Bulletin of the Seismographic Stations

Vol. 47, No. 2, pp. 56 - 110

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 July 1, 1977 to December 31, 1977

by

Keith L. McLaughlin

Roy D. Miller

Robert A. Uhrhammer

BULLETIN OF THE SEISMOGRAPHIC STATIONS

of the University of California

Volume 47, Number 2

July 1, 1977 to December 31, 1977

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CONTENTS

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.

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HISTORY OF THE UNIVERSITY OF CALIFORNIA STATIONS

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

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

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

Since 1942, the number of seismographic stations associated with the University of California has increased from six to eighteen in 1976. In 1950, Professor Perry Byerly was appointed Director by the Regents; he had been in charge of instruction and research since 1925. Professor Bruce A. Bolt was appointed Director in 1963. Since 1960, the stations have entered into research and service contracts with the Air Force Office of Scientific Research, the National Science Foundation, the California Department of Water Resources and the California State Division of Mines and Geology. A telemetry network of fifteen stations in Central California, recording on film and selected stations on magnetic tape, is now operated together with seismographs with broad-band frequency response at Berkeley, Jamestown, and Whiskeytown. Copies of records from instruments at the Berkeley laboratory are available, together with response characteristics, on request to the Director.

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.

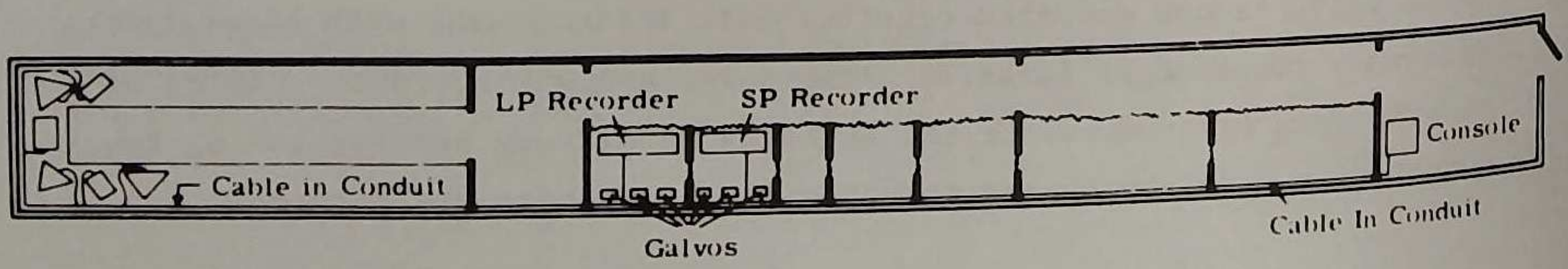
A plan of the tunnel is shown in the diagram below. Piers are constructed of reinforced concrete with no isolation from floor and walls. The temperature is stable. A ventilating and dehumidifying system is connected to all rooms.

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: July 1, 1977 to December 31, 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

July 1, 1977 to December 31, 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					x		
	BB velocity								x		
	Displacement								x		
	Filtered Displacement										

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

July 1, 1977 to December 31, 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	filtered response		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 66 and 67. 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 66 and 68.

UNIVERSITY OF CALIFORNIA ACCELEROGRAPH STATIONS

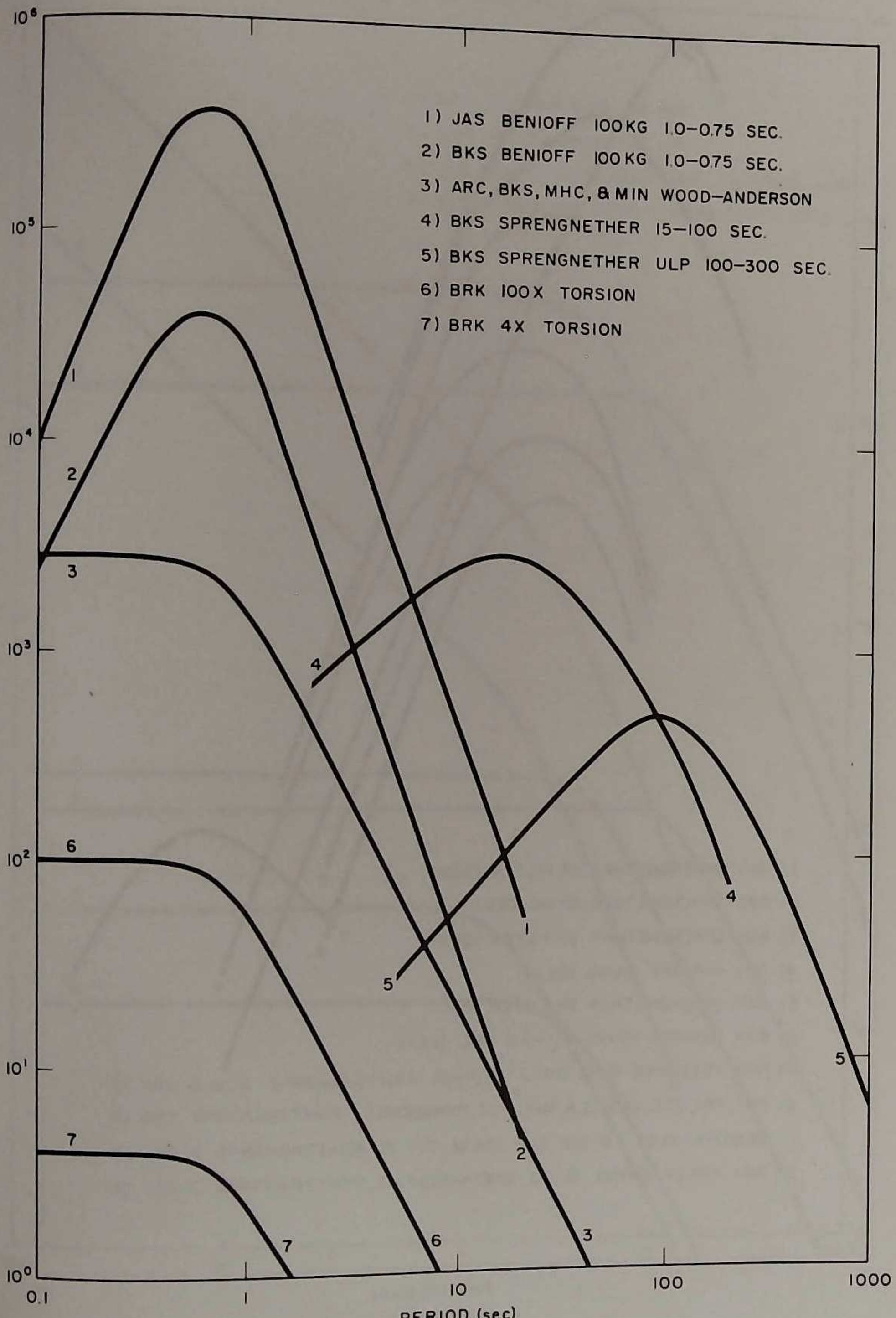
Station Name	Coordinates	Installation Date	Instrument S.N.	Component	Sensitivity (cm/g)	Period (sec)	Damping % of Critical	Structure	Location in Structure
BERKELEY MEMORIAL STADIUM	37.87 N 122.25 W	3 Aug 76	CRA-1 #148 (Recorder) FBA-3 downhole	V	1.79	.018	.64	4" I.D. cased borehole (163m deep)	Downhole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

					Sensitivity (g/F.S.)	Bandwidth (Hz)			
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^{**}	±0.010	.05-50		5" I.D. uncased backfilled borehole (43.8m deep)	Downhole (43.7m)
				Z,H_1,H_2	±0.50	0-50			
				Z,H_1,H_2	±0.010	.05-50			Midhole (15.7m)
				Z,H_1,H_2	±0.50	0-50			
				Z,H_1,H_2	±0.010	.05-50		Metal Box	Ground Surface Level
				Z,H_1,H_2	±0.50	0-50			
EARTH SCIENCES BUILDING	37.87 N 122.26 W	01 Nov 68	Wilmot Seismoscope SR-100	Duplex Horizontal	5.45×10^{-2} (m/rad)	.75	∿ 10	Metal Box	Ground Level

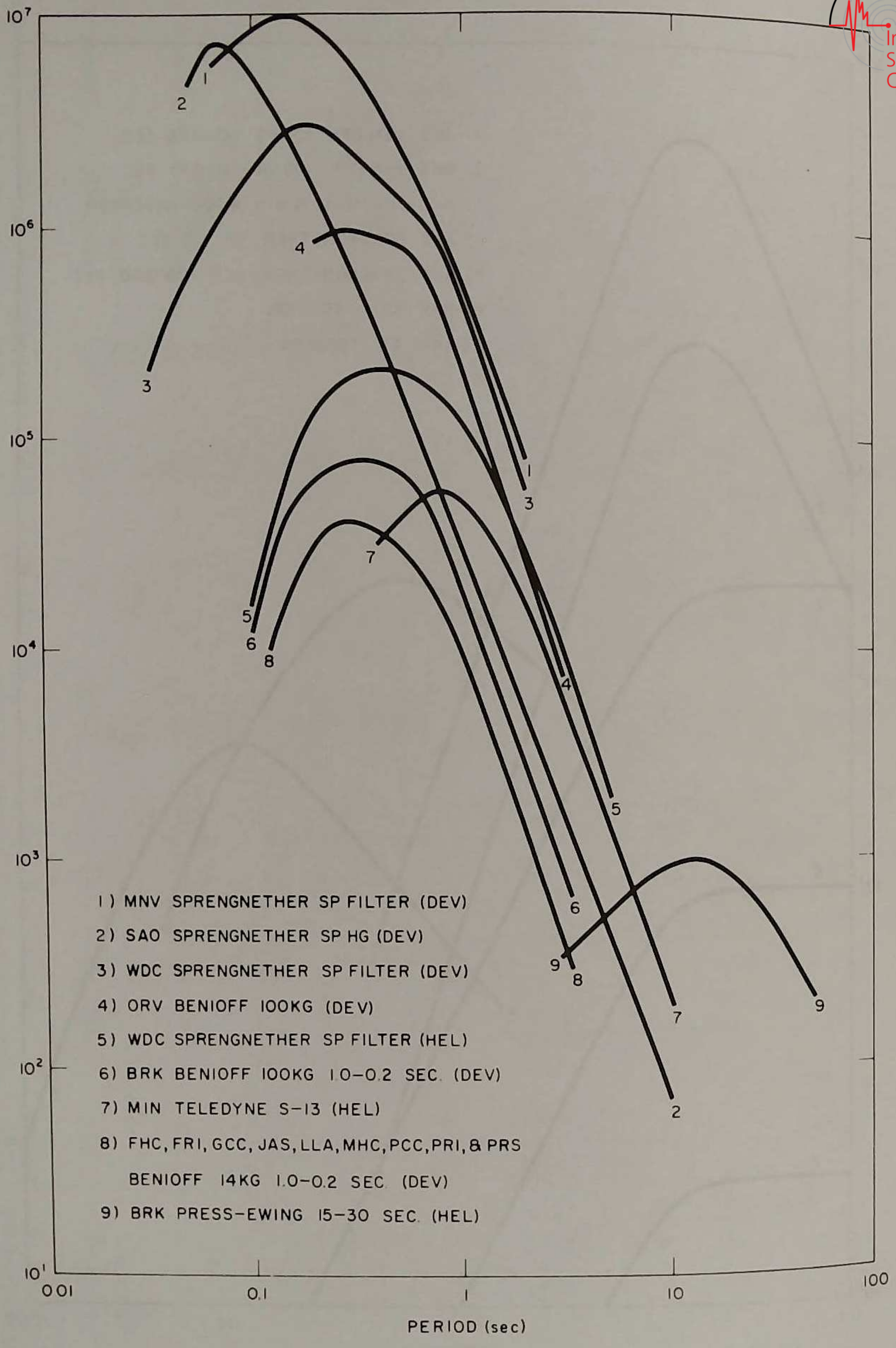
* accelerometer aligned S45W
** accelerometer aligned S45E
\+ recorded on magnetic tape

UNIVERSITY OF CALIFORNIA ACCELEROGRAPH STATIONS MAINTAINED BY USGS

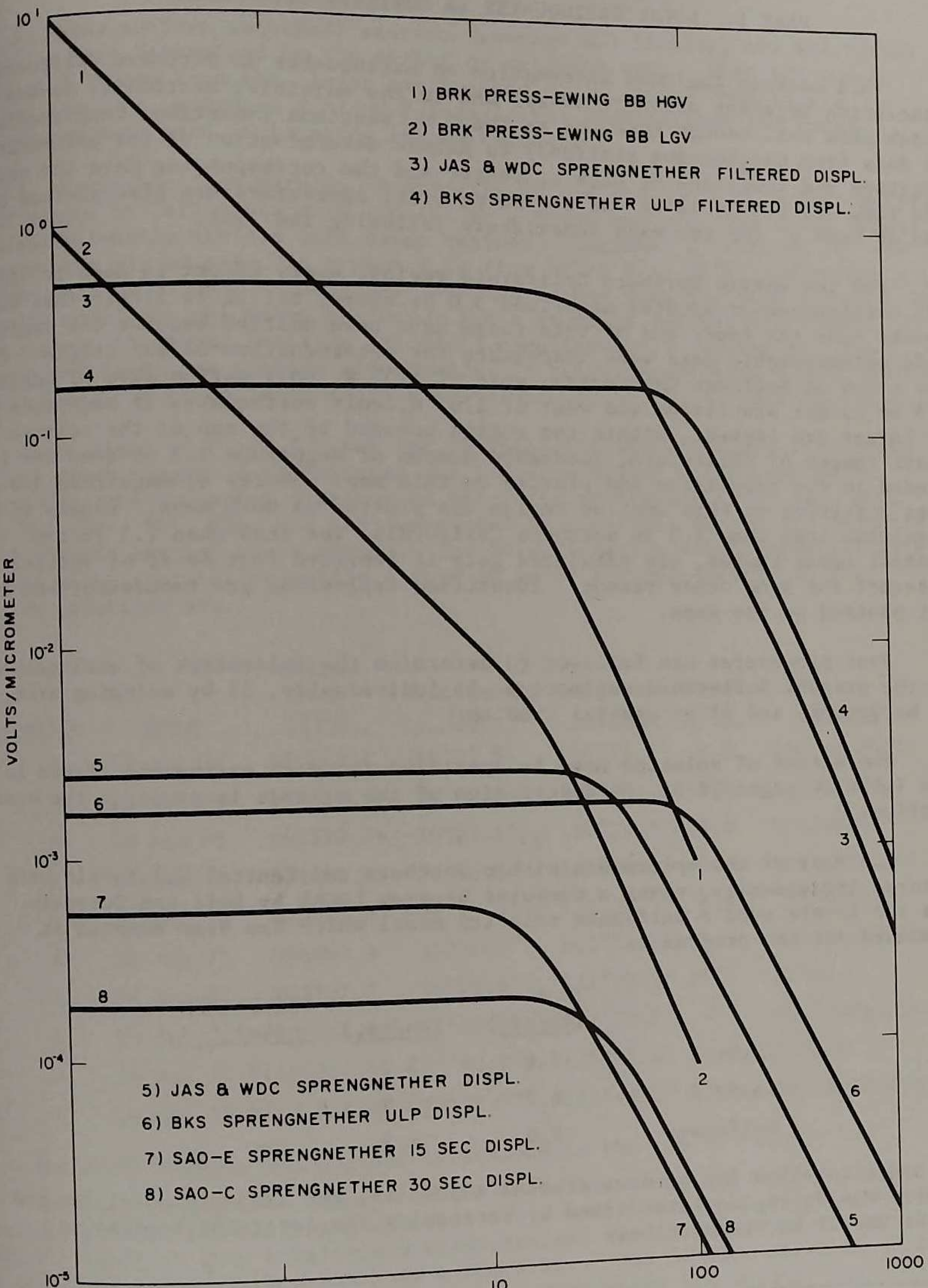
?? Station Name	Coordinates	USGS Number	Installation Date	Instrument S.N.	Component	Sensitivity (cm/g)	Period (Sec.)	Damping % of Critical	Structure	Location in Structure
?? SAGO CENTRAL	36.76 N 121.45 W	1032	5 Mar 73	RFT-250 #343	North Down West	1.82 2.14 1.89	.042 .045 .045	.57 .57 .57	Concrete vault	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
? BUTLER VALLEY ? STA. 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
? BUTLER VALLEY ? STA. 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
? BERKELEY ? HAVILAND 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
? BERKELEY ? BYERLY 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
? BERKELEY ? EVANS 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 76-80. 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.

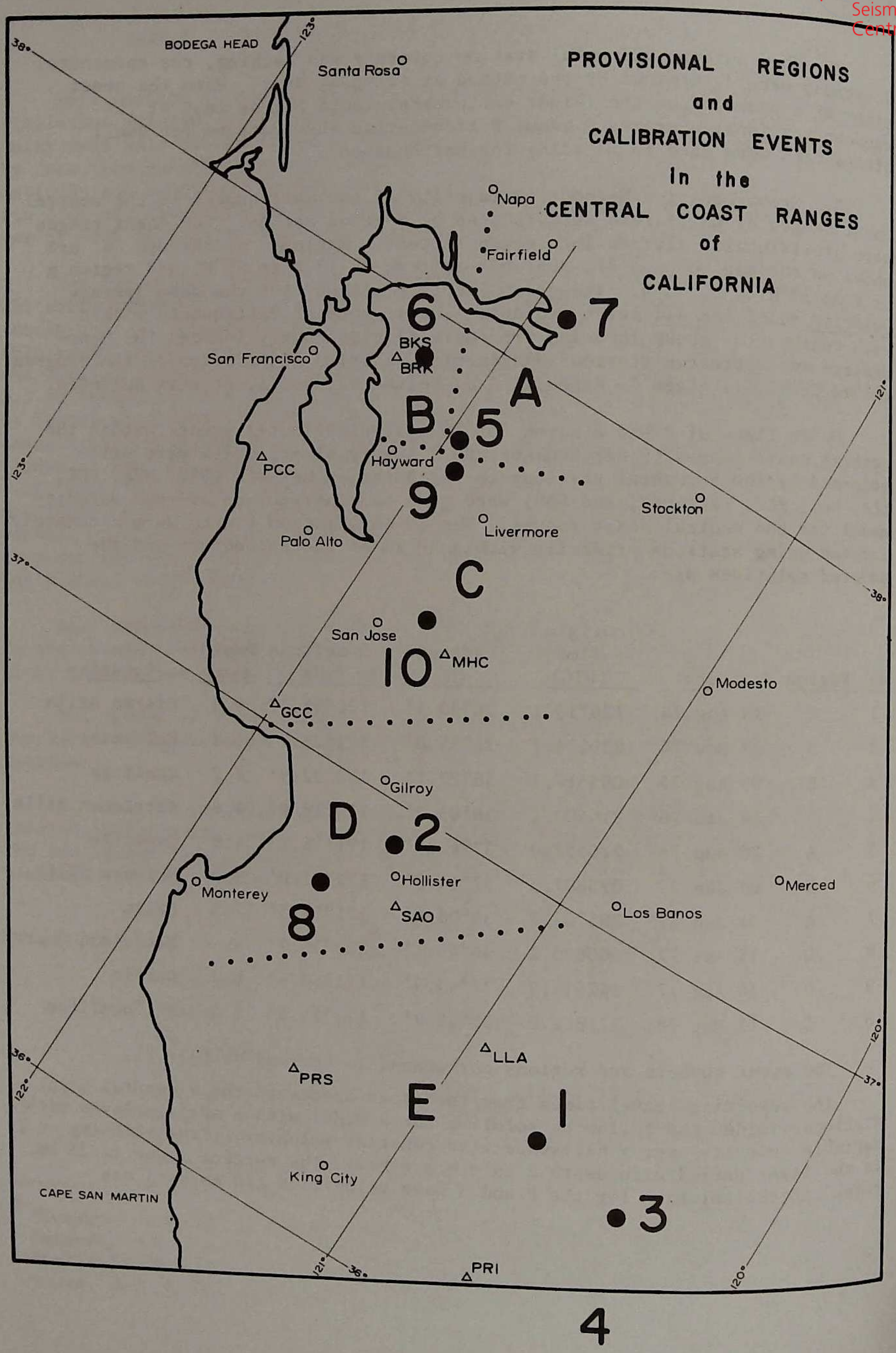
3. Group Location Method: A majority of the earthquakes in the central coast ranges of California were located by a group method. The coast ranges were provisionally divided into seven regions. Regions a through e are shown on the map on page 71; region f is from 38°15'N to 39°N, and region g is from 39°N to 39°45'N. The group location method uses the same average velocity model for all seven regions. For a group of earthquakes within each region, the group location procedure simultaneously locates the hypocenters and estimates station adjustments. A bried description of the program, called GHYP2, is given in Appendix A of Volume 47, No. 1, of this Bulletin.

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 71.

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



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

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

and the corresponding halfspace velocities are

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

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

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 7 regions (a through g) into which the central and northern coast ranges were provisionally divided are:

	Region						
Station	A P/S	B P/S	C P/S	D P/S	E P/S	F P/S	G P/S
BKS	0/.4	0/-.2	0/-.1	.25/.3	.1/-	.2/.2	-.3/-
GCC	-.1/-	-.1/-	-.1/.1	-.3/-.1	-.1/-	-/-	-/-
LLA	-/-	-/-	-.1/.4	-.3/-.2	0/.3	-/-	-/-
MHC	0/0	.2/,2	0/-	0/.1	.2/-	.4/-	-/-
PCC	0/-.6	0/0	-.25/-	-.4/.2	.1/-	0/-.2	-.3/-
PRI	-/-	-/-	-/-	.6/.55	0/.1	-/-	-/-
PRS	-/-	-/-	.2/-.3	-.1/.2	-.3/-	-/-	-/-
SAO	-.1/-	-/-	.05/-	.1/-	0/-	-.4/-	-/-
WDC	-/-	-/-	-/-	-/-	-/-	.15/-	.5/-
WKC	-/-	-/-	-/-	-/-	-/-	-/-	-.6/-

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
f	group - Santa Rosa
g	group - Ukiah
m	individual - modified model for Sierra Nevada region
r	arc
s	individual - standard model

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

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 75. 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 75, on the southwest by a line connecting 35°N-121°W and 29°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

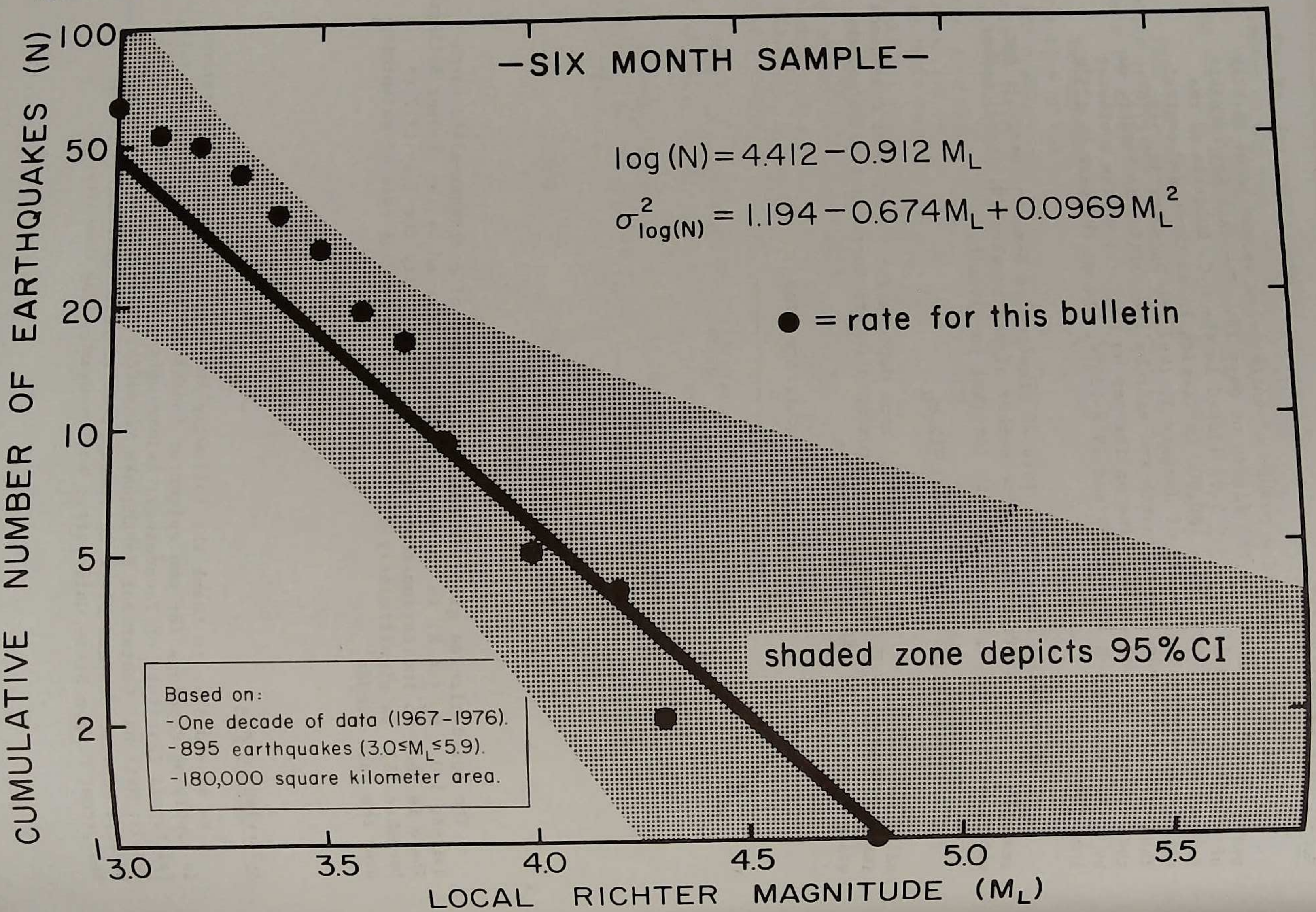
$M_L \geq$	Interoccurrence Time
3.0	4 days
3.5	11 days
4.0	1 month
4.5	3 months
5.0	8 months
5.5	2 years
6.0	5 years

The solid circles give the cumulative number of earthquakes (63 earthquakes, $3.0 \leq M_L \leq 4.8$) in the 6-month interval covered by the present Bulletin. There is thus no indication that the rate of seismicity for July 1977 to December 1977 is significantly different from the average rate of seismicity over the past decade.

Acknowledgements

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.

RECENT RATE OF SEISMICITY FOR NORTHERN & CENTRAL CALIFORNIA



EARTHQUAKES IN NORTHERN CALIFORNIA

Map No.	Date 1977	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
1	Jul 03	19 46 53.1	37°22.9'	121°44.5'	3.2	7	11c	15 km NE of San Jose. Felt.
2	Jul 03	20 21 24.4	37°21.3'	121°42.2'	3.2	8	12c	18 km E of San Jose. Felt.
	Jul 04	21 52 03.5	40.4°	126.9°	5.0	2(R)	8r	Off the coast 245 km WSW of Eureka.
	Jul 04	22 05 45	40.4°	126.9°	4.5	2(R)	8r	Off the coast 245 km WSW of Eureka.
3	Jul 07	14 20 54.2	36°08.3'	120°46.8'	2.9	7	10e	33 km ESE of King City.
4	Jul 08	08 25 37.8	36°53.3'	121°30.3'	2.7	9	12d	10 km NW of Hollister.
5	Jul 08	08 31 40.3	36°53.5'	121°29.6'	2.8	10	12d	10 km NW of Hollister.
6	Jul 09	14 01 01.2	36°51.6'	120°01.9'	3.3	8	7s	22 km NW of Fresno.
7	Jul 12	01 43 28.5	40°16.6'	123°41.5'	4.3	20	7s	20 km NE of Garberville. Felt.
7	Jul 12	05 17 11.2	40°16.6'	123°39.4'	3.7	21	7s	20 km NE of Garberville. Felt.
7	Jul 12	15 22 55.8	40°16.8'	123°41.4'	3.5	19	7s	20 km NE of Garberville. Felt.
8	Jul 14	11 38 05.7	36°34.0'	121°12.2'	3.3	6	12e	Bear Valley, 37 km SE of Hollister.
8	Jul 14	11 45 14.2	36°34.0'	121°12.2'	2.7	6	11e	Bear Valley, 37 km SE of Hollister.
8	Jul 15	11 31 59.1	36°34.4'	121°12.6'	2.8	6	7e	Bear Valley, 37 km SE of Hollister.
9	Jul 16	12 22 51.4	40°22.4'	124°59.2'	(3.0)	24	7s	Off the coast 85 km SW of Eureka.
	Jul 18	21 49 25.5	40°23.8'	125°45.2'	4.7	10(R)	9s	Off the coast 145 km WSW of Eureka.
	Jul 18	21 51 33.7	40°26.9'	125°28.2'	3.8	2	5s	Off the coast 115 km SW of Eureka.
10	Jul 19	23 50 32.1	37°57.9'	122°03.6'	3.2	14	9a	Concord, 21 km NE of Berkeley. Felt in Martinez and Concord.
11	Jul 23	23 48 43.7	41°17.9'	124°48.3'	3.7	13	6s	Off the coast 75 km NW of Eureka.
12	Jul 24	03 18 54.1	36°25.5'	120°42.7'	2.6	3	10e	45 km NE of King City.
13	Jul 26	21 42 16.3	35°55.5'	120°30.5'	3.5	7	10e	75 km NNE of San Luis Obispo.
5	Jul 27	11 10 46.8	36°53.6'	121°30.1'	3.2	7	11d	11 km NW of Hollister. Felt.
14	Jul 27	21 51 17.4	37°20.2'	122°07.4'	3.5	9	11c	Los Altos, 20 km W of San Jose. Felt in San Jose, San Francisco Peninsula and South Bay Area.

Map No.	Date 1977	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
15	Jul 30	16 35 38.1	36°54.9'	121°28.5'	3.8	8	12d	10 km NW of Hollister. Felt in Hollister.
	Aug 01	20 58 34.8	40°23.5'	125°37.7'	(3.9)	13	9s	Off the coast 135 km WSW of Eureka.
16	Aug 02	02 31 43.5	37°55.8'	122°17.9'	2.8	3	9b	7 km NNW of Berkeley. Felt in Berkeley and Albany.
17	Aug 06	10 35 27.9	39°25.4'	121°32.8'	3.1	14	7m	10 km S of Oroville.
18	Aug 08	04 51 40.9	37°32.0'	117°44.8'	4.2	23	7m	60 km E of Bishop.
1	Aug 09	05 19 20.9	37°22.7'	121°43.6'	2.8	9	11c	17 km ENE of San Jose.
19	Aug 09	08 34 25.2	36°12.3'	120°49.2'	3.3	6	9e	28 km E of King City.
20	Aug 10	09 25 17.1	40°32.7'	125°00.5'	3.5	23	6s	Off the coast 80 km SW of Eureka.
1	Aug 10	20 19 23.4	37°23.8'	121°43.4'	2.9	8	11c	18 km ENE of San Jose.
21	Aug 13	02 36 19.0	40°13.2'	124°15.6'	3.0	5	6s	35 km WNW of Garberville.
22	Aug 14	14 25 34.9	37°43.6'	121°56.1'	3.4	7	11c	Dublin, 15 km W of Livermore. Felt in San Ramon, Dublin and Pleasanton.
23	Aug 14	15 02 58.1	37°43.3'	121°59.1'	2.7	12	11c	Dublin, 20 km W of Livermore. Felt in Pleasanton.
24	Aug 14	15 03 25.7	37°43.0'	121°57.6'	2.6	7	7c	Dublin, 18 km W of Livermore. Felt in Pleasanton.
25	Aug 15	10 40 12.6	40°33.6'	121°48.6'	3.0	3	5m	50 km E of Redding.
26	Aug 16	14 24 11.2	37°21.8'	121°36.5'	2.7	7	11c	26 km E of San Jose.
27	Aug 17	05 20 31.1	35°45.5'	120°19.0'	3.1	4	9e	Cholame Valley, 90 km SE of King City.
22	Aug 17	22 27 40.1	37°43.7'	121°56.5'	2.7	7	11c	Dublin, 18 km W of Livermore.
28	Aug 18	11 58 16.8	37°24.6'	121°45.7'	2.9	8	8c	15 km NE of San Jose. Felt in San Jose, Milpitas and Santa Clara.
29	Aug 20	04 59 37.6	39°12.7'	120°26.5'	3.3	26	8m	25 km SW of Truckee.
8	Aug 25	09 38 22.5	36°33.4'	121°11.5'	2.5	6	10e	Bear Valley, 37 km SE of Hollister.
30	Aug 27	21 43 47.5	37°53.0'	121°59.2'	2.6	11	10a	Mt. Diablo, 24 km E of Berkeley.
31	Aug 30	03 53 19.9	36°51.1'	121°38.3'	2.5	3	12d	20 km W of Hollister.
32	Aug 31	09 27 04.6	36°38.4'	121°17.9'	2.7	5	10d	26 km SSE of Hollister.
33	Aug 31	23 39 09.4	38°16.8'	122°35.1'	2.8	9	8f	21 km SE of Santa Rosa. Felt in Santa Rosa.
15	Sep 02	16 24 35.0	36°54.4'	121°28.5'	2.9	6	11d	9 km NW of Hollister.
34	Sep 04	12 33 46.5	36°35.0'	121°05.5'	2.7	7	11e	Bear Valley, 40 km SE of Hollister.

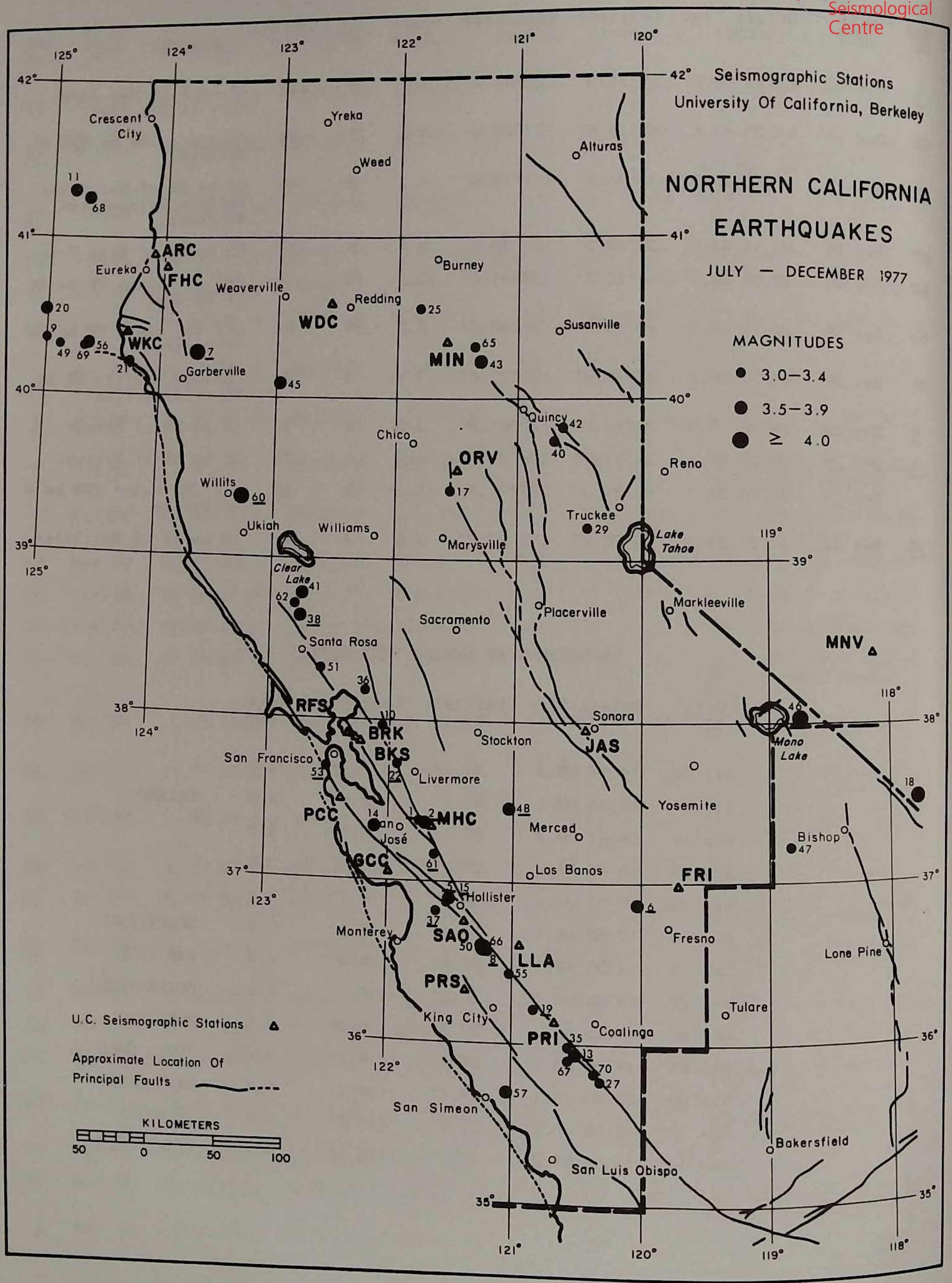
Map No.	Date 1977	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
35	Sep 05	13 26 50.2	35°59.3'	120°34.4'	3.2	7	9e	57 km SE of King City.
36	Sep 05	17 45 28.7	38°09.7'	122°10.2'	3.7	8	12a	32 km N of Berkeley.
37	Sep 07	23 54 57.9	36°48.9'	121°36.2'	2.7	2	12d	18 km WSW of Hollister.
38	Sep 08	00 28 20.5	38°39.2'	122°45.2'	3.6	8	10f	28 km N of Santa Rosa. Felt in Healdsburg.
15	Sep 09	11 18 39.2	36°54.6'	121°28.7'	2.6	3	12d	10 km NW of Hollister.
19	Sep 10	07 38 04.3	36°13.3'	120°50.0'	3.0	8	10e	Peach Tree Valley, 27 km E of King City.
38	Sep 11	05 18 45.8	38°39.8'	122°45.0'	3.5	8	9f	28 km N of Santa Rosa.
39	Sep 11	07 30 16.6	36°59.4'	121°43.3'	2.7	9	12d	32 km NW of Hollister.
38	Sep 11	23 46 11.9	38°40.2'	122°44.9'	3.8	9	10f	28 km N of Santa Rosa. Felt in Healdsburg.
8	Sep 13	01 48 13.7	36°32.8'	121°12.7'	2.8	1	7e	Bear Valley, 40 km SE of Hollister.
40	Sep 20	06 46 25.2	39°44.3'	120°42.8'	3.3	10	7m	65 km NW of Truckee.
37	Sep 20	23 17 12.5	36°48.6'	121°35.0'	2.8	5	12d	18 km WSW of Hollister
41	Sep 22	20 48 42.9	38°46.5'	122°44.5'	3.8	4	9f	37 km N of Santa Rosa. Felt.
1	Sep 25	17 28 06.6	37°22.3'	121°43.7'	2.8	9	11c	17 km ENE of San Jose.
42	Sep 28	00 17 02.7	39°49.8'	120°37.2'	3.0	5	7m	70 km NW of Truckee.
43	Oct 04	06 39 39.1	40°14.6'	121°18.7'	3.7	21	8m	Lake Almanor, 45 km NW of Quincy.
44	Oct 04	11 26 38.9	37°10.9'	121°34.7'	2.5	1	11d	Morgan Hill area, 33 km SE of San Jose.
45	Oct 08	00 33 00.6	40°05.2'	122°57.4'	3.6	25	7s	70 km SW of Redding.
1	Oct 09	03 26 20.6	37°22.7'	121°43.3'	2.6	10	10c	17 km NE of San Jose.
46	Oct 10	19 26 04.2	38°02.0'	118°46.1'	4.0	11	6m	20 km E of Mono Lake.
47	Oct 10	21 35 41.5	37°14.3'	117°50.5'	3.3	3	5m	50 km ESE of Bishop.
37	Oct 11	00 35 13.8	36°48.6'	121°35.8'	3.0	5	13d	17 km WSW of Hollister.
48	Oct 13	06 04 26.5	37°28.2'	121°01.6'	2.5	9	7s	55 km NW of Merced.
48	Oct 13	16 10 27.4	37°28.2'	121°01.7'	3.7	8	7s	55 km NW of Merced.
49	Oct 15	15 42 37.6	40°19.6'	124°53.3'	(3.0)	21	5s	Off the coast 80 km SW of Eureka.
50	Oct 18	10 08 18.8	36°35.7'	121°14.5'	3.5	9	8e	32 km SE of Hollister.
51	Oct 19	11 46 08.4	38°19.8'	122°34.1'	3.3	11	10f	17 km SE of Santa Rosa. Felt in Petaluma, Santa Rosa and Sonoma.
32	Oct 24	19 08 18.4	36°38.5'	121°17.5'	2.8	4	11e	Stone Canyon, 26 km SE of Hollister.
5	Oct 26	00 49 06.7	36°52.9'	121°29.1'	2.7	7	12d	8 km NW of Hollister.
8	Oct 28	11 00 51.8	36°34.2'	121°12.4'	2.8	6	10e	Bear Valley, 37 km SE of Hollister.

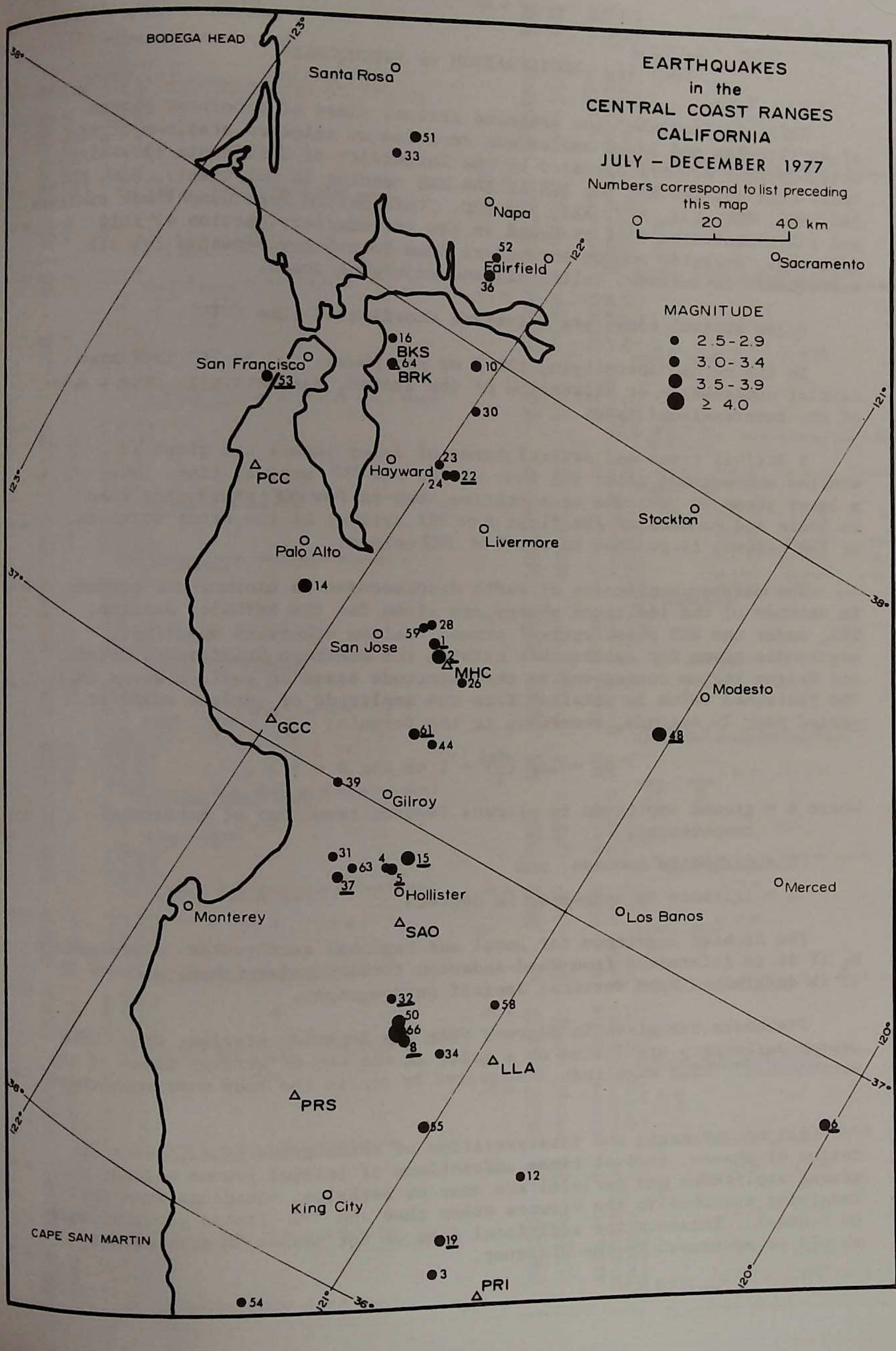
Map No.	Date 1977	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
52	Nov 01	00 04 15.9	38°11.0'	122°10.3'	2.6	7	10a	35 km NNE of Berkeley. Felt in Cordelia.
53	Nov 01	04 06 43.4	37°42.3'	122°31.8'	3.1	8	9b	Off the coast 10 km SW of San Francisco. Felt in San Francisco.
53	Nov 01	04 13 11.8	37°42.3'	122°32.1'	2.5	8	10b	Off the coast 10 km SW of San Francisco.
54	Nov 03	00 21 11.6	35°52.5'	121°11.5'	2.8	4	10e	30 km SSW of King City.
55	Nov 03	17 08 42.5	36°25.0'	121°01.4'	3.0	7	10e	60 km SE of Hollister.
56	Nov 04	02 55 31.3	40°20.4'	124°37.5'	3.7	30	6s	Off the coast 68 km SW of Eureka.
8	Nov 04	15 05 48.4	36°34.5'	121°12.8'	2.9	6	9e	Bear Valley, 35 km SE of Hollister.
8	Nov 04	15 12 53.0	36°34.5'	121°12.9'	3.4	6	10e	Bear Valley, 35 km SE of Hollister.
8	Nov 04	15 13 37	36°34.5'	121°13'	3.4	6		Second event of Double Shock, Bear Valley.
8	Nov 04	21 34 11.3	36°34.5'	121°13.2'	2.7	7	10e	Bear Valley, 35 km SE of Hollister.
57	Nov 18	02 17 18.7	35°42.0'	121°02.1'	3.8	4	8e	58 km S of King City.
58	Nov 18	16 36 45.3	36°44.4'	121°01.8'	2.6	4	10e	37 km SE of Hollister.
59	Nov 19	18 36 49.8	37°23.8'	121°46.7'	2.5	2	10e	12 km NE of San Jose.
60	Nov 22	21 15 53.9	39°24.2'	123°16.4'	4.8	18	7g	10 km E of Willits. Widely felt; damage in Willits.
60	Nov 23	13 53 54.8	39°24.1'	123°17.8'	3.4	12	7g	10 km E of Willits. Felt in Willits.
60	Nov 23	15 27 15.8	39°24.5'	123°17.5'	3.4	16	7g	10 km E of Willits. Felt in Willits.
60	Nov 23	15 29 15.1	39°24.2'	123°17.8'	3.3	20	7g	10 km E of Willits. Felt in Willits.
60	Nov 23	16 22 43.7	39°24.5'	123°18.7'	3.0	12	7g	10 km E of Willits.
61	Nov 26	04 31 56.8	37°10.5'	121°37.8'	3.3	6	11d	Morgan Hill, 30 km SE of San Jose. Felt.
61	Nov 26	20 30 15.0	37°10.9'	121°38.3'	2.6	6	11d	Morgan Hill, 30 km SE of San Jose.
13	Nov 29	16 42 02.4	35°56.4'	120°30.9'	3.7	10	12e	65 km SE of King City.
13	Nov 29	18 22 07.9	35°56.0'	120°31.0'	3.0	9	11e	65 km SE of King City.
62	Dec 04	02 22 39.7	38°42.8'	122°48.1'	3.0	14	9f	30 km NNW of Santa Rosa.
63	Dec 07	18 38 19.5	36°50.8'	121°32.1'	2.8	3	8d	San Juan Bautista, 12 km W of Hollister.
64	Dec 08	18 04 21.0	37°52.0'	122°15.4'	2.6	11	9b	Berkeley. Felt.
53	Dec 09	02 26 55.3	37°41.9'	122°32.2'	2.9	9	10b	Off the coast 10 km SW of San Francisco.
2	Dec 10	23 36 00.8	37°21.5'	121°41.0'	2.6	8	7c	18 km E of San Jose.

Map No.	Date 1977	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
2	Dec 12	01 11 46.0	37°21.0'	121°41.4'	3.6	9	11c	18 km E of San Jose. Felt in San Jose.
65	Dec 13	04 33 47.6	40°19.5'	121°20.8'	3.2	17	5m	Chester, 100 km ESE of Redding.
66	Dec 15	11 15 28.9	36°34.9'	121°13.5'	4.2	9	9e	34 km SE of Hollister. Felt in Salinas and Monterey.
67	Dec 16	10 41 47.6	35°53.3'	120°33.6'	3.1	8	8e	65 km SE of King City.
68	Dec 19	22 07 36.2	41°15.5'	124°41.0'	3.5	18	5s	Off the coast 70 km NW of Eureka.
69	Dec 26	19 37 19.7	40°18.7'	124°40.0'	3.2	29	6s	Off the coast 70 km SW of Eureka.
70	Dec 28	02 59 38.2	35°48.9'	120°22.0'	3.4	9	12e	Cholame Valley, 83 km SE of King City.
6	Dec 29	14 09 16.8	36°51.6'	120°01.0'	3.5	10	7s	22 km NW of Fresno.
6	Dec 29	16 15 59.2	36°51.7'	120°00.0'	2.9	11	7s	22 km NW of Fresno.
	Dec 30	07 24 32.3	40°39.3'	127°44.5'	(4.1)	8	9s	Off the coast 220 km W of Eureka.
15	Dec 31	18 29 34.3	36°56.3'	121°27.7'	2.9	4	10d	10 km NW of Hollister.

