
JAN 01	FHC	ePe 11 44 45.3		
	WDC	iPe 11 44 50.2		• 46 36
	MIN	ePe 11 44 53.5		
	BKS	ePe 11 44 58.3		
		MICRON PERIOD		
		PZ 0.07 0.8		
	MHC	ePe 11 45 02.3		
	JAS	iPe 11 45 04.7		• 46 51
	PRI	ePe 11 45 09.3		
	FRI	ePe 11 45 09.6		
	MNV	ePe 11 45 11.5		• 46 58
		USGS 11 33 41.6, 30.7N, 137.1E, H=476 KM, mb=5.2		
		SOUTH OF HONSHU, JAPAN		
JAN 01	FHC	ePKP 17 54 41.5		
	WDC	ePKP 17 54 42.5		
	MIN	ePKP 17 54 44.5		
	BKS	17 54		• 34 00
	MHC	ePKP 17 54 47.0		
	JAS	ePKP 17 54 48.1		
	FRI	ePKP 17 54 49.5		
	MNV	ePKP 17 54 51.0		
		USGS 17 35 54.9, 7.9S, 109.0E, H=113 KM, mb=5.7		
		JAVA		
JAN 01	WDC	ePdif 19 15 59		• 20 09 PKKP 31 28
	BKS	ePdif 19 16 10 26 45		PP 20 29 PS 29 50 SS 36 00
				• 39 10 Lr 50 40
		MICRON PERIOD		
		LZ 6 20		
		LN 1.0 20		
		LE 5 20		
	JAS	ePdif 19 16 14		• 20 20 PKKP 31 24
	FRI	19 16		• 20 15
	MNV	ePdif 19 16 19		• 20 21 PKKP 31 19
		Ms=6.1, DISTANCE=108°		
		USGS 19 01 39.6, 2.5S, 126.6E, H= 33 KM, mb=6.0, Ms=6.1		
		CERAM SEA		
JAN 01	WDC	ePdif 21 53 06		• 56 58 • 57 25
	BKS	ePdif 21 53 16		PP 57 20 PS 06 16 SS 11 39
				SSS 16 12 Lr 27 16
		MICRON PERIOD		
		LZ 8 20		
		LN 5 20		
		LE 7 20		
	JAS	ePdif 21 53 20		• 57 27
	MNV	ePdif 21 53 21		• 57 26
		Ms=6.3, DISTANCE=98°		
		USGS 21 39 41.3, 38.1N, 91.0E, H= 27 KM, mb=5.9, Ms=6.3		
		TSINGHAI PROVINCE, CHINA		
JAN 02	SAO	iPd 02 09 43.7		
	MHC	ePe 02 09 44.4		
	BKS	eP 02 09 56.3 10 11		
	PRI	eP 02 09 59.4		
	JAS	ePd 02 09 59.8		
	FRI	eP 02 10 02.5		
		BRK 02 09 37.7, 37.0N, 121.5W, H= 9 KM, ML=2.5		
		NORTH-NORTHWEST OF HOLLISTER, CALIFORNIA		
JAN 02	WDC	eP 10 14 16.0		
	BKS	10 15		• 15 37 • 21 24 • 22 46
				• 25 28 • 32 00 • 35 25
				• 45 16
		MICRON PERIOD		
		LZ 3.4 20		
		LN 1.7 20		
		LE 2.1 20		
	JAS	eP 10 14 24.0		
	MNV	eP 10 14 27.5		
	FRI	eP 10 14 28.0		
		USGS 09 55 28.4, 10.2S, 119.0E, H= 19 KM, mb=5.8, Ms=6.3		
		SUMBA ISLANDS REGION		
JAN 03	WDC	eP 01 42 06.6		
	JAS	eP 01 42 30.3		
	MNV	eP 01 42 42.0		
	FRI	eP 01 43 02.3		
		USGS 01 34 34.2, 51.4N, 179.1W, H= 33 KM, mb=4.8		
		ANDREANOF ISLANDS, ALEUTIAN ISLANDS		
JAN 03	SAO	iPe 03 23 24.1		
	MHC	ePe 03 23 33.0		
	PRI	ePe 03 23 37.5		
	BKS	e(P) 03 23 44		• 24 05
	JAS	ePd 03 23 44.6		
		BRK 03 23 21.1, 36.8N, 121.3W, H= 10 KM, ML=2.6		
		SOUTHEAST OF HOLLISTER, CALIFORNIA		
JAN 03	JAS	eP 14 04 43.5		
	MNV	eP 14 04 52.0		
		USGS 13 53 14.2, 23.6S, 180.0W, H=540 KM, mb=5.1		
		SOUTH OF FIJI ISLANDS		
JAN 04	PRI	iPd 13 52 02.2 52 09		
	SAO	iPe 13 52 05.1		
	MHC	eP 13 52 13.5		
	FRI	iPd 13 52 18.6 52 40		
	BKS	e(P) 13 52 24		• 52 58
	JAS	eP 13 52 24.9 52 50		
		BRK 13 51 49.6, 35.9N, 121.4W, H= 2 KM, ML=2.8		
		SOUTHWEST OF KING CITY, CALIFORNIA		
JAN 04	MNV	eP 15 03 05.7		
	PRI	eP 15 03 10.2		
	JAS	eP 15 03 17.5		
	MIN	eP 15 03 36.6		
	WDC	15 03		• 03 40
		USGS 14 56 46.1, 15.3N, 94.4W, H= 33 KM, mb=5.2		
		NEAR COAST OF OAXACA, MEXICO		
JAN 04	MIN	ePKP 21 04 09.8		
	BKS	21 04		• 04 17
	JAS	ePKPd 21 04 14.3		
	FRI	ePKPd 21 04 15.5		
		USGS 20 44 39.4, 7.4S, 38.5E, H= 33 KM, mb=5.2		
		TANZANIA		
JAN 05	MHC	eP 10 31 52.0		
	FRI	eP 10 31 56.7		
	JAS	ePe 10 31 57.3		
	WDC	eP 10 31 58.8		
	MNV	e(P) 10 32 05		
		USGS 10 20 29.1, 23.4S, 180.0E, H=538 KM, mb=5.0		
		SOUTH OF FIJI ISLANDS		
JAN 05	WDC	e(P) 10 49 21		
	MHC	e(P) 10 49 28		
	JAS	eP 10 49 31.7		
	FRI	eP 10 49 36.5		
	MNV	eP 10 49 38.0		
		USGS 10 37 23.8, 26.0N, 142.6E, H= 21 KM, mb=5.1, Ms=4.5		
		BONIN ISLANDS REGION		
JAN 05	BKS	eP 13 40 52.7		
		MICRON PERIOD		
		PZ 0.14 1.1		
	PRI	ePd 13 40 53.3		
	MHC	ePd 13 40 53.5		
	FHC	ePd 13 40 57.5		
	FRI	ePd 13 40 58.3		
	JAS	iPd 13 40 59.0		
	WDC	iPd 13 41 00.7		• 43 06
	MIN	eP 13 41 02.4		• 43 04
	MNV	iPd 13 41 08.2		
		USGS 13 29 48.1, 20.8S, 178.3W, H=575 KM, mb=5.2		
		FIJI ISLANDS REGION		
JAN 05	WDC	eP 14 24 28.2		
	MHC	eP 14 24 36.8		
	JAS	ePd 14 24 40.4		
	FRI	ePd 14 24 44.7		
	MNV	ePd 14 24 49.0		
		USGS 14 12 35.0, 18.7N, 145.5E, H=136 KM, mb=4.6		
		MARIANA ISLANDS		
JAN 05	FHC	eP 22 56 50.8		
	WDC	iPd 22 56 56.2		
	MIN	eP 22 56 59.9		
	BKS	eP 22 57 02.6		Lr 20 40
		MICRON PERIOD		
		PZ 0.06 0.9		
	MHC	eP 22 57 06.3		
	JAS	iPd 22 57 09.6		
	PRI	eP 22 57 13.0		
	FRI	eP 22 57 14.4		
	MNV	iPd 22 57 17.5		
		USGS 22 44 59.7, 23.4N, 143.7E, H= 33 KM, mb=5.7		
		VOLCANO ISLANDS REGION		
JAN 06	FHC	e(P) 06 24 55		
	WDC	e(P) 06 25 00		
	BKS	e(P) 06 25 01 36 19		PS 37 39 SS 41 54 SSS 46 24
				• 51 16 Lr 54 08
		MICRON PERIOD		
		PZ 0.05 1.0		
		LZ 33 20		
		LN 13 20		
		LE 29 20		
	MIN	eP 06 25 03.2		
	MHC	eP 06 25 02.9		
	PRI	e(P) 06 25 06		
	JAS	eP 06 25 07.2		PP 29 05
	FRI	eP 06 25 09.5		
	MNV	e(P) 06 25 15		
		Ms=6.8, DISTANCE=93°		
		USGS 06 11 40.7, 3.6S, 144.4E, H= 33 KM, mb=6.0, Ms=6.6		
		NEAR N. COAST OF PAPUA, NEW GUINEA		
JAN 06	MNV	iPd 07 55 12.3		
	FRI	eP 07 55 29.6 56 06		i 55 36
	JAS	eP 07 55 39.3		i 55 49 i 56 31 i 56 41
	PRI	07 55		• 55 50
		ML=3.8, NEVADA TEST SITE REGION		
		USGS 07 54 39.0, 36.8N, 115.9W, H= 5 KM		
		CALIFORNIA-NEVADA BORDER REGION		
JAN 06	WDC	iPd 08 05 35.4		
	MIN	eP 08 05 40.0		
	JAS	iPd 08 05 56.1		
	MNV	iPd 08 06 02.2		
	FRI	eP 08 06 02.3		
		USGS 07 55 57.5, 49.3N, 155.5E, H= 33 KM, mb=5.4		
		KURIL ISLANDS		
JAN 06	PRI	iPe 08 55 25.0		
	SAO	iPe 08 55 25.2		
	FRI	eP 08 55 31.1		
	MHC	eP 08 55 32.8		
	JAS	iPd 08 55 38.0		
	MNV	iPe 08 56 03.8		
		BRK 08 55 15.1, 36.6N, 120.9W, H= 9 KM, ML=2.7		
		PANOCHE, CALIFORNIA		
JAN 06	SAO	iPe 09 28 05.2		
	PRI	iPd 09 28 14.7 28 28		
	MHC	iPd 09 28 16.5		
	FRI	iPe 09 28 24.2 28 41		
	BKS	e(P) 09 28 26		• 28 29 • 28 48
	JAS	iPe 09 28 26.6 28 45		
	MNV	iP 09 28 54.8		
		BRK 09 28 01.4, 39.6N, 121.3W, H= 2 KM, ML=3.1		
		STONE CANYON, CALIFORNIA		
JAN 06	FHC	16 09		ScP 15 36
	WDC	eP 16 09 21.1		ScP 15 40
	MIN	16 09		• 15 42
	BKS	e(P) 16 09 36 15 46		Lq 18 40 Lr 20 06
		MICRON PERIOD		
		LZ 4.1 20		
		LN 2.0 20		
		LE 4.4 20		
	JAS	eP 16 09 42		ScP 15 51
	PRI	16 09		• 09 53
	FRI	e(P) 16 09 53		ScP 15 55
	MNV	eP 16 09 54.2		ScP 15 56
		Ms=5.3, DISTANCE=39°		
		USGS 16 02 07.6, 51.5N, 175.5W, H= 38 KM, mb=5.2, Ms=5.3		
		ANDREANOF ISLANDS, ALEUTIAN ISLANDS		
JAN 07	SAO	eP 17 26 54.6		
	PRI	eP 17 26 55.0		
	BKS	eP 17 26 55.6		
		MICRON PERIOD		
		PZ 0.04 1.0		
	MHC	eP 17 26 55.8		
	FRI	ePe 17 27 00.2		
	JAS	ePe 17 27 01.1		
	WDC	ePe 17 27 03.8		
	MIN	eP 17 27 05.5		
	MNV	ePe 17 27 09.9		
		USGS 17 14 47.3, 25.2S, 177.0W, H= 76 KM, mb=5.0		
		SOUTH OF FIJI ISLANDS		
JAN 08	WDC	eP 01 18 22.5		• 18 34
	MIN	eP 01 18 26.2		• 18 38
	MHC	eP 01 18 31.5		• 18 43
	JAS	e(P) 01 18 35		• 18 46
	FRI	eP 01 18 39.8		• 18 51
	MNV	eP 01 18 43.8		• 18 55
		USGS 01 06 31.1, 20.1N, 147.5E, H= 47 KM, mb=5.2		
		MARIANA ISLANDS REGION		
JAN 08	BKS	iPd 06 55 53.0		• 55 55
	MHC	iP 06 56 03.7		
	SAO	eP 06 56 12.8		
	JAS	e(P) 06 56 14		
	FRI	e(P) 06 56 26		
		BRK 06 55 50.6, 37.9N, 122.2W, H= 12 KM, ML=2.6		
		BRIONES HILLS, CALIFORNIA		
JAN 08	BKS	iPd 07 17 35.7 17 37		
	MHC	ePe 07 17 47.0		
	SAO	ePe 07 17 55.5		
	JAS	ePe 07 17 57.3		
	FRI	e(P) 07 18 08		
		BRK 07 17 33.9, 37.9N, 122.2W, H= 9 KM, ML=3.0		
		BRIONES HILLS, CALIFORNIA		

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                                                PPS 04 38      Lq 14 40      Lr 18 14
JAN 08  BKS  e(P)   07 53 03
                          MICRON    PERIOD
                     PZ     0.05       1.4
                     LZ      4.5        20
                     LN        5        20
                     LE        5        20
          FHC  eP   07 53 04.0
          MHC  ePe  07 53 04.5
          FRI  eP   07 53 06.5                  • 53 20      PP 56 33
          WDC  ePe  07 53 06.6
          MIN  eP   07 53 09.0                  • 53 23      PP 56 58
          JAS  ePe  07 53 09.6                  • 53 24      PP 56 40
          FRI  ePe  07 53 10.7                  • 53 33      PP 56 52
          MNV  eP   07 53 19.0
                    Mc=6.0, DISTANCE=83°
                    USGS 07 40 41.9, 11.3S, 166.1E, H= 42 KM, mb=5.5, Ms=5.6
                         SANTA CRUZ ISLANDS

JAN 08  BKS  iPd    08 58 15.7  58 18
          MHC  iPe  08 58 27.1
          SAO  iPe  08 58 35.4
          JAS  ePe  08 58 36.8
          MIN  e(P) 08 58 42
          FRI  iPe  08 58 48.4
          PRI  eP   08 58 48.5
          WDC  e(P) 08 58 54
          MNV  e(P) 08 59 04
                    BRK  08 58 13.9, 37.9N, 122.2W, H= 10 KM, ML=4.0
                         BRIONES HILLS, CALIFORNIA

JAN 08  BKS  iPd    09 38 09.4  38 11
          MHC  iPe  09 38 20.8
          SAO  ePe  09 38 28.9
          JAS  ePe  09 38 30.4
          FRI  iPe  09 38 42.1
          PRI  e(P) 09 38 42
          MIN  e(P) 09 38 46
          WDC  ePe  09 38 47.7
          MNV  e(P) 09 38 58
          FHC  e(P) 09 38 59
                    BRK  09 38 07.5, 37.9N, 122.2W, H=  9 KM, ML=4.3
                         BRIONES HILLS, CALIFORNIA

JAN 08  BKS  iP     09 39 37.0
                    BRK  09 39 34  , 37.9N, 122.2W, H=  9 KM, ML=2.8
                         BRIONES HILLS, CALIFORNIA

JAN 08  BKS  iP     09 39 42.8  39 44
          MHC  iPe  09 39 54.1
          SAO  eP   09 40 02.2
          JAS  eP   09 40 03.7
                    BRK  09 39 41  , 37.9N, 122.2W, H=  9 KM, ML=3.8
                         BRIONES HILLS, CALIFORNIA

JAN 08  BKS  iP     09 41 04.7  41 06
                    BRK  09 41 02.7, 37.9N, 122.2W, H=  9 KM, ML=2.7
                         BRIONES HILLS, CALIFORNIA

JAN 08  BKS  iPd    09 44 00.8  44 02
          MHC  ePe  09 44 12.0
          SAO  e(P) 09 44 21
          JAS  e(P) 09 44 22
                    BRK  09 43 59  , 37.9N, 122.2W, H=  9 KM, ML=3.0
                         BRIONES HILLS, CALIFORNIA

JAN 08  BKS  iP     09 45 38.3  45 40
          MHC  e(P) 09 45 50
                    BRK  09 45 36  , 37.9N, 122.2W, H=  9 KM, ML=2.5
                         BRIONES HILLS, CALIFORNIA

JAN 08  BKS  iPd    09 51 57.1  51 59
          MHC  ePe  09 52 08.9
          SAO  eP   09 52 17.2
          JAS  ePe  09 52 18.4
          FRI  e(P) 09 52 30
          MIN  e(P) 09 52 35
                    BRK  09 51 55.6, 37.9N, 122.2W, H=  8 KM, ML=3.0
                         BRIONES HILLS, CALIFORNIA

JAN 08  BKS  iPd    09 54 58.6  55 00
          MHC  iPd  09 55 10.2
          SAO  e(P) 09 55 19
          JAS  e(P) 09 55 20
                    BRK  09 54 57  , 37.9N, 122.2W, H=  8 KM, ML=2.6
                         BRIONES HILLS, CALIFORNIA

JAN 08  WDC  ePe    12 37 44.6
          MHC  eP   12 37 46.8
          MIN  e(P) 12 37 47
          PRI  eP   12 37 50.5
          JAS  eP   12 37 50.7
          FRI  eP   12 37 53.0
          MNV  ePe  12 37 59.6
                    USGS 12 24 45.4,  5.6S, 151.0E, H= 61 KM, mb=5.3
                         NEW BRITAIN REGION

JAN 08  WDC  eP     23 30 20.8
          MIN  eP   23 30 24.5
          BKS  eP   23 30 28.0
                          MICRON    PERIOD
                     PZ     0.02       0.8
          MHC  eP   23 30 31.4
          JAS  iPd  23 30 34.6
          FRI  eP   23 30 39.5
          MNV  eP   23 30 42.3
                    USGS 23 18 25.3, 25.3N, 141.6E, H= 54 KM, mb=4.9
                         VOLCANO ISLANDS REGION

JAN 09  BKS  iPd    05 34 18.5  34 20
          MHC  eP   05 34 29.7
          SAO  iPd  05 34 38.3
          JAS  iPd  05 34 40.3  34 58
          FRI  eP   05 34 51.1
                    BRK  05 34 16.7, 37.9N, 122.2W, H=  9 KM, ML=3.2
                         BRIONES HILLS, CALIFORNIA

JAN 09  BKS  iP     05 46 42.1  46 44
          MHC  iPd  05 46 53.7
          SAO  eP   05 47 01.9
          JAS  iPd  05 47 03.9  47 22
                    BRK  05 46 40.4, 37.9N, 122.2W, H=  8 KM, ML=2.5
                         BRIONES HILLS, CALIFORNIA

JAN 09  MIN  iPe    23 24 56.0
          WDC  iPe  23 25 02.6
          BKS  ePe  23 25 09.0  25 30
          JAS  ePe  23 25 10.2
          MHC  eP   23 25 16.0
          SAO  e(P) 23 25 24
          MNV  eP   23 25 26
          FRI  ePe  23 25 26.9
                    BRK  23 24 39.5, 39.5N, 121.6W, H=  2 KM, ML=3.4
                         SOUTHWEST OF OROVILLE, CALIFORNIA

JAN 10  BKS  iPd    05 08 09.0  08 10
          MHC  eP   05 08 22.8
          SAO  iP   05 08 30.5
                    BRK  05 08 07.8, 37.9N, 122.3W, H=  4 KM, ML=3.0
                         EL CERRITO, CALIFORNIA

JAN 10  SAO  eP     09 42 49.8
          BKS  eP   09 42 50.7
                          MICRON    PERIOD
                     PZ     0.12       0.8
          PRI  eP   09 42 51.1
          MHC  iPe  09 42 51.5
          FHC  eP   09 42 54.8
          FRI  eP   09 42 56.2
          JAS  iPe  09 42 56.7
          WDC  iPe  09 42 58.4
          MIN  eP   09 42 59.8                  • 45 12
          MNV  iPe  09 43 05.6
                    USGS 09 31 49.6, 20.7S, 179.2W, H=653 KM, mb=5.5
                         FIJI ISLANDS REGION

JAN 10  BKS  e(P)   23 30 56
          SAO  e(P) 23 30 56
          MHC  eP   23 30 57.7
          PRI  eP   23 30 58.5
          WDC  ePd  23 31 02.2
          JAS  ePd  23 31 02.5
          FRI  ePd  23 31 02.7
          MIN  eP   23 31 04.0
          MNV  ePd  23 31 10.8
                    USGS 23 18 07.0, 21.5S, 168.7E, H= 16 KM, mb=5.2
                         LOYALTY ISLANDS

JAN 11  PRI  eP     07 14 52.1
          MNV  eP   07 14 54.0
          JAS  eP   07 14 58.2                  • 15 08
          WDC  eP   07 15 11.0                  • 15 20
                    USGS 07 02 34.8, 31.7S,  71.4W, H= 35 KM, mb=5.4
                         NEAR COAST OF CENTRAL CHILE

JAN 12  PRI  eP     13 05 55.0
          MNV  eP   13 05 56.5
          JAS  eP   13 06 00.5
          MHC  eP   13 06 02.0
          WDC  eP   13 06 14.0
          FHC  eP   13 06 20.0
                    USGS 12 53 37.1, 33.0S,  70.2W, H=103 KM, mb=4.8
                         CHILE-ARGENTINA BORDER REGION

JAN 12  FHC         23 53                     • 53 56
          WDC  iPKPe  23 53 55.6
          MIN  ePKP   23 53 56.7
          BKS         23 54                     • 54 01
          MHC  ePKP   23 54 01.2
          JAS  ePKP   23 54 01.5                • 08 27
          FRI  ePKP   23 54 03.5
          MNV  ePKP   23 54 04.3
          PRI  ePKP   23 54 04.3
                    USGS 23 35 19.1,  1.6N,  99.9E, H=178 KM, mb=5.6
                         NORTHERN SUMATRA

JAN 13  PRI  eP     07 19 28.7
          FRI  eP   07 19 33.3  19 58
          SAO  iPe  07 19 41.0
          JAS  iPe  07 19 50.0
          MNV  eP   07 19 57.0
                    ML=3.7, PORT TEJON AREA, CALIFORNIA
                    USGS 07 19 00.8, 35.0N, 119.0W, H=  8 KM
                         CENTRAL CALIFORNIA

JAN 13  MNV  eP     14 14 53.5
          FRI       14 14                     • 14 54
          JAS  iPe  14 14 54.6
          WDC  eP   14 15 08.4
                    USGS 14 02 30.4, 41.0S,  90.9W, H= 33 KM, mb=5.0
                         SOUTHERN PACIFIC OCEAN

JAN 13  WDC  iPe    20 10 03.9                  i 10 17
          MIN  iPd  20 10 08.5
          FHC  iPe  20 10 18.5
          BKS  e(P) 20 10 45
          JAS  ePn  20 10 46.5  11 26      P• 10 49      Ps 10 57
          MHC  e(P) 20 10 53
          MNV  eP   20 10 56.0
                    BRK  20 09 53.4, 41.0N, 122.1W, H=  2 KM, ML=3.7
                         MOUNT SHASTA AREA, CALIFORNIA

JAN 14  SAO  eP     18 09 52.9
          BKS  iP   18 09 54.0
                          MICRON    PERIOD
                     PZ     0.16       1.0
          PRI  ePd  18 09 54.5
          MHC  ePd  18 09 54.6
          FHC  ePd  18 09 58.4
          FRI  ePd  18 09 59.7
          JAS  iPd  18 10 00.2                • 11 20
          WDC  iPd  18 10 01.9                • 11 22
          MIN  eP   18 10 03.7
          MNV  iPd  18 10 09.7
                    USGS 17 58 35.2, 19.8S, 177.5W, H=350 KM, mb=5.2
                         FIJI ISLANDS REGION

JAN 15  PRI         01 47                     • 47 25
          FRI       01 47                     • 47 26
          MHC       01 47                     • 47 34
          JAS  eP   01 47 29.0                • 47 34
          MNV  eP   01 47 29.3                • 47 34
          WDC  eP   01 47 46.1                • 47 55
                    USGS 01 35 50.8, 35.5W, 102.7W, H= 33 KM, mb=4.9, Ms=4.8
                         SOUTHERN PACIFIC OCEAN

JAN 15  WDC  eP     21 06 25
          JAS  eP   21 06 52
                    USGS 21 00 43.2, 62.8N, 150.4W, H=100 KM, mb=4.3
                         CENTRAL ALASKA

JAN 15  MHC  e(P)   21 22 07
          PRI  e(P) 21 22 08
          WDC  eP   21 22 10.6
          JAS  eP   21 22 12.0
                    USGS 21 09 50.2, 14.3S, 170.5E, H= 33 KM, mb=5.0
                         NEW HEBRIDES ISLANDS REGION

JAN 16  FHC  ePe    03 10 34.7  11 06
          WDC  eP   03 10 50.5
          MIN  eP   03 11 01.1
          BKS  e(P) 03 11 07
          MHC  ePd  03 11 16.4
          SAO  eP   03 11 23
          JAS  eP   03 11 25
                    BRK  03 09 51  , 40.7N, 127.6W, H=  2 KM, ML=3.5
                         OFF THE COAST WEST OF EUREKA, CALIFORNIA

JAN 16  FRI  eP     05 10 31.3
          MHC  eP   05 10 36.1
          JAS  eP   05 10 39.2
          MNV  eP   05 10 41.2
          BKS  e(P) 05 10 44
          WDC  eP   05 10 57.0
                    USGS 05 00 26.8, 23.1S, 114.3W, H= 33 KM, mb=4.7
                         EASTER ISLAND REGION

JAN 16  MNV  ePd    16 47 47.5                • 50 22      PcP 50 40      ScP 54 06
          FRI       16 47                   PcP 50 40
          PRI  ePd  16 47 49.4              PcP 50 42
          JAS  ePd  16 47 56.5                • 50 26      PcP 50 43      ScP 54 10
          MHC  eP   16 48 01.0
          WDC  e(P) 16 48 18                  • 50 33      PcP 50 50
                    USGS 16 41 06.6, 13.9N,  91.0W, H=100 KM, mb=4.7
                         NEAR COAST OF GUATEMALA
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JAN 16  FRI  iPe    22 28 51.6  29 12
        MNV  iPd    22 28 59.1
        FRI  ePe    22 29 03.1
        JAS  ePd    22 29 07.4  29 39
        SAO  ePd    22 29 11.6
        BKS  e(P)   22 29 26
                    BRK  22 28 23.8, 36.4N, 117.8W, H= 12 KM, ML=4.1
                         OWENS LAKE AREA, CALIFORNIA

JAN 17  PRI  iPd    00 39 53.8
        FRI  ePe    00 39 58.0
        SAO  iPe    00 40 04.9
        JAS  iPd    00 40 14.6
        MNV  e(P)   00 40 28
                    MAG=3.4, EAST OF SANTA BARBARA, CALIFORNIA
                    USGS 00 39 15.4, 34.4N, 118.7W, H= 14 KM
                         SOUTHERN CALIFORNIA

JAN 17  FHC  eP     05 05 34.4
        WDC  ePd    05 05 38.4
        MIN  e(P)   05 05 42
        MHC  eP     05 05 47.9
        JAS  ePd    05 05 50.5
        FRI  eP     05 05 54.7
                    USGS 04 53 41.4, 18.2N, 146.4E, H= 85 KM, mb=4.5
                         MARIANA ISLANDS

JAN 17  FHC  eP     06 35 19.7
        WDC  eP     06 35 25.0
        MIN  e(P)   06 35 29
        BKS  ePe    06 35 33.0
                          MICRON    PERIOD
                    PZ      0.08      1.4
                    LZ      4.3       20
                    LN      4.1       20
                    LE      6         20
        MHC  eP     06 35 36.0
        JAS  ePd    06 35 39.3
        PRI  eP     06 35 43.3
        FRI  eP     06 35 44.0
                    USGS 06 23 36.1, 26.7N, 142.6E, H= 33 KM, mb=5.6, Ms=5.6
                         BONIN ISLANDS REGION

JAN 17  PRI  eP     08 53 31.5
        BKS  eP     08 53 31.7
                          MICRON    PERIOD
                    PZ      0.02      0.8
        MHC  eP     08 53 31.9
        FRI  eP     08 53 36.1
        JAS  eP     08 53 36.7
        WDC  eP     08 53 38.9
        MIN  eP     08 53 40.5
        MNV  eP     08 53 44.8
                    USGS 08 41 53.3, 26.2S, 179.2E, H=509 KM, mb=4.7
                         SOUTH OF FIJI ISLANDS

JAN 17  FRI  eP     11 14 50
        PRI  eP     11 14 51
        MNV  eP     11 14 59
        JAS  eP     11 15 06
        MHC         11 15                 • 15 10
        BKS         11 15                 • 17 30
                    USGS 11 13 19.4, 32.5N, 115.2W, H= 25 KM, mb=4.6
                         CALIFORNIA-MEXICO BORDER REGION

JAN 17  MHC  eP     19 16 09.2
        PRI  eP     19 16 09.4
        BKS         19 16       25 45       • 37 58
                          MICRON    PERIOD
                    LZ      7         20
                    LN      6         20
                    LE      6         20
        FRI  eP     19 16 15.9
        JAS  eP     19 16 16.0
        WDC  eP     19 16 17.0
        MNV  eP     19 16 26.4
                    USGS 19 04 37.4, 14.9S, 177.2W, H= 36 KM, mb=5.3, Ms=5.9
                         FIJI ISLANDS REGION

JAN 17  FRI  eP     21 39 08.6
        PRI  eP     21 39 09.8          PcP 39 21     pP 40 09 PKPPKP 06 24
        MNV  eP     21 39 10.4
        JAS  eP     21 39 15.1           pP 40 01     pPP 43 12 PKPPKP 06 21
        SAO         21 39                • 39 16
        MHC  eP     21 39 17.5          PcP 39 28      i 40 20
        BKS  eP     21 39 20.2  49 06     i 39 31     pP 40 20      SS 54 43
                                          Lq 00 59     Lr 06 22
                          MICRON    PERIOD
                    PZ      2.4       1.7
                    LZ      7         20
                    LN      6         20
                    LE      9         20
        MIN  eP     21 39 26.5
        WDC  eP     21 39 29.3          PcP 39 37 PKPPKP 06 14 SKPPKP 09 18
        FHC  eP     21 39 36.5
                    Ms=6.2, DISTANCE=81°
                    USGS 21 27 12.6, 24.8S,  68.7W, H= 33 KM, mb=6.3, Ms=6.1
                         CHILE-ARGENTINA BORDER REGION

JAN 18  WDC  eP     17 51 53.1
        MIN  eP     17 51 56.7
        MHC  eP     17 52 02.6
        JAS  eP     17 52 06.2
        PRI         17 52                 • 52 10
        FRI  ePd    17 52 10.7
        MNV  eP     17 52 14.2
                    USGS 17 40 01.9, 21.7N, 144.4E, H=104 KM, mb=4.7
                         MARIANA ISLANDS REGION

JAN 18  SAO  iPd    21 05 50.2
        MHC  iPd    21 05 55.5
        PRI  ePe    21 06 05.7
        BKS  ePe    21 06 06.5  06 23
        JAS  ePe    21 06 09.8
        FRI  iPe    21 06 11.0
                    BRK  21 05 46.4, 36.9N, 121.5W, H=  8 KM, ML=3.5
                         NORTHWEST OF BOLLISTER, CALIFORNIA

JAN 19  FHC  eP     00 59 38
        WDC  ePe    00 59 40.7           PP 03 40
        MIN  ePe    00 59 42.9
        BKS  e(P)   00 59 52                 • 28 30
                          MICRON    PERIOD
                    LZ      3.6       20
                    LN      3.1       20
                    LE      3.6       20
        JAS  ePe    00 59 55.0           PP 03 54   PKKP 16 31
        MHC  eP     00 59 55.5
        SAO  eP     00 59 56.0
        MNV  ePe    00 59 56.7
        FRI  ePe    00 59 59.7
        PRI  eP     01 00 02.4           PP 05 00
                    USGS 00 46 18.3, 37.0N,  95.7E, H= 33 KM, mb=5.9, Ms=5.8
                         TSINGHAI PROVINCE, CHINA

JAN 19  SAO  iPd    02 12 23.6
        MHC  iPd    02 12 28.8
        BKS  iPd    02 12 39.7  12 56     • 12 40
        PRI  iPe    02 12 39.7
        JAS  iPe    02 12 42.9
        FRI  iPe    02 12 44.2
        MNV  eP     02 13 09.0
                    BRK  02 12 19.8, 36.9N, 121.5W, H=  9 KM, ML=3.9
                         NORTHWEST OF BOLLISTER, CALIFORNIA

JAN 19  PRI  eP     09 43 38.2
        FRI  eP     09 43 40.5
        MNV  eP     09 43 46.7
        JAS  eP     09 43 55.0
        BKS  e(P)   09 44 10
                          MICRON    PERIOD
                    LN      1.5       20
                    LE      1.9       20
        MIN         09 44
        WDC  eP     09 44 25.0                • 44 24
        FHC         09 44                     • 44 45
                    USGS 09 39 58.5, 24.2N, 108.8W, H= 33 KM, mb=4.3
                         GULF OF CALIFORNIA

JAN 19  SAO  iPd    14 03 40.2
        MHC  iPd    14 03 45.6
        BKS  eP     14 03 56.5                • 04 13
        PRI  ePd    14 03 56.7
        JAS  ePe    14 03 59.7
        FRI  eP     14 04 01.1  04 20
                    BRK  14 03 36.5, 36.9N, 121.5W, H= 12 KM, ML=2.5
                         NORTHWEST OF HOLLISTER, CALIFORNIA

JAN 20  MHC  iPe    02 11 17.4  11 20
        BKS  ePe    02 11 25.1                • 11 35
        SAO  iPd    02 11 28.1
        JAS  iPd    02 11 36.0  11 48          i 11 51
        FRI  eP     02 11 43.2
                    BRK  02 11 14.0, 37.4N, 121.7W, H= 13 KM, ML=2.5
                         SOUTH OF LIVERMORE, CALIFORNIA

JAN 20  MHC  eP     12 45 21.8
        BKS  e(P)   12 45 22
        FRI  eP     12 45 26.4
        JAS  eP     12 45 27.1
        WDC  eP     12 45 29.0
                    USGS 12 33 59.2, 23.5S, 179.9W, H=546 KM, mb=5.0
                         SOUTH OF FIJI ISLANDS

JAN 20  FHC  iPe    21 28 10.0  28 18
        WDC  iPe    21 28 12.3  28 22
        MIN  iPe    21 28 22.6  28 41
                    BRK  21 28 00.0, 40.6N, 123.4W, H=  5 KM, ML=3.0
                         SOUTHEAST OF EUREKA, CALIFORNIA

JAN 21  WDC  eP     02 33 15.7
        MIN  eP     02 33 18.4
        BKS         02 33                     • 33 23
        MHC  eP     02 33 27
        JAS  eP     02 33 28.6
        FRI  eP     02 33 33.0
        PRI  eP     02 33 33.2
        MNV  eP     02 33 34
                    USGS 02 20 06.3, 23.8N, 121.9E, H= 36 KM, mb=5.3, Ms=5.2
                         TAIWAN

JAN 21  SAO  ePe    06 21 56.6
        BKS  ePe    06 21 57.4  30 57          • 22 02      • 22 10      pP 24 02
                                               • 25 11      • 29 14      SP 31 43
                                               • 34 53      • 35 12      SS 36 30
                                               • 42 40      • 55 00
                          MICRON    PERIOD
                    PZ      0.25      1.1
        PRI  iPe    06 21 58.1                pP 24 02
        MHC  ePe    06 21 58.1                pP 24 03
        FHC  iPe    06 22 01.2
        FRI  ePe    06 22 03.2                pP 24 08
        JAS  iPe    06 22 03.6                pP 24 09
        WDC  iPe    06 22 04.7  31 25          pP 24 10
        MIN  ePe    06 22 06.4                pP 24 12
        MNV  e(P)   06 22 13    31 27          pP 24 19
                    USGS 06 11 05.6, 18.0S, 178.4W, H=604 KM, mb=5.8
                         FIJI ISLANDS REGION

