LIBRARY OF
OFFICE OF EARTHQUAKE STUDIES
U.S. GEOLOGICAL SURVEY, MENLO PARK

International Seismological Centre

Bulletin of the Seismographic Stations

Volume 49, No. 2, pp. 50 - 106

ARCATA--BERKELEY--FICKLE HILL--FRIANT

GRANITE CREEK--JAMESTOWN--LLANADA--MINA--MINERAL

MOUNT HAMILTON--OROVILLE--PARAISO--PILARCITOS CREEK

PRIEST--SAN ANDREAS GEOPHYSICAL OBSERVATORY

SAN PABLO DAM--WALKER RIDGE

WHISKEYTOWN DAM

Earthquakes and the Registration of Earthquakes

From July 1, 1979 to December 31, 1979

by

Richard McKenzie

Roy Miller

Robert A. Uhrhammer

International Seismological Centre

BULLETIN OF THE SEISMOGRAPHIC STATIONS

of the University of California

Volume 49, No. 2

July 1, 1979 to December 31, 1979

CONTENTS

	Page
Introduction	50
Personnel	51
Station Data	52
Station Instrumentation	55
Accelerograph Station Data and Instrumentation	58
Accelerograph Station Data and Instrumentation (USGS Maintained)	59
Instrumental Response Curves	60
Part I - Local Earthquakes in Northern California	63
Map of Earthquakes in Northern California	79
Map of Earthquakes in Central Coast Ranges of California	80
Part II - Registration of Earthquakes	81

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.

International Seismological Centre

PERSONNEL (January 1981)

Director	Bruce A. Bolt
Assistant Director	Thomas V. McEvilly
Assistant Research Seismologists	Robert A. Uhrhammer Richard W. Clymer
Postgraduate Research Assistant	James E. Marrone
Associates	David Brillinger Lane Johnson Ernest Majer Mansour Niazi Joseph Penzien
Associate Development Engineers	Russell W. Sell James R. Bartschi
Technical Staff	J.E. Friday, M. Hilger, R. McKenzie, J.E. Meeker R.D. Miller
Research Assistants	K.-Y. Chun, G. D'Spain, E. Finnstrom, K. McLaughlin P. Murtha, B. Schechter, J. Scheiner, T. Tanimoto
Administrative Assistant	Augusta McClure
Senior Clerk	Christina Tweedie

MAILING ADDRESS

The Director
Seismographic Station
University of California
475 Earth Sciences Building
Berkeley, California 94720

Telephone: (415) 642-3977

International Seismological Centre

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 nineteen in 1979. 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 1969, 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, the California State Division of Mines and Geology, the U.S. Geological Survey, the U.S. Corps of Engineers, the East Bay Municipal Utility District, and others. 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 broadband frequency response at Berkeley, Jamestown, San Andreas Geophysical Observatory, and Whiskeytown Dam. Copies of seismograms and magnetic tapes from seismographs of the Berkeley network are available, together with response characteristics, on request to the Director.

International Seismological Centre

THE BYERLY SEISMOGRAPHIC STATION (BKS)

Equipment of a WWSSN 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.

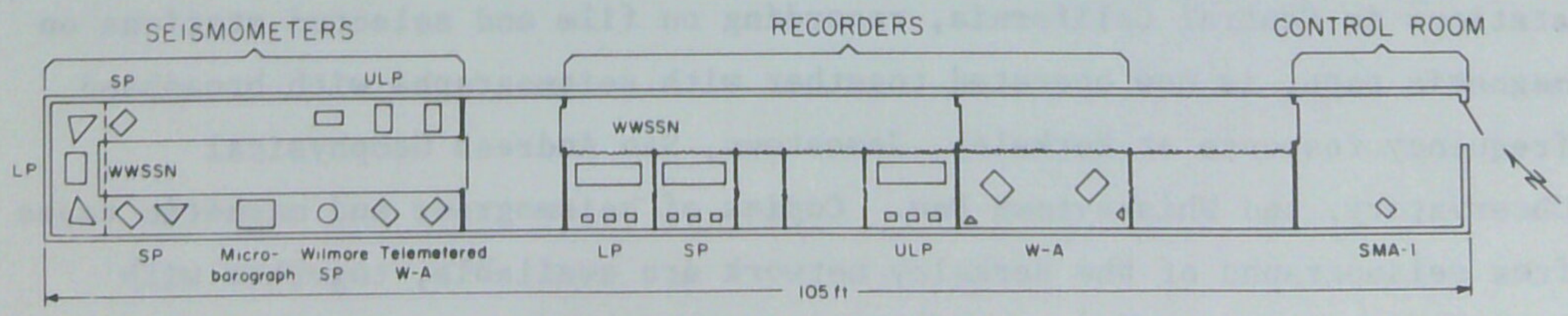
A plan of the tunnel is shown in the diagram below. Piers are constructed of reinforced concrete with no isolation from floor and walls. The temperature is stable. A ventilating and dehumidifying system is connected to all rooms.

Fourteen seismographs are currently operating in the tunnel. Their free periods range from 0.8 sec to 100 sec and the magnification of the photographic recordings ranges from approximately 500 to 25,000. Details are given in the section on instrumentation.

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 down-hill 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, 1979 to December 31, 1979

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. 1968
Whiskeytown Dam	40° 34!8	122° 32!4	300	Pre-Devonian metavolcanic	WDC	National Park Service 1973
Walker Ridge	40° 23!6	124° 17!3	226	Undivided cretaceous marine	WKC	Pacific Gas & Electric Company, 1976
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
San Pablo Dam	37° 56!7	122° 15!4	119	Middle Miocene marine	ZSP	East Bay M.U.D. Nov. 3, 1978
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	Granodiorite (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 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

International Seismological Centre

STATION INSTRUMENTATION

July 1, 1979 to December 31, 1979

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		
	Willmore MK II	1.0	0.2	Z	- - -				x		
	14000X torsion	0.8	-	N, E	14,000 max		x		x		
	700X torsion	0.8	-	N, E	700 max		x		x		
BRK	Benioff 100 kg	1.0	0.2	Z	25,000			x			
	Benioff 100 kg	1.0	8.0	Z	Variable						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	x		
FRI	Benioff 14 kg	1.0	0.33 Filter	Z	150,000			x	x		
GCC	Benioff 14 kg	1.0	0.2	Z	50,000			x	x		
JAS	Benioff 100 kg	1.0	0.75	N, E, Z	250,000	x					
	Benioff 14 kg	1.0	0.2	Z	600,000		x	x	x		
	Sprengnether S-5100	40	-	Z							
	BB velocity								x		
	Displacement								x		
	Filtered Displacement								x		

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

International Seismological Centre

STATION INSTRUMENTATION

July 1, 1979 to December 31, 1979

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	x		
MHC	Benioff 14 kg	1.0	0.2	Z	50,000		x	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	x		
MNV	Broadband instrument filtered to give short-period response			Z	600,000 at 1 sec			x	x		
ORV	Benioff 100 kg	1.0	0.2	Z	220,000			x	x		
PCC	Benioff 14 kg	1.0	0.2	Z	50,000			x	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	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
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		x		
ZSP	Teledyne 18300	1.0	0.2 Filter	Z	- - -		x		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.

International Seismological Centre

International Seismological Centre

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 60 and 61. 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). 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 60 and 62.

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		

Station Name	Coordinates	Installation Date	Instrument S.N.	Component	Sensitivity (g/F.S.)	Bandwidth (Hz)		Structure	Location in Structure
RICHMOND FIELD STATION	37.92 N 122.33 W	12 May 76	Columbia Research Force Balance Accelerometer SA-107 (±2g units) (0-50Hz)	Z,H_1^*,H_2^{**}	±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

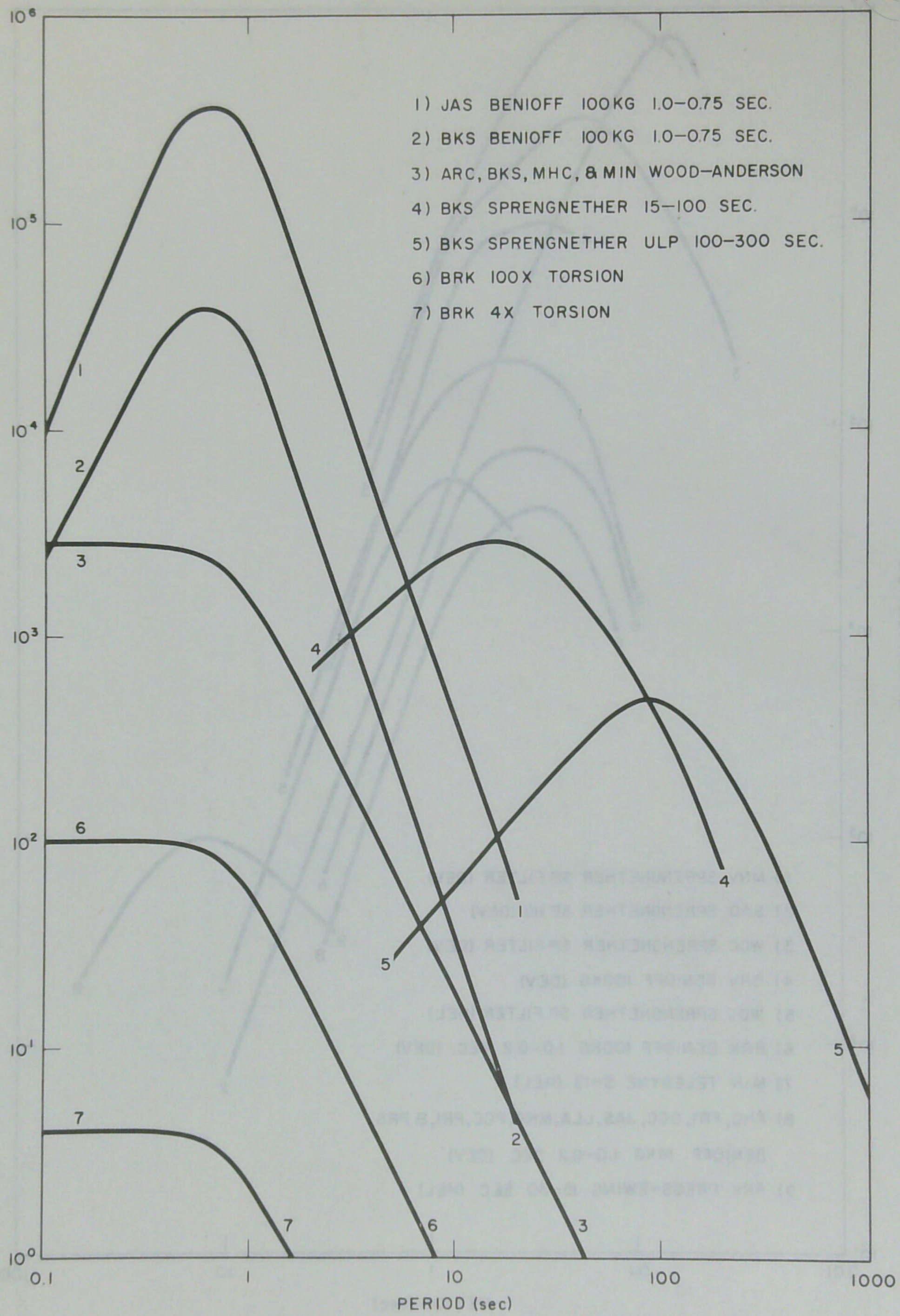
International Seismological Centre

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 N	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
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 SEISM 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