EXPLOSIONS AT NEVADA TEST SITE

Date 1977	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	
Jul 28	14 07 00.2	37.1°	116.1°	3.7	
Aug 04	16 40 00.1	37.1°	116.0°	5.0	"STRAKE"
Aug 16	14 41 00.4	37.1°	116.1°	3.5	
Aug 16	15 49 00.2	37.2°	116.1°	3.9	
Aug 19	17 32 00.1	37.0°	116.0°	3.5	
Aug 19	17 55 00.1	37.1°	116.1°	5.7	"SCANTLING"
Sep 15	14 36 30.1	37.0°	116.0°	4.4	"EBB TIDE"
Sep 27	14 00 00.2	37.2°	116.1°	5.0	"COULMMIERS"
Oct 26	14 15 00.1	37.0°	116.0°	4.8	"BOBSTAY"
Nov 01	18 06 00.1	37.2°	116.2°	4.1	"HYBLA GOLD"
Nov 09	22 00 00.1	37.1°	116.1°	5.6	"SAND REEF"
Nov 17	19 30 00.1	37.0°	116.0°	4.8	"SEAMOUNT"
Dec 14	15 30 00.2	37.1°	116.1°	5.7	"FARALLONES"





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

JULY 01 THROUGH DECEMBER 31, 1977

DATE	STA	P OR PKP (Phase h m s)	S (m s)	OTHER PHASES (Phase m s Phase m s Phase m s)
JUL 01	SAO	ePg 12 18 34		
	FRI	ePg 12 18 35		
	MHC	ePg 12 18 35.5		
	BKS	e(P) 12 18 36		
	FRI	ePg 12 18 40.8		
	JAS	iPd 12 18 41.7		
	WDC	ePg 12 18 43.7		
	MIN	ePg 12 18 46		
	MNV	iPd 12 18 51.8		
		USGS 12 07 10.1, 16.8S, 173.6W, H= 50 KM, mb=5.0		
		TONGA ISLANDS		
JUL 01	WDC	ePg 15 42 47.5		e 43 00
	MIN	ePg 15 42 51.5		e 43 05
	JAS	ePg 15 43 00.2		e 43 22
		USGS 15 32 41.2, 45.6N, 151.5E, H= 36 KM, mb=5.0, Ms=4.5		
		KURIL ISLANDS		
JUL 02	FBC	e(P) 01 07 50		
	BKS	ePg 01 07 51.5 18 18		e 07 58 Lr 33 40
		MICRON PERIOD		
		PZ 0.06 1.0		
		LZ 8 20		
		LN 3.0 20		
		LE 5 20		
	MHC	ePg 01 07 53.5		
	WDC	iPg 01 07 54.1		
	FRI	ePg 01 07 56.0		
	MIN	ePg 01 07 56.5		
	JAS	ePg 01 07 58.0		
	MNV	iPg 01 08 07.3		
		Ms=6.0, DISTANCE=84°		
		USGS 00 55 09.0, 10.0S, 160.5E, H= 16 KM, mb=5.7, Ms=5.8		
		SOLOMON ISLANDS		
JUL 02	FRI	ePg 05 20 59.6		
	PRI	ePg 05 21 01.0		
	MNV	ePg 05 21 02.0		
	JAS	iPg 05 21 06.7		
	MHC	ePg 05 21 08.5		
	BKS	e(P) 05 21 12		
	MIN	ePg 05 21 18.4		
	WDC	iPg 05 21 21.4		
		USGS 05 09 05.6, 25.9S, 70.8W, H= 32 KM, mb=5.4, Ms=5.0		
		NEAR COAST OF NORTHERN CHILE		
JUL 02	FRI	ePg 12 02 11.8		
	MNV	ePg 12 02 17.3		
	JAS	ePg 12 02 19.1		
	WDC	ePg 12 02 32.5		
		USGS 11 49 40.6, 41.7S, 84.1W, H= 33 KM, mb=5.1		
		WEST CHILE RISE		
JUL 02	WDC	ePg 15 59 49.8		
	MIN	ePg 15 59 54.4		
	BKS	16 00		e 00 22
	MHC	ePg 16 00 09.6		
	JAS	ePg 16 00 11.8		
	MNV	ePg 16 00 18.7		
	FRI	ePg 16 00 19.1		
	PRI	ePg 16 00 20.0		
		USGS 15 50 44.7, 53.2N, 160.0E, H= 55 KM, mb=4.7		
		NEAR EAST COAST OF KAMCHATKA		
JUL 03	FBC	13 02		e 02 04
	WDC	iPg 13 02 12.6		
	MIN	ePg 13 02 18.4		
	BKS	13 02		e 02 43 Lq 10 20
		MICRON PERIOD		
		LZ 1.3 16		
		LE 1.7 16		
	MHC	ePg 13 02 35.4		
	JAS	ePg 13 02 37.6		
	PRI	ePg 13 02 46.0		
	FRI	ePg 13 02 46.1		
	MNV	ePg 13 02 46.8		
		USGS 12 55 41.4, 52.5N, 167.5W, H= 33 KM, mb=5.0, Ms=4.6		
		FOX ISLANDS, ALEUTIAN ISLANDS		
JUL 03	WDC	ePg 17 36 20.4		
	BKS	17 36		e 46 00
		MICRON PERIOD		
		LZ 4.0 16		
	MHC	ePg 17 36 42.5		
	JAS	ePg 17 36 45.6		
	FRI	ePg 17 36 53.3		
	MNV	iPd 17 36 54.6		
		USGS 17 29 49.3, 52.6N, 167.5W, H= 33 KM, mb=4.7, Ms=4.5		
		FOX ISLANDS, ALEUTIAN ISLANDS		
JUL 03	MHC	iPg 19 46 55.0		
	BKS	iPg 19 47 05.5		i 47 15 i 47 16
	SAO	iPd 19 47 06.0		
	JAS	iPg 19 47 14.5		
	FRI	ePg 19 47 19.1		
	FRI	ePg 19 47 20.9		
		BRK 19 46 53.1, 37.4N, 121.7W, H= 7 KM, ML=3.2		
		NORTHEAST OF SAN JOSE, CALIFORNIA		
JUL 03	MHC	iPg 20 21 26.1		
	SAO	iPd 20 21 36.6		
	BKS	iPg 20 21 37.4		i 21 48
	JAS	iPg 20 21 45.7		
	FRI	iPg 20 21 52.5		
	MNV	ePg 20 22 17.5		
		BRK 20 21 24.4, 37.4N, 121.7W, H= 8 KM, ML=3.2		
		EAST OF SAN JOSE, CALIFORNIA		
JUL 04	SAO	07 26		e 26 05
	MHC	ePg 07 26 06.0		
	BKS	ePg 07 26 06.1		
	FRI	ePg 07 26 11.8		
	JAS	ePg 07 26 12.2		
	WDC	ePg 07 26 13.4		
	MIN	ePg 07 26 15.6		
	MNV	ePg 07 26 21.9		
		USGS 07 15 02.7, 18.1S, 178.2W, H=464 KM, mb=5.0		
		FIJI ISLANDS REGION		
JUL 04	MHC	ePg 12 42 05.9		
	BKS	ePg 12 42 06.6		
	FRI	ePg 12 42 10.2		
	JAS	ePg 12 42 11.4		
	WDC	ePg 12 42 14.4		
	MIN	ePg 12 42 16.0		
	MNV	ePg 12 42 19.0		
		USGS 12 29 32.0, 31.6S, 178.7W, H=105 KM, mb=5.3		
		KERMADEC ISLANDS REGION		
JUL 04	MHC	ePg 13 37 07.9		
	FRI	ePg 13 37 12.3		
	JAS	ePg 13 37 13.0		
	WDC	ePg 13 37 14.7		
	MNV	ePg 13 37 21.3		
		USGS 13 25 38.6, 24.3S, 179.8E, H=519 KM, mb=4.6		
		SOUTH OF FIJI ISLANDS		
JUL 04	WDC	ePg 16 43 14.4		
	JAS	ePg 16 43 33.8		e 44 36
	MNV	ePg 16 43 40.0		
	FRI	eP 16 43 40.2		
		USGS 16 33 39.9, 48.1N, 146.5E, H=457 KM, mb=4.6		
		SEA OF OKHOTSK		
JUL 04	FHC	iPg 21 52 41.4	53 08	
	WDC	iPg 21 52 56.7	53 35	
	MIN	iPd 21 53 07.4		
	BKS	iPd 21 53 11.6		
	MHC	ePd 21 53 21.5	54 20	e 54 08 e 54 30
	SAO	ePg 21 53 27.5		
	JAS	eP 21 53 28	54 36	e 54 32
	PRI	eP 21 53 40		
	FRI	ePd 21 53 42.5		
	MNV	eP 21 53 50		
		BRK 21 52 03.5, 40.4N, 126.9W, H= 2 KM, ML=5.0		
		OFF THE COAST WEST-SOUTHWEST OF EUREKA, CALIFORNIA		
JUL 04	FHC	iPg 22 06 22.8	06 50	
	WDC	iPd 22 06 39.2	07 17	
	MIN	iPg 22 06 49.0		
	BKS	iPg 22 06 52.9		i 06 58 i 07 07
	MHC	eP 22 07 02.5	08 00	
	SAO	iPg 22 07 08.8	08 14	
	JAS	ePd 22 07 10.8	08 17	
	PRI	eP 22 07 22	08 36	
	FRI	eP 22 07 23.5	08 37	
	MNV	eP 22 07 31		
		BRK 22 05 45 , 40.4N, 126.9W, H= 2 KM, ML=4.5		
		OFF THE COAST WEST-SOUTHWEST OF EUREKA, CALIFORNIA		
JUL 06	FRI	eP 04 50 47.0		
	MNV	iPg 04 50 47.6		
	PRI	eP 04 50 49.6		
	JAS	eP 04 50 55.9		e 52 34
	SAO	e(P) 04 50 58		
	MHC	eP 04 51 00.2		
	BKS	eP 04 51 06 58 00		Lq 01 54 Lr 05 20
		MICRON PERIOD		
		PZ 0.32 1.8		
		LZ 6 20		
		LN 6 20		
		LE 8 20		
	MIN	eP 04 51 11.6		
	WDC	eP 04 51 15.2		
	FHC	ePg 04 51 25.8		
		Ms=5.8, DISTANCE=48°		
		USGS 04 42 23.6, 5.3N, 82.7W, H= 33 KM, mb=5.4, Ms=5.5		
		SOUTH OF PANAMA		
JUL 06	SAO	ePd 11 39 35.7		
	BKS	iPd 11 39 36.9 48 50		pP 41 40 sP 42 41 e 53 01
				Lq 00 20
		MICRON PERIOD		
		PZ 0.35 0.9		
	PRI	iPd 11 39 37.1		pP 41 46
	MHC	iPd 11 39 37.3		pP 41 47 e 58 22
	FHC	iPd 11 39 41.2		
	FRI	iPd 11 39 42.0		pP 41 52
	JAS	iPd 11 39 42.6		pP 41 52 SP 49 50 e 58 22
				e 08 50
	WDC	iPd 11 39 44.3		pP 41 53 SKS 49 05 e 08 48
	MIN	ePd 11 39 45.8		
	MNV	iPd 11 39 51.7		pP 42 02 SP 49 52 e 58 15
				e 08 40
		USGS 11 28 31.5, 21.1S, 178.6W, H=594 KM, mb=5.8		
		FIJI ISLANDS REGION		
JUL 06	MHC	eP 23 10 17.6		
	FRI	eP 23 10 18.0		
	JAS	iPd 23 10 23.1		
	MNV	eP 23 10 30.4		
	WDC	eP 23 10 35.7		
		TUAMOTU ARCHIPELAGO REGION		
JUL 07	PRI	iPg 14 20 56.5		
	SAO	iPd 14 21 09.2		
	FRI	eP 14 21 14.8		
	MHC	eP 14 21 18.4		
	JAS	eP 14 21 24.2		
	BKS	e(P) 14 21 28		
		BRK 14 20 54.2, 36.1N, 120.8W, H= 7 KM, ML=2.9		
		EAST-SOUTHEAST OF KING CITY, CALIFORNIA		
JUL 07	WDC	ePd 16 05 12.1		
	MIN	e(P) 16 05 18		
	BKS	16 05		e 05 29 Lr 15 00
		MICRON PERIOD		
		LZ 1.2 20		
		LN 0.7 20		
		LE 1.4 20		
	MHC	eP 16 05 34		
	JAS	ePd 16 05 36.6		
	FRI	eP 16 05 45.1		
	MNV	ePd 16 05 45.8		
	PRI	e(P) 16 05 46		
		USGS 15 58 24.8, 52.3N, 170.9W, H= 52 KM, mb=5.0		
		FOX ISLANDS, ALEUTIAN ISLANDS		
JUL 08	FRI	eP 04 24 56.1		e 27 30
	MNV	eP 04 25 01.9		
	JAS	eP 04 25 05.9		e 27 42
	MHC	eP 04 25 09.3		
	BKS	04 25		Lr 32 00
		MICRON PERIOD		
		LZ 1.1 20		
		LN 1.2 20		
		LE 0.9 20		
	WDC	e(P) 04 25 33		
	FHC	e(P) 04 25 44		
		USGS 04 19 57.6, 18.0N, 106.0W, H= 33 KM, mb=4.0, Ms=3.6		
		OFF COAST OF JALISCO, MEXICO		
JUL 08	SAO	iPg 08 25 41.0		
	MHC	iPd 08 25 47.1		
	PRI	eP 08 25 56.8		
	BKS	eP 08 26 00.5	26 16	
	JAS	eP 08 26 01.9		
	FRI	e(P) 08 26 02		
		BRK 08 25 37.8, 36.9N, 121.5W, H= 9 KM, ML=2.7		
		NORTHWEST OF HOLLISTER, CALIFORNIA		
JUL 08	SAO	iPg 08 31 43.6		
	MHC	iPd 08 31 49.7	31 56	
	PRI	eP 08 31 59.0	32 16	
	BKS	eP 08 32 02.5	32 18	
	JAS	eP 08 32 02.8		
	FRI	eP 08 32 05.4		
		BRK 08 31 40.3, 36.9N, 121.5W, H= 10 KM, ML=2.8		
		NORTHWEST OF HOLLISTER, CALIFORNIA		
JUL 08	FHC	eP 09 00 38.5		e 28 20 e 35 36
	BKS	ePd 09 00 43.4		
		MICRON PERIOD		
		PZ 0.32 1.0		
		LZ 0.8 20		
		LE 0.5 20		
				e 01 19 e 04 11
	WDC	iPd 09 00 43.9		
	SAO	eP 09 00 45.5		
	MHC	ePd 09 00 45.6		
	MIN	ePd 09 00 46.6		
	PRI	ePd 09 00 49.0		e 01 25 e 04 18
	JAS	iPd 09 00 49.8		
	FRI	ePd 09 00 52.1		i 01 33 e 04 37
	MNV	iPd 09 00 59.0		
		USGS 08 48 04.7, 5.8S, 154.6E, H=127 KM, mb=5.8		
		SOLOMON ISLANDS		

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JUL 08  MHC  eP     09 39 31.5
        FRI  eP     09 39 36.1
        JAS  ePd    09 39 37.0                    • 39 45
        WDC  ePd    09 39 39.4
        MIN  eP     09 39 41.0                    • 39 55
        MNV  ePd    09 39 46.4
                    USGS 09 27 56.8, 22.3S, 176.7W, H=269 KM, mb=4.3
                         SOUTH OF FIJI ISLANDS

JUL 08  WDC         20 05                         • 05 34
        JAS  eP     20 05 45                      • 06 09
                    USGS 19 59 39.9, 61.2N, 150.9W, H= 72 KM, mb=4.7
                         SOUTHERN ALASKA

JUL 09  WDC  eP     08 07 10.0
        MIN  eP     08 07 17.0
        MNV  eP     08 07 56.5
        JAS  ePo    08 07 57.2                    • 10 32    • 11 36    • 13 35
        BKS         08 08
                              MICRON    PERIOD
                         LZ      1.3       20
        FRI  eP     08 08 08.5
        PRI  ePo    08 08 16.7
                    USGS 08 04 23.0, 51.0N, 130.0W, H= 33 KM, mb=4.2
                         QUEEN CHARLOTTE ISLANDS REGION

JUL 09  FRI  iPd    14 01 07.1
        PRI  iPd    14 01 17.5
        JAS  iPd    14 01 21.6
        SAO  iPo    14 01 21.7
        MHC  ePd    14 01 25.3
        MNV  ePo    14 01 38.3
                    BRK  14 01 01.2, 36.9N, 120.0W, H=  8 KM, ML=3.3
                         NORTHWEST OF FRESNO, CALIFORNIA

JUL 09  WDC  eP     15 06 48.2
        MIN  eP     15 06 43.3
        JAS  eP     15 06 54.1
        FRI  e(P)   15 06 59
        MNV  eP     15 07 00.2
                    USGS 14 54 05.7, 28.8N, 127.8E, H= 31 KM, mb=5.2, Ms=4.0
                         EAST CHINA SEA

JUL 09  SAO  ePd    16 56 04.2
        PRI  ePd    16 56 05.4
        BKS  e(P)   16 56 06                      • 20 00    • 20 36    • 24 52
                                                  • 25 16
        MHC  ePd    16 56 06.2
        FRI  ePd    16 56 11.0
        FHC  ePd    16 56 11.4
        JAS  iPd    16 56 12.0
        WDC  iPd    16 56 14.2
        MIN  ePd    16 56 16.3
        MNV  iPd    16 56 21.3
                    USGS 16 44 09.4, 22.5S, 175.1W, H= 33 KM, mb=5.5, Ms=4.9
                         TONGA ISLANDS REGION

JUL 10  FRI  ePKP   02 01 14.8                     • 01 44   PKKP 11 18
        PRI  ePKPo  02 01 15.6
        MNV  ePKPo  02 01 15.7                    • 03 15    • 04 40   PKKP 11 20
        SAO  ePKP   02 01 16.4
        JAS  ePKPo  02 01 17.3                    • 01 47    • 03 29    • 04 42
                                                 PKKP 11 16
        MHC  ePKPo  02 01 18.2
        BKS  iPKPd  02 01 19.8                    • 03 06
        MIN  ePKPo  02 01 21.2
        WDC  iPKPo  02 01 22.3                    • 01 52    • 03 30    • 04 45
        FHC  ePKP   02 01 25.2
                    USGS 01 42 36.5, 56.1S,  27.6W, H=122 KM, mb=6.1
                         SOUTH SANDWICH ISLANDS REGION

JUL 10  SAO         02 49                         • 49 57
        BKS  ePo    02 49 58.5                    • 13 20    • 16 34    • 20 50
                                                  • 30 30
                              MICRON    PERIOD
                         LZ      1.8       20
                         LN      1.4       20
                         LE      1.4       20
        MHC  eP     02 49 59.0
        FHC  eP     02 49 59.2
        PRI  eP     02 50 00.7
        WDC  ePo    02 50 03.0
        JAS  ePo    02 50 03.9                    • 53 32
        FRI  eP     02 50 04.4
        MIN  eP     02 50 05.0
        MNV  ePo    02 50 12.8
                    USGS 02 37 14.6, 19.1S, 168.4E, H= 12 KM, mb=5.5, Ms=5.5
                         NEW HEBRIDES ISLANDS

JUL 10  SAO  eP     04 31 35.9
        BRK  eP     04 31 36.7
        PRI  eP     04 31 37.2
        MHC  ePo    04 31 37.5
        FHC  eP     04 31 41.3
        FRI  eP     04 31 42.2
        JAS  iPo    04 31 42.9                    pP 33 53
        WDC  ePo    04 31 44.6                    pP 33 52
        MIN  eP     04 31 46.3
        MNV  iPo    04 31 51.7                    pP 34 02
                    USGS 04 20 25.5, 21.8S, 179.3W, H=582 KM, mb=5.3
                         FIJI ISLANDS REGION

JUL 10  SAO  e(P)   05 22 49
        MHC  eP     05 22 50.7
        BKS  e(P)   05 22 51                      • 04 20    • 06 55    • 09 32
                                                  • 11 48
                              MICRON    PERIOD
                         LZ      1.6       18
                         LN      1.3       18
                         LE      0.7       18
        PRI  eP     05 22 51.4
        FRI  ePo    05 22 55.5
        FHC  e(P)   05 22 56
        JAS  iPo    05 22 56.1                    pP 25 04
        WDC  iPo    05 22 58.0                    pP 25 06
        MIN  eP     05 22 59.5
        MNV  iPo    05 23 04.8                    pP 25 14
                    USGS 05 11 40.8, 21.9S, 179.3W, H=607 KM, mb=5.4
                         FIJI ISLANDS REGION

JUL 11  WDC  eP     09 46 30.5                    • 46 46
        MIN  eP     09 46 35.8
        BRK  e(P)   09 46 45
        MHC  eP     09 46 50.5
        JAS  ePo    09 46 53.8                    • 47 08
        FRI  eP     09 47 01.5
        PRI  eP     09 47 01.5
        MNV  eP     09 47 02.2
                    USGS 09 38 32.4, 51.4N, 176.3E, H= 13 KM, mb=5.1, Ms=4.8
                         RAT ISLANDS, ALEUTIAN ISLANDS

JUL 11  MHC  eP     16 08 56.9
        WDC         16 08
        PRI  eP     16 09 00.1                    • 08 58
        JAS  iPo    16 09 01.0
        FRI  eP     16 09 02.2
        MNV  eP     16 09 09.5
                    USGS 15 56 08.6,  8.9S, 157.5E, H= 59 KM, mb=5.1
                         SOLOMON ISLANDS

JUL 12  FHC  iPd    01 43 39.1
        WDC  iPo    01 43 45.1
        MIN  iPo    01 43 54.6
        BKS  ePo    01 44 10.3  44 35             • 44 40    • 45 03
        MHC  iP     01 44 19.4  44 49
        JAS  ePd    01 44 21.7  44 59
        SAO  eP     01 44 27.0
        FRI  eP     01 44 37.2
        MNV  eP     01 44 38.3
        PRI  eP     01 44 40.8
                    BRK  01 43 28.5, 40.3N, 123.7W, H= 20 KM, ML=4.3
                         NORTHEAST OF GARBERVILLE, CALIFORNIA

JUL 12  FHC  iPd    05 17 21.7
        WDC  iPo    05 17 27.4
        MIN  iPo    05 17 37.1
        BKS  ePo    05 17 53.1
        MHC  eP     05 18 02.4
        JAS  iPo    05 18 03.8
        SAO  eP     05 18 09.3
        FRI  eP     05 18 19.1
        MNV  eP     05 18 20.3
        PRI  eP     05 18 23.0
                    BRK  05 17 11.2, 40.3N, 123.7W, H= 21 KM, ML=3.7
                         NORTHEAST OF GARBERVILLE, CALIFORNIA

JUL 12  FHC  iPd    15 23 06.3
        WDC  iPo    15 23 12.3  23 25
        MIN  iPo    15 23 21.9
        BKS  ePd    15 23 38.2
        MHC  e(P)   15 23 47
        JAS  eP     15 23 50.9                    • 24 29
        SAO  ePo    15 23 54.6
        MNV  e(P)   15 24 06
                    BRK  15 22 55.8, 40.3N, 123.7W, H= 19 KM, ML=3.5
                         NORTHEAST OF GARBERVILLE, CALIFORNIA

JUL 13  BKS         09 05                         • 06 40
        JAS  eP     09 05 14.8
        FRI  eP     09 05 19.5
                    USGS 08 53 22.8, 30.1N, 142.7E, H= 33 KM, mb=4.9
                         SOUTH OF HONSHU, JAPAN

JUL 13  SAO  e(P)   14 17 56
        PRI  eP     14 17 56.6
        BRK  eP     14 17 56.9
        MHC  eP     14 17 57.5
        FRI  eP     14 18 02.0
        JAS  iPd    14 18 02.9
        WDC  iPd    14 18 05.9
        MNV  iPd    14 18 12.3
                    USGS 14 06 00.0, 23.2S, 175.3W, H= 63 KM, mb=5.0, Ms=5.0
                         TONGA ISLANDS REGION

JUL 14  SAO  iPo    11 38 11.1
        PRI  iPd    11 38 17.6                                1 38 33
        MHC  ePo    11 38 22.3  38 34
        FRI  iP     11 38 28.1
        JAS  iPo    11 38 31.8  38 51
        BKS  ePo    11 38 32.2                    • 38 35
        MNV  eP     11 38 59.3
                    BRK  11 38 05.7, 36.6N, 121.2W, H=  6 KM, ML=3.3
                         BEAR VALLEY, CALIFORNIA

JUL 14  SAO  iPo    11 45 19.5
        PRI  eP     11 45 26.0  45 37
        MHC  eP     11 45 30.9  45 43
        FRI  eP     11 45 36.6
        JAS  eP     11 45 40.8  46 00
        MNV  eP     11 46 10.2
                    BRK  11 45 14.2, 36.6N, 121.2W, H=  6 KM, ML=2.7
                         BEAR VALLEY, CALIFORNIA

JUL 14  WDC  eP     21 42 52.3
        MIN  e(P)   21 43 02
        JAS  eP     21 43 35
        MHC         21 43                         • 43 37
        MNV  eP     21 43 41
        FRI         21 43                         • 43 48
                    USGS 21 40 26.9, 49.1N, 129.6W, H= 10 KM, mb=4.3
                         VANCOUVER ISLAND REGION

JUL 15  BRK         02 20                         pP 20 43
        BKS         02 20                         • 37 18    • 52 14    • 56 34
        MHC  eP     02 20 12.7                    pP 20 44
        PRI  eP     02 20 12.8                    pP 20 44
        WDC  eP     02 20 17                      pP 20 49
        FRI  eP     02 20 17.3                    pP 20 49
        JAS  ePo    02 20 17.5                    pP 20 49
        MNV  ePo    02 20 26.1                    pP 20 58
                    USGS 02 07 40.2, 20.9S, 169.8E, H=121 KM, mb=5.0
                         NEW HEBRIDES ISLANDS

JUL 15  WDC  eP     02 26 02.5
        MIN  eP     02 26 04.9
        MHC  eP     02 26 12.9
        JAS  eP     02 26 15.4
        FRI  eP     02 26 19.2
        PRI  eP     02 26 20.0
        MNV  eP     02 26 20.7
                    USGS 02 12 54.4, 24.1N, 122.2E, H= 33 KM, mb=5.5, Ms=5.7
                         TAIWAN REGION

JUL 15  FRI  eP     04 54 59.2
        PRI         04 55                         • 55 00
        MHC         04 55                         • 55 04
        MNV  eP     04 55 08.1
        JAS  e(P)   04 55 09
        WDC         04 55                         • 55 26
                    USGS 04 44 23.4, 27.6S, 111.7W, H= 33 KM, mb=5.1
                         EASTER ISLAND REGION

JUL 15  PRI  eP     04 56 52.5                    • 57 00
        FRI  ePo    04 56 55.8                    • 57 03
        MHC  eP     04 57 00.6                    • 57 08
        BKS         04 57                         • 06 06    • 06 16    • 13 55
                                                  • 16 51    • 18 12
                              MICRON    PERIOD
                         LZ      0.6       20
                         LN      0.5       20
                         LE      0.1       20
        JAS  ePo    04 57 03.7                    • 57 10
        MNV  iPo    04 57 05.3                    • 57 13
        WDC  ePo    04 57 19.7                    • 57 27
                    USGS 04 46 08.7, 29.4S, 112.3W, H= 33 KM, mb=5.2, Ms=5.6
                         EASTER ISLAND REGION

JUL 15  SAO  iPo    11 32 04.4
        PRI  ePd    11 32 11.2
        MHC  ePd    11 32 15.8                    • 32 27
        FRI  ePo    11 32 21.5
        JAS  ePd    11 32 25.7  32 45
        BKS  eP     11 32 28.5
        MNV  eP     11 32 53.0
                    BRK  11 31 59.1, 36.6N, 121.2W, H=  6 KM, ML=2.8
                         BEAR VALLEY, CALIFORNIA

JUL 16  PRI         11 27                         • 27 59
        MHC         11 27                         • 27 59
        FRI         11 28                         • 28 04
        JAS  eP     11 28 04.9
        WDC  e(P)   11 28 05
        MNV  eP     11 28 15.4
                    USGS 11 16 29.4, 18.7S, 172.8W, H= 51 KM, mb=4.9, Ms=4.6
                         TONGA ISLANDS REGION

JUL 16  FHC  iPo    12 23 07.1
        WDC  iPo    12 23 20.8  23 42
        MIN  eP     12 23 30.5
        MHC  eP     12 23 50.7
        SAO  eP     12 23 57.0
                    BRK  12 22 51.4, 40.4N, 125.0W, H= 24 KM, MAG=3.0
                         OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

JUL 16  PRI         15 28                         • 28 49
        FRI  eP     15 28 54.4
        WDC         15 28                         • 28 55
        JAS  eP     15 28 55.7
        MNV  iPd    15 29 05.5
                    USGS 15 17 11.1, 20.8S, 174.0W, H= 90 KM, mb=4.6
                         TONGA ISLANDS
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JUL 16 FHC  iPe  19 07 22.3
       WDC  iPe  19 07 36.9                 • 08 15      • 09 53      • 10 52
       BKS       19 08                      • 11 38
       MIN  ePe  19 08 18.9
       JAS  iPe  19 08 33.5
       FRI  eP   USGS 19 06 21.3, 43.7N, 127.6W, H= 15 KM, mb=4.6
                 OFF COAST OF OREGON

JUL 16 FRI  eP   23 50 42.1
       BKS       23 50                      • 50 43      • 50 55      • 01 00
       MHC  eP   23 50 43.2                 • 02 30      • 12 38      • 16 42
       WDC  eP   23 50 47.3
       FRI  eP   23 50 48.4                 • 51 00
       JAS  ePe  23 50 51.5                 • 51 04      • 51 21
       WDC  iPe  23 50 52.7
       MIN  eP   23 50 56.7
       MNV  iPe  USGS 23 38 21.4, 27.5S, 176.7W, H= 33 KM, mb=5.5, Ms=4.6
                 KERMADEC ISLANDS REGION

JUL 17 SAO  eP   12 11 39.8
       BKS  e(P) 12 11 41
       MHC  eP   12 11 41.3
       PRI  eP   12 11 41.4
       FRI  eP   12 11 46.6
       JAS  iPe  12 11 46.9
       WDC  ePe  12 11 48.0
       MIN  eP   12 11 50.0
       MNV  iPe  12 11 56.5
                 USGS 12 00 48.4, 17.9S, 178.6W, H=596 KM, mb=4.8
                 FIJI ISLANDS REGION

JUL 18 PRI  eP   18 43 20.5                 • 43 22
       SAO       18 43
       MHC  eP   18 43 20.7
       FHC  eP   18 43 24.0
       FRI  eP   18 43 26.2
       JAS  eP   18 43 26.9
       WDC  eP   18 43 28.0
       MIN  e(P) 18 43 30
       MNV  eP   18 43 37.0
                 USGS 18 31 52.2, 15.6S, 175.5W, H= 33 KM, mb=5.2, Ms=5.0
                 TONGA ISLANDS

JUL 18 FHC  iPe  21 49 49.5
       WDC  iPe  21 50 04.3
       MIN  iPe  21 50 14.4
       BKS  eP   21 50 22.7  51 02
       MHC  eP   21 50 33.0  51 19
       JAS  eP   21 50 38.6                 • 51 18      • 51 32
       SAO  eP   21 50 38.8
       FRI  e(P) 21 50 53
       MNV  eP   21 50 57.6
                 BRK  21 49 25.5, 40.4N, 125.8W, H= 10 KM, ML=4.7
                 OFF THE COAST WEST-SOUTHWEST OF EUREKA, CALIFORNIA

JUL 18 WDC  iPd  21 52 10.6  52 26
       JAS  eP   21 52 44.6
       SAO  eP   21 52 47.0
                 BRK  21 51 33.7, 40.4N, 125.5W, H=  2 KM, ML=3.8
                 OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

JUL 19 WDC  ePe  17 25 53                   • 26 29
       JAS       17 26

JUL 19 BKS  iPe  23 50 36.3  50 39
       MHC  iPd  23 50 45.4  50 54
       JAS  iPe  23 50 53.3  51 09
       SAO  ePd  23 50 53.8
                 BRK  23 50 32.1, 38.0N, 122.1W, H= 14 KM, ML=3.2
                 CONCORD, CALIFORNIA

JUL 20 FHC  e(P)  10 43 32
       WDC  ePe  10 43 39.7
       MIN  eP   10 43 45.0
       JAS  ePe  10 44 03.2
       FRI  e(P) 10 44 11
       PRI  e(P) 10 44 12
       MNV  eP   10 44 12.0
                 USGS 10 36 05.8, 51.6N, 179.5W, H= 33 KM, mb=4.7
                 ANDREANOF ISLANDS, ALUETIAN ISLANDS

JUL 20 FHC  eP   13 30 18.4                 PcP 33 28
       WDC  eP   13 30 26.4                 PcP 33 30
       MIN  eP   13 30 32.5
       BRK  e(P) 13 30 44
       MHC  eP   13 30 50.1                 PcP 33 37
       JAS  eP   13 30 52.4                 PcP 33 38
       MNV  eP   13 31 01                   PcP 33 41
       FRI  eP   13 31 02.2                 PcP 33 40
       PRI       13 31                      e 31 03
                 USGS 13 24 25.9, 54.6N, 161.6W, H= 53 KM, mb=5.3
                 ALASKA PENINSULA

JUL 21 WDC  eP   02 24 35.4
       MHC  eP   02 24 37.6
       JAS       02 24                     e 24 42
       FRI  eP   02 24 43.8
                 USGS 02 11 28.8,  5.9S, 147.6E, H=107 KM, mb=5.4
                 EAST PAPUA, NEW GUINEA REGION

JUL 21 FHC  eP   02 25 37.2
       MIN  eP   02 25 50.8
       JAS  eP   02 26 12.1
       FRI  e(P) 02 26 21
                 USGS 02 20 05.3, 56.4N, 157.2W, H= 91 KM, mb=4.4
                 ALASKA PENINSULA

JUL 21 BRK  eP   07 13 34.0
       SAO  eP   07 13 35.0
       MHC  ePe  07 13 36.0
       FHC  ePe  07 13 36.4
       PRI  eP   07 13 37.0
       WDC  ePe  07 13 40.1
       JAS  iPe  07 13 41.1
       FRI  ePe  07 13 41.5
       MIN  eP   07 13 42.1
       MNV  iPe  07 13 49.9
                 USGS 07 01 21.7, 18.7S, 169.2E, H=233 KM, mb=5.1
                 NEW HEBRIDES ISLANDS

JUL 21 PRI        12 12                     e 12 02
       MHC  e(PKP) 12 11 57                 e 12 03
       BKS  ePKP  12 11 58    20 43    Pdif 08 08    PP 12 54    SKS 18 18
                                         PS 22 30    e 28 44     SS 29 15
                                        SSS 32 25    Lq 39 42    Lr 44 44

                          MICRON   PERIOD
                     LZ     33       20
                     LN     20       20
                     LE     18       20
       FHC  e(PKP) 12 11 59                 e 12 06   PKKP 22 39
       FRI  ePKP   12 11 58.5               e 12 04     PP 12 57   PKKP 22 42
       JAS  ePKPe  12 12 00.4            Pdif 08 40    e 12 05     PP 12 58
                                         PKKP 22 38    e 25 45
       WDC  ePKP   12 12 00.6            Pdif 08 41    i 12 06     PP 13 02
                                         PKKP 22 48    e 22 55
       MIN  ePKP   12 12 00.5               e 12 06
       MNV  ePKPe  12 12 02.6            Pdif 08 46    i 12 08     PP 13 03
                                         PKKP 22 35
                 Ms=6.8, DISTANCE=113.5°
                 USGS 11 53 22.5, 53.9S, 158.6E, H= 33 KM, mb=6.4, Ms=6.7
                 MACQUARIE ISLANDS REGION

JUL 21 FHC  ePe  13 59 20.0
       WDC  iPe  13 59 24.1
       MIN  eP   13 59 27.0                 • 02 43      PP 03 24     • 12 07
       BKS  ePe  13 59 31.2              PKPPKP 24 24
                                            • 03 30
                                         PP 04 00     SKS 10 09     PS 12 16
                                         SS 16 56     • 18 00     SSS 21 24
                                         Lq 27 00     Lr 31 05

                          MICRON   PERIOD
                     PZ     0.04      0.8
                     LZ     60       20
                     LN     16       20
                     LE     23       20
       MHC  eP   13 59 34.2
       JAS  eP   13 59 36.5
                                            • 02 54     PP 03 38     • 08 08
       PRI  eP   13 59 40                PKKP 16 23   PKPPKP 24 12
       FRI  eP   13 59 40.8
       MNV  eP   13 59 42.6                 • 02 57
                                            • 02 59 PKPPKP 23 56
                 Ms=6.7, DISTANCE=99°
                 USGS 13 45 54.0, 16.9N, 122.4E, H= 33 KM, mb=6.1, Ms=6.9
                 LUZON, PHILIPPINE ISLANDS

JUL 22 PRI  eP   00 32 17.7
       MHC  eP   00 32 18.6
       FRI  eP   00 32 22.1
       JAS  eP   00 32 23.0
       FHC  eP   00 32 23.2
       WDC  eP   00 32 25.9
       MNV  iPd  00 32 31.0
                 USGS 00 20 27.1, 30.8S, 178.8E, H=558 KM, mb=4.8
                 KERMADEC ISLANDS REGION

JUL 22 SAO  eP   17 29 32.3
       PRI  ePe  17 29 33.3
       BKS  ePe  17 29 34.4                 • 29 46      • 39 55      • 40 26
                                            • 41 28     Lq 52 56     Lr 56 50

                          MICRON   PERIOD
                     PZ     0.19      1.3
                     LZ     6        20
                     LN     4.3      20
                     LE     3.4      20
       MHC  ePe  17 29 34.4
       FRI  ePe  17 29 37.7
       JAS  iPe  17 29 39.0
       WDC  iPe  17 29 42.2                SKS 40 12
       MIN  ePe  17 29 43.3
       MNV  ePe  17 29 46.5
                 Ms=6.0, DISTANCE=84°
                 USGS 17 16 40.3, 33.8S, 179.7W, H= 31 KM, mb=6.0, Ms=5.9
                 SOUTH OF KERMADEC ISLANDS

JUL 23 WDC  eP   13 51 01.5
       MIN  eP   13 51 07.3
       BRK  e(P) 13 51 18
       JAS  ePd  13 51 27.7
       MNV  ePd  13 51 36.2
       FRI  eP   13 51 36.7
       PRI  eP   13 51 38
                 USGS 13 44 54.6, 54.3N, 162.4W, H= 27 KM, mb=5.1, Ms=4.4
                 ALASKA PENINSULA

JUL 23 FHC  iPe  23 48 58.3  49 08
       WDC  iPe  23 49 13.6  49 36
       MIN  eP   23 49 23.6
       BKS  e(P) 23 49 44
       MHC  e(P) 23 49 52
       JAS  ePe  23 49 55.3
       SAO  eP   23 50 00.4
       MNV  e(P) 23 50 10
                 BRK  23 48 43.7, 41.3N, 124.8W, H= 13 KM, ML=3.7
                 OFF THE COAST NORTHWEST OF EUREKA, CALIFORNIA

JUL 24 PRI  iPd  03 18 59.7
       SAO  eP   03 19 07.0
       FRI  iPe  03 19 10.1
       MHC  e(P) 03 19 16
       JAS  ePe  03 19 19.5  19 39
       MNV  eP   03 19 43
                 BRK  03 18 54.1, 36.4N, 120.7W, H=  3 KM, ML=2.6
                 NORTHEAST OF KING CITY, CALIFORNIA

JUL 24 SAO        06 34                     e 34 10
       PRI  eP   06 34 09.4
       MHC  eP   06 34 09.7
       BKS  ePe  06 34 10.4  43 32          e 35 06     e 44 04     e 47 44
                                            Lq 52 08    Lr 54 24

                          MICRON   PERIOD
                     PZ     3.3       8.0
                     LZ     21       20
                     LN     13       20
                     LE     16       20
       FHC  ePe  06 34 14.2
       FRI  eP   06 34 15.2
       JAS  ePe  06 34 16.0             PKPPKP 02 00
       WDC  ePe  06 34 18.0             PKPPKP 02 00
       MIN  eP   06 34 19.7
       MNV  eP   06 34 26.0
                 Ms=6.3, DISTANCE=72°
                 USGS 06 22 51.3, 15.3S, 173.2W, H= 33 KM, mb=6.0, Ms=6.2
                 TONGA ISLANDS

JUL 24 FHC  ePd  20 06 56.7                  pP 08 30
       WDC  ePd  20 07 01.7                  pP 08 33
       MIN  ePd  20 07 05.0
       BKS  eP   20 07 06.6  16 39          e 07 38     pP 08 45     e 09 23
                                            e 17 40     e 18 28     e 20 10
                                            Lq 31 00    Lr 32 16

                          MICRON   PERIOD
                     PZ     0.05      1.0
       MHC  eP   20 07 10.2
       SAO  eP   20 07 11.3                 pP 08 48    SKS 16 53
       JAS  iPd  20 07 13.7
       PRI  eP   20 07 16.5                 pP 08 54
       FRI  ePd  20 07 18.0                 pP 08 56
       MNV  iPd  20 07 21.8
                 USGS 19 55 36.8, 19.5N, 144.7E, H=409 KM, mb=5.4
                 MARIANA ISLANDS

JUL 25 MNV  ePe  04 58 56.5                  e 59 07
       FRI  eP   04 59 00.4
       JAS  ePe  04 59 08.4
       MIN  ePe  04 59 22.0                  e 59 26
       WDC       04 59
                 USGS 04 51 40.6, 17.9N,  81.7W, H= 33 KM, mb=4.9, Ms=4.0
                 CARIBBEAN SEA

JUL 25 PRI  eP   10 18 09.9
       FRI  eP   10 18 13.4
       MHC  eP   10 18 18.2
       JAS  ePd  10 18 20.7
       MNV  ePd  10 18 22.8
       WDC  eP   10 18 37.5
                 EASTER ISLANDS REGION

JUL 25 PRI  eP   13 11 01.4
       MHC  eP   13 11 02.0
       FRI  eP   13 11 06.2
       JAS  eP   13 11 07.0
       WDC  eP   13 11 09.2
       MNV  eP   13 11 15.1
                 USGS 12 59 26.8, 25.5S, 179.5E, H=510 KM, mb=4.9
                 SOUTH OF FIJI ISLANDS

JUL 25 MNV  iPd  18 51 22.2
       PRI  eP   18 51 22.2
       FRI  eP   18 51 23.2
       JAS  iP   18 51 27.9                  e 52 52     e 54 28
       BKS       18 51
       MIN  eP   18 51 40.8
       WDC  eP   18 51 42.1
                 USGS 18 39 31.2, 24.5S,  68.8W, H= 73 KM, mb=4.8
                 CHILE-ARGENTINA BORDER REGION
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JUL 25  FBC  eP   21 39 48.2
        WDC  eP   21 40 07.9
        MIN  eP   21 40 28.5                  • 42 28      • 44 00      • 44 28
        BKS       21 40                       • 45 38      • 46 06      • 46 50
        JAS  eP   21 40 48.3                  • 41 03
        MNV       21 41
        FRI  eP   21 41 02.5
                  USGS 21 38 39.6, 44.0N, 128.6W, H= 15 KM, mb=4.1
                       OFF COAST OF OREGON

JUL 26  FBC  eP   04 36 10.5
        WDC  eP   04 36 17.0
        MIN  eP   04 36 21.1
        JAS  eP   04 36 34.2
        FRI  eP   04 36 39.4
        MNV  eP   04 36 41.4
                  USGS 04 25 17.3, 39.8N, 141.2E, H=100 KM, mb=4.7
                       HONSHU, JAPAN

JUL 26  MNV  eP   07 55 15.1
        JAS  eP   07 55 19.2
        WDC  eP   07 55 32.8
                  NORTHERN ARGENTINA REGION

JUL 26  FRI  eP   10 39 24.0                  • 39 36
        JAS  eP   10 39 24.9                  • 39 36
        WDC  eP   10 39 27.2                  • 39 38
        MNV  eP   10 39 35.3                  • 39 46
                  USGS 10 27 59.9, 16.2S, 172.3W, H= 41 KM, mb=4.8
                       SAMOA ISLANDS REGION

JUL 26  WDC  eP   17 10 56.7
        MIN  eP   17 10 59
        MNV  eP   17 11 14.3
        JAS  eP   17 11 15.3
        MHC  eP   17 11 18.0
        FRI  eP   17 11 21.2
                  USGS 16 59 57.6, 69.5N,  90.6E, H=  0 KM, mb=4.9
                       CENTRAL SIBERIA

JUL 26  PRI  iPo  21 42 21.7  42 26
        SAO  iPo  21 42 36.0
        FRI  ePo  21 42 37.7
        MHC  eP   21 42 44.2
        JAS  iPo  21 42 50.3  43 17
        BKS  ePd  21 42 54.7  43 24
                  BRK  21 42 16.3, 36.9N, 120.5W, H=  7 KM, ML=3.5
                       NORTH-NORTHEAST OF SAN LUIS OBISPO, CALIFORNIA

JUL 27  PRI  eP   03 06 33.8
        FRI  eP   03 06 39.7
        JAS  eP   03 06 40.2
        WDC  eP   03 06 42.1
        MIN  eP   03 06 44.6
        MNV  eP   03 06 50.3
                  USGS 02 55 08.5, 17.1S, 173.4W, H= 46 KM, mb=4.8
                       TONGA ISLANDS

JUL 27  JAS  eP   08 21 22.0
        WDC  ePo  08 21 24.3                  • 21 35
        MIN  eP   08 21 26.2
        MNV  eP   08 21 32.3                  • 21 42
                  USGS 08 09 58.8, 15.8S, 171.9W, H= 33 KM, mb=4.6
                       SAMOA ISLANDS REGION

JUL 27  SAO  eP   08 22 07.5
        BKS  eP   08 22 09.3
        MHC  eP   08 22 09
        FHC  eP   08 22 13
        FRI  eP   08 22 14
        JAS  eP   08 22 14
        WDC  eP   08 22 15
        MIN  eP   08 22 18
        MNV  eP   08 22 23
                  USGS 08 11 00.5, 20.9S, 178.8W, H=570 KM, mb=5.1
                       FIJI ISLANDS REGION

JUL 27  SAO  iP   11 10 50.0
        MHC  iPd  11 10 56.0
        PRI  ePd  11 11 06.2
        BKS  ePc  11 11 07.2  11 24
        JAS  ePd  11 11 10.2
        FRI  eP   11 11 11.1
                  BRK  11 10 46.8, 36.9N, 121.5W, H=  7 KM, ML=3.2
                       NORTHWEST OF HOLLISTER, CALIFORNIA

JUL 27  FHC  iPo  17 28 35.3
        WDC  iPc  17 28 40.5
        MIN  eP   17 28 43.9
        BKS  ePc  17 28 46.5
                            MICRON    PERIOD
                       PZ     0.08       0.9
        MHC  ePc  17 28 49.8
        SAO  eP   17 28 50.9
        JAS  iPo  17 28 53.1
        PRI  ePo  17 28 56.3
        FRI  ePo  17 28 57.6
        MNV  ePo  17 29 01.0
                  USGS 17 17 05.2, 21.6N, 142.9E, H=302 KM, mb=5.1
                       MARIANA ISLANDS REGION

JUL 27  MHC  iPo  21 51 25.6
        BKS  iPd  21 51 28.7  51 36
        SAO  eP   21 51 32.0
        JAS  iPo  21 51 43.4                  i 52 00
        PRI  e(P) 21 51 47
        FRI  ePc  21 51 49.8
        MIN  e(P) 21 52 08
                  BRK  21 51 17.4, 37.3N, 122.1W, H=  9 KM, ML=3.5
                       LOS ALTOS, CALIFORNIA

JUL 28  MNV  iPo  14 07 36.6                  i 07 59
        FRI  eP   14 07 48.5
        JAS  eP   14 07 57.2
        PRI  e(P) 14 08 02
        MHC  e(P) 14 08 11
                  MAG=3.7, NUCLEAR EXPLOSION, NEVADA TEST SITE
                  USGS 14 07 00.2, 37.1N, 116.1W, H=  5 KM
                       SOUTHERN NEVADA

JUL 28  FHC  ePd  15 23 33.6
        WDC  iPc  15 23 49.3                  • 25 12
        MIN  eP   15 23 59.6                  • 24 27      • 27 11
        BKS  iPd  15 24 15.6  25 38
                            MICRON    PERIOD
                       PZ     0.08       1.2
        MHC  eP   15 24 25.1
        JAS  eP   15 24 29.8
        SAO       15 24                       • 24 32
        PRI       15 24                       • 24 46
        MNV       15 24                       • 24 54
                  USGS 15 22 18.5, 44.2N, 129.0W, H= 15 KM, mb=5.1, Ms=5.4
                       OFF COAST OF OREGON

JUL 29  FHC  eP   11 28 36.3
        BKS  eP   11 28 39.2                  • 28 47      • 28 59
                                              • 39 12      • 44 08      • 49 18
                                        Lr 55 00                   Lq 49 00
                            MICRON    PERIOD
                       PZ     0.03       0.7
                       LZ       70         20
                       LN       50         20
                       LE       50         20
        WDC  eP   11 28 40.1                  • 32 21
        MHC  eP   11 28 41.4
        MIN  eP   11 28 43.1
        SAO  eP   11 28 43.3
        PRI  eP   11 28 44.5
        JAS  eP   11 28 45.7
        FRI  eP   11 28 47.7
        MNV  eP   11 28 54.2
                  Ms=7.0, DISTANCE=84°
                  USGS 11 15 45.3,  8.0S, 155.5E, H= 33 KM, mb=6.4, Ms=7.2
                       SOLOMON ISLANDS

JUL 29  FRI  eP   17 02 44.2                  pP 03 18
        JAS  eP   17 02 45.0                  pP 03 19
        WDC  eP   17 02 47.1                  pP 03 20
        MNV  ePd  17 02 55.0                  pP 03 28
                  USGS 16 51 06.0, 19.5S, 175.0W, H=129 KM, mb=5.1
                       TONGA ISLANDS

JUL 29  PRI  eP   20 06 45.5
        FRI  eP   20 06 47.9
        MNV  eP   20 06 56
        MHC  eP   20 06 56.4
        JAS  eP   20 06 56.7
        BKS       20 06                       • 13 48      • 18 27      • 19 36
                            MICRON    PERIOD
                       LZ       2.5        20
                       LN       2.2        20
                       LE       0.7        20
        WDC  eP   20 07 20
                  USGS 19 58 47.4,  4.6S, 105.6W, H= 33 KM, mb=4.7
                       NORTHERN EASTER ISLAND CORDILLERA

JUL 30  FRI  eP   05 57 59
        PRI  eP   05 58 00.2                  pP 58 14
        MNV  eP   05 58 01.9                  pP 58 14
        JAS  ePo  05 58 05.9                  pP 58 19
        MHC  eP   05 58 07.6                  pP 58 21
        MIN  eP   05 58 17                    pP 58 30
        WDC  e(P) 05 58 18                    pP 58 32
                  USGS 05 45 47.4, 30.7S,  71.4W, H= 45 KM, mb=5.2, Ms=5.2
                       NEAR COAST OF CENTRAL CHILE

JUL 30  MHC  e(P) 14 13 06                    pP 13 16
        WDC  e(P) 14 13 07                    pP 13 17
        JAS  eP   14 13 10.3                  pP 13 20
        FRI  eP   14 13 12.5                  pP 13 22
        MNV  e(P) 14 13 20                    pP 13 30
                  USGS 14 00 25.8, 10.6S, 161.5E, H= 34 KM, mb=5.0
                       SOLOMON ISLANDS

JUL 30  SAO  iPd  16 35 41.6
        MHC  iPd  16 35 47.1
        PRI  ePo  16 35 57.0
        BKS  eP   16 35 58.5  36 15
        JAS  ePd  16 36 01.2
        FRI  iPo  16 36 02.4
                  BRK  16 35 38.1, 36.9N, 121.5W, H=  8 KM, ML=3.8
                       NORTHWEST OF HOLLISTER, CALIFORNIA

JUL 31  JAS  eP   01 19 15
                  USGS 01 08 40.0, 21.3N,  47.2W, H= 33 KM, mb=4.8
                       NORTH ATLANTIC RIDGE

AUG 01  WDC  eP   10 33 52.7                  pP 34 06
        JAS  eP   10 33 52.8                  pP 34 05
        FRI  eP   10 33 53.0                  pP 34 06
        MIN       10 34                       pP 34 08
        MNV  eP   10 34 01.0                  pP 34 14
                  USGS 10 20 58.4, 23.3S, 170.3E, H= 24 KM, mb=5.2
                       LOYALTY ISLANDS REGION

AUG 01  BKS  ePd  13 45 20.5                  pP 45 49
                            MICRON    PERIOD
                       PZ     0.11       1.0
        SAO  ePd  13 45 20.5
        MHC  ePd  13 45 21.8
        FHC  ePd  13 45 22.6
        PRI  ePd  13 45 22.6
        WDC  iPd  13 45 26.1                  pP 45 55
        JAS  ePd  13 45 26.7                  pP 45 56
        FRI  ePd  13 45 27.0                  pP 45 56
        MIN  ePd  13 45 28.1
        MNV  iPd  13 45 35.5                  pP 46 04
                  USGS 13 32 48.8, 20.5S, 169.6E, H=108 KM, mb=5.5
                       NEW HEBRIDES ISLANDS

AUG 01  SAO  eP   19 22 56.0
        BKS  ePd  19 22 57.0
                            MICRON    PERIOD
                       PZ     0.07       0.9
        PRI  eP   19 22 57.6
        MHC  eP   19 22 57.8
        FRI  eP   19 23 02.7
        JAS  iPd  19 23 03.3
        WDC  iPd  19 23 04.7
        MIN  eP   19 23 06.8
        MNV  iPd  19 23 12.2
                  USGS 19 11 57.4, 20.0S, 178.2W, H=599 KM, mb=5.3
                       FIJI ISLANDS REGION