JAN 21  FHC  iPe    17 52 39.5
        WDC  iPe    17 52 55.4
        MIN  eP     17 53 05.5
                    BRK  17 52 03.2, 41.9N, 126.7W, H= 10 KM, ML=3.6
                         OFF THE COAST NORTHWEST OF EUREKA, CALIFORNIA

JAN 21  BKS         20 21                     • 21 42
        MHC  eP     20 21 36.9
        PRI         20 21                     • 21 52
        WDC  eP     20 21 39.3
        JAS  iP     20 21 41.5
        FRI  eP     20 21 43.0
                    USGS 20 08 58.1, 10.7S, 161.3E, H= 51 KM, mb=5.1, Ms=4.8
                         SOLOMON ISLANDS

JAN 22  SAO  eP     05 41 49.6
        PRI  ePd    05 41 51.1
        BKS  eP     05 41 51.2
                          MICRON    PERIOD
                    PZ      0.05      0.8
        MHC  eP     05 41 51.6
        FRI  eP     05 41 57.0
        JAS  eP     05 41 57.7
        WDC  ePd    05 41 59.8
        MIN  eP     05 42 01.8
                    USGS 05 30 30.9, 15.8S, 173.1W, H= 33 KM, mb=5.3
                         TONGA ISLANDS

JAN 22  SAO  iPe    12 18 31.5
        PRI  eP     12 18 38.8
        MHC  ePd    12 18 42.8
        FRI  ePe    12 18 49.3
        JAS  ePe    12 18 53.2
        BKS  eP     12 18 55.5
                    BRK  12 18 26.6, 36.6N, 121.2W, H=  3 KM, ML=2.6
                         BEAR VALLEY, CALIFORNIA

JAN 22  BKS  iPe    15 21 25.1  21 31
        MHC  iPd    15 21 27.0
        JAS  iPd    15 21 36.4  21 50
        SAO  eP     15 21 37.5
                    BRK  15 21 17.4, 37.8N, 121.8W, H= 13 KM, ML=2.8
                         NORTH OF LIVERMORE, CALIFORNIA

JAN 23  BKS         01 50                     • 50 51      • 02 17
                          MICRON    PERIOD
                    LZ      10        20
                    LN      3.6       20
                    LE      6         20
        MHC  e(P)   01 50 51                  • 50 07
        PRI  e(P)   01 50 54                  • 51 10
        WDC  eP     01 50 55.3                • 50 11
        FRI  e(P)   01 50 56                  • 51 13
        JAS  eP     01 50 56.5                • 51 13
                    USGS 01 38 23.5, 13.4S, 166.5E, H= 39 KM, mb=5.5, Ms=5.6
                         NEW HEBRIDES ISLANDS

JAN 23  FHC  eP     05 50 28.6                pP 51 27
        WDC  eP     05 50 33.8                pP 51 30
        MIN  eP     05 50 37.4                pP 51 32
        BKS  eP     05 50 39.3                pP 51 35
        MHC  eP     05 50 42.3                pP 51 39
        JAS  eP     05 50 46.0                pP 51 42
        PRI  eP     05 50 48.0                pP 51 43
        FRI  eP     05 50 50.0
                    USGS 05 38 47.6, 18.0N, 145.5E, H=219 KM, mb=5.1
                         MARIANA ISLANDS

JAN 23  SAO  iP     13 18 54.2
        MHC  iPd    13 18 59.3  19 06          • 19 26
        BKS  ePd    13 19 10.0
        FRI  ePe    13 19 11.0
        JAS  ePe    13 19 14.3
        FRI  e(P)   13 19 16
                    BRK  13 18 50.3, 36.9N, 121.6W, H=  7 KM, ML=2.5
                         NORTHWEST OF BOLLISTER, CALIFORNIA
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JAN 23  WDC  eP     15 06 02.5
        MIN  eP     15 06 06.0                    e 06 10
        BKS         15 06
        MHC  eP     15 06 13.4
        JAS  ePd    15 06 16.5
        PRI  eP     15 06 20.5
        FRI  eP     15 06 21.5
                    USGS 14 54 14.9, 26.8N, 142.9E, H= 33 KM, mb=5.0, Ms=4.4
                         BONIN ISLANDS REGION

JAN 23  BKS  iPe    17 45 52.1  45 53
        MHC  ePd    17 46 04.1  46 14
        SAO  iPd    17 46 11.9
        JAS  iPe    17 46 14.6
                    BRK  17 45 50.5, 37.9N, 122.3W, H=  8 KM, ML=2.7
                         BERKELEY, CALIFORNIA

JAN 23  JAS  eP     22 01 38.0
        MIN  eP     22 01 58.0
        WDC  eP     22 02 03.0
                    USGS 21 54 52.1,  7.4N, 102.8W, H= 33 KM, mb=4.4
                         OFF COAST OF MEXICO

JAN 24  JAS  eP     03 40 10.0
        WDC  eP     03 40 34.5

JAN 24  FHC  ePe    06 21 25.3
        WDC  ePe    06 21 29.8
        JAS  ePe    06 21 49.3
                    USGS 06 11 21.7, 45.5N, 151.1E, H= 33 KM, mb=5.1
                         KURIL ISLANDS

JAN 24  PRI  eP     07 48 18.8
        FRI  eP     07 48 21.0
        JAS  ePe    07 48 26.0                    e 52 36
        MHC  eP     07 48 26.3
        BKS         07 48                         e 48 45      e 54 00
        MIN  eP     07 49 10.2
        WDC  ePe    07 49 17.0
        FHC  ePe    07 49 30.8
                    USGS 07 45 37.9, 27.9N, 111.4W, H= 33 KM, mb=4.8
                         GULF OF CALIFORNIA

JAN 24  WDC  eP     08 44 48.1
        MIN  eP     08 44 53
        JAS  eP     08 45 08.0
                    USGS 08 34 36.8, 45.3N, 150.3E, H= 33 KM, mb=4.8
                         KURIL ISLANDS

JAN 24  BKS  eP     10 41 54.4
                              MICRON     PERIOD
                    PZ          0.02        0.9
        MHC  eP     10 41 54.6
        PRI  eP     10 41 56.2
        WDC  eP     10 41 57.7
        JAS  eP     10 41 59.9
        MIN  eP     10 42 00.0
        FRI  eP     10 42 00.7
                    USGS 10 29 29.7, 13.5S, 168.3E, H= 21 KM, mb=5.3, Ms=4.9
                         NEW HEBRIDES ISLANDS

JAN 24  BKS  iPe    15 55 48.0  55 49
        MHC  iPd    15 56 00.0
        SAO  iPd    15 56 07.8
        JAS  iPe    15 56 10.6  56 30
        FRI  e(P)   15 56 21
                    BRK  15 55 46.5, 37.9N, 122.2W, H=  8 KM, ML=2.8
                         BERKELEY, CALIFORNIA

JAN 24  PRI  iPe    18 05 25.3
        SAO  iPe    18 05 39.0
        FRI  iPd    18 05 39.2
        MHC  ePd    18 05 47.3
        JAS  eP     18 05 51.2
        BKS  e(P)   18 05 55
                    BRK  18 05 16.6, 35.8N, 120.4W, H=  9 KM, ML=3.7
                         PARKFIELD, CALIFORNIA

JAN 24  BKS  eP     19 55 22.5
                              MICRON     PERIOD
                    PZ          0.02        0.8
        PRI  eP     19 55 22.6
        MHC  eP     19 55 22.9
        FRI  eP     19 55 27.2
        JAS  iPd    19 55 27.8
        WDC  eP     19 55 29.4
                    USGS 19 43 47.3, 23.8S, 178.8E, H=464 KM, mb=4.9
                         SOUTH OF FIJI ISLANDS

JAN 25  FRI  eP     01 03 22.6
        PRI  eP     01 03 23.8
        JAS  eP     01 03 29.2
        MHC  eP     01 03 30.6
        BKS         01 03
        WDC  eP     01 03 42.3                    e 03 39
                    USGS 00 50 47.9, 33.6S,  68.4W, H= 17 KM, mb=5.3, Ms=5.3
                         MENDOZA PROVINCE, ARGENTINA

JAN 25  BKS  eP     08 27 17.0                    e 28 23
                              MICRON     PERIOD
                    PZ          0.10        1.5
        FHC  eP     08 27 17.0
        MHC  eP     08 27 18.5                    e 28 23
        PRI  eP     08 27 20.0                    e 28 24
        WDC  eP     08 27 21.6                    e 28 27
        JAS  iP     08 27 23.5                    e 28 26
        MIN  eP     08 27 23.6                    e 28 30      e 30 46
        FRI  eP     08 27 24.3                    e 28 31
                    USGS 08 15 13.6, 15.9S, 168.2E, H=266 KM, mb=5.6
                         NEW HEBRIDES ISLANDS

JAN 25  FHC  eP     10 43 31.9
        BKS  eP     10 43 33.0                    e 06 00      e 09 00
                              MICRON     PERIOD
                    PZ          0.16        1.2
        MHC  eP     10 43 34.7
        WDC  ePd    10 43 36.2                    e 43 50
        PRI  eP     10 43 36.8
        MIN  eP     10 43 38.9
        JAS  ePd    10 43 39.4
        FRI  eP     10 43 41.0                    i 43 55      e 47 04
                                                  e 43 56
                    USGS 10 31 04.9, 10.9S, 164.7E, H= 25 KM, mb=5.7, Ms=5.2
                         SANTA CRUZ ISLANDS REGION

JAN 26  MNV         15 26
        JAS  eP     15 26 43.8                    e 26 36
        WDC  eP     15 27 01.5
        FHC  eP     15 27 09.5
                    USGS 15 16 09.4, 12.2S,  78.0W, H= 14 KM, mb=5.1
                         OFF COAST OF PERU

JAN 27  WDC  eP     14 12 41.4
        BKS         14 12
        JAS  eP     14 12 46.4                    e 12 53
        PRI  e(P)   14 12 47
        FRI  eP     14 12 48
        MNV  eP     14 12 55.3
                    USGS 13 59 45.0,  6.5S, 152.8E, H= 58 KM, mb=5.7
                         NEW BRITAIN REGION

JAN 28  MNV  eP     00 58 23.5
        MIN  eP     00 58 28.0
        JAS  eP     00 58 35.8
        FHC  e(P)   00 58 36
        FRI  eP     00 58 36.5
        PRI  e(P)   00 58 46
                    USGS 00 48 12.6, 50.3N,  29.3W, H= 33 KM, mb=4.7
                         NORTH ATLANTIC RIDGE

JAN 28  MNV         01 23 00.5
        MIN  eP     01 23 03.7
        WDC  e(P)   01 23 06
        FHC         01 23 12.0
        JAS  ePe    01 23 12.0
        FRI  eP     01 23 12.5
        MHC  eP     01 23 19.0
                    USGS 01 12 47.9, 50.2N,  29.3W, H= 33 KM, mb=4.7, Ms=4.6
                         NORTH ATLANTIC RIDGE

JAN 28  FHC  eP     04 36 21.5
        WDC  eP     04 36 26.8
        MIN  eP     04 36 30.0
        BKS  eP     04 36 35.0
                              MICRON     PERIOD
                    PZ          0.03        0.7
        MHC  eP     04 36 38.4
        JAS  eP     04 36 41.1
        PRI  eP     04 36 45.5
        FRI  eP     04 36 46.1
        MNV  eP     04 36 48.2
                    USGS 04 25 14.8, 29.8N, 138.8E, H=409 KM, mb=4.9
                         SOUTH OF HONSHU, JAPAN

JAN 28  PRI  iPd    07 37 26.1
        SAO  iPd    07 37 41.5  37 56
        FRI  eP     07 37 44.6
        MHC  e(P)   07 37 51
        JAS  e(P)   07 37 57
                    BRK  07 37 23.6, 36.0N, 120.7W, H=  2 KM, ML=2.7
                         SOUTHEAST OF KING CITY, CALIFORNIA

JAN 28  MNV  eP     14 21 08.2
        MIN  e(P)   14 21 10
        WDC  e(P)   14 21 10
        FHC  e(P)   14 21 16
        JAS  eP     14 21 19.2
        FRI  eP     14 21 22.0
        MHC  eP     14 21 27.4
                    USGS 14 11 31.0, 57.7N,  33.0W, H= 33 KM, mb=4.9
                         NORTH ATLANTIC OCEAN

JAN 28  SAO  eP     18 13 27.6
        BKS  ePd    18 13 28.7                    e 35 00      Lq 36 20     Lr 39 00
                              MICRON     PERIOD
                    PZ          0.14        1.4
                    LZ          1.9          20
                    LN          1.1          20
                    LE          1.6          20
        FHC  eP     18 13 29.0
        MHC  ePe    18 13 29.0
        PRI  eP     18 13 30.0
        WDC  ePe    18 13 32.7
        JAS  ePe    18 13 34.2
        FRI  ePe    18 13 35.0
        MIN  eP     18 13 35.0
        MNV  ePe    18 13 43.0
                    Ms=5.5, DISTANCE=85°
                    USGS 18 00 51.8, 17.4S, 168.7E, H= 14 KM, mb=5.4, Ms=5.6
                         NEW HEBRIDES ISLANDS

JAN 29  MHC  eP     00 07 27.7
        PRI  eP     00 07 29.0
        WDC  eP     00 07 31.5
        JAS  eP     00 07 32.8
        FRI  eP     00 07 33.3
        MNV  eP     00 07 41.6
                    USGS 23 54 51.2, 17.4S, 168.7E, H= 16 KM, mb=5.0
                         NEW HEBRIDES ISLANDS

JAN 29  FHC  eP     01 05 43.8
        BRK  e(P)   01 05 48
        BKS         01 05                         e 05 53      e 33 40
                              MICRON     PERIOD
                    PZ          0.04        0.7
                    LZ          2.2          20
                    LN          0            20
                    LE          2.0          20
        WDC  ePe    01 05 48.3
        MHC  eP     01 05 50.0
        MIN  eP     01 05 51.0
        PRI  eP     01 05 53.4
        JAS  ePe    01 05 54.0                    PP 09 31
        FRI  eP     01 05 56.5                    PP 09 34
        MNV  eP     01 06 03.0                    PP 09 44
                    USGS 00 52 52.7,  5.2S, 151.8E, H= 55 KM, mb=5.6, Ms=5.2
                         NEW BRITAIN REGION

JAN 29  FRI  eP     10 34 43.2
        JAS  eP     10 34 44
        WDC  eP     10 34 46.8
                    USGS 10 22 18.0, 28.4S, 176.8W, H= 68 KM, mb=5.1
                         KERMADEC ISLANDS REGION

JAN 30  WDC  eP     04 24 21.4
        JAS  eP     04 24 37.0
                    USGS 04 11 57.3, 39.5N, 118.0E, H= 33 KM, mb=5.2, Ms=4.3
                         NORTHEASTERN CHINA

JAN 30  FHC  eP     14 49 01.3  49 31
        WDC  eP     14 49 17.7
        MIN  eP     14 49 28
        MHC  eP     14 49 45
        SAO         14 49                         e 49 51
        JAS  eP     14 49 53
        FRI         14 50                         e 50 07
                    USGS 14 48 21.9, 40.8N, 127.2W, H= 15 KM, mb=4.9
                         OFF COAST OF NORTHERN CALIFORNIA

JAN 31  WDC  eP     08 45 02.8
        MIN  ePe    08 45 06.0
        BKS  e(P)   08 45 22
                              MICRON     PERIOD
                    PZ          0.01        0.6
        JAS  ePd    08 45 24.5
        MNV  eP     08 45 24.5
        MHC  eP     08 45 27.2
        FRI  eP     08 45 31.9
        PRI  eP     08 45 37.8
                    USGS 08 35 37.6, 76.9N, 130.8E, H= 38 KM, mb=4.7
                         LAPTEV SEA

JAN 31  WDC  eP     08 45 07.1
        MIN  eP     08 45 10.3
        BKS  e(P)   08 45 27
                              MICRON     PERIOD
                    PZ          0.02        1.0
        JAS  eP     08 45 28.8
        MNV  eP     08 45 28.8
        MHC  eP     08 45 31.5
        FRI  eP     08 45 36.2
        PRI  eP     08 45 42.1
                    LAPTEV SEA REGION

JAN 31  WDC  ePKP   14 33 01.5
        MIN  e(PKP) 14 33 05
        BKS  e(PKP) 14 33 13
                              MICRON     PERIOD
                    PZ          0.15        1.5
        JAS  ePKPd  14 33 13.5
        MNV  ePKP   14 33 13.5
        MHC  ePKP   14 33 13.7
        FRI  ePKP   14 33 15.6
        PRI  e(PKP) 14 33 17
                    USGS 14 13 34.4,  5.3S,  68.4E, H= 33 KM, mb=5.1
                         CHAGOS ARCHIPELAGO REGION
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JAN 31  VDC  eP    14 39 54.2
        MIN  eP    14 39 56.0
        BKS        14 40                    • 40 07
        MNV  eP    14 40 07.3
        JAS  eP    14 40 08.0
        FRI  eP    14 40 12.3
                   USGS 14 26 14.8, 40.0N,  70.9E, H= 20 KM, mb=6.1, Ms=5.9
                        TADZHIK SSR

JAN 31  BKS  e(P)  20 48 49                 Lq 07 46    Lr 12 30     • 07 12
        MHC  eP    20 48 49.5
        FRI  eP    20 48 49.5
        FRI  eP    20 48 55.2
        JAS  eP    20 48 55.3
        WDC  eP    20 48 56.5
        MNV  eP    20 49 06.0
                   USGS 20 37 20.4, 16.5S, 175.2W, H= 49 KM, mb=5.2, Ms=5.2
                        TONGA ISLANDS

FEB 01  FHC  eP    13 12 40.7
        WDC  eP    13 12 48.0
        MIN  eP    13 12 52.6
        MHC  eP    13 13 05.7
        JAS  iPe   13 13 08.4
        FRI  eP    13 13 15.0
        MNV  eP    13 13 15.8
                   USGS 13 03 03.7, 48.2N, 154.5E, H= 42 KM, mb=5.4
                        KURIL ISLANDS

FEB 01  FHC  iPd   14 33 50.1
        WDC  iPd   14 34 05.7
        MIN  iPd   14 34 15.5
        BKS  iPd   14 34 19.3                • 34 20     i 34 36     • 35 24
        MHC  ePd   14 34 29.5
        SAO  eP    14 34 35.4
        JAS  ePe   14 34 38.2
        FRI  eP    14 34 48.2
        FRI  iPe   14 34 51.0
        MNV  eP    14 34 59.2
                   BRK  14 33 10  , 40.4N, 127.1W, H=  2 KM, ML=5.0
                        OFF THE COAST WSW OF EUREKA, CALIFORNIA

FEB 01  MHC  iP    14 34 45.5  36 44
        FRI  iP    14 35 07.0  36 23
                   BRK  14 33 26  , 40.4N, 127.1W, H=  2 KM, ML=4.8
                        OFF THE COAST WSW OF EUREKA, CALIFORNIA

FEB 01  FHC  eP    15 26 27.5  26 54
        WDC  iPe   15 26 43.4  27 15
        MIN  eP    15 26 53.6  27 32
        BKS  ePd   15 26 57.4
        MHC  iPe   15 27 07.5  28 05
        SAO  eP    15 27 13.0
        JAS  eP    15 27 15.8
        FRI  eP    15 27 26.7
        FRI  iPe   15 27 28.7
        MNV  eP    15 27 34
                   BRK  15 25 47  , 40.4N, 127.1W, H=  2 KM, ML=4.3
                        OFF THE COAST WSW OF EUREKA, CALIFORNIA

FEB 01  JAS  iPd   18 48 19.2
        MNV  iPe   18 48 25.2
        MIN  ePd   18 48 29.8
        FRI  ePd   18 48 34.4
        BKS  eP    18 48 35.1                i 49 02
        MHC  eP    18 48 35.8  49 04
        WDC  eP    18 48 39.3                • 49 11
        FRI  ePd   18 48 48.0                • 49 35
                   BRK  18 47 57.8, 39.1N, 120.0W, H=  5 KM, ML=4.0
                        LAKE TAHOE, CALIFORNIA

FEB 03  FHC  iPe   05 35 37.3
        WDC  iPe   05 35 52.3
        MIN  eP    05 36 02.7
                   BRK  05 35 18.2, 40.7N, 125.4W, H= 10 KM, ML=4.0
                        OFF THE COAST WSW OF EUREKA, CALIFORNIA

FEB 03  FHC        10 48                    • 48 28
        WDC  ePe   10 48 34.5
        MIN  eP    10 48 39.0
        BKS        10 48                    • 48 42
        MHC  eP    10 48 51.0
        JAS  iPe   10 48 53.9
        FRI  eP    10 49 00.3
        FRI  eP    10 49 00.4
        MNV  eP    10 49 01.2
                   USGS 10 38 23.4, 45.4N, 150.4E, H= 33 KM, mb=5.5
                        KURIL ISLANDS

FEB 03  JAS  eP    20 25 18.8
        WDC  eP    20 25 25.9
        MNV  eP    20 25 28.4
                   USGS 20 12 19.8, 21.5S, 169.5E, H= 33 KM, mb=4.7
                        LOYALTY ISLANDS REGION

FEB 03  FHC  ePe   21 42 27.2
        WDC  iPe   21 42 31.8
        MIN  eP    21 42 35.4
        BRK  eP    21 42 43
        MHC  eP    21 42 47.2
        JAS  iPe   21 42 48.6
        FRI  eP    21 42 54.5
        PRI  eP    21 42 55
                   USGS 21 31 48.9, 43.0N, 130.9E, H=506 KM, mb=5.0
                        E. USSR-N.E. CHINA BORDER REGION

FEB 04  FRI  ePe   07 57 51.6          PKKP 16 24 PKPPKP 24 30 SKPPKP 27 03
        MNV  iPe   07 57 53.0            SKS 07 21   PKKP 16 25 SKPPKP 27 02
        PRI  ePe   07 57 53.3            PcP 58 20     pP 59 58     SKS 07 18
                                       SKPPKP 27 01
        SAO  eP    07 57 57.6
        JAS  ePe   07 57 58.0            PcP 58 28     pP 00 03     SKS 07 27
                                       PKKP 16 20 PKPPKP 24 30 SKPPKP 27 00
        MHC  ePe   07 58 00.3            pP 00 06   PKKP 16 22 SKPPKP 26 59
        BRK  ePe   07 58 03.6
        MIN  eP    07 58 08.2
        WDC  iPe   07 58 11.2            PcP 58 42     pP 00 16     SKS 07 57
                                       PKKP 16 15 PKPPKP 24 23
        FHC  iPe   07 58 18.2
                   USGS 07 46 33.8, 24.7S,  63.4W, H=549 KM, mb=6.0
                        SALTA PROVINCE, ARGENTINA

FEB 05  WDC        03 43                    • 47 52     • 58 46     • 58 57
        MIN        03 43                    • 58 48
        BKS        03 43                  PP 48 12   SKKS 54 20     PS 57 30
                                            • 58 55     • 00 10     SS 03 45
                                            • 06 50     • 07 55     Lq 14 20
                                          Lr 19 50
                      MICRON    PERIOD
                   LZ     5        20
                   LN     5        20
                   LE     3.6      20
        JAS  e(P)  03 43 55
        MHC        03 43                    • 48 06     • 58 56     • 03 05
        MNV        03 43                    • 58 56
                                            • 47 44     • 58 56     • 59 12
        FRI                                 • 03 05
        PRI        03 43                    • 59 00     • 03 07
                   03 43                    • 59 05
                   Ms=6.2, DISTANCE=113°
                   USGS 03 29 18.9, 66.4S,  82.6W, H= 33 KM, mb=6.2, Ms=6.2
                        SOUTHERN PACIFIC OCEAN

FEB 05  MHC        09 39                    • 39 16
        PRI  e(P)  09 39 17
        WDC        09 39                    • 39 21
        JAS  eP    09 39 21.5
        FRI  eP    09 39 22.2
        MNV  eP    09 39 29
                   USGS 09 26 37.5, 15.7S, 167.1E, H= 11 KM, mb=5.2, Ms=4.6
                        NEW HEBRIDES ISLANDS

FEB 05  MNV  ePo   15 51 02.7
        FRI        15 51
        JAS  ePo   15 51 15.6                • 51 04
        MHC        15 51
        BKS        15 51                    • 51 24
        MIN  e(P)  15 51 24                 Lq 16 08
        WDC  e(P)  15 51 29
        FHC        15 51                    • 51 40
                   USGS 15 42 44.3, 19.6N,  70.2W, H= 33 KM, mb=5.0, Ms=4.8
                        DOMINICAN REPUBLIC REGION

FEB 05  FHC  iPo   19 26 06.6
        WDC  iPo   19 26 20.0
        MIN  iPo   19 26 30.0  26 56        • 26 56
        BKS  ePd   19 26 41.4  27 16
        MHC  ePd   19 26 51.3                • 26 47     • 27 06     Sg 27 27
        JAS  ePd   19 26 56.0
        SAO  ePo   19 26 58.0
        FRI  e(P)  19 27 11
                   BRK  19 25 53.1, 40.4N, 124.8W, H= 29 KM, ML=4.0
                        OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

FEB 06  MNV  eP    00 41 13.5
        FRI        00 41                    • 41 18
        JAS  eP    00 41 26.0               • 41 26
        MIN  eP    00 41 30.4               • 41 31
        MHC  e(P)  00 41 33
        WDC  eP    00 41 33.5
        FHC  e(P)  00 41 42
                   USGS 00 30 49.9, 17.9N,  49.5W, H= 33 KM, mb=5.2
                        NORTH ATLANTIC OCEAN

FEB 06  SAO  eP    03 21 06.6
        PRI  eP    03 21 08.0
        BRK  eP    03 21 08.0
                      MICRON    PERIOD
                   LZ     3.2      20
                   LN     2.5      20
                   LE     2.5      20
        MHC  eP    03 21 08.5
        FRI  ePo   03 21 13.4
        FHC  ePo   03 21 13.6
        JAS  ePo   03 21 14.3
        WDC  ePo   03 21 17.0
        MIN  eP    03 21 18.5
        MNV  ePo   03 21 23.7
                   USGS 03 09 14.0, 21.8S, 175.3W, H= 33 KM, mb=5.6, Ms=5.7
                        TONGA ISLANDS

FEB 07  JAS  eP    05 54 16.0
        WDC  eP    05 54 19.0
        MNV  eP    05 54 24.0

FEB 07  WDC  eP    08 53 41.0
        JAS  eP    08 53 56.5
        MNV  eP    08 54 06.5
                   USGS 08 42 17.9, 35.6N, 140.9E, H= 47 KM, mb=5.1
                        NEAR EAST COAST OF HONSHU, JAPAN

FEB 07  BKS  ePo   23 39 49.4
                      MICRON    PERIOD
                   PZ     0.08     1.0
        PRI  eP    23 39 49.6
        MHC  eP    23 39 49.8
        FRI  eP    23 39 55.2
        JAS  iPe   23 39 55.9
        WDC  eP    23 39 57.5
        MNV  iPe   23 40 06.2
                   USGS 23 28 38.6, 15.3S, 174.1W, H=132 KM, mb=5.2
                        TONGA ISLANDS

FEB 09  MNV  iPd   07 24 19.0
        JAS  eP    07 24 45.0
        FRI  e(P)  07 24 52                 • 24 56     • 25 28
        MIN  eP    07 24 57.1
        MHC  e(P)  07 25 02
        WDC  eP    07 25 06.5
                   ML=3.7, NORTHEAST OF MINA, NEVADA
                   USGS 07 24 08.3, 39.2N, 118.0W, H=  5 KM
                        NEVADA

FEB 10  WDC  eP    03 39 49.0
        JAS        03 39                    • 39 49
        FRI        03 39                    • 39 50
        MNV        03 39                    • 39 56
                   USGS 03 26 59.0, 21.9S, 169.8E, H= 38 KM, mb=4.9, Ms=5.0
                        LOYALTY ISLANDS REGION

FEB 10  BKS        08 08                  Lr 36 00
        WDC  eP    08 08 44.8
        JAS  eP    08 08 45.2
        FRI  eP    08 08 45.4
        MIN        08 08                    • 08 46
        MNV  eP    08 08 53.0
                   USGS 07 55 56.7, 21.8S, 169.9E, H= 41 KM, mb=5.2, Ms=5.4
                        LOYALTY ISLANDS REGION

FEB 10  BKS  iPd   19 19 11.6  19 26
        MHC  e(P)  19 19 22
        JAS  iPd   19 19 26.7
        FRI  e(P)  19 19 41
                   BRK  19 18 52.0, 38.8N, 122.8W, H=  2 KM, ML=3.0
                        NORTH-NORTHWEST OF SANTA ROSA, CALIFORNIA

FEB 10  FRI  ePKPe 23 00 03.3
        PRI  ePKPe 23 00 03.8
        SAO        23 00                    • 00 04
        MNV  ePKPe 23 00 04.6
        JAS  ePKPe 23 00 06.1               • 00 10
        MHC  ePKPe 23 00 06.5
        BKS  ePKP  23 00 07.6               • 00 11     • 00 22     SS 19 25
                                          SSS 24 40     • 31 50     • 35 20
                                          Lr 42 40
                      MICRON    PERIOD
                   LZ     1.2      20
                   LN     1.1      20
                   LE     1.4      20
        MIN  ePKP  23 00 10
        WDC  ePKP  23 00 10.6
                   USGS 22 41 06.2, 60.9S,  23.1W, H= 33 KM, mb=6.3, Ms=6.2
                        SOUTH SANDWICH ISLANDS REGION

FEB 11  FRI        11 47                    • 47 19
        MNV  iPd   11 47 20.2
        JAS  eP    11 47 26.6
                   USGS 11 39 06.0,  1.2N,  90.7W, H= 33 KM, mb=4.9
                        GALAPAGOS ISLANDS REGION

FEB 11  FRI        11 49                    • 49 39
        MNV  eP    11 49 41.2
        PRI        11 49                    • 49 43
        SAO        11 49                    • 49 44
        JAS  ePd   11 49 47.3
        MHC  eP    11 49 50
        BRK        11 49                    • 49 55
        MIN        11 50                    • 50 05
        WDC        11 50                    • 50 08
                   USGS 11 41 26.6,  1.1N,  90.5W, H= 33 KM, mb=5.1
                        GALAPAGOS ISLANDS REGION

FEB 11  MNV  eP    22 11 44.0
        JAS  eP    22 11 55.5
        FRI  eP    22 11 57
                   USGS 22 01 36.3, 50.6N,  30.0W, H= 33 KM, mb=4.8
                        NORTH ATLANTIC RIDGE
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FEB 12  MHC  eP     12 58 13.4
        FRI  eP     12 58 18.0
        JAS  eP     12 58 18.5
        WDC  eP     12 58 20.7
        MIN  eP     12 58 22.2
        MNV  eP     12 58 27.0
                    SOUTH OF FIJI ISLANDS REGION

FEB 12  SAO  iPd    23 49 29.2
        MHC  iPd    23 49 39.3
        PRI  ePd    23 49 42.7   49 56
        FRI  ePd    23 49 50.0   50 07
        JAS  ePd    23 49 51.0   50 08
        BKS  ePd    23 49 57.7   50 10
                    BRK  23 49 26.7, 36.7N, 121.4W, H= 12 KM, ML=2.8
                    SOUTH OF HOLLISTER, CALIFORNIA

FEB 13  FHC  e(P)   04 20 54
        WDC  eP     04 20 58.0
        MIN  eP     04 21 02.0
        JAS  eP     04 21 11.8
        FRI  eP     04 21 16.0
        MNV  eP     04 21 16.3
                    USGS 04 07 14.5, 15.7N, 119.2E, H= 33 KM, mb=5.7, Ms=4.8
                    LUZON, PHILIPPINE ISLANDS

FEB 13  WDC  e(P)   04 34 27                 e 34 36
        JAS  eP     04 34 33.0               e 34 42
        FRI  eP     04 34 35.5               e 34 44
        MNV  eP     04 34 41.5               e 34 51
                    USGS 04 21 28.8, 5.6S, 152.2E, H= 33 KM, mb=5.4
                    NEW BRITAIN REGION

FEB 13  FHC  iPe    06 00 35.9
        WDC  iPe    06 00 42.3
        MIN  ePe    06 00 47.0
        BKS  ePe    06 00 56.7
                          MICRON    PERIOD
                    PZ      0.03      0.8
        MHC  eP     06 01 01.5
        JAS  iPe    06 01 04.2               e 01 25
        MNV  iPe    06 01 10.9               e 01 30
        FRI  eP     06 01 11.2
        PRI  eP     06 01 12.7
                    USGS 05 51 45.3, 54.1N, 158.6E, H=167 KM, mb=5.0
                    KAMCHATKA

FEB 13  WDC  ePe    08 55 18.6
        MIN  eP     08 55 22.8
        JAS  ePe    08 55 37.5
        FRI  eP     08 55 43.6
        MNV  ePe    08 55 44.8
        PRI  eP     08 55 45.1
                    USGS 08 45 00.1, 44.9N, 147.5E, H= 90 KM, mb=4.9
                    KURIL ISLANDS

FEB 14  FRI  eP     13 59 16.5
        PRI  eP     13 59 22.2
        MNV  iPd    13 59 24.9
        SAO  eP     13 59 33.7
        JAS  iPe    13 59 34.7
        MHC  eP     13 59 47.0
        BKS  eP     14 00 04.0
                    ML=4.0, MOJAVE AREA, CALIFORNIA
                    USGS 13 58 40.3, 35.7N, 117.7W, H=  3 KM
                    CENTRAL CALIFORNIA

FEB 14  FRI  iP     13 59 28.9
        PRI  iPd    13 59 34.4
        JAS  iPe    13 59 46.4
        MHC  iP     13 59 58.4
                    ML=4.1, MOJAVE AREA, CALIFORNIA
                    USGS 13 58 51.8, 35.7N, 117.7W, H=  3 KM
                    CENTRAL CALIFORNIA

FEB 15  FRI  eP     02 00 07.4
        MNV  eP     02 00 15.2
        PRI         02 00                    e 00 16
        JAS  eP     02 00 20.6
        MHC  eP     02 00 20.7
        WDC  eP     02 00 50
                    USGS 01 55 30.3, 19.1N, 108.1W, H= 33 KM, mb=4.4
                    REVILLA GIGEDO ISLANDS REGION

FEB 16  MIN  eP     01 01 25.4
        FRI  eP     01 01 25.9
        JAS  eP     01 01 26.3
        WDC  eP     01 01 26.8
        PRI  eP     01 01 33.0
        MHC  eP     01 01 34.0
                    USGS 00 49 31.2, 26.0N,  26.3W, H= 33 KM, mb=5.5
                    NORTH ATLANTIC OCEAN

FEB 16  FHC  eP     10 54 27.0
        WDC  ePe    10 54 31.0
        MIN  eP     10 54 32.7               e 58 50
        BKS  eP     10 54 35.2
                          MICRON    PERIOD
                    PZ      0.04      1.0
        MHC  eP     10 54 38.4
        JAS  ePe    10 54 41.3
        PRI  eP     10 54 43.7               e 59 10
        FRI  ePe    10 54 45.0
        MNV  ePe    10 54 48.6
                    USGS 10 40 20.9,  0.5N, 126.0E, H= 33 KM, mb=6.1, Ms=5.6
                    MOLUCCA PASSAGE

FEB 16  WDC  eP     12 39 13.0
        MIN  eP     12 39 17
        JAS  eP     12 39 31.5
        MNV  eP     12 39 38.5
                    USGS 12 28 43.8, 43.7N, 142.9E, H=195 KM, mb=4.6
                    HOKKAIDO, JAPAN REGION