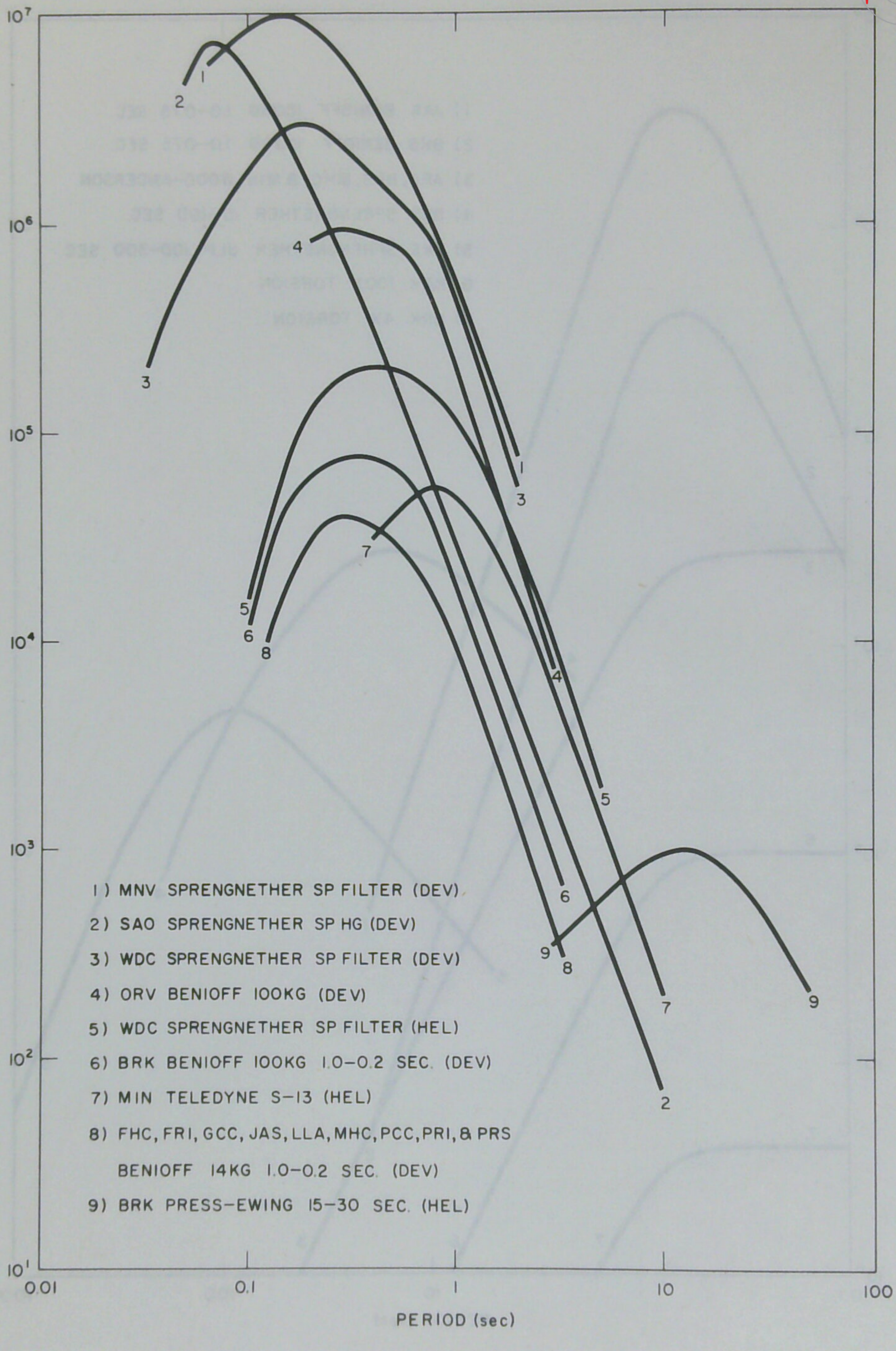
International Seismological Centre

International Seismological Centre



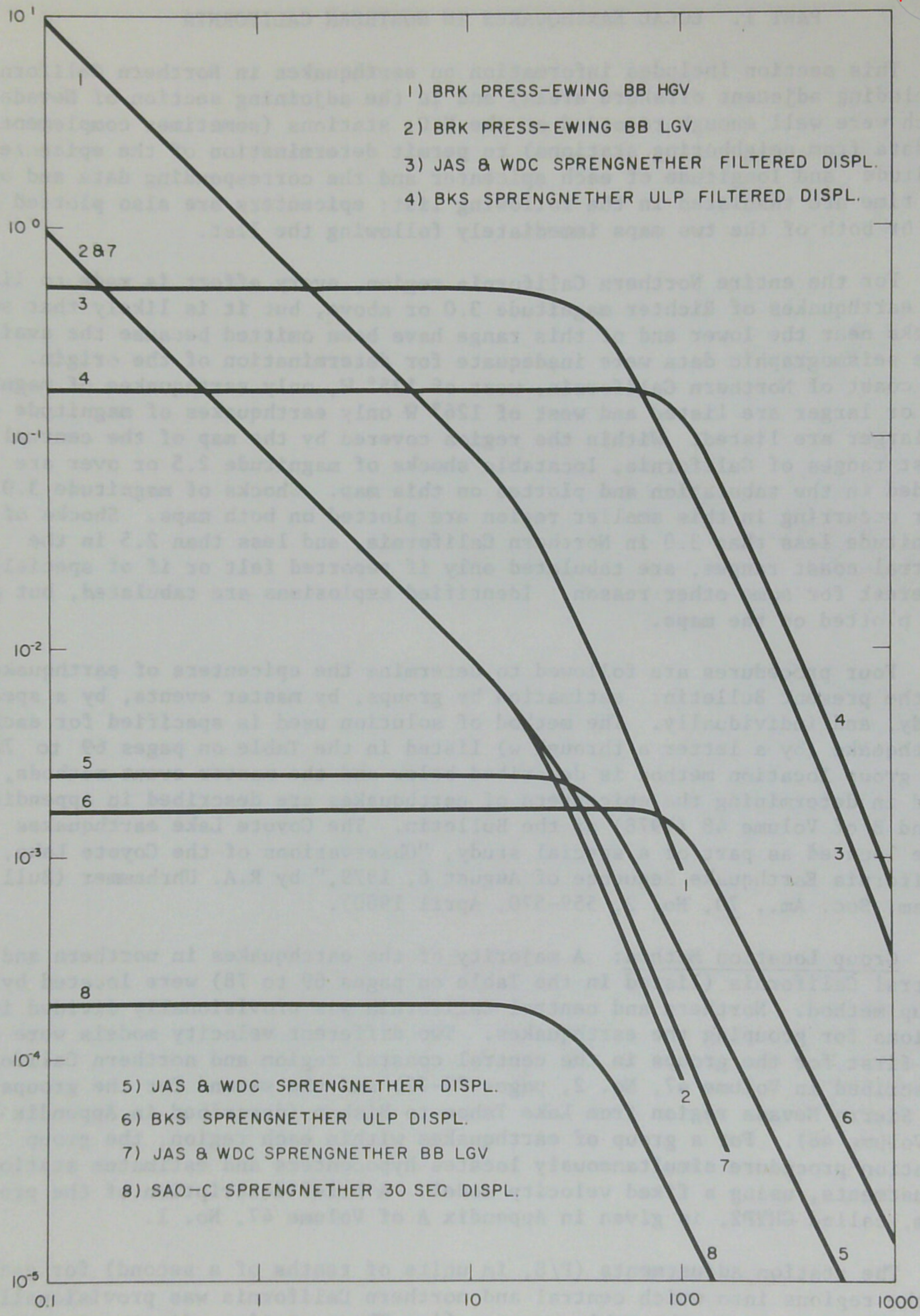
Response curves for photographically recording seismographs. The BKS Benioff and Sprengnether 15 - 100 second instruments are the WWSSN system.

International Seismological Centre



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).

International Seismological Centre



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

International Seismological Centre

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 data 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 by groups, by master events, by a special study, and individually. The method of solution used is specified for each earthquake (by a letter a through w) listed in the Table on pages 69 to 78. The group location method is described below and the master event methods, used in determining the epicenters of earthquakes are described in Appendices A and B of Volume 48 (1978) of the Bulletin. The Coyote Lake earthquakes were located as part of a special study, "Observations of the Coyote Lake, California Earthquake Sequence of August 6, 1979," by R.A. Uhrhammer (Bull. Seism. Soc. Am., 70, No. 2, 559-570, April 1980).

Group Location Method: A majority of the earthquakes in northern and central California (listed in the Table on pages 69 to 78) were located by a group method. Northern and central California was provisionally divided into regions for grouping the earthquakes. Two different velocity models were used, the first for the groups in the central coastal region and northern California (described in Volume 47, No. 2, pages 70-72) and the second for the groups in the Sierra Nevada region from Lake Tahoe to Bishop (described in Appendix B of Volume 48). For a group of earthquakes within each region, the group location procedure simultaneously locates hypocenters and estimates station adjustments, using a fixed velocity model. A brief description of the program, called GHYP2, is given in Appendix A of Volume 47, No. 1.

The station adjustments (P/S, in units of tenths of a second) for each of the regions into which central and northern California was provisionally divided are given in the table on page 64. These station adjustments are to be added to the calculated travel times.

STATION ADJUSTMENTS

Region	ARC	BKS	FHC	FRI	GCC	JAS	LLA	MHC	MIN	MNV	ORV	PCC	PRI	PRS	SAO	WDC	WKC
a	-4/	-3/3	1/3						1/0		0/	-9/				4/1	9/9
b	-2/1	-8/	-1/1						-1/		-3/1	-6/				2/1	
c			3/1						3/0		-3/					2/	2/0
d		-5/2	-1/3						3/		-4/1					4/3	-2/1
e		-1/1							2/		-4/	-1/-1				8/	
f					-6/		-1/-4	2/1					1/-1	1/-4	-3/		
g					-5/		-2/-4	3/2					1/	1/0	-4/		
h				2/-3	-8/		-4/	0/					2/3	-1/	2/		
i				-2/-9		-4/-9				3/7							
j		1/0			-2/-2		0/0	3/0				-2/1	3/	-1/	-1/		
k		-1/1			-1/-3		0/	-1/-1				-3/-2		2/	1/		
m		1/1			-1/-2			1/2				1/-2			-1/		
n					-2/		0/	5/					-1/3	-4/4	-1/		
p				2/0		1/-7				-1/-3							
r		-4/1		1/		-2/-1	-3/-3	2/4					1/		2/		
s				2/0		0/-2				-2/-2	0/0						
w		-2/			-3/		-5/	1/				-7/	6/	-4/	3/		

Note: Station adjustments are given in the form of P/S in units of tenths of seconds.

International Seismological Centre

International Seismological Centre

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 out-numbered 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)".

International Seismological Centre

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

Letter	No. of earthquakes	Location method	Region
a	8	group	Off coast (longitude ≥ 125°W)
b	17	group	Humboldt County (123°-125°W)
c	3	group	Northern California (less Mt. Shasta)
d	0	group	Ukiah-Willits area
e	2	group	Santa Rosa - Clear Lake area
f	6	group	Stone Canyon
g	3	group	Bear Valley
h	0	group	Llanada area
i	55	master event*	Bishop - Mammoth Lakes
j	16	group	Hollister
k	14	group	San Jose - Mt. Hamilton area
m	5	group	Berkeley - Delta area
n	1	group	Priest - San Simeon area
p	0	group†	Mono Lake
q	0	master event+	Mt. Shasta
r	3	group	San Joaquin Valley
s	31	group†	Bridgeport
t	0	individually	Vicinity of Paraiso (PRS)
u	0	individually	San Francisco Peninsula
w	39	special study#	Coyote Lake

* See Appendix B in Volume 48 of the Bulletin
\+ See Appendix A in Volume 48 of the Bulletin.
† Used Bishop velocity model (see *).
# Special study - see text, p. 63.

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 68. 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 280,000 km^2 retion 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 79, on the southwest by a line connecting 35°N-121°W and 29°N-125°W, and on the west by 125°W longitude.