AUG 01  FHC  iPo  20 58 57.2
        WDC  iPo  20 59 12.0  59 37
        MIN  iPo  20 59 21.9  59 56
        BKS  e(P) 20 59 31
        JAS  iPc  20 59 47.1                  i 00 40
        FRI  iP   21 00 01.4
                  BRK  20 58 34.8, 40.4N, 125.6W, H=  13 KM, MAG=3.9
                       OFF THE COAST WEST-SOUTHWEST OF EUREKA, CALIFORNIA

AUG 02  PRI  eP   00 27 03.1
        FRI  eP   00 27 08.1
        JAS  iPo  00 27 08.7
        WDC  eP   00 27 09.5
        MIN  eP   00 27 11.5
        MNV  iPo  00 27 18.2
                  USGS 00 16 06.3, 17.7S, 178.8W, H=552 KM, mb=4.8
                       FIJI ISLANDS REGION

AUG 02  BKS  ePd  02 31 44.8  31 46
        MHC  iPc  02 31 58.7  32 11                i 32 13
        JAS  eP   02 32 09.9                       i 32 28      i 32 32
                  BRK  02 31 43.5, 37.9N, 122.3W, H=  3 KM, ML=2.8
                       NORTH-NORTHWEST OF BERKELEY, CALIFORNIA

AUG 02  WDC  ePo  20 05 49.6
        MIN  eP   20 05 53.2
        BKS  e(P) 20 05 57
                            MICRON    PERIOD
                       PZ     0.03       0.9
        MHC  eP   20 06 00.5
        JAS  e(P) 20 06 04
        PRI  eP   20 06 07.8
        FRI  eP   20 06 08.8
        MNV  ePo  20 06 11.2
                  USGS 19 54 00.6, 27.4N, 142.0E, H= 33 KM, mb=5.0
                       BONIN ISLANDS REGION
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AUG 03  SAO  eP     11 12 16.1
        PRI  eP     11 12 17.5
        BKS  e(P)   11 12 18
                       MICRON     PERIOD
                  PZ     0.02       0.8
        MHC  eP     11 12 18.2
        FRI  eP     11 12 22.8
        FHC  e(P)   11 12 23
        JAS  ePd    11 12 23.7              • 12 28
        WDC  ePd    11 12 26.4              • 12 31
        MIN  eP     11 12 28.0
        MNV  ePd    11 12 33.0              • 12 38
                    USGS 11 00 25.1, 23.0S, 176.3W, H=115 KM, mb=4.8
                         SOUTH OF FIJI ISLANDS

AUG 03  FHC  ePc    12 15 00.9
        WDC  iPo    12 15 07.1
        MIN  eP     12 15 11.4
        BKS  eP     12 15 20.0
                       MICRON     PERIOD
                  PZ     0.04       0.9
        MHC  eP     12 15 25.1
        JAS  iPo    12 15 27.7
        SAO  eP     12 15 28.0
        FRI  eP     12 15 34.1
        MNV  iPo    12 15 34.6
        PRI  eP     12 15 34.9
                    USGS 12 05 41.6, 50.1N, 154.6E, H=156 KM, mb=4.9
                         KURIL ISLANDS

AUG 03  FRI  eP     14 39 54.0
        JAS  ePo    14 39 59.5              • 40 08
        MHC  e(P)   14 40 01
        WDC  ePo    14 40 13.0              • 40 22
        FHC  e(P)   14 40 20
                    USGS 14 27 32.2, 31.7S,  69.3W, H= 48 KM, mb=5.1, Ms=3.9
                         SAN JUAN PROVINCE, ARGENTINA

AUG 04  FRI  ePKP   01 29 50.6          PKKP 39 56
        MNV  ePKP   01 29 51.5          PKKP 39 55
        PRI  ePKP   01 29 51.5          PKKP 39 57
        SAO  e(PKP) 01 29 52
        JAS  iPKPc  01 29 53.2          pPKP 30 22   PKKP 39 52
        MHC  ePKPc  01 29 54.0          pPKP 30 22   PKKP 39 52
        BKS  ePKP   01 29 54.8          pPKP 30 24
                       MICRON     PERIOD
                  PKPZ   0.19       0.9
        MIN  ePKP   01 29 57 3
        WDC  ePKPc  01 29 58.1          pPKP 30 25
        FHC  ePKP   01 30 01.0
                    USGS 01 11 11.3, 56.0S,  27.8W, H=112 KM, mb=6.1
                         SOUTH SANDWICH ISLANDS REGION

AUG 04  FRI  ePKPc  01 33 14
        PRI  ePKP   01 33 14.1
        MNV  ePKP   01 33 14.4
        SAO         01 33                   • 33 17
        JAS  ePKP   01 33 16.2
        MHC  ePKPc  01 33 16.8
        BKS  ePKP   01 33 18
                       MICRON     PERIOD
                  PKPZ   0.06       1.1
        MIN  ePKP   01 33 20
        WDC  ePKP   01 33 21.7
        FHC         01 33                   • 33 24
                    SOUTH SANDWICH ISLANDS REGION

AUG 04  FRI         06 57                   • 57 44
        PRI  eP     06 57 44.6
        JAS  eP     06 57 50.2
        MHC  eP     06 57 52.0
        WDC  eP     06 58 04.5
        FHC  eP     06 58 10.9
                    USGS 06 45 39.0, 28.4S,  71.3W, H= 33 KM, mb=4.9, Ms=4.3
                         NEAR COAST OF CENTRAL CHILE

AUG 04  MNV  ePc    13 28 08.4          PcP 30 25    ScP 34 12
        FRI  ePc    13 28 08.6          PcP 30 25    ScP 34 12
        PRI  eP     13 28 12            PcP 30 26    ScP 34 14
        JAS  ePc    13 28 17.7          PcP 30 28    ScP 34 16
        SAO         13 28               PcP 30 29
        MHC  ePc    13 28 22.6          PcP 30 30
        BKS  eP     13 28 28   34 30     PcP 30 32      • 40 30      • 42 00
                       MICRON     PERIOD
                  PZ     0.03       1.2
                  LZ     3.9       20
                  LN     3.9       20
                  LE     5         20
        MIN  ePc    13 28 34.4          PcP 30 34
        WDC  eP     13 28 38.2          PcP 30 36
        FHC  ePc    13 28 49.5          PcP 30 41
                    Ms=5.4, DISTANCE=38°
                    USGS 13 20 52.5, 12.3N,  87.3W, H= 33 KM, mb=5.4, Ms=5.0
                         NEAR COAST OF NICARAGUA

AUG 04  MNV  iPc    16 40 37.2
        FRI  iPc    16 40 48.8
        JAS  iPc    16 40 57.8
        PRI  iPc    16 41 01.5
        SAO  iPc    16 41 08.0
        MHC  ePc    16 41 10.6
        BKS  eP     16 41 16.9              • 41 28
        MIN  eP     16 41 23.6
        WDC  iPc    16 41 33.2
                    ML=5.0, NUCLEAR EXPLOSION, NEVADA TEST SITE
                    USGS 16 40 00.1, 37.1N, 116.0W, H=  0 KM, mb=5.0, Ms=5.7
                         SOUTHERN NEVADA (NTS)

AUG 05  MHC         01 29                   • 29 40
        JAS  eP     01 29 43.2
        MNV  eP     01 29 45.5
        WDC  eP     01 30 00.2
                    USGS 01 19 06.9, 26.7S, 114.3W, H= 33 KM, mb=4.7
                         EASTER ISLAND REGION

AUG 06  SAO  eP     05 38 42.6
        PRI  ePc    05 38 43.4
        BKS  eP     05 38 43.8              • 38 46
                       MICRON     PERIOD
                  PZ     0.06       1.0
        MHC  ePc    05 38 44.6
        FRI  eP     05 38 49.2
        FHC  ePc    05 38 49.3
        JAS  iPc    05 38 49.8
        WDC  iPc    05 38 52.4
        MIN  eP     05 38 54.1
        MNV  ePc    05 38 59.5
                    USGS 05 26 56.0, 22.2S, 176.0W, H=122 KM, mb=5.1
                         SOUTH OF FIJI ISLANDS

AUG 06  MIN  iPc    10 35 45.9
        WDC  iPc    10 35 52.1
        BKS  eP     10 35 56.6   36 16
        JAS  ePd    10 35 58.0
        SAO  e(P)   10 36 12
                    BRK  10 35 27.9, 39.4N, 121.5W, H= 14 KM, ML=3.1
                         SOUTH OF OROVILLE, CALIFORNIA

AUG 06  WDC  eP     11 38 58.5
        BKS         11 39                   • 06 20
                       MICRON     PERIOD
                  LZ     0.8       20
        JAS         11 39                   • 39 02
        MNV  eP     11 39 11.0
                    USGS 11 26 12.2,  7.1S, 155.8E, H= 83 KM, mb=5.4
                         SOUTHERN SOLOMON ISLANDS

AUG 06  MHC  eP     12 04 26.0
        FRI  eP     12 04 31.3
        JAS  ePc    12 04 32.0
        WDC  ePc    12 04 34.3
        MIN  eP     12 04 36.1
        MNV  ePc    12 04 41.7
                    USGS 11 52 50.6, 18.6S, 174.1W, H= 44 KM, mb=5.2, Ms=4.6
                         TONGA ISLANDS

AUG 07  BKS  eP     01 57 36    09 08       • 09 00      • 11 02      • 14 56
                                            Lq 19 30     Lr 22 50
                       MICRON     PERIOD
                  LZ     6         20
                  LN     2.7       20
                  LE     4.1       20
        WDC  eP     01 57 40
        JAS  e(P)   01 57 42
        FRI  e(P)   01 57 43
        MNV  eP     01 57 50
                    Ms=5.8, DISTANCE=84°
                    USGS 01 45 09.3, 12.4S, 166.3E, H= 36 KM, mb=5.2, Ms=5.7
                         SANTA CRUZ ISLANDS

AUG 07  JAS  eP     02 20 45.7
        WDC  eP     02 20 46.5
        MNV  eP     02 20 54.5

AUG 07  MNV  iPc    07 16 09.2          PcP 17 57    ScP 21 49
        FRI  eP     07 16 09.9          PcP 17 57
        PRI  eP     07 16 13.0          PcP 18 00
        JAS  ePc    07 16 18.5          PcP 18 01    ScP 21 55
        SAO  e(P)   07 16 20
        MHC  eP     07 16 23.4
        BKS  eP     07 16 29.0  23 20     • 16 32    PcP 18 06      • 23 25
                                          • 24 28    Lq 29 12       Lr 30 40
                       MICRON     PERIOD
                  PZ     0.02       0.8
                  LZ     6         20
                  LN     5         20
                  LE     9         20
        MIN  eP     07 16 33.7          PcP 18 07
        WDC  ePc    07 16 37.6          PcP 18 09    ScP 22 05
        FHC  ePc    07 16 48.6          PcP 18 15
                    Ms=5.8, DISTANCE=48°
                    USGS 07 08 05.6,  8.6N,  82.8W, H= 33 KM, mb=5.2, Ms=5.7
                         PANAMA-COASTA RICA BORDER REGION

AUG 07  FRI  eP     07 53 27.5              • 53 41
        JAS  eP     07 53 27.7              • 53 42
        FHC  e(P)   07 53 28
        WDC  eP     07 53 31.0              • 53 45
        MNV  eP     07 53 35.8              • 53 50
                    USGS 07 41 13.9, 29.1S, 177.8W, H=224 KM, mb=4.5
                         KERMADEC ISLANDS

AUG 07  MHC  eP     16 58 23.5
        FRI  eP     16 58 28.0
        JAS  ePc    16 58 29.1              • 58 41
        WDC  eP     16 58 31.9              • 58 44
        MNV  ePc    16 58 38.3              • 58 50
                    USGS 16 46 24.7, 23.0S, 175.0W, H= 33 KM, mb=5.0
                         TONGA ISLANDS REGION

AUG 07  FHC  iPo    23 33 53.5          ScP 39 44
        WDC  iPo    23 34 01.5          pP 34 30     ScP 39 47
        MIN  iPo    23 34 06.9
        BKS  ePc    23 34 16.3
                       MICRON     PERIOD
                  PZ     0.08       0.5
        MHC  ePc    23 34 22.2
        JAS  iPo    23 34 25.5          pP 34 54     PcP 36 02      ScP 39 58
        SAO  eP     23 34 25.7
        FRI  ePc    23 34 33.5          ScP 40 02
        PRI  ePc    23 34 33.8
        MNV  iPc    23 34 34.2          pP 35 02     ScP 40 02
                    USGS 23 26 53.5, 52.3N, 176.3W, H=125 KM, mb=5.3
                         ANDREANOF ISLANDS, ALEUTIAN ISLANDS

AUG 08  MNV  iPc    04 51 58.6
        FRI  iPc    04 52 10.4
        JAS  iPo    04 52 17.4  52 48
        PRI  eP     04 52 26
        SAO  eP     04 52 30.5
        MHC  eP     04 52 31.5
        BKS  iPd    04 52 41.2              • 52 45      • 53 40
                    BRK  04 51 40.9, 37.5N, 117.7W, H= 23 KM, ML=4.2
                         EAST OF BISHOP, CALIFORNIA

AUG 08  MNV  ePc    07 08 46.0
        JAS  ePc    07 08 56.0
        BKS         07 08                   • 27 30
        WDC  e(P)   07 09 17
        FHC  ePc    07 09 24.2
                    USGS 07 00 06.3,  6.9N,  77.8W, H= 33 KM, mb=5.2, Ms=4.6
                         NEAR WEST COAST OF COLOMBIA

AUG 08  FHC  eP     13 11 22.5
        BKS  eP     13 11 23.5  21 48     • 11 34      • 22 33      Lq 33 50
                                          Lr 37 30
                       MICRON     PERIOD
                  PZ     0.06       0.8
                  LZ     2.3       20
                  LN     1.1       20
                  LE     1.6       20
        SAO  eP     13 11 25.2
        MHC  eP     13 11 25.8
        WDC  iPo    13 11 26.8              • 11 38
        PRI  ePc    13 11 28.5
        MIN  eP     13 11 29.2
        JAS  iPd    13 11 30.6              • 11 41
        FRI  eP     13 11 32.0              • 11 42
        MNV  iPd    13 11 39.7              • 11 51
                    Ms=5.5, DISTANCE=87°
                    USGS 12 58 45.0, 10.6S, 161.3E, H= 32 KM, mb=5.8, Ms=5.5
                         SOLOMON ISLANDS

AUG 08  SAO  eP     15 16 40.5
        BKS  eP     15 16 41.2
                       MICRON     PERIOD
                  PZ     0.05       1.0
        MHC  ePc    15 16 42.1
        PRI  ePc    15 16 42.2
        FHC  ePc    15 16 45.1
        FRI  ePc    15 16 47.6
        JAS  iPc    15 16 47.8
        WDC  iPc    15 16 48.8
        MIN  ePc    15 16 50.5
        MNV  iPc    15 16 57.4
                    USGS 15 05 46.5, 17.8S, 178.7W, H=562 KM, mb=5.1
                         FIJI ISLANDS REGION

AUG 08  PRI  eP     17 26 26.0
        MHC  eP     17 26 26.6
        FRI  eP     17 26 31.1              • 26 45
        JAS  eP     17 26 32.5              • 26 48
        WDC  ePc    17 26 35.3              • 26 54
        MNV  ePc    17 26 41.5
                    USGS 17 14 27.6, 23.3S, 174.9W, H= 34 KM, mb=4.9
                         TONGA ISLANDS REGION

AUG 08  PRI  eP     22 32 23.9
        MHC  eP     22 32 24.2
        FRI  eP     22 32 28.8
        JAS  ePd    22 32 29.5
        WDC  ePd    22 32 31.5
        MIN  eP     22 32 33.0
        MNV  ePd    22 32 38.0
                    USGS 22 20 51.5, 23.8S, 179.4W, H=436 KM, mb=5.2
                         SOUTH OF FIJI ISLANDS
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AUG 09  MHC  iPo   05 19 23.0
        BKS  ePd   05 19 33.4  19 43
        SAO  iPd   05 19 33.5
        JAS  iPe   05 19 42.4  19 58
        FRI  ePe   05 19 49.5
                   BRK  05 19 20.9, 37.4N, 121.7W, H=  9 KM, ML=2.8
                        EAST-NORTHEAST OF SAN JOSE, CALIFORNIA

AUG 09  PRI  iPd   08 34 28.3
        SAO  eP    08 34 39.1
        FRI  iPd   08 34 45.7
        MHC  eP    08 34 48.5
        JAS  ePd   08 34 54.6
        BKS  eP    08 34 58.5  35 23
                   BRK  08 34 25.2, 36.2N, 120.8W, H=  6 KM, ML=3.3
                        EAST OF KING CITY, CALIFORNIA

AUG 10  WDC  ePKP  07 26 23.5
        MIN  ePKP  07 26 25.0
        MHC  ePKP  07 26 28.1
        JAS  e(PKP) 07 26 29
        FRI  ePKP  07 26 30.9
        PRI  ePKP  07 26 32.0
        MNV  ePKP  07 26 32.3
                   USGS 07 07 26.9,  8.2S, 107.6E, H= 52 KM, mb=5.7
                        JAVA

AUG 10  FHC  iPe   09 25 32.0                          • 25 40
        WDC  ePe   09 25 46.8
        MIN  ePe   09 25 56.7
                   BRK  09 25 17.1, 40.5N, 125.0W, H= 23 KM, ML=3.5
                        OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

AUG 10  FHC  eP    09 41 15.7
        WDC  ePd   09 41 23.7                          • 41 45      • 42 01      • 42 16
                                                       • 42 38
        MIN  ePd   09 41 29.0
        BKS  eP    09 41 47.5  46 44                   Lq 47 56     Lr 48 52
                              MICRON    PERIOD
                   PZ            0.05      1.0
                   LZ             1.6       18
                   LN             1.2       18
                   LE             1.3       18
        JAS  ePd   09 41 51.2
        MHC        09 41                               • 41 55
        MNV  ePd   09 41 57.8
        FRI        09 42                               • 42 00
        PRI        09 42                               • 42 05
                   Ms=4.7, DISTANCE=30°
                   USGS 09 35 58.7, 56.6N, 152.7W, H= 33 KM, mb=5.0, Ms=4.6
                        KODIAK ISLAND REGION

AUG 10  SAO  eP    18 38 13.0
        BKS  ePd   18 38 13.8  47 30                   PcP 38 19    pP 40 14     sP 41 13
                                                       ScS 47 52    • 51 42
                              MICRON    PERIOD
                   PZ            0.06      1.0
        PRI  ePd   18 38 14.4                          pP 40 18
        MHC  ePd   18 38 14.6                          pP 40 15
        FHC  iPd   18 38 18.4                          pP 40 22
        FRI  ePd   18 38 19.4                          pP 40 23
        JAS  iPd   18 38 20.0                          pP 40 24
        WDC  iPd   18 38 21.5                          pP 40 26
        MIN  eP    18 38 23.5                          pP 40 28
        MNV  iPd   18 38 29.0                          pP 40 34
                   USGS 18 27 09.6, 20.7S, 178.5W, H=585 KM, mb=5.4
                        FIJI ISLANDS REGION

AUG 10  MHC  iPe   20 19 25.7
        BKS  ePe   20 19 35.6  19 45
        SAO  iPd   20 19 36.5
        JAS  iPd   20 19 44.9
        PRI  e(P)  20 19 49
        FRI  ePe   20 19 52.1
                   BRK  20 19 23.4, 37.4N, 121.7W, H=  8 KM, ML=2.9
                        EAST-NORTHEAST OF SAN JOSE, CALIFORNIA

AUG 11  SAO  eP    01 54 15.8                          pP 54 46
        PRI  ePe   01 54 17.3                          pP 54 48
        BKS  ePe   01 54 17.4  03 44                   pP 54 47     PP 57 00     PS 04 35
                                                       SS 07 38     SSS 11 32    Lq 13 10
                                                       Lr 15 30
                              MICRON    PERIOD
                   PZ            0.10      1.0
                   LZ              15        20
                   LN              11        20
                   LE              10        20
        MHC  ePe   01 54 17.8                          pP 54 48     PP 57 03
        FHC  ePe   01 54 22.4                          pP 54 54
        FRI  ePe   01 54 23.0                          pP 54 53
        JAS  iPe   01 54 23.6                          pP 54 54     sP 55 13     PP 57 14
        WDC  iPe   01 54 25.6                          pP 54 56     PP 57 17
        MIN  ePe   01 54 27.6
        MNV  iPe   01 54 33.9
                   Ms=6.3, DISTANCE=76°
                   USGS 01 42 47.5, 17.6S, 174.4W, H= 57 KM, mb=6.3
                        TONGA ISLANDS

AUG 12  FHC  e(P)  00 20 38
        BKS  ePe   00 20 39.6  31 24                   • 21 13      • 32 20      Lq 44 20
                                                       Lr 47 28
                              MICRON    PERIOD
                   PZ            0.07      0.8
                   LZ             2.5        20
                   LN             0.6        20
                   LE             1.9        20
        WDC  ePe   00 20 40.8
        MHC  eP    00 20 41
        SAO        00 20                               • 20 42
        MIN  e(P)  00 20 43
        PRI  eP    00 20 44.0
        JAS  ePe   00 20 46.6
        FRI  eP    00 20 47.4
        MNV  ePe   00 20 54.0                          • 20 56
                   Ms=5.5, DISTANCE=86°
                   USGS 00 07 51.8,  6.5S, 155.0E, H= 58 KM, mb=5.9
                        SOLOMON ISLANDS

AUG 12  PRI  ePe   02 20 06.3  20 37
        FRI  ePe   02 20 10.5
        SAO  eP    02 20 17.7
        MHC  eP    02 20 25
        JAS  iPd   02 20 26.9
        MNV  eP    02 20 29.7
        BKS  ePe   02 20 35.6
        MIN  e(P)  02 21 04                            • 21 29
                   ML=5.8, LOS ANGELES AREA
                   PAS  02 19 26.1, 34.4N, 118.5W, H= 10 KM, ML=4.4
                        SAN FERNANDO VALLEY

AUG 13  FHC  iPe   02 36 31.1
        WDC  iPe   02 36 42.9
        MIN  ePe   02 36 52.8
                   BRK  02 36 19.0, 40.2N, 124.3W, H=  5 KM, ML=3.0
                        WEST-NORTHWEST OF GARBERVILLE, CALIFORNIA

AUG 13  WDC  ePe   03 23 55.0
        MIN  e(P)  03 24 00
        MHC        03 24
        JAS  ePe   03 24 13.9                          • 24 10
        FRI        03 24                               • 24 20
                   USGS 03 13 33.3, 44.3N, 147.9E, H= 67 KM, mb=4.8
                        KURIL ISLANDS

AUG 13  SAO  eP    10 12 06.0
        BKS  eP    10 12 06.3
                              MICRON    PERIOD
                   PZ            0.02      0.9
        MHC  eP    10 12 07.2
        FHC  eP    10 12 07.7
        PRI  ePo   10 12 08.2
        WDC  ePo   10 12 11.4
        JAS  ePo   10 12 12.2
        FRI  eP    10 12 12.6
        MIN  eP    10 12 13.4
        MNV  e(P)  10 12 21
                   USGS 09 59 41.9, 19.3S, 169.2E, H=150 KM, mb=4.9
                        NEW HEBRIDES ISLANDS

AUG 13  FHC  eP    19 43 38.8
        WDC  eP    19 43 45.2
        JAS  eP    19 44 03.5
        MNV  eP    19 44 10.8
                   USGS 19 33 09.7, 43.1N, 145.6E, H= 62 KM, mb=4.9
                        HOKKAIDO, JAPAN REGION

AUG 14  MNV  eP    04 32 23.0                          • 32 50
        FRI  e(P)  04 32 28                            • 32 56
        PRI        04 32                               • 33 01
        JAS  e(P)  04 32 34                            • 33 01
        MHC  eP    04 32 40.8                          • 33 09
        MIN  eP    04 32 43                            • 33 10
        BKS        04 32                               • 33 11      • 40 48
                                                       • 48 20      Lr 51 30     • 47 20
        WDC  e(P)  04 32 46                            • 33 13
        FHC  eP    04 32 57.0                          • 33 24
                   USGS 04 22 49.7, 11.0N,  62.4W, H=112 KM, mb=4.9
                        WINDWARD ISLANDS

AUG 14  PRI  eP    11 09 35.0
        MNV  eP    11 09 35.2
        JAS  ePd   11 09 41.0
        MHC  eP    11 09 43.4
        BKS  e(P)  11 09 47
        MIN  e(P)  11 09 53
        WDC  ePd   11 09 56.2
        FHC  eP    11 10 04.0
                   USGS 10 58 10.9, 19.4S,  71.8W, H= 33 KM, mb=5.1
                        OFF COAST OF NORTHERN CHILE

AUG 14  PRI  eP    12 08 16.3
        MHC  eP    12 08 16.8
        BKS  eP    12 08 16.9
        FRI  eP    12 08 21.1
        JAS  ePe   12 08 21.8
        FHC  e(P)  12 08 22
        WDC  ePe   12 08 24.1
        MIN  eP    12 08 25.9
        MNV  ePe   12 08 30.2
                   USGS 11 56 32.6, 26.0S, 179.0W, H=389 KM, mb=4.4
                        SOUTH OF FIJI ISLANDS

AUG 14  BKS  iPe   14 25 40.7
        MHC  iPd   14 25 43.9
        SAO  eP    14 25 53.5
        JAS  iPe   14 25 55.7
        FRI  eP    14 26 06.0
        PRI  eP    14 26 08
        MIN  eP    14 26 17.0
        WDC  eP    14 26 18.5
        MNV  eP    14 26 23
                   BRK  14 25 34.9, 37.7N, 121.9W, H=  7 KM, ML=3.4
                        DUBLIN, CALIFORNIA

AUG 14  BKS  iPe   15 03 03.4
        MHC  ePd   15 03 06.6
        SAO  e(P)  15 03 17
        JAS  ePe   15 03 18.2  03 34
                   BRK  15 02 58.1, 37.7N, 122.0W, H= 12 KM, ML=2.7
                        DUBLIN, CALIFORNIA

AUG 14  BKS  iP    15 03 31.8
                   BRK  15 03 25.7, 37.7N, 122.0W, H=  7 KM, ML=2.6
                        DUBLIN, CALIFORNIA

AUG 14  FHC  ePKP  21 57 49.0
        WDC  ePKP  21 57 50.0                          • 11 25
        BKS  e(PKP) 21 57 54                           • 59 46      • 01 12      • 01 36
                                                       • 11 20      • 16 50      • 17 30
                                                       Lr 31 00
        MHC  ePKP  21 57 54.5
        JAS  ePKP  21 57 55.5                          • 11 15
        FRI  ePKP  21 57 57.5
        PRI        21 57                               • 57 58
        MNV  ePKP  21 57 59.0                          • 11 10
                   USGS 21 38 51.5,  7.8S, 107.6E, H= 33 KM, mb=5.7, Ms=57
                        JAVA

AUG 15  FHC  eP    00 00 18.7
        WDC  ePe   00 00 24.1                          • 00 35
        JAS  ePe   00 00 41.7                          • 00 52      • 32 26
        FRI  eP    00 00 47.5
        PRI  eP    00 00 48.1
                   USGS 23 49 13.4, 41.7N, 138.6E, H= 33 KM, mb=4.9
                        EASTERN SEA OF JAPAN

AUG 15  PRI  eP    05 53 12.7
        BKS  eP    05 53 13.2  03 12                   SS 08 25     Lr 17 10
                              MICRON    PERIOD
                   LZ             0.9        20
                   LN             0.5        20
                   LE             0.6        20
        MHC  eP    05 53 13.4
        FRI  eP    05 53 18.0
        FHC  eP    05 53 18.4
        JAS  ePd   05 53 19.0
        WDC  ePd   05 53 21.6
        MIN  eP    05 53 23.1
        MNV  ePd   05 53 28.2
                   Ms=5.0, DISTANCE=78°
                   USGS 05 41 12.1, 23.3S, 175.4W, H= 33 KM, mb=5.3, Ms=5.1
                        TONGA ISLANDS REGION

AUG 15  MIN  iPe   10 40 18.2
        WDC  iPe   10 40 23.5  40 31
        FHC  ePd   10 40 43.5
        JAS  e(P)  10 41 01
                   BRK  10 40 12.6, 40.6N, 121.8W, H=  3 KM, ML=3.0
                        EAST OF REDDING, CALIFORNIA

AUG 15  FRI  eP    20 32 15.1                          • 32 21
        MNV  ePe   20 32 16.3                          • 32 22      PcP 33 48
        PRI  ePe   20 32 17.4
        JAS  ePe   20 32 24.0                          • 32 30      PcP 33 51
        BKS        20 32          39 54                Lr 48 10
        MHC  eP    20 32 27.8                          • 32 35
        WDC  ePe   20 32 44.0                          PcP 34 01
        FHC  ePe   20 32 54.0
                   USGS 20 23 44.1,  2.9N,  84.3W, H= 23 KM, mb=5.2
                        OFF COAST OF CENTRAL AMERICA

AUG 15  JAS  eP    23 17 39.5
        WDC  eP    23 17 41.5
        MNV  eP    23 17 49.3
                   USGS 23 06 17.6, 22.2S, 179.5W, H=544 KM, mb=4.8
                        SOUTH OF FIJI ISLANDS
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AUG 16  SAO   eP     04 58 37.5
        BUK   e(P)   04 58 39
        FRI   ePe    04 58 39.0
        MBC   ePe    04 58 39.7
        FRI   ePe    04 58 44.9
        JAS   ePe    04 58 45.8                 • 59 00
        WDC   ePe    04 58 48.5                 • 59 03
        MIN   eP     04 58 50.1
        MNV   iPe    04 58 56.0                 • 59 10
              USGS 04 47 12.6, 17.4S, 171.8W, H= 8 KM, mb=4.9
                   TONGA ISLANDS REGION

AUG 16  BKS   eP     06 28 03.0          PPS 40 10     Lq 51 30     Lr 55 00
                        MICRON    PERIOD
                   PZ     0.08       1.1
        SAO   eP     06 28 03.0
        MBC   ePe    06 28 04.2
        FBC   ePe    06 28 04.3
        FRI   eP     06 28 05.2
        WDC   ePe    06 28 07.9                 • 28 20
        JAS   ePe    06 28 09.1                 • 28 21
        FRI   ePe    06 28 09.5
        MIN   eP     06 28 10.0
        MNV   ePe    06 28 17.9                 • 28 30
              USGS 06 15 16.7, 19.3S, 167.7E, H= 12 KM, mb=5.5, Ms=4.9
                   NEW HEBRIDES ISLANDS REGION

AUG 16  BKS   eP     07 15 44.2
                        MICRON    PERIOD
                   PZ     0.04       1.0
        MBC   eP     07 15 44.6
        FBC   eP     07 15 44.8
        FRI   eP     07 15 45.6
        WDC   ePd    07 15 48.4
        JAS   eP     07 15 49.5
        FRI   eP     07 15 49.9
        MIN   eP     07 15 50.6
        MNV   ePd    07 15 58.3
              USGS 07 03 01.3, 19.0S, 167.6E, H= 33 KM, mb=5.1
                   NEW HEBRIDES ISLANDS REGION

AUG 16  WDC   eP     11 32 53.9
        JAS   eP     11 32 54.9
        FRI          11 32                     • 32 56
        MNV   eP     11 33 03.7
              USGS 11 20 36.1, 18.9S, 169.1E, H=238 KM, mb=4.7
                   NEW HEBRIDES ISLANDS

AUG 16  MBC   iPe    14 24 12.6
        SAO   eP     14 24 23.2
        BKS   iP     14 24 25.0                S• 24 36
        JAS   iPd    14 24 31.1                • 24 46
        FRI   eP     14 24 38
              BRK  14 24 11.2, 37.4N, 121.6W, H= 7 KM, ML=2.7
                   EAST OF SAN JOSE, CALIFORNIA

AUG 16  MNV   iPe    14 41 36.5
        FRI   eP     14 41 48.5                • 41 54
        JAS   eP     14 41 57.5                • 42 08
        FRI   e(P)   14 42 02
              MAG=3.5, NUCLEAR EXPLOSION, NEVADA TEST SITE
              USGS 14 41 00.4, 37.1N, 116.1W, H= 5 KM
                   SOUTHERN NEVADA

AUG 16  MNV   iPe    15 49 36.4
        FRI   ePe    15 49 48.2                • 49 54
        JAS   ePe    15 49 57.3                • 50 08
        FRI   e(P)   15 50 02
              ML=3.9, NUCLEAR EXPLOSION, NEVADA TEST SITE
              USGS 15 49 00.2, 37.2N, 116.1W, H= 5 KM
                   SOUTHERN NEVADA

AUG 17  BKS          03 19      28 30          • 19 26     PP 22 04     • 24 20
                                               SS 33 10    Lq 37 30
                        MICRON    PERIOD
                   LZ     0.9       20
                   LN     0.5       20
                   LE     0.7       20
        FRI   eP     03 19 04                  • 19 16
        JAS   eP     03 19 06.4                • 19 17
        WDC   eP     03 19 08.6                • 19 20
        MNV   eP     03 19 16.0                • 19 28
              Ms=5.0, DISTANCE=71°
              USGS 03 07 29.2, 17.9S, 172.5W, H= 15 KM, mb=5.1, Ms=4.9
                   TONGA ISLANDS REGION

AUG 17  PRI   eP     03 22 10.5
        FRI   eP     03 22 13.4                • 22 47
        SAO   eP     03 22 23.5
        JAS   ePe    03 22 28.0
        MBC   e(P)   03 22 30
        MNV   e(P)   03 22 32
        BKS   e(P)   03 22 44                  • 23 09
              ML=3.9, SOUTHERN CALIFORNIA
              PAS  03 21 41.6, 35.1N, 119.0W, H= 5 KM, ML=3.6
                   SOUTHERN CALIFORNIA

AUG 17  WDC   eP     04 39 52.0
        MIN   eP     04 39 54.0
        JAS   eP     04 40 06.5
        FRI   eP     04 40 11.1
              USGS 04 26 57.7, 49.8N,  78.2E, H= 0 KM, mb=5.0
                   EASTERN KAZAKH, SSR

AUG 17  PRI   e(P)   05 14 57
        FRI   eP     05 15 01.0
        MBC   e(P)   05 15 05
        JAS   eP     05 15 08.2
        MNV   ePd    05 15 11.0
        WDC   ePd    05 15 25.7
              USGS 05 04 30.9, 26.9S, 114.6W, H= 33 KM, mb=4.9, Ms=4.2
                   EASTER ISLAND REGION

AUG 17  PRI   iPe    05 20 39.8  20 49
        FRI   ePd    05 20 53.8
        SAO   eP     05 20 53.8
        MBC   e(P)   05 21 03
        JAS   ePe    05 21 06.7
        BKS   eP     05 21 11.7                • 21 43      • 21 45
              BRK  05 20 31.1, 35.8N, 120.3W, H= 4 KM, ML=3.1
                   CHOLAME VALLEY, CALIFORNIA

AUG 17  BRK   eP     07 38 56.5
        MBC   eP     07 38 58.5
        PRI   e(P)   07 39 00
        FRI   eP     07 39 02.5
        JAS   eP     07 39 03.5
        WDC   eP     07 39 06.5
        MIN   eP     07 39 08.0
        MNV   eP     07 39 11.8
              USGS 07 26 38.0, 27.5S, 177.2W, H= 56 KM, mb=5.0
                   KERMADEC ISLANDS REGION

AUG 17  FBC   ePd    16 55 33.5
        WDC   iPd    16 55 41.8                • 55 52
        MIN   e(P)   16 55 50
        BKS   eP     16 55 56.5  01 54         Lq 04 56     Lr 06 40
                        MICRON    PERIOD
                   LZ     0.8       20
                   LN     0.4       20
                   LE     0.6       20
        MBC   eP     16 56 02
        JAS   ePd    16 56 05.7
        SAO   e(P)   16 56 06
        FRI   eP     16 56 12.9
        PRI   eP     16 56 14.0
        MNV   ePd    16 56 14.6                1 56 20
              Ms=4.4, DISTANCE=40°
              USGS 16 48 31.3, 51.9N, 175.3W, H= 57 KM, mb=5.4
                   ANDREANOF ISLANDS, ALEUTIAN ISLANDS

AUG 17  BKS   iPe    22 27 46.0  27 51
        MBC   ePd    22 27 49.2
        SAO   e(P)   22 27 59                  1 27 57
        JAS   ePe    22 28 00.9
        FRI   eP     22 28 15                  1 28 16
              BRK  22 27 40.1, 37.7N, 121.9W, H= 7 KM, ML=2.7
                   DUBLIN CALIFORNIA

AUG 18  MBC   iPe    11 58 19.5
        BKS   iPe    11 58 28.5  58 37
        SAO   iPd    11 58 30.4
        JAS   iPe    11 58 38.4  58 53
        PRI   eP     11 58 42.6
              BRK  11 58 16.8, 37.4N, 121.8W, H= 8 KM, ML=2.9
                   NORTHEAST OF SAN JOSE, CALIFORNIA

AUG 18  WDC   eP     12 09 35.3                • 09 51      • 38 56
        BKS   eP     12 09 48.4  18 01         pP 10 11     Lq 24 50
                        MICRON    PERIOD
                   LZ     1.5       20
                   LN     0.7       20
                   LE     1.7       20
        MBC   eP     12 09 53
        JAS   ePd    12 09 55.1
        SAO          12 10                     • 10 10      • 39 11
        PRI   eP     12 10 02.3                • 10 03
              Ms=5.1, DISTANCE=61°
              USGS 11 59 41.2, 46.6N, 153.7E, H= 33 KM, mb=5.7, Ms=5.0
                   KURIL ISLANDS

AUG 18  WDC   ePd    13 04 56.9                • 06 05      • 06 11      • 06 18
        BKS   eP     13 05 10.9
        MBC          13 05                     • 05 16
        JAS   ePd    13 05 19.6                • 06 35
        PRI   eP     13 05 23.5
              USGS 12 56 51.9, 50.9N, 174.7E, H= 33 KM, mb=5.3
                   ALEUTIAN ISLANDS REGION

AUG 19  FBC   ePKP   05 27 28.8
        WDC   ePKP   05 27 29.9                • 28 49      PKKP 37 43
        MIN   ePKP   05 27 31.0
        BRK   ePKP   05 27 31.7
        BKS          05 28                     • 28 54
        MBC   ePKP   05 27 33.2
        JAS   ePKP   05 27 34.3                • 29 04      PKKP 37 36
        PRI   ePKP   05 27 35.7
        FRI   ePKP   05 27 35.8
        MNV   ePKP   05 27 38.1                • 29 15
              USGS 05 08 41.6, 11.1S, 118.4E, H= 33 KM, mb=6.1, Ms=5.4
                   SOUTH OF SUMBAWA ISLANDS

AUG 19  FBC   ePKP   06 28 00                  Pdif 24 03   • 27 42   PKPPKP 45 47
        WDC   ePKP   06 28 00                  Pdif 24 07   • 24 36   • 27 43
                                               • 28 13      • 28 50   PP 29 18
                                               • 29 53      • 30 12   • 30 35
                                               • 30 52      PKKP 37 18  • 37 40
                                               • 38 02      SKKP 40 52  • 41 45
                                               PKPPKP 45 25  • 46 00   • 59 30
                                               • 02 10      • 08 18   • 12 26
                                               • 28 30      • 39 50
        MIN   ePKP   06 28 02                  Pdif 24 27   • 27 45   PKKP 38 17
                                               PKPPKP 45 20
        BKS   ePKP   06 28 02    37 00         Pdif 24 28   • 27 45   PP 29 24
                                               • 30 37      SKP 31 22   PPP 32 01
                                               SKKS 36 20   PKKP 38 16   SP 39 00
                                               PS 39 26     PPS 40 38   • 43 03
                                               • 44 09      SS 45 56    SSS 50 01
                                               • 54 48      Lq 57 17    • 59 00
                                               Lr 03 45     • 48 08     • 04 00
                        MICRON    PERIOD
                   PPZ    7.3       3.5
                   LE     360       20
                   LN     240       20
        MBC   ePKP   06 28 05                  Pdif 24 55   • 27 47   • 28 28
                                               PP 29 27     • 30 03   • 30 30
                                               PKKP 38 09   SKKP 41 34   • 42 09
                                               PKPPKP 45 32  • 28 38
        SAO   ePKP   06 28 05                  PP 29 46     PKKP 38 07  • 41 48
        JAS   ePKP   06 28 05                  Pdif 24 30   • 24 55   • 27 47
                                               • 28 17      • 28 37   PP 29 33
                                               • 30 15      • 30 43   • 31 12
                                               • 31 45      PKKP 38 08  • 38 30
                                               • 38 49      SKKP 41 30  • 42 02
                                               PKPPKP 45 36  • 08 25   • 18 20
                                               • 28 45      • 39 52
        FRI   ePKP   06 28 06                  Pdif 24 30   • 27 50   • 02 25
        PRI   ePKP   06 28 07                  Pdif 24 36   • 24 58   • 27 49
                                               • 28 32      • 29 10   PP 29 36
                                               • 30 07      • 30 30   • 31 03
                                               PKKP 38 08   • 38 36   • 38 52
                                               SKKP 40 00   • 41 03   PKPPKP 45 30
        MNV          06 28                     Pdif 24 20   • 27 52
              Ms=8.1, DISTANCE=118°
              USGS 06 08 55.2, 11.1S, 118.5E, H= 33 KM, mb=7.0, Ms=7.9
                   SOUTH OF SUMBAWA ISLAND

AUG 19  MBC   eP     09 57 22.0
        FRI   eP     09 57 26.5
        JAS   ePe    09 57 27.6
        WDC   ePe    09 57 30.3
        MIN   eP     09 57 31.8
        MNV   ePe    09 57 36.8
              SOUTH OF FIJI ISLANDS

AUG 19  WDC   ePKP   11 52 16.8                PKKP 02 30
        BKS          11 52                     • 52 45
        MBC   ePKP   11 52 20
        JAS   ePKP   11 52 21                  PKKP 02 24
        FRI   ePKP   11 52 22
        MNV   ePKP   11 52 25
              USGS 11 33 27.8, 11.0S, 118.7E, H= 33 KM, mb=5.6
                   SOUTH OF SUMBAWA ISLAND

AUG 19  FBC   ePKP   13 42 23                  • 43 57 PKPPKP 09 16
        WDC   ePKPe  13 42 24.1
        MIN   ePKP   13 42 25.5
        MBC   ePKP   13 42 27
        JAS   ePKPe  13 42 28.5                PKKP 52 36
        PRI   ePKP   13 42 30
        FRI   ePKP   13 42 30                  • 44 18   PKKP 52 30
        MNV   ePKPe  13 42 32.3
              USGS 13 23 37.0, 10.8S, 119.2E, H= 33 KM, mb=5.8, Ms=5.7
                   SUMBA ISLAND REGION

AUG 19  MNV   iPe    17 32 37.8
        FRI   eP     17 32 40
        JAS   eP     17 32 58.5
        PRI   eP     17 33 02.5
              MAG=3.5, NUCLEAR EXPLOSION, NEVADA TEST SITE
              USGS 17 32 00.1, 37.0N, 116.0W, H= 5 KM
                   SOUTHERN NEVADA

AUG 19  MNV   iPe    17 55 36.5
        FRI   iPe    17 55 48.2
        JAS   ePe    17 55 57.1
        PRI   iPe    17 56 00.9
        SAO   ePe    17 56 07.3
        MBC   ePe    17 56 10.0
        BKS   iPe    17 56 16.5
        WDC   ePe    17 56 32.3
              ML=5.7, NUCLEAR EXPLOSION, NEVADA TEST SITE
              USGS 17 55 00.1, 37.1N, 116.1W, H= 0 KM, mb=5.6
                   SOUTHERN NEVADA (NTS)
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AUG 19  FHC  ePKP    19 57 46.4                PP 59 18
        WDC  ePKPo   19 57 47.4
        BRK  e(PKP)  19 57 48
        JAS  ePKPo   19 57 51.6
        PRI  ePKP    19 57 53.5
        FRI  ePKPo   19 57 53.5
        MNV  ePKPo   19 57 55.8
                     USGS 19 38 59.7, 10.8S, 119.1E, H= 33 KM, mb=5.8, Ms=5.4
                     SUMBA ISLAND REGION

AUG 19  FHC  ePKP    20 39 04.8                PP 40 40
        WDC  ePKPo   20 39 05.9
        BRK  e(PKP)  20 39 08
        MHC  ePKP    20 39 09.1
        JAS  ePKP    20 39 10.2
        PRI  ePKP    20 39 11.5
        FRI  ePKP    20 39 11.9
                     USGS 20 20 18.6, 10.9S, 119.1E, H= 33 KM, mb=5.8, Ms=5.2
                     SUMBA ISLAND REGION

                                    • 54 02    PP 55 18
AUG 19  WDC  ePKP    21 53 51.3
        MIN  ePKP    21 53 52.5
        JAS  ePKP    21 53 56.6
        PRI  ePKP    21 53 57
                                    • 54 09
        FRI  ePKP    21 53 57.4     • 54 10    PP 55 30
        MNV  ePKP    21 53 59.5
                     USGS 21 35 03.3, 10.9S, 119.2E, H= 33 KM, mb=5.8, Ms=5.1
                     SUMBA ISLAND REGION

                                    • 53 06
AUG 20  PRI          02 53
        MNV  eP      02 53 06.6
        FRI  eP      02 53 09.2
        JAS  eP      02 53 17.6
        MHC  eP      02 53 23.5
        BKS          02 53          59 26      • 53 34    PP 55 05    Lq 02 26
                                    SeS 03 56  Lr 05 00
                     MICRON   PERIOD
                PZ     0.03     0.6
        MIN  eP      02 53 33.3
        WDC  eP      02 53 37.4
        FHC  eP      02 53 49.7
                     USGS 02 46 11.8, 16.6N,  86.9W, H= 14 KM, mb=5.3, Ms=5.7
                     CARIBBEAN SEA

AUG 20  PRI          03 58                     • 58 56
        MNV  eP      03 58 47.8                • 59 00
        FRI  eP      03 58 49.9                • 59 02
        JAS  eP      03 58 58.7                • 59 10    • 59 35    PoP 01 35
        SAO          03 59                     • 59 03
        MHC  eP      03 59 04.5                • 59 38
        BKS  eP      03 59 10       05 10      PP 00 42   Lq 08 06   Lr 09 38
                     MICRON   PERIOD
                PZ     0.09     1.0
                LZ     12       20
                LN     43       20
                LE     37       20
        MIN  eP      03 59 14.7
        WDC  eP      03 59 19.0          PoP 01 44
        FHC  eP      03 59 30.2                • 59 42
                     Ms=6.4, DISTANCE=40°
                     USGS 03 51 54.7, 16.7N,  86.6W, H= 36 KM, mb=5.6, Ms=5.9
                     CARIBBEAN SEA

AUG 20  JAS  iPd     04 59 59.6
        MIN  ePo     05 00 03.8
        MNV  eP      05 00 10.6                1 00 12
        BKS  eP      05 00 11.8  00 36
        MHC  ePo     05 00 13.4
        WDC  ePd     05 00 14.0  00 40
        FRI  eP      05 00 16.4
        SAO  eP      05 00 20.0
                     BRK  04 59 37.6, 39.2N, 120.4W, H= 26 KM, ML=3.3
                     SOUTHWEST OF TRUCKEE, CALIFORNIA

AUG 20  FHC  eP      07 39 29.5
        WDC  eP      07 39 34.1
        MIN  eP      07 39 37.7
        JAS  eP      07 39 51.0
        FRI  eP      07 39 56.7
        MNV  eP      07 39 56.8
                     USGS 07 28 48.9, 41.9N, 133.5E, H=431 KM, mb=4.6
                     SEA OF JAPAN

AUG 20  FHC  ePKP    09 40 41.0
        BKS          09 40                     PP 42 15   • 48 39    PS 51 30
                                               SS 58 32   Lq 10 00   Lr 15 36
                     MICRON   PERIOD
                LZ     1.8      20
                LN     0.7      20
                LE     1.6      20
        WDC  ePKP    09 40 42.2                PP 42 10
        JAS  ePKP    09 40 46.5              PKKP 50 53
        FRI  ePKP    09 40 48.3
        MNV  ePKP    09 40 50.5
                     USGS 09 21 50.3, 11.1S, 119.1E, H= 33 KM, mb=5.7, Ms=5.8
                     SOUTH OF SUMBA ISLANDS

AUG 20  BKS  ePo     12 34 09.7
        FHC  ePo     12 34 09.7
        SAO  eP      12 34 10.3
        MHC  ePo     12 34 11.3
        PRI  ePo     12 34 13.0
        WDC  iPo     12 34 13.6                pP 35 12
        MIN  ePo     12 34 16.0
        JAS  iPo     12 34 16.4                pP 35 14
        FRI  ePo     12 34 17.3                pP 35 16
        MNV  ePo     12 34 25.7                pP 35 24
                     USGS 12 22 11.1, 12.4S, 167.1E, H=242 KM, mb=5.1
                     SANTA CRUZ ISLANDS

AUG 20  PRI  eP      18 36 29.9
        MNV  iPo     18 36 30.8
        JAS  iPo     18 36 35.5                pP 37 10
        MHC  eP      18 36 37.3
        MIN  eP      18 36 46.0
        WDC  iPo     18 36 49.1                pP 37 16
        FHC  ePo     18 36 55.9
                     USGS 18 24 23.7, 28.8S,  67.4W, H=134 KM, mb=5.1
                     LA RIOJA PROVINCE, ARGENTINA

AUG 20  MNV  eP      19 04 02.0
        PRI  eP      19 04 03.3
        JAS  eP      19 04 09.2
        MHC  eP      19 04 12.5
        BRK  e(P)    19 04 17
        WDC  iPd     19 04 26.1
        FHC  iPd     19 04 35.2
                     USGS 18 53 55.5,  8.6S,  74.4W, H=155 KM, mb=5.1
                     PERU-BRAZIL BORDER REGION

AUG 20  WDC  ePKP    19 35 20.5                PP 36 42   PKKP 45 36
        MIN  ePKP    19 35 21.5
        BKS          19 35                   Pdif 32 16   • 35 28    • 36 34
                                                • 41 24   • 43 36    • 46 00
        MHC  ePKP    19 35 23.5
        JAS  ePKP    19 35 24.5              PKKP 45 30
        PRI  ePKP    19 35 26.0
        FRI  ePKP    19 35 26.3
        MNV  ePKPo   19 35 28.5                PP 37 00
                     USGS 19 16 32.7, 11.0S, 119.1E, H= 33 KM, mb=6.0, Ms=6.1
                     SOUTH OF SUMBA ISLANDS

AUG 20  FRI  ePKP    21 01 17.5
        PRI  ePKP    21 01 17.7
        MNV  ePKP    21 01 18.0
        JAS  ePKP    21 01 19.8
        MHC  ePKP    21 01 20.5
        BRK  e(PKP)  21 01 21
        WDC  ePKP    21 01 24.9
        FHC  ePKP    21 01 28.5
                     SOUTH SANDWICH ISLANDS REGION

AUG 20  FHC  eP      22 11 13.5
        WDC  ePo     22 11 15.0
        BKS  eP      22 11 32.6
        JAS  ePo     22 11 34.4
        MNV  ePo     22 11 34.7
        MHC  eP      22 11 36.5
        FRI  e(P)    22 11 41
        PRI  eP      22 11 45.2
                     USGS 21 59 58.7, 64.2N,  99.6E, H=  0 KM, mb=5.0, Ms=5.5
                     CENTRAL SIBERIA

AUG 21  JAS  eP      00 27 16.7
        WDC  eP      00 27 19.6
                     USGS 00 15 16.1, 22.9S, 173.9W, H= 33 KM, mb=4.8
                     TONGA ISLANDS REGION