FEB 16  MNV  iPe    17 53 38.0
        FRI  iPe    17 53 49.0
        JAS  iPe    17 53 58.1
        PRI  eP     17 54 01.7
        MHC  eP     17 54 11.1
        BKS  eP     17 54 29.5
        MIN  eP     17 54 24.5
        WDC  eP     17 54 33.5
                    ML=4.2, NUCLEAR EXPLOSION, NEVADA TEST SITE
                    USGS 17 53 00.2, 37.0N, 116.0W, H=  5 KM, mb=4.8
                    SOUTHERN NEVADA

FEB 16  PRI  iPe    18 32 32.2
        SAO  iPe    18 32 43.7
        FRI  iPd    18 32 50.3   33 06
        MHC  eP     18 32 53.4   33 18       i 32 57
        JAS  iPe    18 33 00.3   33 22
                    BRK  18 32 28.9, 36.1N, 120.8W, H= 15 KM, ML=2.6
                    PEACH TREE VALLEY, CALIFORNIA

FEB 17  FHC  iPe    09 58 49.5
        WDC  iPe    09 59 04.0   59 26
        MIN  eP     09 59 13.8
        BKS  ePe    09 59 23.1
        MHC  eP     09 59 33.2
        JAS  eP     09 59 39.0
        SAO  iP     09 59 39.7
        FRI  eP     09 59 53.9
                    BRK  09 58 32.0, 40.4N, 125.2W, H= 24 KM, ML=3.7
                    OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

FEB 18  SAO  eP     02 08 54
        PRI  ePd    02 08 54.8               e 09 06
        BKS  eP     02 08 55.8
        MHC  eP     02 08 55.8               e 09 06
        FHC  ePd    02 08 59.7               e 09 11
        FRI  ePd    02 09 00.2
        JAS  ePd    02 09 01.4               e 09 10
        WDC  ePd    02 09 04.1
        MNV  eP     02 09 10.2               e 09 21
                    USGS 01 56 47.3, 24.7S, 176.0W, H= 35 KM, mb=5.0
                    SOUTH OF FIJI ISLANDS

FEB 18  FHC  eP     04 19 10.5
        WDC  ePe    04 19 16.2               e 19 33
        MIN  eP     04 19 20.5
        BKS  ePe    04 19 27.5   28 32       e 19 46      Lq 36 32      Lr 40 36
                          MICRON    PERIOD
                    PZ      0.03      0.8
                    LZ      2.9       20
                    LN      1.6       20
                    LE      2.7       20
        MHC  eP     04 19 32
        SAO         04 19                    e 19 52
        JAS  ePe    04 19 34.0               e 19 53
        PRI  eP     04 19 40
        MNV  iPe    04 19 40.8               e 19 58
        FRI  e(P)   04 19 42
                    Ms=5.6, DISTANCE=72°
                    USGS 04 08 13.4, 41.4N, 142.0E, H=  5 KM, mb=5.5, Ms=5.6
                    HOKKAIDO, JAPAN REGION

FEB 18  SAO  eP     06 43 20
        PRI  ePd    06 43 20.7
        MHC  ePd    06 43 21.6
        BKS  iPd    06 43 21.7
                          MICRON    PERIOD
                    PZ      0.05      1.0
        FRI  ePd    06 43 26.2
        JAS  ePd    06 43 27.1
        WDC  iPd    06 43 30.0
        MIN  ePd    06 43 31.4
        MNV  ePd    06 43 36.1
                    USGS 06 31 23.7, 24.4S, 176.3W, H=122 KM, mb=5.1
                    SOUTH OF FIJI ISLANDS

FEB 18  FHC  iPe    21 02 56.8
        WDC  iPe    21 03 02.2
        MIN  iPe    21 03 05.9
        BKS  iPe    21 03 11.2   12 46       PPS 13 50     Lr 26 00
                          MICRON    PERIOD
                    PZ      0.43      1.0
                    LZ      4.4       20
                    LN      3.2       20
                    LE      4.4       20
        MHC  eP     21 03 15.1
        SAO  eP     21 03 17.1
        JAS  iPe    21 03 17.9               e 03 34
        PRI  iPe    21 03 22.9               e 03 39
        FRI  ePe    21 03 23.3
        MNV  iPe    21 03 25.3
                    Ms=5.8, DISTANCE=76°
                    USGS 20 51 29.8, 33.1N, 140.8E, H= 42 KM, mb=6.0, Ms=5.7
                    SOUTH OF HONSHU, JAPAN

FEB 19  MNV  eP     03 26 28.4               e 28 40
        FRI  eP     03 26 31.7               e 28 42
        JAS  eP     03 26 39.1               e 28 44
        MHC         03 26                    e 26 44
                    USGS 03 19 06.8, 11.6N,  86.9W, H= 33 KM, mb=5.3
                    NEAR COAST OF NICARAGUA

FEB 19  WDC  iPe    04 13 55.7
        BKS  ePe    04 14 04.7
                          MICRON    PERIOD
                    PZ      0.03      1.0
        MHC  eP     04 14 08.6
        JAS  iPe    04 14 11.5
        MNV  eP     04 14 16.3
        PRI  eP     04 14 16.3
        FRI  eP     04 14 16.8
                    USGS 04 02 24.2, 33.1N, 140.8E, H= 52 KM, mb=5.2
                    SOUTH OF HONSHU, JAPAN

FEB 19  BKS         09 07                    e 11 14      e 12 00
        MHC  eP     09 08 00.8
        JAS  eP     09 08 05.4
        FRI  eP     09 08 07.1
        MNV  eP     09 08 14.5
                    USGS 08 55 34.3, 11.0S, 165.3E, H= 33 KM, mb=4.8
                    SANTA CRUZ ISLANDS

FEB 19  BKS  iP     09 43 51.5
        MHC         09 43                    e 43 53
        PRI  eP     09 43 55.2
        JAS  eP     09 43 58.2
        MNV  eP     09 44 07.5
                    USGS 09 31 26.9, 11.1S, 165.4E, H= 33 KM, mb=4.4
                    SANTA CRUZ ISLANDS

FEB 19  FHC  eP     22 42 19.6
        WDC  iPd    22 42 26.7
        MIN  ePd    22 42 31.9
        BKS  ePd    22 42 43     49 42       e 42 50      SS 53 00      Lr 56 18
                          MICRON    PERIOD
                    PZ      0.48      1.5
                    LN      110       20
                    LE      110       20
        MHC  eP     22 42 47.0
        JAS  ePd    22 42 49.5
        SAO  eP     22 42 53.4
        FRI  eP     22 42 57.3
        MNV  iPd    22 42 57.5
        PRI  ePd    22 42 58.4
                    Ms=7.0, DISTANCE=48°
                    USGS 22 34 04.1, 53.6N, 170.0E, H= 33 KM, mb=6.2, Ms=6.7
                    NEAR ISLANDS, ALEUTIAN ISLANDS

FEB 19  WDC  eP     22 56 01.2
        JAS  eP     22 56 24.0
        MNV  eP     22 56 30.5
                    USGS 22 47 39.1, 53.3N, 170.3E, H= 30 KM, mb=5.1
                    NEAR ISLANDS, ALEUTIAN ISLANDS

FEB 19  PRI  eP     23 40 12.0
        SAO  eP     23 40 14.3
        MHC  eP     23 40 18.5
        FRI  eP     23 40 18.7
        BKS  ePd    23 40 20
                          MICRON    PERIOD
                    PZ      0.05      1.1
        JAS  eP     23 40 23.2
        WDC  eP     23 40 35.8
                    USGS 23 29 57.9, 22.1S, 138.8W, H=  0 KM, mb=5.3
                    TUAMOTU, ARCHIPELAGO REGION

FEB 21  WDC  eP     00 35 36
        JAS  eP     00 35 48.4
        FRI  eP     00 35 53.0
        MNV  eP     00 35 56.0

FEB 21  JAS  ePKP   06 41 50.2               e 41 59
        WDC  ePKP   06 41 58.2               e 42 07
                    USGS 06 22 16.8, 52.2S,  12.7E, H= 33 KM, mb=4.9
                    SOUTHWEST OF AFRICA

FEB 21  JAS  eP     08 30 57
        FRI  e(P)   08 31 01
        MNV  eP     08 31 05
                    USGS 08 18 12.8, 12.0N, 144.0E, H= 33 KM
                    SOUTH OF MARIANA ISLANDS
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FEB 21  WDC  iPe   11 09 38.2  09 55
        FHC  ePd   11 09 40.0              i 09 45
        MIN  ePd   11 09 42.4
        JAS  ePd   11 09 57.0
                   BRK  11 09 15.3, 39.4N, 123.3W, H= 20 KM, ML=3.2
                        WILLITS, CALIFORNIA

FEB 21  WDC  ePd   20 07 59.7
        MHC        20 08                 ScP 14 34
        JAS  ePd   20 08 26.5            ScP 14 35
        MNV  ePd   20 08 34.0
        FRI  ePd   20 08 35.2            ScP 14 38
                   USGS 20 02 06.0, 55.9N, 161.9W, H=167 KM, mb=5.0
                        ALASKA PENINSULA

FEB 22  FHC  iPe   00 57 53.5
        WDC  iPe   00 58 08.9  58 34
        MIN  iPe   00 58 19.3
        MHC  ePd   00 58 42.3
        JAS  iPd   00 58 46.7
        SAO  ePd   00 58 49.2
        FRI  ePd   00 59 01.5
                   BRK  00 57 36.6, 40.8N, 125.2W, H= 20 KM, ML=4.4
                        OFF THE COAST WEST OF EUREKA, CALIFORNIA

FEB 22  WDC  iPd   01 42 34.9
        JAS  iPd   01 42 55.9
        MNV  iPd   01 43 02.9
                   USGS 01 33 13.8, 51.2N, 156.5E, H=  5 KM, mb=5.1
                        KAMCHATKA

FEB 22  MNV  iPe   06 24 22.5
        JAS  iPe   06 24 25.0
        FRI  iPd   06 24 33.8
        MHC  iPd   06 24 43.9
        BKS  ePd   06 24 46.6
        SAO  ePe   06 24 46.8
        MIN  iPe   06 24 48.8
        PRI  ePe   06 24 51.5
        WDC  iPe   06 24 57.9
                   BRK  06 24 06.1, 38.5N, 119.3W, H= 22 KM, ML=4.8
                        SOUTHEAST OF LAKE TAHOE, CALIFORNIA

FEB 22  MNV  iPe   06 31 21.2
        JAS  iPe   06 31 24.2  31 38
        FRI  iPd   06 31 32.6  31 52
        BKS  e(P)  06 31 48
                   BRK  06 31 04.4, 38.5N, 119.3W, H= 13 KM, ML=3.0
                        SOUTHEAST OF LAKE TAHOE, CALIFORNIA

FEB 22  MNV  ePe   19 58 53.9
        FRI  ePd   19 59 04.7
        MIN  ePe   19 59 06.2
        JAS  ePe   19 59 07.1
                   USGS 19 48 35.2, 32.2N,  40.4W, H= 33 KM, mb=5.2, Ms=4.8
                        NORTH ATLANTIC RIDGE

FEB 23  PRI  eP    00 18 38.4
        MHC  eP    00 18 38.7
        BKS  e(P)  00 18 39
                        MICRON    PERIOD
                   PZ     0.04       1.0
        FRI  ePd   00 18 44.2
        JAS  ePd   00 18 45.2
        WDC  ePd   00 18 46.8
        MNV  ePd   00 18 55.6
                   USGS 00 07 18.2, 15.3S, 173.7W, H= 33 KM, mb=4.9
                        TONGA ISLANDS

FEB 24  FRI  eP    04 49 05.5
        JAS  eP    04 49 06.5
        WDC  eP    04 49 08.7
        MIN  eP    04 49 11.5
        MNV  eP    04 49 16.2
                   USGS 04 37 40.7, 18.5S, 174.5W, H=186 KM, mb=4.8
                        TONGA ISLANDS

FEB 24  WDC  eP    11 50 48.8
        MIN        11 50                 • 50 57
        JAS  eP    11 51 06.5
        FRI        11 51                 • 51 14
        MNV        11 51                 • 51 14
                   USGS 11 40 00.0, 42.4N, 142.5E, H= 75 KM, mb=5.3
                        HOKKAIDO, JAPAN REGION

FEB 24  SAO  eP    16 22 00.9
        BRK  eP    16 22 01.8
        MHC  ePe   16 22 02.7
        PRI  eP    16 22 02.7
        FRI  ePe   16 22 08.0
        JAS  ePe   16 22 08.3            PoP 22 26
        WDC  eP    16 22 09.2
        MIN  eP    16 22 11
        MNV  ePe   16 22 17.8
                   USGS 16 11 05.4, 17.6S, 178.9W, H=543 KM, mb=4.9
                        FIJI ISLANDS REGION

FEB 25  WDC  iPd   01 32 07.6
        BKS  e(P)  01 32 12    43 06      SS 49 45      • 52 36     Lr 01 28
                                                        • 06 11
                        MICRON    PERIOD
                   LZ     3.2       20
                   LN     1.1       20
                   LE     3.2       20
        MHC  eP    01 32 09.7
        MIN  e(P)  01 32 10
        JAS  eP    01 32 13.8
        PRI  e(P)  01 32 14
        FRI  eP    01 32 16.3
        MNV  ePd   01 32 22.5
                   Ms=5.8, DISTANCE=95°
                   USGS 01 18 52.8,  6.3S, 147.5E, H= 52 KM, mb=5.9, Ms=5.9
                        EAST PAPUA , NEW GUINEA REGION

FEB 25  FHC  iPe   03 57 45.5  57 51        1 57 48
        WDC  iPe   03 57 59.1              • 58 17
        MIN  ePe   03 58 08.7
                   BRK  03 57 37.1, 40.4N, 124.2W, H= 18 KM, ML=3.0
                        SOUTH OF EUREKA, CALIFORNIA

FEB 26  FRI  eP    00 32 08.5
        MHC  eP    00 32 09.0
        BKS  eP    00 32 09.5
                        MICRON    PERIOD
                   PZ     0.04       0.9
        FRI  eP    00 32 14.1
        JAS  ePe   00 32 14.9
        WDC  ePe   00 32 17.4
        MNV  ePe   00 32 25.0
                   USGS 00 20 30.6, 19.0S, 174.1W, H= 33 KM, mb=5.3
                        TONGA ISLANDS

FEB 26  JAS  eP    14 19 24              • 19 44
        FRI        14 19                 • 19 44
        WDC  eP    14 19 25              • 19 45
        MNV  eP    14 19 35              • 19 55
                   USGS 14 07 42.1, 17.3S, 177.0W, H= 74 KM, mb=4.8
                        FIJI ISLANDS REGION

FEB 26  FHC  eP    23 40 21.5
        WDC  eP    23 40 35
        JAS  eP    23 41 20
                   OFF THE OREGON COAST

FEB 27  JAS  eP    04 14 03
                   USGS 04 03 09.4, 37.5N,  31.9W, H= 33 KM, mb=4.6, Ms=4.8
                        AZORES ISLANDS REGION

FEB 27  FHC  eP    18 45 13.0
        WDC  eP    18 45 18.2
        MIN  eP    18 45 21.5
        BKS  eP    18 45 23.5
                        MICRON    PERIOD
                   PZ     0.04       0.7
        MHC  eP    18 45 26.5
        JAS  eP    18 45 29.9
        PRI  eP    18 45 32.5
        FRI  eP    18 45 34.0
        MNV  eP    18 45 38.0
                   USGS 18 34 08.5, 18.6N, 145.3E, H=579 KM, mb=5.0
                        MARIANA ISLANDS

FEB 28  PRI  e(P)  01 40 30
        MNV  eP    01 40 32
        FRI        01 40
        JAS  eP    01 40 40.5            • 40 34
        MHC        01 40
        BKS        01 40                 • 40 46
        WDC        01 41                 • 57 00
                                         • 41 07
                   USGS 01 32 02.0,  4.0N,  82.5W, H= 33 KM, mb=5.1, Ms=5.2
                        SOUTH OF PANAMA

FEB 28  WDC  eP    02 04 11.5
        MHC  eP    02 04 19.7
        JAS  eP    02 04 22.5
        FRI  eP    02 04 26.5
        MNV  eP    02 04 30.0
                   USGS 01 50 31.9,  9.2N, 126.1E, H= 64 KM, mb=5.7
                        MINDANAO, PHILIPPINE ISLANDS

FEB 28  WDC  eP    18 01 26.3
        MHC  eP    18 01 42.6
        JAS  eP    18 01 45.3
        FRI  eP    18 01 51.8
        MNV  eP    18 01 52.2
        PRI  eP    18 01 53.4
                   USGS 17 50 54.4, 44.6N, 146.8E, H= 10 KM, mb=5.3, Ms=4.7
                        KURIL ISLANDS

MAR 01  WDC  iPKPd 02 03 48.7
        MIN  ePKP  02 03 49.7
        JAS        02 03                 • 03 59
                   USGS 01 44 11.7,  7.2S,  67.9E, H= 33 KM, mb=4.8
                        MID-INDIAN RISE

MAR 01  BKS  iPe   21 08 49.2  08 52
        MHC  iPe   21 08 57.8
        SAO  ePd   21 09 06.6
        JAS  iPd   21 09 08.3  09 25
                   BRK  21 08 46.2, 37.8N, 122.1W, H=  6 KM, ML=3.0
                        EAST OF BERKELEY, CALIFORNIA

MAR 02  MHC  eP    00 08 44.8
        JAS  ePe   00 08 49.9
        WDC  ePe   00 08 51.8
        MNV  eP    00 08 58.1
                   USGS 23 57 10.8, 24.7S, 179.7E, H=481 KM, mb=4.7
                        SOUTH OF FIJI ISLANDS

MAR 02  MHC  eP    05 17 20.0
        PRI  eP    05 17 20.5
        SAO  e(P)  05 17 22
        BKS  eP    05 17                 • 17 25       • 41 00
                        MICRON    PERIOD
                   PZ     0.06       1.0
        FHC  eP    05 17 22.0
        FRI  eP    05 17 25.6
        WDC  ePd   05 17 25.8
        JAS  ePd   05 17 26.0
        MIN  e(P)  05 17 32
        MNV  eP    05 17 35.6
                   USGS 05 05 23.6, 16.4S, 178.0E, H= 33 KM, mb=5.5, Ms=5.1
                        FIJI ISLANDS

MAR 02  WDC  eP    10 07 18.5
        MIN  e(P)  10 07 22
        BKS        10 07                 SS 25 00      • 28 00     Lq 40 00
                                         Lr 50 00
                        MICRON    PERIOD
                   LZ      10        20
                   LN       5        20
                   LE      11        20
        MHC  eP    10 07 27.0
        JAS  eP    10 07 29.5            PKKP 23 25    • 27 18
        FRI  eP    10 07 33.5
        MNV  eP    10 07 37.0
                   Ms=6.4, DISTANCE=105°
                   USGS 09 53 23.2,  6.8N, 123.7E, H= 52 KM, mb=6.1, Ms=6.1
                        MINDANAO,PHILIPPINE ISLANDS

MAR 02  WDC  iPe   23 19 49.7
        MIN  eP    23 19 54.5
        MHC  eP    23 20 10.7
        JAS  iPe   23 20 12.7
        MNV  iPe   23 20 19.5
        FRI  eP    23 20 20.0
                   USGS 23 11 01.8, 54.7N, 163.7E, H= 42 KM, mb=5.1
                        OFF EAST COAST OF KAMCHATKA

MAR 03  BKS        12 07                 • 07 07
        JAS  iPe   12 07 12.9
        MNV  iPe   12 07 22.7
                   USGS 11 55 59.7, 18.2S, 177.0W, H=384 KM, mb=4.8
                        FIJI ISLANDS REGION

MAR 04  WDC  ePd   19 34 43.0                  pP 35 12      sP 35 26    PKKP 52 24
                                              PKPPKP 00 32
        MIN  eP    19 34 43.5
        FHC  eP    19 34 44.9                 PKKP 52 22
        MNV  ePd   19 34 47.5
        JAS  eP    19 34 52.6                 pP 35 22      sP 35 30    PP 38 40
                                              PKKP 52 19
                                              PKPPKP 00 27
        FRI  eP    19 34 55.8                 PKKP 52 17
        MHC  eP    19 34 57.2                 PKKP 52 17 PKPPKP 00 27
        BKS  ePd   19 34 57.3  45 30          pP 35 25      sP 35 40    PP 38 38
                                              • 47 15       sSS 52 00   Lq 59 00
                        MICRON    PERIOD
                   PZ     0.09       0.7
        SAO  e(P)  19 34 58                   pP 35 31      sP 35 45
        PRI  eP    19 35 02.0
                   USGS 19 21 54.1, 45.8N,  26.8E, H= 94 KM, mb=6.4
                        RUMANIA

MAR 05  MNV  eP    03 02 55                                 • 05 20
        FRI  eP    03 03 12
        JAS        03 03                                    • 03 23
        WDC        03 03                                    • 03 55
                   USGS 03 00 54.7, 35.9N, 108.3W, H= 22 KM, mb=4.6
                        NEW MEXICO

MAR 05  SAO  eP    16 26 27.3
        BKS  ePe   16 26 28.6
                        MICRON    PERIOD
                   PZ     0.04       0.9
        PRI  ePe   16 26 29.0
        MHC  ePe   16 26 29.3
        FRI  ePe   16 26 33.8
        JAS  ePe   16 26 34.3
        WDC  iPe   16 26 35.9
        MIN  e(P)  16 26 37
        MNV  iPe   16 26 42.6
                   USGS 16 15 07.3, 23.3S, 178.8E, H=597 KM, mb=5.1
                        SOUTH OF FIJI ISLANDS

MAR 05  FHC  iPd   23 55 52.8  56 01
        WDC  iPd   23 55 56.1              • 56 05
        MIN  ePe   23 56 06.5
                   BRK  23 55 43.4, 40.8N, 123.4W, H= 35 KM, ML=3.3
                        EAST OF EUREKA, CALIFORNIA
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MAR 06  SAO  iPe    00 32 39.2
        PRI  iPe    00 32 47.0
        MHC  eP     00 32 48.5
        FRI  iPe    00 32 54.5
        JAS  iPd    00 32 57.7
        BKS  e(P)   00 33 01
        MNV  eP     00 33 25.5
                    BRK  00 32 33.9, 36.7N, 121.1W, H= 6 KM, ML=2.9
                         SOUTHEAST OF BOLLISTER, CALIFORNIA

MAR 07  WDC  iPe    00 41 08.5
        BKS  e(P)   00 41 20
                          MICRON    PERIOD
                    PZ      0.06       1.2
        MHC  eP     00 41 23.3
        JAS  iPe    00 41 24.3
        MNV  iPe    00 41 28.6
        FRI  ePe    00 41 29.3
        PRI  ePe    00 41 30.7
                    USGS 00 28 47.4, 40.0N, 118.7E, H= 33 KM, mb=5.3, Ms=5.0
                         NORTHEASTERN CHINA

MAR 07  MHC  eP     02 38 35.7
        PRI  eP     02 38 37.4
        JAS  iPe    02 38 40.9
        FRI  eP     02 38 41.7
        MNV  ePe    02 38 50.4
                    USGS 02 26 07.0, 14.6S, 167.7E, H= 35 KM, mb=5.2
                         NEW HEBRIDES ISLANDS

MAR 07  MHC  eP     03 19 20.5
        FRI  eP     03 19 22.0
        BKS  eP     03 19 24.5
                          MICRON    PERIOD
                    PZ      0.02       1.5
        WDC  ePe    03 19 23.7
        JAS  ePe    03 19 25.6
        FRI  eP     03 19 26.5
        MNV  eP     03 19 35.1
                    USGS 03 06 51.8, 14.6S, 167.9E, H= 28 KM, mb=5.3
                         NEW HEBRIDES ISLANDS

MAR 07  JAS  eP     06 29 52.1                  e 31 32
                    USGS 06 21 36.3,  1.9N,  90.6W, H= 33 KM, mb=4.8
                         GALAPAGOS ISLANDS REGION

MAR 07  WDC  ePe    07 11 20.0
        BKS  ePe    07 11 24.4
                          MICRON    PERIOD
                    PZ      0.03       0.6
        MHC  eP     07 11 27.4
        JAS  iPe    07 11 31.0
        FRI  eP     07 11 33.0
        FRI  eP     07 11 34.8
        MNV  eP     07 11 39.2
                    USGS 06 59 06.6, 13.9N, 145.0E, H=120 KM, mb=5.1
                         MARIANA ISLANDS

MAR 07  FHC  eP     09 23 00.7
        WDC  iPe    09 23 07.6
        BKS  ePe    09 23 19.3
                          MICRON    PERIOD
                    PZ      0.05       0.8
        MHC  eP     09 23 23.3
        JAS  iPe    09 23 25.9
        SAO  eP     09 23 25.9
        PRI  eP     09 23 31.4
        FRI  eP     09 23 32.0
        MNV  iPe    09 23 33.1
                    USGS 09 12 28.1, 43.1N, 145.8E, H= 24 KM, mb=5.4
                         HOKKAIDO, JAPAN REGION

MAR 07  MNV  eP     10 51 25.7
        JAS  eP     10 51 35.6
                    USGS 10 39 20.9,  7.4N,  36.0W, H= 33 KM, mb=4.9
                         CENTRAL MID-ATLANTIC RIDGE

MAR 07  FRI  iPe    21 52 59.6  53 26
        PRI  eP     21 53 04.6
        JAS  iP     21 53 17.9  53 59
                    MAG=3.6, CHINA LAKE AREA, CALIFORNIA
                    USGS 21 52 24.0, 35.7N, 117.7W, H= 12 KM
                         CENTRAL CALIFORNIA

MAR 08  SAO  eP     03 13 26.6
        BKS  ePe    03 13 27.5
                          MICRON    PERIOD
                    PZ      0.03       0.7
        MHC  eP     03 13 28.2
        PRI  eP     03 13 28.4
        FRI  eP     03 13 33.5
        JAS  iPe    03 13 33.9                  e 15 34
        WDC  eP     03 13 34.7
        MIN  eP     03 13 36.4
        MNV  iPe    03 13 43.5                  e 15 45
                    USGS 03 02 32.8, 17.8S, 178.7W, H=571 KM, mb=5.3
                         FIJI ISLANDS REGION

MAR 08  JAS  eP     08 20 18.7
        FRI  eP     08 20 19.0
        MNV  eP     08 20 27.3
                    USGS 08 07 19.7,  8.3S, 156.2E, H= 33 KM, mb=5.3, Ms=5.8
                         SOLOMON ISLANDS

MAR 08  FRI  eP     13 19 31.1
        MNV  eP     13 19 32.7
        PRI  eP     13 19 32.9
        JAS  eP     13 19 39.3
        MHC  eP     13 19 42.2
        BKS  e(P)   13 19 49
                          MICRON    PERIOD
                    PZ      0.06       1.0
        MIN  e(P)   13 19 55
        WDC  e(P)   13 19 57
        FHC         13 20                       e 20 07
                    USGS 13 08 56.3, 12.0S,  74.2W, H= 41 KM, mb=5.6, Ms=5.6
                         PERU

MAR 08  FRI  eP     22 56 44.9
        MNV  eP     22 56 46.1
        PRI  eP     22 56 46.5
        JAS  eP     22 56 52.8
        MHC  eP     22 56 55.5
        BKS  e(P)   22 57 02
                          MICRON    PERIOD
                    PZ      0.05       0.7
        MIN  e(P)   22 57 06
        WDC  eP     22 57 09.9
        FHC  eP     22 57 19.5
                    USGS 22 46 04.8, 12.1S,  74.0W, H= 14 KM, mb=5.6, Ms=5.4
                         PERU

MAR 09  WDC  eP     06 41 45.4
        MHC  eP     06 42 00.7
        JAS  eP     06 42 03.1
        FRI  eP     06 42 09.0
        MNV  eP     06 42 09.3
                    USGS 06 30 32.2, 41.2N, 138.2E, H= 33 KM, mb=5.0
                         EASTERN SEA OF JAPAN

MAR 09  FHC  iPe    14 38 34.9                  pP 40 35
        WDC  ePe    14 38 39.4                  pP 40 41        PP 41 40
        MIN  ePe    14 38 42.6                                          PPP 08 10
        BRK  iPe    14 38 50.2                  pP 40 46
                                                SS 52 54        PP 41 48
        BKS  iPe    14 38 50.4                  pP 40 52        Lg 59 20
                                                e  51 28        PP 41 48        PPP 44 44
                          MICRON    PERIOD                      SS 56 06        SeS 47 52
                    PZ      1.96       0.9                                     Lr 58 49
        MHC  ePe    14 38 54.4                  pP 40 56
        JAS  ePe    14 38 55.9                  pP 40 57        PP 42 00
                                                PPP 08 10       PP 41 55        sP 42 10
        SAO  eP     14 38 57.0                                  e  08 28        sP 42 06
        FRI  ePe    14 39 01.4                  pP 41 04        PPP 08 18
        MNV  ePe    14 39 01.5
        PRI  ePe    14 39 02.7                  pP 41 04        PP 42 16        PPP 08 20
                    USGS 14 27 53.6, 41.6N, 130.9E, H=528 KM, mb=5.9
                         NORTH KOREA

MAR 10  MNV  iP     15 16 28.6                  i 19 13
        FRI  eP     15 16 28.9
        JAS  eP     15 16 38.7                  e 19 16
        MHC         15 16                       e 16 38
                    USGS 15 10 03.3, 14.9N,  92.3W, H=107 KM, mb=4.8
                         NEAR COAST OF CHIAPAS, MEXICO

MAR 12  MNV  ePe    03 08 14.4
        FRI  ePe    03 08 23.8
        JAS  ePe    03 08 27.4
        MIN  eP     03 08 29.5
        PRI  eP     03 08 30.5
        WDC  eP     03 08 32.1
        MHC  ePe    03 08 34.9
        BKS  eP     03 08 37.5                  e 17 28         e 24 56
                          MICRON    PERIOD
                    PZ      0.08       1.3
        FHC  ePe    03 08 41.5
                    USGS 02 57 50.6, 23.7N,  45.2W, H= 33 KM, mb=5.4, Ms=5.6
                         NORTH ATLANTIC RIDGE

MAR 12  PRI  iPd    05 55 39.4
        SAO  iPe    05 55 42.9
        FRI  iPd    05 55 46.1
        MHC  iPd    05 55 50.1
        JAS  iPd    05 55 54.6
                    BRK  05 55 31.2, 36.6N, 120.7W, H= 10 KM, ML=3.2
                         SOUTHEAST OF HOLLISTER, CALIFORNIA

MAR 12  PRI         08 13                       e 13 54
        FRI  eP     08 13 55.5
        MNV  ePe    08 14 03.0
        JAS  ePe    08 14 07.1
        MHC  eP     08 14 08.5
        BKS         08 14                       e 18 44
        MIN         08 14                       e 14 04
                    USGS 08 09 10.3, 18.7N, 107.3W, H= 33 KM, mb=4.9
                         OFF COAST OF JALISCO, MEXICO

MAR 12  SAO  iPd    09 19 10.0
        MHC  iPd    09 19 16.2
        PRI  iPd    09 19 25.6
        BKS  eP     09 19 26.9  19 44
        JAS  ePe    09 19 30.1
        FRI  eP     09 19 31.2
                    BRK  09 19 06.7, 36.9N, 121.5W, H= 9 KM, ML=3.6
                         NORTHWEST OF HOLLISTER, CALIFORNIA

MAR 13  MNV  ePe    05 05 50.3
        PRI  ePe    05 05 51.8
        JAS  iPe    05 05 56.5
        MHC  eP     05 05 59.0
        BKS         05 06                       e 06 03
        WDC  iPe    05 06 11.7
        FHC  e(P)   05 06 20
                    USGS 04 54 42.0, 17.0S,  69.8W, H=128 KM, mb=5.2
                         PERU-BOLIVIA BORDER REGION

MAR 13  FRI  ePe    21 24 33.9
        MNV  iPe    21 24 35.0                  e 25 13
        PRI  eP     21 24 36.2
        JAS  iPe    21 24 42.1                  e 25 19
        MHC  ePe    21 24 45.4                  e 25 24
        BKS  eP     21 24 50.1
                          MICRON    PERIOD
                    PZ      0.06       0.9
        MIN  e(P)   21 24 55
        WDC  iPe    21 24 59.0                  e 25 33
        FHC  iPe    21 25 08.1                  e 25 43
                    USGS 21 14 32.2,  8.0S,  74.4W, H=161 KM, mb=5.1
                         PERU-BRAZIL BORDER REGION

MAR 14  SAO  eP     19 14 12.7
        MHC  eP     19 14 13.4                  e 16 18
        BKS  ePe    19 14 13.7
                          MICRON    PERIOD
                    PZ      0.05       0.7
        PRI  eP     19 14 14.0
        FHC  eP     19 14 17.9
        FRI  eP     19 14 19.1                  e 16 24
        JAS  iPe    19 14 19.6                  e 16 24
        WDC  eP     19 14 20.3                  e 16 25
        MIN  eP     19 14 23.4
        MNV  iPe    19 14 28.8                  e 16 32
                    USGS 19 03 07.8, 20.7S, 178.5W, H=577 KM, mb=5.4
                         FIJI ISLANDS REGION

MAR 14  PRI  eP     21 04 45.0
        BKS  eP     21 04 45.6
                          MICRON    PERIOD
                    PZ      0.03       0.7
        MHC  eP     21 04 45.7
        FRI  eP     21 04 49.5
        JAS  iPe    21 04 50.5
        WDC  iPe    21 04 53.3
                    USGS 20 52 38.2, 31.0S, 179.9E, H=368 KM, mb=5.0
                         KERMADEC ISLANDS REGION

MAR 15  MHC  eP     04 23 10.0
        FRI  eP     04 23 15.9
        JAS  iPe    04 23 16.5
        WDC  eP     04 23 18.4
        MIN  eP     04 23 20.0
                    USGS 04 11 51.2, 15.2S, 173.2W, H= 32 KM, mb=4.9, Ms=5.3
                         TONGA ISLANDS

MAR 15  WDC  e(P)   09 09 07                   PP 13 29
        BKS         09 09                       e 09 12
        MHC         09 09                       e 09 15     PP 13 40
        MIN         09 09                       e 09 16
        JAS  eP     09 09 17.6
        PRI         09 09                       e 09 20
        FRI  eP     09 09 20.4                  PP 13 47
        MNV  eP     09 09 26.0
                    USGS 08 54 58.8,  5.0S, 131.0E, H= 41 KM, mb=5.8, Ms=5.5
                         BANDA SEA

MAR 15  FHC  eP     20 08 30.5
        BKS  e(P)   20 08 34
        MHC  eP     20 08 35.5
        WDC  eP     20 08 35.5
        MIN  eP     20 08 38.3
        PRI  eP     20 08 39.2
        JAS  ePe    20 08 40.5
        FRI  eP     20 08 42.5
        MNV  ePe    20 08 49.1
                    USGS 19 55 42.6,  6.7S, 155.0E, H= 31 KM, mb=5.5, Ms=5.8
                         SOLOMON ISLANDS
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MAR 15 FRI  eP    21 35 13.5                PcP 37 43
       MNV  ePc   21 35 13.7                PcP 37 43
       FRI  eP    21 35 16.4
       JAS  eP    21 35 22.8                PcP 37 46
       MDC  eP    21 35 27.4
       BKS  ePd   21 35 35.1
                        MICRON    PERIOD
                  PZ      0.05       1.0
       MIN  eP    21 35 40.2
       WDC  eP    21 35 44.1                PcP 37 54
       FHC  eP    21 35 55.6
                  USGS 21 28 23.6, 13.4N,  89.7W, H= 95 KM, mb=4.7
                       EL SALVADOR

MAR 16 FHC  eP    06 27 57.5
       WDC  eP    06 28 04.0
       JAS  eP    06 28 28.5
       FRI  eP    06 28 37.5
       PRI  eP    06 28 44.5
                  USGS 06 22 17.7, 55.5N, 157.0W, H= 18 KM, mb=5.1, Ms=3.9
                       ALASKA PENINSULA

MAR 16 SAO  iPd   07 54 59.9
       MDC  iPd   07 55 05.3
       FRI  ePc   07 55 15.3
       BKS  ePd   07 55 16.5
       JAS  iPc   07 55 19.4
       FRI  ePc   07 55 20.6
                  BRK  07 54 56.2, 36.9N, 121.5W, H=  9 KM, ML=3.6
                       NORTHWEST OF HOLLISTER, CALIFORNIA