International Seismological Centre

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 intefval is given by

$$\text{Log } N = 4.412 - 0.912\ M_L$$

valid for $3.0 \leq M_L \leq 5.9$. The shaded zone depicts the 95 percent confidence interval for log N. Hence, the approximately interoccurrence time for earthquakes $\geq M_L$ in the 280,000 km^2 area is

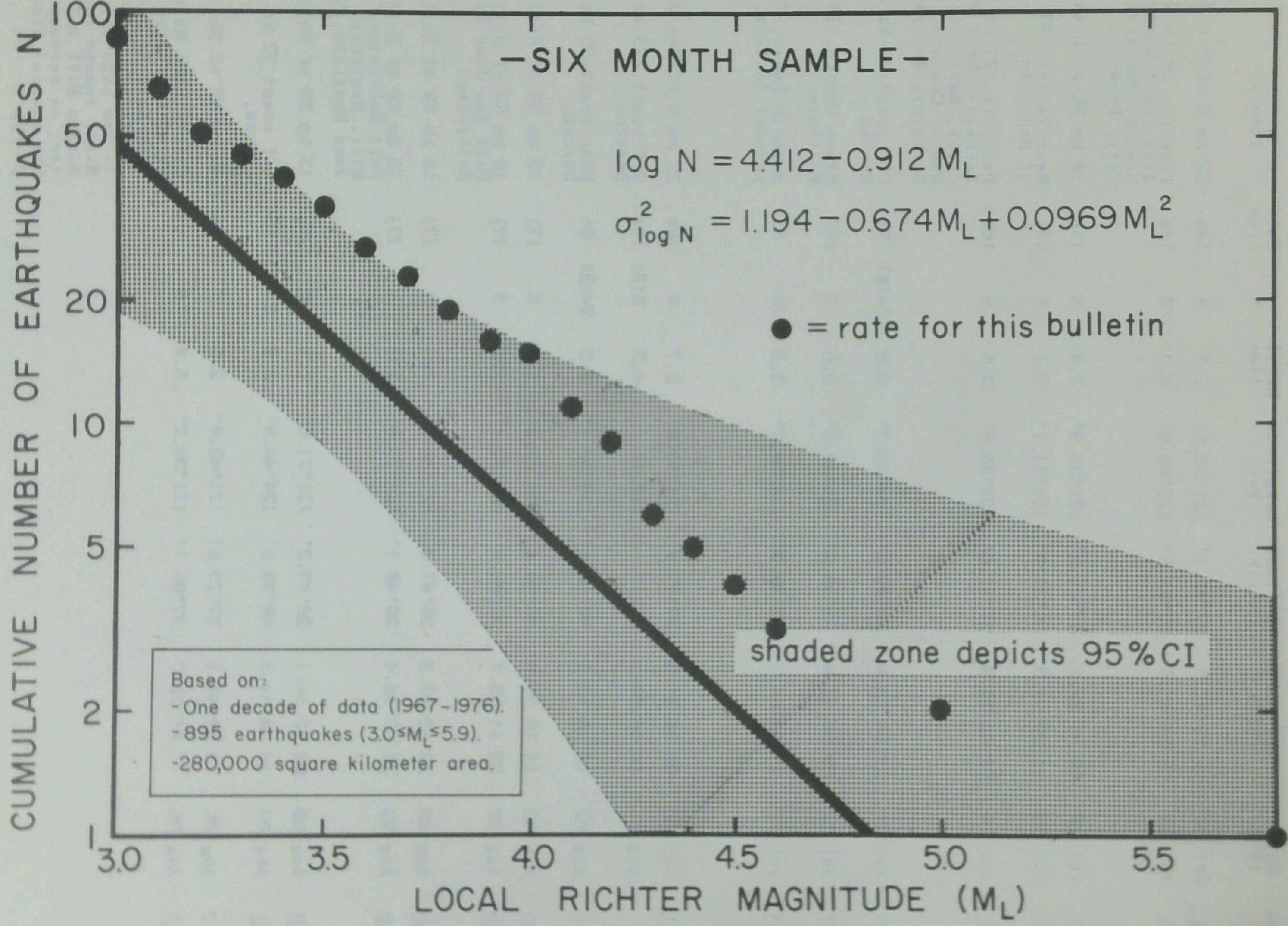
$M_L \geq$	Interoccurrence Time
3.0	4 days
3.5	11 days
4.0	1 month
4.5	3 months
5.0	8 months
5.5	2 years
6.0	5 years

The solid circles give the cumulative number of earthquakes (87 earthquakes, $3.0 \leq M_L \leq 5.3$) in the last six months of 1979. Thus, the rate of seismicity for the last six months of 1979 is significantly higher than the average rage of seismicity over the past decade. The high rate of seismicity is primarily due to the sequences of earthquakes at Coyote Lake and Bridgeport.

Acknowledgements

We would 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; Office of Earthquake Studies, U.S. Geological Survey; Pacific Gas and Electric Company; and California Department of Water Resources.

RECENT RATE OF SEISMICITY FOR NORTHERN & CENTRAL CALIFORNIA



89

International Seismological Centre

International Seismological Centre

EARTHQUAKES IN NORTHERN CALIFORNIA

July 1 - December 31, 1979

Map No.	Date 1979	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
1	Jul 02	18 59 41.9	37°18.1'	121°39.6'	2.7	6	14k	22 km E of San Jose.
2	Jul 03	13 25 45.6	37°35.5'	122°00.0'	3.3	9	15m	Fremont, 30 km N of San Jose. Felt Hayward, Newark, Oakland, Union City, Fremont.
3	Jul 05	00 51 37.2	37°44.3'	121°34.9'	2.8	5	11r	18 km NE of Livermore.
4	Jul 09	21 20 40.9	36°32.9'	121°11.1'	3.1	6	16g	Bear Valley, 40 km SE of Hollister.
5	Jul 10	08 23 22.9	37°51.6'	121°55.8'	3.6	9	16k	Danville, 27 km E of Berkeley. Felt Walnut Creek, Danville, San Ramon, Concord, Dublin, Berkeley, Moraga.
6	Jul 21	22 04 33.8	40°23.3'	124°56.7'	3.0	24(R)	7b	Off coast 80 km SW of Eureka.
7	Jul 22	07 36 11.4	36°38.9'	121°19.6'	2.6	7	16f	Stone Canyon, 28 km SE Hollister.
8	Jul 27	23 23 08.7	37°36.9'	118°54.7'	3.2	18	8i	Mammoth Lakes. See special listing, p.73.
1	Jul 28	05 05 11.9	37°17.9'	121°39.6'	2.7	4	16k	22 km E of San Jose.
	Aug 01	10 50 24.1	41.1°	127.4°	4.7	5(R)	10a	Off coast 275 km W of Eureka.
9	Aug 02	12 18 45.5	40°12.8'	124°20.4'	3.3	24(R)	6b	Near coast 70 km SSW of Eureka.
10	Aug 02	14 16 56.6	36°48.1'	121°33.2'	2.9	5	17j	15 km SW of Hollister.
10	Aug 02	20 41 35.7	36°48.0'	121°33.1'	3.1	5	17j	15 km SW of Hollister. Felt San Juan Bautista, Hollister.
10	Aug 02	20 52 07.5	36°47.3'	121°32.6'	3.0	5	17j	15 km SW of Hollister.
10	Aug 02	21 43 16.4	36°48.1'	121°33.0'	3.9	5	17j	15 km SW of Hollister. Felt Hollister, Morgan Hill, Monterey, San Juan Bautista, Salinas.
10	Aug 03	02 42 54.1	36°47.2'	121°31.6'	2.8	6	17j	15 km SW of Hollister.
11	Aug 04	14 48 01.5	40°20.5'	124°44.8'	3.8	24(R)	7b	Off coast 72 km SW of Eureka.
12	Aug 06	13 50 48.1	37°23.0'	121°43.8'	2.5	7	17k	17 km NE of San Jose.
13	Aug 06	17 05 22.7	37°06.1'	121°30.2'	5.8	6	10w	Coyote Lake Main Shock, NW of Hollister. Felt from Reno to Sacramento to Fresno, Santa Rosa to San Luis Obispo. Minor damage in Gilroy, Morgan Hill and Hollister; no serious injury. See special listing, p. 75.

International Seismological Centre

Map No.	Date 1979	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
14	Aug 08	10 24 58.4	40°16.9'	124°33.8'	4.2	24(R)	7b	Off coast 70 km SW of Eureka. Felt Honeydew, Scotia.
15	Aug 13	19 18 46.8	37°51.5'	122°10.5'	3.2	9	16m	Orinda, 8 km E of Berkeley. Felt Berkeley, Orinda, Martinez, San Francisco, Oakland, Moraga.
16	Aug 15	22 58 22.7	37°08.7'	121°55.6'	2.5	10	16j	Santa Cruz Mountains 20 km S of San Jose. Felt.
17	Aug 17	15 43 03.4	37°50.8'	122°15.1'	2.9	9	16m	4 km S of Berkeley. Felt Berkeley, Oakland.
7	Aug 22	09 42 26.9	36°37.1'	121°17.4'	3.1	9	15f	Stone Canyon, 28 km SE of Hollister.
17	Aug 24	04 46 51.4	37°50.5'	122°15.1'	2.8	8	16m	4 km S of Berkeley. Felt El Cerrito, Berkeley, Richmond, Oakland, Lafayette, Albany, San Francisco.
18	Aug 29	04 07 58.1	35°51.2'	121°27.2'	2.9	7	15n	50 km SW of King City.
5	Aug 31	18 53 45.1	37°50.4'	121°59.8'	2.7	6	14k	Danville, 25 km E of Berkeley. Felt.
	Sep 05	09 42 02.2	41°40.6'	125°53.9'	4.2	5(R)	6a	Off coast 180 km NW of Eureka.
19	Sep 05	15 50 31.9	37°42.1'	121°43.6'	2.5	2	15k	Livermore. Felt.
20	Sep 05	20 15 57.6	37°48.0'	123°19.1'	2.6	7	8e	Near Farallon Islands, 80 km W of San Francisco.
21	Sep 07	18 13 29.2	37°33.2'	121°41.4'	2.6	8	16k	15 km SE of Livermore.
5	Sep 09	20 48 31.1	37°49.7'	122°00.1'	2.8	5	14k	Danville, 23 km E of Berkeley. Felt.
22	Sep 10	14 11 15.8	37°18.2'	121°05.4'	2.8	7	14r	Gustine, 35 km SSW of Modesto.
16	Sep 14	01 04 05.0	37°07.3'	121°55.7'	3.1	12	17j	Santa Cruz Mountains, 25 km S of San Jose. Felt Santa Cruz.
4	Sep 17	15 53 41.5	36°31.3'	121°09.8'	2.7	8	16g	Bear Valley, 43 km SE of Hollister.
23	Sep 19	02 44 40.4	39°50.0'	120°39.3'	3.2	4	14c	30 km SE of Quincy.
5	Sep 19	03 22 42.6	37°49.8'	122°00.2'	2.7	6	13k	Danville, 23 km E of Berkeley. Felt.
	Sep 21	08 00 49.2	40°26.4'	125°31.8'	3.6	5(R)	6a	Off coast 125 km SW of Eureka.
24	Sep 21	12 56 03.5	37°22.0'	121°36.1'	2.9	7	15k	Mt. Hamilton, 28 km E of San Jose.
	Sep 24	08 07 10.0	40°21.1'	125°44.3'	3.8	5(R)	5a	Off coast 150 km SW of Eureka.
25	Sep 26	23 25 11.1	40°03.3'	121°13.5'	3.0	12	11c	Lake Almanor, 28 km NW of Quincy.