                                                • 04 20
AUG 21  WDC  ePKP    01 03 42
        JAS  ePKP    01 03 47
        MNV  ePKP    01 03 50.5

AUG 21  FHC  eP      05 30 52.4
        WDC  iPo     05 30 57.7
        MIN  eP      05 31 01.6
        BKS  e(P)    05 31 08
        MHC  eP      05 31 11.4
        JAS  iPo     05 31 14.2
        PRI  eP      05 31 19.5
        FRI  eP      05 31 19.6
        MNV  iPo     05 31 21.4
                     USGS 05 19 34.2, 35.2N, 141.1E, H= 42 KM, mb=5.5, Ms=5.2
                     NEAR EAST COAST OF HONSHU, JAPAN

AUG 21  FHC  ePKP    07 09 19.0
        WDC  ePKP    07 09 20.3
        MIN  ePKP    07 09 21.5
        MHC  ePKP    07 09 23.7
        JAS  ePKP    07 09 24.5
        PRI  ePKP    07 09 26.0
        FRI  ePKP    07 09 26.4
        MNV  ePKP    07 09 28.5
                     USGS 06 50 33.1, 11.2S, 118.8E, H= 33 KM, mb=5.4
                     SOUTH OF SUMBAWA ISLAND

AUG 21  FRI  ePd     11 40 37.0
        MNV  iPd     11 40 37.6                PoP 43 05   SoP 46 50
        PRI  eP      11 40 39.9
        JAS  ePd     11 40 46.5                PoP 43 10   SoP 46 55
        MHC  eP      11 40 51.2
        BKS  eP      11 40 57.4
        MIN  eP      11 41 04.2
        WDC  iPd     11 41 08.2                PoP 43 16   SoP 47 04
        FHC  ePd     11 41 19.6
                     USGS 11 33 50.8, 13.8N,  90.1W, H= 84 KM, mb=4.8
                     NEAR COAST OF GUATEMALA

AUG 21  WDC  ePKP    15 55 36.5              PKKP 05 54
        BRK  ePKP    15 55 38.4
        JAS  ePKP    15 55 40.8              PKKP 05 46
        PRI  ePKP    15 55 42.3
        FRI  ePKP    15 55 42.4
        MNV  ePKP    15 55 44.5
                     USGS 15 36 48.5, 11.2S, 119.1E, H= 33 KM, mb=5.7
                     SOUTH OF SUMBA ISLAND

AUG 21  SAO  eP      19 47 36.0
        PRI  ePo     19 47 37.0                • 47 54
        BKS  ePd     19 47 37.5
                     MICRON   PERIOD
                PZ     0.07     0.5
        MHC  ePo     19 47 38.0
        FRI  ePo     19 47 41.7                • 47 58
        JAS  ePo     19 47 42.8                • 48 00    PP 51 19
        FHC  ePo     19 47 43.5
        WDC  ePo     19 47 45.9                • 48 02    PP 51 23
        MNV  iPo     19 47 50.9                • 48 08
                     USGS 19 35 05.6, 30.0S, 177.9W, H= 59 KM, mb=5.7
                     KERMADEC ISLANDS

AUG 22  FRI  eP      03 27 33.5
        JAS  eP      03 27 34.6
        WDC  eP      03 27 37.7
        MNV  eP      03 27 43.5
                     USGS 03 15 31.4, 25.5S, 176.1W, H=157 KM, mb=4.2
                     SOUTH OF FIJI ISLANDS

AUG 23  FRI  eP      03 24 27.0
        MNV  eP      03 24 28.8                • 25 00
        PRI  eP      03 24 29.0
        SAO  eP      03 24 33.0
        JAS  iPd     03 24 34.2                • 25 06
        MHC  eP      03 24 36.8
        BKS  eP      03 24 40.3
        MIN  eP      03 24 46.0
        WDC  iPd     03 24 48.8                • 25 20
        FHC  ePd     03 24 56.2                • 25 28
                     USGS 03 12 51.9, 21.3S,  68.2W, H= 99 KM, mb=5.2
                     CHILE-BOLIVA BORDER REGION

AUG 23  PRI  eP      08 19 22.5
        BRK  eP      08 19 23.3
        MHC  eP      08 19 23.6
        FRI  eP      08 19 28.0
        FHC  eP      08 19 29.0
        JAS  ePo     08 19 29.1
        WDC  ePo     08 19 32.0
        MIN  eP      08 19 33.5
        MNV  ePo     08 19 37.9
                     USGS 08 07 12.9, 25.6S, 176.2W, H= 49 KM, mb=5.4, Ms=4.9
                     SOUTH OF FIJI ISLANDS

AUG 23  FHC  e(P)    08 44 48
        WDC  eP      08 44 51.3
        MIN  e(P)    08 44 56
        MHC  e(P)    08 45 02
        JAS  eP      08 45 04.5
        FRI  e(P)    08 45 08
        MNV  eP      08 45 12.6
                     USGS 08 32 42.5, 14.0N, 144.5E, H=151 KM, mb=4.8
                     MARIANA ISLANDS

AUG 23  FHC  ePKP    10 43 00.7
        WDC  ePKP    10 43 02.0              PKKP 53 09
        JAS  ePKP    10 43 06.3
        FRI  ePKP    10 43 09.0
        MNV  ePKP    10 43 10.0
                     USGS 10 24 12.1, 11.4S, 117.7E, H= 33 KM, mb=5.7, Ms=4.9
                     SOUTH OF SUMBAWA ISLAND

AUG 24  BRK  e(P)    13 43 30
        PRI  e(P)    13 43 30
        MHC  e(P)    13 43 31
        FRI  eP      13 43 36.2
        JAS  eP      13 43 36.9
        FHC  e(P)    13 43 37
        WDC  eP      13 43 38.5
        MIN  eP      13 43 40.8
                     USGS 13 32 08.9, 17.9S, 175.1W, H=170 KM, mb=4.8
                     TONGA ISLANDS

AUG 25  BKS  eP      01 35 00.0
        SAO  eP      01 35 00
        MHC  ePo     01 35 00.7
        FHC  ePo     01 35 01.1
        PRI  eP      01 35 01.7
        WDC  iPo     01 35 04.8
        JAS  iPo     01 35 05.7
        FRI  ePo     01 35 06.0
        MIN  eP      01 35 07
        MNV  iPo     01 35 14.5
                     USGS 01 22 48.2, 19.0S, 169.4E, H=254 KM, mb=4.8
                     NEW HEBRIDES ISLANDS
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                    07 47                          • 08 56
AUG 25 BKS                  MICRON    PERIOD
                       LZ     2.5       20
                       LN     1.4       20
                       LE     1.8       20
                    07 47 07
       MHC  ePKP    07 47 08
       FRI  e(P)    07 47 11
       FHC  ePKP    07 47 13.0
       FRI  ePKP    07 47 13.5
       JAS  ePKP    07 47 14.2
       WDC  ePKP    07 47 16
       MIN  ePKP    07 47 23.8
       MNV  ePKP    USGS 07 35 33.7, 15.0S, 177.3W, H= 33 KM, mb=5.1, Ms=5.2
                       FIJI ISLANDS REGION

       SAO  iPe     09 38 28.1
AUG 25 PRI  ePKP    09 38 34.4                • 38 45
       MHC  ePKP    09 38 39.4
       FRI  ePe     09 38 44.8
       JAS  iPe     09 38 49.4  38 08
       MNV  e(P)    09 39 16                  • 39 52
                    BRK  09 38 22.5, 36.6N, 121.2W, H=  6 KM, ML=2.5
                       BEAR VALLEY, CALIFORNIA

                    18 05                     • 05 22
AUG 25 FHC          18 05 36.5
       WDC  ePKP    18 06 12
       JAS  ePKP    18 06 28.6
       MNV  ePKP    USGS 18 04 02.6, 44.0N, 129.3W, H= 15 KM, mb=4.2
                       OFF COAST OF OREGON

AUG 25 FHC  e(PKP)  18 23 55
       WDC  ePKP    18 23 58.0                PP 25 20   PKKP 34 16
       MIN  ePKP    18 23 58.7
       BKS  ePKP    18 24 00    30 52         PP 25 18    PS 34 52    SS 42 00
                                              PKPPKP 45 10  Lq 53 12  Lr 00 28
                         MICRON    PERIOD
                    LZ     4.3       20
                    LN     2.3       20
                    LE     4.1       20
       MHC  ePKP    18 24 00.5
       JAS  ePKP    18 24 01.6                PP 25 23   PKKP 34 10
       PRI  ePKP    18 24 03.0
       FRI  ePKP    18 24 03.2              PKKP 34 05
       MNV  ePKP    18 24 05.5              PKKP 34 04
                    Ms=6.1, DISTANCE=118°
                    USGS 18 05 10.8, 10.7S, 119.3E, H= 33 KM, mb=6.1, Ms=6.0
                       SUMBA ISLANDS REGION

AUG 25 WDC  ePKP    18 27 55.5
       MHC  ePKP    18 27 58.0
       JAS  ePKP    18 27 59.3
       FRI  ePKP    18 28 01.0
       MNV  ePKP    16 28 03.2
                    USGS 18 09 10.1, 10.4S, 119.1E, H= 33 KM, mb=6.1
                       SUMBA ISLAND REGION

AUG 26 SAO          00 02                     pP 02 41
       BKS          00 02                     pP 02 42
       PRI          00 02                     pP 02 42
       MHC          00 02                     pP 02 42
       FRI  eP      00 02 27.6                pP 02 46
       JAS  eP      00 02 28.7                pP 02 47
       WDC          00 02                      • 02 35    pP 02 50
       MNV  eP      00 02 38.5                pP 02 55
                    USGS 23 49 50.7, 30.5S, 178.2W, H= 60 KM, mb=5.3
                       KERMADEC ISLANDS

AUG 26 FHC  eP       07 23 40.0
       WDC  ePe      07 23 46.5
       MIN  eP       07 23 52.2
       BKS  e(P)     07 24 02
       MHC  eP       07 24 07.0
       JAS  iPe      07 24 10.2
       SAO  eP       07 24 10.8
       PRI  eP       07 24 17.9
       FRI  eP       07 24 18.1
       MNV  iPe      07 24 18.4                • 24 36
                    USGS 07 15 48.2, 51.5N, 175.7E, H= 34 KM, mb=4.9, Ms=4.1
                       RAT ISLANDS, ALEUTIAN ISLANDS

AUG 26 FHC  e(PKP)  08 45 22
       WDC  ePKP    08 45 23.5                PP 46 44
       MIN  ePKP    08 45 24.7
       BRK  ePKP    08 45 25.3
       BKS          08 45                     • 47 00     • 57 32     • 03 34
                                               • 22 24
       MHC  ePKP    08 45 26.7
       JAS  ePKP    08 45 28.0              PKKP 55 40
       FRI  ePKP    08 45 29.5
       PRI  ePKP    08 45 30
       MNV  ePKPe   08 45 31.8
                    USGS 08 26 37.5, 10.7S, 119.3E, H= 33 KM, mb=5.6, Ms=5.7
                       SUMBA ISLAND REGION

AUG 26 BRK  e(P)     14 18 42
       MHC  eP       14 18 43.7
       FHC  e(P)     14 18 46
       PRI  eP       14 18 46.8
       WDC  eP       14 18 48.1
       JAS  ePd      14 18 48.6
       FRI  eP       14 18 49.0
       MIN  eP       14 18 50.2
       MNV  ePd      14 18 57.2
                    USGS 14 06 17.8, 20.5S, 169.8E, H=164 KM, mb=5.0
                       NEW HEBRIDES ISLANDS

AUG 26 FRI  ePKP     20 09 00.2              PP 10 53 PKPPKP 26 00
       PRI  ePKP     20 09 01.0               • 09 21    PP 10 55
       MNV  ePKP     20 09 01.3           PKPPKP 26 01
       JAS  ePKP     20 09 03.0               • 09 28    PP 11 13    • 22 12
                                           PKPPKP 25 50
       SAO  ePKP     20 09 03.8
       MHC  ePKP     20 09 03.5              PP 11 03
       BKS  ePKPd    20 09 04.9            Pdif 05 54   pPKP 09 09    PP 11 08
                                               • 12 32   SKS 16 24   SKKKS 18 08
                                               • 19 12    • 20 16     PS 21 16
                                             PPS 22 22   SS 27 48     • 28 24
                                               • 29 24    • 31 40    SSS 32 08
                                               • 33 08    • 36 32     • 40 05
                                               • 42 20
                         MICRON    PERIOD
                    PKPZ   0.17      1.0
                    LZ     25        20
                    LN     30        20
                    LE     26        20
       MIN          20 09                     • 09 06
       WDC  ePKP    20 09 08.0                • 09 33    PP 11 20    • 21 40
                                           PKPPKP 25 39
       FHC  ePKP    20 09 10.6              PP 11 28
                    Ms=7.1, DISTANCE=124°
                    USGS 19 50 01.4, 59.4S,  20.5W, H= 33 KM, mb=6.3, Ms=7.1
                       SOUTHWESTERN ATLANTIC OCEAN

AUG 27 FHC  ePKP     07 31 01.5
       WDC  ePKP     07 31 02.6
                                          Pdif 27 06
       MIN  ePKP     07 31 04.0           PKKP 42 03    • 30 46    PP 31 42
       BRK  ePKP     07 31 04.3                         PKKS 45 10
       BKS           07 31
                                          Pdif 27 01    PP 31 54   SKS 37 44
                                            • 39 35     PS 41 14    • 41 46
                                            • 44 17     SS 46 41    • 47 21
                                            SS 51 36    Lq 58 24
                         MICRON    PERIOD
                    LZ     34        20
                    LN     4.3       20
                    LE     23        20
       MHC  ePKP     07 31 05.8
       JAS  ePKP     07 31 06.8
                                          Pdif 27 10     • 30 44    PP 31 57
       PRI  ePKP     07 31 08.0           PKKP 41 49    PKKS 44 53
       FRI  ePKP     07 31 08.5           PKKP 41 55    PKKS 44 53
       MNV  ePKP     07 31 10.5           Pdif 27 20    PKKP 41 45
                    Ms=6.8, DISTANCE=110°
                    USGS 07 12 22.5,  8.1S, 125.3E, H= 25 KM, mb=6.4, Ms=6.8
                       TIMOR

AUG 27 BKS  iPe      21 43 51.9  43 56
       MHC  iPe      21 43 59.1  44 09
       JAS  ePd      21 44 07.7
       SAO  eP       21 44 08.3
                    BRK  21 43 47.5, 37.9N, 122.0W, H= 11 KM, ML=2.6
                       MOUNT DIABLO, CALIFORNIA

AUG 28 PRI  e(P)     14 23 57
       MHC  e(P)     14 23 58
       BKS  eP       14 24 00.6  34 24          • 34 27     • 34 30    SP 35 22
                                               SS 39 56    Lq 46 11    Lr 49 47
                         MICRON    PERIOD
                    PZ     0.06      1.2
                    LZ     9         20
                    LN     6         20
                    LE     5         20
       FRI  eP       14 24 02.2
       JAS  eP       14 24 03.5
       FHC           14 24                     • 24 20
       WDC  eP       14 24 06.6                • 24 06
       MIN  eP       14 24 07.9                • 24 24
       MNV  eP       14 24 11.5
                    Ms=6.1, DISTANCE=85°
                    USGS 14 11 30.3, 29.1S, 177.1W, H= 44 KM, mb=5.5, Ms=5.5
                       KERMADEC ISLANDS

AUG 28 WDC          20 23                     • 23 09
       MIN          20 23                     • 23 14
       BKS  ePe     20 23 28    34 21         PS 35 26     • 37 14    SS 40 20
                                               Lq 47 20    Lr 51 30
                         MICRON    PERIOD
                    PZ     0.27      9.6
                    LZ     2.3       20
                    LN     0.7       20
                    LE     2.0       20
       JAS          20 23                     • 23 20
       FRI          20 23                     • 23 22
       MNV          20 23                     • 23 29
                    Ms=5.5, DISTANCE=89°
                    USGS 20 10 05.0,  1.1S, 146.2E, H= 33 KM, mb=5.2, Ms=5.5
                       ADMIRALTY ISLANDS REGION

AUG 29 FHC          14 37                     • 37 16
       WDC  eP       14 37 22.0                • 40 23
       MIN           14 37                     • 37 25
       BKS  eP       14 37 28    48 12         PP 41 36    PS 50 24    SS 55 35
                                               Lq 05 30    Lr 09 30
                         MICRON    PERIOD
                    LZ     10        20
                    LN     4.1       20
                    LE     9         20
       MHC           14 37                     • 37 32
       JAS           14 37                     • 37 34
       PRI           14 37                     • 37 37
       FRI           14 37                     • 37 38
       MNV  eP       14 37 38.0
                    Ms=6.3, DISTANCE=101°
                    USGS 14 23 40.5, 17.4N, 119.9E, H= 12 KM, mb=6.0, Ms=6.2
                       PHILIPPINE ISLANDS REGION

AUG 29 FRI  eP       16 48 16.4
       PRI  eP       16 48 17.7
       MNV  eP       16 48 18.7
       JAS  eP       16 48 22.8
       MHC  eP       16 48 24.9
       BRK  eP       16 48 27.5
       MIN  eP       16 48 33.7
       WDC  eP       16 48 36.5
                    USGS 16 36 02.8, 31.9S,  69.2W, H=123 KM, mb=5.4
                       SAN JUAN PROVINCE, ARGENTINA

AUG 29 WDC  eP       21 07 05.9                SeP 13 11
       BKS  ePd      21 07 21.0  13 16          • 07 27     Lq 16 10    Lr 18 00
                         MICRON    PERIOD
                    PZ     0.41      0.8
                    LZ     4.5       20
                    LN     3.2       20
                    LE     4.3       20
       MHC  eP       21 07 27.2
       JAS  eP       21 07 29.9
       FRI  eP       21 07 38.0
       MNV  eP       21 07 39.0              SeP 13 27
       PRI  eP       21 07 39.9
                    Ms=5.3, DISTANCE=40°
                    USGS 20 59 59.2, 51.6N, 174.0W, H= 25 KM, mb=5.4, Ms=5.1
                       ANDREANOF ISLANDS, ALEUTIAN ISLANDS

AUG 30 SAO  iPd      03 53 23.3
       MHC  iPe      03 53 29.9
       PRI  ePd      03 53 40.2
       BKS  iPe      03 53 41.9  53 58
       JAS  ePe      03 53 45.3
       FRI  e(P)     03 53 46
                    BRK  03 53 19.9, 36.9N, 121.6W, H=  3 KM, ML=2.5
                       WEST OF HOLLISTER, CALIFORNIA

AUG 30 FHC  ePd      06 56 18.5                pP 56 46    SeP 02 58
       WDC  ePd      06 56 22.5                pP 56 50    PeP 59 38   SeP 03 00
       MIN  ePd      06 56 27.1                pP 56 55    SeP 03 02
       BKS  ePd      06 56 46.8                pP 57 14
                         MICRON    PERIOD
                    PZ     0.05      0.9
                                              pP 57 18    SeP 03 10
       JAS  ePd      06 56 49.7                 • 57 19
       MHC  eP       06 56 51.0                pP 57 21    PeP 59 48   SeP 03 12
       MNV  ePd      06 56 53.4                pP 57 27    PeP 59 49   SeP 03 14
       FRI  eP       06 56 59.0                pP 57 32    SeP 03 17
       PRI  eP       06 57 04.2
                    USGS 06 50 39.9, 63.2N, 151.1W, H=130 KM, mb=5.0
                       CENTRAL ALASKA

AUG 30 FHC                                      • 19 28
       WDC  eP       15 19 31.6
       MIN           15 19                     • 19 41
       BKS  e(P)     15 19 52    25 38          • 20 27     • 28 46
                         MICRON    PERIOD
                    PZ     0.03      1.0
                    LZ     1.1       20
                    LN     0.9       20
                    LE     1.4       20
       MHC  e(P)     15 19 57
       JAS  eP       15 19 55
       PRI  eP       15 20 04
       MNV  eP       15 20 05
       FRI           15 20                     • 20 08
                    Ms=4.9, DISTANCE=38°
                    USGS 15 12 27.6, 51.4N, 173.8W, H= 33 KM, mb=5.4, Ms=5.0
                       ANDREANOF ISLANDS, ALEUTIAN ISLANDS
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AUG 31  MNV  ePd    00 50 50.0
        FRI  ePd    00 50 52.0
        PRI  eP     00 50 55.6                    • 51 45
        JAS  ePd    00 51 00.2
        MHC  eP     00 51 05.5                    • 51 19     PP 53 09     SoS 01 00
        BKS  e(P)   00 51 10      58 21           Lr 07 35
                                MICRON    PERIOD
                           PZ     0.07       1.1
                           LZ      60         20
                           LN      39         20
                           LE      38         20
        MIN  eP     00 51 14.0
        WDC  ePd    00 51 17.4
        FHC  ePd    00 51 28.1
                    Ms=6.5, DISTANCE=53°
                    USGS 00 42 05.4,  7.3N,  76.3W, H= 33 KM, mb=5.7, Ms=6.4
                         NORTHERN COLOMBIA

AUG 31  BKS         05 42                         • 06 11
                                MICRON    PERIOD
                           LZ      2.1         20
                           LN      1.8         20
                           LE      1.6         20
        PRI         05 42                         • 42 18
        FRI  eP     05 42 22.5
        JAS  eP     05 42 24
        WDC  eP     05 42 25.0
        MNV  eP     05 42 32.0
                    USGS 05 29 59.4, 29.4S, 176.9W, H=117 KM, mb=4.6
                         KERMADEC ISLANDS REGION

AUG 31  FHC  e(P)   09 05 22                      • 05 38
        WDC  e(P)   09 05 31                      • 05 43     PoP 08 08
        MIN  eP     09 05 36.7                    • 05 48
        MHC  eP     09 05 51                      • 06 04
        JAS  eP     09 05 55.4                    • 06 07
        FRI  eP     09 06 03.3                    • 06 15     PoP 08 18
        MNV  ePd    09 06 04.3                    • 06 16     PoP 08 18
                    USGS 08 58 27.1, 51.5N, 173.9W, H= 43 KM, mb=4.8
                         ANDREANOF ISLANDS, ALEUTIAN ISLANDS

AUG 31  SAO  iPe    09 27 08.0
        PRI  eP     09 27 18.7
        MHC  eP     09 27 19.7
        FRI  eP     09 27 28.0   27 45
        JAS  ePe    09 27 30.5
                    BRK  09 27 04.6, 36.6N, 121.3W, H=  5 KM, ML=2.7
                         SOUTH-SOUTHEAST OF HOLLISTER, CALIFORNIA

AUG 31  BKS         23 16                         • 39 30     Lr 46 30
        FRI  eP     23 16 07.6
        JAS  eP     23 16 08.3
        WDC  eP     23 16 11.6
                    USGS 23 03 39.5, 29.1S, 176.8W, H= 69 KM, mb=5.1
                         KERMADEC ISLANDS REGION

AUG 31  BKS  iPe    23 39 19.4   39 28
        MHC  eP     23 39 31.1
        SAO  eP     23 39 38.2
        JAS  eP     23 39 37.4
                    BRK  23 39 09.4, 38.3N, 122.6W, H=  9 KM, ML=2.8
                         SOUTHEAST OF SANTA ROSA, CALIFORNIA

SEP 01  FHC         03 10                         • 10 50
        WDC  eP     03 10 49.0          PKPPKP 39 14
        MIN  eP     03 10 51.0
        MNV  eP     03 11 02.7
        JAS  iPe    03 11 06.4          PKPPKP 39 14
        BKS  ePe    03 11 07.5
                                MICRON    PERIOD
                           PZ     0.03       0.8
        MHC  eP     03 11 10.7
        FRI  eP     03 11 12.0
        PRI  eP     03 11 18.4
                    USGS 02 59 57.5, 73.4N,  54.6E, H=  0 KM, mb=5.7
                         NOVAYA ZEMLYA

SEP 01  BKS         09 11                         Lr 41 00
        FRI  eP     09 10 59.0
        JAS  eP     09 11 00.0
        WDC  eP     09 11 03.3
        MIN  eP     09 11 04.6
        MNV  eP     09 11 08.3
                    USGS 08 58 31.7, 29.2S, 177.3W, H= 95 KM, mb=4.6
                         KERMADEC ISLANDS

SEP 01  FHC         14 33                         • 34 54
        WDC  iPe    14 33 59.1                    pP 34 50
        MIN  iPe    14 34 02.6                    pP 34 54
        BKS         14 34                         pP 34 55
        MHC  eP     14 34 07.4                    pP 34 59
        JAS  iPe    14 34 11.1                    pP 35 02
        PRI  eP     14 34 13.5                    pP 35 05
        FRI  eP     14 34 15.3                    pP 35 06
        MNV  iPe    14 34 19.4                    pP 35 11
                    USGS 14 22 12.9, 18.3N, 145.5E, H=218 KM, mb=5.2
                         MARIANA ISLANDS

SEP 01  MNV  ePd    17 45 51.6
        FRI  eP     17 45 53.4
        PRI  eP     17 45 57.3
        JAS  eP     17 46 01.7
        MHC  eP     17 46 07.0
        BKS  eP     17 46 12.3                    • 53 20     Lr 05 50
                                MICRON    PERIOD
                           PZ     0.02       0.9
                           LZ      1.2         20
                           LN      0.7         20
                           LE      1.8         20
        MIN  e(P)   17 46 16
        WDC  eP     17 46 18.4
        FHC  ePd    17 46 29.6
                    USGS 17 37 06.8,  7.4N,  76.3W, H= 28 KM, mb=5.3, Ms=4.9
                         NORTHERN COLOMBIA

SEP 01  PRI  eP     20 58 54.0
        MHC  eP     20 58 54.9
        FRI  eP     20 58 58.7
        JAS  eP     20 58 59.7
        WDC  eP     20 59 02.9
        MIN  e(P)   20 59 04
        MNV  eP     20 59 07.5
                    USGS 20 46 06.8, 32.5S, 179.6W, H= 38 KM, mb=5.1, Ms=4.9
                         SOUTH OF KERMADEC ISLANDS

SEP 02  BRK  eP     00 13 30.5
        PRI  eP     00 13 31.0
        MHC  eP     00 13 31.1
        FRI  eP     00 13 35.9
        JAS  eP     00 13 36.4
        WDC  eP     00 13 38.0
        MNV  eP     00 13 44.8
                    USGS 00 02 11.1, 22.9S, 179.1E, H=590 KM, mb=4.9
                         SOUTH OF FIJI ISLANDS

SEP 02  FHC  ePe    05 54 21.1
        WDC  ePe    05 54 25.1
        MIN  eP     05 54 28.1
        BKS  ePd    05 54 33.6                    • 05 14
                                MICRON    PERIOD
                           PZ     0.02       0.8
        MHC  eP     05 54 36.5
        JAS  eP     05 54 38.5
        FRI  eP     05 54 42.7                    • 58 11
        PRI  eP     05 54 43.0
        MNV  eP     05 54 44.2
                    USGS 05 41 45.6, 26.4N, 126.4E, H= 97 KM, mb=5.6
                         RYUKYU ISLANDS

SEP 02  FRI  eP     07 18 07.2
        PRI  eP     07 18 07.9
        MNV  ePd    07 18 11.5
        JAS  ePd    07 18 17.0
        MHC  eP     07 18 19.2
        BKS  ePd    07 18 24.6
                                MICRON    PERIOD
                           PZ     0.03       0.8
        MIN  e(P)   07 18 35
        WDC  ePd    07 18 38.3
        FHC  eP     07 18 47.7
                    USGS 07 09 52.7,   .1S,  91.7W, H= 33 KM, mb=4.9
                         GALAPAGOS ISLANDS

SEP 02  FHC  ePKP   10 55 14.1                                PP 56 31
        WDC  ePKPe  10 55 15.6
        MIN  ePKP   10 55 16.7
        BKS  ePKPe  10 55 18.1                    • 55 38     SKKKS 03 55     PS 06 32
                                                  • 11 29     SSS 13 05       • 13 32
                                            PKPPKP 15 45      SSSS 18 00      SKPPKP 19 34
                                                  • 20 50     Lq 26 50
                                MICRON    PERIOD
                           PZ     0.03       1.1
                           LZ      1.6         20
                           LN      0.4         20
                           LE      1.6         20
        MHC  ePKP   10 55 18.8                    PP 56 40
        JAS  ePKPe  10 55 19.8                    PP 56 48     PKKP 05 25
        PRI  ePKP   10 55 21.2                PKKP 05 24
        FRI  ePKP   10 55 21.3                PKKP 05 22
        MNV  ePKPe  10 55 23.7                    PP 56 57
                    Ms=5.6, DISTANCE=122°
                    USGS 10 36 28.3, 11.0S, 119.1E, H= 33 KM, mb=6.0, Ms=5.9
                         SOUTH OF SUMBA ISLAND

SEP 02  SAO  iPd    16 24 38.3
        MHC  iPd    16 24 44.1
        PRI  ePd    16 24 55.0
        BKS  ePd    16 24 55.7                    • 25 11
        JAS  iPe    16 24 59.1
        FRI  ePe    16 24 59.5   25 19
                    BRK  16 24 35.0, 36.9N, 121.5W, H=  6 KM, ML=2.9
                         NORTHWEST OF HOLLISTER, CALIFORNIA

SEP 02  PRI  eP     19 42 56.8
        FRI  eP     19 42 57.7
        MNV  iPe    19 43 03.8
        JAS  iPe    19 43 04.6
        WDC  ePe    19 43 18.5
                    USGS 19 30 45.1, 40.1S,  90.9W, H= 33 KM, mb=4.6
                         WEST CHILE RISE

SEP 03  BKS  ePd    12 07 39.0                    Lr 28 20
                                MICRON    PERIOD
                           P      0.02       0.7
        PRI  eP     12 07 39.1
        MHC  eP     12 07 39.3
        FHC  eP     12 07 43.6
        FRI  eP     12 07 44.7
        JAS  ePd    12 07 45.7
        WDC  ePd    12 07 47.6
        MIN  eP     12 07 49.3
        MNV  ePd    12 07 56.2
                    USGS 11 56 18.4, 15.3S, 173.2W, H= 18 KM, mb=5.4, Ms=5.1
                         TONGA ISLANDS

SEP 03  MNV  eP     22 40 16.0                PoP 42 33     SoP 46 18
        PRI         22 40                     • 40 17     PoP 42 34
        FRI         22 40                     • 40 18     PoP 42 34
        JAS  eP     22 40 25.4                PoP 42 37     SoP 46 24
        MHC         22 40                     • 40 32     PoP 42 39
        BKS  eP     22 40 34     47 40        PoP 42 38     SoP 46 39     Lq 51 12
                                              Lr 53 20
                                MICRON    PERIOD
                           LZ      2.2         20
                           LN      2.0         20
                           LE      3.9         20
        WDC  eP     22 40 45.9                PoP 42 44
        FHC  eP     22 40 57.0                PoP 42 50
                    Ms=5.3, DISTANCE=40°
                    USGS 22 23 07.0, 12.5N,  87.5W, H= 79 KM, mb=5.3
                         NEAR COAST OF NICARAGUA

SEP 04  BKS  eP     03 30 11.1
                                MICRON    PERIOD
                           P      0.03       0.8
        MHC  eP     03 30 11.4
        FHC         03 30                         • 30 15
        FRI  eP     03 30 15.2
        JAS  eP     03 30 16.5
        WDC  eP     03 30 18.3
        MIN  eP     03 30 19.8
        MNV  eP     03 30 24.7
                    USGS 03 18 41.4, 24.4S, 179.9E, H=509 KM, mb=4.8
                         SOUTH OF FIJI ISLANDS

SEP 04  BKS  eP     09 01 06.0                pP 01 30     PP 04 22     SKS 11 25
                                              PS 12 19     SS 16 20     SSS 20 20
                                              Lq 23 00
                                MICRON    PERIOD
                           PZ     0.05       0.9
                           LZ      45         20
                           LN      17         20
                           LE      41         20
        FHC  eP     09 01 06.2
        MHC  eP     09 01 09.0
        PRI  eP     09 01 10.8
        WDC         09 01                         • 01 10
        JAS  eP     09 01 12.4
        MIN  eP     09 01 12.7
        FRI  eP     09 01 13.5
        MNV  eP     09 01 22.0
                    Ms=6.8, DISTANCE=82°
                    USGS 08 48 39.2, 13.7S, 166.7E, H= 33 KM, mb=6.0, Ms=6.5
                         NEW HEBRIDES ISLANDS

SEP 04  SAO  iPe    12 33 53.0
        PRI  iPe    12 33 57.8
        MHC  eP     12 34 03.4
        FRI  eP     12 34 06.8                    • 34 20
        JAS  iPd    12 34 11.9   34 32
        BKS  eP     12 34 13.2
        MNV  iPe    12 34 39.0
                    BRK  12 33 46.5, 36.6N, 121.1W, H=  7 KM, ML=2.7
                         BEAR VALLEY, CALIFORNIA

SEP 04  FHC  eP     15 48 34.6
        WDC  eP     15 48 42.4                SoP 54 28
        MIN  eP     15 48 47.7
        BKS  eP     15 48 57.3                    • 49 10     PP 50 46     SoP 55 26
                                                  Lq 58 46     Lr 00 48
                                MICRON    PERIOD
                           PZ     0.08       0.6
                           LZ      50         20
                           LN      20         20
                           LE      55         20
        MHC  eP     15 49 03.3
        JAS  eP     15 49 05.6
        SAO  eP     15 49 07.5
        FRI  eP     15 49 13.3                SoP 54 44
        MNV  eP     15 49 14.3
        PRI  eP     15 49 14.5
                    Ms=6.5, DISTANCE=43°
                    USGS 15 40 57.3, 51.2N, 178.4E, H= 34 KM, mb=5.6, Ms=6.4
                         RAT ISLANDS, ALEUTIAN ISLANDS
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SEP 04  WDC  eP     16 01 26.9
        MIN  eP     16 01 32.0
        BKS         16 01                    e 01 49
        JAS  eP     16 01 49.1
        FRI  eP     16 01 57.9
                    USGS 15 53 40.8, 51.0N, 178.6E, H= 33 KM, mb=5.0
                         RAT ISLANDS, ALEUTIAN ISLANDS

SEP 04  FHC  eP     16 51 19.4
        WDC  eP     16 51 24.3
        MIN  eP     16 51 28.6
        BKS  eP     16 51 33.7
                         MICRON     PERIOD
                    PZ     0.11       1.0
        MHC  eP     16 51 37.5
        JAS  eP     16 51 40.0
        FRI  eP     16 51 45.2
        PRI  eP     16 51 45.3
        MNV         16 51                    i 51 49
                    USGS 16 39 48.5, 33.3N, 140.7E, H= 17 KM, mb=5.6
                         SOUTH OF HONSHU, JAPAN

SEP 04  FHC  eP     16 56 23.1
        WDC  eP     16 56 31.0
        MIN  eP     16 56 36.5
        BKS  eP     16 56 45.8
                         MICRON     PERIOD
                    PZ     0.04       0.7
        MHC  eP     16 56 51.0
        JAS  eP     16 56 54.4
        FRI  eP     16 57 02.3
        PRI  eP     16 57 02.3
                    USGS 16 48 44.7, 51.1N, 178.3E, H= 37 KM, mb=5.1
                         RAT ISLANDS, ALEUTIAN ISLANDS

SEP 04  FHC  eP     17 18 09.2
        WDC  eP     17 18 17.4               i 18 24    SoP 24 02
        MIN  eP     17 18 22.4
        BKS  e(P)   17 18 32                 SoP 25 02  Lq 28 18   Lr 30 18
                         MICRON     PERIOD
                    PZ     0.09       0.8
        MHC  eP     17 18 37.2               i 18 50
        JAS  eP     17 18 40.5               SoP 24 14
        SAO  eP     17 18 41.5
        FRI  eP     17 18 48.3               SoP 24 18
        PRI  eP     17 18 48.5
        MNV  eP     17 18 48.8
                    USGS 17 10 30.6, 51.1N, 178.3E, H= 31 KM, mb=5.5, Ms=6.4
                         RAT ISLANDS, ALEUTIAN ISLANDS

SEP 04  FHC  eP     17 32 27.3
        WDC  iP     17 32 35.0               i 32 41    SoP 38 18
        MIN  eP     17 32 40.4               i 32 47
        BKS  eP     17 32 49.2               e 32 59    SoP 39 24   Lq 42 44
                                             Lr 44 42
                         MICRON     PERIOD
                    PZ     0.11       0.8
        MHC  eP     17 32 54.9
        JAS  eP     17 32 58.0               SoP 38 22
        SAO  eP     17 33 01.3
        FRI  eP     17 33 05.3
        PRI  eP     17 33 06.0
                    USGS 17 24 42.8, 51.1N, 178.0E, H=  8 KM, mb=5.8, Ms=6.6
                         RAT ISLANDS, ALEUTIAN ISLANDS

SEP 04  FHC  eP     17 46 05.2
        WDC  eP     17 46 11.9
        MIN  eP     17 46 18.4
        BKS  eP     17 46 27.0               Lr 58 00
                         MICRON     PERIOD
                    PZ     0.08       1.1
        MHC  eP     17 46 31.9
        JAS  eP     17 46 35.1
        FRI  eP     17 46 42.6
        PRI  eP     17 46 43.3
                    USGS 17 38 24.8, 51.2N, 177.8E, H= 45 KM, mb=5.3
                         RAT ISLANDS, ALEUTIAN ISLANDS

SEP 04  FHC  eP     18 07 48.6
        WDC  eP     18 07 56.6
        MIN  eP     18 08 02.5
        BKS  eP     18 08 11.0
                         MICRON     PERIOD
                    PZ     0.03       0.8
        MHC  eP     18 08 16.6
        JAS  eP     18 08 20.4
        FRI  eP     18 08 28.2
        PRI  eP     18 08 28.5
                    USGS 18 00 11.9, 51.1N, 178.2E, H= 50 KM, mb=4.9
                         RAT ISLANDS, ALEUTIAN ISLANDS

SEP 04  FHC  ePo    18 33 30.2
        WDC  ePo    18 33 37.7
        MIN  eP     18 33 43.3
        BKS  eP     18 33 52.0
                         MICRON     PERIOD
                    PZ     0.07       1.1
        MHC  eP     18 33 57.7
        JAS  ePo    18 34 01.0               e 34 21
        FRI  eP     18 34 08.8
        PRI  e(P)   18 34 09
                    USGS 18 25 49.8, 51.2N, 177.8E, H= 41 KM, mb=5.3
                         RAT ISLANDS, ALEUTIAN ISLANDS

SEP 04  FHC  eP     18 46 02.2
        WDC  ePd    18 46 08.9
        MIN  eP     18 46 15.4
        BKS  e(P)   18 46 24
                         MICRON     PERIOD
                    PZ     0.03       0.8
        MHC  e(P)   18 46 30
        JAS  ePd    18 46 33.3
        FRI  eP     18 46 40.8
        PRI  eP     18 46 41.2
                    USGS 18 38 23.6, 51.2N, 178.3E, H= 35 KM, mb=5.0
                         RAT ISLANDS, ALEUTIAN ISLANDS

SEP 04  FHC  e(P)   19 30 42
        WDC  ePo    19 30 49.8
        MIN  eP     19 30 55.2
        BKS  e(P)   19 31 03
                         MICRON     PERIOD
                    PZ     0.03       0.8
        MHC  eP     19 31 09.5
        JAS  ePo    19 31 13.0
        FRI  eP     19 31 20.7
        PRI  e(P)   19 31 21
        MNV  iPo    19 31 21.6
                    USGS 19 23 00.5, 51.2N, 177.7E, H= 35 KM, mb=5.0, Ms=4.7
                         RAT ISLANDS, ALEUTIAN ISLANDS

SEP 04  FHC  ePo    23 28 22.7               SoP 34 11
        WDC  iPo    23 28 30.5               SoP 34 14
        MIN  ePo    23 28 35.7
        BKS  ePo    23 28 44.7               SoP 35 14  Lq 38 44   Lr 40 50
                         MICRON     PERIOD
                    PZ     0.08       0.8
                    LZ     5          20
                    LN     2.7        20
                    LE     6          20
        MHC  ePo    23 28 50.5
        JAS  iPo    23 28 53.9               SoP 34 26
        SAO  e(P)   23 28 54
        FRI  ePo    23 29 01.8               SoP 34 30
        PRI  ePo    23 29 02.2
        MNV  iPo    23 29 02.7               SoP 34 30
                    Ms=5.5, DISTANCE=44°
                    USGS 23 20 44.9, 51.2N, 178.2E, H= 41 KM, mb=5.5, Ms=5.3
                         RAT ISLANDS, ALEUTIAN ISLANDS

SEP 05  WDC  eP     00 02 09.0
        BKS         00 02
        MHC         00 02                    e 02 24
        JAS  eP     00 02 33.0               e 02 30
        FRI  eP     00 02 40.7
        MNV  eP     00 02 42.0
                    USGS 23 54 27.2, 51.5N, 178.5E, H= 53 KM, mb=4.6
                         RAT ISLANDS, ALEUTIAN ISLANDS

SEP 05  FHC  e(P)   01 05 53
        WDC  ePd    01 06 00.8
        MIN  eP     01 06 06.0
        MHC  eP     01 06 20.6
        JAS  ePd    01 06 23.8
        FRI  eP     01 06 31.7
        MNV  ePd    01 06 32.5
                    USGS 00 58 10.9, 51.0N, 177.8E, H= 26 KM, mb=5.0, Ms=4.1
                         RAT ISLANDS, ALEUTIAN ISLANDS

SEP 05  FHC  ePo    03 15 48.8
        WDC  ePo    03 15 49.9
        MIN  iPo    03 15 51.7
        BKS  eP     03 16 03.4
                         MICRON     PERIOD
                    PZ     0.04       0.8
        MNV  ePo    03 16 04.1
        JAS  ePo    03 16 04.4
        MHC  eP     03 16 06.4
        FRI  ePo    03 16 09.3
        PRI  ePo    03 16 13.1
                    USGS 03 02 57.8, 50.1N,  79.0E, H=  0 KM, mb=5.9
                         EASTERN KAZAKH, SSR

SEP 05  FHC  e(P)   12 59 49
        WDC  ePd    12 59 56.7
        MIN  eP     13 00 01.8
        BKS  e(P)   13 00 11
                         MICRON     PERIOD
                    PZ     0.02       0.8
        MHC  eP     13 00 16.4
        JAS  ePd    13 00 19.9
        FRI  eP     13 00 27.6
        MNV  ePd    13 00 28.5
                    USGS 12 52 12.4, 51.4N, 178.5E, H= 33 KM, mb=4.7
                         RAT ISLANDS, ALEUTIAN ISLANDS

SEP 05  PRI  iPo    13 26 54.0
        SAO  ePd    13 27 09.3  27 23
        FRI  ePd    13 27 11.9
        MHC  e(P)   13 27 20
        JAS  iPd    13 27 24.8               e 27 49
                    BRK  13 26 50.2, 36.0N, 120.6W, H=  7 KM, ML=3.2
                         SOUTHEAST OF KING CITY, CALIFORNIA

SEP 05  FHC  ePKP   15 31 46.0
        WDC  ePKP   15 31 47.5
        MIN  ePKP   15 31 48.8
        MHC  ePKP   15 31 52.8
        JAS  ePKP   15 31 53.5
        FRI  ePKP   15 31 55.5
        PRI  ePKP   15 31 56.0
        MNV  ePKP   15 31 56.5
                    USGS 15 13 05.6,  3.9S, 103.7E, H=162 KM, mb=5.2
                         SOUTHERN SUMATERA

SEP 05  BKS  iPd    17 45 34.6  45 39
        MHC  ePo    17 45 45.6
        JAS  iPd    17 45 52.1
        SAO  eP     17 45 54.2
        FRI  e(P)   17 46 05
        WDC  e(P)   17 46 08
                    BRK  17 45 28.7, 38.2N, 122.2W, H=  8 KM, ML=3.7
                         NORTH OF BERKELEY, CALIFORNIA

SEP 05  WDC  eP     22 38 50.3
        JAS  eP     22 39 14.0
        MNV  eP     22 39 21.5
        FRI  e(P)   22 39 22
                    USGS 22 31 04.6, 51.5N, 178.5E, H= 33 KM, mb=4.6, Ms=3.3
                         RAT ISLANDS, ALEUTIAN ISLANDS

SEP 06  BKS  eP     04 46 03.4  56 32        e 46 19    ScS 56 56   SS 58 08
                                             Lq 09 00   Lr 12 20
                         MICRON     PERIOD
                    PZ     0.04       0.6
                    LZ     1.4        20
                    LN     0.7        20
                    LE     1.6        20
        SAO  eP     04 46 04.7
        MHC  ePo    04 46 05.2               e 46 21
        WDC  ePo    04 46 06.2               e 46 24
        PRI  eP     04 46 07.8
        MIN  eP     04 46 08.6               e 46 25
        JAS  ePo    04 46 09.8               e 46 27
        FRI  ePo    04 46 11.5               e 46 34
        MNV  iPo    04 46 19.3
                    Ms=5.5, DISTANCE=86°
                    USGS 04 33 27.9, 10.4S, 161.0E, H= 61 KM, mb=5.5
                         SOLOMON ISLANDS

SEP 06  WDC  eP     14 28 19.5
        JAS  eP     14 28 42.0
        FRI  eP     14 28 50.0
        MNV  eP     14 28 51.0
                    USGS 14 20 36.4, 51.4N, 178.6E, H= 46 KM, mb=4.6
                         RAT ISLANDS, ALEUTIAN ISLANDS

SEP 06  SAO  e(P)   17 48 31
        BKS  eP     17 48 31.9
                         MICRON     PERIOD
                    PZ     0.02       0.6
        PRI  eP     17 48 32.1
        MHC  eP     17 48 32.3
        FHC  eP     17 48 36.3
        FRI  eP     17 48 37.1
        JAS  eP     17 48 37.7
        WDC  ePo    17 48 39.5
        MIN  eP     17 48 41.2
        MNV  ePo    17 48 46.3
                    USGS 17 37 18.2, 22.2S, 179.7W, H=583 KM, mb=4.8
                         SOUTH OF FIJI ISLANDS

SEP 06  FRI  eP     23 12 38.9
        JAS  eP     23 12 39.4
        WDC  eP     23 12 41.4
        MIN  eP     23 12 43.9
        MNV  eP     23 12 48.1
                    USGS 23 01 24.3, 21.8S, 179.1W, H=593 KM, mb=5.1
                         FIJI ISLANDS REGION

SEP 07  SAO  iPd    23 55 01.1               i 55 17
        MHC  iPd    23 55 08.4
        PRI  eP     23 55 17.3
        BKS  e(P)   23 55 20
        JAS  eP     23 55 23.3  55 41
        FRI  eP     23 55 24.7  55 43
                    BRK  23 54 57.9, 36.8N, 121.6W, H=  2 KM, ML=2.7
                         WEST-SOUTHWEST OF HOLLISTER, CALIFORNIA

SEP 08  BKS  e(P)   00 28 37     28 50
        MHC  eP     00 28 47.5
        MIN  e(P)   00 28 52
        WDC  eP     00 28 52.5
        JAS  iPo    00 28 53.0
        SAO  eP     00 28 55.4
        FRI  e(P)   00 29 07
        PRI  e(P)   00 29 11
        MNV  e(P)   00 29 17
                    BRK  00 28 20.5, 38.7N, 122.8W, H=  8 KM, ML=3.6
                         NORTH OF SANTA ROSA, CALIFORNIA
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SEP 09  FRC  ePe   02 45 36.9                  • 45 48      • 47 38
        WDC  iPe   02 45 41.3
        MIN  ePe   02 45 45.0
        BKS  eP    02 45 52.8
                          MICRON    PERIOD
                     PZ     0.06       0.9
        MHC  ePe   02 45 56.8                  • 47 55
        JAS  iPe   02 45 58.4
        SAO  eP    02 45 59.2
        MNV  iPe   02 46 03.8
        FRI  ePe   02 46 04.0                  • 46 12
        PRI  ePe   02 46 04.9
                   USGS 02 34 59.5, 43.0N, 131.4E, H=499 KM, mb=4.9
                        E. USSR-N.E. CHINA BORDER REGION

SEP 09  SAO  iPd   11 18 42.6
        MHC  iPd   11 18 48.2
        PRI  eP    11 18 59.0
        BKS  eP    11 19 01.2   19 17
        JAS  eP    11 19 02.8   19 20
        FRI  eP    11 19 03.8
                   BRK  11 18 39.2, 36.9N, 121.5W, H=  3 KM, ML=2.6
                        NORTHWEST OF HOLLISTER, CALIFORNIA

SEP 09  WDC  eP    16 04 34.8                  • 04 36
        MIN        16 04
        JAS  eP    16 04 58.8                  • 05 06
        MNV        16 05
                   USGS 15 58 56.4, 62.2N, 149.5W, H= 59 KM, mb=4.6
                        CENTRAL ALASKA

SEP 09  SAO  eP    17 49 16.8
        PRI  eP    17 49 18.3
        MHC  eP    17 49 18.5
        FRI  eP    17 49 23.5
        JAS  eP    17 49 24.0
        WDC  eP    17 49 25.7
        MNV  ePd   17 49 33.3
                   USGS 17 38 16.4, 20.1S, 177.7W, H=561 KM, mb=4.8
                        FIJI ISLANDS REGION

SEP 10  FRI  eP    04 49 44.3
        MNV  e(P)  04 49 45
        PRI  eP    04 49 45.9
        JAS  ePe   04 49 52.0
        MHC  e(P)  04 49 55
        MIN  eP    04 50 05.7
        WDC  ePe   04 50 08.7
                   USGS 04 39 05.6, 14.2S,  76.0W, H= 58 KM, mb=5.0
                        NEAR COAST OF PERU

SEP 10  PRI  iPe   07 38 07.8
        SAO  iPe   07 38 17.3
        FRI  ePe   07 38 24.9   38 40
        MHC  e(P)  07 38 27
        JAS  ePe   07 38 33.0
        BKS  e(P)  07 38 37                    • 39 06
                   BRK  07 38 04.3, 36.2N, 120.8W, H=  8 KM, ML=3.0
                        EAST OF KING CITY, CALIFORNIA

SEP 10  FRI  ePe   10 27 48.0          PcP 30 26
        MNV  iPe   10 27 49.2          PcP 30 26
        PRI  ePe   10 27 50.6          PcP 30 28
        JAS  ePe   10 27 57.7          PcP 30 30
        SAO  eP    10 27 58.0
        MHC  ePe   10 28 02.0
        BKS  ePe   10 28 07.8                  • 30 33      • 30 38      Lq 38 40
                                               Lr 40 30
                          MICRON    PERIOD
                     PZ     0.03       0.8
                     LZ     2.1         20
                     LN     1.7         20
                     LE     2.9         20
        MIN  ePe   10 28 16.0          PcP 30 40
        WDC  ePe   10 28 20.0          PcP 30 37    SoP 34 38
        FHC  ePe   10 28 31.3
                   Ms=5.1, DISTANCE=36°
                   USGS 10 21 11.5, 13.9N,  91.7W, H= 78 KM, mb=5.6
                        NEAR COAST OF GUATEMALA

SEP 10  WDC  iPKPe 13 57 50.3
        MIN  e(PKP) 13 57 52
        BRK  e(PKP) 13 57 53
        MHC  ePKP  13 57 55.0
        JAS  ePKP  13 57 55.6
        FRI  ePKP  13 57 57.7          PP 01 00
        PRI  ePKP  13 57 57.9
        MNV  ePKP  13 57 59.2          PP 01 04
                   USGS 13 39 01.7,  6.6S, 107.1E, H=105 KM, mb=5.9
                        JAVA

SEP 10  MHC  eP    15 05 26.8
        PRI  eP    15 05 28.1
        WDC  ePe   15 05 28.5
        MIN  eP    15 05 31.2
        JAS  ePe   15 05 31.8
        FRI  eP    15 05 33.1
        MNV  eP    15 05 41.4
                   USGS 14 53 02.5, 10.9S, 165.6E, H= 40 KM, mb=5.1, Ms=4.7
                        SANTA CRUZ ISLANDS