       SAO  iPd   07 56 34.2
       MDC  iPd   07 56 39.6
       BKS  ePd   07 56 51.1
       FRI  ePc   07 56 55.4
                  BRK  07 56 30.5, 36.9N, 121.5W, H=  9 KM, ML=2.7
                       NORTHWEST OF HOLLISTER, CALIFORNIA

MAR 16 FHC  ePc   13 07 06.5  07 28
       WDC  eP    13 07 22.4  07 54
       MIN  eP    13 07 32
       BKS  eP    13 07 38.8
       MDC  eP    13 07 48.5
       SAO  eP    13 07 55.0
       JAS  e(P)  13 07 58
                  BRK  13 06 38   , 40.4N, 126.0W, H=  2 KM, ML=3.4
                       OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

MAR 16 WDC        15 49                     • 49 11
       MIN        15 49                     • 49 18
       JAS  eP    15 49 58
       FRI  eP    15 50 10.5
       PRI  eP    15 50 17
                  USGS 15 46 38.6, 50.8N, 129.6W, H= 33 KM, mb=4.5
                       VANCOUVER ISLAND REGION

MAR 17 FHC  iPd   09 15 28.4  15 56
       WDC  iPd   09 15 45.5
       MIN  eP    09 15 54.2  16 38
       BKS  eP    09 15 58.4                • 16 12      • 16 48
       MDC  iPc   09 16 08.3  17 05
       SAO  iPc   09 16 14.1
       JAS  iPd   09 16 17.1  17 22
       FRI  iPd   09 16 28.0
       FRI  iPc   09 16 29.4
       MNV  eP    09 16 48.0
                  BRK  09 14 49   , 40.4N, 127.1W, H=  2 KM, ML=4.1
                       OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

MAR 17 JAS  eP    12 53 51.5
       FRI  eP    12 53 52.4
       MNV  eP    12 54 00.8
                  USGS 12 42 30.9, 12.9S, 169.4E, H=649 KM, mb=4.9
                       SANTA CRUZ ISLANDS REGION

MAR 18 FHC  eP    21 57 18.5
       WDC  eP    21 57 23.0                PP 00 40   PKKP 14 10
       MIN  eP    21 57 25.4
       BKS  eP    21 57 29.0  09 06           • 57 44   SKS 08 12    PS 10 00
                                              SS 15 00     • 16 00    SSS 19 00
                                              Lq 22 50     Lr 29 20
                        MICRON    PERIOD
                  PZ      0.08       1.0
                  LZ        51        20
                  LN        22        20
                  LE        49        20
       MDC  eP    21 57 33.0                PP 00 57
       JAS  eP    21 57 35.3                PP 01 00
       FRI  e(P)  21 57 39
       PRI  eP    21 57 39.0             PKKP 14 00
       MNV  eP    21 57 41.3
                  Ms=6.9, DISTANCE=96°
                  USGS 21 43 52.4, 16.8N, 122.3E, H= 37 KM, mb=6.2, Ms=7.0
                       LUZON, PHILIPPINE ISLANDS

MAR 19 BKS  e(P)  09 33 58
       PRI  eP    09 34 00.8
       MDC  eP    09 34 01.0
       FRI  eP    09 34 06.5
       JAS  eP    09 34 07.0
       WDC  ePc   09 34 08.9
       MIN  eP    09 34 10.7
       MNV  ePc   09 34 16.8
                  USGS 09 22 42.4, 17.2S, 174.7W, H=176 KM, mb=5.1
                       TONGA ISLANDS

MAR 19 FRI  eP    10 38 25.3                Sg 38 52
       PRI  eP    10 38 31.3
       MNV  eP    10 38 35.2                Pg 38 41
       JAS  eP    10 38 43.8                Sg 39 25
                  MAG=3.5, MOJAVE DESERT AREA, CALIFORNIA
                  USGS 10 37 49.7, 35.7N, 117.7W, H=  2 KM
                       CENTRAL CALIFORNIA

MAR 19 FHC  ePc   11 06 39.8
       WDC  iPc   11 06 44.9                pP 07 06 PKPPKP 35 37
       MIN  ePc   11 06 49.2
       BKS  ePc   11 06 56.3                • 20 00      Lq 23 00
                        MICRON    PERIOD
                  PZ      0.08       0.9
                  LZ       2.3        20
       MDC  ePc   11 07 01.0
       JAS  iPc   11 07 03.8                pP 07 25 PKPPKP 35 42
       FRI  ePc   11 07 10.0
       PRI  ePc   11 07 10.3             PKPPKP 35 42
       MNV  iPc   11 07 11.1
                  USGS 10 56 25.1, 44.2N, 148.2E, H= 70 KM, mb=6.0
                       KURIL ISLANDS

MAR 19 FHC  e(P)  19 48 34
       WDC  eP    19 48 38.2
       MIN  e(P)  19 48 41
       BKS        19 48                     • 01 36      Lq 26 20
                        MICRON    PERIOD
                  LZ      3.6        20
                  LN      1.2        20
                  LE      3.3        20
       JAS  eP    19 48 49.3
       MNV  eP    19 48 56.5
                  USGS 19 35 08.0, 16.8N, 122.4E, H= 39 KM, mb=5.6, Ms=5.8
                       LUZON,PHILIPPINE ISLANDS

MAR 19 MDC  iPd   22 56 49.5
       BKS  iPc   22 57 00.4                • 57 10
       SAO  iPc   22 57 00.7
       JAS  iPd   22 57 07.1
       FRI  eP    22 57 13.0
       FRI  eP    22 57 14.3
                  BRK  22 56 47.6, 37.4N, 121.6W, H=  8 KM, ML=3.4
                       SOUTH-SOUTHEAST OF LIVERMORE, CALIFORNIA

MAR 19 FRI  ePc   23 11 11.9
       SAO  ePc   23 11 13.8
       MDC  ePc   23 11 17.8
       FRI  ePc   23 11 18.3
       BKS  ePc   23 11 19.7
                        MICRON    PERIOD
                  PZ      0.15       0.9
       JAS  iPc   23 11 23.3
       MNV  iPc   23 11 30.7
       WDC  iPc   23 11 35.9
       MIN  ePc   23 11 37.0
                  USGS 23 00 58.2, 21.9S, 139.0W, H=  0 KM, mb=5.9, Ms=5.5
                       TUAMOTU ARCHIPIELAGO REGION

MAR 21 MDC  eP    04 15 50.4
       FRI  eP    04 15 55.0
       JAS  ePc   04 15 55.6
       WDC  ePc   04 15 57.6
       MIN  eP    04 15 59.2
       MNV  eP    04 16 03.9
                  USGS 04 04 29.3, 23.2S, 179.6E, H=574 KM, mb=4.6
                       SOUTH OF FIJI ISLANDS

MAR 21 FHC  eP    04 48 17.5
       WDC  ePc   04 48 22.5
       MIN  eP    04 48 25.9
       BKS  e(P)  04 48 27                                  • 05 17
       MDC  eP    04 48 29.7
       JAS  ePc   04 48 33.5
       PRI  eP    04 48 35.3
       FRI  eP    04 48 37.2
       MNV  eP    04 48 41.6
                  USGS 04 36 00.6, 13.2N, 145.3E, H= 56 KM, mb=5.4
                       MARIANA ISLANDS

MAR 21 FHC  eP    07 10 04
       WDC  eP    07 10 09.0
       MIN  eP    07 10 12.1
       BKS  e(P)  07 10 14    20 38       Lq 31 48     Lr 35 35
                        MICRON    PERIOD
                  PZ      0.01       0.5
                  LZ       2.9        20
                  LN       1.4        20
                  LE       1.4        20
       MDC  eP    07 10 16.0
       JAS  eP    07 10 19.6
       PRI  eP    07 10 21.5
       FRI  eP    07 10 23.5
       MNV  e(P)  07 10 28
                  Ms=5.5, DISTANCE=84°
                  USGS 06 57 44.4, 13.2N, 145.3E, H= 33 KM, mb=5.5, Ms=5.6
                       MARIANA ISLANDS

MAR 21 FHC  e(P)  08 03 54
       WDC  eP    08 03 58.8
       MIN  eP    08 04 02.0
       BKS  eP    08 04 02.8
                        MICRON    PERIOD
                  PZ      0.03       0.6
       MDC  eP    08 04 05.7
       JAS  ePc   08 04 09.3
       PRI  eP    08 04 11.3
       FRI  eP    08 04 13.2
       MNV  eP    08 04 17.8
                  USGS 07 51 35.9, 13.1N, 145.3E, H= 54 KM, mb=5.2, Ms=5.1
                       MARIANA ISLANDS

MAR 21 WDC  ePKP  21 37 29.2                SP 47 46     • 52 23
       MIN  ePKPc 21 37 29.7
       FHC  ePKPc 21 37 29.7
       MNV  ePKPc 21 37 34.0                SP 48 05
       JAS  ePKPc 21 37 34.5                PP 38 25     SP 48 10     • 52 12
       BKS  ePdif 21 33 40                    • 37 24     PP 38 31    PPP 41 02
                                             SP 48 10      • 49 30      • 55 08
                                             SSS 59 00     • 05 40     Lr 12 00
                        MICRON    PERIOD
                  LZ        21        20
                  LN        24        20
                  LE        36        20
       FRI  ePKPc 21 37 36.4                SP 48 20
       MDC  ePKP  21 37 36.5                SP 48 20
       PRI  ePKPc 21 37 38.9             PPP 41 15    SP 48 30
                  Ms=7.0, DISTANCE=115°
                  USGS 21 18 54.2, 27.6N,  56.4E, H= 29 KM, mb=6.2, Ms=6.9
                       SOUTHERN IRAN

MAR 21 WDC  ePKP  23 00 39.5                SP 11 30
       FHC  ePKP  23 00 40.3
       MNV  ePKP  23 00 44.5                SP 11 29
       JAS  ePKP  23 00 45.0                SP 11 29
       FRI  ePKP  23 00 47.0                SP 11 20
       MDC  ePKP  23 00 47.0
                  USGS 22 42 06.5, 27.6N,  56.5E, H= 36 KM, mb=5.8
                       SOUTHERN IRAN

MAR 22 SAO  eP    02 35 39.0
       PRI  eP    02 35 40.0                pP 36 49
       MDC  eP    02 35 40.9
       BKS  eP    02 35 41.2  45 40         SoS 46 12
                        MICRON    PERIOD
                  PZ      0.11       0.8
       FRI  eP    02 35 44.3                pP 36 55
       JAS  eP    02 35 45.4                pP 36 57
       FHC  eP    02 35 45.9
       WDC  eP    02 35 48.4                pP 37 07
       MIN  eP    02 35 49.6
       MNV  eP    02 35 52.9
                  USGS 02 23 17.8, 33.6S, 179.1E, H=336 KM, mb=5.6
                       SOUTH OF KERMADEC ISLANDS

MAR 22 FHC  ePKP  12 16 07.0
       WDC  ePKP  12 16 08                  SP 26 57
       JAS  ePKP  12 16 11.1                SP 26 55
       MNV  ePKP  12 16 11.8                SP 26 52
       BKS        12 16                     PP 17 10     SP 26 46     SS 33 12
                                              • 50 00
                        MICRON    PERIOD
                  LZ       1.6        20
                  LN       1.8        20
                  LE       2.8        20
       FRI  ePKP  12 16 12.6                SP 26 46
       MDC  ePKP  12 16 12.6
                  Ms=5.9, DISTANCE=115°
                  USGS 11 57 30.9, 27.6N,  56.5E, H= 39 KM, mb=5.7, Ms=5.9
                       SOUTHERN IRAN

MAR 23 MNV  iPc   02 20 04.7                PcP 21 17    ScP 25 01
       FRI  ePc   02 20 07.3
       PRI  eP    02 20 11.2
       JAS  iPc   02 20 15.2                PcP 21 23    ScP 25 06
       SAO  eP    02 20 16.6
       MDC  ePc   02 20 20.5
       BKS  eP    02 20 25.6
                        MICRON    PERIOD
                  PZ      0.22       0.9
       MIN  ePc   02 20 27.4                PcP 21 31    ScP 25 15
       WDC  iPc   02 20 30.9                PcP 21 38
       FHC  ePc   02 20 41.7
                  USGS 02 11 14.6,  6.8N,  73.0W, H=164 KM, mb=5.5
                       NORTHERN COLOMBIA

MAR 23 BKS        05 12                     Lq 05 34
                        MICRON    PERIOD
                  LZ       1.6        20
       JAS  eP    05 12 22.0
       WDC  eP    05 12 22.9
       MNV  eP    05 12 32.7
                  USGS 05 00 41.0, 14.8S, 178.2W, H= 33 KM, mb=5.0, Ms=5.1
                       FIJI ISLANDS REGION
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MAR 23  BKS  eP     07 30 43    40 20          e 40 54      Lq 48 50      e 49 22
                                                Lr 52 20
                          MICRON     PERIOD
                    PZ      0.27        1.0
                    LZ        23         20
                    LN        20         20
                    LE        17         20
        MHC  eP     07 30 43.9
        PRI  eP     07 30 44.3
        FHC  eP     07 30 46.7
        JAS  ePo    07 30 50.0
        FRI  eP     07 30 50.0
        WDC  ePo    07 30 50.7
        MIN  eP     07 30 52.8
        MNV  eP     07 31 00.3
                    Ms=6.5, DISTANCE=73°
                    USGS 07 19 11.1, 14.5S, 177.9W, H= 33 KM, mb=5.6, Ms=6.3
                         FIJI ISLANDS REGION

MAR 23  FRI  ePKP   16 28 12.7
        MNV  ePKP   16 28 13.0
        JAS  ePKP   16 28 16.0
        MHC  ePKP   16 28 16.8
        WDC  ePKP   16 28 21.4
                    SOUTH SANDWICH ISLANDS REGION

MAR 23  BKS  e(P)   17 21 56    31 36          e 32 06      Lq 40 20      Lr 43 30
                          MICRON     PERIOD
                    PZ      0.09        1.1
                    LZ        15         20
                    LN        11         20
                    LE         0         20
        MHC  eP     17 21 57.3
        PRI  eP     17 21 57.6
        FHC  e(P)   17 22 00
        FRI  eP     17 22 03.0
        JAS  eP     17 22 03.2
        WDC  eP     17 22 04.0
        MIN  eP     17 22 06.0
        MNV  eP     17 22 13.5
                    Ms=6.1, DISTANCE=73°
                    USGS 17 10 19.5, 14.4S, 178.0W, H=  2 KM, mb=5.6, Ms=6.0
                         FIJI ISLANDS REGION

MAR 23  PRI  eP     19 08 53.8
        MHC  e(P)   19 08 56
        FRI  eP     19 08 59.5
        JAS  eP     19 09 00.4
        WDC  eP     19 09 02.0
        MNV  eP     19 09 10.5
                    USGS 18 57 36.6, 15.0S, 173.2W, H= 33 KM, mb=5.1
                         TONGA ISLANDS

MAR 24  MNV  eP     07 36 15.5
        FRI  eP     07 36 16.1
        PRI  eP     07 36 18.7
        JAS  eP     07 36 24.5
        MHC  eP     07 36 29.1
                    USGS 07 27 17.2,  3.2N,  78.5W, H= 24 KM, mb=5.2
                         SOUTH OF PANAMA

MAR 24  MNV  eP     07 44 50.5
        JAS  eP     07 44 56.5
        FRI  e(P)   07 44 59
        MHC  e(P)   07 45 02
        PRI  eP     07 45 06.8
                    USGS 07 32 30.5, 51.3N,  15.8E, H= 33 KM, mb=5.0, Ms=3.5
                         POLAND

MAR 25  JAS  eP     13 45 52.6
                    USGS 13 39 45.2, 60.8N, 148.1W, H= 55 KM, mb=4.6
                         KENAI PENINSULA, ALASKA

MAR 26  FHC  ePo    04 42 40.8
        WDC  iPo    04 42 49.7                 e 43 30      e 44 33
        MIN  eP     04 42 55.4
        BKS  ePd    04 43 05.2  48 34          Lq 50 50
                          MICRON     PERIOD
                    PZ      0.15        0.9
                    LZ        12         20
                    LN        30         20
                    LE        12         20
        MHC  eP     04 43 11.2
        JAS  eP     04 43 14.5                 e 43 42      e 44 18
        SAO  eP     04 43 14.5
        FRI  ePo    04 43 23.0
        PRI  ePo    04 43 23.4
        MNV  ePo    04 43 24.0
                    Ms=6.1, DISTANCE=35°
                    USGS 04 36 14.7, 52.3N, 168.3W, H= 38 KM, mb=5.7, Ms=6.0
                         FOX ISLANDS, ALEUTIAN ISLANDS

MAR 26  SAO  eP     08 30 46.3
        PRI  ePo    08 30 47.9
        BKS  ePo    08 30 48.0
                          MICRON     PERIOD
                    PZ      0.05        0.8
        MHC  iPo    08 30 48.5
        FHC  ePo    08 30 53.0
        FRI  ePo    08 30 53.5
        JAS  iPo    08 30 54.3
        WDC  iPo    08 30 56.6                 e 31 19
        MIN  ePo    08 30 58.4                 e 31 25
        MNV  iPo    08 31 04.3
                    USGS 08 19 18.5, 18.6S, 174.1W, H= 93 KM, mb=5.6
                         TONGA ISLANDS

MAR 26  JAS  eP     09 08 53.6
        WDC  eP     09 08 56.0

MAR 26  BKS  iPd    19 13 18.0  13 27
        MHC  iPd    19 13 27.8
        JAS  eP     19 13 31.9  13 52
        SAO  eP     19 13 36.0
        WDC  eP     19 13 41.2
        FRI  eP     19 13 46.8
                    BRK  19 13 06.4, 38.5N, 122.2W, H=  7 KM, ML=2.9
                         NORTHEAST OF NAPA, CALIFORNIA

MAR 26  MNV  ePd    22 34 53.0
        FRI         22 34
        PRI         22 34                      e 34 54
        JAS  iPd    22 34 58.6                 e 34 54
        MHC  eP     22 35 01.4
        BKS  e(P)   22 35 04
        WDC  iPd    22 35 12.9
                    USGS 22 23 26.5, 20.3S,  66.4W, H=207 KM, mb=4.8
                         SOUTHERN BOLIVIA

MAR 27  FRI  eP     07 37 10.9
        JAS  iP     07 37 11.5
        WDC  eP     07 37 13.4
        MIN  eP     07 37 15.2
                    USGS 07 25 33.2, 23.8S, 179.8W, H=441 KM, mb=4.5
                         SOUTH OF FIJI ISLANDS

MAR 27  BKS  eP     11 25 09.2
        MHC  eP     11 25 21.7
        JAS  iP     11 25 28.4  25 51
        SAO  eP     11 25 29.0
                    BRK  11 24 58.4, 38.3N, 122.6W, H=  2 KM, ML=2.5
                         SOUTHEAST OF SANTA ROSA, CALIFORNIA

MAR 27  WDC  ePKP   17 35 37.4
        JAS  ePKP   17 35 38.0
        FRI  ePKP   17 35 38.1
                    USGS 17 15 46.5, 47.3S, 100.2E, H= 33 KM, mb=4.2
                         SOUTHEAST INDIAN RISE

MAR 27  WDC  eP     22 46 27.0
        JAS         22 46                      e 46 40
        MHC         22 46                      e 46 45
                    USGS 22 34 06.7, 13.4N, 145.4E, H= 65 KM, mb=5.1
                         MARIANA ISLANDS

MAR 28  MHC  eP     01 28 04.0
        BKS  ePo    01 28 04.2  38 20          Lr 53 40
                          MICRON     PERIOD
                    PZ      0.05        1.0
        PRI  e(P)   01 28 06
        WDC  eP     01 28 07.0
        JAS  eP     01 28 08.5
        FRI  eP     01 28 10.0
        MNV  eP     01 28 18.5
                    USGS 01 15 41.8, 14.7S, 167.1E, H=109 KM, mb=5.7
                         NEW HEBRIDES ISLANDS

MAR 29  WDC  iPo    04 09 51.9
        MIN  eP     04 09 53.9
        BRK  e(P)   04 10 06
        MNV  ePo    04 10 06.0
        JAS  iPo    04 10 06.5
        MHC  eP     04 10 08.4
        FRI  eP     04 10 11.3
                    USGS 03 56 57.7, 49.8N,  78.1E, H=  0 KM, mb=5.4
                         EASTERN KAZAKH, SSR

MAR 29  FRI  eP     15 37 11.3
        JAS  eP     15 37 11.7
        WDC  e(P)   15 37 14
        MNV  eP     15 37 20.4
                    USGS 15 25 54.5, 22.1S, 179.7W, H=605 KM, mb=4.7
                         SOUTH OF FIJI ISLANDS

MAR 29  SAO  eP     17 54 27.1
        PRI  eP     17 54 28.6
        BKS  ePd    17 54 28.8
        MHC  eP     17 54 28.8
        JAS  eP     17 54 34.2
        WDC  eP     17 54 36.0
        MIN  eP     17 54 37.8
        MNV  eP     17 54 43.2
                    USGS 17 43 23.5, 20.3S, 178.3W, H=543 KM, mb=5.0
                         FIJI ISLANDS REGION

MAR 30  WDC  eP     11 32 21
        JAS  eP     11 32 32
        FRI  eP     11 32 37
        MNV  eP     11 32 39
                    USGS 11 20 35.7, 31.5N, 140.2E, H= 33 KM, mb=5.3, Ms=5.3
                         SOUTH OF HONSHU, JAPAN

APR 01  WDC  e(P)   00 23 18
        MIN         00 23                      e 23 23
        MHC         00 23                      e 23 39
        JAS  e(P)   00 23 41
        MNV  e(P)   00 23 48
        FRI         00 23                      e 23 49
                    USGS 00 14 41.5, 55.4N, 166.2E, H= 33 KM, mb=4.9, Ms=4.0
                         KOMANDORSKY ISLANDS REGION

APR 01  WDC  ePKP   13 55 00                   PP 55 51      e 05 49
        FHC  e(PKP) 13 55 02
        MNV  ePKPo  13 55 04.2                 PP 55 57
        JAS  ePKP   13 55 04.7                 e 05 41
        BKS         13 55                      PP 56 03      SP 05 45
                          MICRON     PERIOD
                    LZ        2.3         20
                    LN        3.0         20
                    LE        2.9         20
        FRI  ePKPo  13 55 06.6
        MHC  ePKP   13 55 07
        PRI  ePKP   13 55 09.7
                    USGS 13 36 24.7, 27.5N,  56.3E, H= 29 KM, mb=6.2, Ms=6.0
                         SOUTHERN IRAN

APR 02  FHC  iPd    06 09 17.1
        WDC  iPo    06 09 30.3
        MIN  iP     06 09 40.8
        JAS  e(P)   06 10 20
                    BRK  06 09 11.9, 40.6N, 123.9W, H= 14 KM, ML=3.6
                         SOUTHEAST OF EUREKA, CALIFORNIA

APR 02  SAO  eP     07 26 41.3                 e 26 56      e 27 10
        BKS  ePo    07 26 42.9  36 09          PP 29 30      SS 40 40      e 44 08
                                               Lq 45 00      Lr 47 10
                          MICRON     PERIOD
                    PZ      6.14        0.8
                    LZ       490         21
                    LNE      590         21
                    LNW      101         21
        PRI  iPo    07 26 43.1                 e 26 56 PKPPKP 54 41
        MHC  ePo    07 26 43.5                 e 26 54      e 27 26 PKPPKP 54 42
        FHC  ePo    07 26 48.5
        FRI  ePo    07 26 48.6
        JAS  iPo    07 26 49.7          PKKP 46 32 PKPPKP 54 38
        WDC  iPo    07 26 52.1
        MIN  ePo    07 26 52.9
        MNV  ePo    07 26 59.8
                    Ms=7.9, DISTANCE=73°
                    USGS 07 15 22.7, 16.7S, 172.1W, H= 33 KM, mb=6.8, Ms=7.6
                         SAMOA ISLANDS REGION

APR 02  FRI  ePd    20 45 02.5                 PoP 47 53
        MNV  ePd    20 45 02.8                 PoP 47 52
        PRI  ePd    20 45 05.5                 PoP 47 54     ScP 51 15
        SAO  eP     20 45 11.8
        JAS  iPd    20 45 12.0                 PoP 47 55     ScP 51 18
        MHC  iPd    20 45 16.8                 PoP 47 57     ScP 51 20
        BKS  eP     20 45 22.6
                          MICRON     PERIOD
                    PZ      0.06        0.8
        BRK  eP     20 45 22.6                 PoP 47 59     ScP 51 22
        MIN  ePd    20 45 30.1
        WDC  iPd    20 45 34.0                 PoP 48 02     ScP 51 26
        FHC  ePd    20 45 45.6                 ScP 51 32
                    USGS 20 39 06.2, 16.9N,  92.8W, H=249 KM, mb=5.3
                         CHIAPAS, MEXICO

APR 03  WDC  iPd    10 21 04.0
        MIN  e(P)   10 21 06
        FHC  eP     10 21 09.5                 i 21 12
        BKS  eP     10 21 19.1  21 46
        JAS  ePd    10 21 26.3
                    BRK  10 20 43.8, 39.6N, 123.0W, H=  5 KM, ML=3.0
                         NORTH-NORTHEAST OF UKIAH, CALIFORNIA

APR 03  WDC  eP     18 48 31.5
        MIN  eP     18 48 38.5
        MHC         18 49                      e 49 14
        JAS  ePd    18 49 19.5
        PRI  eP     18 49 38
                    USGS 18 45 45.9, 50.7N, 129.9W, H=  4 KM, mb=4.7
                         VANCOUVER ISLAND REGION

APR 04  BRK  e(P)   04 42 50
        FHC  eP     04 42 50.2
        MHC  eP     04 42 51.3
        PRI  eP     04 42 53.0
        WDC  eP     04 42 54.5
        JAS  eP     04 42 56.4
        MIN  eP     04 42 56.6
        FRI  eP     04 42 57.2
                    USGS 04 30 20.6, 14.3S, 167.6E, H= 15 KM, mb=5.2, Ms=5.3
                         NEW HEBRIDES ISLANDS
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APR 04  SAO  eP     07 39 49.1
        BRK  e(P)   07 39 50
        MHC  eP     07 39 50.8
        PRI  eP     07 39 50.9
        FRI  eP     07 39 56.4
        FBC  eP     07 39 56.7
        JAS  eP     07 39 57.6
        WDC  eP     07 39 59.7
        MIN  eP     USGS 07 28 55.5, 15.0S, 177.6W, H=431 KM, mb=4.7
                       FIJI ISLANDS REGION

APR 04  PRI  eP     18 02 22.5
        PRI  eP     18 02 24.6
        JAS  eP     18 02 32.2
        MHC  eP     18 02 36.4
        BKS         18 02                    Lq 12 00     Lr 15 30
                                MICRON    PERIOD
                       LZ         0.9        20
                       LN         4.1        20
                       LE         3.4        20
        WDC  eP     18 02 55.0
        FBC  eP     18 03 06.7
                    USGS 17 56 00.3, 14.9N,  94.1W, H= 28 KM, mb=4.9
                       OFF COAST OF CHIAPAS, MEXICO

APR 04  PRI  eP     18 04 36.6
        JAS  iPo    18 04 40.7                i 04 48
        PRI  eP     18 04 42.0
        MIN  eP     18 04 42.7
        WDC  eP     18 04 45.0
        MHC  eP     18 04 46.8
        BKS  eP     18 04 48                 Lq 26 50     Lr 31 40
                                MICRON    PERIOD
                       LZ         3.6        20
                       LN         4.3        20
                       LE         2.1        20
        FBC  eP     18 04 52.0
                    USGS 17 52 19.7,  7.3N,  34.9W, H= 33 KM, mb=5.5, Ms=6.0
                       CENTRAL MID-ATLANTIC RIDGE

APR 05  PRI  eP     07 45 56.5
        JAS  eP     07 46 02.3
        MHC  eP     07 46 05.2
        WDC  eP     07 46 17.8
        FBC  eP     07 46 26.0
                    USGS 07 34 52.8, 16.5S,  71.0W, H=117 KM, mb=4.7
                       SOUTHERN PERU

APR 05  WDC  eP     08 40 12.5
        MIN  eP     08 40 15.8
        MHC  eP     08 40 20.9
        JAS  eP     08 40 24.4
        PRI  eP     08 40 28.7
                    USGS 08 28 29.0, 18.7N, 145.3E, H=233 KM, mb=4.9
                       MARIANA ISLANDS

APR 05  FBC  eP     10 55 05.6
        WDC  eP     10 55 10.5
        MIN  eP     10 55 14.6
        BKS  eP     10 55 15.6                • 55 47      • 05 44     Lq 17 30
                                             Lr 26 00
                                MICRON    PERIOD
                       PZ         0.02       0.5
                       LZ         1.4        20
                       LN         0.9        20
                       LE         1.6        20
        MHC  eP     10 55 17.6
        JAS  eP     10 55 21.6
        PRI  eP     10 55 23.7
        PRI  eP     10 55 24.9
                    Ms=5.4, DISTANCE=83°
                    USGS 10 42 35.0, 12.0N, 144.2E, H= 17 KM, mb=5.6, Ms=5.5
                       SOUTH OF MARIANA ISLANDS

APR 05  MNV  iPe    15 00 36.5
        PRI  iPe    15 00 48.2
        JAS  iPe    15 00 57.1
        PRI  iPe    15 01 00.9
        SAO  iPe    15 01 07.4
        MHC  iPe    15 01 10.0
        BKS  iPe    15 01 16.4                • 01 28
        MIN  eP     15 01 22.9
        WDC  iPe    15 01 32.3
        FBC  eP     15 01 47.5
                    ML=5.5, NUCLEAR EXPLOSION, NEVADA TEST SITE
                    USGS 15 00 00.2, 37.1N, 116.1W, H=  0 KM, mb=5.6, Ms=5.3
                       SOUTHERN NEVADA

APR 05  MNV  e(P)   16 57 39
        PRI  e(P)   16 57 57
        JAS  e(P)   16 58 07
        PRI  e(P)   16 58 12
        BKS  e(P)   16 58 32
                    ML=4.4, COLLAPSE, NEVADA TEST SITE
                    USGS 16 57 06.3, 37.1N, 116.1W, H=  0 KM, mb=4.6
                       SOUTHERN NEVADA

APR 06  WDC  eP     16 21 43.5
        JAS  eP     16 21 44.4
        MNV  eP     16 21 53.0
                    USGS 16 09 28.5, 19.0S, 169.5E, H=267 KM, mb=4.8
                       NEW HEBRIDES ISLANDS

APR 07  MHC  eP     09 45 05.2
        PRI  eP     09 45 09.7
        JAS  eP     09 45 10.7
        WDC  eP     09 45 10.9
        MNV  eP     09 45 19.7
                    USGS 09 34 09.8, 19.6S, 177.8W, H=617 KM, mb=4.7
                       FIJI ISLANDS REGION

APR 07  MNV  ePKP   12 14 27.7
        PRI  ePKP   12 14 30.6
        MIN  ePKP   12 14 31.4
        JAS  ePKP   12 14 31.7
        WDC  ePKP   12 14 32.1
        PRI  ePKP   12 14 33.7
                    USGS 11 54 37.1, 26.9S,  26.7E, H= 11 KM, mb=5.5
                       REPUBLIC OF SOUTH AFRICA

APR 07  MNV  ePe    20 35 07.5
        PRI  e(P)   20 35 09
        JAS  ePe    20 35 16.1
        MHC         20 35                    • 35 20
        BKS         20 35                    Lq 45 52     Lr 48 26
                                MICRON    PERIOD
                       LZ         1.2        19
                       LN         0.9        19
                       LE         1.4        19
        WDC  e(P)   20 35 38
        FBC  ePe    20 35 49.7
                    USGS 20 28 28.7, 14.8N,  91.2W, H= 33 KM, mb=4.9, Ms=4.0
                       GUATEMALA

APR 07  PRI  eP     20 41 57.2
        PRI  ePe    20 41 58.9
        MNV  ePe    20 41 59.3
        JAS  ePe    20 42 05.2
        MHC  ePe    20 42 07.8
        BKS  eP     20 42 11.8
                                MICRON    PERIOD
                       PZ         0.04       1.0
        WDC  ePe    20 42 21.9
        FBC  eP     20 42 30.1
                    USGS 20 31 09.5, 15.4S,  76.3W, H= 27 KM, mb=5.2
                       OFF COAST OF PERU

APR 08  FBC  ePe    09 00 36.7  01 13
        WDC  ePe    09 00 52.7  01 35
        MIN  ePe    09 01 04.7
        JAS  eP     09 01 31.5
        PRI  e(P)   09 01 47
                    BRK  08 59 53  , 42.0N, 127.2W, H=  2 KM, ML=4.0
                       OFF THE COAST NORTHWEST OF EUREKA, CALIFORNIA

APR 08  PRI  eP     11 13 33.3
        MHC  eP     11 13 44.8
        JAS  eP     11 13 48.2
        MNV  ePe    11 13 50.6
        WDC  eP     11 14 11.7
                    USGS 11 06 52.2,  2.5N, 115.7W, H= 33 KM, mb=4.6
                       EAST CENTRAL PACIFIC OCEAN

APR 09  WDC  iPe    00 14 29.1  14 37
        FBC  iPe    00 14 30.8  14 40
        MIN  iPd    00 14 40.0  14 56
        JAS  e(P)   00 15 18
                    BRK  00 14 18.1, 40.5N, 123.2W, H=  5 KM, ML=3.1
                       SOUTHEAST OF EUREKA, CALIFORNIA

APR 09  PRI  ePd    04 14 00.0
        MNV  iPd    04 14 00.5                          e 15 53
        PRI  ePd    04 14 02.2                e 15 55
        SAO  eP     04 14 07.0
        JAS  iPd    04 14 07.6                e 16 02 PKPPKP 42 14
        MHC  ePd    04 14 11.0                e 16 04
        BKS  ePd    04 14 14.8  22 30          pP 16 06      sP 17 00      sS 25 40
                                                SS 27 28      e 42 34
                                MICRON    PERIOD
                       PZ         0.29       1.0
        MIN  ePd    04 14 19.8
        WDC  iPd    04 14 23.1                e 16 18 PKPPKP 42 07
        FBC  iPd    04 14 31.8
                    USGS 04 04 12.5, 10.0S,  71.2W, H=564 KM, mb=5.5
                       PERU-BRAZIL BORDER REGION

APR 09  WDC         13 38                     e 38 26
        JAS  eP     13 39 08.7
        MNV         13 39                     e 39 22
        PRI         13 39                     e 39 23
                    USGS 13 36 56.7, 44.2N, 128.9W, H= 15 KM, mb=4.3
                       OFF COAST OF OREGON

APR 09  BKS  eP     21 28 52    39 34        Lr 54 48
                                MICRON    PERIOD
                       PZ         0.06       1.2
                       LZ         2.0        20
                       LN         1.0        20
                       LE         2.0        20.
        MHC  eP     21 28 53.3
        PRI  eP     21 28 54.3
        WDC  ePd    21 28 57.4
        JAS  ePd    21 28 58.3
        MIN  eP     21 28 59.5
        MNV  ePd    21 29 07.1
                    Ms=5.5, DISTANCE=85°
                    USGS 21 16 14.6, 19.1S, 169.6E, H= 25 KM, mb=5.4, Ms=5.4
                       NEW HEBRIDES ISLANDS

APR 10  BKS         01 06                    Lr 33 21
                                MICRON    PERIOD
                       LZ         1.4        20
                       LN         0.9        20
                       LE         1.1        20
        MHC  e(P)   01 06 56
        PRI  e(P)   01 06 58
        WDC  eP     01 07 00.6
        JAS  eP     01 07 01.2
        FRI  e(P)   01 07 02
        MNV  eP     01 07 10.3
                    USGS 00 54 16.5, 19.0S, 169.6E, H= 18 KM, mb=4.9, Ms=5.0
                       NEW HEBRIDES ISLANDS