International Seismological Centre

Map No.	Date 1979	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
10	Sep 27	06 14 50.5	36°48.8'	121°33.5'	2.9	5	18j	San Juan Bautista, 15 km W of Hollister. Felt San Juan Bautista.
14	Sep 27	22 32 35.1	40°16.7'	124°26.6'	3.4	20(R)	7b	Near coast 65 km SW of Eureka.
26	Sep 29	02 22 19.1	40°22.4'	125°18.0'	3.7	5(R)	6a	Off coast 110 km SW of Eureka.
27	Oct 07	20 54 41.4	38°13.4'	119°21.3'	5.0	9	7s	Bridgeport Main Shock, 40 km NW of Mono Lake. Felt Mono Lake, Bridgeport, Tuolumne County. No damage reported. See special listing, p. 77.
10	Oct 13	20 46 12.0	36°48.6'	121°33.2'	3.4	4	18j	San Juan Bautista, 15 km W of Hollister. Felt San Juan Bautista.
28	Oct 14	17 03 48.0	41°25.9'	124°27.8'	3.7	24(R)	6b	Off coast 75 km NW of Eureka.
28	Oct 14	23 04 04.1	41°26.0'	124°25.7'	3.4	24(R)	6b	Off coast 75 km NW of Eureka.
7	Oct 16	16 21 35.1	36°38.1'	121°17.9'	2.8	8	10f	Stone Canyon, 28 km SE of Hollister.
29	Oct 17	23 38 17.9	40°40.9'	124°14.7'	3.0	24(R)	5b	Near coast 15 km S of Eureka.
30	Oct 18	02 04 16.7	36°57.2'	121°37.2'	2.5	7	15j	Santa Cruz Mountains, 23 km NW of Hollister.
1	Oct 18	05 33 14.8	37°18.9'	121°40.8'	3.0	7	15k	Mt. Hamilton, 22 km E of San Jose.
4	Oct 20	06 25 38.5	36°33.8'	121°12.2'	3.4	9	16g	Bear Valley, 36 km SE of Hollister.
11	Oct 21	11 34 46.0	40°21.1'	124°49.0'	3.6	24(R)	7b	Off coast 75 km SW of Eureka.
10	Oct 21	14 21 44.3	36°50.1'	121°35.2'	2.6	2	18j	San Juan Bautista, 17 km W of Hollister.
31	Oct 23	10 55 37.9	40°25.8'	124°17.2'	4.0	19(R)	6b	Petrolia, 50 km S of Eureka.
	Oct 23	15 32 18.6	40°27.6'	125°44.9'	3.8	5(R)	7a	Off coast 150 km SW of Eureka.
32	Oct 24	15 23 50.6	40°25.7'	124°42.2'	4.5	24(R)	7b	Off coast 62 km SW of Eureka. Felt Eureka, Arcata, Ferndale, Petrolia, Mckinleyville.
33	Oct 25	09 01 40.3	40°25.3'	124°30.8'	4.0	24(R)	7b	Near coast 55 km SW of Eureka.
34	Oct 31	20 06 25.6	39°28.8'	121°27.3'	3.1	9	9c	Oroville.
35	Nov 03	05 46 02.7	40°23.2'	123°34.7'	3.0	24(R)	7b	70 km SE of Eureka.
36	Nov 08	04 30 27.9	40°19.4'	125°10.4'	4.5	5(R)	8a	Off coast 110 km SW of Eureka.
37	Nov 13	07 56 55.1	36°54.0'	121°29.5'	2.8	10	18j	10 km NW of Hollister.

Map No.	Date 1979	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
	Nov 13	12 46 21.2	40°26.3'	125°40.0'	3.5	5(R)	7a	Off coast 130 km SW of Eureka.
38	Nov 15	15 08 57.1	37°25.3'	121°39.0'	2.9	8	16k	Mt. Hamilton, 25 km ENE of San Jose.
14	Nov 21	09 22 31.9	40°17.8'	124°22.1'	3.4	21	8b	Near coast 60 km SSW of Eureka.
7	Nov 22	06 52 03.4	36°38.2'	121°18.4'	2.5	7	15f	Stone Canyon, 28 km SE of Hollister.
5	Nov 26	12 40 08.6	37°51.8'	121°59.4'	3.0	7	15k	Danville, 23 km E of Berkeley. Felt.
5	Nov 26	12 43 57.6	37°51.4'	121°59.9'	2.8	7	13k	Danville, 23 km E of Berkeley. Felt.
39	Nov 27	14 39 03.5	38°25.6'	119°05.3'	3.1	8	6s	California-Nevada border, 45 km N of Mono Lake.
10	Nov 28	22 51 27.6	36°48.3'	121°33.5'	2.5	5	14j	San Juan Bautista, 15 km W of Hollister.
7	Dec 02	03 54 27.5	36°36.5'	121°17.1'	3.0	8	15f	Stone Canyon, 28 km SE of Hollister.
14	Dec 08	17 28 07.7	40°17.3'	124°32.6'	3.1	24(R)	7b	Off coast 68 km SW of Eureka.
10	Dec 10	14 11 21.7	36°47.9'	121°33.3'	2.7	5	17j	San Juan Bautista, 15 km WSW of Hollister.
40	Dec 11	12 05 02.2	37°44.1'	122°07.8'	2.5	6	16m	San Leandro, 18 km SE of Berkeley. Felt San Leandro, Castro Valley, Oakland.
41	Dec 13	16 14 29.1	37°03.6'	121°08.6'	2.8	10	10r	28 km NE of Hollister.
42	Dec 14	20 34 45.2	40°15.4'	123°50.8'	3.1	24(R)	7b	Garberville, 70 km SSE of Eureka.
43	Dec 16	06 51 53.3	37°08.5'	118°35.8'	3.4	7	9i	30 km SW of Bishop.
44	Dec 20	05 02 19.6	38°48.0'	122°47.9'	3.0	4	15e	Cobb Mountain, 42 km N of Santa Rosa. Felt.
45	Dec 22	18 54 15.7	36°40.9'	121°22.1'	3.3	5	15f	Stone Canyon, 20 km S of Hollister.
46	Dec 24	13 09 40.1	36°58.6'	122°14.2'	3.8	8	16j	20 km W of Santa Cruz. Felt Santa Cruz.
11	Dec 28	19 32 47.8	40°17.7'	124°44.1'	3.0	24(R)	7b	Off coast 80 km SW of Eureka.
	Dec 31	08 27 52.5	38°27.6'	118°25.7'	4.8	8	9	Nevada, 75 km NE of Mono Lake.
37	Dec 31	17 15 37.8	36°54.0'	121°29.7'	2.5	8	17j	10 km NW of Hollister.

International Seismological Centre

International Seismological Centre

SERIES OF EARTHQUAKES NEAR MAMMOTH LAKES, CALIFORNIA

July - December, 1979

Map No.	Date 1979	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
8	Jul 27	23 23 08.7	37°36.9'	118°54.7'	3.2	18	8i	Mammoth Lakes.
	Jul 28	20 09 21.4	37°36.8'	118°54.3'	3.1	11	8i	Mammoth Lakes.
	Aug 03	04 30 43.4	37°36.6'	118°54.8'	3.1	17	7i	Mammoth Lakes.
	Aug 03	04 33 54.0	37°37.2'	118°55.0'	3.3	20	6i	Mammoth Lakes.
	Sep 07	09 43 48.7	37°37.7'	118°55.8'	4.1	16	9i	Mammoth Lakes. Felt.
	Sep 24	13 05 04.8	37°37.5'	118°54.5'	4.1	8	9i	Mammoth Lakes. Felt.
	Sep 24	14 26 20.1	37°37.3'	118°55.7'	3.6	8	9i	Mammoth Lakes. Felt.
	Sep 24	15 01 20.9	37°37.6'	118°55.9'	3.0	7	9i	Mammoth Lakes. Felt.
	Sep 26	21 45 35.3	37°38.5'	118°56.4'	3.4	10(R)	10i	Mammoth Lakes.
	Oct 01	11 52 20.6	37°32.5'	118°49.3'	3.2	10(R)	6i	Mammoth Lakes (3rd shock of triple event).
	Oct 01	12 37 02.3	37°35.7'	118°51.1'	3.0	12	9i	Mammoth Lakes.
	Oct 03	08 54 24.8	37°37.7'	118°54.7'	3.0	12	9i	Mammoth Lakes.
	Oct 03	08 58 30.8	37°37.3'	118°54.5'	3.1	10	9i	Mammoth Lakes.
	Nov 07	06 27 24.0	37°37.1'	118°54.4'	3.8	11	9i	Mammoth Lakes. Felt.
	Nov 09	09 00 52.8	37°37.0'	118°53.7'	3.3	7	10i	Mammoth Lakes.
	Nov 09	10 12 54.5	37°35.6'	118°54.2'	4.0	3	7i	Mammoth Lakes. Felt.
	Nov 09	17 46 58.3	37°37.4'	118°52.9'	4.0	14	9i	Mammoth Lakes. Felt.
	Nov 09	17 54 15.0	37°36.0'	118°52.5'	4.3	3	9i	Mammoth Lakes. Felt.
	Nov 09	20 10 58.2	37°37.4'	118°54.0'	3.1	15	8i	Mammoth Lakes.
	Nov 09	20 38 54.6	37°37.2'	118°53.1'	3.3	15	9i	Mammoth Lakes.
	Nov 09	21 04 49.2	37°37.3'	118°53.8'	3.6	13	9i	Mammoth Lakes. Felt.
	Nov 09	22 26 54.4	37°37.2'	118°54.0'	3.4	14	9i	Mammoth Lakes.
	Nov 09	22 59 33.3	37°37.7'	118°53.7'	3.6	16	9i	Mammoth Lakes. Felt.
	Nov 10	09 45 08.9	37°37.1'	118°54.5'	4.0	17	9i	Mammoth Lakes. Felt.
	Nov 12	14 09 51.9	37°37.1'	118°54.0'	3.2	12	9i	Mammoth Lakes.
	Nov 13	22 14 47.3	37°37.8'	118°55.2'	3.3	10(R)	8i	Mammoth Lakes.
	Nov 14	01 05 44.7	37°36.9'	118°55.1'	3.4	10	9i	Mammoth Lakes.
	Nov 15	12 45 54.9	37°36.8'	118°53.8'	3.0	10(R)	9i	Mammoth Lakes.
	Nov 15	20 51 33.8	37°36.7'	118°52.3'	3.3	17	9i	Mammoth Lakes.
	Nov 16	21 48 25.6	37°36.2'	118°52.2'	3.8	18	9i	Mammoth Lakes. Felt.
	Nov 16	21 50 09.7	37°36.7'	118°53.7'	3.2	10(R)	9i	Mammoth Lakes.
	Nov 17	18 46 40.7	37°36.1'	118°52.2'	3.3	18	9i	Mammoth Lakes.
	Nov 17	21 47 52.3	37°36.5'	118°52.3'	3.1	10(R)	9i	Mammoth Lakes.
	Nov 19	04 55 52.4	37°37.4'	118°54.3'	3.2	18	9i	Mammoth Lakes.

International Seismological Centre

Map No.	Date 1979	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
8	Nov 19	08 17 35.2	37°37.4'	118°53.4'	3.2	19	9i	Mammoth Lakes.
	Nov 20	17 23 59.0	37°36.5'	118°53.0'	4.2	14	9i	Mammoth Lakes. Felt.
	Nov 21	08 59 46.6	37°36.6'	118°52.9'	3.1	9	9i	Mammoth Lakes.
	Nov 24	04 29 30.1	37°36.7'	118°50.2'	3.1	7	9i	Mammoth Lakes.
	Nov 26	17 26 30.9	37°36.7'	118°49.8'	3.1	12	8i	Mammoth Lakes.
	Nov 29	08 23 31.3	37°36.6'	118°50.2'	3.3	2	9i	Mammoth Lakes.
	Nov 30	05 25 35.0	37°37.6'	118°53.6'	3.1	12	9i	Mammoth Lakes.
	Dec 06	19 32 38.9	37°35.9'	118°52.2'	4.2	15	9i	Mammoth Lakes. Felt.
	Dec 08	13 19 19.8	37°36.3'	118°53.1'	3.0	8	8i	Mammoth Lakes.
	Dec 08	13 20 50.3	37°36.4'	118°53.2'	3.0	10(R)	8i	Mammoth Lakes.
	Dec 08	21 38 52.4	37°36.2'	118°53.8'	4.3	16	8i	Mammoth Lakes. Felt.
	Dec 09	02 08 16.8	37°36.3'	118°51.8'	3.5	14	9i	Mammoth Lakes. Felt.
	Dec 09	08 32 03.3	37°37.2'	118°54.1'	3.2	10(R)	8i	Mammoth Lakes.
	Dec 14	06 02 11.4	37°36.1'	118°57.0'	3.3	6	7i	Mammoth Lakes.
	Dec 16	06 29 27.0	37°35.1'	118°51.8'	3.6	2	7i	Mammoth Lakes. Felt.
	Dec 16	10 44 15.8	37°36.2'	118°52.1'	3.4	13	9i	Mammoth Lakes.
	Dec 20	02 27 36.8	37°37.4'	118°57.6'	3.5	10	8i	Mammoth Lakes. Felt.
	Dec 26	08 09 04.4	37°31.7'	118°48.0'	3.9	19	6i	Mammoth Lakes. Felt.
	Dec 28	03 29 49.5	37°39.4'	118°52.1'	3.7	15	10i	Mammoth Lakes. Felt.
	Dec 28	04 40 38.7	37°38.6'	118°51.9'	3.2	7	9i	Mammoth Lakes.