SEP 10  JAS  eP    16 11 56.0
        MNV  eP    16 11 57.8
                   USGS 16 00 03.3, 57.3N, 106.2E, H= 33 KM, mb=4.8
                        LAKE BAIKAL REGION

SEP 11  BKS  eP    05 19 02.5   19 16       i 19 03
        MHC  ePe   05 19 12.8
        MIN  eP    05 19 17.0
        WDC  eP    05 19 17.5
        JAS  iPe   05 19 18.4
        SAO  eP    05 19 20.5
                   BRK  05 18 45.8, 38.7N, 122.8W, H=  8 KM, ML=3.5
                        NORTH OF SANTA ROSA, CALIFORNIA

SEP 11  SAO  iPd   07 30 22.6
        MHC  iPd   07 30 24.0
        BKS  eP    07 30 33.8   30 49
        PRI  e(P)  07 30 39
        JAS  eP    07 30 39.8
                   BRK  07 30 16.6, 37.0N, 121.7W, H=  9 KM, ML=2.7
                        NORTHWEST OF HOLLISTER, CALIFORNIA

SEP 11  PRI  eP    14 19 23.8
        MHC  eP    14 19 24.2
        BKS        14 19          28 47      SS 33 58     SSS 37 15     Lq 40 20
                                               Lr 42 00
        FRI  eP    14 19 29.6
        JAS  eP    14 19 30.4
        WDC  eP    14 19 32.1
        MIN  eP    14 19 34.0
        MNV  eP    14 19 40.5
                   USGS 14 08 04.6, 15.4S, 173.2W, H= 33 KM, mb=5.4, Ms=5.6
                        TONGA ISLANDS

SEP 11  PRI  eP    14 23 49.3
        MHC  eP    14 23 49.5
        BKS  e(P)  14 23 55       33 12       SS 38 25     Lq 44 00
                          MICRON    PERIOD
                     LZ     5          20
                     LN     3.0        20
                     LE     3.4        20
        FRI  eP    14 23 55.5
        JAS  eP    14 23 56.2
        WDC  eP    14 23 58.0
        MIN  eP    14 23 59.9
        MNV  eP    14 24 06.4
                   Ms=5.7, DISTANCE=73°
                   USGS 14 12 29.9, 15.4S, 173.3W, H= 33 KM, mb=5.3, Ms=5.6
                        TONGA ISLANDS

SEP 11  WDC  eP    23 33 00.7                  PP 37 00
        MNV        23 33                       PP 37 02
        JAS  eP    23 33 07.2                  PP 37 19
        FRI  eP    23 33 09.3                  PP 37 10
        BKS        23 33                        • 33 17      PP 37 07      SP 46 18
                                                SS 52 19      • 54 12       Lq 03 00
                                                Lr 11 40
                          MICRON    PERIOD
                     LZ     7          20
                     LN     9          20
                     LE     5          20
        BRK  eP    23 33 10.7
        MHC  eP    23 33 12.1
        PRI  eP    23 33 15.5                  PP 37 29
                   Ms=6.3, DISTANCE=102°
                   USGS 23 19 23.7, 35.0N,  23.0E, H= 33 KM, mb=5.8, Ms=6.0
                        CRETE

SEP 11  BKS  ePe   23 46 28.8   46 42        i 46 30
        MHC  ePd   23 46 39.0
        MIN  eP    23 46 43.2
        WDC  ePe   23 46 43.3
        JAS  ePe   23 46 44.8
        SAO  iPd   23 46 46.9
        FRI  e(P)  23 46 58
                   BRK  23 46 11.9, 38.7N, 122.7W, H=  9 KM, ML=3.8
                        NORTH OF SANTA ROSA, CALIFORNIA

SEP 12  MNV  ePKP  22 58 52.0
        FRI  ePKP  22 58 52.5
        JAS  ePKP  22 58 54.0
        WDC  ePKP  22 59 00.1
                   USGS 22 39 58.1, 59.4S,  25.9W, H= 33 KM, mb=5.3, Ms=5.2
                        SOUTH SANDWICH ISLANDS REGION

SEP 12  MNV  eP    23 26 41.7
        WDC  eP    23 27 10.0

SEP 12  FHC  eP    23 27 56.6
        WDC  eP    23 28 00.7                  pP 28 11
        JAS  eP    23 28 19.3                  pP 28 29
        FRI  eP    23 28 25.0                  pP 28 35
        PRI  eP    23 28 25.2                  pP 28 35
        MNV  eP    23 28 25.6                  pP 28 35
                   USGS 23 16 50.7, 41.8N, 138.4E, H= 32 KM, mb=5.2, Ms=5.1
                        EASTERN SEA OF JAPAN

SEP 13  SAO  eP    00 33 12.0
        BKS  eP    00 33 12.4   42 20       PPP 37 37     SSS 46 45     Lq 51 17
                                               Lr 54 00
                          MICRON    PERIOD
                     PZ     0.03       0.8
                     LZ     10         20
                     LN     7          20
                     LE     8          20
        PRI  eP    00 33 13.0          PKPPKP 01 06
        MHC  eP    00 33 13.3
        FRI  eP    00 33 18.8
        JAS  eP    00 33 19.6
        WDC  iPd   00 33 21.4          PKPPKP 01 00
        MIN  eP    00 33 24.0
        MNV  iPd   00 33 30.2
                   Ms=6.1, DISTANCE=73°
                   USGS 00 21 52.6, 15.5S, 173.3W, H= 33 KM, mb=5.7, Ms=6.0
                        TONGA ISLANDS

SEP 13  SAO  iPe   01 48 19.4
        PRI  eP    01 48 26.2   48 39        i 48 29      • 48 40
        MHC  ePe   01 48 30.8   48 44
        FRI  eP    01 48 36.3   48 53
        JAS  eP    01 48 40.7
        BKS  eP    01 48 43.8   49 04        • 48 53
        MNV  iP    01 49 09.0
                   BRK  01 48 13.7, 36.5N, 121.2W, H=  1 KM, ML=2.8
                        BEAR VALLEY, CALIFORNIA

SEP 13  PRI  eP    04 11 05.0
        FRI  eP    04 11 09.4
        JAS  eP    04 11 10.0
        WDC  eP    04 11 12.1
        MIN  eP    04 11 15.4
        MNV  eP    04 11 20.2
                   USGS 03 59 44.8, 15.5S, 173.0W, H= 33 KM, mb=5.1
                        TONGA ISLANDS

SEP 13  MNV  eP    05 47 41.2
        PRI  eP    05 47 41.4
        JAS  eP    05 47 46.4
        MIN        05 47                       • 47 58
        WDC  eP    05 48 00.5
                   USGS 05 36 03.7, 23.1S,  66.6W, H=207 KM, mb=4.9
                        JUJUY PROVINCE, ARGENTINA

SEP 14  FRI  ePKP  15 09 55.3
        PRI  ePKP  15 09 55.5
        MNV  ePKP  15 09 56.1
        JAS  ePKP  15 09 57.7                   • 10 12
        MHC  ePKP  15 09 58.7
        BKS  ePKP  15 10 00.2                   • 11 43      SKS 20 19     • 23 27
                                                • 29 00      SSS 37 03     • 49 26
                                               Lq 51 56       • 55 49      Lr 59 14
                          MICRON    PERIOD
                     PKPZ   0.04       1.0
                     LZ     1.6        18
                     LN     1.2        18
                     LE     1.4        18
        MIN  ePKP  15 10 01.6
        WDC  ePKP  15 10 02.3                   i 10 16
                   Ms=5.7, DISTANCE=128°
                   USGS 14 51 03.9, 56.4S,  25.7W, H= 38 KM, mb=5.9, Ms=5.9
                        SOUTH SANDWICH ISLANDS REGION

SEP 15  MNV  iPe   14 37 07.6
        FRI  iPe   14 37 18.7
        JAS  iPe   14 37 27.8
        PRI  eP    14 37 31.0
        SAO  eP    14 37 38.6
        MHC  eP    14 37 40.3
        BKS  e(P)  14 37 49                     • 38 11      • 38 38
        MIN  eP    14 37 54.2
        WDC        14 38                        • 38 04
                   ML=4.4, NUCLEAR EXPLOSION, NEVADA TEST SITE
                   USGS 14 36 30.1, 37.0N, 116.0W, H=  0 KM, mb=4.5
                        SOUTHERN NEVADA (NTS)

SEP 16  MHC  eP    03 22 20.3
        FRI  ePe   03 22 24.2
        JAS  ePe   03 22 25.5
        WDC  ePe   03 22 28.0
        MNV  ePe   03 22 33.2
                   USGS 03 10 04.0, 29.7S, 178.8W, H=207 KM, mb=5.0
                        KERMADEC ISLANDS

SEP 17  WDC        00 00                        • 00 41
        MIN  e(P)  00 00 42
        MNV  eP    00 00 43.2
        FRI        00 00                        • 00 45
        JAS  e(P)  00 00 48
                   USGS 23 48 08.4, 46.3N,  13.0E, H= 25 KM, mb=5.1, Ms=5.1
                        AUSTRIA
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SEP 17 FHC iPe 05 36 03.1
WDC eP 05 36 07.7 • 36 36 • 36 53 • 39 25
MIN ePe 05 36 10.9 PP 39 40
BKS ePe 05 36 12.0 • 46 40 • 46 48
• 52 10 Lq 58 46 Lr 02 17

	MICRON	PERIOD
PZ	0.15	1.0
LZ	4.0	20
LN	3.0	20
LE	3.8	20

MHC ePe 05 36 14.9 • 36 46
SAO eP 05 36 15.5
JAS iPe 05 36 18.5 • 47 07
PRI ePe 05 36 20.3 • 36 33 • 47 05
FRI ePe 05 36 21.9
MNV iPe 05 36 26.1
Ms=5.8, DISTANCE=85°
USGS 05 23 30.2, 11.8N, 143.1E, H= 33 KM, mb=6.0, Ms=6.1
SOUTH OF MARIANA ISLANDS

SEP 17 FHC ePe 10 58 43.8
WDC ePe 10 58 49.2
MIN e(P) 10 58 53
BKS eP 10 58 57.4

	MICRON	PERIOD
PZ	0.02	0.7

MHC eP 10 59 01.4
JAS ePe 10 59 04.1
PRI eP 10 59 08.6
FRI eP 10 59 09.2
MNV eP 10 59 11.0
USGS 10 47 21.5, 30.8N, 140.2E, H=173 KM, mb=4.8
SOUTH OF HONSHU, JAPAN

SEP 17 FHC eP 16 35 48.7
WDC iPd 16 35 57.2
MIN e(P) 16 36 03
BKS e(P) 16 36 11
MHC ePd 16 36 17.1
JAS iPd 16 36 21.0
PRI ePd 16 36 28.7
FRI ePd 16 36 29.0
MNV iPd 16 36 30.5
USGS 16 28 54.2, 50.4N, 173.4W, H= 33 KM, mb=4.8
ANDREANOF ISLANDS, ALEUTIAN ISLANDS

SEP 17 FHC e(P) 18 31 59
WDC iPe 18 32 05.6
MIN ePe 18 32 10.3
BKS eP 18 32 27.0
JAS iPe 18 32 32.9
MHC eP 18 32 33.2
MNV iPe 18 32 37.5
FRI ePe 18 32 42.2
FRI ePe 18 32 46.0
USGS 18 26 29.9, 61.0N, 152.9W, H=150 KM, mb=4.8
SOUTHERN ALASKA

SEP 18 FRI ePe 05 50 56.0 PcP 53 26 • 53 42
MNV ePe 05 50 56.2 PcP 53 26 • 53 41
PRI eP 05 50 58.7
SAO e(P) 05 51 05
JAS ePe 05 51 05.4 PcP 53 30 • 53 44 ScP 57 14
MHC eP 05 51 10.1
BKS eP 05 51 16.4
MIN eP 05 51 23.0
WDC eP 05 51 26.7 PcP 53 36
FHC ePe 05 51 38.0
USGS 05 44 09.3, 13.6N, 90.0W, H=108 KM, mb=5.0
NEAR COAST OF GUATEMALA

SEP 18 MHC e(P) 09 58 36
WDC e(P) 09 58 38
JAS eP 09 58 40.3 • 59 03
MIN 09 58 • 58 41
FRI eP 09 58 41.1
MNV eP 09 58 49.5 • 59 11
USGS 09 46 10.4, 13.6S, 166.7E, H= 73 KM, mb=5.5
NEW HEBRIDES ISLANDS

SEP 18 FRI eP 18 33 32.4
PRI eP 18 33 33.6
MNV ePe 18 33 35.2
JAS ePe 18 33 39.3
MHC eP 18 33 41.0
BRK eP 18 33 44.4
WDC ePe 18 33 53.4
FHC e(P) 18 34 00
USGS 18 21 23.7, 29.9S, 71.5W, H= 33 KM, mb=5.4
NEAR COAST OF CENTRAL CHILE

SEP 19 WDC e(P) 05 27 25 • 31 52
BKS eP 05 27 30 PS 41 20 SS 47 00 Lq 57 36
Lr 03 36

	MICRON	PERIOD
LZ	5	20
LN	1.8	20
LE	3.6	20

MIN e(P) 05 27 32
MHC 05 27 • 32 00
JAS e(P) 05 27 35 PKP 31 34 PP 32 09 PKKP 42 45
PRI 05 27 • 27 45 • 31 35 • 32 10
• 42 47
MNV 05 27 PKP 31 35 • 42 41
FRI 05 27 • 31 38
Ms=6.0, DISTANCE=110°
USGS 05 13 09.2, 2.0S, 126.6E, H= 33 KM, mb=5.9, Ms=5.9
CERAM SEA

SEP 19 PRI eP 06 23 04.7
MHC eP 06 23 05.3
FHC e(P) 06 23 09
FRI eP 06 23 10.5
JAS eP 06 23 11.4
WDC eP 06 23 13.6
MNV eP 06 23 21.7
USGS 06 11 47.0, 15.8S, 172.3W, H= 33 KM, mb=4.8
SAMOA ISLANDS REGION

SEP 19 BRK eP 13 01 43.1
SAO eP 13 01 43.7
MHC eP 13 01 44.3
PRI eP 13 01 44.9 • 01 52
FHC eP 13 01 46.2
FRI eP 13 01 50.0 • 01 57
JAS eP 13 01 50.0 • 01 57
WDC eP 13 01 50.2 • 01 57
MNV ePe 13 02 00.0 • 02 07
USGS 12 49 46.2, 16.4S, 178.0E, H= 22 KM, mb=5.5, Ms=5.1
FIJI ISLANDS

SEP 19 SAO eP 14 29 59.7
PRI eP 14 30 01.0
MHC ePd 14 30 01.8 pP 30 52
BKS eP 14 30 02.0
FRI ePd 14 30 05.9
JAS iPd 14 30 06.9
FHC iPd 14 30 07.0
WDC iPd 14 30 09.7 pP 31 00
MIN eP 14 30 11.0
MNV iPd 14 30 15.2
USGS 14 17 54.1, 27.8S, 178.0W, H=206 KM, mb=5.1
KERMADEC ISLANDS REGION

SEP 20 MIN iPd 06 46 42.7 46 55
WDC iPd 06 46 54.8 47 16
JAS iPe 06 46 58.9 47 22
BKS eP 06 47 03.8 47 33
BRK 06 46 25.2, 39.7N, 120.7W, H= 10 KM, ML=3.3
NORTHWEST OF TRUCKEE, CALIFORNIA

SEP 20 WDC eP 11 28 24.2
MIN eP 11 28 28.6
BKS eP 11 28 32.0
JAS eP 11 28 45.6
FRI eP 11 28 53.8 • 28 54
MNV eP 11 28 54.8
USGS 11 20 35.3, 51.3N, 178.1E, H= 28 KM, mb=4.8
RAT ISLANDS, ALEUTIAN ISLANDS

SEP 20 WDC eP 13 45 34.5
JAS eP 13 45 52.3
FRI eP 13 45 55.0
USGS 13 34 00.2, 31.1N, 142.5E, H= 33 KM, mb=4.9
SOUTH OF HONSHU, JAPAN

SEP 20 PRI eP 13 49 53.2
FRI eP 13 49 58.1
JAS eP 13 49 59.1
WDC eP 13 50 02.1
MIN eP 13 50 03.2
USGS 13 37 05.5, 32.5S, 179.6W, H= 33 KM, mb=5.2
SOUTH OF KERMADEC ISLANDS

SEP 20 FRI eP 16 34 54.8 pP 35 24 • 46 42
MNV e(P) 16 34 56 pP 35 26
PRI ePd 16 34 56.3 pP 35 26 • 46 41
SAO e(P) 16 35 01 pP 35 30
JAS eP 16 35 01.4 pP 35 31 • 46 52
MHC eP 16 35 03.9 pP 35 33
BRK e(P) 16 35 07 pP 35 37
BKS 16 35 pP 35 37 • 53 48 • 57 14
• 00 08
MIN eP 16 35 13.0 pP 35 42
WDC ePd 16 35 15.8 pP 35 46
FHC eP 16 35 23.1 pP 35 53
USGS 16 23 13.3, 23.4S, 68 3W, H=114 KM, mb=5.3
NORTHERN CHILE

SEP 20 SAO iPd 23 17 14.9
MHC iPd 23 17 23.2 17 31
PRI ePe 23 17 31.7
BKS eP 23 17 34.5 17 52
JAS ePd 23 17 38.2
FRI e(P) 23 17 39
BRK 23 17 12.5, 36.8N, 121.6W, H= 5 KM, ML=2.8
WEST-SOUTHWEST OF HOLLISTER, CALIFORNIA

SEP 21 SAO e(P) 09 40 02
BKS eP 09 40 03 50 10 • 50 38 Lr 06 10
PRI eP 09 40 03.1
MHC eP 09 40 03.9
FRI eP 09 40 08.3
FHC eP 09 40 09.2
JAS ePd 09 40 09.6 • 40 26
WDC iPd 09 40 12.3 • 40 30
MIN eP 09 40 13.8
MNV iPd 09 40 18.8 • 40 36
USGS 09 27 59.5, 23.5S, 175.2W, H= 15 KM, mb=5.5, Ms=5.3
TONGA ISLANDS REGION

SEP 21 FHC 10 42 • 42 48
WDC ePe 10 42 55.9 • 43 05
MIN eP 10 43 01.5
BRK e(P) 10 43 10
JAS ePe 10 43 19.2 • 43 28
FRI eP 10 43 27
MNV ePe 10 43 28.0 • 43 37
PRI 10 43 • 43 43
USGS 10 35 26.6, 51.4N, 178.4W, H= 30 KM, mb=4.9
ANDREANOF ISLANDS, ALEUTIAN ISLANDS

SEP 21 PRI iPd 13 20 18.3
FRI iPd 13 20 20.6 PcP 24 42
SAO eP 13 20 26.5
MNV iPd 13 20 28.9
JAS iPd 13 20 32.7 PcP 24 44
MHC ePd 13 20 33.4
BKS iPd 13 20 41.0 24 40 • 20 52 i 24 54

	MICRON	PERIOD
PZ	0.54	1.2

MIN ePd 13 21 00.0
WDC eP 13 21 04.1 PcP 24 50
FHC ePd 13 21 12.7
USGS 13 15 57.3, 20.0N, 109.2W, H= 33 KM, mb=5.7, Ms=4.7
REVILLA GIGEDO ISLANDS REGION

SEP 21 FHC eP 14 55 12.6
WDC eP 14 55 20.3
MIN eP 14 55 26.1
JAS eP 14 55 48.0
MNV eP 14 55 54.8
FRI eP 14 55 57.3
USGS 14 49 54.6, 56.7N, 152.4W, H= 20 KM, mb=4.8
KODIAK ISLAND REGION

SEP 21 WDC eP 17 48 28.3 i 48 41
MIN eP 17 48 33.5
JAS eP 17 48 51.6 i 49 05
MNV eP 17 48 58.2 i 49 12
FRI 17 48 • 48 59
PRI eP 17 49 02.0
USGS 17 39 38.8, 55.7N, 162.3E, H= 48 KM, mb=5.1, Ms=4.9
NEAR EAST COAST OF KAMCHATKA

SEP 21 FHC eP 21 10 49.0 pP 11 41
WDC iPd 21 10 55.2 18 25 pP 11 46 PP 14 16 pPP 15 25
MIN eP 21 10 59.4 i 11 53
BKS ePd 21 11 08.7 18 44 pP 11 58 sP 12 25 sS 20 12
• 22 14 Lq 25 24 • 29 36

	MICRON	PERIOD
PZ	0.06	0.9

MHC eP 21 11 13.2 pP 12 07 pPP 15 32 • 19 04
JAS iPd 21 11 16.3 PKPPKP 41 05
SAO eP 21 11 17.2 pP 12 14
MNV iPd 21 11 22.4 pPP 15 45
FRI eP 21 11 23.1
PRI eP 21 11 23.2
USGS 21 01 44.0, 51.8N, 155.2E, H=231 KM, mb=5.6
NORTHWEST OF KURIL ISLANDS

SEP 22 BKS iPd 20 49 02.3 49 15
MHC ePd 20 49 12.0
MIN ePe 20 49 13
WDC eP 20 49 13.4
JAS ePe 20 49 15.0
SAO eP 20 49 19.0
FHC eP 20 49 30
FRI eP 20 49 31
BRK 20 48 42.9, 38.8N, 122.7W, H= 4 KM, ML=3.8
NORTH OF SANTA ROSA, CALIFORNIA

SEP 23 FHC ePKPe 06 16 41.1 • 18 04 PKKP 26 56
WDC ePKPe 06 16 43.8
MIN ePKP 06 16 45.0
BRK ePKP 06 16 45.7
MHC ePKPe 06 16 47.0 PKKP 26 48
JAS ePKPe 06 16 48.0 PKKP 26 50
PRI ePKPe 06 16 49.4
FRI ePKPe 06 16 49.8
MNV ePKPe 06 16 52.0
USGS 05 57 55.6, 11.2S, 118.2E, H= 33 KM, mb=6.0, Ms=5.4
SOUTH OF SUMBAWA ISLAND

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SEP 24  FRI  ePo   21 29 03.6
        FRI  ePd   21 29 07.4
        SAO  iPd   21 29 15.0
        JAS  ePo   21 29 23.3   30 08
        MHC  e(P)  21 29 24                    • 29 30
        MNV        21 29                       • 29 32
        BKS        21 29
                   ML=4.0, LOS ANGELES AREA
                   PAS  21 28 24.3, 34.5N, 118.4W, H=  5 KM, ML=4.2
                   SOUTHERN CALIFORNIA

SEP 25  SAO  eP    16 26 14.9
        BKS  eP    16 26 16.1
                        MICRON     PERIOD
                   PZ     0.02        0.9
        FRI  eP    16 26 16.3
        MHC  eP    16 26 16.6
        FHC  ePo   16 26 20.4
        FRI  ePo   16 26 21.4
        JAS  iPo   16 26 22.0              pP 28 32
        WDC  iPo   16 26 23.7              pP 28 38
        MIN  eP    16 26 25.3
        MNV  ePo   16 26 30.6              pP 28 40
                   USGS 16 15 05.9, 21.8S, 179.5W, H=606 KM, mb=5.4
                   FIJI ISLANDS REGION

SEP 25  MHC  iPo   17 28 08.7
        BKS  ePo   17 28 19.2   28 29
        SAO  iPd   17 28 19.3
        JAS  iPo   17 28 28.0   28 44
        FRI  e(P)  17 28 34
                   BRK  17 28 06.6, 37.4N, 121.7W, H=  9 KM, ML=2.8
                   EAST-NORTHEAST OF SAN JOSE, CALIFORNIA

SEP 26  WDC  ePo   08 30 24.5                 • 30 40
        MIN  eP    08 30 29.4
        JAS  iPo   08 30 46.6
        MNV  eP    08 30 53.6                 • 31 10
        FRI  e(P)  08 30 54
        FRI  eP    08 30 54
                   USGS 08 21 21.7, 53.4N, 160.7E, H= 43 KM, mb=4.8, Ms=4.6
                   NEAR EAST COAST OF KAMCHATKA

SEP 26  FRI  iPo   21 55 21.4   55 41       i 55 25
        FRI  eP    21 55 30.2   55 59
        MNV  iPd   21 55 35.7
        JAS  iPd   21 55 39.4   56 13
        SAO  iP    21 55 40.2
        MHC        21 55                   • 55 45
                   PAS  21 54 54.9, 36.1N, 118.1W, H=  5 KM, ML=3.2
                   CENTRAL CALIFORNIA

SEP 27  FRI  eP    13 26 40.0
        BKS        13 26                   • 46 56
        JAS  eP    13 26 46.5
        MNV        13 26                   • 26 50
        WDC  eP    13 27 03.8

SEP 27  MNV  iPo   14 00 36.0
        FRI  iPo   14 00 48.0
        JAS  iP    14 00 56.9
        FRI  ePo   14 01 01.0
        SAO  eP    14 01 07.4
        MHC  eP    14 01 09.8
        BKS  eP    14 01 16.5
        MIN  ePo   14 01 22.4
        WDC  eP    14 01 32.0
                   ML=5.0, NUCLEAR EXPLOSION, NEVADA TEST SITE
                   USGS 14 00 00.2, 37.2N, 116.1W, H=  0 KM, mb=4.8
                   SOUTHERN NEVADA (NTS)

SEP 27  FRI  eP    17 33 54.7
        MHC  eP    17 33 55.7
        FRI  eP    17 34 00.1
        JAS  eP    17 34 01.3
        WDC  ePo   17 34 04.2
        MNV  ePo   17 34 10.7
                   USGS 17 22 05.8, 21.5S, 174.3W, H= 33 KM, mb=5.0
                   TONGA ISLANDS

SEP 27  MIN  eP    19 39 45.5                 • 39 54
        WDC  eP    19 40 05

SEP 28  MIN  iPo   00 17 20.9   17 33
        WDC  ePo   00 17 33.0
        JAS  eP    00 17 38.0
        MNV  e(P)  00 17 45
                   BRK  00 17 02.7, 39.8N, 120.6W, H=  5 KM, ML=3.0
                   NORTHWEST OF TRUCKEE, CALIFORNIA

SEP 28  SAO  eP    12 23 58.2
        FRI  eP    12 23 59.4
        BRK  eP    12 23 59.7
        MHC  eP    12 24 00.3
        FRI  ePo   12 24 05.0
        FHC  eP    12 24 05.3
        JAS  iPo   12 24 06.1
        WDC  iPo   12 24 08.7                 • 24 35
        MIN  eP    12 24 10.3
        MNV  iPo   12 24 15.4
                   USGS 12 12 10.3, 21.5S, 174.2W, H= 33 KM, mb=5.6, Ms=4.8
                   TONGA ISLANDS

SEP 29  PRI  eP    18 42 59.5
        BRK  e(P)  18 43 00
        BKS        18 43                   • 04 36
        MHC  eP    18 43 00.3
        FRI  eP    18 43 05.3
        JAS  ePo   18 43 06.1
        WDC  ePo   18 43 08.9
        MIN  eP    18 43 10.5
        MNV  ePo   18 43 16.0
                   USGS 18 31 29.4, 18.3S, 172.8W, H= 33 KM, mb=5.3
                   TONGA ISLANDS REGION

SEP 30  BKS        04 11                   • 37 00
        MHC  eP    04 10 57.2              • 11 10
        WDC  eP    04 10 58.0              • 11 11
        PRI  eP    04 11 00.0              • 11 13
        MIN        04 11                   • 11 14
        JAS  eP    04 11 02.0              • 11 15
        FRI  eP    04 11 03.6              • 11 16
        MNV  eP    04 11 11.3              • 11 24
                   USGS 03 58 17.9, 10.3S, 161.5E, H= 33 KM, mb=5.2, Ms=5.0
                   SOLOMON ISLANDS

SEP 30  MNV  iPo   07 17 52.5                 PcP 19 59    ScP 23 42
        FRI  eP    07 17 53.2                 PcP 20 00
        PRI  eP    07 17 56.0                 ScP 23 45
        SAO  e(P)  07 18 02
        JAS  ePo   07 18 02.1                 PcP 20 02    ScP 23 47
        MHC  eP    07 18 07.0
        BKS  eP    07 18 13.1   24 30        PcP 20 09    ScS 28 00
                        MICRON     PERIOD
                   PZ     0.07        0.9
                   LZ     2.1          20
                   LN     1.8          20
                   LE     2.8          20
        MIN  eP    07 18 18.0                 ScP 23 54
        WDC  eP    07 18 21.4                 PcP 20 10    ScP 23 58
        FHC  eP    07 18 33
                   Ms=5.2, DISTANCE=42°
                   USGS 07 10 25.3, 11.2N,  85.8W, H= 66 KM, mb=5.2
                   NICARAGUA

SEP 30  MNV  iPo   10 20 57.7
        FRI  ePo   10 21 22.3
        JAS  ePo   10 21 22.7                 • 22 01      • 23 40
        MIN  eP    10 21 27.8
        WDC  ePo   10 21 36.8                 • 24 11
        PRI  ePo   10 21 37.2
        MHC  eP    10 21 39.9                 • 24 23
        SAO  eP    10 21 41.1
        BKS  eP    10 21 42.0                 • 24 20
                        MICRON     PERIOD
                   PZ     0.15        0.9
        FHC  ePo   10 21 53.3
                   USGS 10 19 21.0, 40.5N, 110.4W, H=  5 KM, mb=5.0
                   UTAH

SEP 30  JAS  eP    11 49 13.3
        WDC  eP    11 49 15.5
        MIN  eP    11 49 17.4
        MNV  eP    11 49 23.4
                   USGS 11 37 46.2, 16.0S, 173.0W, H= 33 KM, mb=5.0, Ms=4.5
                   TONGA ISLANDS

SEP 30  PRI  eP    21 34 17.0                 • 34 25
        MHC  eP    21 34 17.5                 • 34 25
        BKS  eP    21 34 17.6   43 42         • 34 22      Lq 52 30     Lr 54 20
                        MICRON     PERIOD
                   PZ     1.0         8.0
                   LZ     3.5          20
                   LN     2.2          20
                   LE     2.2          20
        FRI  eP    21 34 23.0                 • 34 30
        JAS  eP    21 34 24.0                 • 34 32
        WDC  eP    21 34 26.0                 • 34 33
        MIN  eP    21 34 28
        MNV  ePo   21 34 34.0                 • 34 41
                   Ms=5.6, DISTANCE=74°
                   USGS 21 22 57.5, 16.0S, 172.9W, H= 33 KM, mb=5.4, Ms=5.5
                   SAMOA ISLANDS REGION

OCT 01  WDC  ePKP  13 11 20.3
        MIN  ePKP  13 11 21.7
        MHC  ePKP  13 11 23.8
        JAS  ePKP  13 11 24.8
        PRI  ePKP  13 11 26.3
        FRI  ePKP  13 11 26.6                 • 24 55
        MNV  ePKP  13 11 28.5                 • 24 55
                   USGS 12 52 31.1, 10.1S, 117.5E, H= 33 KM, mb=5.6
                   SOUTH OF SUMBAWA ISLAND

OCT 02  PRI  eP    18 41 46.5
        FRI  eP    18 41 48
        MNV  ePo   18 41 54.0
        JAS  ePo   18 41 55.0
        BRK  e(P)  18 41 58
        MIN  eP    18 42 08
        WDC  ePo   18 42 10.5
        FHC  e(P)  18 42 16
                   SOUTHERN PACIFIC OCEAN REGION

OCT 02  FRI  eP    18 56 35.2
        PRI  eP    18 56 36.8
        MNV  iPo   18 56 37.0
        JAS  ePo   18 56 43.3
        MHC  eP    18 56 46.2
        BKS  eP    18 56 51.2                 • 57 16
                        MICRON     PERIOD
                   PZ     0.05        1.0
        WDC  eP    18 57 00.4
        FHC  eP    18 57 10.4
                   USGS 18 46 35.6,  9.0S,  79.2W, H= 46 KM, mb=5.3, Ms=4.7
                   OFF COAST OF NORTHERN PERU

OCT 03  MNV  eP    04 49 17.0
        FRI  eP    04 49 24.5
        JAS  eP    04 49 28.6
        PRI        04 49                      • 49 32
        MIN  eP    04 49 34.2
        MHC  eP    04 49 35.5
        WDC  e(P)  04 49 36
                   USGS 04 38 33.7, 14.1N,  48.2W, H= 33 KM, mb=5.1, Ms=4.7
                   NORTH ATLANTIC OCEAN

OCT 03  BKS  eP    05 01 20                   • 01 31
                        MICRON     PERIOD
                   PZ     0.04        0.8
        MHC  eP    05 01 20.2
        PRI  eP    05 01 21.1
        WDC  eP    05 01 24.2                 • 01 35
        JAS  eP    05 01 25.0                 • 01 36
        FRI  eP    05 01 25.3                 • 01 37
        MIN  eP    05 01 26.2
        MNV  eP    05 01 33.7                 • 01 45
                   USGS 04 48 33.6, 20.4S, 168.3E, H= 33 KM, mb=5.4
                   LOYALTY ISLANDS

OCT 03  BKS  eP    12 33 10.3                 • 33 15      e 33 22
        MHC  eP    12 33 11.1
        PRI  eP    12 33 11.8
        WDC  ePd   12 33 15.0                 • 33 27
        JAS  ePd   12 33 15.9
        FRI  eP    12 33 16.3                 • 33 30
        MIN  eP    12 33 17.0
        MNV  ePd   12 33 24.4                 • 33 38
                   USGS 12 20 21.5, 20.4S, 168.3E, H= 11 KM, mb=5.1
                   LOYALTY ISLANDS

OCT 03  BKS  eP    19 15 04.9
                        MICRON     PERIOD
                   PZ     0.04        0.9
        SAO        19 15                      • 15 06
        MHC  eP    19 15 07.3
        FRI  eP    19 15 11.7
        JAS  eP    19 15 12.5
        WDC  iPd   19 15 14.1
        MIN  eP    19 15 16.1
        MNV  iP    19 15 21.7
                   USGS 19 04 01.5, 20.4S, 178.2W, H=547 KM, mb=4.6
                   FIJI ISLANDS REGION

OCT 03  BKS        19 48                      Lq 16 16     Lr 16 20
                        MICRON     PERIOD
                   LZ     2.5          20
                   LN     1.6          20
                   LE     1.8          20
        FRI  eP    19 48 05.7
        JAS  eP    19 48 07.0
        WDC  eP    19 48 09.9
        MIN  eP    19 48 11.4
        MNV  eP    19 48 14.8
                   USGS 19 35 30.1, 30.1S, 176.8W, H= 33 KM, mb=4.8
                   KERMADEC ISLANDS REGION

OCT 03  WDC  ePKP  23 03 53.3
        JAS  ePKP  23 03 59.5                 • 06 02
        FRI  ePKP  23 04 01.4
        MNV        23 04                      • 04 07
                   USGS 22 44 52.3,  0.5N,  98.7E, H= 13 KM, mb=5.5, Ms=4.7
                   NORTHERN SUMATERA

OCT 04  MIN  iP    06 39 45.1
        WDC  iP    06 39 57.4
        FHC  eP    06 40 16.0                 i 40 24
        JAS  iP    06 40 20.0   40 50
        BKS  eP    06 40 22.6   40 53
        MHC  eP    06 40 27.9   41 07
        MNV  iPd   06 40 28.0
        FRI  eP    06 40 34.8                 i 41 30
        SAO  eP    06 40 35.8
                   BRK  06 39 39.1, 40.2N, 121.3W, H= 21 KM, ML=3.7
                   LAKE ALMANOR, CALIFORNIA
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OCT 04  MHC  iPd   11 26 42.5
        SAO  iPd   11 26 47.9
        BKS  iPe   11 26 55.7   27 09
        JAS  eP    11 27 00.5   27 16
        FRI  eP    11 27 05.2   27 24
                   BRK  11 26 38.9, 37.2N, 121.6W, H=  1 KM, ML=2.5
                        MORGAN HILL, CALIFORNIA

OCT 04  WDC  eP    15 46 50
        JAS  eP    15 47 12
        MNV  eP    15 47 13
        FRI  e(P)  15 47 17
        FRI  eP    15 47 24.5

OCT 04  FHC  ePd   15 50 14.1
        WDC  ePd   15 50 19.4
        MIN  eP    15 50 23.2
        BKS  eP    15 50 29.2
                          MICRON     PERIOD
                     PZ     0.14        1.2
        MHC  eP    15 50 33.3
        SAO  e(P)  15 50 36
        JAS  iPd   15 50 36.0
        FRI  ePd   15 50 41.2
        PRI  ePd   15 50 41.5
        MNV  iPd   15 50 43.0
                   USGS 15 38 56.6, 36.1N, 139.7E, H= 66 KM, mb=5.4
                        HONSHU, JAPAN

OCT 04  FHC  iPe   21 43 56.9
        WDC  iPe   21 44 03.3
        MIN  ePe   21 44 07.8
        BKS  eP    21 44 17.0
                          MICRON     PERIOD
                     PZ     0.04        0.8
        MHC  ePe   21 44 22.0
        JAS  iPe   21 44 24.4
        SAO  eP    21 44 25.0
        FRI  ePe   21 44 31.3
        MNV  iPe   21 44 31.5
        PRI  eP    21 44 32.3
                   USGS 21 34 43.5, 51.5N, 156.6E, H= 95 KM, mb=5.2
                        KAMCHATKA

OCT 05  FRI  ePe   04 46 12.0
        PRI  ePe   04 46 13.2
        MNV  iPe   04 46 14.6              • 46 38
        SAO  eP    04 46 17.1
        JAS  iPe   04 46 19.0              • 46 34
        MHC  ePe   04 46 20.8
        BKS  ePe   04 46 24.2              • 46 38
                          MICRON     PERIOD
                     PZ     0.06        0.9
        MIN  ePe   04 46 30.2
        WDC  iPe   04 46 33.3              • 46 48
        FHC  ePe   04 46 40.0
                   USGS 04 34 09.8, 28.2S,  70.7W, H= 52 KM, mb=5.4
                        CENTRAL CHILE

OCT 05  WDC  eP    05 48 12.3
        MIN  eP    05 48 12.7
        MNV  eP    05 48 16.9
        JAS  eP    05 48 21.8
        BKS        05 48                   • 01 28      • 06 44      Lq 18 12
                                                                   Lr 22 30
                          MICRON     PERIOD
                     LN     3.4         20
                     LE     3.8         20
        PRI  e(P)  05 48 31
                   USGS 05 34 46.8, 41.0N,  33.4E, H= 33 KM, mb=5.3, Ms=5.8
                        TURKEY

OCT 05  PRI  e(P)  07 44 37                • 44 46
        PRI  e(P)  07 44 40                • 44 48
        MHC        07 44                   • 44 54
        BKS        07 44                   • 44 56
        JAS  eP    07 44 47                • 44 57
        MNV  eP    07 44 48.5              • 44 57
        WDC  eP    07 45 02.9              • 45 11
                   USGS 07 33 18.6, 34.7S, 109.0W, H= 33 KM, mb=4.8
                        EASTER ISLAND CORDILLERA

OCT 05  SAO  e(P)  10 40 10
        PRI  eP    10 40 10.7
        MHC  eP    10 40 11.7
        BKS  eP    10 40 12.4              • 40 31      • 40 46      • 50 34
                                           • 50 47      Lq 06 04     • 06 10
                                          Lr 09 52
                          MICRON     PERIOD
                     PZ     0.05        1.1
                     LZ     3.5         20
                     LN     2.3         20
                     LE     1.7         20
        FRI  eP    10 40 15.5          PKPPKP 08 14
        JAS  iPe   10 40 16.7          PKPPKP 08 13
        FHC  ePe   10 40 17.4
        WDC  eP    10 40 19.8              • 40 33 PKPPKP 08 12
        MIN  eP    10 40 21.7
        MNV  ePe   10 40 24.9              • 40 38 PKPPKP 08 05
                   Ms=5.6, DISTANCE=85°
                   USGS 10 27 46.3, 29.0S, 176.9W, H= 56 KM, mb=5.4, Ms=5.7
                        KERMADEC ISLANDS REGION

OCT 05  PRI  e(P)  13 40 49
        MHC  eP    13 40 49.7
        BRK        13 41                   • 41 58
        FRI  eP    13 40 54.5
        JAS  eP    13 40 55.4
        WDC  eP    13 40 58.0              • 41 06
        MNV  eP    13 41 04.5              • 41 12
                   USGS 13 28 50.6, 22.6S, 175.7W, H= 33 KM, mb=4.8
                        TONGA ISLANDS REGION

OCT 05  SAO  eP    14 26 17.3
        BKS  eP    14 26 18.5              • 35 19
                          MICRON     PERIOD
                     PZ     0.03        0.8
        PRI  eP    14 26 19.1
        MHC  eP    14 26 19.1
        PRI  eP    14 26 24.3
        JAS  iPd   14 26 24.7              • 28 23
        WDC  iPd   14 26 26.1              • 28 25      • 35 35
        MIN  eP    14 26 28.0
        MNV  iPd   14 26 34.3              • 28 33
                   USGS 14 15 24.3, 18.6S, 177.7W, H=573 KM, mb=5.6
                        FIJI ISLANDS REGION

OCT 05  FHC        19 10                   • 10 13
        WDC  ePKP  19 10 00.7              • 11 19
        MHC  ePKP  19 10 03.7              • 10 17
        JAS  ePKP  19 10 05.0              • 10 19      • 11 38
        FRI  ePKP  19 10 06.6              • 10 20
        PRI  e(PKP) 19 10 07
        MNV        19 10                   • 10 09
                   USGS 18 51 10.1, 11.2S, 117.2E, H= 33 KM, mb=5.6, Ms=4.8
                        SOUTH OF SUMBAWA ISLAND

OCT 06  WDC  eP    03 11 23
        MIN  eP    03 11 24.6
        MNV        03 11                   • 11 36
        MHC        03 11                   • 11 47
        FRI  eP    03 11 48
        PRI        03 11                   • 11 56
                   USGS 03 02 07.5, 83.2N,   4.7W, H= 33 KM, mb=4.5
                        NORTH OF SVALBARD
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OCT 07  WDC  ePKP  05 04 32
        BKS        05 04                   • 06 23
                                           • 05 52
                                           • 23 14      • 15 51      • 22 57
                          MICRON     PERIOD                          Lr 45 15
                     LZ     1.8         20
        JAS  iPKP  05 04 34.7          PKKP 14 37
        FRI  ePKP  05 04 37.6
        MNV  ePKP  05 04 40.3
                   USGS 04 45 43.2, 10.0S, 117.3E, H= 33 KM, mb=5.7, Ms=5.6
                        SOUTH OF SUMBAWA ISLAND

OCT 07  WDC  ePKP  05 58 25.5
        BKS        05 58
        JAS  ePKP  05 58 28.6              Lr 28 14
        FRI  ePKP  05 58 31.7
        MNV  iPKP  05 58 33.9
                   USGS 05 39 36.5, 10.1S, 117.7E, H= 33 KM, mb=5.6
                        SOUTH OF SUMBAWA ISLAND

OCT 07  FHC  ePKP  12 29 31.6
        WDC  ePKP  12 29 32.2
        BKS  ePKP  12 29 35.0              PP 31 06     • 42 04
                                           • 30 56      • 39 00      • 47 30
                                           • 59 00      • 01 16      Lr 10 22
                          MICRON     PERIOD
                     LZ     4.3         20
                     LN     1.1         20
                     LE     5           20
        MHC  ePKP  12 29 35.8
        JAS  ePKP  12 29 36.4              PP 31 18     PKKP 39 38   SKKP 44 03
        FRI  ePKP  12 29 38.0              • 42 10
        PRI  ePKP  12 29 38.6
        MNV  ePKP  12 29 40.3              • 42 12
                   USGS 12 10 43.7, 10.0S, 117.3E, H= 33 KM, mb=5.9, Ms=6.3
                        SOUTH OF SUMBAWA ISLAND

OCT 07  FHC  ePKP  17 20 00.1
        WDC  ePKPd 17 20 01.4              • 20 05
        MIN        17 20                   • 20 06
        BKS        17 20                   • 02 14      • 36 00      • 37 20
                                           • 51 00
        MHC  ePKP  17 20 04.6
        JAS  e(PKP) 17 20 06
        PRI  ePKP  17 20 07.4
        FRI  ePKP  17 20 07.6              • 20 10
        MNV  ePKPd 17 20 09.7              • 20 13
                   USGS 17 01 13.2,  9.9S, 117.3E, H= 33 KM, mb=5.6, Ms=5.6
                        SUMBAWA ISLAND REGION

OCT 07  FHC  ePKP  17 55 34.5
        WDC  ePKP  17 55 35.7              • 55 46      • 57 05
        MHC  e(PKP) 17 55 39
        JAS  e(PKP) 17 55 40               • 57 09
        PRI  e(PKP) 17 55 41
        FRI  ePKP  17 55 41.9              • 55 52
        MNV  ePKP  17 55 44.1              • 55 54      • 57 16
                   USGS 17 36 46.2,  9.8S, 117.3E, H= 33 KM, mb=5.8, Ms=5.8
                        SUMBAWA ISLAND REGION

OCT 07  FHC  e(P)  23 18 33
        WDC  ePd   23 18 37.7
        MHC        23 18                   • 18 50
        JAS  eP    23 18 51.9
        FRI  e(P)  23 18 57
                   USGS 23 06 04.9, 28.9N, 128.2E, H= 33 KM, mb=5.1, Ms=4.5
                        RYUKYU ISLANDS

OCT 08  WDC  iPd   00 33 11.6   33 21
        FHC  iPe   00 33 18.3   33 32
        MIN  iPe   00 33 18.4   33 32
        JAS  eP    00 33 47.2
        MNV  eP    00 34 03.0
                   BRK  00 33 00.6, 40.1N, 123.0W, H= 25 KM, ML=3.6
                        SOUTHWEST OF REDDING, CALIFORNIA

OCT 08  FRI  ePd   03 14 03.1
        MNV  iPd   03 14 04.5              pP 14 37
        PRI  ePd   03 14 05.2              pP 14 38
        SAO  eP    03 14 10.7
        JAS  ePd   03 14 11.3
        MHC  ePd   03 14 14.6
        BKS  ePd   03 14 19.0
        MIN  ePd   03 14 24.6
        WDC  ePd   03 14 28.0
        FHC  ePd   03 14 37.2
                   USGS 03 03 51.5,  9.5S,  74.7W, H=129 KM, mb=5.5
                        PERU

OCT 08  WDC  eP    21 20 32.9                                • 24 46
                   USGS 21 06 52.8, 13.3N, 124.5E, H= 32 KM, mb=5.4, Ms=5.5
                        LUZON, PHILIPPINE ISLANDS

OCT 09  JAS  eP    02 39 54.0
        WDC  eP    02 40 08.5
                   USGS 02 27 39.2, 29.9S,  71.8W, H= 41 KM, mb=4.9, Ms=4.5
                        NEAR COAST OF CENTRAL CHILE

OCT 09  MHC  iPe   03 26 22.8
        SAO  iPd   03 26 33.3                                • 26 43
        BKS  ePe   03 26 33.5
        JAS  eP    03 26 42.2   26 57
        FRI  eP    03 26 48.7
                   BRK  03 26 20.6, 37.4N, 121.7W, H= 10 KM, ML=2.6
                        NORTHEAST OF SAN JOSE, CALIFORNIA

OCT 09  WDC  ePe   04 15 33.1
        MIN  eP    04 15 37.8
        JAS  ePe   04 15 56.2
        MNV  iPe   04 16 03.4
        FRI  eP    04 16 03.9
        PRI  eP    04 16 05.1
                   USGS 04 06 55.4, 54.8N, 166.0E, H= 33 KM, mb=4.9, Ms=3.9
                        KOMANDORSKY ISLANDS REGION

OCT 09  WDC  ePKP  17 15 53.3
        MHC  ePKP  17 15 56.4
        JAS  ePKP  17 15 57.4
        PRI  ePKP  17 15 58.5
        FRI  ePKP  17 15 58.7
        MNV  ePKP  17 16 01.5
                   USGS 16 57 04.0, 10.0S, 117.5E, H= 33 KM, mb=5.6, Ms=4.9
                        SOUTH OF SUMBAWA ISLAND

OCT 10  SAO  e(P)  12 06 03                          PKKP 24 50 PKPPKP 33 05
        PRI  eP    12 06 04.0                        PKKP 24 52 PKPPKP 33 05
        MHC  eP    12 06 05.0                          PP 09 30     • 12 14      • 12 30
        BKS  ePd   12 06 06.0   16 20                 ScS 17 10     • 21 26      • 21 40
                                                      SSS 25 00     • 27 10      Lq 27 30
                                                    • 30 00         • 30 40
                          MICRON     PERIOD
                     LZ     180         20
                     LN     180         20
                     LE     37          20
                                          PKKP 24 47 PKPPKP 33 02
        FRI  ePd   12 06 09.3                • 06 36      PKKP 24 45 PKPPKP 33 02
        JAS  iPd   12 06 10.4
        FHC  eP    12 06 10.6                • 06 41      • 07 56      • 09 25
        WDC  iPd   12 06 13.7                PKKP 25 03 PKPPKP 32 58
                                            PKPPKP 32 53
        MIN  eP    12 06 14.9
        MNV  iPd   12 06 19.3
                   Ms=7.4, DISTANCE=83°
                   USGS 11 53 53.6, 25.9S, 175.4W, H= 33 KM, mb=6.6, Ms=7.2
                        SOUTH OF TONGA ISLANDS
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OCT 10  MNV  iPd    19 26 16.4
        FRI  iPd    19 26 28.0
        JAS  iPo    19 26 28.1
        MHC  ePd    19 26 44.5   27 14
        SAO  ePd    19 26 46     27 17
        PRI  ePd    19 26 46.4
        BKS  ePd    19 26 50.8                 • 27 29
        WDC  ePd    19 27 05.0
             BRK  19 26 04.2, 38.0N, 118.6W, H= 11 KM, ML=4.0
                  EAST OF MONO LAKE, CALIFORNIA

OCT 10  MNV  iPd    21 36 04.8
        FRI  iPd    21 36 09.2
        JAS  iPd    21 36 20.8   36 48
        PRI  ePd    21 36 25.8
             BRK  21 35 41.5, 37.2N, 117.8W, H=  3 KM, ML=3.3
                  EAST-SOUTHEAST OF BISHOP, CALIFORNIA

OCT 11  SAO  iPd    00 35 16.2
        MHC  iPd    00 35 24.7   35 33
        PRI  ePd    00 35 33.1
        BKS  ePd    00 35 35.0                 • 35 52
        JAS  ePd    00 35 39.0
             BRK  00 35 13.8, 36.8N, 121.6W, H=  5 KM, ML=3.0
                  WEST-SOUTHWEST OF HOLLISTER, CALIFORNIA

OCT 11  PRI  eP     02 15 52
        MHC  eP     02 15 53.5
        FRI  eP     02 15 57.5                 • 16 08
        JAS  eP     02 15 58.5                 • 16 08
        WDC  eP     02 16 02.0                 • 16 12
        MNV  eP     02 16 07.5                 • 16 18
                  SOUTH OF TONGA ISLANDS

OCT 11  FHC  eP     03 51 53
        WDC  eP     03 52 07
        BKS         03 52                      • 53 20
        JAS  eP     03 52 50
        MNV  eP     03 53 04
        FRI  eP     03 53 05.5
             USGS 03 50 49.2, 43.9N, 127.9W, H= 15 KM, mb=4.8
                  OFF COAST OF OREGON

OCT 11  MNV  iPe    07 57 43.2
        FRI  eP     07 58 07.7
        JAS  eP     07 58 07.8
        MIN  eP     07 58 13.1
        WDC  eP     07 58 22.7                 • 01 15
        PRI  eP     07 58 23.0
        MHC  eP     07 58 25.3
        SAO  eP     07 58 26.5
        BKS  eP     07 58 28.4                 • 01 14      • 02 20
                       MICRON     PERIOD
                  PZ     0.14       1.5
             USGS 07 56 06.5, 40.5N, 110.5W, H=  6 KM, mb=4.8
                  UTAH