APR 10  WDC  iPe    08 41 53.3                e 42 14
        BKS  eP     08 42 05.4                e 42 26      e 42 34
                                MICRON    PERIOD
                       PZ         0.05       0.8
        MHC  eP     08 42 10
        SAO  ePe    08 42 12                  e 42 31
        JAS  iPe    08 42 12.2
                    USGS 08 31 33.4, 44.5N, 147.5E, H= 84 KM, mb=5.4
                       KURIL ISLANDS

APR 10  PRI  e(P)   18 21 02
        MHC  eP     18 21 02.0
        JAS  ePd    18 21 07.2
        WDC  ePd    18 21 08.8
        MIN  eP     18 21 10.9
        MNV  ePd    18 21 16.0
                    USGS 18 09 58.9, 21.0S, 179.3W, H=647 KM, mb=4.8
                       FIJI ISLANDS REGION

APR 11  MHC  e(P)   14 04 35
        WDC  eP     14 04 36.8
        PRI  e(P)   14 04 38
        JAS  eP     14 04 40.1
        MNV  ePd    14 04 49.3
                    USGS 13 52 03.2, 14.9S, 167.7E, H= 28 KM, mb=5.1
                       NEW HEBRIDES ISLANDS

APR 11  FBC  iPe    23 48 36.7
        WDC  iPe    23 48 51.0  49 10
        MIN  iPe    23 49 00.9  49 30        i 49 32
        BKS  eP     23 49 10.3
        MHC  iPe    23 49 20.4                i 50 06
        JAS  iPe    23 49 25.9                i 50 17
        SAO  iPd    23 49 26.7
        FRI  eP     23 49 40.8
        PRI  eP     23 49 41.7
        MNV  eP     23 49 45.7
                    BRK  23 48 18.0, 40.4N, 125.3W, H= 21 KM, ML=4.1
                       OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

APR 11  FBC  iPe    23 53 55.8
        WDC  iPe    23 54 10.1                • 54 32
        MIN  iPd    23 54 20.0                • 54 51
        MHC  eP     23 54 39.0
        JAS  eP     23 54 45.5
        SAO  iP     23 54 45.9
        FRI  eP     23 55 00.0
                    BRK  23 53 38.4, 40.4N, 125.2W, H= 24 KM, ML=3.5
                       OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

APR 12  WDC  eP     04 03 27.6
        MIN  eP     04 03 32.1
        MHC  eP     04 03 48.9
        JAS  eP     04 03 50.7
        MNV  iPe    04 03 57.6
        FRI  eP     04 03 58.4
                    USGS 03 54 45.3, 55.8N, 164.5E, H= 42 KM, mb=5.0, Ms=4.1
                       KOMANDORSKY ISLANDS REGION

                                              • 51 00
APR 12  WDC         10 51
        MIN  eP     10 51 03.5
        JAS  eP     10 51 14.0
        FRI  eP     10 51 20.0
        MNV  eP     10 51 21.4
                    USGS 10 38 49.8, 31.8N, 131.5E, H= 44 KM, mb=5.1
                       KYUSHU, JAPAN
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APR 13  FRI   ePKP    01 57 04.1
        MNV   ePKPc   01 57 04.8
        PRI   ePKP    01 57 04.8
        SAO   ePKP    01 57 05.4
        JAS   ePKPc   01 57 06.4
        MHC   ePKPc   01 57 07.2
        BKS   ePKP    01 57 08.5
        MIN   ePKP    01 57 10.3
        WDC   ePKPc   01 57 11.3
              USGS 01 38 10.6, 57.9S,  25.3W, H= 33 KM, mb=5.3
                   SOUTH SANDWICH ISLANDS REGION

APR 13  FHC   iPd     18 28 08.8
        WDC   iPd     18 28 16.8
        MIN   eP      18 28 22.0
        BKS   eP      18 28 29.8
        MHC   eP      18 28 37.0
        JAS   iPd     18 28 40.4
        FRI   eP      18 28 48.0
        FRI   eP      18 28 48.2
        MNV   iPd     18 28 49.0
              USGS 18 20 43.3, 51.7N, 179.6W, H= 46 KM, mb=5.1
                   ANDREANOF ISLANDS, ALEUTIAN ISLANDS

APR 14  SAO   eP      04 16 27.6
        BKS   eP      04 16 28.2
                        MICRON     PERIOD
                   PZ     0.08        1.1
        FRI   eP      04 16 29.0
        MHC   eP      04 16 29.0
        FRI   eP      04 16 34.2
        JAS   iPd     04 16 34.4
        WDC   iPd     04 16 35.4
        MIN   eP      04 16 37.4
        MNV   iPd     04 16 44.2
              USGS 04 05 31.2, 17.7S, 178.7W, H=535 KM, mb=5.2
                   FIJI ISLANDS REGION

APR 15  FRI   eP      23 47 16.7                  pP 47 44
        PRI   ePd     23 47 18.5                  pP 47 44
        MNV   iPd     23 47 18.7
        SAO   e(P)    23 47 23                    pP 47 49 SKPPKP 18 08
        JAS   iPd     23 47 23.9                  pP 47 52
        MHC   ePd     23 47 26.3
        BKS   eP      23 47 29.4
                        MICRON     PERIOD
                   PZ     0.06        0.9
        MIN   ePd     23 47 35.3
        WDC   iPd     23 47 38.2                  pP 48 04
        FHC   iPd     23 47 45.6
              USGS 23 35 35.6, 23.1S,  68.7W, H= 99 KM, mb=5.4
                   NORTHERN CHILE

APR 16  SAO   eP      06 42 20.3
        PRI   eP      06 42 21.8
        MHC   eP      06 42 22.2
        BKS           06 42                       e 42 48
        FHC   e(P)    06 42 26
        PRI   ePd     06 42 26.9
        JAS   iPd     06 42 27.6
        WDC   iP      06 42 29.2
        MIN   eP      06 42 30.9
        MNV   ePd     06 42 36.0
              USGS 06 31 13.7, 21.5S, 179.2W, H=600 KM, mb=5.2
                   FIJI ISLANDS REGION

APR 17  JAS   eP      02 46 36.0
        MNV   eP      02 46 45.7
              USGS 02 34 43.0, 21.0S, 173.9W, H= 33 KM, mb=5.0
                   TONGA ISLANDS

APR 17  PRI   eP      02 53 46.7
        MNV   eP      02 53 48.4
        JAS   eP      02 53 52.2
        WDC   eP      02 54 06
              USGS 02 41 17.6, 33.3S,  68.9W, H= 47 KM, mb=5.1, Ms=4.2
                   MENDOZA PROVIDENCE, ARGENTINA

APR 18  MNV   iPc     13 10 39.7                  PcP 12 42
        FRI   eP      13 10 40.2
        PRI   e(P)    13 10 43
        JAS   ePc     13 10 50.0                  PcP 12 46
        MHC   eP      13 10 54.0
        FHC   e(P)    13 11 19
              USGS 13 03 24.8, 11.4N,  85.6W, H=201 KM, mb=4.8
                   NICARAGUA

APR 18  FRI   iPd     19 02 06.2
        PRI   eP      19 02 06.5
        MNV   iPd     19 02 08.5
        JAS   eP      19 02 15.3
        MHC   eP      19 02 18.7
        BKS           19 02                       e 02 18
        MIN   iP      19 02 39.4
              USGS 18 56 55.2, 18.6N, 101.4W, H= 91 KM, mb=5.0
                   GUERRERO, MEXICO

APR 20  SAO   eP      03 26 29.5
        PRI   eP      03 26 30.6
        MHC   ePc     03 26 31.6
        BKS   eP      03 26 31.7
                        MICRON     PERIOD
                   PZ     0.06        0.9
        FRI   ePc     03 26 35.5
        JAS   iPc     03 26 36.5
        FHC   ePc     03 26 37.8
        WDC   iPc     03 26 39.5
        MIN   eP      03 26 40.7
        MNV   iPc     03 26 44.2
              USGS 03 14 07.7, 29.9S, 178.3W, H=138 KM, mb=5.3
                   KERMADEC ISLANDS

APR 20  MHC   eP      11 30 33.6
        PRI   eP      11 30 34.5
        WDC   eP      11 30 37.7
        JAS   eP      11 30 38.3
        FRI   eP      11 30 39.0
        MIN   eP      11 30 39.7
              USGS 11 18 17.4, 18.8S, 169.1E, H=224 KM, mb=4.6
                   NEW HEBRIDES ISLANDS

APR 20  WDC   ePc     15 34 40.5
        BKS   eP      15 34 41.1
                        MICRON     PERIOD
                   PZ     0.02        0.7
        MHC   eP      15 34 42.8
        MIN   ePc     15 34 43.2
        PRI   ePc     15 34 46.4
        JAS   ePc     15 34 46.9
        FRI   eP      15 34 49.2
        MNV   ePc     15 34 55.3
              USGS 15 21 45.9,  5.6S, 148.3E, H=177 KM, mb=5.7
                   NEW BRITAIN REGION

APR 20  FHC   eP      20 15 30.5
        WDC   iPd     20 15 35.3
        MIN   iPd     20 15 39.2
        BKS   eP      20 15 43.9
                        MICRON     PERIOD
                   PZ     0.47        0.8
        MHC   iPd     20 15 47.9
        SAO   eP      20 15 49.6
        JAS   iP      20 15 49.8
        FRI   eP      20 15 54.9
        PRI   eP      20 15 55.0
        MNV   iPd     20 15 56.9
              USGS 20 04 29.4, 30.6N, 137.5E, H=493 KM, mb=5.5
                   SOUTH OF HONSHU, JAPAN

APR 20  FHC   eP      23 25 48.5
        BKS   eP      23 25 50.5  36 28           PP 29 12        SP 37 32
                                                  SS 41 48        Lg 48 20
                        MICRON     PERIOD
        LZ             26          20
        LNE            10          20
        LNW             8          20
        MHC   eP      23 25 52.3
        WDC   eP      23 25 52.9
        SAO   eP      23 25 53.1
        PRI   eP      23 25 54.8
        MIN   eP      23 25 55.6
        JAS   eP      23 25 57.0                  PKKP 44 37
        FRI   eP      23 25 58.5                  PKKP 44 35
        MNV   eP      23 26 06.0                  PKKP 44 29
              Ms=6.3, DISTANCE=85°
              USGS 23 13 10.4,  9.8S, 160.3E, H= 33 KM, mb=6.4, Ms=6.7
                   SOLOMON ISLANDS

APR 20  FHC   eP      23 31 18.5
        BKS   eP      23 31 20.1
                        MICRON     PERIOD
                   PZ     0.08        1.2
        MHC   eP      23 31 21.6
        WDC   eP      23 31 22.4
        PKI   eP      23 31 23.8
        MIN   eP      23 31 25.6
        JAS   eP      23 31 26.1
        FRI   eP      23 31 28.2
        MNV   eP      23 31 35.2
              USGS 23 18 40.8,  9.9S, 160.6E, H= 33 KM, mb=5.9
                   SOLOMON ISLANDS

APR 20  FHC   eP      23 55 29.0
        BKS   eP      23 55 32.8  06 36           e 55 42         SP 07 16        SS 11 20
                                                  Lq 18 10        Lr 21 40
                        MICRON     PERIOD
        PZ             0.08        0.8
        LZ             220         20
        LNE            160         20
        LNW            110         20
        MHC   eP      23 55 33.8
        WDC   eP      23 55 34.2
        SAO   eP      23 55 34.3
        PRI   eP      23 55 36.5
        MIN   eP      23 55 38.0
        JAS   eP      23 55 38.5
        FRI   eP      23 55 40.2
              T PHASE AT 03:24:00.
              Ms=7.5, DISTANCE=85°
              USGS 23 42 50.5,  9.9S, 160.3E, H= 19 KM, mb=6.3, Ms=7.5
                   SOLOMON ISLANDS

APR 21  WDC   iP      00 00 52.7
        MIN           00 00                       e 00 55
        PRI           00 00                       e 00 56
        JAS   iP      00 00 59.7
              SOLOMON ISLANDS REGION

APR 21  FHC   eP      00 01 48.0
        BKS   eP      00 01 50.4
                        MICRON     PERIOD
                   PZ     0.72        1.0
        MHC   eP      00 01 53.5
        WDC   iP      00 01 53.5
        SAO   eP      00 01 53.6
        MIN   eP      00 01 54.5
        PRI   eP      00 01 55.0
        JAS   eP      00 01 58.0
              USGS 23 49 13.1,  9.8S, 160.8E, H= 33 KM, mb=6.8, Ms=7.5
                   SOLOMON ISLANDS

APR 21  FHC   eP      00 08 56.6
        BKS   eP      00 08 58.7
                        MICRON     PERIOD
                   PZ     0.05        0.6
        MHC   eP      00 09 00.4
        WDC   iPc     00 09 01.0
        PRI   iP      00 09 03.6
        JAS   eP      00 09 04.0
        MIN   eP      00 09 04.2
        FRI   eP      00 09 05.3
              USGS 23 56 17.6,  9.8S, 160.3E, H= 33 KM, mb=5.7
                   SOLOMON ISLANDS

APR 21  FHC   eP      00 15 27.4
        BKS   eP      00 15 29.3
                        MICRON     PERIOD
                   PZ     0.21        0.7
        SAO   eP      00 15 30.8
        MHC   eP      00 15 31.3
        WDC   iPc     00 15 31.9
        MIN   eP      00 15 34.0
        PRI   eP      00 15 34.0
        JAS   iPc     00 15 36.3
        FRI   eP      00 15 37.5
              USGS 00 02 49.0,  9.7S, 160.1E, H= 33 KM, mb=6.1
                   SOLOMON ISLANDS

APR 21  BRK   eP      00 18 06.7
        WDC   eP      00 18 09.6
        MHC   eP      00 18 09.7
        SAO   eP      00 18 10
        PRI   eP      00 18 12.3
        FRI   eP      00 18 15.9
        MNV   eP      00 18 23.5
              USGS 00 05 27.7,  9.8S, 160.2E, H= 33 KM, mb=5.5
                   SOLOMON ISLANDS

APR 21  WDC   iPc     00 25 56.0
        PRI   eP      00 25 58.1
        JAS   eP      00 26 00.3

APR 21  FHC   eP      00 57 20.0
        BKS   eP      00 57 24.3
        MHC   eP      00 57 25.2
        WDC   eP      00 57 25.7
        PRI   eP      00 57 28.0
        MIN   eP      00 57 28.6
        JAS   eP      00 57 30.5
        FRI   eP      00 57 31.5
              USGS 00 44 33.5, 10.9S, 158.2E, H= 33 KM, mb=5.7
                   SOLOMON ISLANDS

APR 21  BKS   e(P)    00 58 51
        WDC   e(P)    00 58 54
        JAS   i(P)    00 58 59

APR 21  FHC   eP      01 19 48.7
        BKS   eP      01 19 50.7
                        MICRON     PERIOD
                   PZ     0.06        0.9
        MHC   eP      01 19 52.3
        WDC   eP      01 19 53.0
        PRI   eP      01 19 54.8
        MIN   eP      01 19 55.3
        JAS   eP      01 19 57.2
        FRI   eP      01 19 58.7
              USGS 01 07 09.6,  9.8S, 160.2E, H= 32 KM, mb=5.5
                   SOLOMON ISLANDS
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APR 21 FHC ePo 01 33 12.2
BKS eP 01 33 14.4
MICRON PERIOD
PZ 0.05 0.9
MHC eP 01 33 15.4
WDC eP 01 33 16.9
PRI eP 01 33 18.7
MIN eP 01 33 19.2
JAS e(P) 01 33 21
FRI eP 01 33 21.6
MNV e(P) 01 33 30
USGS 01 20 32.8, 9.9S, 160.0E, H= 32 KM, mb=5.5
SOLOMON ISLANDS

APR 21 BRK eP 01 39 02.0
MHC eP 01 39 04.0
WDC eP 01 39 04.7
PRI eP 01 39 06.7
JAS eP 01 39 09.5
FRI eP 01 39 10.3

APR 21 FHC eP 01 57 33.3
WDC ePo 01 57 39.0
MIN eP 01 57 42.3
BKS eP 01 57 46.6
MICRON PERIOD
PZ 0.03 0.8
MHC eP 01 57 49.8
JAS eP 01 57 53.0
PRI eP 01 57 57.0
FRI eP 01 57 57.8
USGS 01 45 50.2, 26.9N, 142.4E, H= 33 KM, mb=5.8, Ms=6.2
BONIN ISLANDS REGION

APR 21 FHC eP 03 06 01.0
MHC eP 03 06 04.7
WDC eP 03 06 05.4
BKS e(P) 03 06 06
MICRON PERIOD
PZ 0.02 0.7
FRI eP 03 06 07.3
MIN eP 03 06 07.9
JAS eP 03 06 09.7
FRI eP 03 06 10.9
USGS 02 53 22.5, 9.8S, 160.0E, H= 33 KM, mb=4.9
SOLOMON ISLANDS

APR 21 BKS eP 03 39 40.6 • 39 47
MICRON PERIOD
PZ 0.02 0.7
MHC eP 03 39 41.9
WDC ePo 03 39 42.8
PRI eP 03 39 44.5
MIN eP 03 39 45.2
JAS eP 03 39 46.4
FRI eP 03 39 48.1
MNV ePo 03 39 56.0
USGS 03 26 58.8, 9.8S, 160.3E, H= 20 KM, mb=5.4
SOLOMON ISLANDS

APR 21 MHC eP 03 47 08.9
WDC eP 03 47 09.6
JAS eP 03 47 13.4
FRI eP 03 47 15.2
MNV e(P) 03 47 23
USGS 03 34 26.6, 9.9S, 160.2E, H= 33 KM, mb=5.2
SOLOMON ISLANDS

APR 21 WDC eP 04 09 48.0
JAS eP 04 10 02.0
FRI eP 04 10 07.0
USGS 03 59 56.2, 70.9N, 14.2W, H= 10 KM, mb=4.9
JAN MAYEN ISLAND REGION

APR 21 BKS eP 04 20 26.6
MICRON PERIOD
PZ 0.02 0.9
MHC e(P) 04 20 29
WDC ePo 04 20 29.3
PRI eP 04 20 30.6
MIN eP 04 20 31.6
JAS eP 04 20 33.5
FRI eP 04 20 34.6
MNV ePo 04 20 42.0
USGS 04 07 44.5, 9.9S, 159.9E, H= 27 KM, mb=5.1
SOLOMON ISLANDS

APR 21 FHC eP 04 21 11.8
MHC eP 04 21 15.2
WDC eP 04 21 16.0
PRI eP 04 21 17.7
MIN eP 04 21 18.5
JAS eP 04 21 20.0
FRI eP 04 21 21.5
MNV eP 04 21 28.5
SOLOMON ISLANDS REGION

APR 21 WDC eP 04 27 22.3
PRI eP 04 27 25.3
MNV eP 04 27 36.6
SOLOMON ISLANDS REGION

APR 21 FHC ePo 04 36 47.3
BKS eP 04 36 49.1 47 25 • 36 56 PP 48 12 SP 48 20
PPS 48 34 • 51 40 SS 52 33
Lq 59 15 Lr 02 36
MICRON PERIOD
PZ 0.28 0.8
LZ 500 18
LNE 560 18
LNV 180 18
MHC ePo 04 36 50.8
SAO eP 04 36 51.2
WDC ePo 04 36 51.7 • 47 20 PKKP 54 54 PKPPKP 03 08
PRI ePo 04 36 53.5 • 47 33
MIN ePo 04 36 54.3
JAS iPo 04 36 54.7 • 39 13 • 47 38 PKKP 54 53
PKPPKP 03 03
FRI ePo 04 36 56.3 PKPPKP 03 07
MNV eP 04 37 01.5
T PHASE AT 06:11:00.
Ms=8.0, DISTANCE=85°
USGS 04 24 09.6, 10.0S, 160.7E, H= 33 KM, mb=6.6, Ms=7.5
SOLOMON ISLANDS

APR 21 FHC ePo 05 19 06.8
BKS eP 05 19 07.8
MICRON PERIOD
PZ 0.07 1.3
SAO eP 05 19 09.8
MHC ePo 05 19 10.3
WDC iPo 05 19 11.1
PRI ePo 05 19 13.0
MIN ePo 05 19 13.7
JAS ePo 05 19 15.2
FRI ePo 05 19 16.7
USGS 05 06 28.5, 10.1S, 160.7E, H= 33 KM, mb=5.8
SOLOMON ISLANDS

APR 21 FHC ePo 06 43 42.9
BKS eP 06 43 45.1
MICRON PERIOD
PZ 0.04 0.8
SAO e(P) 06 43 46
MHC ePo 06 43 46.5
WDC ePo 06 43 47.4
PRI eP 06 43 49.2
MIN eP 06 43 49.6
JAS eP 06 43 51.2
FRI ePo 06 43 52.7
MNV e(P) 06 44 01
USGS 06 31 03.9, 9.9S, 160.2E, H= 31 KM, mb=5.3
SOLOMON ISLANDS

APR 21 MHC eP 07 06 04.2
WDC eP 07 06 04.5
PRI eP 07 06 07
MIN 07 06 • 06 08
JAS eP 07 06 09
FRI eP 07 06 10.4
USGS 06 53 22.0, 10.0S, 160.8E, H= 21 KM, mb=5.0
SOLOMON ISLANDS

APR 21 FHC eP 07 31 29
BKS eP 07 31 30.8
MICRON PERIOD
PZ 0.05 0.8
SAO eP 07 31 33
MHC ePo 07 31 33.4
WDC ePo 07 31 34.0
PRI ePo 07 31 35.9
MIN ePo 07 31 36.7
JAS eP 07 31 38.0
FRI eP 07 31 39.1
MNV ePo 07 31 46.9
USGS 07 18 51.1, 10.2S, 160.7E, H= 33 KM, mb=5.6, Ms=6.0
SOLOMON ISLANDS

APR 21 MHC eP 08 08 03
WDC eP 08 08 04.2
PRI 08 08 • 08 05
MIN 08 08 • 08 07
BKS e(P) 08 08 08
MICRON PERIOD
PZ 0.02 0.8
JAS eP 08 08 08.1
FRI eP 08 08 09.4
MNV eP 08 08 17.3
USGS 07 55 19.5, 9.9S, 160.7E, H= 11 KM, mb=4.8
SOLOMON ISLANDS

APR 21 FHC 08 17 • 17 35
WDC eP 08 17 39.8
BKS e(P) 08 17 41
MICRON PERIOD
PZ 0.01 0.6
PRI e(P) 08 17 43
JAS eP 08 17 43.9
FRI eP 08 17 45.3
MNV eP 08 17 52.9
USGS 08 04 54.8, 10.0S, 160.3E, H= 20 KM, mb=5.1
SOLOMON ISLANDS

APR 21 MHC 08 31 • 31 18
JAS eP 08 31 24.2
FRI eP 08 31 26
USGS 08 18 35.9, 10.3S, 161.0E, H= 12 KM, mb=4.8
SOLOMON ISLANDS

APR 21 BRK e(P) 09 49 35
MHC eP 09 49 37.2
WDC eP 09 49 38.0
PRI eP 09 49 39.8
JAS eP 09 49 42.1
FRI eP 09 49 43.7
USGS 09 36 58.0, 10.1S, 160.7E, H= 51 KM, mb=5.0
SOLOMON ISLANDS

APR 21 FHC eP 09 58 16.5 • 58 19
BKS eP 09 58 19.6 08 44
MICRON PERIOD
LZ 2.1 20
LN 0.9 20
LE 2.0 20
MHC eP 09 58 20.1 • 58 22
WDC ePo 09 58 20.8 i 58 23
SAO eP 09 58 21.9
PRI eP 09 58 22.7 • 58 25
MIN e(P) 09 58 24 • 58 26
JAS ePo 09 58 24.8 i 58 27
FRI eP 09 58 26 • 58 29
MNV ePo 09 58 34.0 i 58 36
Ms=5.5, DISTANCE=85°
USGS 09 45 38.2, 10.3S, 160.7E, H= 33 KM, mb=5.6, Ms=5.6
SOLOMON ISLANDS

APR 21 MHC eP 10 38 44.6
WDC eP 10 38 45.6
JAS eP 10 38 49.6
FRI eP 10 38 51.0
MNV eP 10 38 59
USGS 10 26 03.1, 10.0S, 160.5E, H= 33 KM, mb=5.0
SOLOMON ISLANDS

APR 21 FRI eP 15 15 25.5 PcP 18 05 ScP 21 41
MNV iPc 15 15 25.6 PcP 18 04 ScP 21 40
PRI eP 15 15 28.3
JAS ePc 15 15 35.2 • 16 17 PcP 18 08 ScP 21 45
SAO e(P) 15 15 37
MHC ePo 15 15 39.7
WDC e(P) 15 15 59 PcP 18 15 ScP 21 54
FHC eP 15 16 08.1
USGS 15 08 54.9, 14.7N, 91.5W, H=109 KM, mb=4.9
GUATEMALA

APR 21 WDC eP 16 25 22.8
USGS 16 12 35.5, 10.2S, 160.1E, H= 20 KM, mb=5.4
SOLOMON ISLANDS

APR 21 FHC ePo 17 05 54.3
MHC eP 17 05 58.0
WDC ePc 17 05 58.8
PRI eP 17 06 00.9
JAS e(P) 17 06 03
MNV eP 17 06 11.7
USGS 16 53 11.5, 10.2S, 160.6E, H= 12 KM, mb=5.3, Ms=5.4
SOLOMON ISLANDS

APR 21 FHC eP 17 32 30.0
WDC ePo 17 32 36.0
MHC eP 17 32 46.5
JAS eP 17 32 49.5
PRI eP 17 32 54.0
FRI eP 17 32 54.5
MNV eP 17 32 57.5
USGS 17 20 44.7, 26.7N, 142.4E, H= 27 KM, mb=5.2, Ms=4.7
BONIN ISLANDS REGION

APR 21 SAO iP 18 00 06.3
PRI ePd 18 00 17.0
MHC ePd 18 00 17.7
FRI eP 18 00 26.6
BKS e(P) 18 00 28 00 48 Pg 00 32 Sg 00 53
JAS iPc 18 00 29.1
BRK 18 00 03.1, 36.6N, 121.3W, H= 6 KM, ML=3.0
STONE CANYON, CALIFORNIA

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APR 21  SAO  iPe    19 58 58.7
        FRI  iPd    19 59 09.5
        MHC  ePd    19 59 10.0
        FRI  ePe    19 59 19.2
        JAS  iPe    19 59 21.3
        BKS  eP     19 59 22.2   59 42        Pg 59 25      Sg 59 46
                    BRK  19 58 55.5, 36.6N, 121.3W, H=  6 KM, ML=2.9
                         STONE CANYON, CALIFORNIA

APR 22  FHC  eP     01 00 55.2
        WDC  iPe    01 01 01.7
        BRK  eP     01 01 14.7
        MHC  ePe    01 01 19.9
        JAS  iPe    01 01 22.1
        SAO  eP     01 01 22.6
        FRI  ePe    01 01 28.7
        MNV  iPe    01 01 28.7
        PRI  eP     01 01 29.6
                    USGS 00 52 01.6, 52.3N, 153.8E, H=390 KM, mb=4.8
                         NORTHWEST OF KURIL ISLANDS

APR 22  FHC  eP     03 23 36.0
        MHC  eP     03 23 39.5
        WDC  eP     03 23 40.2
        BKS  eP     03 23 41     34 10        Sp 35 08      Lq 46 10      Lr 49 20
                                 MICRON    PERIOD
                              LZ     5         20
                              LN     3.8       20
                              LE     4.1       20
        FRI  eP     03 23 42.0
        MIN  eP     03 23 42.8
        JAS  eP     03 23 44.2
        FRI  eP     03 23 45.9
        MNV  eP     03 23 53.5
                    Ms=5.9, DISTANCE=85°
                    USGS 03 11 00.2, 10.2S, 160.7E, H= 51 KM, mb=5.6, Ms=6.0
                         SOLOMON ISLANDS

APR 22  FHC  eP     06 23 49.7
        WDC  eP     06 24 05.0
        MIN  eP     06 24 16
        BKS  eP     06 24 33.0   26 17        Lr 27 28
        MHC  eP     06 24 42.0
        JAS  eP     06 24 47.0
        FRI  eP     06 25 01.0
        MNV  eP     06 25 02.8
        PRI  eP     06 25 03
                    USGS 06 22 31.5, 44.2N, 129.4W, H= 15 KM, mb=5.0, Ms=4.7
                         OFF COAST OF OREGON

APR 22  BRK  eP     07 31 21
        MHC  eP     07 31 23.1
        WDC  eP     07 31 24.2
        FRI  eP     07 31 25.9
        JAS  eP     07 31 27.8
        FRI  eP     07 31 29.5
        MNV  eP     07 31 37.3
                    USGS 07 18 45.2, 10.1S, 161.0E, H= 48 KM, mb=5.2
                         SOLOMON ISLANDS

APR 22  FHC  eP     08 17 22.7
        WDC  eP     08 17 37.1
        MIN  eP     08 17 48.3
        BKS  e(P)   08 18 04     19 50
        MHC  eP     08 18 14.6
        JAS  eP     08 18 19.0
        SAO  e(P)   08 18 21
        MNV  eP     08 18 33.0
        FRI  eP     08 18 33.5
        PRI  eP     08 18 33.5
                    USGS 08 16 04.5, 44.3N, 129.3W, H= 15 KM, mb=5.2, Ms=4.7
                         OFF COAST OF OREGON

APR 22  FHC  e(P)   08 27 12
        WDC  eP     08 27 26.7
        MIN  e(P)   08 27 36
        BKS         08 28        29 38
        MHC  eP     08 28 03.0
        JAS  eP     08 28 07.5
        FRI  eP     08 28 22.0
        MNV  eP     08 28 22.0
        PRI         08 28                    • 28 25
                    USGS 08 25 52.9, 44.2N, 129.4W, H= 15 KM, mb=4.7
                         OFF COAST OF OREGON

APR 22  FHC  e(P)   08 34 16
        WDC  eP     08 34 30
        MIN         08 34                    • 34 40
        BKS         08 35        37 00
        MHC  e(P)   08 35 06
        JAS  eP     08 35 11.0
        FRI  eP     08 35 25.4
        PRI         08 35                    • 35 34
                    USGS 08 32 56.5, 44.3N, 129.3W, H= 15 KM, mb=4.5
                         OFF COAST OF OREGON

APR 22  FHC  eP     12 23 42.8
        BKS  eP     12 23 45.2
                                 MICRON    PERIOD
                              PZ    0.03      0.6
        MHC  eP     12 23 46.3
        WDC  ePe    12 23 47.0
        FRI  eP     12 23 49.0
        MIN  eP     12 23 49.5
        JAS  ePe    12 23 51.0
        FRI  eP     12 23 52.6
        MNV  eP     12 24 00.0
                    USGS 12 11 03.7, 9.9S, 160.2E, H= 33 KM, mb=5.3, Ms=47
                         SOLOMON ISLANDS

APR 22  BKS  eP     13 33 18.2
                                 MICRON    PERIOD
                              PZ    0.04      0.9
        SAO  eP     13 33 19
        MHC  ePe    13 33 19.6
        WDC  ePe    13 33 20.4
        FRI  eP     13 33 22.3
        MIN  eP     13 33 22.8
        JAS  iPe    13 33 24.4
        FRI  ePe    13 33 26.0
        MNV  iPe    13 33 33.6
                    USGS 13 20 36.3, 9.9S, 159.9E, H= 33 KM, mb=5.3, Ms=4.9
                         SOLOMON ISLANDS

APR 22  FHC
        BKS         18 37
                    18 37                    • 37 50
                                             • 37 55
        MHC  eP     18 37 53.8               Lr 05 00      • 46 40       • 48 32
        WDC  eP     18 37 54.6
        FRI  eP     18 37 56.5
        JAS  eP     18 37 59.0
        FRI  eP     18 38 00.3
        MNV  eP     18 38 07.7
                    USGS 18 25 11.0, 10.0S, 160.7E, H= 25 KM, mb=5.3, Ms=5.2
                         SOLOMON ISLANDS

APR 23  FHC  e(P)   14 58 30
        WDC  ePd    14 58 33.9
        MIN  eP     14 58 37.1                • 58 39
        JAS  ePd    14 58 56.2
        MNV  ePd    14 58 56.8                • 59 02
        MHC  eP     14 58 58.0                • 59 02
        FRI  eP     14 59 03.2
        PRI  eP     14 59 08.6                • 59 09
                    USGS 14 49 09.1, 75.2N, 134.4E, H= 37 KM, mb=5.0, Ms=4.2
                         LAPTEV SEA

APR 23  FHC  e(P)   16 42 30
        BKS  eP     16 42 34.0
                                 MICRON    PERIOD
                              PZ    0.03      1.0
        WDC  eP     16 42 34.0
        MHC  eP     16 42 34.5
        PRI  eP     16 42 36.0
        JAS  eP     16 42 38.0
        FRI  eP     16 42 39.8
        MNV  eP     16 42 47.2
                    USGS 16 29 50.2, 10.0S, 160.2E, H= 26 KM, mb=5.2, Ms=4.6
                         SOLOMON ISLANDS

APR 23  FHC  iPe    17 55 21.0
        WDC  iPe    17 55 37.0                • 57 50
        MIN  eP     17 55 47
        BKS         17 56                     • 56 05       • 57 28       • 58 10
                                              • 59 08
        MHC         17 56                     • 56 14
        JAS  eP     17 56 16.5
        PRI  eP     17 56 35.5
        MNV  eP     17 56 36
                    USGS 17 54 43.4, 42.0N, 126.7W, H= 15 KM, mb=4.8
                         OFF COAST OF OREGON

APR 24  MHC  eP     01 17 01.8
        WDC  eP     01 17 02.4
        PRI  eP     01 17 04.5
        MIN  eP     01 17 06.4
        JAS  eP     01 17 06.5
        FRI  eP     01 17 08.1
        MNV  eP     01 17 15.6
                    USGS 01 04 21.5, 10.0S, 160.7E, H= 33 KM, mb=5.0
                         SOLOMON ISLANDS

APR 24  FHC  e(P)   06 41 32
        BKS  e(P)   06 41 35                  • 08 26       • 10 32
                                 MICRON    PERIOD
                              PZ    0.06      1.0
        MHC  eP     06 41 35.7
        WDC  eP     06 41 36.5
        PRI  eP     06 41 38.2
        MIN         06 41                     • 41 42
        JAS  eP     06 41 40.5
        FRI  eP     06 41 41.9
        MNV  eP     06 41 49.4
                    USGS 06 28 52.3,  9.9S, 160.1E, H= 29 KM
                         SOLOMON ISLANDS

APR 24  WDC  eP     18 16 06.9
        MHC         18 16                     • 16 14
        JAS  eP     18 16 17.8
        MNV         18 16                     • 16 28
                    USGS 18 03 43.9, 13.0N, 145.2E, H= 59 KM, mb=4.8
                         MARIANA ISLANDS

APR 24  FRI  eP     23 47 53.5
        JAS  eP     23 48 07.5
        MHC         23 48                     • 48 08

APR 25  WDC  eP     04 19 51.9
        JAS  eP     04 20 06.2
        FRI  eP     04 20 11.2
                    USGS 04 06 57.8, 49.8N,  78.2E, H=  0 KM, mb=5.1
                         EASTERN KAZAKH, SSR

APR 26  MNV  eP     11 00 27.3
        JAS  iPe    11 00 28.5
        BKS         11 00                     • 23 44       • 27 56
                    USGS 10 48 00.2, 41.3S,  89.3W, H= 33 KM, mb=4.9, Ms=5.0
                         SOUTHERN PACIFIC OCEAN

APR 27  WDC  eP     12 10 37.8
        JAS  eP     12 10 52.2
        FRI  eP     12 10 57
                    USGS 11 58 54.1, 29.4N, 142.0E, H= 25 KM, mb=5.3, Ms=4.2
                         SOUTH OF HONSHU, JAPAN

APR 27  BKS         13 27                     • 37 00       • 51 12       • 53 20
        MHC  eP     13 27 02.5
        WDC  eP     13 27 03.5
        PRI  eP     13 27 05.5
        JAS  eP     13 27 06.5
        FRI  eP     13 27 08.0
                    USGS 13 14 23.2, 10.2S, 160.6E, H= 56 KM, mb=5.1
                         SOLOMON ISLANDS