International Seismological Centre

SEQUENCE OF THE COYOTE LAKE, CALIFORNIA, EARTHQUAKE

Date: 6 August 1979, OT-17:05:22.7, ML=5.8

Map No.	Date 1979	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
13	Aug 06	17 05 22.7	37°06.1'	121°30.2'	5.8	6	10w	Coyote Lake Main Shock, NW of Hollister. Felt from Reno to Sacramento to Fresno, Santa Rosa to San Luis Obispo. Minor damage in Gilroy, Morgan Hill and Hollister; no serious injury.
	Aug 06	17 10 43.3	37°05.3'	121°28.9'	3.7	6	7w	Coyote Lake aftershock. Felt Gilroy and Morgan Hill.
	Aug 06	17 22 47.6	37°02.6'	121°28.5'	3.3	7	9w	Coyote Lake aftershock.
	Aug 06	18 17 45.5	37°02.4'	121°27.9'	2.5	6	8w	Coyote Lake aftershock.
	Aug 06	22 21 01.7	37°01.8'	121°28.0'	3.5	6	10w	Coyote Lake aftershock. Felt Gilroy and Morgan Hill.
	Aug 06	22 33 55.4	37°00.0'	121°28.5'	4.3	4	10w	Coyote Lake aftershock. Felt Gilroy, Morgan Hill, Hollister.
	Aug 06	22 35 57.6	36°58.9'	121°29.1'	2.9	5(R)	8w	Coyote Lake aftershock.
	Aug 06	22 36 04.9	36°59.4'	121°29.0'	3.6	1	8w	Coyote Lake aftershock. Felt Gilroy and Morgan Hill.
	Aug 06	23 36 00.6	37°02.9'	121°28.2'	2.7	3	9w	Coyote Lake aftershock.
	Aug 07	02 32 31.6	36°58.7'	121°28.0'	3.0	5	10w	Coyote Lake aftershock.
	Aug 07	05 56 51.6	37°03.7'	121°29.2'	2.9	4	10w	Coyote Lake aftershock.
	Aug 07	18 51 46.5	36°59.7'	121°27.7'	2.5	1	7w	Coyote Lake aftershock.
	Aug 07	19 01 41.3	36°58.6'	121°28.4'	2.5	2	9w	Coyote Lake aftershock.
	Aug 07	19 11 25.7	36°59.1'	121°28.2'	3.1	2	9w	Coyote Lake aftershock.
	Aug 08	03 52 14.4	36°59.5'	121°28.3'	2.6	2	9w	Coyote Lake aftershock.
	Aug 08	22 56 07.9	37°02.0'	121°28.0'	3.2	4	9w	Coyote Lake aftershock. Felt Gilroy and Morgan Hill.
	Aug 09	05 28 48.6	36°58.7'	121°27.5'	2.7	6	9w	Coyote Lake aftershock.
	Aug 09	07 03 20.2	37°00.9'	121°27.3'	4.2	5	9w	Coyote Lake aftershock. Felt Gilroy, Fremont, Morgan Hill, Hollister, Newark, San Leandro, Alameda, Monterey.
	Aug 09	12 49 27.5	36°58.6'	121°27.9'	3.5	3	9w	Coyote Lake aftershock. Felt Gilroy and Morgan Hill.
	Aug 09	12 51 41.7	36°58.2'	121°27.7'	2.8	5(R)	9w	Coyote Lake aftershock.
	Aug 10	00 25 20.7	37°01.2'	121°27.5'	3.6	5	8w	Coyote Lake aftershock. Felt Gilroy and Morgan Hill.
	Aug 10	04 50 40.0	36°57.9'	121°28.8'	3.0	5(R)	8w	Coyote Lake aftershock.

International Seismological Centre

Map No.	Date 1979	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
13	Aug 10	05 10 42.9	36°58.8'	121°26.3'	2.7	5(R)	8w	Coyote Lake aftershock.
	Aug 10	12 37 00.3	36°57.6'	121°28.2'	2.5	5(R)	8w	Coyote Lake aftershock.
	Aug 10	19 22 26.8	36°58.4'	121°28.1'	2.6	1	8w	Coyote Lake aftershock.
	Aug 11	09 40 19.3	36°59.0'	121°27.5'	2.8	1	8w	Coyote Lake aftershock.
	Aug 11	16 42 32.7	36°58.2'	121°28.6'	2.6	5(R)	8w	Coyote Lake aftershock.
	Aug 11	20 29 35.2	37°08.3'	121°31.5'	3.2	5	8w	Coyote Lake aftershock. Felt Gilroy and Morgan Hill.
	Aug 14	03 15 57.0	36°59.4'	121°28.0'	3.5	4	8w	Coyote Lake aftershock. Felt Gilroy and Morgan Hill.
	Aug 16	11 47 44.9	37°09.7'	121°32.8'	2.5	3	8w	Coyote Lake aftershock.
	Sep 03	06 40 16.2	37°03.9'	121°29.1'	3.1	3	8w	Coyote Lake aftershock.
	Sep 10	06 16 04.1	37°09.1'	121°32.2'	3.0	6	8w	Coyote Lake aftershock.
	Sep 15	02 45 12.9	37°03.7'	121°29.3'	2.7	3	8w	Coyote Lake aftershock.
	Sep 16	23 24 20.9	36°57.7'	121°26.1'	2.6	12	16w	Coyote Lake aftershock.
	Sep 17	19 19 13.1	37°02.4'	121°29.6'	2.9	5(R)	8w	Coyote Lake aftershock.
	Oct 20	06 32 29.3	36°58.6'	121°28.6'	3.0	5(R)	8w	Coyote Lake aftershock.
	Nov 28	00 56 58.6	37°02.8'	121°28.1'	2.9	1	8w	Coyote Lake aftershock.
	Dec 06	07 14 49.3	37°08.7'	121°31.2'	3.0	9	8w	Coyote Lake aftershock.
	Dec 17	06 54 53.1	37°03.8'	121°29.7'	2.9	11	8w	Coyote Lake aftershock. Felt Morgan Hill.

International Seismological Centre

SEQUENCE OF THE BRIDGEPORT, CALIFORNIA, EARTHQUAKE

Date: 7 October 1979, OT-20:54:41.4, ML=5.0

Map No.	Date 1979	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
27	Oct 07	20 54 41.4	38°13.4'	119°21.3'	5.0	9	7s	Bridgeport Main Shock, 40 km NW of Mono Lake. Felt Mono Lake, Bridgeport, Tuolumne County. No damage reported.
	Oct 07	21 05 08.1	38°12.2'	119°20.4'	3.0	14	6s	Bridgeport aftershock.
	Oct 07	21 10 00.0	38°13.8'	119°21.3'	4.0	10	7s	Bridgeport aftershock. Felt.
	Oct 07	21 11 43	38°13.8'	119°21.3'	3.1	10(R)	6s	Bridgeport aftershock.
	Oct 07	21 20 53.0	38°13.7'	119°21.7'	4.4	11	7s	Bridgeport aftershock. Felt.
	Oct 07	21 31 36.0	38°13.8'	119°21.3'	3.0	12	7s	Bridgeport aftershock.
	Oct 07	21 45 23.8	38°12.4'	119°19.8'	4.1	8	7s	Bridgeport aftershock. Felt.
	Oct 07	22 49 04.6	38°12.9'	119°20.3'	3.2	10	7s	Bridgeport aftershock.
	Oct 07	23 31 44.8	38°12.6'	119°19.6'	3.8	10	7s	Bridgeport aftershock. Felt.
	Oct 07	23 44 09.1	38°12.5'	119°19.5'	3.4	9	7s	Bridgeport aftershock.
	Oct 07	23 45 17.7	38°12.3'	119°20.1'	3.5	11	6s	Bridgeport aftershock.
	Oct 07	23 45 33	38°12.5'	119°19.5'	3.5	9(R)	6s	Bridgeport aftershock.
	Oct 08	00 23 54.6	38°14.1'	119°21.4'	3.7	10	7s	Bridgeport aftershock. Felt.
	Oct 08	00 47 44.8	38°13.3'	119°21.5'	4.0	9	7s	Bridgeport aftershock. Felt.
	Oct 08	01 29 47.1	38°13.2'	119°20.9'	3.0	9	7s	Bridgeport aftershock.
	Oct 08	02 01 49.7	38°13.5'	119°21.2'	3.0	7	7s	Bridgeport aftershock.
	Oct 08	02 02 53.7	38°14.1'	119°21.2'	3.5	11	7s	Bridgeport aftershock. Felt.
	Oct 08	02 03 31.0	38°13.8'	119°21.1'	3.5	16	5s	Bridgeport aftershock.
	Oct 08	03 34 24.0	38°12.3'	119°19.4'	4.6	9	7s	Bridgeport aftershock. Felt.
	Oct 08	03 56 55.1	38°13.5'	119°22.1'	3.0	5(R)	3s	Bridgeport aftershock.
	Oct 08	09 28 56.1	38°11.9'	119°19.9'	3.2	7	7s	Bridgeport aftershock.
	Oct 08	09 38 36.4	38°12.8'	119°19.8'	3.7	10	7s	Bridgeport aftershock. Felt.
	Oct 08	09 48 17.5	38°13.7'	119°20.5'	3.1	5(R)	3s	Bridgeport aftershock.
	Oct 08	12 14 02.0	38°13.7'	119°21.0'	4.1	9	7s	Bridgeport aftershock. Felt.
	Oct 09	22 00 10.4	38°12.9'	119°20.4'	4.2	8	7s	Bridgeport aftershock. Felt.
	Oct 10	14 41 31.6	38°13.1'	119°20.5'	3.0	5	7s	Bridgeport aftershock.
	Oct 10	19 26 07.2	38°14.3'	119°21.9'	3.1	9	7s	Bridgeport aftershock.

International Seismological Centre

Map No.	Date 1979	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	h	Solution	Remarks
27	Oct 20	09 40 21.8	38°14.2'	119°22.4'	3.3	7	5s	Bridgeport aftershock.
	Nov 25	08 43 36.2	38°14.9'	119°21.7'	3.0	13	5s	Bridgeport aftershock.
	Dec 13	11 35 28.5	38°15.0'	119°20.9'	3.1	5	6s	Bridgeport aftershock.