OCT 11  WDC  eP     12 05 31.0
        JAS  eP     12 05 46.6
        FRI  eP     12 05 52.0
        MNV  eP     12 05 53.8
             USGS 11 53 55.1, 31.4N, 140.9E, H= 61 KM, mb=4.8
                  SOUTH OF HONSHU, JAPAN

OCT 11  SAO  eP     12 25 25.4
        PRI  eP     12 25 26.8
        BKS  iPd    12 25 27
        MHC  eP     12 25 27.2
        FRI  eP     12 25 31.4
        JAS  iPe    12 25 32.3
        WDC  eP     12 25 33.9
        MNV  eP     12 25 40.4
             USGS 12 14 03.4, 23.6S, 179.8E, H=548 KM, mb=5.4
                  SOUTH OF FIJI ISLANDS

OCT 11  PRI  eP     21 15 11.8
        MNV  eP     21 15 17
        JAS  eP     21 15 18.7
        MIN  eP     21 15 31.5
        WDC  eP     21 15 32.4
             USGS 21 02 34.7, 42.9S,  83.4W, H= 33 KM, mb=4.9
                  WEST CHILE RISE

OCT 12  WDC  iPe    00 57 07.7
        JAS  iP     00 57 24.3
        FRI  eP     00 57 30.0
             USGS 00 46 23.1, 41.8N, 133.7E, H=440 KM, mb=4.6
                  SEA OF JAPAN

OCT 12  BKS         05 30                      • 30 08
        MHC  eP     05 30 10.8
        FRI  eP     05 30 15.6
        JAS  eP     05 30 16.0
        WDC  eP     05 30 17.8
        MIN  eP     05 30 19.9
        MNV  eP     05 30 25.0
             USGS 05 19 03.8, 21.5S, 179.3W, H=620 KM, mb=5.0
                  FIJI ISLANDS REGION

OCT 13  SAO  ePe    00 56 47.9
        BKS  eP     00 56 48.4                 • 35 46
                       MICRON     PERIOD
                  PZ     0.05       1.0
        MHC  ePe    00 56 49.4
        FRI  ePe    00 56 49.5
        FHC  eP     00 56 53
        FRI  iPe    00 56 54.7
        JAS  iPe    00 56 55.1
        WDC  iPe    00 56 56.2
        MIN  eP     00 56 58
        MNV  iPe    00 57 04.5
             USGS 00 45 56.0, 18.2S, 178.4W, H=596 KM, mb=5.1
                  FIJI ISLANDS REGION

OCT 13  MHC  iPd    06 04 36.3   04 43
        JAS  iPd    06 04 39.1   04 48
        SAO  iPe    06 04 41.2
        FRI  ePd    06 04 47.0   05 02
             BRK  06 04 26.5, 37.5N, 121.0W, H=  9 KM, ML=2.5
                  NORTHWEST OF MERCED, CALIFORNIA

OCT 13  PRI  eP     09 14 12
        MHC  e(P)   09 14 13
        FRI  eP     09 14 17.8
        JAS  eP     09 14 18.3
        WDC  eP     09 14 19.3
        MIN  eP     09 14 21
        MNV  eP     09 14 28.2
             USGS 09 02 53.5, 16.2S, 178.0W, H=225 KM, mb=4.7
                  FIJI ISLANDS REGION

OCT 13  MHC  iPd    16 10 37.3   10 44
        JAS  iPd    16 10 40.1   10 49
        SAO  iPe    16 10 42.3
        BKS  eP     16 10 45.2   10 57         • 10 54
        FRI  iPd    16 10 48.1   10 03         • 11 03
        PRI  ePe    16 10 50.6
        MNV  ePd    16 11 08.1                 • 11 09
        MIN  eP     16 11 15.7
             BRK  16 10 27.4, 37.5N, 121.0W, H=  8 KM, ML=3.7
                  NORTHWEST OF MERCED, CALIFORNIA

OCT 13  JAS  eP     23 23 27.5
        FRI  eP     23 23 29.9
        MNV  eP     23 23 36.6
             USGS 23 10 36.5,  6.2S, 154.6E, H= 82 KM, mb=5.2
                  SOLOMON ISLANDS

OCT 13  MNV  eP     23 26 53.2
        JAS  eP     23 27 02.5
        WDC  eP     23 27 17.8
        FHC  eP     23 27 26
             USGS 23 16 27.2, 12.2S,  78.0W, H= 26 KM, mb=5.2, Ms=4.5
                  OFF COAST OF PERU

OCT 14  SAO  eP     05 06 53.1
        BKS  eP     05 06 54.3                 • 16 12      • 27 40
                       MICRON     PERIOD
                  PZ     0.02       1.0
        PRI  ePe    05 06 54.6
        MHC  eP     05 06 55.0
        FHC  eP     05 06 59.5
        FRI  iPe    05 07 00.5
        JAS  iPe    05 07 01.3                 PP 09 40
        WDC  iPe    05 07 03.2
        MIN  ePe    05 07 05.0
        MNV  iPe    05 07 11.7                 • 09 44      • 09 55
             USGS 04 55 34.8, 15.7S, 173.0W, H= 33 KM, mb=5.9, Ms=5.7
                  TONGA ISLANDS

OCT 14  PRI  eP     11 03 39.7
        FRI  eP     11 03 45.6
        JAS  eP     11 03 46.3
        WDC  eP     11 03 48.1                 • 04 49
        MIN  eP     11 03 49.8
        MNV  eP     11 03 56.0                 • 04 57
             USGS 10 52 19.7, 19.2S, 175.7W, H=250 KM, mb=5.2
                  TONGA ISLANDS

OCT 14  BKS  eP     12 41 34.2
        SAO  eP     12 41 34.5
        MHC  eP     12 41 35.6
        PRI  eP     12 41 37.0
        WDC  iPe    12 41 38.0                 • 42 09
        FRI  eP     12 41 41.4                 • 49 43
        JAS  iPe    12 41 41.6                 • 42 15      • 45 03      • 49 30
        MIN  eP     12 41 46.0
        MNV  eP     12 41 49.7                 • 42 11      • 49 39
             USGS 12 29 13.8, 15.4S, 167.4E, H=125 KM, mb=5.7
                  NEW HEBRIDES ISLANDS

OCT 15  WDC  eP     07 37 02.4
        BKS         07 37                      • 37 04
        JAS  eP     07 37 08.7                 • 40 34
        FRI  eP     07 37 11.0
        MNV         07 37                      • 40 28
             USGS 07 24 04.1,  5.8S, 151.0E, H= 65 KM, mb=5.1
                  NEW BRITAIN REGION

OCT 15  FHC  iPe    15 42 52.5   43 03
        WDC  eP     15 43 05.7
        MIN  eP     15 43 16
        MHC  e(P)   15 43 36
        SAO  eP     15 43 42.5
             BRK  15 42 37.6, 40.3N, 124.8W, H= 21 KM, MAG=3.0
                  OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

OCT 15  WDC  eP     21 12 33.1
        MHC  eP     21 12 36.5
        JAS  eP     21 12 39.4
        FRI  eP     21 12 41.9
             USGS 20 59 36.9,  5.6S, 147.1E, H=200 KM, mb=5.2
                  EAST PAPUA NEW GUINEA REGION

OCT 16  WDC  eP     02 09 29.0
        BKS         02 09        17 52         Lq 24 15      • 24 45
        MHC  eP     02 09 45.0
        JAS  eP     02 09 47.9
        FRI  eP     02 09 54.5
        MNV  eP     02 09 55.5
             USGS 01 59 36.6, 47.1N, 153.9E, H= 33 KM, mb=5.6, Ms=5.6
                  KURIL ISLANDS

OCT 16  WDC  ePe    04 31 15.3                 • 31 34
        JAS  ePe    04 31 43.1
        MNV  eP     04 31 47.8
        FRI  eP     04 31 52.3                 • 32 11
             USGS 04 25 40.0, 59.9N, 152.5W, H= 82 KM, mb=4.6
                  SOUTHERN ALASKA

OCT 16  BKS         13 26                      Lq 54 52
                       MICRON     PERIOD
                  LZ     9          20
                  LN     7          20
                  LE     6          20
        FRI  eP     13 26 43.0
        JAS  ePe    13 26 44.5
        WDC  ePe    13 26 47.7
        MNV  ePe    13 26 52.4
             USGS 13 14 05.0, 30.1S, 176.9W, H= 20 KM, mb=5.2, Ms=5.7
                  KERMADEC ISLANDS REGION

OCT 16  FHC         21 28                      • 28 05
        WDC  ePKP   21 28 06.3
        BKS         21 28                      • 00 12
                       MICRON     PERIOD
                  LZ     3.2        20
                  LE     2.5        20
        JAS  ePKP   21 28 11.0                 PKKP 38 13
        FRI  ePKP   21 28 12
        PRI  ePKP   21 28 12.5
        MNV  ePKP   21 28 14.5
             USGS 21 09 17.7,  9.7S, 117.1E, H= 33 KM, mb=5.6, Ms=5.8
                  SUMBAWA ISLANDS REGION

OCT 17  SAO  eP     17 39 34.1
        BKS  ePd    17 39 35.1   51 28         • 50 00      SS 55 54      Lq 03 20
                                                Lr 07 24
                       MICRON     PERIOD
                  PZ     0.52       1.1
        PRI  eP     17 39 35.3                 i 40 13
        MHC  eP     17 39 35.6                 i 40 09
        FHC  eP     17 39 38.8
        FRI  eP     17 39 39.8
        JAS  eP     17 39 40.1                 i 40 07      i 43 18
        WDC  iPd    17 39 41.7                 i 40 20
        MIN  eP     17 39 43.0
             USGS 17 26 40.4, 27.9S, 173.1E, H= 33 KM, mb=6.3, Ms=6.7
                  NORTH OF NEW ZEALAND

OCT 17  FRI         19 25                      • 25 19
        JAS  eP     19 25 19.4
        WDC  eP     19 25 20.9
        MNV         19 25                      • 25 27
             USGS 19 12 20.2, 27.9S, 173.7E, H= 33 KM, mb=5.1
                  NORTH OF NEW ZEALAND

OCT 17  PRI  eP     23 59 17.6
        MHC  eP     23 59 18.1
        FRI  eP     23 59 22.5
        JAS  iP     23 59 23.4
        WDC  eP     23 59 25.1
             USGS 23 47 50.9, 24.1S, 179.6E, H=531 KM, mb=4.9
                  SOUTH OF FIJI ISLANDS

OCT 18  MHC  eP     02 10 52.8
        FRI  eP     02 10 56.9
        JAS  eP     02 10 58.1
        WDC  eP     02 10 59.0
        MNV  eP     02 11 05.6
             USGS 01 57 57.1, 27.8S, 173.2E, H= 21 KM, mb=5.0
                  NORTH OF NEW ZEALAND
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OCT 18  FHC  eP    07 09 13.4
        WDC        07 09                    • 09 21
        MIN  eP    07 09 26.8
        JAS  eP    07 09 47.9
        MNV  eP    07 09 56.3
        FRI  eP    07 09 57.6
                   USGS 07 03 53.5, 54.8N, 154.6W, H= 33 KM, mb=4.9
                        SOUTH OF ALASKA

OCT 18  SAO  iPe   10 08 23.6
        PRI  iPd   10 08 31.4
        MHC  ePe   10 08 34.8
        FRI  ePe   10 08 41.3
        BKS  eP    10 08 44.0
        JAS  iPe   10 08 44.9
        MNV  iPe   10 09 12.5
                   BRK  10 08 18.8, 36.6N, 121.2W, H=  9 KM, ML=3.5
                        SOUTHEAST OF HOLLISTER, CALIFORNIA

OCT 18  SAO  eP    23 35 29.7
        PRI  ePe   23 35 31.2
        MHC  ePe   23 35 31.4
        BKS  ePe   23 35 32.0
                        MICRON     PERIOD
                   PZ     0.18        1.2
        FHC  ePe   23 35 34.5
        FRI  iPe   23 35 36.5
        JAS  iPe   23 35 36.8              pP 37 42
        WDC  iPe   23 35 38.0              pP 37 43
        MIN  ePe   23 35 39.8
        MNV  iPe   23 35 46.5              pP 37 53
                   USGS 23 24 39.2, 18.0S, 178.4W, H=603 KM, mb=5.3
                        FIJI ISLANDS REGION

OCT 19  FHC  e(P)  02 21 39
        WDC  iPe   02 21 44.5         ScP 28 28
        MIN  ePe   02 21 49.0
        BKS  eP    02 22 07.0
                        MICRON     PERIOD
                   PZ     0.06        1.0
        JAS  iPe   02 22 11.3         ScP 28 38
        MHC  eP    02 22 12.7
        MNV  iPe   02 22 15.0         PcP 25 06
        FRI  ePe   02 22 20.7         PcP 25 08    ScP 28 42
        PRI  ePe   02 22 25.9         ScP 28 38
                   USGS 02 16 02.6, 62.9N, 150.6W, H=102 KM, mb=5.0
                        CENTRAL ALASKA

OCT 19  PRI  eP    02 33 25.5
        MHC  eP    02 33 26.3
        BKS  ePe   02 33 30.6
                        MICRON     PERIOD
                   PZ     0.22        1.2
                   LZ     2.5         20
                   LN     2.7         20
                   LE     1.6         20
        FRI  eP    02 33 31.0
        JAS  ePe   02 33 32.0
        WDC  ePe   02 33 34.3
        MIN  eP    02 33 36.3
        MNV  ePe   02 33 41.6
                   USGS 02 21 40.4, 20.7S, 174.0W, H= 33 KM, mb=5.3, Ms=5.5
                        TONGA ISLANDS

OCT 19  WDC  ePKP  06 53 44
        MNV  ePKP  06 53 49.0
        JAS  ePKP  06 53 50.0
        FRI  ePKP  06 53 51.5
                   USGS 06 35 10.9, 27.8N,  54.9E, H= 33 KM, mb=5.6, Ms=5.2
                        SOUTHERN IRAN

OCT 19  SAO  eP    07 53 36.3
        BKS  ePd   07 53 37.6
                        MICRON     PERIOD
                   PZ     0.06        0.8
        PRI  eP    07 53 37.8
        MHC  eP    07 53 38.1
        FHC  eP    07 53 42.2
        FRI  eP    07 53 43.4
        JAS  iPd   07 53 43.9
        WDC  iPd   07 53 45.7
        MIN  eP    07 53 47.7
        MNV  iPd   07 53 53.9
                   USGS 07 42 24.5, 18.1S, 175.2W, H=259 KM, mb=5.1
                        TONGA ISLANDS

OCT 19  BKS  iPe   11 46 18.7
        MHC  iPd   11 46 30.3
        JAS  iPe   11 46 37.4
        SAO  eP    11 46 37.5
        WDC  e(P)  11 46 43
        FRI  e(P)  11 46 50
                   BRK  11 46 08.4, 38.3N, 122.6W, H= 11 KM, ML=3.3
                        SOUTHEAST OF SANTA ROSA, CALIFORNIA

OCT 19  FHC        21 30                    • 30 08
        WDC  eP    21 30 13.8
        MHC        21 30                    • 30 34
        JAS  eP    21 30 34.8
        MNV  eP    21 30 41.7
                   USGS 21 20 41.6, 49.3N, 155.6E, H= 62 KM, mb=5.3
                        KURIL ISLANDS

OCT 19  FHC  eP    22 52 29.4
        WDC  ePd   22 52 33.0              PP 56 14      • 10 39
        MIN  eP    22 52 35.9
        BKS        22 52                    • 52 39
        MHC  eP    22 52 44.1
        JAS  ePd   22 52 45.7              PP 56 33
        PRI  eP    22 52 50.2
        FRI  eP    22 52 50.3               • 56 46
        MNV  eP    22 52 51.7
                   USGS 22 39 34.1, 22.6N, 121.6E, H=158 KM, mb=5.5
                        TAIWAN REGION

OCT 20  FHC        05 50                    • 50 00
        WDC  eP    05 49 53.4               • 50 06
        MIN        05 50                    • 50 01      • 50 10
        BKS        05 50                    Lq 04 45     Lr 07 00
                        MICRON     PERIOD
                   LZ     1.8         20
                   LN     1.4         20
                   LE     1.4         20
        MHC        05 50
        JAS  eP    05 50 13.5               • 50 23
        MNV  eP    05 50 21                 • 50 26
        FRI  e(P)  05 50 22                 • 50 33
        PRI  e(P)  05 50 29                 • 50 33
                   Ms=5.2, DISTANCE=62°     • 50 42
                   USGS 05 40 05.7, 47.2N, 154.1E, H= 44 KM, mb=5.4, Ms=5.4
                        KURIL ISLANDS

OCT 20  FHC
        WDC  eP    08 26                    • 26 44      • 26 54
        MIN  eP    08 26 50.0               • 27 01
        BKS        08 26 54.5               • 27 06
        MHC  eP    08 27                    • 39 40
        JAS  eP    08 27 10.9               • 27 22
        MNV  eP    08 27 13.0               • 27 25
        FRI  eP    08 27 19.4               • 27 31
        PRI  eP    08 27 20.6               • 27 32
                   USGS 08 18 07.0, 56.4N, 164.1E, H= 40 KM, mb=5.2, Ms=4.9
                        KOMANDORSKY ISLANDS REGION

OCT 20  MNV  eP    09 27 52.9
        FRI  eP    09 27 54.2               PcP 30 06
        PRI  eP    09 27 56.2               PcP 30 06
        JAS  eP    09 28 02.9               PcP 30 09
        MHC  eP    09 28 08                 PcP 30 10
        BKS        09 28                    PcP 30 12
        MIN  eP    09 28 19.5               PcP 30 15    • 45 45
        WDC  eP    09 28 22.8               PcP 30 16
        FHC  e(P)  09 28 36                 PcP 30 18
                                            PcP 30 22
                   USGS 09 20 34.8, 11.7N,  87.0W, H= 69 KM, mb=5.2
                        NEAR COAST OF NICARAGUA

OCT 21  FHC  eP    19 16 27.3
        WDC  iPd   19 16 35.7
        MIN  ePd   19 16 41.2
        BKS  eP    19 16 51.2               • 27 00
                        MICRON     PERIOD
                   PZ     0.06        0.8
        MHC  ePd   19 16 56.7
        JAS  iPd   19 17 00.2
        SAO  eP    19 17 01.0
        FRI  ePd   19 17 08.6
        PRI  eP    19 17 08.8               PcP 19 18
        MNV  iPd   19 17 09.3               PcP 19 18
                   USGS 19 09 47.2, 52.3N, 171.4W, H= 67 KM, mb=5.3
                        FOX ISLANDS, ALEUTIAN ISLANDS

OCT 21  FRI  eP    22 26 57.2
        JAS  ePd   22 26 57.9
        WDC  ePd   22 26 59.1
        MNV  iPd   22 27 05.9
                   USGS 22 14 00.0, 27.7S, 173.8E, H= 33 KM, mb=5.3
                        NORTH OF NEW ZEALAND

OCT 22  MNV  ePd   01 32 16.0               ScP 37 10
        FRI  eP    01 32 18.5
        PRI  e(P)  01 32 22
        JAS  eP    01 32 26.3               ScP 37 16
        SAO  e(P)  01 32 29
        MHC  eP    01 32 31.6
        BKS  eP    01 32 36.0
                        MICRON     PERIOD
                   PZ     0.06        0.8
        MIN  eP    01 32 39.4
        WDC  ePd   01 32 42.0               ScP 37 26
        FHC  eP    01 32 52.9               ScP 37 34
                   USGS 01 23 27.0,  7.1N,  72.9W, H=169 KM, mb=5.3
                        NORTHERN COLOMBIA

OCT 22  BRK  e(P)  02 28 44
        WDC  eP    02 28 47.4
        PRI  e(P)  02 28 50
        JAS  eP    02 28 50.9
        MIN  e(P)  02 28 52
        FRI  eP    02 28 52.7
        MNV  eP    02 29 00.7
                   USGS 02 16 08.9, 10.1S, 161.0E, H= 48 KM, mb=5.1, Ms=4.3
                        SOLOMON ISLANDS

OCT 22  FRI  eP    18 06 14
        PRI  eP    18 06 14.8
        JAS  iPd   18 06 19.4
        WDC  iPd   18 06 32.1
        FHC  eP    18 06 38.7
                   USGS 17 54 45.9, 28.0S,  62.9W, H=603 KM, mb=5.3
                        SANTIAGO DEL ESTERO PROVINCE, ARGENTINA

OCT 22  FRI  eP    18 08 43.3          PcP 08 47      pP 11 06    PKKP 26 56
                                       SKPPKP 37 28
        PRI  eP    18 08 45.1          PcP 08 49      pP 11 00 SKPPKP 37 30
        MNV  e(P)  18 08 46            SP 18 24    PKKP 26 57 SKPPKP 37 29
        SAO  eP    18 08 48.7
        JAS  iPe   18 08 49.7               pP 11 03     pPP 14 12     SP 18 32
                                       PKKP 26 53 SKPPKP 37 25
        MHC  eP    18 08 51.8          PcP 08 56      pP 11 08
        BKS  eP    18 08 54.8  18 40   PcP 08 58      pP 11 08      • 15 30
                                       SKS 18 25      sS 21 30
                        MICRON     PERIOD
                   PZ     0.56        0.6
        MIN  eP    18 08 59.5          PcP 09 03
        WDC  iPe   18 09 02.4               pP 11 18     SP 18 55    PKKP 26 46
                                            • 29 08
        FHC  ePe   18 09 09.0          PcP 09 13      pP 11 24    PKKP 26 44
                   USGS 17 57 17.4, 28.0S,  63.0W, H=614 KM, mb=6.1
                        SANTIAGO DEL ESTERO PROVINCE, ARGENTINA

OCT 22  SAO  eP    19 58 12
        PRI  eP    19 58 13.5
        MHC  eP    19 58 13.5
        BRK  eP    19 58 14
        FRI  eP    19 58 17.8
        JAS  eP    19 58 19.9
        WDC  eP    19 58 22.9
        MNV  eP    19 58 28.6
                   FIJI ISLANDS REGION

OCT 22  BRK  eP    21 09 11.1
        PRI  ePe   21 09 12.0
        MHC  eP    21 09 12.1
        FRI  eP    21 09 17.5
        JAS  ePe   21 09 18.0
        WDC  ePe   21 09 19.1
        MNV  ePe   21 09 28.0
                   USGS 20 58 15.9, 15.6S, 177.0W, H=392 KM, mb=4.5
                        FIJI ISLANDS REGION

OCT 23  PRI  eP    02 57 12.6
        FRI  eP    02 57 17.4
        JAS  eP    02 57 17.9
        WDC  eP    02 57 19.7
        MNV  eP    02 57 26.6
                   USGS 02 46 02.2, 21.7S, 179.4W, H=592 KM, mb=5.0
                        FIJI ISLANDS REGION

OCT 23  SAO  eP    10 44 28.4
        BKS  eP    10 44 29.0               pP 44 53
        MHC  eP    10 44 29.7               pP 44 54
        PRI  eP    10 44 30.5               pP 44 55
        WDC  iPd   10 44 34.0               pP 44 59     PP 48 00    pPP 48 24
        JAS  ePd   10 44 34.4               pP 44 59     PP 48 00    pPP 48 24
        FRI  ePd   10 44 34.9               pP 45 00
        MIN  ePd   10 44 36.1
        MNV  iPd   10 44 43.3               pP 45 06     PP 48 12    pPP 48 37
                   USGS 10 31 53.1, 21.5S, 170.3E, H= 89 KM, mb=5.6
                        LOYALTY ISLANDS REGION

OCT 24  PRI  eP    00 32 43.1
        BRK  e(P)  00 32 44
        MHC  eP    00 32 44.1
        FRI  eP    00 32 48.0
        JAS  ePe   00 32 49.1
        WDC  ePe   00 32 52.4
        MNV  ePe   00 32 57.0
                   USGS 00 20 05.7, 30.5S, 177.8W, H= 19 KM, mb=5.4
                        KERMADEC ISLANDS

OCT 24  WDC  eP    01 56 39.8
        MIN  eP    01 56 43.6
        BRK  e(P)  01 56 49
        MHC  eP    01 56 53
        JAS  eP    01 56 55.6
        PRI  e(P)  01 57 01
        FRI  eP    01 57 01.2
        MNV  eP    01 57 03.3
                   USGS 01 45 09.9, 33.4N, 140.7E, H= 56 KM, mb=5.0
                        SOUTH OF HONSHU, JAPAN
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OCT 24  MNV  eP    06 08 25.5
        MIN  eP    06 08 29.2                    • 08 32
        WDC        06 08
        JAS  eP    06 08 36.8
        FRI  eP    06 08 38.5
        MHC  eP    06 08 45.0
                   USGS 05 58 27.8, 52.2N,  31.6W, H= 33 KM, mb=4.9, Ms=5.0
                        NORTH ATLANTIC RIDGE

                                        pP 16 19    PcP 18 38
OCT 24  JAS  eP    07 15 59.0
        MNV  eP    07 16 06.0          PcP 18 40
        FRI  eP    07 16 08.0          PcP 18 40
                   USGS 07 09 41.2, 56.5N, 161.7W, H=198 KM, mb=4.7
                        ALASKA PENINSULA

OCT 24  FRI  eP    16 19 13.0
        PRI  ePd   16 19 14.1
        MNV  ePd   16 19 15.8
        JAS  ePd   16 19 19.6
        MHC  eP    16 19 21.2
        BKS  e(P)  16 19 22
        MIN  eP    16 19 31
        WDC  ePd   16 19 33.1
                   USGS 16 06 55.6, 33.2S,  70.0W, H=112 KM, mb=4.9
                        CHILE-ARGENTINA BORDER REGION

OCT 24  SAO  iPe   19 08 21.9
        PRI  eP    19 08 32.4                    i 08 46
        MHC  eP    19 08 33.6
        BKS  eP    19 08 34.2
        FRI  eP    19 08 42.0                    i 09 05
        JAS  iPe   19 08 44.7
                   BRK  19 08 18.4, 36.6N, 121.3W, H=  4 KM, ML=2.8
                        STONE CANYON, CALIFORNIA

                                        PcP 43 06
OCT 25  FRI  eP    06 40 27.9          PcP 43 06
        MNV  iPe   06 40 28.5          PcP 43 08
        PRI  eP    06 40 31            • 40 37
        SAO        06 40               PcP 43 10
        JAS  eP    06 40 37.5          PcP 43 12
        MHC  ePe   06 40 41.9            • 43 14
        BKS        06 41
        FHC  eP    06 41 11.5
                   USGS 06 33 58.5, 15.0N,  91.2W, H=117 KM, mb=4.8
                        MEXICO-GUATEMALA BORDER REGION

OCT 26  SAO  iPd   00 49 09.8
        MHC  iPd   00 49 16.0
        PRI  ePe   00 49 25.5
        BKS  eP    00 49 28.2  49 44
        JAS  ePd   00 49 30.2  49 48
        FRI  ePd   00 49 31.5  49 49
                   BRK  00 49 06.7, 36.9N, 121.5W, H=  7 KM, ML=2.7
                        NORTHWEST OF HOLLISTER, CALIFORNIA

OCT 26  FRI  eP    02 32 16.5
        JAS  eP    02 32 17
        WDC  eP    02 32 18
        MNV  eP    02 32 27
                   USGS 02 20 35.1, 15.6S, 177.3W, H= 33 KM, mb=4.8, Ms=5.5
                        FIJI ISLANDS REGION

OCT 26  JAS        11 31                         • 31 58
        WDC        11 32                         • 32 02
        MNV  eP    11 32 08.8
                   USGS 11 20 16.1, 15.6S, 177.4W, H= 41 KM, mb=5.0, Ms=5.7
                        FIJI ISLANDS REGION

OCT 26  MNV  iPe   14 15 38.0
        FRI  iPe   14 15 48.9
        JAS  eP    14 15 59.0
        PRI  eP    14 16 01.7
        SAO  eP    14 16 08.5
        MHC  eP    14 16 11.0
        BKS        14 16                         • 16 26
        MIN  eP    14 16 24.5
                   ML=4.8, NUCLEAR EXPLOSION, NEVADA TEST SITE
                   USGS 14 15 00.1, 37.0N, 116.0W, H=  0 KM, mb=4.4
                        SOUTHERN NEVADA (NTS)

OCT 26  FHC  eP    15 18 36.5                    i 18 44
        WDC  eP    15 18 44.5                    i 18 52
        MIN  eP    15 18 50.3                    i 18 57
        BKS  eP    15 18 59.5
                        MICRON    PERIOD
                   PZ     0.11       1.0
        MHC  eP    15 19 05.1
        JAS  iPe   15 19 08.3                    i 19 27
        SAO  eP    15 19 08.3
        FRI  eP    15 19 15.7                    i 19 20
        PRI  eP    15 19 16.0
        MNV  iPe   15 19 17.0
                   USGS 15 10 58.8, 51.1N, 178.3E, H= 33 KM, mb=5.6, Ms=5.2
                        RAT ISLANDS, ALEUTIAN ISLANDS

OCT 26  SAO  eP    16 11 33
        FRI  eP    16 11 35.2
        MHC  eP    16 11 37.2
        JAS  eP    16 11 41.6
        MNV  eP    16 11 47.2
        FHC        16 11                         • 11 54
        WDC  iPe   16 11 58.1
                   USGS 16 01 44.7, 20.8S, 126.8W, H= 33 KM, mb=4.9
                        SOUTH PACIFIC OCEAN

OCT 26  WDC  eP    18 33 46.4
        JAS  eP    18 33 47.4
                   USGS 18 21 29.9, 19.0S, 169.4E, H=252 KM, mb=5.0
                        NEW HEBRIDES ISLANDS

OCT 27  MHC  eP    11 40 34.3
        FRI  eP    11 40 38.6
        JAS  eP    11 40 39.5
        WDC  eP    11 40 41.2
        MIN  eP    11 40 42.7
        MNV  eP    11 40 49.0
                   USGS 11 29 09.8, 23.6S, 179.9W, H=532 KM, mb=5.0
                        SOUTH OF FIJI ISLANDS

OCT 27  PRI  eP    12 17 59.8
        FRI  eP    12 18 05.2
        JAS  eP    12 18 05.5
        WDC  eP    12 18 06.3
        MIN  eP    12 18 08.5
        MNV  eP    12 18 15.5
                   USGS 12 06 19.2, 16.4S, 177.5W, H= 33 KM, mb=5.1
                        FIJI ISLANDS REGION

OCT 27  BKS        18 05                         • 05 22
        FRI  eP    18 05 25.0
        JAS  eP    18 05 25.5
        WDC  eP    18 05 27.0
        MIN  eP    18 05 28.9
        MNV  eP    18 05 34.4
                   USGS 17 54 15.9, 20.9S, 179.2W, H=622 KM, mb=4.8
                        FIJI ISLANDS REGION

OCT 28  SAO  iPe   11 00 57.1
        PRI  iPd   11 01 03.8  01 14
        MHC  iPd   11 01 08.5
        FRI  iPe   11 01 14.2  01 31
        BKS  ePd   11 01 17.7  01 39
        JAS  iPd   11 01 18.3  01 37
        MNV  eP    11 01 45.4
                   BRK  11 00 51.8, 36.6N, 121.2W, H=  6 KM, ML=2.8
                        BEAR VALLEY, CALIFORNIA

OCT 28  JAS  eP    18 10 31.5
        MNV  eP    18 10 37.1

OCT 29  WDC  ePe   03 19 51.8                    • 19 55
        MIN  eP    03 19 53.6                    • 19 57
        MNV  eP    03 20 06.0                    • 20 09
        JAS  eP    03 20 06.4                    • 20 09
        BKS        03 20                         • 20 08
        MHC  eP    03 20 08.3
        FRI  eP    03 20 11.0                    • 20 14
        PRI  eP    03 20 14.4
                   USGS 03 06 57.7, 49.8N,  78.2E, H=  0 KM, mb=5.5
                        EASTERN KAZAKH, SSR

OCT 29  WDC  ePe   03 19 54.9
        MIN  ePe   03 19 56.7
        MNV  ePe   03 20 09.2
        JAS  ePe   03 20 09.2
        FRI  ePe   03 20 14.0
                   USGS 03 07 02.9, 50.1N,  78.9E, H=  0 KM, mb=5.6
                        EASTERN KAZAKH, S.S.R.

OCT 29  BKS  ePe   10 27 23.3
                        MICRON    PERIOD
                   PZ     0.04       0.5
        MHC  eP    10 27 24.8
        WDC  eP    10 27 28.0
        JAS  eP    10 27 29.5
        MIN  eP    10 27 29.7
        FRI  eP    10 27 30.6
        MNV  eP    10 27 39.7
                   USGS 10 15 12.1, 14.4S, 167.3E, H=184 KM, mb=5.1
                        NEW HEBRIDES ISLANDS

OCT 29  MNV  ePe   10 52 27.0
        PRI  ePe   10 52 27.5
        JAS  iPe   10 52 32.5
        MIN  eP    10 52 43
        WDC  iPe   10 52 46.5
                   USGS 10 40 57.8, 22.0S,  65.9W, H=263 KM, mb=4.6
                        JUJUY PROVINCE, ARGENTINA

OCT 29  BKS  ePe   17 27 58.6
                        MICRON    PERIOD
                   PZ     0.02       0.7
        PRI  eP    17 27 58.8
        MHC  eP    17 27 59.1
        FRI  eP    17 28 03.9
        JAS  eP    17 28 04.5
        WDC  eP    17 28 06.2
        MIN  eP    17 28 08.1
        MNV  eP    17 28 13.7
                   USGS 17 16 52.2, 20.7S, 178.0W, H=538 KM, mb=4.8
                        FIJI ISLANDS REGION

OCT 29  FRI  eP    19 02 45.0
        JAS  ePe   19 02 51.6
        MNV  eP    19 02 56.9
        WDC  ePe   19 03 07.8
        MIN  eP    19 03 08.0
                   USGS 18 52 54.2, 20.8S, 126.6W, H= 33 KM, mb=4.8
                        SOUTH PACIFIC OCEAN

OCT 29  WDC  ePd   20 28 55.6                    • 29 26
        BKS  e(P)  20 28 58
                        MICRON    PERIOD
                   PZ     0.06       1.3
        MIN  eP    20 28 58
        MHC  eP    20 28 58
        PRI  eP    20 29 02
        JAS  ePd   20 29 02.0                    • 29 34     PP 32 55
        FRI  eP    20 29 04.4
        MNV  eP    20 29 10.8
                   USGS 20 15 45.1,  6.2S, 146.6E, H=106 KM, mb=5.9
                        EAST PAPUA NEW GUINEA REGION

OCT 29  PRI  e(P)  20 43 05
        FRI  eP    20 43 11.5
        JAS  eP    20 43 18.0
        MNV  eP    20 43 23.3
        WDC  eP    20 43 34.0
                   SOUTH PACIFIC OCEAN REGION

OCT 30  SAO  eP    01 16 10.0
        BKS  ePe   01 16 11.7
                        MICRON    PERIOD
                   PZ     0.03       0.5
        MHC  eP    01 16 11.7
        PRI  eP    01 16 12.3
        FRI  eP    01 16 16.7
        JAS  iPd   01 16 17.1
        WDC  iPd   01 16 18.7
        MIN  ePd   01 16 20.4
        MNV  ePd   01 16 26.1
                   USGS 01 05 06.2, 20.7S, 178.4W, H=567 KM, mb=5.1
                        FIJI ISLANDS REGION

OCT 30  FRI        05 29                         • 29 39
        JAS  eP    05 29 45.2
        MNV  eP    05 29 50.3
        WDC  eP    05 30 01.3
                   SOUTH PACIFIC OCEAN REGION

OCT 30  SAO  eP    06 36 31.0
        BKS  iPd   06 36 32.2
                        MICRON    PERIOD
                   PZ     0.10       0.7
        PRI  ePd   06 36 32.5
        MHC  ePd   06 36 32.8
        FHC  ePd   06 36 36.3
        FRI  ePd   06 36 37.6
        JAS  iPd   06 36 38.1
        WDC  iPd   06 36 39.7
        MIN  ePd   06 36 41.5
        MNV  iPd   06 36 47.3
                   USGS 06 25 30.0, 20.4S, 178.6W, H=600 KM, mb=5.6
                        FIJI ISLANDS REGION

OCT 30  BKS  ePd   13 05 45.6                    • 13 28
                        MICRON    PERIOD
                   PZ     0.05       0.7
        FHC  e(P)  13 05 46
        SAO  e(P)  13 05 46
        MHC  ePd   13 05 46.7
        PRI  eP    13 05 47.5
        WDC  e(P)  13 05 50
        JAS  ePd   13 05 51.7
        MIN  eP    13 05 52.0
        FRI  ePd   13 05 52.5
        MNV  ePd   13 06 00.9
                   USGS 12 53 22.8, 14.9S, 167.0E, H=103 KM, mb=5.6
                        NEW HEBRIDES ISLANDS

OCT 30  BKS  ePe   16 38 16.6
                        MICRON    PERIOD
                   PZ     0.03       0.8
        MHC  eP    16 38 16.7
        FRI  eP    16 38 20.7
        JAS  eP    16 38 21.8
        WDC  eP    16 38 25.0
        MIN  eP    16 38 27.3
        MNV  eP    16 38 30.7
                   USGS 16 25 58.0, 27.2S, 176.7W, H= 47 KM, mb=5.2
                        KERMADEC ISLANDS REGION

OCT 30  PRI        22 39                         • 39 19
        MHC  eP    22 39 19.2
        FRI  eP    22 39 23.3
        JAS  eP    22 39 24.5
        WDC  eP    22 39 27.6
        MIN        22 39                         • 39 29
        MNV  eP    22 39 32.9
                   USGS 22 27 01.9, 27.4S, 176.4W, H= 57 KM, mb=5.3, Ms=4.7
                        KERMADEC ISLANDS REGION
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OCT 31  FRI  eP    08 28 59.5
        FRI  eP    08 29 05.0
        MHC  eP    08 29 07.1
        BKS  ePd   08 29 10.5
                        MICRON     PERIOD
                   PZ     0.02        0.8
        JAS  ePc   08 29 11.5
        MNV  ePc   08 29 16.7
        MIN  eP    08 29 26.3
        WDC  eP    08 29 28.0
                   USGS 08 19 14.5, 20.8S, 126.7W, H= 33 KM, mb=5.1, Ms=4.2
                        SOUTH PACIFIC OCEAN

OCT 31  FRI  ePc   13 19 14.5
        JAS  ePc   13 19 15.8
        WDC  ePc   13 19 18.0
        MIN  ePc   13 19 20
        MNV  ePc   13 19 25.0
                   USGS 13 07 27.8, 20.7S, 174.8W, H= 86 KM, mb=4.8
                        TONGA ISLANDS

NOV 01  BKS  ePd   00 04 22.2  04 31
        MHC  e(P)  00 04 34
        JAS  eP    00 04 39.8
        SAO  e(P)  00 04 42
                   BRK  00 04 15.9, 38.2N, 122.2W, H=  7 KM, ML=2.6
                        NORTH-NORTHEAST OF BERKELEY, CALIFORNIA

NOV 01  BKS  iPc   04 06 49.5  06 54
        MHC  iPc   04 06 59.0  07 10
        SAO  eP    04 07 05.2
        JAS  iPc   04 07 12.0  07 33
                   BRK  04 06 43.4, 37.7N, 122.5W, H=  8 KM, ML=3.1
                        OFF COAST SOUTHWEST OF SAN FRANCISCO, CALIFORNIA

NOV 01  BKS  iPc   04 13 18.0  13 22
        MHC  iPc   04 13 27.3  13 39
        SAO  eP    04 13 33.8
        JAS  eP    04 13 40.5
                   BRK  04 13 11.8, 37.7N, 122.5W, H=  8 KM, ML=2.5
                        OFF COAST SOUTHWEST OF SAN FRANCISCO, CALIFORNIA

NOV 01  MNV  iPc   18 06 34.4
        FRI  iPc   18 06 46.4
        JAS  iPc   18 06 55.2
        PHI  ePc   18 07 00.3
        SAO        18 07                 • 07 08
        MHC        18 07                 • 07 08
        BKS        18 07                 • 07 12      • 07 25
        MIN        18 07                 • 07 22
        WDC        18 07                 • 07 30
                   ML=4.1, NUCLEAR EXPLOSION, NEVADA TEST SITE
                   USGS 18 06 00.1, 37.2N, 116.2W, H=  0 KM, mb=4.7
                        SOUTHERN NEVADA (NTS)

NOV 01  FRI  eP    20 54 04.0
        BKS  eP    20 54 07.3
                        MICRON     PERIOD
                   PZ     0.02        0.8
        JAS  eP    20 54 10.4
        MNV  eP    20 54 15.7
        WDC  eP    20 54 26.5
        FHC  eP    20 54 28
                   SOUTH PACIFIC OCEAN REGION

NOV 02  FHC  eP    01 15 41.2
        WDC  iPc   01 15 45.5
        MIN  eP    01 15 48.3
        BKS  e(P)  01 15 54
                        MICRON     PERIOD
                   PZ     0.01        0.9
        MHC  eP    01 15 56.6
        JAS  eP    01 15 58.4
        FRI  eP    01 16 02.8
        PRI  eP    01 16 03.2
        MNV  iPc   01 16 04.0
                   USGS 01 02 45.8, 24.7N, 121.9E, H= 85 KM, mb=4.9
                        TAIWAN

NOV 02  PRI  eP    01 30 47.7
        FHC  ePc   01 30 52.1
        FRI  eP    01 30 53.5
        JAS  ePc   01 30 54.0
        WDC  ePc   01 30 56.0
        MIN  eP    01 30 58.0
        MNV  eP    01 31 04.5
                   USGS 01 19 27.9, 15.4S, 173.3W, H= 30 KM, mb=5.3, Ms=4.8
                        TONGA ISLANDS

NOV 02  FRI  ePd   05 59 08.0                 • 01 14
        MNV  iPd   05 59 08.1
        PRI  eP    05 59 13.0
        JAS  ePd   05 59 17.2                 • 01 17
        MHC  ePd   05 59 21.8
        BKS  iPc   05 59 27.8                 I 01 22
                        MICRON     PERIOD
                   PZ     0.03        0.8
        MIN  eP    05 59 33.0
        WDC  eP    05 59 36.5
        FHC  eP    05 59 49.0
                   USGS 05 51 37.4, 10.8N,  85.8W, H= 71 KM, mb=4.8
                        COSTA RICA

NOV 02  PRI  eP    06 41 14.2
        FRI  eP    06 41 19.5
        BKS  eP    06 41 25.2
                        MICRON     PERIOD
                   PZ     0.04        1.0
        JAS  eP    06 41 26.3
        MNV  eP    06 41 31.4
        MIN  eP    06 41 41.7
        WDC  eP    06 41 42.3
                   SOUTH PACIFIC OCEAN REGION

NOV 02  FRI  ePc   14 58 20.2
        MNV  iPc   14 58 21.5
        PRI  ePc   14 58 22.2
        JAS  iPc   14 58 28.3
        MHC  ePc   14 58 31.5
        BKS  ePc   14 58 36.3
                        MICRON     PERIOD
                   PZ     0.03        0.4
        MIN  eP    14 58 41.9
        WDC  iPc   14 58 45.3
        FHC  ePc   14 58 54.0
                   USGS 14 47 57.2, 10.1S,  74.8W, H= 48 KM, mb=5.5, Ms=4.5
                        PERU

NOV 03  PRI  iPd   00 21 21.9  21 29
        SAO  iPd   00 21 28.5
        MHC  eP    00 21 38.4
        FRI  eP    00 21 40.1  22 00
        JAS  ePc   00 21 47.6
        BKS  e(P)  00 21 57
                   BRK  00 21 11.6, 35.9N, 121.2W, H=  4 KM, ML=2.8
                        SOUTH-SOUTHWEST OF KING CITY, CALIFORNIA

NOV 03  MIN        02 36                 • 36 07
        MNV  eP    02 36 09.8
        FRI        02 36                 • 36 16
        JAS  eP    02 36 15.6
                   USGS 02 22 54.9, 42.1N,  24.0E, H=  6 KM, mb=5.2, Ms=5.1
                        BULGARIA

NOV 03  PRI  iPd   17 08 50.6
        SAO  iPc   17 08 51.5
        MHC  eP    17 09 02.0
        FRI  iPd   17 09 03.3
        JAS  iPc   17 09 10.3  09 30
        BKS  iPc   17 09 15.4  09 36
        MNV  eP    17 09 35.5
                   BRK  17 08 42.5, 36.4N, 121.0W, H=  7 KM, ML=3.0
                        SOUTHEAST OF HOLLISTER, CALIFORNIA

NOV 03  WDC  eP    17 37 43.0
        MHC  eP    17 37 51.8
        JAS  eP    17 37 53.6
        FRI  eP    17 37 57.8
        MNV  eP    17 38 02.0
                   USGS 17 25 08.4, 12.0N, 143.7E, H= 33 KM, mb=5.4, Ms=4.8
                        SOUTH OF MARIANA ISLANDS

NOV 04  FHC  iPc   02 55 44.3  55 52
        WDC  iPc   02 55 56.5  56 14        i 56 04
        MIN  eP    02 56 06.2  56 32
                   BRK  02 55 31.3, 40.3N, 124.6W, H= 30 KM, ML=3.7
                        OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

NOV 04  FHC  eP    10 00 08.5
        WDC  iPd   10 00 12.8                 • 00 58      SP 06 13
        MIN  eP    10 00 17.3
        BKS  ePc   10 00 29      06 28        Lq 09 14     Lr 11 06
                        MICRON     PERIOD
                   PZ     0.06        0.8
                   LZ     300         20
                   LN     120         20
                   LE     230         20
        MHC  eP    10 00 33.3                 • 01 22
        JAS  eP    10 00 35.7                 • 00 53      • 01 24      SP 06 28
        SAO  eP    10 00 38.1
        FRI  eP    10 00 44.9              PcP 02 41      SP 06 27
        MNV  eP    10 00 45.5               SP 06 34
        PRI  eP    10 00 45.7                 • 01 37
                   Ms=7.0, DISTANCE=40°
                   USGS 09 52 55.7, 51.7N, 176.0W, H= 33 KM, mb=5.7, Ms=6.7
                        ANDREANOF ISLANDS, ALEUTIAN ISLANDS

NOV 04  WDC        10 09                      • 09 18
        MIN        10 09                      • 09 32
        BKS  e(P)  10 09 39
                        MICRON     PERIOD
                   PZ     0.08        1.4
        JAS  eP    10 09 42.0
        FRI        10 09                      • 09 50
                   USGS 10 02 03.7, 51.5N, 175.5W, H= 33 KM, mb=5.2
                        ANDREANOF ISLANDS, ALEUTIAN ISLANDS

NOV 04  FRI  eP    12 56 28.9              pP 56 43    PcP 59 02    pPcP 59 19
                                           ScP 02 45
        MNV  iPc   12 56 29.0              pP 56 43    PcP 59 02    pPcP 59 18
                                           ScP 02 44
        PRI  eP    12 56 31.0              pP 56 46    PcP 59 03    pPcP 59 20
                                           SoP 02 46
        SAO        12 57                      • 57 40
        JAS  eP    12 56 37.9              pP 56 52    PcP 59 05    pPcP 59 22
                                           ScP 02 48
        MHC  eP    12 56 42.8              pP 56 57    pPcP 59 23   ScP 02 51
        BKS  ePc   12 56 48.1                 • 59 16  pPcP 59 25   ScP 02 53
                        MICRON     PERIOD
                   PZ     0.02        1.0
        MIN  eP    12 56 55.7              pP 57 11    pPcP 59 28   ScP 02 55
        WDC        12 57                      • 57 13      e 57 23  PcP 59 12
                                           pPcP 59 29   ScP 02 58
        FHC  eP    12 57 11.8              pP 57 26    ScP 03 03
                   USGS 12 49 47.5, 13.9N,  90.6W, H=104 KM, mb=5.0
                        NEAR COAST OF GUATEMALA

NOV 04  SAO  iPc   15 05 53.5
        PRI  ePd   15 06 00.5
        MHC  iPd   15 06 04.9  06 17
        FRI  iPc   15 06 10.8
        JAS  eP    15 06 14.8  06 33
        BKS  e(P)  15 06 15                   • 06 18
                   BRK  15 05 48.4, 36.6N, 121.2W, H=  6 KM, ML=2.9
                        BEAR VALLEY, CALIFORNIA

NOV 04  SAO  iP    15 12 58.1
        PRI  iPd   15 13 05.1
        MHC  iPd   15 13 09.7
        FRI  iPc   15 13 15.5
        JAS  iPd   15 13 19.6
        BKS  eP    15 13 20.5
        MNV  iP    15 13 46.8
                   BRK  15 12 53.0, 36.6N, 121.2W, H=  6 KM, ML=3.4
                        DOUBLE SHOCK; SECOND ML=3.4 EVENT 44 SECS. LATER.
                        BEAR VALLEY, CALIFORNIA

NOV 04  FHC  eP    18 14 37.0              pP 14 52
        WDC  eP    18 14 45.5              pP 14 59    ScP 20 46    pSCP 21 06
        BRK  eP    18 14 59.6              pP 15 14
        BKS        18 15      21 04        pP 15 15    Lq 24 05     Lr 25 40
                        MICRON     PERIOD
                   LZ     7           20
                   LN     3.6         20
                   LE     7           20
        MHC  eP    18 15 05.7              pP 15 20    ScP 20 56    pSCP 21 16
        JAS  eP    18 15 09.5              pP 15 24    ScP 20 57    pSCP 21 17
        FRI  eP    18 15 17.4              pP 15 32    ScP 21 01    pSCP 21 21
        PRI        18 15                   pP 15 32
                   Ms=5.5, DISTANCE=40°
                   USGS 18 07 31.3, 51.4N, 175.6W, H= 33 KM, mb=5.4, Ms=5.4
                        ANDREANOF ISLANDS, ALEUTIAN ISLANDS

NOV 04  SAO  iPc   21 34 16.4
        PRI  ePc   21 34 23.5
        MHC  ePd   21 34 27.8
        FRI  ePc   21 34 33.8
        JAS  ePd   21 34 37.8
        BKS  eP    21 34 40.5  35 02
                   BRK  21 34 11.3, 36.6N, 121.2W, H=  7 KM, ML=2.7
                        BEAR VALLEY, CALIFORNIA

                                              • 36 06
NOV 05  FHC        01 36
        WDC  eP    01 36 04.3
        BKS  eP    01 36 09.0
                        MICRON     PERIOD
                   PZ     0.03        0.7
        MHC  eP    01 36 12.3
        JAS  eP    01 36 16.0
        PRI  eP    01 36 18.0
        FRI  eP    01 36 20.5
        MNV  eP    01 36 24.5
                   USGS 01 24 01.0, 17.0N, 147.3E, H= 39 KM, mb=5.1
                        MARIANA ISLANDS REGION

NOV 05  FRI  ePc   04 01 15.0
        JAS  ePc   04 01 21.4
        MNV  ePc   04 01 26.7
        WDC  ePc   04 01 37.8
                   USGS 03 51 24.0, 20.8S, 126.7W, H= 33 KM, mb=4.9
                        SOUTH PACIFIC OCEAN

                                              • 15 27
NOV 05  FHC        06 15
        BKS  eP    06 15 32.1
                        MICRON     PERIOD
                   PZ     0.04        0.8
        MHC  ePc   06 15 33.8
        WDC  ePc   06 15 34.5
        PRI  eP    06 15 36.0
        JAS  ePc   06 15 38.5
        FRI  ePc   06 15 39.9
        MNV  ePc   06 15 47.6
                   USGS 06 02 57.6, 10.1S, 161.0E, H= 70 KM, mb=5.6
                        SOLOMON ISLANDS
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NOV 05  WDC  ePo   14 51 17.9                    SeP 57 17   pSCP 57 32
        BKS  eP    14 51 34.7  57 38             Lq 00 30
                        MICRON      PERIOD
                   LZ     12          20
                   LN      4.3        20
                   LE     12          20
        JAS  eP    14 51 42.0                   SeP 57 28   pSCP 57 44
        FRI  eP    14 51 50                     SeP 57 32   pSCP 57 48
        MNV  ePo   14 51 50.4                   SeP 57 32   pSCP 57 48
                   Ms=5.7, DISTANCE=40°
                   USGS 14 44 03.3, 51.5N, 175.5W, H= 33 KM, mb=5.3, Ms=5.6
                        ANDREANOF ISLANDS, ALEUTIAN ISLANDS