APR 27  MNV  iPe    15 00 36.9
        JAS  iPe    15 00 57.6
        PRI  iPe    15 01 01.2
        SAO  eP     15 01 07.8
        MHC  iPe    15 01 10.3
        BKS  ePe    15 01 16.8
        MIN  eP     15 01 23.3
        WDC  iPe    15 01 32.7
        FHC  eP     15 01 49.9
                    ML=5.2, NUCLEAR EXPLOSION, NEVADA TEST SITE
                    USGS 15 00 00.1, 37.1N, 116.3W, H=  0 KM, mb=5.4, Ms=4.2
                         SOUTHERN NEVADA

APR 28  WDC  eP     04 15 39.8
        BKS         04 15                     • 26 08       • 37 32       • 42 00
                                                 Lq 48 36      Lr 56 00
                                 MICRON    PERIOD
                              LZ    1.8       20
                              LN    0.9       20
                              LE    1.4       20
        JAS  e(P)   04 15 54
        FRI  eP     04 15 55.0
        MNV  eP     04 15 58.5
                    USGS 04 03 12.9, 12.7N, 145.0E, H= 45 KM, mb=5.0, Ms=5.1
                         SOUTH OF MARIANA ISLANDS

APR 29  FHC  ePd    08 20 16.8
        WDC  iPd    08 20 24.3                • 20 33
        MIN  ePd    08 20 29.3
        BKS  ePe    08 20 47.0                • 29 22       • 31 40       • 33 28
                                              • 36 44
        JAS  eP     08 20 52.4                • 21 02
        MHC  e(P)   08 20 53
        MNV  ePd    08 20 56.8                i 21 07
        FRI  e(P)   08 21 03
        PRI  eP     08 21 06
                    USGS 08 15 11.8, 59.4N, 145.0W, H=  8 KM, mb=4.7, Ms=4.1
                         GULF OF ALASKA

APR 30  BRK  eP     02 17 13.4
        PRI  eP     02 17 13.8
        MHC  eP     02 17 14.2
        FRI  eP     02 17 19.4
        JAS  eP     02 17 20.1
        WDC  ePe    02 17 22.2
        MIN  eP     02 17 24.1
        MNV  ePe    02 17 30.2
                    USGS 02 05 45.7, 17.0S, 174.1W, H= 42 KM, mb=5.0
                         TONGA ISLANDS

APR 30  FHC  iPd    13 11 29.7   11 38
        WDC  iPe    13 11 39.7   11 56
        MIN  eP     13 11 49
                    BRK  13 11 16.7, 40.2N, 124.1W, H=  5 KM, ML=3.0
                         SOUTH OF EUREKA, CALIFORNIA

APR 30  MNV  ePe    16 33 04.0
        MIN  eP     16 33 15.8
        JAS  ePe    16 33 17.0
        FHC  ePd    16 33 26.0
                    USGS 16 22 45.3, 32.4N,  40.3W, H= 33 KM, mb=4.6, Ms=5.1
                         NORTH ATLANTIC RIDGE
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APR 30  BRK  e(P)   19 03 32     03 44
        BKS  iPe    19 03 33.3   03 45
        MHC  e(P)   19 03 40
             BRK  19 03 16.6, 37.7N, 123.3W, H= 2 KM, ML=2.6
                  FARALLON ISLANDS AREA, CALIFORNIA

APR 30  FRI  e(P)   20 42 38
        PRI  eP     20 42 39.4
        MNV  ePe    20 42 39.8
        JAS  ePe    20 42 45.8
        MHC  e(P)   20 42 48
        WDC  e(P)   20 43 02
        FHC  e(P)   20 43 11
             USGS 20 31 47.7, 15.0S,  75.6W, H= 10 KM, mb=5.3, Ms=4.8
                  NEAR COAST OF PERU

APR 30  WDC  eP     21 56 42.4              • 56 58
        MIN         21 56                   • 56 46
        BKS         21 57                   • 05 48
                         MICRON    PERIOD
                    LZ     2.1       20
        MHC  eP     21 57 03.0
        JAS  eP     21 57 06.7
        FRI  eP     21 57 14.9
        MNV  eP     21 57 15.8
             USGS 21 49 40.7, 51.6N, 173.3W, H= 42 KM, mb=4.8, Ms=4.8
                  ANDREANOF ISLANDS, ALEUTIAN ISLANDS

MAY 01  FRI  ePd    00 18 50.3
        MNV  ePd    00 18 51.7              • 19 21
        PRI  eP     00 18 52.5
        JAS  ePd    00 18 58.8              • 19 30
        MHC  eP     00 19 02.1
        BRK  eP     00 19 06.6
        MIN  eP     00 19 12.9
        WDC  ePd    00 19 16.4              • 19 46
        FHC  ePd    00 19 25.8
             USGS 00 09 06.2,  6.1S,  77.1W, H=123 KM, mb=4.9
                  NORTHERN PERU

MAY 01  FHC  eP     08 48 07.5
        BRK  eP     08 48 10.3
        MHC  eP     08 48 12.5
        WDC  eP     08 48 13.1
        PRI  eP     08 48 15.0
        MIN  eP     08 48 15.9
        JAS  eP     08 48 17.1
        FRI  eP     08 48 19.0
        MNV  ePd    08 48 26.5
             USGS 08 35 29.5,  9.9S, 160.7E, H= 19 KM, mb=5.5
                  SOLOMON ISLANDS

MAY 01  FHC         14 52                   • 52 32
        BKS         14 52                   • 52 33
        MHC         14 52                   • 52 34
        WDC  eP     14 52 35.2
        PRI         14 52                   • 52 36
        JAS  eP     14 52 37.5
        FRI         14 52                   • 52 41
        MNV         14 52                   • 52 50
             USGS 14 40 13.3, 11.5S, 166.2E, H= 69 KM, mb=5.1
                  SANTA CRUZ ISLANDS

MAY 01  FHC  eP     16 35 00.0
        WDC  eP     16 35 02.7
        BRK  e(P)   16 35 12
        JAS  eP     16 35 18.1
        PRI  eP     16 35 23.5
        MNV  eP     16 35 24.2
             USGS 16 23 01.7, 35.2N, 132.6E, H=  6 KM, mb=4.5, Ms=4.6
                  SOUTHERN HONSHU, JAPAN

MAY 01  WDC  eP     18 52 18.6
        BKS         18 52                   • 52 19
        MHC  eP     18 52 19.7
        MIN  eP     18 52 21.3
        PRI  eP     18 52 23.5
        JAS  eP     18 52 24.3
        FRI  eP     18 52 26.2
        MNV  eP     18 52 33.1
             USGS 18 39 23.8,  7.2S, 154.4E, H= 32 KM, mb=5.6
                  SOLOMON ISLANDS

MAY 02  FHC  iPe    05 57 22.4  57 38
        WDC  ePd    05 57 38.3  58 06
        MIN  ePd    05 57 48.2
        JAS  eP     05 58 13.5
             BRK  05 56 59.3, 40.6N, 125.6W, H=  2 KM, ML=3.1
                  OFF THE COAST WSW OF EUREKA, CALIFORNIA

MAY 03  FHC  eP     03 26 27.6
        WDC  eP     03 26 32.6
        MIN  eP     03 26 36.3
        MHC  eP     03 26 44.0
        JAS  eP     03 26 46.7
        FRI  eP     03 26 50.4
        PRI  eP     03 26 50.8
        MNV  eP     03 26 54.0
             USGS 03 15 07.6, 27.4N, 148.2E, H=312 KM, mb=4.8
                  BONIN ISLANDS REGION

MAY 04  FRI  eP     00 39 02.2
        MNV  ePd    00 39 04.1
        PRI  eP     00 39 04.3
        JAS  iPd    00 39 09.5
        MHC  eP     00 39 12.1
        BRK  e(P)   00 39 16
        WDC  iPd    00 39 24.5
        FHC  ePd    00 39 31.9
             USGS 00 27 31.0, 20.5S,  68.8W, H= 82 KM, mb=5.2
                  CHILE-BOLIVIA BORDER REGION

MAY 04  PRI  iPd    06 05 06.5
        SAO  iPe    06 05 12.6
        PRI  iPd    06 05 13.2
        MHC  eP     06 05 19.3
        JAS  iPe    06 05 23.3
        MNV  iPe    06 05 46.7
             BRK  06 04 58.1, 36.5N, 120.5W, H=  5 KM, ML=2.8
                  SOUTHEAST OF HOLLISTER, CALIFORNIA

MAY 04  MIN  iPe    06 59 27.7
        WDC  iPe    06 59 33.9
        BKS  ePd    06 59 37.5  59 58
        JAS  iPd    06 59 39.7
        MHC  eP     06 59 44.5
        SAO  eP     06 59 52.4
        MNV  ePd    06 59 55.8
        FRI  eP     06 59 56.0
             BRK  06 59 10.5, 39.4N, 121.5W, H=  7 KM, ML=3.6
                  SOUTH-SOUTHEAST OF OROVILLE, CALIFORNIA

MAY 04  SAO  eP     08 28 21.0
        PRI  e(P)   08 28 22
        BRK  eP     08 28 22.0
        MHC  eP     08 28 22.6
        FRI  eP     08 28 27.6
        JAS  ePd    08 28 28.2
        WDC  ePd    08 28 29.8
        MIN  eP     08 28 31.7
        MNV  ePd    08 28 37.3
             USGS 08 17 20.5, 20.3S, 178.4W, H=587 KM, mb=4.7
                  FIJI ISLANDS REGION

MAY 04  BKS  iPd    19 43 41.5  43 47
        MHC  eP     19 43 48.9
        JAS  iP     19 43 54.4
        SAO  eP     19 43 57.3
        FRI  eP     19 44 08.4
        WDC  eP     19 44 18.9
        MNV  eP     19 44 20.5
             BRK  19 43 34.0, 38.2N, 122.0W, H= 21 KM, ML=3.2
                  NORTHEAST OF BERKELEY, CALIFORNIA

MAY 05  SAO  eP     22 18 42.6
        PRI  ePd    22 18 43.7
        BRK  eP     22 18 44
        BKS         22 18                   • 40 40      • 43 40
                         MICRON    PERIOD
                    LZ     1.4       20
                    LN     2.5       20
                    LE     2.5       20
                    SH     2.7        6.3
        MHC  eP     22 18 44.5
        FHC  eP     22 18 49.4
        FRI  ePd    22 18 49.6
        JAS  iPd    22 18 50.6                PP 21 35
        WDC  eP     22 18 53.0                • 19 35      PP 21 35
        MNV  ePd    22 19 00.9                PP 21 38
                                              PP 21 46
             USGS 22 07 20.9, 17.2S, 172.1W, H= 33 KM, mb=5.2
                  TONGA ISLANDS REGION

MAY 05  WDC  eP     22 25 27
        JAS  eP     22 25 44.8
        FRI         22 25
        MNV  iPd    22 25 51.7              • 25 49
             USGS 22 14 34.7, 41.9N, 142.3E, H= 71 KM, mb=5.0
                  HOKKAIDO, JAPAN REGION

MAY 05  BKS  iPd    22 40 39.4  40 46
        MHC  ePd    22 40 46.9  41 00       I 40 54
        JAS  iPe    22 40 52.1  41 08       I 40 58      • 41 29
        SAO  eP     22 40 55.2
        FRI  eP     22 41 06.2
        WDC  eP     22 41 08.6
             BRK  22 40 32.1, 38.2N, 122.0W, H= 21 KM, ML=3.3
                  NORTHEAST OF BERKELEY, CALIFORNIA

MAY 06  WDC  eP     04 03 33.3
        MIN  eP     04 03 37.8
        BRK  eP     04 03 45
        JAS  eP     04 03 52.8
        FRI  eP     04 03 59.2
        PRI  eP     04 04 00
        MNV  eP     04 04 00.2
             USGS 03 53 30.2, 45.9N, 152.1E, H= 29 KM, mb=5.4, Ms=4.5
                  KURIL ISLANDS REGION

MAY 06  MNV  ePd    13 03 35.7
        JAS  ePd    13 03 40.4
        WDC  eP     13 03 58.2
             USGS 12 52 38.1, 15.9S,  75.0W, H= 33 KM, mb=5.0, Ms=4.4
                  NEAR COAST OF PERU

MAY 07  WDC  eP     02 23 40.2
        MIN  eP     02 23 41.1
        JAS  eP     02 23 54.7
        BKS         02 23                   • 43 00   Lq 49 00   Lr 51 00
                         MICRON    PERIOD
                    LZ     3.4       20
                    LN     3.7       20
                    LE     1.1       20
        FRI  eP     02 23 59.9
        MHC  eP     02 24 01.2
        PRI  eP     02 24 07.5
             USGS 02 13 32.7, 71.8N,   1.8W, H= 33 KM, mb=5.4, Ms=5.1
                  JAN MAYEN ISLAND REGION

MAY 07  PRI  eP     15 23 05.3
        FRI  e(P)   15 23 11
        JAS  eP     15 23 12.0
        WDC  eP     15 23 14.6
        MIN  e(P)   15 23 16
        MNV  eP     15 23 22.0
             USGS 15 11 37.2, 18.2S, 172.4W, H= 33 KM, mb=5.0
                  TONGA ISLANDS REGION

MAY 07  SAO  eP     18 37 12.3
        BKS  iPe    18 37 13.7  46 59       • 37 18      • 47 09
                         MICRON    PERIOD
                    PZ     0.13      0.9
        PRI  ePe    18 37 13.7
        MHC  ePe    18 37 14.2
        FRI  ePe    18 37 18.2
        FHC  ePe    18 37 18.4
        JAS  iPe    18 37 19.0                • 39 20
        WDC  iPe    18 37 21.2                • 39 22      • 40 12
        MIN  ePe    18 37 22.5
             USGS 18 25 33.4, 25.7S, 179.9E, H=450 KM, mb=5.4
                  SOUTH OF FIJI ISLANDS

MAY 07  PRI         19 47                   • 47 01
        MHC         19 47                   • 47 01
        FRI         19 47                   • 47 07
        JAS  eP     19 47 07.0              • 47 43
        MIN         19 47                   • 47 12
        MNV  eP     19 47 17.0              • 47 53
             USGS 19 35 32.2, 18.0S, 172.6W, H= 33 KM, mb=5.0, Ms=4.5
                  TONGA ISLANDS REGION

MAY 07  WDC  ePe    22 25 44.1              • 25 57
        BKS         22 26                   • 26 12
        MHC  e(P)   22 26 04                • 26 18
        JAS  ePe    22 26 08.5              • 26 21
        FRI  eP     22 26 16.3              • 26 30
        MNV  ePe    22 26 17.5              • 26 30
             USGS 22 18 42.5, 51.7N, 173.2W, H= 33 KM, mb=4.8
                  ANDREANOF ISLANDS, ALEUTIAN ISLANDS

MAY 07  PRI  eP     23 34 17.7
        FRI  eP     23 34 22.7
        JAS  eP     23 34 30.4
        MNV  eP     23 34 30.9
        BKS  ePd    23 34 32.2              • 38 08      • 44 48   Lr 48 34
        WDC  eP     23 34 52.1
        FHC  e(P)   23 35 02
             USGS 23 25 53.5,  8.8S, 107.6W, H= 33 KM, mb=4.3
                  NORTHERN EASTER ISLAND CORDILLERA

MAY 08  JAS  eP     04 49 24.8
        WDC  eP     04 49 27.0
        MNV  eP     04 49 34.6
             USGS 04 37 31.5, 19.6S, 175.9W, H= 33 KM, mb=5.0, Ms=4.5
                  TONGA ISLANDS

MAY 08  FRI  e(P)   15 37 35
        JAS  eP     15 37 38.8
        MIN  e(P)   15 37 44
        WDC  eP     15 37 46.0
             USGS 15 26 25.5, 13.5N,  44.9W, H= 33 KM, mb=4.9, Ms=4.8
                  NORTH ATLANTIC RIDGE

MAY 08  MNV  eP     16 54 25.7
        JAS  e(P)   16 54 34
        MHC         16 54                   • 54 37
        BKS  e(P)   16 54 40                • 02 18   Lq 09 15   Lr 12 15
        MIN         16 54                   • 54 44
        WDC         16 54                   • 54 52
             USGS 16 45 16.0,  1.3S,  81.1W, H= 27 KM, mb=5.1, Ms=4.9
                  OFF COAST OF ECUADOR

MAY 08  WDC  eP     21 17 38.6
        JAS  eP     21 17 50.5
             USGS 21 07 47.4, 71.5N,  12.5W, H= 33 KM, mb=4.3, Ms=4.4
                  JAN MAYEN ISLANDS REGION
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MAY 09  MNV  eP     12 30 49.8                    e 31 20
        PRI  eP     12 30 49.8                    e 31 20
        JAS  eP     12 30 55.2                    e 31 26
        MHC  eP     12 30 57.4                    e 31 28
        WDC  eP     12 31 09.6                    e 31 40
                    USGS 12 19 08.3, 22.0S,  68.4W, H= 80 KM, mb=5.0
                         NORTHERN CHILE

MAY 09  FHC  iPd    15 15 14.8
        WDC  iPd    15 15 19.0
        MIN  eP     15 15 22
        BKS  ePd    15 15 27.0
                              MICRON    PERIOD
                         PZ     0.02       0.8
        JAS  eP     15 15 32.4
        MNV  eP     15 15 38.0
                    USGS 15 02 44.6, 27.1N, 126.8E, H=109 KM, mb=5.4
                         EAST CHINA SEA

MAY 10  FHC  iPe    00 09 56.5   10 20          i 10 03
        WDC  iPe    00 10 12.0   10 45
        MIN  eP     00 10 22.8
        JAS  eP     00 10 53.8
                    BRK  00 09 28.8, 41.7N, 126.0W, H= 20 KM, ML=3.9
                         OFF THE COAST WEST OF EUREKA, CALIFORNIA

MAY 11  PRI  eP     10 04 29.5
        FRI  eP     10 04 33.3
        MNV  ePc    10 04 43.5
        JAS  eP     10 04 49.5
        BKS         10 04                    e 08 08
                    USGS 10 01 49.1, 27.6N, 112.4W, H= 10 KM, mb=4.6
                         BAJA CALIFORNIA

MAY 11  SAO  eP     14 11 25.0
        BKS  eP     14 11 26.0
        PRI  eP     14 11 26.3
        MHC  eP     14 11 26.7
        FRI  eP     14 11 31.2
        JAS  iPe    14 11 31.9
        WDC  iPe    14 11 33.5
        MIN  eP     14 11 35.1
        MNV  ePc    14 11 40.3
                    USGS 14 00 03.9, 23.4S, 180.0E, H=545 KM, mb=4.6
                         SOUTH OF FIJI ISLANDS

MAY 11  BKS  ePd    22 46 37.5                    e 46 55     Lr 13 00
                              MICRON    PERIOD
                         PZ     0.03       0.8
                         LZ     0.6         20
        MHC  eP     22 46 38.7
        WDC  eP     22 46 39.6
        PRI  eP     22 46 41.3
        JAS  eP     22 46 43.6
        FRI  eP     22 46 45.5
        MNV  eP     22 46 52.6
                    USGS 22 34 00.2, 10.2S, 160.9E, H= 51 KM, mb=5.2
                         SOLOMON ISLANDS

MAY 12  BKS  ePe    10 25 48.0                    e 25 54
        MHC  eP     10 25 48.8
        PRI  eP     10 25 49.2
        FRI  eP     10 25 54.3
        JAS  eP     10 25 54.4
        WDC  eP     10 25 54.8
        MIN  eP     10 25 56.8
                    USGS 10 13 54.1, 16.4S, 178.5E, H= 33 KM, mb=4.8
                         FIJI ISLANDS

MAY 12  PHC  eP     11 30 17.3
        WDC  eP     11 30 21.0
        MIN  eP     11 30 24.0
        BKS  ePe    11 30 32.0   41 00       Lq 55 00     Lr 02 00
                              MICRON    PERIOD
                         PZ     0.06       1.0
                         LZ     1.3         20
                         LN     0.7         20
                         LE     1.1         20
        MHC  eP     11 30 35.6
        JAS  eP     11 30 36.8
        SAO  eP     11 30 38.7
        MNV  eP     11 30 40.8
        FRI  eP     11 30 41.6
        PRI  eP     11 30 43.2
                    Ms=5.3, DISTANCE=84°
                    USGS 11 17 53.1, 39.3N, 117.7E, H= 22 KM, mb=5.8, Ms=5.4
                         NORTHEASTERN CHINA

MAY 12  SAO  eP     15 36 32.6
        BKS  ePd    15 36 33.5
                              MICRON    PERIOD
                         PZ     0.04       0.7
        PRI  ePd    15 36 34.2
        MHC  ePd    15 36 34.2
        PHC  eP     15 36 37.2
        JAS  iPd    15 36 39.8
        WDC  ePd    15 36 41.0
        MIN  eP     15 36 43.2
        MNV  iPd    15 36 49.3
                    USGS 15 25 46.2, 18.2S, 177.6W, H=628 KM, mb=4.8
                         FIJI ISLANDS REGION

MAY 12  PHC  eP     21 46 54.2                pP 47 22
        WDC  ePd    21 47 00.5                pP 47 28
        MIN  eP     21 47 05.1                pP 47 33
        BKS  e(P)   21 47 14                  pP 47 42      e 48 06      e 48 14
        MHC  eP     21 47 18.5                pP 47 46
        JAS  iPd    21 47 21.1                pP 47 50
        SAO  e(P)   21 47 22                  pP 47 50
        FRI  eP     21 47 27.8                pP 47 56
        PRI  eP     21 47 28                  pP 47 56
        MNV  iPd    21 47 28.2                pP 47 57
                    USGS 21 37 33.4, 50.2N, 155.0E, H=126 KM, mb=5.3
                         KURIL ISLANDS

MAY 13  FRI  eP     03 08 42.5
        MNV  iPe    03 08 43.9
        PRI  e(P)   03 08 46
        JAS  ePe    03 08 52.6
        MHC  eP     03 08 56.8
        BKS         03 09                    Lq 19 38     Lr 21 40
                              MICRON    PERIOD
                         LZ     1.0         20
                         LN     0.9         20
                         LE     0.7         20
        WDC  ePe    03 09 14.4
        PHC  ePe    03 09 25.9
                    USGS 03 02 07.7, 14.2N,  91.6W, H= 82 KM, mb=4.8
                         GUATEMALA

MAY 13  PHC  ePe    11 24 38.2
        WDC  iPe    11 24 43.3                pP 26 19      sP 27 36
                                              e 26 17       pP 26 24      sP 27 45
        MIN  ePe    11 24 46.9                SKS 34 17 PKPPKP 51 49
        BKS  iPe    11 24 50.8   34 11        pP 26 38
                              MICRON    PERIOD  pP 26 32      sP 27 57      Lr 51 00
                         PZ     0.23       0.8
        MHC  ePe    11 24 54.7                e 26 31       pP 26 37      sP 28 01
        SAO  eP     11 24 56.5                SKS 34 18
        JAS  iPe    11 24 57.3                pP 26 38
                                              e 26 34       pP 26 39      sP 28 07
        PRI  eP     11 25 02.0                SKS 34 25  PKKP 43 38 PKPPKP 51 43
        FRI  ePe    11 25 02.3                pP 26 44      sP 28 13      SKS 34 30
        MNV  iPe    11 25 04.6                pP 26 44      sP 28 14      SKS 34 34
                                              e 26 40       sP 28 18      SKS 34 40
                    USGS 11 13 31.2, 28.4N, 139.5E, H=430 KM, mb=5.8
                         BONIN ISLANDS REGION

MAY 13  PRI  eP     19 53 18.2
        MHC  eP     19 53 18.6
        PHC  eP     19 53 22.3
        FRI  eP     19 53 23.3
        JAS  ePe    19 53 23.9
        WDC  ePe    19 53 25.6
        MNV  eP     19 53 32.4
                    USGS 19 42 07.8, 22.4S, 179.6W, H=627 KM, mb=4.8
                         SOUTH OF FIJI ISLANDS

MAY 14  PRI  eP     06 13 12.0
        FRI  eP     06 13 12.4
        MNV  eP     06 13 14.0
        JAS  eP     06 13 21.5
        MHC  eP     06 13 24.8
        BKS  ePe    06 13 30.0                    e 15 32
                              MICRON    PERIOD
                         LZ     7           20
                         LN     5           20
                         LE     8           20
        MIN  eP     06 13 38
        WDC  eP     06 13 41.3
        PHC  eP     06 13 52
                    Ms=5.8, DISTANCE=52°
                    USGS 06 04 39.7,  1.5N,  85.3W, H= 33 KM, mb=5.2, Ms=5.7
                         OFF COAST OF ECUADOR

MAY 14  FRI         07 07                    e 07 22
        MNV  eP     07 07 23.8
        PRI         07 07                    e 07 24
        JAS  eP     07 07 31.5
        BKS         07 07                    e 14 50     Lr 23 26
                              MICRON    PERIOD
                         LZ     5           20
                         LN     3.4         20
                         LE     4.2         20
        WDC         07 07                    e 07 41
                    USGS 06 58 49.9,  1.6N,  85.3W, H= 33 KM, mb=5.1, Ms=5.5
                         OFF COAST OF ECUADOR

MAY 15  PHC  eP     00 30 21.0
        WDC  eP     00 30 27.2
        MHC  e(P)   00 30 45
        JAS  ePe    00 30 47.5
        FRI  eP     00 30 54.0
        MNV  eP     00 30 54.6
                    USGS 00 20 59.6, 49.6N, 152.9E, H=221 KM, mb=5.0
                         NORTHWEST OF KURIL ISLANDS

MAY 15  PHC  ePd    15 57 10.7
        WDC  ePd    15 57 21.6
        MIN  eP     15 57 27.4
        BKS  ePe    15 57 37.5   03 16       Lq 05 45     Lr 07 08
                              MICRON    PERIOD
                         PZ     0.07       1.0
                         LZ     2.1         20
                         LN     2.2         20
                         LE     1.8         20
        MHC  eP     15 57 43.3
        JAS  ePd    15 57 46.6
        SAO  eP     15 57 47
        FRI  ePd    15 57 55.1
        PRI  eP     15 57 55.7
        MNV  ePd    15 57 55.8
                    Ms=5.0, DISTANCE=36°
                    USGS 15 50 47.1, 52.4N, 168.0W, H= 33 KM, mb=5.3, Ms=4.7
                         FOX ISLANDS, ALEUTIAN ISLANDS

MAY 15  FRI  iPd    19 58 58.9   59 04
        JAS  iPd    19 59 04.2   59 14
        SAO  iPe    19 59 13.5
        MHC  ePe    19 59 14.0
        PRI  ePe    19 59 14.1
        BKS  e(P)   19 59 22
        MNV  eP     19 59 22.0
                    BRK  19 58 50.1, 37.3N, 120.0W, H=  8 KM, ML=2.7
                         EAST OF MERCED, CALIFORNIA

MAY 15  SAO  eP     23 23 55.2
        BKS  ePd    23 23 56.1
                              MICRON    PERIOD
                         PZ     0.08       1.0
        PRI  eP     23 23 56.5
        MHC  eP     23 23 56.9
        FRI  eP     23 24 01.7
        JAS  eP     23 24 02.0                pP 25 54
        WDC  eP     23 24 03.5                pP 25 50
        MNV  eP     23 24 11.5
                    USGS 23 12 53.6, 19.1S, 177.7W, H=499 KM, mb=5.5
                         FIJI ISLANDS REGION

MAY 16  JAS  eP     02 10 53.8
        MNV  eP     02 11 02.6
                    USGS 01 58 14.4, 10.3S, 161.2E, H= 85 KM, mb=5.1
                         SOLOMON ISLANDS

MAY 16  MHC         11 27                    e 27 05
        BKS         11 27                    e 38 48     Lr 53 32
                              MICRON    PERIOD
                         LZ     2.3         20
                         LN     1.6         20
                         LE     1.6         20
        FRI         11 27                    e 27 14
        JAS  eP     11 27 14.0
        MNV         11 27                    e 27 23
        WDC         11 27                    e 27 24
                    USGS 11 14 30.7, 17.4S, 167.9E, H= 30 KM, mb=5.1, Ms=5.3
                         NEW HEBRIDES ISLANDS

MAY 18  PHC  ePd    04 05 52.0
        WDC  ePd    04 05 58.4                e 06 04      e 06 36
        MIN  e(P)   04 06 03
        BKS  e(P)   04 06 14
        MHC  eP     04 06 19.2
        JAS  ePd    04 06 21.2                e 06 27      e 06 56
        SAO         04 06                     e 06 25
        MNV  eP     04 06 27.2
        FRI  eP     04 06 28.4
        PRI  eP     04 06 30.0
                    USGS 03 57 13.4, 55.7N, 160.8E, H=158 KM, mb=5.1
                         KAMCHATKA

MAY 18  PRI  ePe    04 39 47.6                e 39 54
        FRI  eP     04 39 49.7                e 39 56
        MHC  eP     04 39 55.6                e 40 03
        MNV  ePe    04 39 56.9                e 40 04
        JAS  ePe    04 39 56.9                e 40 04
        BRK  e(P)   04 39 59
        WDC  ePe    04 40 12.4                e 40 20
                    USGS 04 28 11.5, 36.1S, 101.6W, H= 23 KM, mb=4.7, Ms=4.2
                         SOUTHERN PACIFIC OCEAN

MAY 18  BKS  ePe    06 55 37.3
                              MICRON    PERIOD
                         PZ     0.20       1.4
        SAO  ePe    06 55 37.3
        MHC  ePe    06 55 38.4
        PHC  ePe    06 55 38.7
        PRI  ePe    06 55 39.4
        WDC  iPe    06 55 42.3                e 56 37      PP 59 06     PP 59 08
        JAS  iPe    06 55 43.4                e 56 38      e 56 54
        FRI  ePe    06 55 43.8
        MIN  ePe    06 55 44.3
        MNV  ePe    06 55 52.0                e 56 43      PP 59 21
                    USGS 06 43 21.1, 19.0S, 169.2E, H=217 KM, mb=5.2
                         NEW HEBRIDES ISLANDS
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MAY 20  FRI  eP    21 17 02.8
        MBC  eP    21 17 03.6
        BKS  eP    21 17 03.8
                        MICRON     PERIOD
                   PZ     0.04        1.0
        FRI  eP    21 17 08.1
        FBC  eP    21 17 08.3
        JAS  ePc   21 17 08.9                 • 17 23
        WDC  ePc   21 17 11.7                 • 17 25
        MIN  eP    21 17 13.3
        MNV  ePc   21 17 17.9                 • 17 32
                   USGS 21 04 58.0, 23.9S, 176.6W, H= 48 KM, mb=5.6, Ms=4.5
                        SOUTH OF FIJI ISLANDS

MAY 20  MNV  ePd   21 19 51.3
        FRI  eP    21 19 51.3
        FRI  e(P)  21 19 52
        JAS  ePd   21 19 56.4
        MBC  eP    21 19 58.6
        BRK  e(P)  21 20 02
        WDC  ePd   21 20 10.1
        FBC  ePd   21 20 17.3
                   USGS 21 08 07.4, 24.2S,  66.9W, H=178 KM, mb=5.0
                        SALTA PROVINCE, ARGENTINA

MAY 20  FBC  ePKP  23 10 13.5
        WDC  ePKP  23 10 14.8                 • 11 03
        MBC  ePKP  23 10 20.0
        JAS  ePKP  23 10 20.8                 • 10 58      • 13 39
        FRI  ePKP  23 10 22.7                 • 13 44
        PRI  ePKP  23 10 23.1                 • 13 43
        MNV  ePKP  23 10 23.5                 • 10 54      • 13 45
                   USGS 22 51 13.9,  4.4S, 102.0E, H= 37 KM, mb=5.7, Ms=5.3
                        SOUTHERN SUMATRA

MAY 21  FBC  e(P)  00 09 04
        BRK  e(P)  00 09 07
        BKS        00 09                      • 00 36
                        MICRON     PERIOD
                   LZ     4.3         18
                   LN     1.7         18
                   LE     2.6         18
        MBC  e(P)  00 09 09
        WDC  eP    00 09 09.8
        FRI  e(P)  00 09 12
        JAS  e(P)  00 09 14
        FRI  e(P)  00 09 15
        MNV  eP    00 09 22.8
                   USGS 23 56 27.6, 10.2S, 160.6E, H= 33 KM, mb=5.4, Ms=5.7
                        SOLOMON ISLANDS

MAY 21  FRI  iPc   00 28 37.7  28 50
        MNV  iPc   00 28 38.7
        JAS  iPc   00 28 45.2                 • 29 01
        PRI  eP    00 28 56.5
        SAO  ePd   00 28 59.6
        MBC  eP    00 28 59.9
        BKS  eP    00 29 06.5
                   BRK  00 28 19.7, 37.5N, 118.7W, H= 12 KM, ML=3.4
                        MAMMOTH LAKES AREA, CALIFORNIA

MAY 21  BKS        05 48                      • 01 45      • 08 30      • 12 00
                                              • 22 00
        JAS        05 49                      • 52 10      • 52 47      • 05 24
        WDC  eP    05 48 43                   • 49 32      • 49 54      • 52 03
        MNV        05 48                      • 52 48
                                              • 52 12
                   USGS 05 35 27.5, 15.7N, 120.8E, H=189 KM, mb=5.7
                        LUZON, PHILIPPINE ISLANDS

MAY 21  FBC  ePKP  10 47 37.1
        WDC  ePKP  10 47 37.7
        MIN  ePKP  10 47 40.7
        JAS  ePKP  10 47 46.2
        MNV  ePKP  10 47 46.5
        MBC  e(PKP)10 47 47
        FRI  ePKP  10 47 48.6
        PRI  ePKP  10 47 50.8
                   USGS 10 27 57.0,  8.6S,  67.5E, H= 33 KM, mb=4.6
                        MID-INDIAN RISE

MAY 21  WDC  eP    12 48 36
        JAS  eP    12 48 38
        FRI        12 48                      • 48 39
        MNV        12 48                      • 48 47
                   USGS 12 36 00.3, 15.0S, 166.7E, H= 35 KM, mb=5.2, Ms=4.6
                        NEW HEBRIDES ISLANDS

MAY 21  FBC  eP    13 52 12.5
        WDC  eP    13 52 17.5
        MIN  eP    13 52 21.0
        BKS  e(P)  13 52 25
        MBC  e(P)  13 52 29
        JAS  eP    13 52 31.7
        FRI  eP    13 52 36.4
        PRI  e(P)  13 52 37
        MNV  eP    13 52 39.0
                   USGS 13 40 55.0, 27.6N, 140.0E, H=340 KM, mb=5.1
                        BONIN ISLANDS REGION

MAY 21  MNV  eP    14 23 52.5
        PRI  eP    14 23 53.0
        FRI        14 23
        JAS  eP    14 24 01.5                 • 23 54
        MBC        14 24
        MIN        14 24                      • 24 05
        WDC  eP    14 24 19.0                 • 24 18
        FBC  e(P)  14 24 30
                   USGS 14 14 41.3,  1.6S,  80.9W, H= 48 KM, mb=5.0, Ms=4.7
                        NEAR COAST OF ECUADOR

MAY 22  WDC  e(P)  02 17 34
        BKS  eP    02 17 42.0
                        MICRON     PERIOD
                   PZ     0.03        0.8
        MBC  eP    02 17 45.5
        JAS  eP    02 17 48.3
        FRI  eP    02 17 53.2
        MNV  eP    02 17 55.2
                   USGS 02 06 24.4, 30.0N, 138.7E, H=431 KM, mb=4.6
                        SOUTH OF HONSHU, JAPAN

MAY 22  SAO  eP    23 38 20.2
        PRI  eP    23 38 21.0
        MBC  eP    23 38 21.2
        BKS  eP    23 38 21.4
                        MICRON     PERIOD
                   PZ     0.04        0.8
        FRI  eP    23 38 26.5
        JAS  iPd   23 38 26.9
        WDC  iPd   23 38 28.5                 • 39 47
        MIN  eP    23 38 30.5                 • 39 49
        MNV  iPd   23 38 36.6                 • 39 58
                   USGS 23 27 03.8, 19.5S, 177.2W, H=350 KM, mb=5.2
                        FIJI ISLANDS REGION