EXPLOSIONS AT NEVADA TEST SITE

Date 1979	Origin Time (UTC)	Latitude North	Longitude West	Magnitude	
Aug 03	15 07 30.2	37.083°	116.070°	4.8	"BURZET"
Aug 08	15 00 00.1	37.015°	116.008°	4.8	"OFFSHORE"
Aug 29	15 08 00.2	37.121°	116.066°	5.0	"NESSEL"
Sep 06	15 00 00.1	37.088°	116.053°	5.7	"HEARTS"
Sep 08	17 02 00.1	37.154°	116.038°	3.7	"PERA"
Sep 26	15 00 00.1	37.229°	116.364°	5.5	"SHEEPSHEAD"
Dec 14	18 00 00.1	37.137°	116.063°	4.1	"AZUL"
Dec 25	14 17 10.8	37.270°	117.061°	4.4	

International Seismological Centre

NORTHERN CALIFORNIA EARTHQUAKES

JULY-DECEMBER 1979

Seismographic Stations
University Of California, Berkeley

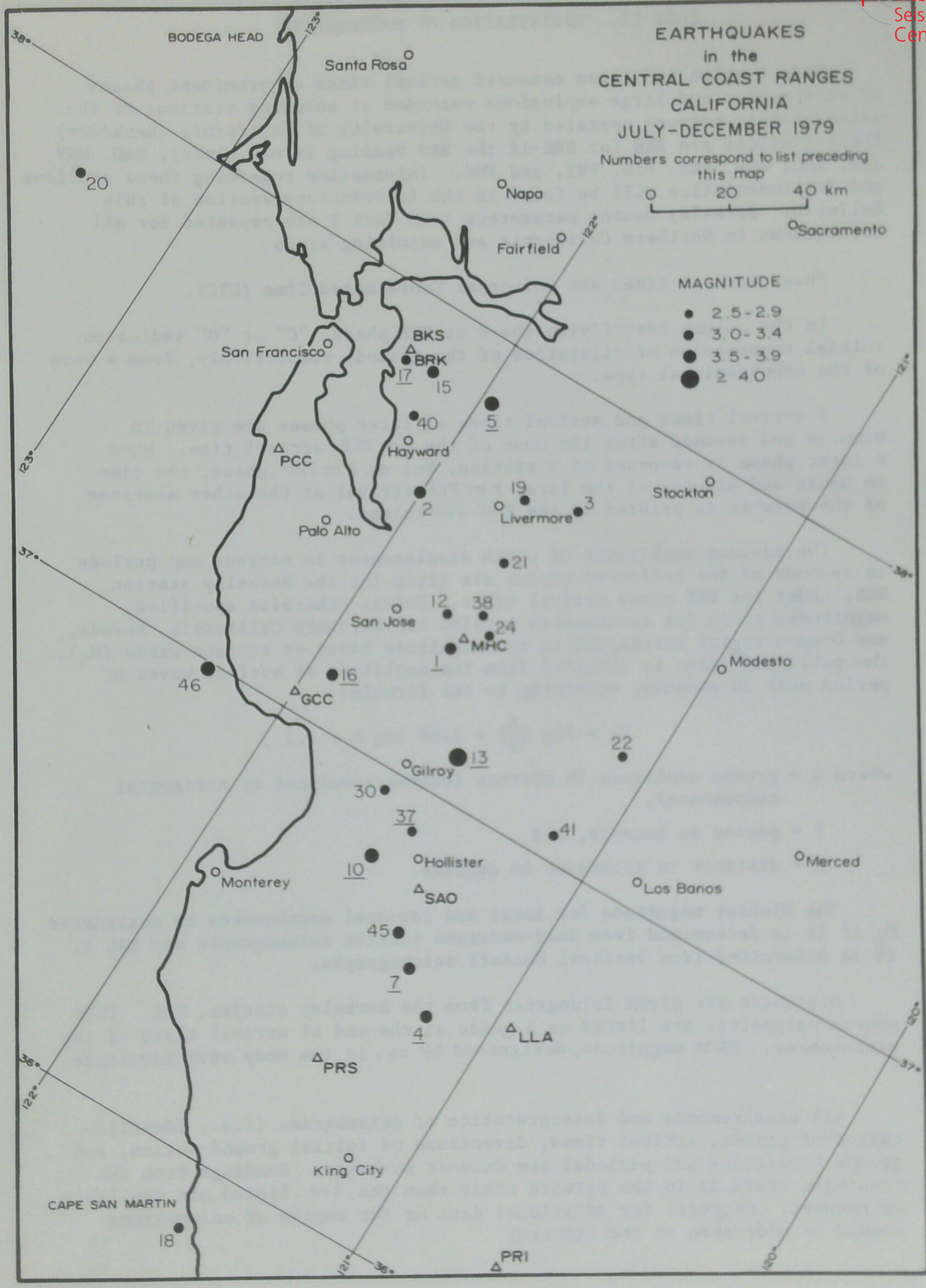
MAGNITUDE
- 3.0-3.4
- 3.5-4.0
- ≥ 4.0

U.C. Seismographic Stations

Approximate Location Of Principal Faults

KILOMETERS
50 0 50 100

International Seismological Centre



International Seismological Centre

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, 1979

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	BRK	e(P) 06 17 09		
	MHC	eP 06 17 10.1		
	PRI	eP 06 17 11.0		
	FRI	e(P) 06 17 15		
	JAS	eP 06 17 16.0		
	WDC	eP 06 17 17.9		
	MIN	eP 06 17 19.7		
		USGS 06 05 45.2, 19.9S, 175.5W, h=232 km, mb=5.0		
		TONGA ISLANDS		
JUL 01	FRI	eP 20 46 11.4		
	PRI	eP 20 46 13.3		
	JAS	ePe 20 46 19.4		PcP 48 03
	SAO	eP 20 46 19.7		
	MHC	eP 20 46 23.8		
	BKS	ePe 20 46 29.0	53 22	Lq 56 20 Lr 58 36 e 02 12
		MICRON PERIOD		
		PZ 0.10 1.4		
		LZ 60 20		
		LN 50 20		
		LE 90 20		
	MIN	eP 20 46 34.5		
	WDC	ePe 20 46 38.1		
	FHC	ePe 20 46 49.2		
		Ms=6.7, Distance=45°		
		USGS 20 38 04.0, 8.3N, 82.9W, h= 28 km, mb=5.5, Ms=6.5		
		PANAMA-COSTA RICA BORDER REGION		
JUL 02	FRI	eP 00 39 33.3		
	PRI	eP 00 39 36.1		
	JAS	eP 00 39 41.8		
	MHC	e(P) 00 39 46		
	WDC	eP 00 40 00.8		
		USGS 00 31 28.4, 8.4N, 82.8W, h= 33 km, mb=5.0		
		PANAMA-COSTA RICA BORDER REGION		
JUL 02	FRI	eP 06 26 15.8		
	PRI	eP 06 26 18.7		
	JAS	eP 06 26 24.5		
	MHC	eP 06 26 29.3		
	BRK	eP 06 26 34.2		
	BKS	06 26		e 34 26 e 44 02
		MICRON PERIOD		
		LZ 0.9 20		
		LN 1.2 20		
		LE 2.3 20		
	MIN	eP 06 26 39.6		
	WDC	eP 06 26 43.4		
	FHC	eP 06 26 54.5		
		USGS 06 18 08.9, 8.3N, 83.0W, h= 33 km, mb=5.2, Ms=5.2		
		COSTA RICA		
JUL 02	MHC	iPd 18 59 43.5		
	SAO	iPd 18 59 53.1		
	BKS	e(P) 18 59 56	00 07	
		BRK 18 59 41.9, 37.3N, 121.7W, h= 6 km, ML=2.7		
		EAST OF SAN JOSE, CALIFORNIA		
JUL 03	MHC	eP 03 01 49.8		
	FRI	eP 03 01 54.5		
	JAS	iPe 03 01 55.1		e 03 37
	WDC	iPe 03 01 57.1		i 02 05 e 03 40
	MIN	eP 03 01 58.7		
		USGS 02 50 20.5, 23.9S, 179.6W, h=479 km, mb=5.1		
		SOUTH OF FIJI ISLANDS		
JUL 03	JAS	eP 03 11 58.3		
	WDC	eP 03 12 14.2		
		USGS 03 00 51.1, 16.7S, 73.1W, h= 77 km, mb=5.1		
		NEAR COAST OF PERU		
JUL 03	PRI	eP 08 48 44.7		
	MHC	eP 08 48 56.0		
	JAS	eP 08 48 56.1		
	MIN	eP 08 49 16.5		
	WDC	eP 08 49 19.9		
		USGS 08 41 18.1, 2.1N, 101.1W, h= 10 km, mb=5.3, Ms=5.7		
		EAST CENTRAL PACIFIC OCEAN		
JUL 03	BKS	iPe 13 25 52.6	25 58	
	MHC	iPe 13 25 53.2		
	SAO	iPe 13 26 02.8		
	JAS	iPd 13 26 07.9		
	MIN	eP 13 26 30.4		
		BRK 13 25 45.6, 37.6N, 122.0W, h= 9 km, ML=3.3		
		NORTH OF SAN JOSE, CALIFORNIA		
JUL 04	FHC	ePe 06 18 05.2		pP 18 22
	WDC	iPe 06 18 11.2		pP 18 28 PKPPKP 46 50
	MIN	ePe 06 18 15.3		pP 18 32
	BKS	iPe 06 18 22.8	27 05	pP 18 39 Lq 34 36 Lr 38 00
		MICRON PERIOD		
		PZ 0.26 1.0		
	MHC	ePe 06 18 27.3		pP 18 44
	SAO	eP 06 18 29.6		
	JAS	iPe 06 18 30.0		pP 18 46 PKPPKP 46 46
	FRI	iPe 06 18 36.2		pP 18 53
	PRI	ePe 06 18 36.4		
		mb=6.1, h=60km, Distance=67°		
		USGS 06 07 45.2, 44.0N, 146.7E, h= 78 km, mb=6.0		
		KURIL ISLANDS		
JUL 04	FRI	eP 20 39 00		
	PRI	eP 20 39 02.6		
	JAS	eP 20 39 08.5		
	MHC	eP 20 39 13		
	BKS	eP 20 39 19	46 13	
		MICRON PERIOD		
		PZ 0.03 0.9		
		LZ 0.8 20		
		LN 1.1 20		
		LE 1.1 20		
	MIN	eP 20 39 24		
	WDC	eP 20 39 28		
	FHC	eP 20 39 38.7		
		Ms=5.0, Distance=47°		
		USGS 20 30 53.8, 8.3N, 83.1W, h= 23 km, mb=5.0, M=5.0		
		COSTA RICA		
JUL 04	PRI	22 47		e 47 19
	JAS	eP 22 47 21.7		
	MHC	22 47		e 47 26
	BRK	22 47		e 47 35
	WDC	22 47		e 47 40
		USGS 22 39 07.5, 8.4N, 83.0W, h= 33 km, mb=5.1		
		COSTA RICA		
JUL 05	MHC	iPd 00 51 45.3	51 52	i 51 47
	BKS	eP 00 51 47.4		e 51 55
	JAS	ePd 00 51 54.0	52 08	i 51 57
	SAO	eP 00 51 55.5		
		BRK 00 51 37.2, 37.7N, 121.6W, h= 5 km, ML=2.8		
		NORTHEAST OF LIVERMORE, CALIFORNIA		
JUL 05	MHC	02 28		e 28 26 e 28 37
	SAO	02 28		e 28 26
	PRI	02 28		e 28 29 e 28 38
	WDC	eP 02 28 30.5		e 28 41
	JAS	eP 02 28 31.3		e 28 42
	FRI	02 28		e 28 33 e 28 44
	MIN	02 28		e 28 45
		USGS 02 15 40.9, 20.1S, 168.3E, h= 33 km, mb=4.6		
		LOYALTY ISLANDS		
JUL 05	FHC	eP 06 21 50.5		
	WDC	ePe 06 21 56.4		
	MIN	ePe 06 22 00.7		
	BKS	eP 06 22 08.5		
	MHC	ePe 06 22 12.7		
	JAS	ePe 06 22 15.2		
	PRI	eP 06 22 21		
	FRI	eP 06 22 21.3		
		USGS 06 11 29.2, 43.9N, 146.6E, h= 70 km, mb=5.2		
		KURIL ISLANDS		
JUL 05	JAS	eP 22 20 53.5		
	WDC	eP 22 20 54.1		
		USGS 22 09 49.9, 17.5S, 178.7W, h=532 km, mb=4.8		
		FIJI ISLANDS REGION		
JUL 06	FRI	eP 02 13 34.0		
	PRI	eP 02 13 34.9		
	SAO	eP 02 13 39.0		
	JAS	iPe 02 13 40.7		i 14 12 e 15 02
	MHC	eP 02 13 42.3		
	BKS	iPe 02 13 45.5	24 26	SKS 24 09 sS 25 24 SS 30 02
				Lq 36 50 e 41 40
		MICRON PERIOD		
		PZ 0.37 1.5		
	MIN	eP 02 13 51.8		
	WDC	iPe 02 13 54.5		i 14 22
	FHC	eP 02 14 01.2		
		USGS 02 01 16.1, 32.1S, 71.3W, h= 45 km, mb=5.7, Ms=5.6		
		NEAR COAST OF CENTRAL CHILE		
JUL 06	PRI	13 56		e 56 22
	JAS	eP 13 56 31.6		
	WDC	ePe 13 56 47.0		
		USGS 13 45 39.9, 15.1S, 70.5W, h=239 km, mb=4.7		
		SOUTHERN PERU		
JUL 07	BRK	e(P) 03 58 18		
	PRI	eP 03 58 19.1		
	MHC	eP 03 58 19.3		
	JAS	ePe 03 58 24.8		
	WDC	ePe 03 58 26.7		
		FIJI ISLANDS		
JUL 07	FHC	ePe 03 59 48.9		
	WDC	ePe 03 59 49.9		
	MIN	iPe 03 59 51.9		
	BKS	eP 04 00 03.4		
		MICRON PERIOD		
		PZ 0.07 0.9		
	JAS	iPe 04 00 04.4		
	MHC	ePe 04 00 06.5		
	FRI	ePe 04 00 09.0		
	PRI	ePe 04 00 13.1		
		USGS 03 46 57.4, 50.1N, 79.1E, h= 0 km, mb=5.8		
		UNDERGROUND NUCLEAR EXPLOSION		
		EASTERN KAZAKH, S.S.R.		
JUL 07	FRI	iPd 09 39 41.8		PcP 42 17
	PRI	ePd 09 39 44.3		
	SAO	eP 09 39 51.0		
	JAS	iPd 09 39 51.3		PcP 42 20 pPcP 42 36 ScP 46 06
				e 46 34
	MHC	ePd 09 39 55.7		
	BKS	eP 09 40 01.1	45 49	e 40 16 PP 41 28 PcP 42 24
				e 42 37 ScP 46 10 Lq 49 40
				Lr 53 10
		MICRON PERIOD		
		PZ 0.06 1.0		
		LZ 3.6 20		
		LN 3.5 20		
		LE 5 20		
	MIN	iPd 09 40 09.2		
	WDC	iPd 09 40 13.1		PcP 42 28 pPcP 42 44 ScP 46 15
				e 46 44
	FHC	eP 09 40 24.5		
		USGS 09 33 02.4, 14.0N, 91.0W, h= 93 km, mb=5.1		
		GUATEMALA		
JUL 07	PRI	eP 22 32 01.4		
	MHC	eP 22 32 01.7		
	BKS	e(P) 22 32 02	41 40	Lq 51 00
		MICRON PERIOD		
		LZ 1.3 20		
		LN 0.8 20		
		LE 1.0 20		
	FRI	e(P) 22 32 07		
	JAS	ePe 22 32 08.0		
	WDC	ePe 22 32 10.5		
	MIN	e(P) 22 32 12		
		Ms=5.1, Distance=75°		
		USGS 22 20 27.1, 19.0S, 173.1W, h= 33 km, mb=5.0, Ms=5.4		
		TONGA ISLANDS		
JUL 08	PRI	eP 01 15 27.8		e 15 38
	FRI	eP 01 15 31.8		e 15 42
	MHC	eP 01 15 37.6		e 15 48
	BKS	e(P) 01 15 40	23 06	ScS 25 25 SS 26 44 Lq 28 40
				Lr 30 28
		MICRON PERIOD		
		LZ 10 20		
		LN 9 20		
		LE 2.5 20		
	JAS	iPe 01 15 40.7		e 15 51
	WDC	iPe 01 16 00.8		e 16 11
		Ms=5.7, Distance=52°		
		USGS 01 06 31.4, 13.2S, 112.2W, h= 10 km, mb=4.9, Ms=5.6		
		NORTHERN EASTER ISLAND CORDILLERA		
JUL 08	SAO	eP 09 06 58.8		
	BKS	eP 09 07 00.1		
		MICRON PERIOD		
		PZ 0.03 0.8		
	PRI	eP 09 07 00.3		
	MHC	ePe 09 07 00.5		
	FRI	iPe 09 07 05.3		
	JAS	iPe 09 07 05.7		
	WDC	ePe 09 07 07.5		
	MIN	eP 09 07 09.1		
		USGS 08 55 48.4, 22.2S, 179.6W, h=609 km, mb=5.5		
		SOUTH OF FIJI ISLANDS		
JUL 08	PRI	eP 09 24 11.6		
	JAS	eP 09 24 17.0		
	WDC	eP 09 24 30.5		
		USGS 09 11 54.5, 31.9S, 68.3W, h=118 km, mb=4.7		
		SAN JUAN PROVINCE, ARGENTINA		
JUL 09	WDC	eP 11 10 15.2		
	MIN	eP 11 10 18.2		
	BKS	11 10		e 10 25
	MHC	eP 11 10 28		
	JAS	eP 11 10 29.4		
	FRI	eP 11 10 34.1		
	PRI	eP 11 10 35.0		
		USGS 10 57 22.1, 31.5N, 119.2E, h= 11 km, mb=5.5, Ms=5.4		
		EASTERN CHINA		