NOV 06  FHC  ePo   02 48 34.0
        WDC  iPo   02 48 39.5
        MIN  iPo   02 48 44.3
        BKS  eP    02 48 54.0
                        MICRON      PERIOD
                   PZ     0.08        1.1
        MHC  ePo   02 48 59.5
        JAS  iPo   02 49 01.7
        SAO  ePo   02 49 03.7
        MNV  iPo   02 49 08.5
        FRI  ePo   02 49 08.8
                   USGS 02 39 35.4, 53.6N, 159.8E, H= 67 KM, mb=5.2
                        NEAR EAST COAST OF KAMCHATKA

NOV 07  WDC  eP    08 29 29.3                   • 29 46
        MIN  eP    08 29 33.5
        JAS  eP    08 29 48.8
        MNV  eP    08 29 56.5
                   USGS 08 19 31.1, 46.4N, 153.2E, H= 33 KM, mb=4.9, Ms=4.3
                        KURIL ISLANDS

NOV 07  FHC  eP    08 36 20.8                   • 37 59
        WDC  ePd   08 36 25.9
        MIN  ePd   08 36 29.2
        BKS  eP    08 36 30.6
                        MICRON      PERIOD
                   PZ     0.07        1.0
        MHC  ePd   08 36 33.5
        SAO  eP    08 36 34.3
        JAS  iPd   08 36 37.0                   • 38 05
        FRI  ePd   08 36 41.0                   • 38 13
        MNV  iPd   08 36 45.4
                   USGS 08 24 32.5, 15.3N, 145.0E, H=256 KM, mb=5.4
                        MARIANA ISLANDS

NOV 07  FRI  eP    13 33 11.2
        JAS  eP    13 33 12.0
        WDC  eP    13 33 13.5
        MNV  eP    13 33 22
                   USGS 13 21 36.7, 16.3S, 174.7W, H= 33 KM, mb=4.8
                        TONGA ISLANDS

NOV 08  FRI  eP    03 14 22.2
        JAS  eP    03 14 23.3
        WDC  eP    03 14 25.9
        MNV  eP    03 14 30.8
                   USGS 03 02 13.0, 30.3S, 179.7W, H=346 KM, mb=4.3
                        KERMADEC ISLANDS REGION

NOV 08  WDC  eP    15 08 58.9
        JAS  eP    15 09 18.5
        MNV  eP    15 09 26.3
                   USGS 14 59 10.4, 47.4N, 154.3E, H= 33 KM, mb=5.5, Ms=4.6
                        KURIL ISLANDS

NOV 09  MHC  ePo   16 03 38.6
        BRK  e(P)  16 03 39
        PRI  ePo   16 03 39.6
        WDC  ePo   16 03 43.2                   • 04 12
        JAS  ePo   16 03 43.6                   • 04 14
        FRI  ePo   16 03 43.9
        MNV  eP    16 03 52.2
                   USGS 15 51 08.0, 20.5S, 169.7E, H=124 KM, mb=4.9
                        NEW HEBRIDES ISLANDS

NOV 09  PRI        20 28                        • 28 09
        MHC  eP    20 28 03                     • 28 10
        BKS        20 28                        • 28 10     • 01 00
        FRI  eP    20 28 06.3                   • 28 13
        FHC        20 28                        • 28 07     • 28 15
        JAS  eP    20 28 07.5                   • 28 14
        WDC  eP    20 28 10.6                   • 28 17
        MIN        20 28                        • 28 18
        MNV  eP    20 28 14.9                   • 28 22
                   USGS 20 14 59.7, 35.7S, 178.4E, H= 41 KM, mb=5.0
                        OFF EAST COAST OF NORTH ISLAND, NEW ZEALAND

NOV 09  FHC        21 24                        • 24 15     • 24 27
        WDC  eP    21 24 20.0                   • 24 33
        MIN        21 24                        • 24 37
        MHC        21 24                        • 24 50
        JAS  eP    21 24 39.8                   • 24 53
        PRI        21 24                        • 25 00
        FRI        21 24                        • 25 00
        MNV  eP    21 24 47.7                   • 25 00
                   USGS 21 14 32.0, 47.5N, 154.3E, H= 33 KM, mb=5.1
                        KURIL ISLANDS

NOV 09  MNV  iPo   22 00 37.0
        FRI  iPo   22 00 48.3
        JAS  iPo   22 00 57.4
        PRI  iPo   22 01 00.9
        SAO  ePo   22 01 07.4
        MHC  iPo   22 01 10.0                   • 01 17
        BKS  iPo   22 01 17.6                   • 01 25     • 01 30
        MIN  iPo   22 01 23.6
        WDC  iPo   22 01 32.8                   • 01 39     • 01 53     • 02 35
        FHC  ePo   22 01 48.1
                   ML=5.6, NUCLEAR EXPLOSION, NEVADA TEST SITE
                   USGS 22 00 00.1, 37.1N, 116.1W, H=  0 KM, mb=5.7, Ms=4.0
                        SOUTHERN NEVADA (NTS)

NOV 10  FRI  iPo   02 35 53.8
        PRI  ePo   02 36 02.3
        MNV  ePd   02 36 03.4
        JAS  iPd   02 36 11.4
        SAO  eP    02 36 12.0
        MHC  eP    02 36 15.7
        BKS  eP    02 36 25.7
                   PAS  02 35 24.1, 36.1N, 117.9W, H=  5 KM, ML=3.6
                        SOUTHERN CALIFORNIA (OWENS VALLEY)

NOV 10  PRI  eP    04 28 21.8                   • 28 28
        MHC  ePo   04 28 22.8                   • 28 30
        BKS  eP    04 28 23.0
        FRI  ePo   04 28 26.1                   • 28 32
        JAS  ePo   04 28 27.3                   • 28 34
        FHC  eP    04 28 28.1                   • 28 34
        WDC  ePo   04 28 30.4                   • 28 37
        MIN  eP    04 28 31
        MNV  ePo   04 28 34.7                   • 28 42
                   USGS 04 15 20.5, 35.9S, 178.5E, H= 56 KM, mb=5.0
                        OFF EAST COAST OF NORTH ISLAND, NEW ZEALAND

NOV 12  SAO  eP    19 15 54.2
        BKS  iPd   19 15 55.5
                        MICRON      PERIOD
                   PZ     0.11        0.9
        PRI  ePd   19 15 55.7
        MHC  ePd   19 15 56.1
        FHC  ePd   19 16 00.0
        FRI  ePd   19 16 00.9
        JAS  iPd   19 16 01.5
        WDC  iPd   19 16 03.2
        MIN  eP    19 16 05.1
        MNV  e(P)  19 16 11
                   USGS 19 04 48.0, 20.5S, 177.8W, H=507 KM, mb=5.0
                        FIJI ISLANDS REGION

NOV 13  FRI  eP    08 52 37.5
        MNV  iPo   08 52 39.0
        PRI  eP    08 52 39.5
        JAS  ePo   08 52 45.5
        MHC  eP    08 52 48.7
        BRK  eP    08 52 53
        WDC  ePo   08 53 02.8
        FHC  eP    08 53 11
                   USGS 08 42 21.4,  9.4S,  75.7W, H= 45 KM, mb=5.3, Ms=4.1
                        PERU

NOV 14  WDC  eP    00 48 26.2
        BKS  eP    00 48 34.3
                        MICRON      PERIOD
                   PZ     0.07        0.8
        MHC  eP    00 48 37.5
        JAS  ePd   00 48 40.0
        PRI  eP    00 48 44.5
        PRI  eP    00 48 45.0
        MNV  ePd   00 48 47.4
                   USGS 00 37 13.2, 28.7N, 139.5E, H=412 KM, mb=4.8
                        BONIN ISLANDS REGION

NOV 14  FRI  ePKP  10 24 41.7
        PRI  ePKP  10 24 42.3
        MNV  ePKPo 10 24 42.6
        JAS  ePKPo 10 24 44.2
        MHC  ePKP  10 24 45.0
        BKS  ePKP  10 24 46.3
                        MICRON      PERIOD
                   PKPZ   0.03        0.8
        MIN  ePKP  10 24 48.1
        WDC  ePKP  10 24 49.2
        FHC  ePKP  10 24 51.8
                   USGS 10 06 09.3, 56.0S,  27.4W, H=175 KM, mb=5.3
                        SOUTH SANDWICH ISLANDS REGION

NOV 14  FHC  eP    20 03 36.8
        BKS        20 03                        • 03 40
        WDC  eP    20 03 40.4
        MIN  eP    20 03 43.0
        JAS  eP    20 03 46.8                   • 04 06
        FRI  eP    20 03 49.2                   • 04 08
        MNV  eP    20 03 55.4                   • 04 14
                   USGS 19 50 25.0,  6.9S, 147.4E, H= 67 KM, mb=5.2
                        EAST PAPUA, NEW GUINEA REGION

NOV 16  MNV  ePd   10 42 44.2
        PRI  eP    10 42 44.2
        JAS  eP    10 42 49.5
        MHC  eP    10 42 51.9
        BRK  ePd   10 42 55.4
        WDC  ePd   10 43 03.9
        FHC  e(P)  10 43 06
                   USGS 10 31 05.8, 22.6S,  68.6W, H=125 KM, mb=5.2
                        NORTHERN CHILE

NOV 16  WDC  ePd   19 10 11.9
        MIN  eP    19 10 14.8
        MHC  eP    19 10 23.0
        JAS  ePd   19 10 25.0
        FRI  eP    19 10 29.0
        MNV  ePd   19 10 30.5
                   USGS 18 57 20.6, 24.8N, 123.0E, H=129 KM, mb=5.0
                        SOUTHWESTERN RYUKYU ISLANDS

NOV 16  WDC  ePo   19 47 06.5
        JAS  ePo   19 47 24.5
        FRI  eP    19 47 30.4
        MNV  ePo   19 47 31.0
                   USGS 19 36 14.2, 41.9N, 142.3E, H= 69 KM, mb=5.1
                        HOKKAIDO, JAPAN REGION

NOV 16  SAO  eP    21 52 22.6
        BKS  iPd   21 52 23.6
                        MICRON      PERIOD
                   PZ     0.09        1.0
        MHC  ePo   21 52 24.0
        PRI  ePo   21 52 24.1
        FHC  e(P)  21 52 26
        FRI  ePo   21 52 29.3
        JAS  iPo   21 52 29.7
        MIN  e(P)  21 52 30
        WDC  iPo   21 52 30.5
        MNV  e(P)  21 52 39
                   USGS 21 41 30.4, 17.8S, 178.5W, H=581 KM, mb=5.2
                        FIJI ISLANDS REGION

NOV 17  FRI  iPKPd 15 39 21.6                   PKS 42 44   PKKP 49 26
        PRI  ePKPd 15 39 22.3
        MNV  iPKPd 15 39 22.5                   • 40 05     PKKP 49 24
        SAO  ePKP  15 39 23.2
        JAS  iPKPd 15 39 24.1                   PKS 42 47   PKKP 49 23
        MHC  ePKPd 15 39 24.9
        BKS  ePKP  15 39 25.8
                        MICRON      PERIOD
                   PKPZ   0.08        0.8
        MIN  ePKPd 15 39 28.0
        WDC  iPKPd 15 39 28.9                   • 39 55     PKS 42 50
        FHC  ePKPd 15 39 31.7
                   USGS 15 20 43.5, 56.0S,  27.9W, H=127 KM, mb=5.6
                        SOUTH SANDWICH ISLANDS REGION

NOV 17  FHC  iPo   17 31 53.2
        WDC  iPo   17 31 58.4
        MIN  eP    17 32 02.1
        BKS  iPo   17 32 07.5                   • 32 11     • 32 18     • 33 15
                        MICRON      PERIOD
                   PZ     0.13        0.8
        MHC  eP    17 32 11.3
        SAO  eP    17 32 13.3
        JAS  iPo   17 32 14.2                   I 32 40     • 35 05
        PRI  eP    17 32 19.2
        FRI  eP    17 32 19.3                   • 32 46
        MNV  iPo   17 32 21.4
                   USGS 17 20 32.6, 33.6N, 139.9E, H=112 KM, mb=5.5
                        SOUTH OF HONSHU, JAPAN

NOV 17  FRI  iPo   19 30 49.0
        JAS  eP    19 30 58.1
        PRI  eP    19 31 01.2
        SAO  eP    19 31 08.7
        MHC  eP    19 31 11.1
        BKS  iPgo  19 31 31.0                   • 31 42
                   ML=4.8, NUCLEAR EXPLOSION, NEVADA TEST SITE
                   USGS 19 30 00.1, 37.0N, 116.0W, H=  0 KM, mb=4.7
                        SOUTHERN NEVADA (NTS)

NOV 17  FRI  eP    23 53 07.0
        BKS  eP    23 53 12.7                   • 53 20
                        MICRON      PERIOD
                   PZ     0.02        1.0
        JAS  eP    23 53 13.6
        MNV  eP    23 53 18.8
        WDC        23 53                        • 53 30

NOV 18  PRI  iPd   02 17 29.2
        SAO  iPo   02 17 38.8
        FRI  eP    02 17 47.2
        MHC  eP    02 17 48.0
        JAS  ePo   02 17 56.3
        BKS  eP    02 18 00                     • 18 07     Sg 18 34
                   BRK  02 17 18.7, 35.7N, 121.0W, H=  4 KM, ML=3.8
                        SOUTH OF KING CITY, CALIFORNIA
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                10 36                    • 36 52
NOV 18 FBC      10 36 41.7               • 38 37
       WDC ePKP 10 36 43.6
       MIN ePKP 10 36 46.8               • 36 52
       BKS ePKP
                        MICRON    PERIOD
                PKPZ      0.06       1.1
       JAS ePKP 10 36 48.3
       MHC ePKP 10 36 49.9
       PRI ePKP 10 36 50.3
       FRI ePKP 10 36 51.5
       MNV ePKP
           USGS 10 17 41.0,  4.4S, 102.0E, H= 33 KM, mb=5.5, Ms=5.9
                SOUTHERN SUMATERA

NOV 18 SAO iPe  16 36 52.4
       PRI iPd  16 36 58.9
       MHC ePe  16 37 00.1
       FRI ePe  16 37 04.0
       JAS eP   16 37 07.5  37 24
       BKS e(P) 16 37 14
       MNV e(P) 16 37 35
           BRK  16 36 45.3, 36.7N, 121.0W, H=  4 KM, ML=2.6
                SOUTHEAST OF HOLLISTER, CALIFORNIA

NOV 19 FRI ePKP 01 01 22.6
       MNV ePKPe 01 01 23.4
       PRI ePKPe 01 01 23.4
       JAS ePKPe 01 01 25.0
       MHC ePKP 01 01 26
       BRK ePKP 01 01 26.8
       MIN ePKP 01 01 30
       VDC ePKPe 01 01 30.1
           USGS 00 42 46.8, 56.0S,  27.8W, H=141 KM, mb=5.5
                SOUTH SANDWICH ISLANDS REGION

NOV 19 MHC iPd  18 36 52.3
       BRK eP   18 37 02.1
       SAO ePd  18 37 03.3
       JAS ePe  18 37 12.3  37 28
       PRI eP   18 37 17.1
       FRI eP   18 37 18.8
           BRK  18 36 49.8, 37.4N, 121.8W, H=  2 KM, ML=2.5
                NORTHEAST OF SAN JOSE, CALIFORNIA

NOV 20 FBC eP   00 23 32.7
       WDC eP   00 23 45.2
       BKS      00 24                   • 24 16      • 25 26      • 25 52
       MHC eP   00 24 26
       JAS eP   00 24 29.5
       SAO      00 24                   • 24 34
       MNV      00 24                   • 24 42
       FRI eP   00 24 45.5
       FRI e(P) 00 24 47
           USGS 00 22 39.1, 43.5N, 126.9W, H= 15 KM, mb=4.7
                OFF COAST OF OREGON

NOV 20 FBC eP   16 09 44.7
       WDC ePe  16 09 48.9
       MIN eP   16 09 52.0
       JAS e(P) 16 10 03
       FRI eP   16 10 06.6
       MNV e(P) 16 10 08
           USGS 15 57 16.3, 26.8N, 126.3E, H=145 KM, mb=4.9
                RYUKYU ISLANDS

NOV 20 WDC iPd  18 59 40.0
       BKS      19 00                   • 00 02
       JAS iPd  19 00 07.1
       MHC eP   19 00 08.4
       MNV ePd  19 00 11.2              • 00 22
       SAO      19 00                   • 00 13
       FRI ePd  19 00 16.8
       FRI eP   19 00 22
           USGS 18 53 57.8, 62.4N, 150.7W, H= 79 KM, mb=4.9
                CENTRAL ALASKA

NOV 21 WDC ePd  02 20 08.4               • 20 16
       MIN eP   02 20 12
       MHC      02 20                   • 20 24
       JAS ePd  02 20 26.1              • 20 34
       FRI eP   02 20 31.9
       PRI      02 20                   • 20 32
       MNV eP   02 20 32.7
           USGS 02 09 25.3, 42.9N, 138.9E, H=228 KM, mb=4.8
                EASTERN SEA OF JAPAN

NOV 21 FRI eP   02 52 18.1               • 54 36
       FRI ePd  02 52 21.4               • 54 59
       MNV eP   02 52 29.1
       SAO e(P) 02 52 31
       JAS ePd  02 52 36.7               • 55 30
       MHC eP   02 52 37
       BKS ePd  02 52 47.3  54 50      Lr 58 00
                        MICRON    PERIOD
                PZ        0.15       1.0
       MIN e(P) 02 53 12
       WDC e(P) 02 53 18                 • 57 14      • 57 40
       FHC e(P) 02 53 31
           USGS 02 50 03.4, 29.3N, 113.0W, H= 33 KM, mb=5.2, Ms=5.6
                GULF OF CALIFORNIA

NOV 21 SAO eP   10 04 49.4
       PRI eP   10 04 50.4
       BKS eP   10 04 50.7
                        MICRON    PERIOD
                PZ        0.04       0.7
       MHC eP   10 04 51.3
       FRI eP   10 04 54.9
       FHC iPd  10 04 55.5
       JAS iPd  10 04 55.9
       WDC iP   10 04 59.4
       MNV iPd  10 05 03.6
           USGS 09 52 38.6, 31.4S, 179.9W, H=324 KM, mb=5.2
                KERMADEC ISLANDS REGION

NOV 21 MHC eP   23 17 14.8
       FRI eP   23 17 18.8               • 17 26
       JAS iPe  23 17 19.7
       MNV eP   23 17 27.5
           USGS 23 05 12.4, 29.3S, 179.8W, H=330 KM, mb=4.8
                KERMADEC ISLANDS REGION

NOV 22 FBC ePd  16 09 13.9
       BKS eP   16 09 16                pP 09 37    pPP 13 06     sS 19 42
                                        PS 20 18    sSS 25 26     Lq 32 00
                                        Lr 35 20
                MICRON    PERIOD
           PZ      0.21       0.8
           LZ       1.6        20
           LN       0.9        20
           LE       1.6        20
       SAO eP   16 09 17             pP 09 40
       MHC ePd  16 09 17.5           pP 09 40
       PRI ePd  16 09 20
       MIN eP   16 09 21
       JAS ePd  16 09 22.4           pP 09 44     • 12 44
       FRI ePd  16 09 23.9           pP 09 46
       MNV ePd  16 09 31.2           pP 09 54
           Ms=5.5, DISTANCE=86°
           USGS 15 56 44.1, 10.2S, 161.1E, H= 92 KM, mb=5.9
                SOLOMON ISLANDS

NOV 22 WDC iPe  21 16 16.3
       FHC iPe  21 16 18.3
       MIN iPd  21 16 20.1
       BKS iPd  21 16 21.4
       MHC ePd  21 16 31.7
       JAS iPd  21 16 35.5
       SAO ePd  21 16 38.9
       FRI ePd  21 16 50.4
       PRI ePd  21 16 51.6
       MNV iPd  21 16 56.1
           BRK  21 15 53.9, 39.4N, 123.3W, H= 18 KM, ML=4.8
                EAST OF WILLITS, CALIFORNIA

NOV 23 FRI ePe  09 38 51.5
       MNV ePe  09 38 52.9
       PRI ePe  09 38 53.0
       SAO eP   09 38 56.5
       JAS ePe  09 38 57.8
       MHC ePe  09 39 00.3
       BKS ePe  09 39 03.0  49 30      PcP 39 28     PP 42 46     ScS 49 48
                                        SS 55 00     SSS 59 00     Lq 02 00
                                        Lr 06 14
                MICRON    PERIOD
           PZ      0.56       1.2
           LZ        50         20
           LN        32         20
           LE        41         20
       MIN ePe  09 39 09
       WDC ePe  09 39 11.7
       FHC ePe  09 39 19.1
           Ms=6.9, DISTANCE=86°
           USGS 09 26 24.7, 31.0S,  67.8W, H= 13 KM, mb=6.3, Ms=7.4
                SAN JUAN PROVINCE, ARGENTINA

NOV 23 FRI eP   09 47 24.5
       PRI ePe  09 47 25.9
       SAO eP   09 47 30
       JAS ePe  09 47 31.2
       MHC eP   09 47 33.0
       BKS eP   09 47 36.7
                        MICRON    PERIOD
                PZ        0.12       1.2
       MIN e(P) 09 47 42
       WDC iPe  09 47 44.7
       FHC ePe  09 47 51.3
           USGS 09 34 58.3, 31.2S,  67.0W, H= 33 KM, mb=6.0
                SAN JUAN PROVINCE, ARGENTINA

NOV 23 FRI eP   11 21 08.3                        • 21 14
       PRI eP   11 21 09.7                        • 21 16
       MNV      11 21                             • 21 10      • 21 16
       SAO      11 21                             • 21 14
       JAS ePe  11 21 15.0                        • 21 21
       MHC ePe  11 21 16.7                        • 21 23
       BRK e(P) 11 21 20
       BKS      11 21                             • 21 26
       MIN      11 21                             • 21 26      • 21 32
       WDC iPe  11 21 28.4                        • 21 35
           USGS 11 08 41.2, 31.2S,  67.7W, H= 20 KM, mb=5.6
                SAN JUAN PROVINCE, ARGENTINA

NOV 23 FRI eP   11 59 23.5
       PRI eP   11 59 24.7
       JAS ePe  11 59 30.0
       MHC e(P) 11 59 32
       MIN      11 59                             • 59 43
       WDC ePe  11 59 43.6
           USGS 11 46 56.7, 31.0S,  67.6W, H= 15 KM, mb=5.4
                SAN JUAN PROVINCE, ARGENTINA

NOV 23 FRI eP   12 10 36.1
       PRI ePe  12 10 37.4
       MNV eP   12 10 38
       SAO ePe  12 10 41.9
       JAS ePe  12 10 42.5
       MHC eP   12 10 44
       BRK eP   12 10 48
       MIN eP   12 10 53.3
       WDC iPe  12 10 56.1                        • 11 05      • 11 23
       FHC iPe  12 11 04.2
           USGS 11 58 09.8, 31.0S,  67.8W, H= 22 KM, mb=5.9
                SAN JUAN PROVINCE, ARGENTINA

NOV 23 FRI ePe  13 17 28.2
       PRI eP   13 17 29.6
       MNV ePe  13 17 30.5
       SAO eP   13 17 33
       JAS ePe  13 17 34.7
       MHC ePe  13 17 36.5
       BKS eP   13 17 40.6
                        MICRON    PERIOD
                PZ        0.10       1.4
       MIN eP   13 17 45.5
       WDC iPe  13 17 48.3
       FHC      13 17                             • 17 56
           USGS 13 05 02.5, 31.1S,  67.7W, H= 27 KM, mb=5.6
                SAN JUAN PROVINCE, ARGENTINA

NOV 23 MNV      13 51                             • 51 13
       JAS      13 51                             • 51 18
       WDC eP   13 51 35.1
           USGS 13 38 48.5, 31.4S,  67.8W, H= 27 KM, mb=4.8
                SAN JUAN PROVINCE, ARGENTINA

NOV 23 WDC iPd  13 54 17.8
       FHC iPe  13 54 19.7
       MIN ePe  13 54 21.6
       BKS eP   13 54 23.7
       MHC eP   13 54 33.3
       JAS ePe  13 54 37.2
       FRI eP   13 54 53.0
       MNV e(P) 13 54 57
           BRK  13 53 54.8, 39.4N, 123.3W, H= 12 KM, ML=3.4
                EAST OF WILLITS, CALIFORNIA

NOV 23 WDC ePe  15 27 38.4
       FHC ePe  15 27 40.6
       MIN ePe  15 27 43.4
       BRK eP   15 27 43.6
       MHC e(P) 15 27 55
       JAS ePd  15 27 58.6
           BRK  15 27 15.8, 39.4N, 123.3W, H= 16 KM, ML=3.4
                EAST OF WILLITS, CALIFORNIA

NOV 23 WDC eP   15 29 37.3
       FHC e(P) 15 29 40
       MIN e(P) 15 29 42
       BRK eP   15 29 42.5
       JAS e(P) 15 29 57
           BRK  15 29 15.1, 39.4N, 123.3W, H= 20 KM, ML=3.3
                EAST OF WILLITS, CALIFORNIA

NOV 23 WDC iPd  16 23 06.8                        i 23 13
       FHC eP   16 23 08.6
       MIN e(P) 16 23 10
       JAS e(P) 16 23 27
           BRK  16 22 43.7, 39.4N, 123.3W, H= 12 KM, ML=3.0
                EAST OF WILLITS, CALIFORNIA

NOV 23 PRI eP   16 40 53.7
       MNV ePd  16 40 54.7
       JAS ePd  16 40 59.0
       MHC e(P) 16 41 01
       WDC eP   16 41 11.5
       FHC eP   16 41 17
           USGS 16 28 26.6, 31.2S,  67.6W, H= 33 KM, mb=5.2
                SAN JUAN PROVINCE, ARGENTINA
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NOV 23  FRI   ePe    16 48 29.8
        PRI   ePe    16 48 31.0
        MNV   ePe    16 48 32.0
        SAO   eP     16 48 34.7
        JAS   ePe    16 48 36.3
        MHC   ePe    16 48 38.3
        BKS   ePd    16 48 41.8
                          MICRON     PERIOD
                     PZ     0.08        1.4
        MIN   eP     16 48 47.3
        WDC   ePe    16 48 49.8
        FHC          16 48                    e 48 59
                     USGS 16 36 01.3, 31.3S,  67.7W, H= 13 KM, mb=5.7, Ms=5.4
                          SAN JUAN PROVINCE, ARGENTINA

NOV 23  FHC   eP     17 02 02.7                    ScP 08 22
        WDC   ePe    17 02 10.7                    ScP 08 24
        MIN   ePe    17 02 16.5                    ScP 08 18      Lq 11 08      Lr 12 15
        BKS   eP     17 02 26.3  08 12
                          MICRON     PERIOD
                     PZ     0.05        0.5
                     LZ     7          20
                     LN     4          20
                     LE     5          20
        MHC   ePe    17 02 32.0                    ScP 08 32
        JAS   iPe    17 02 35.5                    e 02 36
        SAO          17 02                         ScP 08 36
        FRI   ePe    17 02 43.7
        PRI   ePe    17 02 44.3                    ScP 08 37
        MNV   iPe    17 02 44.7
                     Ms=5.5, DISTANCE=38°
                     USGS 16 55 20.4, 52.2N, 171.5W, H= 53 KM, mb=5.5, Ms=5.5
                          FOX ISLANDS, ALEUTIAN ISLANDS

NOV 23  PRI   eP     22 04 29.2
        MNV   ePe    22 04 30.2
        JAS   ePe    22 04 34.4
        MHC   eP     22 04 36.1
        BKS   e(P)   22 04 39
        WDC   ePe    22 04 47.6
                     USGS 21 52 02.3, 31.4S,  67.7W, H= 33 KM, mb=5.4
                          SAN JUAN PROVINCE, ARGENTINA

NOV 23  JAS   eP     22 09 58.7
        WDC   eP     22 10 12
                     USGS 21 57 25.0, 31.6S,  67.5W, H= 33 KM, mb=5.1
                          SAN JUAN PROVINCE, ARGENTINA

NOV 23  FRI   eP     23 40 04.2
        PRI   eP     23 40 05.4
        MNV   eP     23 40 06.5
        JAS   eP     23 40 10.7
        MHC   eP     23 40 12.6
        MIN   eP     23 40 21.3
        WDC   eP     23 40 24.2
                     USGS 23 27 37.5, 31.6S,  67.7W, H= 33 KM, mb=5.5, Ms=4.8
                          SAN JUAN PROVINCE, ARGENTINA

NOV 24  FRI   eP     02 09 58.7
        PRI   eP     02 09 59.9
        MNV   eP     02 10 01.1
        JAS   ePe    02 10 05.2
        MHC   eP     02 10 07.1
        BKS   e(P)   02 10 11
                          MICRON     PERIOD
                     PZ     0.14        1.6
        MIN   eP     02 10 15.9
        WDC   ePe    02 10 18.7
        FHC          02 10                    e 10 25
                     USGS 01 57 32.0, 31.5S,  67.6W, H= 33 KM, mb=5.6, Ms=5.8
                          SAN JUAN PROVINCE, ARGENTINA

NOV 24  FRI   eP     02 10 59.6
        PRI   eP     02 11 00.9
        MNV   eP     02 11 02.0
        JAS   eP     02 11 06.1
        MHC   eP     02 11 08.1
        BKS   eP     02 11 11.7
                          MICRON     PERIOD
                     PZ     0.19        1.6
        MIN          02 11                    e 11 17
        WDC   eP     02 11 19.7
        FHC          02 11                    e 11 26
                     USGS 01 58 33.4, 31.5S,  67.6W, H= 33 KM, mb=5.8, Ms=6.0
                          SAN JUAN PROVINCE, ARGENTINA

NOV 24  FRI   eP     02 14 59.3                    e 15 06
        PRI   eP     02 15 00.5                    e 15 08
        MNV   eP     02 15 01.5                    e 15 09
        SAO   e(P)   02 15 04
        JAS   ePe    02 15 05.7                    e 15 12
        MHC   eP     02 15 07.5                    e 15 14
        BKS   eP     02 15 11.7                    e 38 36      e 44 00
                          MICRON     PERIOD
                     PZ     0.12        1.4
        MIN   eP     02 15 16.3
        WDC   ePe    02 15 19.1                    e 15 26
        FHC   eP     02 15 25.6
                     USGS 02 02 31.0, 31.6S,  67.6W, H= 23 KM, mb=5.7, Ms=6.3
                          SAN JUAN PROVINCE, ARGENTINA

NOV 24  FRI   eP     02 27 33.8
        PRI   eP     02 27 35.1
        JAS   eP     02 27 40.3
        MHC   eP     02 27 42.3
        MIN   e(P)   02 27 51
        WDC   eP     02 27 53.8
                     USGS 02 15 05.9, 31.3S,  67.7W, H= 14 KM, mb=5.3
                          SAN JUAN PROVINCE, ARGENTINA

NOV 24  PRI   ePe    17 10 12.0
        SAO   eP     17 10 13.9
        MHC   ePe    17 10 17.8
        FRI   ePe    17 10 18.3
        BKS   eP     17 10 19.9
                          MICRON     PERIOD
                     PZ     0.16        1.0
        JAS   ePe    17 10 23.2
        MNV   ePe    17 10 30.7
        MIN   eP     17 10 35.7
        WDC   ePe    17 10 36.0
        FHC          17 10                    e 10 36
                     USGS 16 59 58.5, 21.9S, 139.0W, H=  0 KM, mb=6.0, Ms=4.5
                          TUAMOTO ARCHIPELAGO REGION

NOV 24  MNV   ePd    18 08 30.3
        PRI   eP     18 08 30.7
        FRI   e(P)   18 08 31
        SAO   e(P)   18 08 35
        JAS   iPd    18 08 35.9
        MHC   eP     18 08 39.5
        BKS   eP     18 08 42
        MIN   eP     18 08 47.3
        WDC   iPd    18 08 50.4
        FHC   eP     18 08 57.9
                     USGS 17 57 01.2, 20.9S,  67.5W, H=174 KM, mb=5.1
                          SOUTHERN BOLIVIA

NOV 24  FRI   eP     18 32 42
        PRI   ePe    18 32 43.5
        MNV   ePe    18 32 44.5
        JAS   iPe    18 32 48.8
        MHC   eP     18 32 50.6
        BKS          18 32
        WDC   iPe    18 33 02.2                    e 32 58
                     USGS 18 20 16.7, 31.3S,  67.6W, H= 33 KM, mb=5.7
                          SAN JUAN PROVINCE, ARGENTINA

NOV 24  FRI   eP     18 55 07.2
        PRI   eP     18 55 08.2
        MNV   eP     18 55 09.1
        JAS   ePe    18 55 13.4
        MHC   eP     18 55 15.3
        BKS          18 55                    e 55 19
        WDC   ePe    18 55 26.9
                     USGS 18 42 41.2, 31.5S,  67.9W, H= 33 KM, mb=5.7, Ms=4.8
                          SAN JUAN PROVINCE, ARGENTINA

NOV 24  BKS   eP     20 22 44.6
        MHC   eP     20 22 45.2
        PRI   eP     20 22 45.3
        FRI   eP     20 22 50.4
        JAS   eP     20 22 50.7
        WDC   eP     20 22 51.8
        MIN   eP     20 22 53.3
        MNV   ePe    20 23 00.3
                     USGS 20 11 48.1, 17.8S, 178.8W, H=549 KM, mb=5.2
                          FIJI ISLANDS REGION

NOV 24  PRI   eP     23 13 19.8
        MNV   ePd    23 13 20.8
        JAS   e(P)   23 13 25
        WDC   eP     23 13 38.3
                     USGS 23 00 53.1, 31.2S,  67.6W, H= 33 KM, mb=5.3
                          SAN JUAN PROVINCE, ARGENTINA

NOV 25  PRI   eP     00 16 56.3
        MNV   eP     00 16 57.2
        JAS   ePd    00 17 01.5
        MHC   eP     00 17 03.3
        WDC   ePd    00 17 15.1
                     USGS 00 04 30.5, 31.1S,  67.7W, H= 33 KM, mb=5.5
                          SAN JUAN PROVINCE, ARGENTINA

NOV 25  WDC   eP     01 30 07.5
        JAS   eP     01 30 18
        FRI   eP     01 30 21.5
        PRI   eP     01 30 21.5
        MNV   eP     01 30 25.7

NOV 25  PRI   eP     03 59 44
        MNV   eP     03 59 45
        JAS   eP     03 59 49.3
                     USGS 03 47 15.9, 31.7S,  67.6W, H= 33 KM, mb=5.0
                          SAN JUAN PROVINCE, ARGENTINA

NOV 25  FHC          23 44                    e 44 38
        MIN   eP     23 44 49.6
        BKS   eP     23 44 58.7
        MHC   ePe    23 45 04.4
        JAS   ePe    23 45 08.0
        FRI   ePe    23 45 15.7
        PRI   eP     23 45 15.9
        MNV   iPe    23 45 16.5
                     USGS 23 37 13.2, 51.9N, 180.0W, H= 88 KM, mb=5.0
                          ANDREANOF ISLANDS, ALEUTIAN ISLANDS

NOV 26  MHC   iPd    04 32 00.3
        SAO   iPd    04 32 05.7                    e 32 16
        BKS   iPe    04 32 12.7  32 25
        JAS   ePe    04 32 18.5  32 35
        PRI   eP     04 32 20
        FRI   ePe    04 32 23.0
                     BRK  04 31 56.8, 37.2N, 121.6W, H=  6 KM, ML=3.3
                          MORGAN HILL, CALIFORNIA

NOV 26  SAO   eP     09 26 03.0
        BKS   eP     09 26 04.2                    e 26 42
        PRI   eP     09 26 04.9
        MHC   eP     09 26 04.9
        FRI   eP     09 26 09.4
        JAS   eP     09 26 10.2
        WDC   eP     09 26 10.6
        MIN          09 26                    e 26 14
        MNV   eP     09 26 20.5
                     USGS 09 14 51.2, 15.3S, 174.4W, H=133 KM, mb=5.3
                          TONGA ISLANDS

NOV 26  FRI   eP     15 35 17.5
        JAS   eP     15 35 18.3
        WDC   eP     14 35 20.0
        MIN          15 35                    e 35 22
        MNV   eP     15 35 28.0
                     USGS 15 23 50.9, 15.3S, 173.6W, H= 33 KM, mb=4.5
                          TONGA ISLANDS

NOV 26  MHC   iPd    20 30 18.6  30 21
        SAO   iPe    20 30 23.9
        BKS   eP     20 30 31.0  30 44
        JAS   iPd    20 30 37.1  30 53
                     BRK  20 30 15.0, 37.2N, 121.6W, H=  6 KM, ML=2.6
                          MORGAN HILL, CALIFORNIA

NOV 26  WDC          22 59                    e 59 16
        MIN          22 59                    e 59 20
        JAS   eP     22 59 32.3
        MNV   eP     22 59 36.4
        FRI   eP     22 59 37.5
                     USGS 22 46 52.2, 39.5N, 117.9E, H= 33 KM, mb=5.1
                          NORTHEASTERN CHINA

NOV 27  WDC   eP     08 46 02.4
        MIN          08 46                    e 46 07
        BKS   e(P)   08 46 13    54 08      ScS 56 01      Lq 01 04
                          MICRON     PERIOD
                     LZ     1.8        20
                     LN     6          20
                     LE     3.2        20
        MHC          08 46                    e 46 18
        JAS   eP     08 46 22.3
        PRI          08 46                    e 46 29
        MNV          08 46                    e 46 30
                     Ms=5.8, DISTANCE=60°
                     USGS 08 36 05.7, 46.4N, 153.3E, H= 33 KM, mb=5.5, Ms=5.7
                          KURIL ISLANDS

NOV 27  MNV   eP     09 20 31.6
        JAS   eP     09 20 35.8
        WDC   eP     09 20 49.6
                     USGS 09 08 03.7, 31.2S,  67.6W, H= 33 KM, mb=5.0
                          SAN JUAN PROVINCE, ARGENTINA

NOV 27  MIN   eP     09 27 27.0
        WDC   eP     09 27 28.7
        MNV   eP     09 27 33.3                    i 27 36
        JAS   eP     09 27 50
        FRI          09 27                    e 27 58
                     USGS 09 25 55.1, 44.6N, 116.3W, H=  5 KM, mb=4.2
                          WESTERN IDAHO

NOV 27  WDC   iPe    10 53 07.8
        MIN   eP     10 53 13.6
        BKS   ePd    10 53 22.7
        JAS   eP     10 53 32.8
        PRI   eP     10 53 41.0
        FRI   eP     10 53 42.2
        MNV   iPe    10 53 42.5
                     USGS 10 46 43.8, 51.3N, 166.3W, H= 33 KM, mb=5.0, Ms=4.7
                          ALEUTIAN ISLANDS REGION
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NOV 27  SAO  eP    12 51 19.3
        BKS  ePd   12 51 20.3
        FRI  eP    12 51 20.9
        MHC  eP    12 51 21.0
        FHC  eP    12 51 24.5
        FRI  eP    12 51 25.9
        JAS  iPd   12 51 26.3
        WDC  iPd   12 51 28.0                  • 53 23
        MIN  eP    12 51 30.0
        MNV  iPd   12 51 35.6                  • 53 38
                   USGS 12 40 15.0, 20.5S, 178.4W, H=558 KM, mb=5.6
                        FIJI ISLANDS REGION

NOV 27  WDC  iPe   15 10 44.2
        MIN  eP    15 10 49.4                  • 11 15
        BKS  ePe   15 11 04.3                  • 11 31      • 11 44
        JAS  eP    15 11 11.5
        MHC  eP    15 11 11.6
        SAO  eP    15 11 15.3
        MNV  iPe   15 11 17.4
        FRI  eP    15 11 20.8                  • 11 47
        FRI  eP    15 11 24.2
                   USGS 15 05 06.8, 58.6N, 155.4W, H=116 KM, mb=4.9
                        ALASKA PENINSULA

NOV 27  MNV  eP    20 27 32.1
        JAS  eP    20 27 37.0
        WDC  eP    20 27 49.0
                   USGS 20 15 03.6, 31.7S,  67.6W, H= 33 KM, mb=5.1
                        SAN JUAN PROVINCE, ARGENTINA

NOV 27  MHC        22 13                       • 14 03
        JAS  eP    22 13 33.0                  • 14 06
        FRI  eP    22 13 37.5                  • 14 11
        MNV  eP    22 13 41.5                  • 14 14
                   USGS 22 01 15.8, 18.4N, 145.8E, H= 33 KM, mb=5.1
                        MARIANA ISLANDS

NOV 27  MNV  eP    23 02 17.1
        FRI  eP    23 02 17.5
        JAS  eP    23 02 22.8
        MIN  eP    23 02 34.3
        WDC  eP    23 02 37.2
                   USGS 22 50 40.2, 21.5S,  68.3W, H= 98 KM, mb=4.9
                        CHILE-BOLIVIA BORDER REGION

NOV 28  FRI  eP    00 29 49.3
        PRI  ePe   00 29 50.6
        MNV  ePe   00 29 51.5
        JAS  iPe   00 29 55.8
        MHC  eP    00 29 57.7
        WDC  iPe   00 30 09.4
        FHC  ePe   00 30 15.6
                   USGS 00 17 24.7, 31.0S,  67.6W, H= 33 KM, mb=5.4
                        SAN JUAN PROVINCE, ARGENTINA

NOV 28  MNV  iPe   00 40 24.2
        FRI  eP    00 40 30.2
        JAS  ePe   00 40 36.2
        MHC  eP    00 40 43.5
        MIN  eP    00 40 44.2
        WDC  ePe   00 40 47.3
        FHC  ePe   00 40 58.0
                   USGS 00 30 58.4, 15.9N,  60.9W, H= 62 KM, mb=5.4
                        LEEWARD ISLANDS

NOV 28  WDC  ePe   03 12 42.4
        MIN  eP    03 12 43
        MNV  ePe   03 12 45.7
        JAS  eP    03 12 50
                   USGS 02 59 10.8, 36.0N,  27.8E, H= 85 KM, mb=5.6
                        DODECANESE ISLANDS

NOV 28  FRI  eP    04 32 02.0
        PRI  eP    04 32 03.2
        MNV  eP    04 32 04.3
        JAS  ePe   04 32 08.6
        MHC  eP    04 32 10.4
        BRK  eP    04 32 13.4
        MIN  eP    04 32 19.3
        WDC  ePe   04 32 22.0
        FHC  eP    04 32 28.4
                   USGS 04 19 35.8, 31.7S,  67.8W, H= 36 KM, mb=5.5, Ms=5.4
                        SAN JUAN PROVINCE, ARGENTINA

NOV 28  FRI  ePe   04 43 09.0          PcP 45 46
        MNV  iPe   04 43 09.3           pP 43 54    ScP 49 10
        PRI  eP    04 43 12.3          PcP 45 48
        JAS  iPe   04 43 18.4          PcP 45 50   pPcP 46 45    ScP 49 14
        MHC  ePe   04 43 23.2
        BKS  ePe   04 43 28.7          PcP 45 54
        MIN  ePe   04 43 36.0
        WDC  iPe   04 43 39.9          PcP 45 56   pPcP 46 52    ScP 49 23
        FHC  iPe   04 43 51.8          PcP 46 02
                   USGS 04 36 52.5, 15.3N,  91.4W, H=225 KM, mb=5.1
                        MEXICO-GUATEMALA BORDER REGION

NOV 28  JAS  eP    05 35 45.8                  • 35 52
        FRI  eP    05 35 49.2                  • 35 56

NOV 28  FRI  eP    05 51 48.2
        PRI  eP    05 51 49.9
        MNV  eP    05 51 50.7                  • 52 00
        SAO  eP    05 51 53.3
        JAS  eP    05 51 55.0                  • 52 04
        MHC  eP    05 51 57.1
        BKS  eP    05 52 00
        MIN  eP    05 52 05.8
        WDC  ePe   05 52 08.6                  • 52 17
                   USGS 05 39 22.0, 30.8S,  67.9W, H= 10 KM, mb=5.4, Ms=4.9
                        SAN JUAN PROVINCE, ARGENTINA

NOV 28  JAS  eP    06 36 26
        FRI  eP    06 36 29.3

NOV 28  FRI  eP    06 43 57.7
        PRI  eP    06 43 59.8
        MNV  eP    06 44 00
        SAO  e(P)  06 44 03
        JAS  eP    06 44 04.0
        MHC  eP    06 44 05.9
        BKS  eP    06 44 10      54 46      PS 55 44    PPS 56 26     SS 00 39
                                              Lr 13 08
        MIN  e(P)  06 44 16
        WDC  e(P)  06 44 17
        FHC  eP    06 44 24
                   USGS 06 31 29.3, 31.4S,  67.4W, H= 16 KM, mb=5.7, Ms=5.8
                        SAN JUAN PROVINCE, ARGENTINA

NOV 28  FHC  ePe   13 13 21.1
        WDC  iPe   13 13 29.0
        MIN  iPe   13 13 34.3
        BKS  eP    13 13 44.1
        MHC        13 13                       • 13 50
        JAS  iPe   13 13 53.1
        SAO  eP    13 13 53.4
        PRI  ePe   13 14 01.0
        MNV  iPe   13 14 01.5
                   USGS 13 06 37.8, 53.0N, 175.0W, H=232 KM, mb=4.6
                        ANDREANOF ISLANDS, ALEUTIAN ISLANDS

NOV 28  FRI  eP    18 52 35.3
        PRI  eP    18 52 36.3
        MNV  ePe   18 52 37.6
        JAS  eP    18 52 41.7
        MHC  eP    18 52 43.4
        BRK  eP    18 52 46.6
        MIN  eP    18 52 52.6
        WDC  ePe   18 52 55.2
                   USGS 18 40 17.0, 32.0S,  69.1W, H= 86 KM, mb=5.5
                        MENDOZA PROVINCE, ARGENTINA

NOV 28  JAS  eP    19 29 02.8
        MNV  ePd   19 29 04.7
        WDC  ePd   19 29 18.5

NOV 28  WDC  ePd   22 24 53.0
        MIN  eP    22 24 56.7
        JAS  ePd   22 25 07.7
        FRI  eP    22 25 12.9
        MNV  ePd   22 25 15.2
                   USGS 22 13 11.2, 28.9N, 141.1E, H= 84 KM, mb=5.0
                        BONIN ISLANDS REGION

NOV 29  PRI  iPe   16 42 07.5
        SAO  ePe   16 42 21.7
        FRI  ePd   16 42 23.4
        MHC  ePe   16 42 30.3
        JAS  ePd   16 42 35.1
        BKS  iPd   16 42 40.0
                   BRK  16 42 02.4, 35.9N, 120.5W, H= 10 KM, ML=3.7
                        SOUTHEAST OF KING CITY, CALIFORNIA

NOV 29  PRI  iPe   18 22 13.0
        SAO  eP    18 22 27.2
        FRI  ePd   18 22 29.0
        MHC  e(P)  18 22 35
        JAS  eP    18 22 41.5
                   BRK  18 22 07.9, 35.9N, 120.5W, H=  9 KM, ML=3.0
                        SOUTHEAST OF KING CITY, CALIFORNIA

NOV 30  FHC  ePe   04 19 49.2
        WDC  iPe   04 19 50.2
        MIN  ePe   04 19 52.2
        BKS  ePe   04 20 03.6
                              MICRON     PERIOD
                   PZ            0.04        0.6
        MNV  iPe   04 20 04.4
        JAS  iPe   04 20 04.8
        MHC  eP    04 20 06.7
        FRI  ePe   04 20 09.2
        SAO  eP    04 20 11.0
        PRI  ePe   04 20 13.3
                   USGS 04 06 57.5, 50.0N,  78.9E, H=  0 KM, mb=5.9, Ms=3.5
                        EASTERN KAZAKH, SSR

NOV 30  SAO  eP    10 26 49.3
        PRI  eP    10 26 50.0
        MHC  eP    10 26 50.2
        BKS  iPe   10 26 51.0
        FHC  eP    10 26 53.9
        FRI  eP    10 26 55.0
        JAS  eP    10 26 55.6
        WDC  eP    10 26 57.2                                  pP 29 03
        MIN  eP    10 26 59.0
        MNV  eP    10 27 04.7
                   USGS 10 15 43.4, 20.6S, 178.4W, H=550 KM, mb=5.5
                        FIJI ISLANDS REGION

NOV 30  WDC  ePe   12 20 46.6
        MIN  eP    12 20 48.7
        JAS  eP    12 20 57.0
        FRI  eP    12 21 01
        MNV  eP    12 21 05.0
                   USGS 12 08 04.9, 12.5N, 141.5E, H= 32 KM, mb=5.4, Ms=4.9
                        SOUTH OF MARIANA ISLANDS

DEC 01  WDC  ePKP  09 04 31.4
        JAS  ePKP  09 04 32.4
        MIN        09 04                       • 04 33
        MNV        09 04                       • 04 42
                   USGS 08 44 39.4, 46.5S,  96.3E, H= 33 KM, mb=4.7
                        SOUTHEAST INDIAN RISE

DEC 01  FHC  eP    18 18 01.2
        BKS  eP    18 18 02.9
        MHC  eP    18 18 04.7
        WDC  eP    18 18 05.6
        PRI  eP    18 18 07.8
        MIN  eP    18 18 08.0
        JAS  eP    18 18 09.6
        FRI  eP    18 18 11.3
        MNV  eP    18 18 18.9
                   USGS 18 05 28.4,  9.9S, 160.3E, H= 77 KM, mb=5.2
                        SOLOMON ISLANDS

DEC 02  WDC  eP    04 27 10.5                  • 31 15
        BKS  eP    04 27 12                 PS 39 44    SS 45 00    Lq 53 08
                                            Lr 56 56
                              MICRON     PERIOD
                   LZ              5         20
                   LN            1.4         20
                   LE              5         20
        MHC  eP    04 27 14.0
        MIN  eP    04 27 14.6
        JAS  eP    04 27 16.3                  • 31 10   PKKP 44 50 PKPPKP 52 18
        PRI  eP    04 27 18.0
        FRI  eP    04 27 20.5
        MNV  eP    04 27 26.2               PKKP 44 42
                   Ms=6.0, DISTANCE=96°
                   USGS 04 13 53.8,  5.0S, 145.0E, H= 66 KM, mb=5.7
                        EAST PAPUA NEW GUINEA REGION

DEC 02  FHC  eP    13 06 16.5
        WDC  eP    13 06 23.1                  i 06 33
        MIN  eP    13 06 27.1
        BKS        13 06          14 10     SS 18 04    Lq 20 12    Lr 22 50
        MHC        13 06                       • 06 43
        JAS  eP    13 06 44.4
        MNV  iPe   13 06 51.6
        FRI  eP    13 06 52.3
        PRI        13 06                       • 06 54
                   USGS 12 57 10.7, 52.9N, 159.7E, H= 15 KM, mb=5.8, Ms=5.1
                        OFF EAST COAST OF KAMCHATKA

DEC 03  FHC  iPe   05 18 38.0
        WDC  iPe   05 18 42.8
        MIN  ePe   05 18 46.3
        BKS  ePe   05 18 51.0
                              MICRON     PERIOD
                   PZ            0.14        0.8
        MHC  ePe   05 18 54.8
        SAO  ePe   05 18 56.5
        JAS  ePe   05 18 57.5
        PRI  ePe   05 19 02.0
        FRI  ePe   05 19 02.4
        MNV  iPe   05 19 04.5
                   USGS 05 07 32.1, 30.3N, 138.4E, H=419 KM, mb=5.2
                        SOUTH OF HONSHU, JAPAN