MAY 23  FBC  e(P)  03 13 10
        WDC  eP    03 13 16.9
        MIN  eP    03 13 20.2
        BKS  eP    03 13 21.8
                        MICRON     PERIOD
                   PZ     0.02        0.7
        MBC  eP    03 13 24.9
        JAS  eP    03 13 28.5
        PRI  eP    03 13 31.2
        FRI  eP    03 13 32.7
                   USGS 03 01 25.5, 17.4N, 145.2E, H=207 KM, mb=4.7
                        MARIANA ISLANDS

MAY 23  FBC  e(P)  12 47 51
        BKS  eP    12 47 53.0
                        MICRON     PERIOD
                   PZ     0.02        1.0
        MBC  eP    12 47 55.1
        WDC  ePd   12 47 56.7                 • 48 05
        PRI  ePd   12 47 57.4
        MIN  eP    12 47 59.3
        JAS  ePd   12 48 00.2                 • 48 09
        FRI  ePd   12 48 01.5                 • 48 10
        MNV  ePd   12 48 09.5                 • 48 18
                   USGS 12 35 27.1, 10.6S, 164.8E, H= 33 KM, mb=5.2, Ms=4.7
                        SANTA CRUZ ISLANDS REGION

MAY 23  FBC  ePKP  22 14 49.6
        WDC  ePKP  22 14 50.7                 • 17 08
        MIN  ePKP  22 14 52.4
        MBC  ePKP  22 14 56.6
        JAS  ePKP  22 14 57.2
        FRI  ePKP  22 14 58.6
        MNV  ePKP  22 14 59.7
        PRI  ePKP  22 14 59.7
                   USGS 21 55 54.1,  0.7N,  98.7E, H= 40 KM, mb=5.5, Ms=4.7
                        NORTHERN SUMATRA

MAY 24  FBC  eP    07 58 05.3
        WDC  eP    07 58 10.7                 • 01 06
        MIN  eP    07 58 14.6
        BKS  eP    07 58 17.6                 • 22 00
                        MICRON     PERIOD
                   PZ     0.07        1.0
                   LZ     2.5         20
                   LN     1.1         20
                   LE     1.4         20
        MBC  eP    07 58 21.5
        SAO  eP    07 58 23.0
        JAS  eP    07 58 24.7                 • 01 19
        PRI  eP    07 58 28.4
        FRI  eP    07 58 29.5
        MNV  eP    07 58 32.5
                   USGS 07 46 13.5, 25.5N, 142.5E, H=  9 KM, mb=5.7, Ms=5.3
                        VOLCANO ISLANDS REGION

MAY 24  FBC  eP    10 35 03.5
        WDC  eP    10 35 08.7                 pP 36 04     SKS 45 07 PKPPKP 02 04
        MIN  eP    10 35 12.3
        BKS  eP    10 35 14.0                 pP 36 12     SKS 45 00      SS 50 00
                                              • 56 00       • 00 00       • 04 30
                        MICRON     PERIOD
                   PZ     0.13        0.9
                   LZ     6           20
                   LN     2.1         20
                   LE     3.6         20
        MBC  eP    10 35 17.1                 pP 36 14
        SAO  eP    10 35 19.3
        JAS  eP    10 35 20.9                 pP 36 13     SKS 45 10    PKKP 53 52
                                              PKPPKP 01 57
        FRI  eP    10 35 25.1
        MNV  eP    10 35 29.1                 SKS 45 32
        PRI  eP    10 35 23.3                 pP 36 19
                   USGS 10 23 23.4, 18.8N, 145.4E, H=207 KM, mb=5.7
                        MARIANA ISLANDS

MAY 24  MNV  eP    11 22 13.4
        FRI  eP    11 22 18.0
        JAS  eP    11 22 25.0
        MBC  eP    11 22 31.4
                   USGS 11 14 36.0, 17.6N,  78.6W, H= 33 KM, mb=4.7
                        JAMAICA REGION

MAY 25  SAO  eP    12 20 54.2
        BKS  eP    12 20 55.0                 pP 20 56
                        MICRON     PERIOD
                   PZ     0.22        1.2
        MBC  eP    12 20 55.7                 pP 22 58
        PRI  eP    12 20 56.0                 pP 22 57
        FBC  eP    12 20 58.8
        FRI  eP    12 21 01.0                 pP 23 03
        JAS  eP    12 21 01.3                 pP 23 04
        WDC  eP    12 21 02.2                 pP 23 05
        MIN  eP    12 21 04.3
        MNV  eP    12 21 11.0
                   USGS 12 10 01.2, 17.9S, 178.6W, H=578 KM, mb=5.4
                        FIJI ISLANDS REGION

MAY 25  FBC  ePKP  15 14 35.5
        WDC  iPKPc 15 14 37.3                 PP 16 24     PKKP 24 26      • 25 43
                                              SKKP 28 10
        MIN  ePKP  15 14 38.5                 PP 16 26
        BKS  ePKP  15 14 41                   PP 16 30      • 18 00      SKS 21 45
                                               • 26 45     SS 32 15     sSS 34 00
                                              SSS 39 00     • 55 00
                        MICRON     PERIOD
                   LZ     4.4         22
                   LN     1.1         22
                   LE     3.0         22
        JAS  ePKP  15 14 43.5                 I 15 01      PP 16 40     SKKP 28 07
        MBC  ePKP  15 14 43.7                 • 15 05
        FRI  ePKP  15 14 45.9                 • 15 03
        MNV  ePKP  15 14 46.0
        PRI  ePKP  15 14 46.7                 PP 16 50     SKKP 28 06
                   USGS 14 55 45.0,  4.2N,  95.8E, H= 56 KM, mb=5.9
                        NORTHERN SUMATRA

MAY 25  MNV  iPc   17 00 36.7
        FRI  iPc   17 00 48.4
        JAS  iPc   17 00 57.5
        PRI  iPc   17 01 01.1
        SAO  eP    17 01 07.5
        MBC  eP    17 01 10.0
        BKS  eP    17 01 16.5
        MIN  eP    17 01 23.2
        WDC  eP    17 01 32.4
        FBC  eP    17 01 50.6
                   ML=5.2, NUCLEAR EXPLOSION, NEVADA TEST SITE
                   USGS 17 00 00.1, 37.1N, 116.0W, H=  0 KM, mb=5.3
                        SOUTHERN NEVADA

MAY 25  FBC  eP    23 08 21.0
        WDC  iPc   23 08 21.3
        JAS  iP    23 08 42.4
        MBC  eP    23 08 48.6
        FRI  eP    23 08 49.4
        PRI  eP    23 08 59.0
                   USGS 23 01 06.5, 77.5N, 105.2W, H= 33 KM, mb=4.4
                        QUEEN ELIZABETH ISLANDS

MAY 27  BKS  e(P)  12 30 02
        PRI  e(P)  12 30 02
        FRI  ePd   12 30 06.9                 pP 30 21
        JAS  iPd   12 30 08.0                 pP 30 22
        WDC  iPd   12 30 11.1                 pP 30 25
        MIN  eP    12 30 12
        MNV  eP    12 30 15.9                 pP 30 30
                   USGS 12 17 33.7, 29.4S, 177.5W, H= 51 KM, mb=4.7
                        KERMADEC ISLANDS

MAY 27  FBC  eP    23 10 57.2
        BKS  eP    23 10 57.4
                        MICRON     PERIOD
                   PZ     0.04        0.7
        WDC  ePc   23 10 59.5
        MBC  ePc   23 11 00.3
        MIN  eP    23 11 01.6
        PRI  eP    23 11 02.1
        JAS  ePc   23 11 03.9
        FRI  ePc   23 11 05.7
        MNV  ePc   23 11 13.1
                   USGS 22 58 13.3,  9.4S, 159.0E, H= 33 KM, mb=5.3, Ms=4.9
                        SOLOMON ISLANDS
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MAY 28  SAO  iPc    06 26 56.5
        PRI  ePd    06 27 07.7
        MHC  ePd    06 27 08.0   27 20
        FRI  ePc    06 27 17.0   27 34
        JAS  ePc    06 27 19.2   27 37
        BKS  eP     06 27 20.6                e 27 42
                    BRK  06 26 53.6, 36.6N, 121.3W, H=  1 KM, ML=3.0
                         STONE CANYON, CALIFORNIA

MAY 29  FHC  ePc    03 09 49.6
        WDC  ePc    03 09 50.7
        MIN  ePc    03 09 52.7
        BKS  eP     03 10 04.6
                              MICRON     PERIOD
                         PZ     0.04        0.7
        MNV  ePc    03 10 04.8
        JAS  ePc    03 10 05.2
        MHC  ePc    03 10 07.2
        FRI  ePc    03 10 09.8
        SAO  eP     03 10 10
        PRI  ePc    03 10 13.5
                    USGS 02 56 57.8, 49.9N,  78.8E, H=  0 KM
                         EASTERN KAZAKH, SSR

MAY 29  MNV  e(P)   16 48 04
        JAS  iPc    16 48 17.0
                    USGS 16 37 20.5, 40.5N,  29.5W, H= 12 KM, mb=4.7, Ms=4.6
                         AZORES ISLANDS REGION

MAY 29  FHC  eP     17 36 43.5
        WDC  iPc    17 36 48.5
        BKS  ePc    17 36 57.2
        MHC  e(P)   17 37 01
        JAS  ePc    17 37 03.4
        FRI  eP     17 37 08.0
        PRI  ePc    17 37 08.2
        MNV  ePc    17 37 10.0
                    USGS 17 25 36.8, 31.3N, 138.3E, H=381 KM, mb=4.9
                         SOUTH OF HONSHU, JAPAN

MAY 30  FRI         02 52                     e 52 52
        JAS  eP     02 52 38

MAY 30  MNV  iPd    09 26 35.6                e 26 48
        MIN  eP     09 26 50.5               Sg 28 14
        JAS  ePc    09 26 56.7                e 27 18    Sg 28 25
        FRI  e(P)   09 27 00                  e 27 23    Sg 28 36
                    ML=3.9, NORTHEASTERN NEVADA
                    USGS 09 25 36.4, 41.5N, 115.5W, H=  5 KM, mb=4.2
                         NEVADA

MAY 30  FHC  eP     15 22 35
        WDC  e(P)   15 22 49                  e 23 05    ScP 29 02
        MIN  eP     15 22 51
        BKS  eP     15 23 00.0  28 36         Lr 31 08
                              MICRON     PERIOD
                         PZ     0.10        1.5
                         LZ     46          20
                         LN     14          20
                         LE     39          20
        JAS  eP     15 23 08.0               ScP 29 12
        MHC  e(P)   15 23 10
        SAO         15 23                     e 23 16
        FRI         15 23                     e 23 18    ScP 29 16
        MNV  eP     15 23 19.0               ScP 29 17
        PRI         15 23                     e 23 23
                    Ms=6.0, DISTANCE=36°
                    USGS 15 16 01.6, 52.4N, 169.7W, H= 33 KM, mb=5.6, Ms=6.0
                         FOX ISLANDS, ALEUTIAN ISLANDS

MAY 31  MNV  ePc    10 55 50.3
        PRI  eP     10 55 56.8
        JAS  eP     10 56 03.5
        MHC         10 56                     e 56 11
        WDC  eP     10 56 16.0
        FHC  e(P)   10 56 29
                    USGS 10 47 29.0, 19.4N,  69.5W, H= 53 KM, mb=4.9, Ms=3.4
                         DOMINICAN REPUBLIC REGION

MAY 31  MNV  eP     14 33 01.5
        PRI  eP     14 33 01.5
        JAS  eP     14 33 08.2
        MHC  eP     14 33 11.0
        WDC  eP     14 33 22.5
        FHC         14 33                     e 33 30
                    USGS 14 21 21.9, 23.8S,  66.6W, H=205 KM, mb=4.6
                         JUJUY PROVINCE, ARGENTINA

MAY 31  FHC  eP     15 00 09.3               pP 00 46
        BKS  eP     15 00 10.4               pP 00 46    e 11 46    Lq 22 00
                              MICRON     PERIOD
                         PZ     0.7        12.0
        MHC  ePc    15 00 11.6               pP 00 48
        PRI  eP     15 00 13.7               pP 00 50
        WDC  iPc    15 00 13.8               pP 00 50
        MIN  eP     15 00 16.0               pP 00 53
        JAS  iPc    15 00 16.7               pP 00 53
        FRI  ePc    15 00 17.7               pP 00 54
        MNV  iPc    15 00 26.0               pP 01 02
                    USGS 14 47 59.1, 11.8S, 166.5E, H=138 KM, mb=5.6
                         SANTA CRUZ ISLANDS

MAY 31  FRI         15 41                     e 41 04
        JAS         15 41                     e 41 05
        WDC  ePc    15 41 06.0
        MNV  ePc    15 41 15.4
                    USGS 15 29 11.8, 15.7S, 178.6W, H=  2 KM, mb=4.9
                         FIJI ISLANDS REGION

MAY 31  WDC  iPc    16 40 31.4  40 36
        MIN  iP     16 40 38.9
        FHC  ePc    16 40 47.3
        JAS  e(P)   16 41 20                  i 41 08
        MNV  e(P)   16 41 38
                    BRK  16 40 24.2, 40.9N, 122.3W, H= 15 KM, ML=3.6
                         SHASTA LAKE, CALIFORNIA

MAY 31  BKS  ePd    22 56 57.4  57 03
        MHC  eP     22 57 05.1
        JAS  iPd    22 57 10.3  57 26
        SAO  eP     22 57 13.6
                    BRK  22 56 50.3, 38.2N, 122.0W, H= 20 KM, ML=2.6
                         NORTHEAST OF BERKELEY, CALIFORNIA

JUN 01  SAO  eP     09 09 17.3
        PRI  eP     09 09 18.5                e 09 20
        BRK  eP     09 09 18.8                e 09 30
        BKS         09 09                     e 09 30
                                              e 09 44    e 19 06
                              MICRON     PERIOD
                         LZ     0.9         20
        MHC  eP     09 09 19.4
        FRI  eP     09 09 24.2                e 09 31
        JAS  eP     09 09 25.2                e 09 36
        WDC  eP     09 09 28.0                e 09 37
        MIN  eP     09 09 29.5                e 09 39
        MNV  eP     09 09 34.7                e 09 41
                    USGS 09 57 30.9, 21.2S, 174.4W, H= 33 KM, mb=5.2, Ms=5.2
                         TONGA ISLANDS

JUN 01  WDC  eP     13 08 26
        MIN  eP     13 08 28                  e 12 32
        BKS         13 08                     e 19 14
                              MICRON     PERIOD
                         LZ     2.2         20
                         LN     1.7         20
                         LE     0.9         20
        JAS  eP     13 08 37                  e 11 47
                    USGS 12 54 49.2, 36.2N,  31.3E, H= 67 KM, mb=5.7
                         TURKEY                e 12 43    e 25 00

JUN 02  WDC  e(P)   15 05 38
        MIN  eP     15 05 39.2
        MNV  e(P)   15 05 41
        JAS  e(P)   15 05 49
        BKS         15 05                     e 26 58    e 38 46
                              MICRON     PERIOD
                         LZ     1.4         20
                         LN     2.7         20
                         LE     2.5         20
        FRI  e(P)   15 05 54
                    USGS 14 55 31.9, 63.7N,  19.0W, H= 10 KM, mb=4.9, Ms=5.0
                         ICELAND

JUN 02  FRI  e(P)   17 02 07
        MNV  eP     17 02 08.2
        PRI  eP     17 02 08.4
        JAS  eP     17 02 13.8
        MHC  eP     17 02 16.4
        WDC  ePd    17 02 28.7
        FHC  ePd    17 02 35.9
                    USGS 16 50 37.1, 20.8S,  69.0W, H=107 KM, mb=5.2
                         NORTHERN CHILE

JUN 03  FHC  iPd    01 40 50.4                i 40 56    i 41 02
        WDC  iPd    01 40 51.5                i 40 57    i 41 00    i 41 04
        MIN  ePc    01 41 01.3  41 20
        JAS  e(P)   01 41 42
                    BRK  01 40 38.0, 41.1N, 123.2W, H= 46 KM, ML=3.3
                         NORTHEAST OF EUREKA, CALIFORNIA

JUN 03  WDC  ePc    11 53 19.8
        MIN  eP     11 53 24.0
        BRK  eP     11 53 31
        JAS  ePc    11 53 38.7
        FRI  ePc    11 53 44.7
                    USGS 11 42 55.9, 43.8N, 147.1E, H= 94 KM, mb=4.8
                         KURIL ISLANDS

JUN 03  SAO  eP     14 44 00.9
        BKS  eP     14 44 02.0
                              MICRON     PERIOD
                         PZ     0.05        1.0
        PRI  eP     14 44 02.5
        MHC  ePd    14 44 02.6
        FHC  ePd    14 44 06.0
        FRI  ePd    14 44 07.8
        JAS  iPd    14 44 08.2
        WDC  iPd    14 44 09.5
        MIN  eP     14 44 11.9
                    USGS 14 33 07.0, 18.9S, 177.6W, H=573 KM
                         FIJI ISLANDS REGION

JUN 03  BKS  eP     15 29 56.7                PPS 41 20  SS 45 44    e 46 22
                                              Lq 52 00   Lr 55 20
                              MICRON     PERIOD
                         PZ     0.04        1.1
                         LZ     4.5         20
                         LN     1.6         20
                         LE     3.2         20
        WDC         15 29                     e 29 56
        MHC         15 29                     e 29 57
        FRI         15 30                     e 30 02
        JAS         15 30                     e 30 03
                    Ms=5.7, DISTANCE=83°
                    USGS 15 17 25.1, 14.1S, 166.6E, H= 38 KM, mb=5.4, Ms=5.4
                         NEW HEBRIDES ISLANDS

JUN 03  WDC  ePd    23 00 58.0
        MHC  eP     23 01 05.3
        JAS  ePd    23 01 08.2
        FRI  eP     23 01 15.2
        MNV  ePd    23 01 15.5
                    USGS 22 50 01.5, 40.5N, 145.3E, H= 33 KM, mb=5.0
                         OFF EAST COAST OF HONSHU, JAPAN

JUN 04  WDC  eP     15 12 02.7
        MIN  eP     15 12 05.6
        JAS  eP     15 12 21.0
        FRI  eP     15 12 26.6
                    USGS 15 00 33.4, 56.3N, 111.6E, H= 33 KM, mb=4.9, Ms=4.2
                         LAKE BAIKAL REGION

JUN 04  MNV  eP     19 03 25.5
        JAS  eP     19 03 38
        WDC  eP     19 03 50
                    USGS 18 54 29.6, 18.9N,  64.1W, H= 49 KM, mb=4.7
                         VIRGIN ISLANDS

JUN 04  BKS  iPd    20 57 15.4  57 21
        MHC  iPd    20 57 22.9
        JAS  iPc    20 57 28.1
        SAO  iPd    20 57 31.3
        MIN  e(P)   20 57 42
        FRI  ePd    20 57 42.3
        PRI  e(P)   20 57 43
        WDC  ePd    20 57 44.7
        MNV  e(P)   20 57 56
                    BRK  20 57 07.7, 38.2N, 122.0W, H= 20 KM, ML=3.8
                         NORTHEAST OF BERKELEY, CALIFORNIA

JUN 04  BKS  iPd    21 07 02.5  07 08
        MHC  ePc    21 07 10.2
        JAS  ePc    21 07 15.1
        SAO  eP     21 07 18.8
                    BRK  21 06 55.0, 38.2N, 122.0W, H= 20 KM, ML=2.6
                         NORTHEAST OF BERKELEY, CALIFORNIA

JUN 05  FRI  eP     02 57 53.3                pP 58 04
        PRI  ePc    02 57 54.6                pP 58 06
        MNV  eP     02 57 55.6                pP 58 06
        JAS  ePc    02 58 00.5                pP 58 12
        MHC  eP     02 58 02.6                pP 58 14
        BKS  eP     02 58 06.3  08 05         pP 58 18   SS 13 20    Lq 19 10
                                              Lr 23 45
                              MICRON     PERIOD
                         PZ     0.09        1.5
                         LZ     1.0         20
                         LN     0.9         20
                         LE     0.7         20
        MIN  eP     02 58 12.1                pP 58 23
        WDC  ePc    02 58 15.2                pP 58 26
        FHC  eP     02 58 22.3                pP 58 34
                    Ms=5.2, DISTANCE=79°
                    USGS 02 46 05.9, 23.9S,  70.2W, H= 32 KM, mb=5.6, Ms=5.4
                         NEAR COAST OF NORTHERN CHILE

JUN 05  FRI  e(P)   06 49 40
        MNV  eP     06 49 40.0
        PRI  eP     06 49 40.0
        JAS  ePd    06 49 45.0
        MHC  eP     06 49 47.3
        BRK  e(P)   06 49 50
        WDC  ePd    06 49 59.1
                    USGS 06 37 56.9, 24.2S,  67.0W, H=188 KM, mb=4.6
                         CHILE-ARGENTINA BORDER REGION

JUN 05  WDC  eP     06 52 12.3
        MIN  eP     06 52 16.7
        JAS  eP     06 52 30.9
        MNV         06 52                     e 52 37
                    USGS 06 41 23.1, 42.1N, 142.9E, H= 66 KM, mb=4.6
                         HOKKAIDO, JAPAN REGION

JUN 05  MNV  iPc    14 09 13.0
        FRI  eP     14 09 18.7                e 09 24
        JAS  ePc    14 09 31.0                e 09 38    Sg 10 26
                    BRK  14 08 31.9, 36.5N, 116.4W, H=  2 KM, ML=3.7
                         NORTHWEST OF LAS VEGAS, NEVADA
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JUN 05  FHC  ePd   15 31 51.3
        WDC  iPd   15 31 55.7
        BKS  e(P)  15 31 56
        MIN  eP    15 31 58.4
        MHC  eP    15 31 59.7
        JAS  iPd   15 32 02.5
        FRI  eP    15 32 04.5
        MNV  iPd   15 32 11.0
                   USGS 15 19 13.7,  4.6S, 151.9E, H=150 KM, mb=5.4
                        NEW BRITAIN REGION

JUN 06  FRI  ePKP  01 48 48.2
        JAS  ePKPd 01 48 49.8
        MHC        01 48                    • 48 52
        BKS        01 48                    • 50 26
        WDC  ePKPd 01 48 55.8
        FHC  ePKP  01 48 58.8
                   USGS 01 29 59.3, 55.2S,  28.9W, H= 33 KM, mb=5.3, Ms=5.0
                        SOUTH SANDWICH ISLANDS, REGION

JUN 06  MNV  iPc   06 47 08.0
        FRI  ePc   06 47 14.5
        FRI  eP    06 47 19.0
        JAS  ePc   06 47 20.8
        MHC  eP    06 47 27.3
        MIN  eP    06 47 29.1
        WDC  ePc   06 47 33.4
        FHC  e(P)  06 47 46
                   USGS 06 38 46.1, 19.4N,  69.5W, H= 49 KM, mb=4.9, Ms=4.2
                        DOMINICAN REPUBLIC REGION

JUN 06  BRK  e(P)  09 49 04
        FHC  e(P)  09 49 05
        MHC  e(P)  09 49 06
        FRI  e(P)  09 49 09
        WDC  ePc   09 49 12.7
        JAS  ePc   09 49 15.7
        MIN  eP    09 49 17.0
                   T PHASE AT 10:24:00.
                   USGS 09 42 18.7, 19.4N, 155.1W, H=  8 KM, mb=4.8
                        HAWAII

JUN 06  WDC  iPc   09 46 47.0
        BKS        09 47       49 40        • 47 04
        JAS  eP    09 47 29.0
        MNV  ePc   09 47 35.0
                   USGS 09 44 23.7, 49.1N, 129.5W, H= 27 KM, mb=4.5, Ms=3.6
                        VANCOUVER ISLAND REGION

JUN 06  SAO  e(P)  12 57 30
        FRI  eP    12 57 31.7
        MHC  ePc   12 57 32.0
        BKS  eP    12 57 32.9
                              MICRON    PERIOD
                   PZ            0.05       0.9
        FHC  ePc   12 57 36.0
        FRI  ePc   12 57 37.3
        JAS  iPc   12 57 37.9                • 58 36
        WDC  iPc   12 57 39.7                • 58 35
        MIN  eP    12 57 41.6
        MNV  iPc   12 57 47.9
                   USGS 12 46 11.8, 19.2S, 175.6W, H=253 KM, mb=5.1
                        TONGA ISLANDS

JUN 06  FRI  eP    13 16 58.4
        MNV  eP    13 16 58.5
        JAS  ePd   13 17 04.2
        WDC  ePd   13 17 18.7
        FHC  e(P)  13 17 26
                   USGS 13 05 20.1, 22.0S,  68.7W, H= 97 KM, mb=4.8
                        NORTHERN CHILE

JUN 06  BKS  iPd   16 38 59.7  39 06
        MHC  ePc   16 39 07.2
        JAS  eP    16 39 12.5
        SAO  eP    16 39 15.5
                   BRK  16 38 51.7, 38.2N, 122.0W, H= 22 KM, ML=2.6
                        NORTHEAST OF BERKELEY, CALIFORNIA

JUN 06  SAO  ePc   20 02 49.2
        BKS  eP    20 02 50.4
                              MICRON    PERIOD
                   PZ            0.03       0.9
        FRI  ePc   20 02 50.8
        MHC  ePc   20 02 50.9
        FRI  ePc   20 02 56.1
        JAS  iPc   20 02 56.5
        WDC  ePc   20 02 57.5
        MNV  ePc   20 03 06.2
                   USGS 19 51 59.3, 18.0S, 178.4W, H=609 KM, mb=4.8
                        FIJI ISLANDS REGION

JUN 06  WDC  iPc   22 48 57.3
        MIN  eP    22 49 03.2
        BKS  eP    22 49 12.0
                              MICRON    PERIOD
                   PZ            0.02       0.7
        JAS  iPc   22 49 20.6
        FRI  ePc   22 49 28.3
                   USGS 22 41 15.9, 51.6N, 178.5E, H= 67 KM, mb=4.7
                        RAT ISLANDS, ALEUTIAN ISLANDS

JUN 07  FHC  iPd   01 14 28.0
        WDC  iPc   01 14 40.5
        MIN  iPc   01 14 50.5
        BKS  iPd   01 15 13.7  15 56        • 16 30
        JAS  e(P)  01 15 21
        MHC  ePc   01 15 23.1
        SAO  iPc   01 15 30.5
        FRI  e(P)  01 15 40
        FRI  e(P)  01 15 44
                   BRK  01 14 22.0, 41.0N, 123.9W, H= 28 KM, ML=3.8
                        NORTHEAST OF EUREKA, CALIFORNIA

JUN 07  BKS        08 18                    Lq 42 40     Lr 47 00
        FRI  eP    08 18 53.7
        MHC  eP    08 18 54.8
        FRI  eP    08 18 58.2
        JAS  ePc   08 18 59.4
        WDC  ePc   08 19 02.8
        MNV  eP    08 19 07.0
                   USGS 08 06 06.6, 33.1S, 178.6W, H= 33 KM, mb=4.9, Ms=4.9
                        SOUTH OF KERMADEC ISLANDS

JUN 07  FHC  ePc   08 53 33.6
        BKS  eP    08 53 34.5
                              MICRON    PERIOD
                   PZ            0.04       0.6
        SAO  eP    08 53 35.0
        MHC  ePc   08 53 35.8
        WDC  iPc   08 53 37.8                • 56 40
        FRI  ePc   08 53 38.0
        MIN  ePc   08 53 40.2
        JAS  ePc   08 53 40.8                • 56 55
        FRI  ePc   08 53 42.3
        MNV  ePc   08 53 50.1                • 57 10
                   USGS 08 41 17.9, 10.8S, 166.0E, H= 77 KM, mb=5.2
                        SANTA CRUZ ISLANDS

JUN 07  FRI  eP    13 43 35.5
        MNV  eP    13 43 36.4                • 44 08
        JAS  eP    13 43 40.8                • 44 12
        MHC  eP    13 43 42.7
        MIN  eP    13 43 51.6
        WDC  eP    13 43 54.4                • 44 26
        FHC  eP    13 44 00.8
                   USGS 13 31 24.3, 29.8S,  67.7W, H=111 KM, mb=5.2
                        LA RIOJA PROVINCE, ARGENTINA

JUN 08  FRI  ePd   13 36 51.6
        MNV  iPd   13 36 53.3                • 37 37
        PRI  ePd   13 36 53.5                • 37 37
        SAO  ePd   13 36 57.5
        JAS  iPd   13 36 58.7                • 37 42
        MHC  ePd   13 37 01.2
        BKS  eP    13 37 04.9
                              MICRON    PERIOD
                   PZ            0.15       1.4
        MIN  ePd   13 37 10.0
        WDC  ePd   13 37 13.0                • 37 58
        FHC  ePd   13 37 20.2
                   USGS 13 25 15.6, 22.1S,  67.3W, H=144 KM, mb=5.4
                        CHILE-BOLIVIA BORDER REGION

JUN 08  PRI  ePc   14 17 19.5                • 18 13
        MHC  ePc   14 17 19.8                • 18 14
        FRI  ePc   14 17 24.6                • 18 18
        JAS  ePc   14 17 25.5                • 18 19
        WDC  ePc   14 17 27.6                • 18 22
        MNV  ePc   14 17 34.5                • 18 28
                   USGS 14 05 39.3, 22.1S, 177.0W, H=226 KM, mb=5.2
                        SOUTH OF FIJI ISLANDS

JUN 08  FHC  e(P)  14 36 47                  • 37 15
        WDC  iPc   14 36 52.1                • 37 21
        MIN  ePc   14 36 56.2
        BKS  eP    14 37 02.9  46 20        • 46 45     Lq 55 10
                              MICRON    PERIOD
                   PZ            0.04       0.8
        MHC  eP    14 37 06.7
        JAS  iPc   14 37 09.3
        SAO  e(P)  14 37 10
        FRI  ePc   14 37 15.0
        PRI  ePc   14 37 15.0
        MNV  iPc   14 37 16.5
                   USGS 14 25 46.5, 38.5N, 141.5E, H= 78 KM, mb=5.5
                        NEAR EAST COAST OF HONSHU, JAPAN

JUN 09  WDC  eP    07 32 53
        JAS  eP    07 33 16.5
                   USGS 07 24 01.4, 55.1N, 162.6E, H= 33 KM, mb=4.7, Ms=4.2
                        NEAR EAST COAST OF KAMCHATKA

JUN 09  WDC  ePd   13 39 33.0
        BKS  eP    13 39 37.4
                              MICRON    PERIOD
                   PZ            0.14       1.2
        MHC  eP    13 39 40.0
        SAO        13 39                     • 39 42
        JAS  ePd   13 39 43.0
        PRI  ePd   13 39 45.5
                   USGS 13 27 12.3, 13.2N, 144.5E, H= 97 KM, mb=5.2
                        MARIANA ISLANDS

JUN 09  FHC  iPc   19 05 54.5
        WDC  iPc   19 06 06.2
        MIN  iPc   19 06 16.0  06 42
        BKS  eP    19 06 27.2                • 07 08
        MHC  eP    19 06 37.0
        JAS  e(P)  19 06 41
        SAO  eP    19 06 43.5
                   BRK  19 05 41.2, 40.3N, 124.6W, H= 29 KM, ML=3.7
                        OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

JUN 09  FHC  iPc   19 14 11.0
        WDC  iPc   19 14 22.9  14 41
        MIN  ePc   19 14 32.6  14 58
        BKS  eP    19 14 43.6
        MHC  eP    19 14 54.0
        SAO  eP    19 15 00.0
                   BRK  19 13 59.7, 40.2N, 124.2W, H=  5 KM, ML=3.5
                        SOUTH OF EUREKA, CALIFORNIA

JUN 10  WDC  ePKP  02 54 13
        MIN  ePKP  02 54 15
        BKS  ePKP  02 54 17
        MHC  ePKP  02 54 19
        JAS  ePKP  02 54 19
        FRI  ePKP  02 54 21
        MNV  ePKP  02 54 22
        PRI  ePKP  02 54 22.5
                   USGS 02 35 14.0,  3.1S, 101.5E, H= 33 KM, mb=5.4, Ms=5.2
                        SOUTHERN SUMATRA

JUN 11  FHC  iPc   04 14 13.8
        WDC  ePc   04 14 29.3
                   BRK  04 13 55.3, 41.3N, 125.2W, H= 20 KM, ML=3.1
                        OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

JUN 11  WDC  eP    11 57 14.2
        FRI  eP    11 57 15.1
        JAS  eP    11 57 15.2
                   USGS 11 46 15.3, 18.0S, 178.5W, H=583 KM, mb=4.7
                        FIJI ISLANDS REGION

JUN 11  PRI  iPd   19 25 10.1
        SAO  iPc   19 25 11.4
        MHC  ePd   19 25 21.8
        FRI  ePc   19 25 23.1
        JAS  ePc   19 25 30.2
        BKS  e(P)  19 25 32
                   BRK  19 25 02.1, 36.4N, 121.0W, H= 10 KM, ML=2.5
                        SOUTHEAST OF HOLLISTER, CALIFORNIA

JUN 11  JAS  ePc   20 44 04.0
                   USGS 20 33 30.7, 33.9N,  39.0W, H= 33 KM, mb=4.8, Ms=4.5
                        NORTH ATLANTIC RIDGE

JUN 12  FHC  ePc   08 58 27.0
        WDC  ePc   08 58 32.6
        JAS  ePc   08 58 50.8                • 58 56      • 58 58
        FRI  ePc   08 58 56.6
        MNV  ePc   08 58 57.4
        PRI        08 59                     • 59 12
                   USGS 08 47 46.2, 42.4N, 142.1E, H=108 KM, mb=5.1
                        HOKKAIDO, JAPAN  REGION

JUN 12  BKS  eP    12 29 21.5
                              MICRON    PERIOD
                   PZ            0.04       1.0
        MHC  ePc   12 29 22.1
        WDC  ePc   12 29 26.0
        JAS  iPc   12 29 27.1
        FRI  ePc   12 29 27.4
        MNV  ePc   12 29 35.6
                   USGS 12 16 49.2, 19.8S, 169.1E, H=106 KM, mb=5.0
                        NEW HEBRIDES ISLANDS

JUN 12  FRI  ePc   15 26 07.5
        JAS  ePc   15 26 07.8
        WDC  ePc   15 26 08.8
        MNV  ePc   15 26 17.5
                   USGS 15 15 06.9, 18.0S, 178.7W, H=574 KM, mb=4.5
                        FIJI ISLANDS REGION

JUN 12  FRI  eP    19 25 47.1
        JAS  eP    19 25 47.2
        WDC  eP    19 25 49.8
        MNV  eP    19 25 57.2
                   USGS 19 13 49.2, 23.0S, 176.2W, H=123 KM, mb=4.7
                        SOUTH OF FIJI ISLANDS

JUN 13  FRI  eP    05 35 20.8
        MNV  eP    05 35 21.0
        JAS  eP    05 35 30.4
                   USGS 05 28 39.1, 13.8N,  90.4W, H=111 KM, mb=4.4
                        NEAR COAST OF GUATEMALA
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JUN 13  FRI  eP     06 12 42.0
        JAS  eP     06 12 42.8
                    USGS 06 01 23.9, 23.9S, 179.5E, H=686 KM, mb=4.8
                         SOUTH OF FIJI ISLANDS

JUN 13  MNV  eP     08 13 48.2
        FRI  eP     08 13 49.0
        JAS  eP     08 13 53.5                  • 14 19      • 14 29
        MHC  eP     08 13 55.9                  • 14 32
        WDC  iPd    08 14 08.0
                    USGS 08 02 11.9, 22.6S,  68.5W, H=149 KM, mb=4.7
                         NORTHERN CHILE

JUN 13  BKS  eP     10 20 22.0  29 59       SS 34 47     Lq 39 08     Lr 42 10
                          MICRON    PERIOD
                    PZ      0.04      0.9
                    LZ      1.8       20
                    LN      0.9       20
                    LE      1.2       20
        SAO  eP     10 20 22.0
        PRI  eP     10 20 23.0
        MHC  eP     10 20 23.0
        FHC  eP     10 20 27.2
        FRI  eP     10 20 28.5
        JAS  iPo    10 20 29.1                  i 20 42
        WDC  iPo    10 20 31.6                  i 20 44
        MIN  eP     10 20 33.3
        MNV  ePo    10 20 39.4                  i 21 52
                    Ms=5.3, DISTANCE=74°
                    USGS 10 08 48.0, 18.5S, 174.1W, H= 41 KM, mb=5.5, Ms=5.3
                         TONGA ISLANDS