International Seismological Centre

International Seismological Centre

```
JUL 09  WDC          16 21                    e 21 42
        JAS          16 21                    e 21 48
        BKS  eP      16 20 56    31 52     PPS 33 16     Lq 44 24     Lr 48 54
                              MICRON     PERIOD
                        PZ      1.23       12
                        LZ      9          20
                        LN      4.1        20
                        LE      8          20
                        Ms=6.1, Distance=91°
                        USGS 16 08 09.5,  5.6S, 153.3E, h= 44 km, mb=5.7, Ms=6.1
                             NEW IRELAND REGION

JUL 09  SAO  iPc     21 20 46.7
        PRI  iPd     21 20 52.3
        MHC  iPc     21 20 57.8
        FRI  eP      21 21 03.1
        JAS  iPd     21 21 07.7
        BKS  iP      21 21 07.8                e 21 44
                        BRK  21 20 40.9, 36.5N, 121.2W, h=  6 km, ML=3.1
                             SOUTHEAST OF HOLLISTER, CALIFORNIA

JUL 10  WDC  iPd     04 10 02.9
        MIN  iPd     04 10 07.4
        BKS  iP      04 10 25.5                e 10 33
                              MICRON     PERIOD
                        PZ      0.06       1.0
        JAS  eP      04 10 29.9
        MHC  eP      04 10 31.4
        FRI  iPd     04 10 39.5
        PRI  eP      04 10 44.4
                        USGS 04 04 20.5, 63.2N, 150.7W, h=130 km, mb=4.9
                             CENTRAL ALASKA

JUL 10  BKS  iPc     08 23 28.0  23 32
        MHC  iPd     08 23 34.3
        SAO  ePd     08 23 42.9
        JAS  iPc     08 23 43.8
        FRI  iPc     08 23 55.3
        PRI  eP      08 23 55.9
                        BRK  08 23 22.9, 37.9N, 121.9W, h=  9 km, ML=3.6
                             EAST OF BERKELEY, CALIFORNIA

JUL 10  FRI  eP      14 06 16.4
        PRI          14 06                    e 06 26
        JAS  eP      14 06 29.7               e 06 33
        MHC          14 06                    e 06 33
        BKS          14 06                    e 06 38     Lq 10 00     Lr 12 40
                              MICRON     PERIOD
                        LN      4.1        20
                        LE      9          20
        MIN          14 07                    e 07 03
        WDC  eP      14 07 05.0
                        USGS 14 02 34.1, 24.9N, 108.5W, h= 15 km, mb=4.7
                             GULF OF CALIFORNIA

JUL 10  JAS  eP      16 37 50.4               e 38 06
        WDC  eP      16 37 50.7               e 38 07
                        USGS 16 25 08.0, 19.0S, 168.5E, h= 56 km, mb=5.3
                             NEW HEBRIDES ISLANDS

JUL 11  FHC  eP      02 09 34.5
        WDC  ePd     02 09 40.2               e 09 50
        MIN  eP      02 09 43.8
        BKS  eP      02 09 50.2  19 17         e 10 00      e 10 08      e 10 35
                                               e 11 28     Lq 28 40     Lr 31 16
                              MICRON     PERIOD
                        LZ      4.1        20
                        LN      1.8        20
                        LE      2.1        20
        MHC  eP      02 09 54.0
        JAS  ePd     02 09 56.6               e 10 06
        PRI  eP      02 10 02.0
        FRI  eP      02 10 02.3               e 10 12
                        Ms=5.5, Distance=74°
                        USGS 01 58 21.8, 36.6N, 141.2E, h= 42 km, mb=5.6, Ms=5.8
                             NEAR EAST COAST OF HONSHU, JAPAN

JUL 11  WDC  ePc     12 32 02.0
        MIN  ePc     12 32 08.7
        BKS  eP      12 32 33    36 19     Lq 36 31     Lr 38 14
                              MICRON     PERIOD
                        PZ      2.4        5
                        LZ      4.1        20
                        LN      7          20
                        LE      9          20
        JAS  ePc     12 32 37.4
        MHC          12 32                    e 32 41
        FRI  eP      12 32 49.0
        PRI  eP      12 32 49.0
                        Ms=5.1, Distance=21°
                        USGS 12 28 02.9, 55.3N, 135.0W, h= 10 km, mb=5.1, Ms=5.1
                             OFF COAST OF SOUTHEASTERN ALASKA

JUL 11  WDC  ePd     14 12 30.4
        MIN  eP      14 12 33.3
        BKS          14 12                    e 12 48      e 13 00      e 13 07
                                               e 17 40
                              MICRON     PERIOD
                        LZ      0.7        20
                        LN      0.9        20
                        LE      1.8        20
        JAS  ePd     14 12 58.5
        MHC          14 12                    e 12 59
        FRI          14 13                    e 13 10
        PRI          14 13                    e 13 15
                        USGS 14 07 28.9, 62.8N, 127.7W, h= 10 km, mb=5.0, Ms=4.7
                             NORTHWEST TERRITORIES, CANADA

JUL 11  WDC  e(P)    22 17 01
        JAS  eP      22 17 16.2
        FRI          22 17                    e 17 22
                        USGS 22 04 36.3, 48.0N, 103.3E, h= 41 km, mb=4.8
                             MONGOLIA

JUL 12  PRI  eP      23 34 02.6
        FRI          23 34                    e 34 04
        MHC  eP      23 34 10.5
        JAS  eP      23 34 11.3
        BKS  eP      23 34 13.3  44 10         e 34 23      e 34 33     SS 49 20
                                               Lq 54 30     Lr 58 25
                              MICRON     PERIOD
                        PZ      0.07       1.0
                        LZ      1.3        20
                        LN      1.9        20
                        LE      1.0        20
        WDC  eP      23 34 27.0
        MIN  eP      23 34 28.3
        FHC  eP      23 34 31.7
                        Ms=5.5, Distance=80°
                        USGS 23 22 17.4, 36.3S,  98.0W, h= 10 km, mb=5.5, Ms=5.3
                             SOUTHERN PACIFIC OCEAN

JUL 13  FHC  eP      08 22 07.0                i 22 25
        WDC  iPd     08 22 11.6                i 22 29      e 25 11
        MIN  eP      08 22 15.3                e 22 33
        BKS  eP      08 22 20.8  32 25         e 22 32      e 22 38      e 22 41
                                           PP 25 48     SS 38 09    SSS 41 20
                                               Lq 43 20     Lr 47 00
                              MICRON     PERIOD
                        PZ      0.08       0.8
                        LZ      1.6        20
                        LN      0.5        20
                        LE      1.2        20
        MHC  eP      08 22 24.8
        JAS  iP      08 22 27.0                i 22 44      e 25 31
        FRI  eP      08 22 32.2                i 22 50
        PRI          08 22                    e 22 33
        MNV  iPd     08 22 33.3                i 22 51
                        Ms=5.3, Distance=82°
                        USGS 08 10 11.7, 33.8N, 131.8E, h= 69 km, mb=5.9
                             KYUSHU, JAPAN

JUL 13  BKS          17 21                                    Lr 49 00
                              MICRON     PERIOD
                        LZ      2.2        19
                        LN      1.5        19
                        LE      1.2        19
        JAS  ePc     17 21 02.8
        WDC  eP      17 21 06.1
        MNV  ePc     17 21 10.7
                        USGS 17 08 31.0, 28.7S, 176.8W, h= 33 km, mb=5.4, Ms=5.4
                             KERMADEC ISLANDS REGION

JUL 14  WDC  ePc     05 13 04.8
        MIN  eP      05 13 05.9
        MNV  ePc     05 13 13.3
        JAS  ePc     05 13 16.9
        BKS  e(P)    05 13 18
                              MICRON     PERIOD
                        PZ      0.02       0.6
        FRI  e(P)    05 13 20
        MHC  e(P)    05 13 20
        PRI  eP      05 13 26.0
                        USGS 04 59 55.1, 47.8N,  48.1E, h=  0 km, mb=5.6
                             UNDERGROUND NUCLEAR EXPLOSION
                             WESTERN KAZAKH, S.S.R.

JUL 15  MNV  eP      09 18 59                 e 19 13
        PRI          09 19                    e 19 06
        JAS          09 19                    e 19 04      e 19 20
        BKS          09 19                    e 19 27
        WDC          09 19                    e 19 37
                        USGS 09 08 32.5, 12.4S,  77.0W, h= 60 km, mb=4.9
                             NEAR COAST OF PERU

JUL 15  MNV  ePc     11 30 40.4
        JAS  ePc     11 30 49.3
        MHC  eP      11 30 54.5
        BKS  e(P)    11 31 01