DEC 03  MNV  ePe   12 31 53.0                                  PcP 33 48
        PRI  e(P)  12 31 57                                    PcP 33 52
        JAS  e(P)  12 32 02
        MHC  eP    12 32 06.5
        MIN  e(P)  12 32 18
        WDC  e(P)  12 32 22
        FHC  e(P)  12 32 32
                   USGS 12 24 06.7,  9.3N,  84.7W, H= 59 KM, mb=4.8
                        COSTA RICA

DEC 03  MNV  iPd   12 43 57.0
        FRI  eP    12 44 03.3
        JAS  ePd   12 44 09.5
        MHC  eP    12 44 17
        WDC  e(P)  12 44 22
        FHC  e(P)  12 44 34
                   USGS 12 35 38.2, 19.1N,  69.6W, H= 81 KM, mb=5.0
                        DOMINICAN REPUBLIC REGION
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DEC 03  WDC   ePKP   14 00 16.0                    e 02 00
        MIN   e(PKP) 14 00 17                      e 02 12      e 19 32
        BKS          14 00
        MHC   e(PKP) 14 00 22                      e 02 23
        JAS   ePKP   14 00 22.2
        FRI   e(PKP) 14 00 24
        MNV   ePKP   14 00 24.5
        PRI   e(PKP) 14 00 25
              USGS 13 41 20.9,  3.5N,  95.9E, H= 41 KM, mb=5.8, Ms=5.9
                   OFF WEST COAST OF NORTHERN SUMATERA

DEC 03  WDC   eP     16 48 12.5
        JAS   eP     16 48 15.3
        FRI   eP     16 48 16
        MNV   eP     16 48 24
              USGS 16 35 26.4, 17.6S, 167.3E, H= 10 KM, mb=5.4
                   NEW HEBRIDES ISLANDS

DEC 04  JAS   eP     01 18 28.5
        WDC   eP     01 18 36.0

DEC 04  JAS   eP     02 00 39.0
        WDC   eP     02 00 46.5

DEC 04  BKS   eP     02 22 56.5   23 10
        MHC   e(P)   02 23 07
        JAS   eP     02 23 12.5
        SAO   eP     02 23 14.5
              BRK    02 22 39.7, 38.7N, 122.8W, H= 14 KM, ML=3.0
                     NORTH-NORTHWEST OF SANTA ROSA, CALIFORNIA

DEC 04  SAO   e(P)   06 02 36
        BKS   eP     06 02 37    12 43      PPS 13 36      SS 17 48      Lq 22 44
                                                Lr 26 28
                          MICRON     PERIOD
                     PZ     0.12        1.6
                     LZ     6           20
                     LN     3.9         20
                     LE     4.1         20
        PRI   eP     06 02 37.2
        MHC   ePe    06 02 38.0
        FRI   ePe    06 02 42.5
        FHC   ePe    06 02 43.3
        JAS   ePe    06 02 43.5
        WDC   iPe    06 02 46.3
        MIN   eP     06 02 47.9
        MNV   iPe    06 02 52.5
              Ms=5.9, DISTANCE=80°
              USGS 05 50 35.6, 23.9S, 176.1W, H= 56 KM, mb=5.6, Ms=6.2
                   SOUTH OF FIJI ISLANDS

DEC 04  WDC   iPe    11 48 34.9                   pP 50 14
        MIN   ePe    11 48 39.0
        BKS   eP     11 48 47.3
                          MICRON     PERIOD
                     PZ     0.01        0.7
        MHC   eP     11 48 52.0
        JAS   iPe    11 48 54.0                   pP 50 34
        SAO   eP     11 48 54.7
        FRI   ePe    11 49 00.4                   pP 50 41
        MNV   iPe    11 49 00.4                   pP 50 42
        PRI   eP     11 49 01.1
              USGS 11 39 02.8, 48.2N, 146.6E, H=479 KM, mb=5.1
                   SEA OF OKHOTSK

DEC 04  MHC   eP     13 19 46.2
        WDC   eP     13 19 50.0
        JAS   eP     13 19 51.1
        FRI   eP     13 19 51.2

DEC 04  SAO   eP     14 34 39.6
        BKS   eP     14 34 40.6
                          MICRON     PERIOD
                     PZ     0.04        0.6
        PRI   ePd    14 34 41.2
        MHC   ePd    14 34 41.5
        FHC   ePe    14 34 45.4
        FRI   ePd    14 34 46.6
        JAS   iPd    14 34 47.2
        WDC   iPd    14 34 48.7
        MIN   eP     14 34 50.9
        MNV   iPd    14 34 57.0
              USGS 14 23 24.0, 18.3S, 176.4W, H=272 KM, mb=5.2
                   FIJI ISLANDS REGION

DEC 05  PRI          14 25                        e 25 55
        SAO          14 25                        e 25 55
        MHC          14 25                        e 25 57
        BKS   eP     14 26 00.2   36 04      Lq 46 30      Lr 49 30
                          MICRON     PERIOD
                     PZ     0.04        1.0
                     LZ     3.9         20
                     LN     3.2         20
                     LE     3.2         20
        JAS   eP     14 26 02.2
        WDC   eP     14 26 05.0                   e 27 11
              Ms=5.8, DISTANCE=80°
              USGS 14 13 52.0, 23.9S, 176.0W, H= 33 KM, mb=5.5, Ms=5.9
                   SOUTH OF FIJI ISLANDS

DEC 05  PRI          15 55                        e 55 47
        FRI          15 55                        e 55 52
        MNV   eP     15 55 53.8
        JAS   eP     15 55 58.4
        MHC          15 56                        e 56 08
        BRK          15 56                        e 56 05
        WDC   iPe    15 56 12.3                   e 56 12
              USGS 15 43 27.9, 31.0S,  67.7W, H= 32 KM, mb=5.4, Ms=5.6
                   SAN JUAN PROVINCE, ARGENTINA

DEC 05  WDC   eP     23 46 29.7
        JAS   eP     23 46 52.6
        MNV   eP     23 46 59.1
              USGS 23 37 37.1, 55.7N, 162.2E, H= 33 KM, mb=4.5
                   NEAR EAST COAST OF KAMCHATKA

DEC 06  FRI   eP     08 54 03.0
        PRI   eP     08 54 04.8
        MNV   eP     08 54 05.7
        JAS   eP     08 54 10.0
        MHC   eP     08 54 11.8
        MIN   eP     08 54 20
        WDC   eP     08 54 23.0
        FHC          08 54                        e 54 34
              USGS 08 41 39.3, 31.1S,  67.7W, H= 35 KM, mb=5.6, Ms=5.1
                   SAN JUAN PROVINCE, ARGENTINA

DEC 06  WDC   eP     10 39 53.8
        JAS   eP     10 40 12.2
        FRI          10 40                        e 40 19
              USGS 10 29 17.0, 45.2N, 144.3E, H= 33 KM, mb=5.0
                   HOKKAIDO, JAPAN REGION

DEC 06  MNV   eP     12 53 46.0
        JAS   eP     12 53 54.6
        WDC   eP     12 54 05.0
              USGS 12 41 16.7, 31.4S,  67.7W, H= 33 KM, mb=4.9
                   SAN JUAN PROVINCE, ARGENTINA

DEC 06  FRI   ePo    17 17 33.0                   e 17 42
        PRI   ePo    17 17 34.4                   e 17 42
        MNV   iPo    17 17 35.5
        SAO   ePo    17 17 38.0
        JAS   iPo    17 17 40.0                   e 17 47
        MHC   ePo    17 17 41.4
        BKS   ePo    17 17 44.6                   e 17 51
                          MICRON     PERIOD
                     PZ     0.1         1.2
        MIN   ePo    17 17 50.3
        WDC   ePe    17 17 53.1                   e 18 00
        FHC   ePe    17 17 59.6
              USGS 17 05 06.4, 31.2S,  67.7W, H= 19 KM, mb=5.9, Ms=5.9
                   SAN JUAN PROVINCE, ARGENTINA

DEC 06  JAS   eP     18 40 14.8
        WDC   eP     18 40 27.9
              USGS 18 27 42.4, 31.3S,  67.7W, H= 33 KM, mb=5.2
                   SAN JUAN PROVINCE, ARGENTINA

DEC 07  FRI   eP     00 44 40.9
        PRI   eP     00 44 42.2
        MNV   eP     00 44 42.9
        SAO   eP     00 44 45.9
        JAS   iPd    00 44 47.5
        MHC   eP     00 44 49.4
        BKS   e(P)   00 44 52
        MIN   eP     00 44 58.4
        WDC   iPd    00 45 01.0
        FHC   ePd    00 45 07.5
              USGS 00 32 36.0, 28.6S,  67.4W, H=124 KM, mb=5.4
                   LA RIOJA PROVINCE, ARGENTINA

DEC 07  PRI   eP     03 35 10.2
        MNV   ePd    03 35 11.8
        JAS   eP     03 35 15.5
        MHC   eP     03 35 17.2
        WDC   eP     03 35 29.0
              USGS 03 22 44.3, 31.2S,  67.9W, H= 33 KM, mb=5.2
                   SAN JUAN PROVINCE, ARGENTINA

DEC 07  SAO   eP     06 11 47.3
        PRI   eP     06 11 48.5
        BKS   eP     06 11 49.1
                          MICRON     PERIOD
                     PZ     0.02        1.2
        MHC   eP     06 11 49.5
        FRI   eP     06 11 53.9
        JAS   ePe    06 11 55.1
        WDC   ePe    06 11 57.9
        MNV   eP     06 12 04.0
              USGS 05 59 44.3, 24.1S, 175.6W, H= 33 KM, mb=5.2, Ms=4.7
                   SOUTH OF TONGA ISLANDS

DEC 07  FHC   eP     09 10 15.7
        WDC   ePd    09 10 20.1                   e 10 52
        MIN   eP     09 10 23.2                   e 10 55
        BKS   eP     09 10 24.3                   e 10 56
                          MICRON     PERIOD
                     PZ     0.07        1.0
        MHC   eP     09 10 27.5                   e 11 59
        SAO   eP     09 10 29.3
        JAS   ePd    09 10 31.0                   e 11 04
        PRI   eP     09 10 33.0                   e 11 04
        FRI   eP     09 10 34.8                   e 11 06
        MNV   iPd    09 10 39.3                   e 11 10
              USGS 08 58 06.2, 13.6N, 144.6E, H=136 KM, mb=5.4
                   MARIANA ISLANDS

DEC 07  WDC          17 08 49.0
        MIN          17 08                        e 08 56
        JAS   eP     17 09 15.2
        MNV   eP     17 09 23.6
              USGS 17 01 06.8, 51.1N, 178.3E, H= 44 KM, mb=4.4
                   RAT ISLANDS, ALEUTIAN ISLANDS

DEC 07  SAO   iPd    18 38 21.8
        MHC   iPd    18 38 29.8   38 37
        PRI   iPe    18 38 38.7   38 53
        BKS   ePe    18 38 41.9   38 59
        JAS   eP     18 38 45.4   39 04
              BRK    18 38 19.5, 36.8N, 121.5W, H=  3 KM, ML=2.8
                     SAN JUAN BAUTISTA, CALIFORNIA

DEC 07  WDC   iPd    20 43 30.5                   e 44 14
        BKS   eP     20 43 36.5
                          MICRON     PERIOD
                     PZ     0.08        1.1
        MHC   ePd    20 43 40.1
        JAS   iPd    20 43 43.4                   e 44 27
        SAO          20 43                        e 43 47
        PRI   eP     20 43 46.5
              USGS 20 31 46.3, 22.0N, 143.3E, H=201 KM, mb=5.2
                   VOLCANO ISLANDS REGION

DEC 08  SAO   eP     06 27 19                     pP 27 36
        PRI   eP     06 27 20.8                   pP 27 38     sP 27 47
        BKS   eP     06 27 21.0   37 29           pP 27 38     sP 27 48     SS 42 40
                                                  Lq 47 50     Lr 51 24
                          MICRON     PERIOD
                     PZ     0.15        1.5
                     LZ     3.9         20
                     LN     3.6         20
                     LE     3.2         20
        MHC   eP     06 27 21.4                   pP 27 39
        JAS   ePe    06 27 26.9                   pP 27 44     sP 27 54
        WDC   eP     06 27 29.8                   pP 27 46     sP 27 56     e 28 13
              Ms=5.8, DISTANCE=81°
              USGS 06 15 16.2, 24.2S, 175.6W, H= 33 KM, mb=5.5, Ms=6.1
                   SOUTH OF TONGA ISLANDS

DEC 08  JAS   eP     12 25 24.9
        WDC   eP     12 25 27.6
              USGS 12 14 00.5, 17.8S, 173.7W, H=151 KM, mb=5.1
                   TONGA ISLANDS

DEC 08  BKS   ePe    18 04 22.7   04 24
        MHC   ePe    18 04 34.8
        SAO   eP     18 04 42.6
        JAS   iPe    18 04 46.1                   e 05 04
              BRK    18 04 21.0, 37.9N, 122.3W, H= 11 KM, ML=2.6
                     BERKELEY, CALIFORNIA

DEC 09  BKS   eP     02 27 01.5   27 06
        MHC   iPe    02 27 10.8
        SAO   eP     02 27 17.1
        JAS   iPd    02 27 24.0   27 45
              BRK    02 26 55.3, 37.7N, 122.5W, H=  9 KM, ML=2.9
                     OFF COAST SOUTHWEST OF SAN FRANCISCO, CALIFORNIA

DEC 09  PRI          05 13                        e 13 41
        MHC   eP     05 13 41.4
        BKS   ePd    05 13 41.5
                          MICRON     PERIOD
                     PZ     0.04        0.9
        FRI   eP     05 13 46.3
        JAS   eP     05 13 47.3
        WDC   eP     05 13 49.8
        MIN          05 13                        e 13 52
              USGS 05 01 38.1, 23.5S, 176.0W, H= 33 KM, mb=5.1, Ms=4.6
                   SOUTH OF FIJI ISLANDS
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DEC 09  PRI  eP     21 42 39.3                 • 42 52
        BKS  eP     21 42 40.0
                        MICRON     PERIOD
                    PZ     0.03        0.9
        MBC  ePe    21 42 48.1                 • 42 53
        FRI  ePe    21 42 44.6                 • 42 58
        JAS  ePe    21 42 45.5                 • 42 59
        WDC  ePe    21 42 48.2                 • 43 02
        MIN  eP     21 42 50.0
        MNV  ePe    21 42 54.6                 • 43 08
                    USGS 21 30 34.6, 24.1S, 175.7W, H= 33 KM, mb=5.1
                         SOUTH OF TONGA ISLANDS

DEC 09  PRI  eP     21 57 18.7
        JAS  ePe    21 57 24.0
        MBC  eP     21 57 26.0
        MIN  eP     21 57 34.6
        WDC  eP     21 57 37.5
                    USGS 21 44 51.8, 31.5S,  67.7W, H= 37 KM, mb=5.2, Ms=4.3
                         SAN JUAN PROVINCE, ARGENTINA

DEC 10  PRI  eP     00 41 35.0
        BKS         00 41                      • 41 35
        MBC  eP     00 41 35.3
        FHC  eP     00 41 39.2
        FRI  eP     00 41 40.0
        JAS  eP     00 41 40.3
        WDC  eP     00 41 42.3
        MIN  eP     00 41 44.1
        MNV  eP     00 41 50.2
                    USGS 00 30 27.8, 21.5S, 179.5W, H=619 KM, mb=4.9
                         FIJI ISLANDS REGION

DEC 10  FRI  eP     07 24 20.5
        PRI  eP     07 24 20.7
        MNV  eP     07 24 21.4
        JAS  eP     07 24 25.7
        MBC  e(P)   07 24 29
        MIN  e(P)   07 24 36
        WDC  eP     07 24 40.5
        FHC  eP     07 24 46.6
                    USGS 07 11 56.0, 31.2S,  67.6W, H= 39 KM, mb=5.6, Ms=4.8
                         SAN JUAN PROVINCE, ARGENTINA

DEC 10  JAS  eP     08 49 32.2
        WDC  eP     08 49 45.7
                    USGS 08 36 59.0, 31.4S,  67.9W, H= 33 KM, mb=5.3
                         SAN JUAN PROVINCE, ARGENTINA

DEC 10  PRI  e(P)   14 32 24
        PRI  eP     14 32 25.0
        MNV  ePe    14 32 25.9
        JAS  ePe    14 32 30.2
        MBC  eP     14 32 32.4
        MIN  e(P)   14 32 41
        WDC  ePe    14 32 43.8
        FHC  eP     14 32 50.3
                    USGS 14 19 58.4, 31.2S,  67.7W, H= 27 KM, mb=5.3
                         SAN JUAN PROVINCE, ARGENTINA

DEC 10  FHC  e(P)   15 31 10
        WDC  eP     15 31 15.0
        MIN  e(P)   15 31 19
        BKS         15 31                      • 31 27
        MBC  eP     15 31 26.4
        JAS  eP     15 31 28.8
        FRI  eP     15 31 34.5
        PRI  e(P)   15 31 35
        MNV  e(P)   15 31 37
                    USGS 15 19 28.8, 32.0N, 138.9E, H= 33 KM, mb=5.0, Ms=4.7
                         SOUTH OF HONSHU, JAPAN

DEC 10  WDC  iPe    22 08 07.4
        MIN  eP     22 08 12.0
        MBC  eP     22 08 26.2
        JAS  iPe    22 08 28.5
        FRI  eP     22 08 35.3
        MNV  iPe    22 08 35.5
                    USGS 21 58 51.3, 51.4N, 156.6E, H=132 KM, mb=4.8
                         KAMCHATKA

DEC 10  FHC  ePd    23 21 14.2
        WDC  iPd    23 21 20.5                 pP 21 51
        MIN  e(P)   23 21 25
        BKS  eP     23 21 33.2                 • 22 04
                        MICRON     PERIOD
                    PZ     0.07        1.0
        MBC  eP     23 21 37.8
        JAS  ePd    23 21 40.2                 pP 22 12
        FRI  eP     23 21 46.8
        MNV  iPd    23 21 47.5                 pP 22 19
        PRI  ePd    23 21 47.5
                    USGS 23 11 37.1, 47.6N, 152.8E, H=128 KM, mb=5.2
                         KURIL ISLANDS

DEC 10  MBC  iPe    23 36 02.5
        SAO  iPd    23 36 12.9
        BKS  eP     23 36 14.4  36 24
        JAS  iPe    23 36 22.1  36 38
        FRI  e(P)   23 36 28
                    BRK  23 36 00.8, 37.4N, 121.7W, H=  8 KM, ML=2.6
                         EAST OF SAN JOSE, CALIFORNIA

DEC 11  MNV  iPe    16 31 20.2
        FRI  ePe    16 31 23.8
        FRI  e(P)   16 31 28
        JAS  ePe    16 31 30.9
        SAO  eP     16 31 33.5
        MBC  ePe    16 31 37.0
        BKS  ePe    16 31 41.0
                        MICRON     PERIOD
                    PZ     0.17        1.0
        MIN  eP     16 31 42.5
        WDC  ePe    16 31 46.1
        FHC  ePe    16 31 56.8
                    USGS 16 22 08.6,  9.5N,  69.6W, H= 18 KM, mb=5.6, Ms=5.0
                         VENEZUELA

DEC 12  MBC  iPe    01 11 47.7
        SAO  iPd    01 11 58.0
        BKS  iPe    01 11 59.5  12 10
        JAS  iPe    01 12 07.4  12 23
        PRI  ePe    01 12 10.9
        FRI  ePe    01 12 12.9
                    BRK  01 11 46.0, 37.4N, 121.7W, H=  9 KM, ML=3.6
                         EAST OF SAN JOSE, CALIFORNIA

DEC 12  PRI  eP     08 04 23
        JAS  eP     08 04 40
        MBC  eP     08 04 43
        WDC  eP     08 05 10
                    USGS 07 59 55.2, 19.4N, 108.4W, H= 33 KM, mb=4.7
                         REVILLA GIGEDO ISLANDS REGION

DEC 12  PRI  ePd    08 49 17.5
        JAS  ePd    08 49 23.8
        WDC  ePd    08 49 25.0
                    USGS 08 38 00.2, 17.8S, 175.1W, H=202 KM, mb=5.3
                         TONGA ISLANDS

DEC 13  MNV  eP     01 24 15.3
        FRI  eP     01 24 22.7
        JAS  eP     01 24 26.8
        PRI  eP     01 24 30.8
        MIN  eP     01 24 33.4
        SAO         01 24
        MBC  eP     01 24 34.8                 • 24 34
        WDC  eP     01 24 36.9
        BKS  e(P)   01 23 38       33 05       Lq 39 40     Lr 43 16
                        MICRON     PERIOD
                    LZ     42          20
                    LN     26          20
                    LE     35          20
        FHC  eP     01 24 46.6
                    Ms=6.6, DISTANCE=65°
                    USGS 01 14 18.6, 17.4N,  54.8W, H= 33 KM, mb=5.7, Ms=6.4
                         NORTH ATLANTIC OCEAN

DEC 13  MBC  eP     01 33 36.7
        BKS         01 33
        FRI  eP     01 33 41.1                 • 33 38
        JAS  eP     01 33 41.9
        WDC  eP     01 33 43.7
        MIN  eP     01 33 46.3
        MNV  eP     01 33 50.3
                    USGS 01 22 01.7, 25.0S, 179.8W, H=467 KM, mb=4.4
                         SOUTH OF FIJI ISLANDS

DEC 13  SAO  eP     03 18 45.0
        BKS  e(P)   03 18 46
        MBC  eP     03 18 46.5
        PRI  eP     03 18 46.7
        FHC  eP     03 18 48.5
        FRI  eP     03 18 51.8
        JAS  iPe    03 18 52.1
        WDC  iPe    03 18 53.0
        MIN  eP     03 18 54.8
        MNV  iPe    03 19 01.9
                    USGS 03 07 47.7, 17.8S, 178.8W, H=534 KM, mb=5.3
                         FIJI ISLANDS REGION

DEC 13  MIN  iPe    04 33 52.8  33 56
        WDC  iPe    04 34 05.1  34 18
        JAS  iP     04 34 31.9  35 02
                    BRK  04 33 47.6, 40.3N, 121.3W, H= 17 KM, ML=3.2
                         CHESTER, CALIFORNIA

DEC 13  SAO  eP     06 39 11.2
        PRI  eP     06 39 12.2
        BKS  ePd    06 39 12.9
        MBC  eP     06 39 13.2
        FRI  eP     06 39 18.0
        JAS  eP     06 39 18.9
        WDC  eP     06 39 21.2
        MIN  eP     06 39 23.0
                    USGS 06 27 40.0, 18.3S, 173.5W, H= 38 KM, mb=5.2
                         TONGA ISLANDS

DEC 13  PRI  eP     10 18 50.3
        MNV  eP     10 18 50.4
        JAS  eP     10 18 54.7
        MBC  eP     10 18 56.6
        WDC  eP     10 19 07.7
                    USGS 10 06 20.6, 31.6S,  67.4W, H= 33 KM, mb=5.4
                         SAN JUAN PROVINCE, ARGENTINA

DEC 13  BKS         14 44                      • 44 41
        JAS  eP     14 44 55.2
        FRI  eP     14 45 09.9

DEC 14  WDC  ePKPd  03 20 21.4                 PP 25 51
        MIN  ePKP   03 20 21.5
        FHC  ePKPd  03 20 22.5
        BRK  ePKP   03 20 23.2
        BKS         03 20                      • 20 25     • 20 29     • 20 58
                                               PKPAB 22 03 PP 26 05
        JAS  ePKPd  03 20 23.4                 PKPAB 22 01 PP 25 53 PcPPKP 29 03
        SAO  ePKP   03 20 23.5
        FRI  ePKPd  03 20 23.7                 PKPAB 22 04
        MNV  ePKPd  03 20 23.7                 PKPAB 21 55 PP 25 54
        MBC  ePKP   03 20 24.0                 PKPAB 22 04
        PRI  ePKPd  03 20 24.9                 PKPAB 22 10 PP 26 09 PcPPKP 29 08
                    USGS 03 00 14.6, 33.8S,  58.0E, H= 33 KM, mb=5.6, Ms=4.7
                         SOUTH INDIAN OCEAN

DEC 14  PRI  e(P)   04 53 48
        MBC  eP     04 53 48.8
        BKS         04 53                      • 53 54     • 53 57     • 54 19
                        MICRON     PERIOD
                    LZ     1.8         20
                    LN     1.4         20
                    LE     0.9         20
        FRI  eP     04 53 52.6
        JAS  ePd    04 53 53.7
        WDC  ePd    04 53 56.5
        MNV  ePd    04 54 02.0
                    USGS 04 41 23.1, 27.5S, 178.4W, H= 45 KM, mb=5.1, Ms=5.3
                         KERMADEC ISLANDS REGION

DEC 14  FHC  eP     09 06 14.6
        WDC  ePe    09 06 20.4
        BKS  e(P)   09 06 32
        MBC  eP     09 06 36.1
        JAS  ePe    09 06 38.8
        FRI  ePe    09 06 45.0
        MNV  ePe    09 06 46.2
        PRI  eP     09 06 47.3
                    USGS 08 55 44.5, 42.3N, 147.6E, H= 20 KM, mb=5.1
                         OFF COAST OF HOKKAIDO, JAPAN

DEC 14  PRI  eP     10 29 51.9
        MBC  e(P)   10 29 52
        FRI  eP     10 29 57.8
        JAS  eP     10 29 58.4
        WDC  eP     10 30 00.2
        MNV  eP     10 30 09.2
                    USGS 10 18 33.2, 15.3S, 173.1W, H= 33 KM, mb=5.0
                         TONGA ISLANDS

DEC 14  MNV  iPe    15 30 36.1
        FRI  iPe    15 30 47.9
        JAS  iPe    15 30 56.7
        PRI  iPe    15 31 00.7
        SAO  iPe    15 31 07.2
        MBC  iPe    15 31 09.7
        BKS  iPe    15 31 16.4
        MIN  iP     15 31 22.5
        WDC  iPe    15 31 31.8
        FHC         15 31                      • 31 48
                    ML=5.7, NUCLEAR EXPLOSION, NEVADA TEST SITE
                    USGS 15 30 00.2, 37.1N, 116.1W, H=  0 KM, mb=5.7
                         SOUTHERN NEVADA (NTS)

DEC 14  SAO  ePd    19 03 35.7
        PRI  ePd    19 03 37.1
        BKS  ePd    19 03 37.3
                        MICRON     PERIOD
                    PZ     0.13        1.0
        MBC  ePd    19 03 37.5
        FHC  eP     19 03 41.3
        FRI  ePd    19 03 42.2
        JAS  ePd    19 03 42.8
        WDC  ePd    19 03 44.4
        MIN  ePd    19 03 46.0
        MNV  iPd    19 03 51.8
                    USGS 18 52 34.9, 21.1S, 179.1W, H=659 KM, mb=5.6
                         FIJI ISLANDS REGION
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DEC 15  SAO  iPe    11 15 33.9
        FRI  iPd    11 15 41.1
        MHC  iPe    11 15 45.1
        FRI  iPe    11 15 51.3
        BKS  ePe    11 15 54.3                  • 16 35
        JAS  ePd    11 15 54.4
        MNV  eP     11 16 18.3
        WDC  e(P)   11 16 31
                BRK  11 15 28.9, 36.6N, 121.2W, H= 9 KM, ML=4.2
                     SOUTHEAST OF HOLLISTER, CALIFORNIA

DEC 16  WDC  eP     07 22 15
        MIN  eP     07 22 18.7
        BKS  ePd    07 22 27.7
        JAS  eP     07 22 32.4
        FRI  eP     07 22 39.2
        MNV  eP     07 22 40
                USGS 07 11 41.6, 43.2N, 146.8E, H= 38 KM, mb=5.4, Ms=4.6
                     KURIL ISLANDS

DEC 16  PRI  iPe    10 41 53.1
        SAO  iPd    10 42 07.5
        FRI  iPd    10 42 09.1
        MHC  eP     10 42 16.0
        JAS  eP     10 42 21.2   42 45
        MNV  eP     10 42 41.6
                BRK  10 41 47.6, 35.9N, 120.6W, H= 8 KM, ML=3.1
                     SOUTHEAST OF KING CITY, CALIFORNIA

DEC 16  FHC         15 21                       • 21 43      • 21 55
        WDC  eP     15 21 46.7                  i 22 00
        MIN  eP     15 21 51.5                  • 22 04
        BKS  ePd    15 21 57.0                  • 22 10
        MHC  eP     15 22 00.7                  • 22 14
        JAS  eP     15 22 03.4                  i 22 17
        SAO         15 22                       • 22 07
        FRI  eP     15 22 08.6                  • 22 23
        PRI  eP     15 22 09.7                  i 22 24
        MNV  eP     15 22 10.4
                USGS 15 10 28.0, 36.6N, 141.0E, H= 46 KM, mb=5.6, Ms=5.4
                     NEAR EAST COAST OF HONSHU, JAPAN

DEC 17  FHC         11 39                       • 39 00
        BKS         11 39                       • 48 52      • 49 00
        JAS  eP     11 39 33.4
        FRI  eP     11 39 41.3
        PRI  eP     11 39 41.4
        MNV  eP     11 39 42.1
                USGS 11 32 24.4, 52.2N, 170.1W, H= 44 KM, mb=5.0, Ms=5.1
                     FOX ISLANDS, ALEUTIAN ISLANDS

DEC 17  BRK  eP     16 14 04.6
        PRI  eP     16 14 05.0
        MHC  eP     16 14 05.3
        FHC  eP     16 14 09.0
        FRI  eP     16 14 10.2
        JAS  eP     16 14 10.5
        MIN  eP     16 14 14.0
        MNV  eP     16 14 19.5
                USGS 16 03 00.3, 21.0S, 178.8W, H=602 KM, mb=5.1
                     FIJI ISLANDS REGION

DEC 17  MHC  eP     16 19 44.3
        FRI  eP     16 19 49.0
        JAS  eP     16 19 50.0
        MNV  eP     16 19 59.3
                USGS 16 07 50.0, 23.7S, 175.8W, H=115 KM, mb=5.1
                     TONGA ISLANDS REGION

DEC 17  JAS  eP     16 35 08.5
        FRI  eP     16 35 09.3
                USGS 16 22 54.1, 15.8S, 168.0E, H=227 KM, mb=5.2
                     NEW HEBRIDES ISLANDS

DEC 17  MIN  eP     17 34 16.5
        BRK  eP     17 34 25.8
        BKS         17 34                       • 40 04      • 40 12      • 42 36
                                                • 43 37      • 44 04
        MHC  ePd    17 34 32.0
        JAS  ePd    17 34 35.9
        FRI  eP     17 34 44.0
        PRI  eP     17 34 44.5
        MNV  ePd    17 34 45.0
                USGS 17 27 27.5, 52.2N, 170.0W, H= 40 KM, mb=5.3, Ms=5.5
                     FOX ISLANDS, ALEUTIAN ISLANDS

DEC 18  WDC  ePe    01 03 35.7
        MIN  eP     01 03 41.0
        JAS  eP     01 04 03.5
        FRI  eP     01 04 13.1
                USGS 00 58 11.7, 57.6N, 151.3W, H= 29 KM, mb=4.7
                     KODIAK ISLANDS REGION

DEC 18  FHC  e(P)   07 06 18
        WDC  iPe    07 06 24.5              pP 06 52
        MIN  ePe    07 06 29.2
        MHC  eP     07 06 45.3
        JAS  ePe    07 06 47.1              pP 07 15
        MNV  iPe    07 06 53.8              pP 07 22
        FRI  eP     07 06 54.5              pP 07 22
        PRI  eP     07 06 56.8
                USGS 06 57 33.3, 55.3N, 160.6E, H=118 KM, mb=5.1
                     KAMCHATKA

DEC 19  FHC  eP     10 59 48
        WDC  eP     10 59 55.9                  • 00 09
        MIN  eP     11 00 01.3
        BKS  ePd    11 00 09.7
        MHC  eP     11 00 16
        JAS  eP     11 00 19.9                  • 00 33
        MNV  eP     11 00 27.3
        FRI  eP     11 00 27.6
                USGS 10 52 38.9, 51.2N, 176.4W, H= 53 KM, mb=5.1
                     ANDREANOF ISLANDS, ALEUTIAN ISLANDS

DEC 19  FHC  iPe    22 07 48.9                  i 07 53
        WDC  iPe    22 08 04.3   08 33          i 08 25
        MIN  eP     22 08 15.8
                BRK  22 07 36.2, 41.3N, 124.7W, H= 18 KM, ML=3.5
                     OFF THE COAST NORTHWEST OF EUREKA, CALIFORNIA

DEC 20  FHC  eP     09 00 10.0
        WDC  iPe    09 00 16.3              pP 00 49
        MIN  eP     09 00 20.3
        BRK         09 00                   • 00 29
        MHC  eP     09 00 33.7
        JAS  iPe    09 00 36.5              pP 01 09   PKKP 21 25 PKPPKP 29 52
        SAO  eP     09 00 36.8
        FRI  eP     09 00 42.8              pP 01 15
        PRI  eP     09 00 43.5
        MNV  iP     09 00  3.7
                USGS 08 50 38.2, 48.6N, 153.0E, H=140 KM, mb=5.8
                     KURIL ISLANDS

DEC 20  WDC  eP     13 21 16.0
        JAS  eP     13 21 16.7
        FRI  eP     13 21 17.3
                USGS 13 08 59.2, 18.8S, 169.3E, H=248 KM, mb=4.1
                     NEW HEBRIDES ISLANDS

DEC 21  FHC  eP     01 12 18.0
        WDC  iPd    01 12 23.5                  pP 12 38     sP 12 58     PP 15 20
        MIN  ePd    01 12 27.2
        BKS  eP     01 12 30.8   22 26          • 23 08      • 23 16      • 26 56
                                                • 27 05      • 27 42      • 30 49
                                                Lr 36 17
                              MICRON     PERIOD
                        PZ      0.83       0.8
                        LZ       100        20
                        LNE       42        20
                        LNW       70        20
        MHC  eP     01 12 34.2
        SAO  eP     01 12 35.5
        JAS  iPd    01 12 37.6                  pP 12 53     sP 13 13 PKPPKP 39 36
                                                PKPPKS 43 27
        PRI  ePd    01 12 41.3
        FRI  ePd    01 12 42.2
        MNV  iPd    01 12 45.2
                Ms=7.0, DISTANCE=80°
                USGS 01 00 32.8, 25.5N, 143.1E, H= 33 KM, mb=6.2, Ms=6.8
                     VOLCANO ISLANDS REGION

DEC 21  FRI  ePe    03 59 58.9
        PRI  ePe    04 00 00.4
        SAO  eP     04 00 03.8
        JAS  iPe    04 00 05.6
        MHC  eP     04 00 07.3
        BRK  eP     04 00 10.8
        MIN  eP     04 00 16.3
        WDC  iPe    04 00 19.0
                USGS 03 47 32.5, 31.5S,  67.6W, H= 33 KM, mb=5.7
                     SAN JUAN PROVINCE, ARGENTINA

DEC 21  FHC  e(P)   05 06 39
        WDC  eP     05 06 43.5
        JAS  eP     05 06 58.0
        FRI  eP     05 07 03.1
        MNV  eP     05 07 04.9
                USGS 04 54 31.3, 30.8N, 132.3E, H= 33 KM, mb=5.2
                     SOUTHEAST OF SHIKOKU, JAPAN

DEC 21  JAS  eP     06 08 58.7

DEC 21  WDC  e(P)   16 48 43
        JAS  eP     16 49 04
        MNV  eP     16 49 10.7
        FRI         16 49                       • 49 12
                USGS 16 39 33.0, 52.9N, 159.8E, H= 33 KM, mb=5.5, Ms=5.0
                     OFF EAST COAST OF KAMCHATKA

DEC 22  FRI  ePe    02 12 49.0
        JAS  ePe    02 12 49.9
        WDC  ePe    02 12 52.8
        MNV  ePe    02 12 58.5
                USGS 02 00 41.8, 27.5S, 178.8W, H=253 KM, mb=5.2
                     KERMADEC ISLANDS REGION

DEC 22  WDC  iP     04 57 46.1                  • 57 52
        MIN  eP     04 57 49.8                  • 58 06
        BRK  eP     04 57 54.9
        MHC         04 57                       • 57 58
        JAS  eP     04 58 00.5                  • 58 07      • 01 23
        SAO         04 58                       • 58 00
        FRI  eP     04 58 05.0                  • 58 11
        PRI         04 58                       • 58 06
        MNV  eP     04 58 06.2
                USGS 04 45 14.7, 29.6N, 127.8E, H= 33 KM, mb=5.5, Ms=5.3
                     EAST CHINA SEA

DEC 22  WDC  e(P)   22 29 04
        JAS  eP     22 29 21.1
        MNV  eP     22 29 28.2
                USGS 22 17 59.9, 39.1N, 143.2E, H= 23 KM, mb=5.3, Ms=4.8
                     OFF EAST COAST OF HONSHU, JAPAN

DEC 23  PRI  eP     17 21 19
        FRI  eP     17 21 23
        MNV  eP     17 21 44.5
        JAS  eP     17 21 45
        WDC  eP     17 22 15

DEC 23  WDC  ePe    21 13 12.2
        BKS  e(P)   21 13 22                    • 22 32      • 22 39      • 24 31
                                                • 28 04      • 30 00      Lr 34 36
                              MICRON     PERIOD
                        PZ      0.07       1.3
                        LZ         8        20
                        LN         7        20
                        LE         8        20
        MHC  eP     21 13 26.5
        JAS  ePe    21 13 29.4
        FRI  eP     21 13 34.0
        PRI  eP     21 13 35.8
        MNV  ePe    21 13 36.5
                Ms=6.0, DISTANCE=75°
                USGS 21 02 07.5, 39.1N, 143.2E, H= 19 KM, mb=5.6, Ms=5.9
                     OFF EAST COAST OF HONSHU, JAPAN

DEC 23  WDC  eP     22 13 14.0
        MIN  e(P)   22 13 17
        BKS  eP     22 13 19.6
                              MICRON     PERIOD
                        PZ      0.10       1.0
        MHC  eP     22 13 22.0
        JAS  eP     22 13 25.5                  • 15 35
        PRI  eP     22 13 28.2
        FRI  eP     22 13 29.6
        MNV  eP     22 13 33.5
                USGS 22 02 06.1, 18.2N, 145.6E, H=604 KM, mb=5.3
                     MARIANA ISLANDS

DEC 24  MNV  ePd    05 31 02.5
        PRI  eP     05 31 02.8
        JAS  ePd    05 31 07.7
        MIN  eP     05 31 18.7
        WDC  ePd    05 31 21.7
                USGS 05 19 24.2, 22.8S,  66.4W, H=194 KM, mb=4.9
                     JUJUY PROVINCE, ARGENTINA

DEC 24  JAS  eP     16 00 46.8
        FRI         16 00                       • 00 48
        WDC  eP     16 00 48.5
        MNV  eP     16 00 57.5
                USGS 15 48 32.2, 24.9S, 176.0W, H= 33 KM, mb=4.8, Ms=5.2
                     SOUTH OF FIJI ISLANDS

DEC 25  SAO  e(P)   04 38 03
        BKS  eP     04 38 04.3
                              MICRON     PERIOD
                        PZ      0.02       0.8
        MHC  eP     04 38 04.5
        PRI  eP     04 38 05.2
        FHC  eP     04 38 05.9
        WDC  ePe    04 38 09.2
        FRI  eP     04 38 09.4
        JAS  ePe    04 38 09.5
        MIN  eP     04 38 11.1
        MNV  ePe    04 38 18.0
                USGS 04 25 27.7, 22.0S, 170.9E, H= 76 KM, mb=5.0
                     LOYALTY ISLANDS REGION

DEC 25  FHC  ePe    07 23 34
        WDC  ePe    07 23 42.7
        MIN  ePe    07 23 49.5
        JAS  eP     07 24 22.0
        MHC         07 24                       • 24 25
        MNV  eP     07 24 29.5
        FRI         07 24                       • 24 43
        PRI  eP     07 24 45
                USGS 07 20 59.6, 50.6N, 129.6W, H= 10 KM, mb=4.4, Ms=4.0
                     VANCOUVER ISLANDS REGION
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DEC 25  MNV  ePKP   13 38 05.8
        JAS  ePKP   13 38 07.5
        MIN  ePKP   13 38 11.3
        WDC  ePKP   13 38 12.4
             USGS 13 19 24.2, 55.9S,  27.6W, H=102 KM, mb=5.0
                  SOUTH SANDWICH ISLANDS REGION

DEC 25  WDC  ePo    13 49 52.3
        MHC  eP     13 50 03.1
        JAS  ePo    13 50 06.4
        FRI  eP     13 50 11.3
        MNV  ePo    13 50 13.7

DEC 25  WDC  eP     22 46 56
        JAS  eP     22 47 09
        FRI  eP     22 47 14
             USGS 22 33 48.1, 24.2N, 121.7E, H= 40 KM, mb=5.2, Ms=4.7
                  TAIWAN

                    01 09                    • 09 10
DEC 26  PRI
        MHC  eP     01 09 15
        JAS  eP     01 09 20
        WDC  eP     01 09 23
             USGS 00 57 07.4, 24.6S, 175.9W, H= 33 KM, mb=4.6, Ms=5.0
                  SOUTH OF TONGA ISLANDS

DEC 26  FHC  iPo    19 37 32.7
        WDC  iPo    19 37 45.5
        MIN  ePo    19 37 55.3
        BKS  eP     19 38 06.0  38 40
        JAS  eP     19 38 20
             BRK  19 37 19.7, 40.3N, 124.7W, H= 29 KM, ML=3.2
                  OFF THE COAST SOUTHWEST OF EUREKA, CALIFORNIA

                    01 40 32.1
DEC 27  PRI  eP
        BKS  e(P)   01 40 34
        FRI  eP     01 40 37.2
        JAS  eP     01 40 38.4
        FHC  eP     01 40 39.3
        WDC  eP     01 40 41.8
        MIN  eP     01 40 43.2
        MNV  eP     01 40 46.8
             USGS 01 28 14.7, 29.1S, 176.2W, H= 95 KM, mb=4.4
                  KERMADEC ISLANDS REGION

DEC 27  SAO  eP     11 49 16.3
        BKS  ePo    11 49 17.4
                       MICRON     PERIOD
                  PZ     0.06       1.0
        PRI  ePo    11 49 18.0
        MHC  ePo    11 49 18.1
        FHC  eP     11 49 21.0
        FRI  ePo    11 49 23.4
        JAS  iPo    11 49 23.6
        WDC  iPo    11 49 24.5
        MIN  ePo    11 49 26.6
        MNV  iPo    11 49 33.3
             USGS 11 38 21.3, 18.0S, 178.6W, H=555 KM, mb=5.3
                  FIJI ISLANDS REGION

DEC 27  FHC         15 15                ScP 21 58
        WDC  eP     15 15 24.6             pP 16 01     sP 16 39     PoP 18 35
                                           ScP 21 58
        MIN  eP     15 15 29.6             pP 16 06     ScP 22 00
        BKS  ePd    15 15 46.7
                       MICRON     PERIOD
                  PZ     0.05       1.0
        MHC  eP     15 15 51.7             ScP 22 10
        JAS  eP     15 15 51.9             pP 16 29     sP 17 18     SoP 22 09
        MNV  eP     15 15 56.8             pP 16 34     SoP 22 12
        FRI  eP     15 16 01.1             pP 16 39     PoP 18 46    ScP 22 13
        PRI  eP     15 16 05.1             ScP 22 15
             USGS 15 09 51.0, 60.4N, 153.7W, H=175 KM, mb=5.1
                  SOUTHERN ALASKA

DEC 28  PRI  iPo    02 59 46.5
        PRI  iPd    03 00 00.3
        SAO  iPo    03 00 00.5
        MHC  eP     03 00 08.3
        JAS  iPd    03 00 12.7  00 42
        BKS  eP     03 00 19.3                • 00 28      • 00 52
        MNV  eP     03 00 28.3                i 00 32
             BRK  02 59 38.2, 35.8N, 120.4W, H=  9 KM, ML=3.4
                  CHOLAME VALLEY, CALIFORNIA

DEC 28  MIN  ePKP   03 04 27.5
        WDC  ePKP   03 04 29.0
        MNV  ePKP   03 04 30.0
        FHC  ePKP   03 04 30.8
        JAS  ePKP   03 04 31.9                • 06 13      • 14 26
        FRI  ePKP   03 04 32.1
        BKS  ePKP   03 04 33.4              PP 06 14     PPP 08 50      • 12 44
                                            • 13 08      SP 16 12       • 17 20
                                            • 18 24      SS 23 46       • 24 36
                                          SSS 27 16      • 27 40        • 31 54
                                            • 34 30      • 38 00
                       MICRON     PERIOD
                  PPZ    1.43       16
                  LZ     17         20
                  LN     20         20
                  LE     15         20
        MHC  ePKP   03 04 34.0
        SAO         03 04                    • 04 38
        PRI  ePKP   03 04 36.1
             Ms=6.9, DISTANCE=123°
             USGS 02 45 36.7, 16.7N,  40.3E, H= 33 KM, mb=5.9, Ms=6.6
                  RED SEA

DEC 28  FRI  eP     09 40 28.0
        JAS  eP     09 40 29.2
        WDC  eP     09 40 30.9

DEC 28  FRI  eP     11 31 19.6
        JAS  eP     11 31 20.5
        WDC  eP     11 31 23.4
        MNV  eP     11 31 30.4
             USGS 11 19 14.0, 23.8S, 175.4W, H= 50 KM, mb=4.8
                  TONGA ISLANDS REGION

DEC 28  WDC  eP     18 56 58.0
        JAS  eP     18 57 22.6
        MNV         18 57                    • 57 30
        FRI  eP     18 57 30.5
             USGS 18 49 55.9, 51.4N, 173.3W, H= 33 KM, mb=4.5
                  ANDREANOF ISLANDS, ALEUTIAN ISLANDS

DEC 28  MIN  eP     20 42 49.5
        WDC  eP     20 42 51.1
        FHC  eP     20 42 51.7
        MNV  eP     20 42 51.7
        JAS  eP     20 43 01.0
        FRI  eP     20 43 05.2
        BKS  e(P)   20 43 07                 Lq 05 00     Lr 08 32
                       MICRON     PERIOD
                  LZ     3.0        20
                  LN     2.0        20
                  LE     2.9        20
        MHC  eP     20 43 08.6
        SAO         20 43                    • 43 12
        PRI  eP     20 43 13.3
             USGS 20 32 40.8, 64.6N,  17.3W, H= 10 KM, mb=5.0, Ms=5.2
                  ICELAND

DEC 29  BKS  e(P)   10 31 07
        SAO         10 31                  pP 31 35
        PRI  eP     10 31 07.9               • 31 07
        MHC  eP     10 31 08
        FRI  eP     10 31 13.5
        JAS  ePd    10 31 14.3             pP 31 39
        WDC  ePd    10 31 16.4             pP 31 39
        MIN  eP     10 31 18.1             pP 31 42
        MNV  ePd    10 31 24.3             pP 31 50
             USGS 10 19 42.1, 18.0S, 173.9W, H= 98 KM, mb=5.2
                  TONGA ISLANDS

DEC 29  FRI  iPd    14 09 22.7
        PRI  iPd    14 09 32.9
        JAS  iPd    14 09 37.1
        SAO  iPo    14 09 37.2
        MHC  eP     14 09 40.9
        BKS  e(P)   14 09 52
        MNV  ePo    14 09 53.4                • 10 17      • 10 20
             BRK  14 09 16.8, 36.9N, 120.0W, H= 10 KM, ML=3.5
                  NORTHWEST OF FRESNO, CALIFORNIA

DEC 29  FRI  iPd    16 16 04.9  16 08
        PRI  iPd    16 16 15.2
        JAS  iPd    16 16 19.3
        SAO  ePo    16 16 19.6
        MHC  eP     16 16 23.1
        MNV  eP     16 16 35
             BRK  16 15 59.2, 36.9N, 120.0W, H= 11 KM, ML=2.9
                  NORTHWEST OF FRESNO, CALIFORNIA

DEC 29  WDC  iPo    19 56 34.2                • 58 30
        MIN  ePo    19 56 37.6
        BKS  eP     19 56 42.0                • 56 58      • 06 00
                       MICRON     PERIOD
                  PZ     0.08       1.0
        MHC  ePo    19 56 45.6
        JAS  iPo    19 56 48.1                • 58 48
        PRI  eP     19 56 52.5
        FRI  ePo    19 56 53.0                • 58 53
        MNV  ePo    19 56 55.2
             USGS 19 45 27.4, 28.5N, 138.4E, H=529 KM, mb=5.2
                  BONIN ISLANDS REGION

DEC 30  WDC  iPo    07 25 32.0
        MIN  eP     07 25 43
        BKS  eP     07 25 48.3
        MHC  eP     07 25 58
        SAO  eP     07 26 04.2
        JAS  eP     07 26 06.7
             BRK  07 24 32.3, 40.7N, 127.7W, H=  8 KM, MAG=4.1
                  OFF THE COAST WEST OF EUREKA, CALIFORNIA

DEC 30  WDC  eP     10 51 13.2                • 51 32
        BKS  e(P)   10 51 14                  • 01 39      Lr 18 56
        MHC  e(P)   10 51 14
        MIN  eP     10 51 15.7
        PRI  eP     10 51 18.3                • 51 38
        JAS  eP     10 51 19.0                • 51 38
        FRI  eP     10 51 21.2                • 51 40
             USGS 10 38 19.5,  5.1S, 151.8E, H= 68 KM, mb=5.9
                  NEW BRITAIN REGION

DEC 30  WDC  eP     15 03 16.0
        BKS  e(P)   15 03 31
        JAS  eP     15 03 40.0
        FRI  eP     15 03 48.3
        PRI  eP     15 03 48.7
             USGS 14 56 16.2, 51.9N, 172.8W, H= 33 KM, mb=4.8
                  ANDREANOF ISLANDS, ALEUTIAN ISLANDS

DEC 30  MIN  eP     17 47 42.0
        WDC  eP     17 47 42.0
        JAS  eP     17 47 49.7
        FRI  eP     17 47 51.6
        BKS  eP     17 47 53.7                • 47 56
                       MICRON     PERIOD
                  PZ     0.04       0.7
        MHC  eP     17 47 54.8
        SAO  e(P)   17 47 57
        PRI  eP     17 47 57.8
             USGS 17 35 08.9, 40.0N,  15.4E, H=283 KM, mb=5.6
                  SOUTHERN ITALY

DEC 31  FRI  eP     08 04 06.0                • 04 30
        PRI  eP     08 04 08.1
        SAO  e(P)   08 04 13
        JAS  ePo    08 04 13.7
        MHC  eP     08 04 16.6
        BKS  iPd    08 04 21.4  13 31         • 04 41      • 05 22      • 14 34
                                              SS 19 16     Lq 22 00
                       MICRON     PERIOD
                  PZ     0.4        0.8
        MIN  eP     08 04 26.6
        WDC  eP     08 04 29.5
             USGS 07 53 18.0, 15.3S,  71.7W, H=158 KM, mb=5.9
                  SOUTHERN PERU

DEC 31  WDC  iPd    08 28 38.9
        MIN  eP     08 28 42.3
        BKS  eP     08 28 46.6
                       MICRON     PERIOD
                  PZ     0.03       0.8
        MHC  eP     08 28 50.2
        JAS  eP     08 28 53.0
        PRI  eP     08 28 57.1
        FRI  eP     08 28 57.7
             USGS 08 17 25.5, 28.0N, 139.7E, H=424 KM, mb=4.8
                  BONIN ISLANDS REGION

DEC 31  SAO  iPd    18 29 38.1
        MHC  eP     18 29 43.1
        PRI  iPd    18 29 54.5  30 15
        BKS  iPd    18 29 54.6  30 13         • 29 55
        JAS  iPd    18 29 57.3  30 14
        FRI  ePo    18 29 58.5  30 16
             BRK  18 29 34.3, 36.9N, 121.5W, H=  4 KM, ML=2.9
                  NORTHWEST OF HOLLISTER, CALIFORNIA
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