JUN 14  MNV  iPd    04 37 27.7  37 45
        PRI  iPo    04 37 28.4                  i 37 30      i 37 49      i 37 51
        JAS  eP     04 37 40.0  38 09
        PRI  eP     04 37 45.3                  i 38 17
                    BRK  04 37 03.8, 37.1N, 118.0W, H= 12 KM, ML=3.1
                         SOUTHEAST OF BISHOP, CALIFORNIA

JUN 14  JAS  eP     08 48 33.1                  • 49 25
        WDC         08 48                       • 48 35      • 49 28
        MNV  eP     08 48 43.0
                    USGS 08 37 09.8, 18.0S, 175.1W, H=223 KM, mb=5.0
                         TONGA ISLANDS

JUN 15  MNV  eP     00 03 42.3
        JAS  eP     00 03 54.0
        PRI  eP     00 03 57.4
        MHC  eP     00 04 01.0
        WDC  eP     00 03 54.6
        FHC  eP     00 04 10.2
                    USGS 23 52 58.6, 16.6N,  46.6W, H= 33 KM, mb=5.1, Ms=5.3
                         NORTH ATLANTIC RIDGE

JUN 15  MNV  eP     00 04 32.8
        JAS  eP     00 04 44.6
        PRI  e(P)   00 04 46
        MIN  eP     00 04 49.2
        MHC  eP     00 04 51.4
        WDC  eP     00 04 51.5
        BKS         00 04                       • 14 00      • 26 40
                          MICRON    PERIOD
                    LZ      1.6       20
                    LN      1.4       20
                    LE      1.3       20
        FHC  eP     00 04 59.8
                    USGS 23 53 49.9, 16.5N,  46.6W, H= 33 KM, mb=5.3
                         NORTH ATLANTIC RIDGE

JUN 15  WDC  eP     09 23 51
        MIN  eP     09 23 58.0
        JAS  eP     09 24 20.2
        MNV  eP     09 24 27.0
                    USGS 09 18 25.4, 56.3N, 153.3W, H= 33 KM, mb=4.6, Ms=4.2
                         KODIAK ISLAND REGION

JUN 15  PRI  eP     13 25 42.3
        MNV  iPo    13 25 41.1
        JAS  eP     13 25 51.1
                    USGS 13 19 07.0, 14.3N,  92.8W, H= 33 KM, mb=4.8
                         NEAR COAST OF CHIAPAS, MEXICO

JUN 15  WDC  eP     22 54 47.2
        JAS  eP     22 54 54.4                  • 58 46
        FRI  eP     22 54 57.0
        MNV  eP     22 55 02.8
                    USGS 22 41 50.7,  5.5S, 147.4E, H=183 KM, mb=5.3
                         EAST PAPUA NEW GUINEA REGION

JUN 17  SAO  ePo    02 40 03.5
        BKS  iPo    02 40 04.7  49 09       pP 42 20     sP 43 13     ScS 49 20
                                              • 53 45
                          MICRON    PERIOD
                    PZ      0.24      0.9
        PRI  iPo    02 40 05.1                sP 43 13
        MHC  iPo    02 40 05.3                • 40 15    PcP 40 24      sP 43 14
        FHC  iPo    02 40 08.6                • 49 11
        FRI  ePo    02 40 10.0                sP 43 20
        JAS  iPo    02 40 10.6                pP 42 31
                                              PcP 40 28
        WDC  iPo    02 40 11.8                • 43 09    • 40 38      pP 42 31
                                              • 40 20    sP 43 22     • 49 22
        MIN  ePo    02 40 13.7                • 49 24    PcP 40 29      sP 43 23
        MNV  iPo    02 40 19.7
                                              pP 42 43     sP 43 17     • 43 37
                    USGS 02 29 09.8, 19.9S, 179.1W, H=690 KM, mb=5.7
                         FIJI ISLANDS REGION

JUN 17  MNV  eP     09 46 23.8
        JAS         09 46
        BKS         09 46                       • 46 25
                                                • 53 08
                    USGS 09 41 25.2, 18.9N, 105.9W, H= 33 KM, mb=4.0, Ms=4.1
                         OFF COAST OF JALISCO, MEXICO

JUN 17  FRI  e(P)   10 26 30
        MNV  ePo    10 26 38.1
        JAS  eP     10 26 41.8
        WDC  eP     10 27 12.6
                    USGS 10 21 51.0, 18.9N, 108.2W, H= 33 KM, mb=4.1, Ms=3.1
                         REVILLA GIGEDO ISLANDS REGION

JUN 17  FHC  ePd    14 56 58.4
        WDC  iPd    14 57 04.2                  pP 57 26
        MIN  e(P)   14 57 08                    pP 57 32
        BKS  ePd    14 57 09.5
                          MICRON    PERIOD
                    PZ      0.05      0.6
        MHC  ePd    14 57 12.7
        SAO  eP     14 57 14
        JAS  iPd    14 57 16.4
        PRI  ePd    14 57 19.0
        FRI  ePd    14 57 20.7
        MNV  iPd    14 57 24.9
                                              pP 57 53
                    USGS 14 45 09.4, 19.0N, 145.7E, H=100 KM, mb=5.6
                         MARIANA ISLANDS

JUN 17  BKS  iPd    19 38 56.4  39 02
        MHC  ePd    19 39 03.8
        JAS  ePo    19 39 09.1
        SAO  iPd    19 39 12.3
        PRI  e(P)   19 39 24
        MIN  ePd    19 39 24.8
        WDC  ePo    19 39 25.9
                    BRK  19 38 48.9, 38.2N, 122.0W, H= 20 KM, ML=3.6
                         NORTHEAST OF BERKELEY, CALIFORNIA

JUN 17  SAO  eP     20 52 23.4
        BRK  eP     20 52 24.2
        MHC  ePd    20 52 24.8
        FHC  eP     20 52 28.6
        FRI  eP     20 52 29.7
        JAS  iPd    20 52 30.1
        WDC  iPd    20 52 31.8
        MIN  eP     20 52 33.7
        MNV  eP     20 52 38.8
                    USGS 20 41 20.5, 21.0S, 178.7W, H=608 KM
                         FIJI ISLANDS REGION

JUN 17  MNV  iPd    23 02 09.0
        FRI  eP     23 02 10.1
        JAS  ePd    23 02 18.7
        SAO  e(P)   23 02 19
        MHC  eP     23 02 23.2
        BKS  eP     23 02 29
        MIN  e(P)   23 02 34
        WDC  iPd    23 02 38.5
        FHC  ePd    23 02 49.8
                    USGS 22 54 30.1, 10.2N,  85.7W, H= 27 KM, mb=4.7, Ms=4.1
                         COSTA RICA

JUN 17  MIN  iPd    23 32 19.7  32 34
        WDC  eP     23 32 28.5  32 51
                    BRK  23 31 58.2, 40.8N, 120.4W, H=  4 KM, ML=3.0
                         NORTH-NORTHEAST OF SUSANVILLE, CALIFORNIA

JUN 18  MHC  ePo    02 01 24.7
        PRI  e(P)   02 01 26
        WDC  ePo    02 01 27.4
        MIN  ePo    02 01 29.6
        JAS  iPo    02 01 29.8
        FRI  ePo    02 01 30.6
        MNV  ePo    02 01 38.8
                    USGS 01 48 48.0, 15.3S, 166.1E, H= 37 KM, mb=5.4, Ms=4.8
                         NEW HEBRIDES ISLANDS

JUN 18  BKS  iPo    03 06 20.2  06 26
        MHC  iPd    03 06 23.9  06 32
        JAS  iPo    03 06 32.4  06 50
                    BRK  03 06 13.8, 37.8N, 121.8W, H= 17 KM, ML=2.7
                         EAST OF BERKELEY, CALIFORNIA

JUN 18  BKS  eP     03 21 25.5  21 31
        MHC  iPd    03 21 29.3  21 38
        JAS  ePo    03 21 37.7  21 52
        SAO  eP     03 21 38.7
                    BRK  03 21 19.2, 37.9N, 121.8W, H= 18 KM, ML=2.6
                         EAST OF BERKELEY, CALIFORNIA

JUN 18  SAO  e(P)   10 15 10
        BKS  eP     10 15 10.6
                          MICRON    PERIOD
                    PZ      0.07      0.8
        PRI  ePd    10 15 10.7                • 15 19
        MHC  ePd    10 15 11.0                • 15 18      • 15 23
        FHC  ePd    10 15 14.5
        FRI  ePd    10 15 15.8
        JAS  iPd    10 15 16.4                • 15 22
        WDC  iPd    10 15 18.1                • 15 24
        MIN  ePd    10 15 19.8
        MNV  iPd    10 15 25.6
                    USGS 10 04 08.3, 20.3S, 178.0W, H=567 KM, mb=5.0
                         FIJI ISLANDS REGION

JUN 18  WDC  ePo    10 34 55.1
        JAS  ePo    10 35 12.9
                    USGS 10 24 02.9, 41.9N, 142.3E, H= 72 KM, mb=4.7
                         HOKKAIDO, JAPAN REGION

JUN 18  FRI  ePd    17 01 09.7
        MNV  iPd    17 01 11.3
        PRI  ePd    17 01 11.6
        SAO  eP     17 01 15.8
        JAS  iPd    17 01 16.9
        MHC  ePd    17 01 19.4
        BKS  ePd    17 01 23.0  11 07       pP 02 10
                          MICRON    PERIOD
                    PZ      0.11      1.0
        MIN  ePd    17 01 28.4
        WDC  iPd    17 01 31.6
        FHC  ePd    17 01 39.2
                    USGS 16 49 40.9, 20.9S,  68.5W, H=131 KM, mb=5.4
                         CHILE-BOLIVIA BORDER REGION

JUN 18  MNV  iPo    21 02 52.8
        JAS  ePo    21 03 01.0
        WDC  e(P)   21 03 24
                    USGS 20 56 20.8, 14.5N,  92.9W, H= 33 KM, mb=5.1, Ms=4.3
                         NEAR COAST OF CHIAPAS, MEXICO

JUN 18  BKS  eP     22 23 37.0  34 06       SS 39 45     Lq 47 14     Lr 49 32
                          MICRON    PERIOD
                    PZ      0.04      1.0
                    LZ      5         20
                    LN      1.2       20
                    LE      3.4       20
        WDC  ePo    22 23 37.0
        PRI  ePo    22 23 39.4
        JAS  ePo    22 23 41.1
        FRI  ePo    22 23 42.8
        MNV  ePo    22 23 59.0
                    Ms=5.8, DISTANCE=87°
                    USGS 22 10 49.6,  9.8S, 159.7E, H= 11 KM, mb=5.6, Ms=5.7
                         SOLOMON ISLANDS

JUN 18  PRI  eP     22 45 23.8
        MHC  ePo    22 45 25.2
        FHC  ePo    22 45 28.1
        FRI  ePo    22 45 29.6
        JAS  ePo    22 45 30.3
        WDC  ePo    22 45 32.1
        MNV  ePo    22 45 38.7
                    USGS 22 33 56.0, 24.2S, 179.1E, H=543 KM, mb=5.2
                         SOUTH OF FIJI ISLANDS

JUN 19  SAO  iPd    00 07 06.0
        MHC  iPd    00 07 09.3
        BRK  eP     00 07 13.2
        JAS  ePd    00 07 26.1  07 45
                    BRK  00 07 01.1, 36.9N, 121.6W, H= 10 KM, ML=2.5
                         NORTHWEST OF HOLLISTER, CALIFORNIA

JUN 19  FRI  eP     07 33 38.8
        JAS  eP     07 33 39.3
        WDC  eP     07 33 41.7
        MIN  eP     07 33 43.9
        MNV  eP     07 33 49.5
                    USGS 07 22 13.2, 16.3S, 172.1W, H= 33 KM, mb=4.7
                         SAMOA ISLANDS REGION

JUN 19  FHC         07 45
        WDC  eP     07 45 47.3                  • 45 43
        JAS  eP     07 45 57.4                  • 49 40      • 50 03
        FRI         07 45                       • 50 08    PKKP 01 31
        MNV  eP     07 46 05.4                  • 50 09
                                                • 50 12    PKKP 01 40
                    USGS 07 32 13.8,  4.7N, 124.9E, H=271 KM, mb=5.7
                         CELEBES SEA
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JUN 19
FHC ePg 11 57 06.4 PcP 57 48 • 59 26
WDC iPo 11 57 13.1 PcP 57 52 • 59 22
MIN ePg 11 57 17.3 PcP 57 58 • 06 31 • 12 56
BKS ePg 11 57 25 05 35 • 15 23
MHC ePg 11 57 29.8 PcP 58 08
JAS iPo 11 57 32.8 PcP 58 14
FRI ePg 11 57 39.1
FRI ePg 11 57 39.8 PcP 58 15
MNV iPo 11 57 40.0
USGS 11 47 23.4, 47.1N, 151.1E, H=149 KM, mb=5.6
KURIL ISLANDS

JUN 19
MNV ePg 18 28 26.0
JAS ePg 18 28 37.6
MIN ePg 18 28 42.1 • 28 44
MHC 18 28
FHC e(P) 18 28 58
USGS 18 17 39.2, 15.5N, 46.7W, H= 33 KM, mb=5.3, Ms=4.6
NORTH ATLANTIC RIDGE

JUN 21
MHC iPd 02 43 13.0
BKS iPo 02 43 16.5 43 24
SAO iPd 02 43 23.4
JAS iPd 02 43 24.8
FRI ePo 02 43 35.0
FRI ePd 02 43 35.7
MIN ePo 02 43 49.5
WDC ePo 02 43 52.2
MNV ePo 02 43 52.8
FHC ePo 02 44 05.3
BRK 02 43 06.6, 37.7N, 121.7W, H= 11 KM, ML=4.4
EAST OF LIVERMORE, CALIFORNIA

JUN 21
JAS ePd 07 31 14.4
FRI eP 07 31 15.4
USGS 07 18 47.0, 15.3S, 167.3E, H=122 KM, mb=5.1
NEW HEBRIDES ISLANDS

JUN 21
FRI 08 49 • 49 42
SAO eP 08 49 40.4 • 49 42
MHC 08 49
FRI ePo 08 49 47.4
JAS ePo 08 49 47.7
WDC ePo 08 49 48.8
MIN eP 08 49 59.7
USGS 08 38 47.4, 17.9S, 178.5W, H=579 KM, mb=4.9
FIJI ISLANDS REGION

JUN 21
SAO eP 09 09 16.8
BRK eP 09 09 17.0
MHC eP 09 09 17.8
FRI 09 09 • 09 18
FHC eP 09 09 21.7
FRI eP 09 09 23.2
JAS iPo 09 09 23.8
WDC eP 09 09 25.2
MIN eP 09 09 27.5
MNV eP 09 09 33.9
USGS 08 58 21.1, 15.8S, 174.8W, H=306 KM, mb=4.7
TONGA ISLANDS

JUN 21
FRI iPd 15 29 23.4 29 34
SAO iPe 15 29 23.6
MHC eP 15 29 34.4
FRI eP 15 29 35.9 29 52
JAS iPd 15 29 43.2 30 02
BKS eP 15 29 43.8 • 30 22
MNV iP 15 30 09.2
BRK 15 29 15.6, 36.5N, 121.2W, H= 2 KM, ML=3.0
SOUTHEAST OF HOLLISTER, CALIFORNIA

JUN 22
WDC eP 07 22 57.2
JAS eP 07 23 10.2
FRI eP 07 23 16.1
MNV iPd 07 23 17.7
USGS 07 11 27.5, 35.5N, 140.4E, H= 35 KM, mb=5.1, Ms=4.5
NEAR EAST COAST OF HONSHU, JAPAN

JUN 22
WDC eP 08 59 31.5
MIN eP 08 59 35.7
JAS eP 08 59 53.9
MNV iPd 09 00 01.0
FRI eP 09 00 01.2
FRI eP 09 00 01.5
USGS 08 50 28.3, 53.9N, 160.6E, H= 33 KM, mb=5.1, Ms=3.9
NEAR EAST COAST OF KAMCHATKA

JUN 22
FHC iPe 09 44 56.7
WDC iPe 09 45 10.9 45 31
MIN iPe 09 45 21.8 45 49
JAS eP 09 45 47.2
SAO eP 09 45 48.7
BRK 09 44 42.3, 40.5N, 124.9W, H= 23 KM, ML=3.7
OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

JUN 22
SAO ePd 12 20 29.0
FRI iPd 12 20 30.2 PKPPKP 47 38
BKS iPd 12 20 30.4 30 27 • 21 11 • 21 50 PP 23 39
• 26 33 • 29 52 Lr 35 32
MICRON PERIOD
LN 112 20
LE 99 20
MHC iPd 12 20 30.9 PKPPKP 47 35
FRI iPd 12 20 35.5
FHC iPd 12 20 35.9
JAS iPd 12 20 36.3
WDC iPd 12 20 38.9
MIN iP 12 20 40.5
MNV iPd 12 20 45.5
T PHASE AT 13:45:00.
Ms=7.3, DISTANCE=78°
USGS 12 08 33.4, 22.9S, 175.9W, H= 65 KM, mb=6.8
TONGA ISLANDS REGION

JUN 23
FHC iPe 04 04 06.5 04 13
WDC iP 04 04 20.5
MIN iPe 04 04 30.4
BRK 04 03 53.3, 40.4N, 124.8W, H= 34 KM, ML=3.2
OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

JUN 23
MHC iPd 19 36 31.5
BKS iPe 19 36 34.9 36 42 • 36 37 • 36 38
SAO eP 19 36 41.8
JAS eP 19 36 43.2
BRK 19 36 25.0, 37.7N, 121.7W, H= 11 KM, ML=2.5
EAST OF LIVERMORE, CALIFORNIA

JUN 23
WDC iPe 20 28 07.9
MHC ePe 20 28 28.9
JAS eP 20 28 31.0
SAO eP 20 28 32.2
MNV iPe 20 28 37.9
FRI ePe 20 28 38.7
USGS 20 19 27.9, 55.0N, 165.6E, H= 32 KM, mb=4.9, Ms=4.3
KOMANDORSKY ISLANDS REGION

JUN 24
SAO ePo 00 42 20.7
PRI ePo 00 42 22.0
BKS ePo 00 42 22.5 52 20 Lq 03 00 Lr 06 00
MICRON PERIOD
PZ 0.06 1.0
LZ 0.9 20
LN 0.9 20
LE 0.9 20
MHC ePo 00 42 22.7
FRI ePo 00 42 27.3
FHC ePo 00 42 27.8
JAS iPo 00 42 28.2
WDC iPo 00 42 30.8
MIN ePo 00 42 32.5
MNV ePo 00 42 37.3
Ms=5.3, DISTANCE=78°
USGS 00 30 20.9, 22.9S, 175.9W, H= 33 KM, mb=5.5, Ms=5.1
TONGA ISLANDS REGION

JUN 24
PRI ePd 20 01 07.7
FRI 20 01 • 01 11
SAO eP 20 01 18.5
JAS 20 01 • 01 33

JUN 25
SAO e(P) 15 35 47
BKS eP 15 35 47.8
MICRON PERIOD
PZ 0.04 0.7
PRI ePo 15 35 48.3
MHC ePo 15 35 48.4
FHC ePo 15 35 52.0
FRI ePo 15 35 53.2
JAS iPo 15 35 53.8 • 38 09
WDC ePo 15 35 55.4 • 38 11
MIN ePo 15 35 57.1
MNV ePo 15 36 02.8 • 38 19
USGS 15 24 42.9, 21.3S, 179.2W, H=633 KM, mb=5.4
FIJI ISLANDS REGION

JUN 25
SAO iPd 16 36 46.3
MHC iPd 16 36 57.4 37 06
PRI eP 16 37 03.1
BKS eP 16 37 10
FRI eP 16 37 11.5
JAS eP 16 37 12 • 37 30
BRK 16 36 45.5, 36.8N, 121.5W, H= 1 KM, ML=2.5
SOUTHWEST OF HOLLISTER, CALIFORNIA

JUN 25
FHC eP 18 16 27.5
WDC eP 18 16 43.5
MIN eP 18 16 53.5
JAS eP 18 17 26.5
USGS 18 15 50.0, 41.9N, 126.8W, H= 15 KM, mb=4.5, Ms=3.6
OFF COAST OF NORTHERN CALIFORNIA

JUN 25
FHC ePo 18 33 12.8
WDC ePo 18 33 29.1
MIN e(P) 18 33 39
JAS e(P) 18 34 14
USGS 18 32 27.5, 41.6N, 127.6W, H= 15 KM, mb=4.5
OFF COAST OF NORTHERN CALIFORNIA

JUN 25
FHC ePo 18 48 49.0
WDC ePo 18 49 04.8
MIN 18 49 • 49 06
JAS 18 49 • 49 48
USGS 18 48 13.0, 41.8N, 126.6W, H= 15 KM, mb=4.4
OFF COAST OF NORTHERN CALIFORNIA

JUN 25
FHC iPe 19 10 02.0
WDC iPe 19 10 18.0
MIN 19 10 • 10 25
MHC 19 10 • 10 56
JAS 19 11 • 11 00
FRI 19 11 • 11 12
USGS 19 09 26.0, 42.0N, 126.7W, H= 18 KM, mb=4.7, Ms=4.0
OFF COAST OF OREGON

JUN 26
WDC eP 00 21 06.8
MIN eP 00 21 10.3
MHC e(P) 00 21 24
JAS ePo 00 21 25.8
FRI e(P) 00 21 32
PRI e(P) 00 21 32
MNV ePo 00 21 33.2
USGS 00 10 58.2, 45.5N, 150.7E, H= 47 KM, mb=5.2, Ms=4.6
KURIL ISLANDS

JUN 26
SAO ePo 06 11 16.6
PRI ePo 06 11 17.4
BRK ePo 06 11 17.7
MHC ePo 06 11 18.2
FRI ePo 06 11 22.8
JAS iPo 06 11 23.8
WDC iPo 06 11 26.4
MIN ePo 06 11 27.7
MNV ePo 06 11 33.1
USGS 05 59 21.2, 22.7S, 175.5W, H= 51 KM, mb=5.4, Ms=5.1
TONGA ISLANDS REGION

JUN 26
MNV ePo 10 24 03.8
FRI ePo 10 24 10.4
JAS ePo 10 24 16.7
SAO eP 10 24 21.8
MHC eP 10 24 24.0
MIN eP 10 24 24.9
WDC ePo 10 24 29.0
USGS 10 15 39.0, 19.3N, 69.3W, H= 35 KM, mb=4.7, Ms=4.2
DOMINICAN REPUBLIC REGION

JUN 27
BKS 14 23 • 23 56
SAO 14 23 • 23 55
PRI e(P) 14 23 56
MHC eP 14 23 56.5
JAS eP 14 24 01.7
WDC eP 14 24 04.0
USGS 14 11 46.4, 24.2S, 176.9W, H= 33 KM, mb=5.2, Ms=5.3
SOUTH OF FIJI ISLANDS

JUN 28
MNV eP 01 03 58.0
PRI eP 01 03 59.3
JAS eP 01 04 04.0
MHC eP 01 04 07.7
WDC iPo 01 04 19.7
USGS 00 52 20.6, 21.5S, 68.1W, H=101 KM, mb=4.8
CHILE-BOLIVIA BORDER REGION

JUN 28
PRI eP 01 35 25.6
MHC eP 01 35 26.4
FRI eP 01 35 31.3
JAS eP 01 35 32.3
WDC eP 01 35 34.5
MIN eP 01 35 37.0
MNV eP 01 35 41.1
USGS 01 23 39.7, 21.0S, 175.2W, H= 68 KM, mb=5.2
TONGA ISLANDS

JUN 28
MHC eP 05 55 12.7 • 55 24
PRI 05 55 • 55 24
FRI 05 55 • 55 29
JAS eP 05 55 17.5
WDC eP 05 55 21.1 • 55 33
MNV eP 05 55 27.5 • 55 39
USGS 05 43 12.5, 23.5S, 175.3W, H= 47 KM
TONGA ISLANDS REGION

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JUN 28  MHC  iPc    12 46 45.6
        BKS  iPc    12 46 51.1   47 00
        SAO  eP     12 46 57.1
        JAS  iPd    12 46 59.2
        PRI  eP     12 47 08.8
        FRI  ePc    12 47 09.1
        MNV  eP     12 47 30.5
                    BRK  12 46 40.6, 37.6N, 121.7W, H=  8 KM, ML=3.1
                         EAST OF LIVERMORE, CALIFORNIA

JUN 28  MNV  eP     15 49 03.5
        FRI  e(P)   15 49 13
        JAS  eP     15 49 16.8
        MIN  e(P)   15 49 19
        PRI  e(P)   15 49 20
        WDC  eP     15 49 21.7
        MHC  e(P)   15 49 24                    e 58 44      e 10 09
        BKS         15 49
                          MICRON    PERIOD
                       LZ    10        20
                       LN     4.3      20
                       LE    11        20
        FBC  e(P)   15 49 32
                    USGS 15 38 37.0, 22.6N,  45.1W, H= 33 KM, mb=5.3, Ms=5.6
                         NORTH ATLANTIC RIDGE

JUN 28  MNV  eP     16 28 42.7
        FRI  eP     16 28 51.4
        JAS  ePc    16 28 55.4          PKPPKP 57 45
        MIN  eP     16 28 58
        PRI  eP     16 28 58.3
        WDC  ePc    16 29 00.5
        MHC  eP     16 29 03.0                  e 38 00      e 48 52
        BKS         16 28
                          MICRON    PERIOD
                       LZ    20        20
                       LN    10        20
                       LE    21        20
        FBC  eP     16 29 09.8
                    USGS 16 18 15.2, 22.6N,  45.1W, H= 33 KM, mb=5.5, Ms=5.7
                         NORTH ATLANTIC RIDGE

JUN 28  MNV  ePc    19 29 03.2
        FRI  eP     19 29 12.2
        JAS  ePc    19 29 16.0          PKPPKP 58 00
        MIN  eP     19 29 18.6
        PRI  eP     19 29 19.0          PKPPKP 58 00
        WDC  ePc    19 29 21.3          PKPPKP 57 58
        MHC  eP     19 29 23.5
        BKS         19 29                       e 38 40      e 50 12
                          MICRON    PERIOD
                       LZ    24        20
                       LN    10        20
                       LE    27        20
        FBC  ePc    19 29 30.3
                    Ms=6.5, DISTANCE=67°
                    USGS 19 18 35.8, 22 6N,  45.1W, H= 33 KM, mb=5.8, Ms=6.0
                         NORTH ATLANTIC RIDGE

JUN 29  WDC  ePc    03 19 50.5
        MIN  ePc    03 19 53.1
        MNV  ePc    03 20 04.8
        JAS  ePc    03 20 05.1
        MHC  eP     03 20 07.0
        FRI  eP     03 20 10.0
        PRI  e(P)   03 20 14
                    USGS 03 06 58.0, 50.0N,  78.9E, H=  0 KM, mb=5.3, Ms=5.2
                         EASTERN KAZAKH, SSR

JUN 29  PRI  e(P)   03 23 38
        MHC  e(P)   03 23 39
        FRI  e(P)   03 23 44
        JAS  ePc    03 23 44.7
        WDC  eP     03 23 45.0
        MIN  e(P)   03 23 49
        MNV  ePc    03 23 54.0
                    USGS 03 11 39.8, 23.2S, 175.2W, H= 38 KM, mb=5.2, Ms=5.2
                         TONGA ISLANDS REGION

JUN 29  WDC  ePKP   07 42 51.3
        MIN  ePKP   07 42 53
        MHC  ePKP   07 42 53
        JAS  ePKP   07 42 54                e 39 01   PKKP 53 50
        PRI  ePKP   07 42 55
        FRI  ePKP   07 42 55.5
        MNV  ePKP   07 42 57.7              e 39 14   PKKP 53 43
                    USGS 07 24 24.8,  7.6S, 127.7E, H= 58 KM, mb=6.0
                         BANDA SEA

JUN 29  WDC  eP     08 54 29
        MIN  eP     08 54 36
        MHC         08 54                   e 54 53
        JAS  eP     08 54 54
        FRI         08 55                   e 55 02
        PRI         08 55                   e 55 03
        MNV  eP     08 55 03
                    USGS 08 47 15.6, 51.8N, 176.2W, H= 60 KM, mb=5.0
                         ANDREANOF ISLANDS, ALEUTIAN ISLANDS

JUN 29  SAO  iPd    09 33 26.1
        MHC  iPd    09 33 29.7   33 36
        PRI  ePd    09 33 42.0
        BKS  eP     09 33 41.2   33 57
        JAS  ePc    09 33 45.1   34 02
        FRI  e(P)   09 33 47
                    BRK  09 33 21.4, 36.9N, 121.6W, H=  7 KM, ML=2.5
                         NORTHWEST OF HOLLISTER, CALIFORNIA

JUN 29  MHC  eP     21 37 12.2              e 37 26
        FRI  eP     21 37 16.9
        JAS  eP     21 37 17.6              e 37 39
        WDC  eP     21 37 20.4
        MNV  eP     21 37 26.5              e 37 40
                    USGS 21 25 13.7, 22.6S, 175.4W, H= 33 KM, mb=4.9
                         TONGA ISLANDS REGION

JUN 30  FRI  eP     02 57 25.2
        MNV  eP     02 57 26.9
        PRI  eP     02 57 27.0
        SAO  eP     02 57 31.8
        JAS  iPd    02 57 32.7                  i 58 00
        MHC  eP     02 57 35.2                  e 58 01      e 58 13
        BKS  eP     02 57 39.3                  e 58 06
                          MICRON    PERIOD
                       PZ     0.06      0.7
        MIN  eP     02 57 44.6
        WDC  eP     02 57 47.7
        FBC  eP     02 57 56.7              e 58 13
                    USGS 02 46 03.8, 19.4S,  69.5W, H=106 KM, mb=5.4
                         NORTHERN CHILE

JUN 30  PRI  eP     09 02 51.0
        MHC  eP     09 02 51.6
        FRI  eP     09 02 57.1              e 03 09
        JAS  eP     09 02 57.6              e 03 16
        WDC  eP     09 02 59.7              e 03 15
        MIN  eP     09 03 02.0
        MNV  eP     09 03 07.5              i 03 25
                    USGS 08 51 26.1, 17.4S, 173.5W, H= 68 KM, mb=5.3
                         TONGA ISLANDS
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APPENDIX A - GROUP LOCATION PROGRAM - GHYP2

Program GHYP2 is designed to locate local earthquake sources by groups, rather than individually, using a regional array of seismographic stations and a layer over a halfspace velocity model (the velocity in the layer varies as $v = a + bz$). GHYP2 can accept data for up to ten earthquakes recorded by up to ten stations and each station can have a P and/or an S observation for each earthquake.

The program simultaneously estimates:

1. hypocentral parameters,
2. station adjustments (to be added to calculated times), and
3. P and S propagation velocities for the model.

The estimation is made by first-order adjustments to an initial solution. The initial solution and velocity parameters must be specified.

Data Input Format

1. Read VPA,VPB,VPC,VSA,VSB,VSC,D,ERR,NIT1,NIT2,NIT3,NMAX,(JS(I),I=1,4)

   Format (8F5.0,8I5)

   where:

   VPA = initial P wave velocity at surface (km/sec) (5.28, say)

   VPB = initial P wave velocity gradient in layer (0.075, say)

   VPC = initial P wave halfspace velocity (7.70, say)

   VSA = initial S wave velocity at surface (2.98, say)

   VSB = initial S wave velocity gradient in layer (0.043, say)

   VSC = initial S wave halfspace velocity (4.36, say)

   D = depth to interface between layer and halfspace (25 km, say)

   ERR = convergence criteria, if maximum element of solution vector < ERR the solution is considered to have converged (ERR = 0.01, say)

   NIT1 = number of iterations solving for epicentral parameters only (usually = 2)

   NIT2 = number of iterations solving for hypocentral parameters (usually = 2)

   NIT3 = number of iterations solving for hypocentral parameters and station adjustments (usually = 2)

NMAX = maximum number of iterations. Number of iterations solving for hypocenteral parameters, station adjustments, and velocity parameters = NMAX - NIT1 - NIT2 - NIT3 (NMAX ∿ 7 to 12, say)

JS(1) to JS(4) are printing sense switches.

JS(1) = 0: print station location and phase data

JS(2) = 1: print parameters used in constructing equations of condition

JS(3) = 1: not used

JS(4) = 1: print correlation matrix and solution vector

2. Read in initial hypocenter (EILAT, EILONG, EIDEPTH)

Format (3F10.2)

where:

EILAT = latitude in degrees

EILONG = longitude in degrees

EIDEPTH = depth in km

3. Read in station data (up to 10 stations)

Read SNAME(I), SLATD(I),SLATM(I),SLONGD(I),SLONGM(I)

Format (A3,1X,F2.0,F5.2,1X,F3.0,F5.2)

where:

SNAME(I) = station code (up to 3 characters)

SLATD(I) = station latitude (degrees)

SLATM(I) = station latitude (minutes)

SLONGD(I) = station longitude (degrees)

SLONGM(I) = station longitude (minutes)

Note: latitude is assumed to be North and longitude to be West.

Repeat for each station and after the last station place an end-of-record (EOR) in the card deck.

4. Read in phase onset time data (up to 10 earthquakes)

   a. Read (ID(I),I=1,8)~arbitrary title to identify the event

      Format (8A10)

   b. Read STN(I),PH(I),PM(I),PS(I),SH(I),SM(I),SS(I)

      Format(A3,1X,2F2.0,F5.2,1X,2F2.0,F5.2)

      where:

      STN(I) = station code

      PH,PM,PS = P wave onset time in hours, minutes, and seconds (to 0.01 sec)

      SH,SM,SS = S wave onset time in hours, minutes, and seconds (to 0.01 sec)

      Repeat step b for each station observation.

   c. EOR (End of record)

5. EOR to indicate end of input data.

Computational Method

GHYP2 uses damped least-squares to solve a constrained system of equations (which includes penalty functions). The techniques of analysis of variance are used to estimate the standard errors of, and the correlations between, the unknown parameters from the standard errors of the residuals. The observations are weighted by their residuals using a Pearson's Type VII distribution.

Constraint equations are used to constrain the sum of the P station adjustments and, if applicable, the S station adjustments, to be zero. These constraints are necessary to avoid a singular system of equations due to unity correlation between the station adjustments and the origin times of the earthquakes. Penalty functions are used to restrain the perturbations in the station adjustments and the velocity parameters to be small (less than 0.1, say) to improve the conditioning of the normal equations. The system of equations is also damped by adding a constant to the elements in the main diagonal of the normal equations which effectively inhibits the elements of the solution vector from having large absolute values.

Resolution, information density, and covariance matrices are also computed and printed for each iteration.

GHYP2 Output

The program prints out, for each iteration where applicable:

1. The hypocenter for each earthquake, including:
   a. standard errors of the parameters
   b. correlation matrix (used to construct error ellipsoid)
   c. perturbation of each parameter from previous iteration.
2. Station data for each earthquake, including:
   a. delta (km)
   b. azimuth (epicenter to station)
   c. P onset time, weight, and residual
   d. S onset time, weight, and residual.
3. Station adjustments and standard errors for P and S.
4. P and/or S velocities and standard errors.
5. Resolution matrix.
6. Information density matrix.
7. Covariance matrix.
8. Standard error for solution.

APPENDIX B - MODIFIED MERCALLI INTENSITY SCALE OF 1931
(Abridged)

I. Not felt except by a very few under especially favorable circumstances.

II. Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.

III. Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing of truck. Duration estimated.

IV. During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls made cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.

V. Felt by nearly everyone; many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbance of trees, poles and other tall objects sometimes noticed. Pendulum clocks may stop.

VI. Felt by all; many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.

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 motor cars.

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. Disturbed persons driving motor cars.

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.

X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.

XI. Few, if any (masonry), structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipe lines 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 the air.