                              MICRON     PERIOD
                        PZ      0.02       0.6
        WDC          11 31                    e 31 10
                        USGS 11 22 36.8,  8.4N,  83.0W, h= 36 km, mb=4.9, Ms=4.7
                             COSTA RICA

JUL 15  WDC  ePc     18 52 28.9
        JAS  ePc     18 52 29.7
        MNV  ePc     18 52 38.5
                        USGS 18 39 47.0, 19.1S, 168.7E, h= 55 km, mb=5.4
                             NEW HEBRIDES ISLANDS

JUL 15  JAS  ePKP    20 54 12.0
        WDC  ePKP    20 54 16.5
                        USGS 20 35 30.5, 56.6S,  27.1W, h=127 km, mb=5.0
                             SOUTH SANDWICH ISLANDS REGION

JUL 16  WDC  eP      17 21 58.8
        MIN  eP      17 22 02.0
        BKS  eP      17 22 02.5
        MHC  eP      17 22 05.9
        SAO  eP      17 22 06.9
        JAS  eP      17 22 09.7
        PRI  eP      17 22 11.6
        FRI  eP      17 22 13.4
        MNV  ePc     17 22 17.9
                        USGS 17 09 47.2, 14.0N, 145.0E, h=133 km, mb=4.8
                             MARIANA ISLANDS

JUL 16  WDC  eP      23 51 34.2                e 51 37     ScP 58 13     e 58 22
        MIN  eP      23 51 36.3              ScP 58 14
        BKS  ePc     23 51 56.1                e 56 28
                              MICRON     PERIOD
                        PZ      0.04       0.8
        JAS  eP      23 52 01.7              ScP 58 24
        MHC  eP      23 52 01.7              ScP 58 24
        SAO  eP      23 52 06.0
        MNV  eP      23 52 06.7              ScP 58 26
        FRI  eP      23 52 10.8              ScP 58 27
        PRI  eP      23 52 15.0              ScP 58 29
                        USGS 23 45 58.5, 60.9N, 153.0W, h=141 km, mb=4.6
                             SOUTHERN ALASKA

JUL 17  MNV  eP      06 28 32
        FRI  eP      06 28 34.6
        PRI  eP      06 28 37
        JAS  eP      06 28 43.1
        MHC  eP      06 28 48
        BKS  eP      06 28 54.1
                              MICRON     PERIOD
                        PZ      0.02       0.5
        MIN  eP      06 28 58
        WDC  eP      06 29 02.4
                        USGS 06 20 31.6,  8.3N,  83.2W, h= 43 km, mb=5.0, Ms=4.4
                             COSTA RICA

JUL 17  MHC  eP      12 38 18
        JAS  eP      12 38 23.7
        WDC  eP      12 38 26.4
        MNV  eP      12 38 32.8
                        TONGA ISLANDS REGION

JUL 17  MNV  eP      14 51 04.3
        FRI  eP      14 51 05
        PRI  eP      14 51 07
        JAS  eP      14 51 14
        MHC  eP      14 51 18
        BKS  ePd     14 51 23.3
                              MICRON     PERIOD
                        PZ      0.02       1.0
        WDC          14 51                    e 51 35
                        USGS 14 43 02.2,  8.4N,  83.1W, h= 41 km, mb=4.7
                             COSTA RICA

JUL 17  FHC  ePKP    16 20 19.3
        WDC  ePKP    16 20 20.5
        MIN  ePKP    16 20 21.6
        BKS  ePKPd   16 20 23.9
                              MICRON     PERIOD
                        PKPZ    0.02       0.9
        MHC  ePKP    16 20 26.0
        JAS  iPKPd   16 20 26.5
        FRI  ePKP    16 20 28.6
        PRI  ePKP    16 20 29.0
        MNV  ePKPd   16 20 29.5
                        USGS 16 01 15.1,  4.4S,  98.8E, h= 31 km, mb=5.7, Ms=5.2
                             SOUTHWEST OF SUMATERA

JUL 17  WDC  iPd     20 50 04.9                e 50 26
        MIN  ePd     20 50 09.2
        BKS  ePd     20 50 27.6                e 50 41      e 50 49      e 51 28
                                               Lr 57 10
                              MICRON     PERIOD
                        PZ      0.04       0.8
        JAS  iPd     20 50 32.0                e 50 53
        MHC  eP      20 50 33.4                e 50 55
        MNV  ePd     20 50 35.6
        FRI  eP      20 50 41.3                e 51 04
        PRI  eP      20 50 46.6                e 51 09
                        mb=5.2, h=60km, Distance=27°
                        USGS 20 44 29.5, 62.3N, 148.1W, h= 58 km, mb=5.3
                             CENTRAL ALASKA
```

International Seismological Centre

```
JUL 18  SAO  eP     00 41 53.6
        PRI  eP     00 41 55.2
        BKS  ePd    00 41 55.4                  e 45 09      e 45 38      e 46 38
                                                e 51 52      e 51 56      e 53 18
                                                e 53 34
                              MICRON    PERIOD
                         PZ     0.03       0.8
        MHC  eP     00 41 55.5
        FRI  ePd    00 42 00.3
        JAS  iPd    00 42 01.0
        WDC  iPd    00 42 02.9
        MNV  iPd    00 42 10.2
             USGS 00 30 45.7, 21.3S, 178.8W, h=564 km, mb=5.3
                  FIJI ISLANDS REGION

JUL 18  WDC  eP     03 29 56.7
        MIN  eP     03 29 58.6
        BKS  e(P)   03 30 10
                              MICRON    PERIOD
                         PZ     0.02       0.9
        JAS  eP     03 30 11.2
        MNV         03 30                  e 30 18
             USGS 03 17 02.5, 49.9N,  77.8E, h=  0 km, mb=5.1
                  UNDERGROUND NUCLEAR EXPLOSION
                  EASTERN KAZAKH, S.S.R.

JUL 18  WDC  eP     12 45 07.0
        JAS  eP     12 45 34.4
        MNV  eP     12 45 41.5
             USGS 12 39 25.0, 56.8N, 156.6W, h= 57 km, mb=4.8
                  ALASKA PENINSULA

JUL 19  BRK  eP     08 32 32
        BKS         08 32                  e 42 14
        PRI  eP     08 32 32.0
        MHC  eP     08 32 33
        FRI  eP     08 32 37.9
        JAS  eP     08 32 38.7
        WDC  eP     08 32 41.8
        MIN  eP     08 32 42.8
             USGS 08 20 31.6, 31.1S, 179.8E, h=433 km, mb=4.8
                  KERMADEC ISLANDS REGION

JUL 20  JAS  eP     11 19 35.6
        MIN  eP     11 19 47
        WDC  eP     11 19 48.7
             USGS 11 06 41.6, 43.8S,  82.1W, h= 10 km, mb=4.7
                  WEST CHILE RISE

JUL 20  BKS  ePd    13 01 56.6
                              MICRON    PERIOD
                         PZ     0.10       1.5
        MHC  ePd    13 01 58.3                  e 02 04
        PRI  ePd    13 02 00.2                  e 02 06
        WDC  iPd    13 02 01.0                  i 02 07
        MIN  eP     13 02 03.1
        JAS  iPd    13 02 03.5                  i 02 09
        FRI  ePd    13 02 04.5
        MNV  iPd    13 02 13.0                  i 02 19
             USGS 12 49 31.9, 13.3E, 167.4E, h= 36 km, mb=5.3, Ms=4.5
                  NEW HEBRIDES ISLANDS

JUL 20  PRI  eP     21 48 33.1
        BKS  eP     21 48 34                   e 15 56
        MHC  eP     21 48 34.1
        FRI  eP     21 48 37.6
        JAS  iPe    21 48 38.8
        WDC  iPe    21 48 42.0
        MIN  eP     21 48 43.1
        MNV  iPe    21 48 46.1
             USGS 21 35 51.1, 33.4S, 179.3W, h=101 km, mb=5.4
                  SOUTH OF KERMADEC ISLANDS

JUL 20  SAO  eP     22 56 22.7
        BKS  ePe    22 56 24.0  05 58          e 56 28      e 56 34
                              MICRON    PERIOD
                         PZ     0.07       0.8
        PRI  ePe    22 56 24.1
        MHC  ePe    22 56 24.4
        FRI  ePe    22 56 29.1
        JAS  iPe    22 56 29.7                 pP 58 30
        WDC  iPe    22 56 31.5                 pP 58 32
        MIN  eP     22 56 33.2
        MNV  iPe    22 56 39.0                 pP 58 38
             USGS 22 44 59.9, 23.3S, 179.9W, h=530 km, mb=5.4
                  SOUTH OF FIJI ISLANDS

JUL 21  WDC  iPe    01 58 29.2
        MIN  eP     01 58 33.0
        BRK  e(P)   01 58 42
        MHC  e(P)   01 58 47
        JAS  iPe    01 58 50.5
        MNV  iPe    01 58 57.4
        PRI  eP     01 58 57.5
        FRI  e(P)   01 58 58
             USGS 01 49 17.1, 51.9N, 157.5E, h=121 km, mb=4.9
                  NEAR EAST COAST OF KAMCHATKA

JUL 21  FRI  eP     02 49 48.2
        PRI  eP     02 49 49.8                 pP 50 22
        MNV  ePd    02 49 50.0                 pP 50 22
        JAS  ePd    02 49 55.2                 pP 50 27
        MHC  eP     02 49 57.6
        BKS  eP     02 50 01.5
        MIN  eP     02 50 06.7
        WDC  ePd    02 50 09.8                 pP 50 42
             USGS 02 38 02.5, 22.9S,  69.0W, h= 43 km, mb=5.3
                  NORTHERN CHILE

JUL 21  JAS  eP     06 00 01.0
        MNV  ePe    06 00 07.1
        PRI         06 00                  e 00 10
             USGS 05 50 47.0, 56.9N, 162.0E, h= 33 km, mb=4.7
                  NEAR EAST COAST OF KAMCHATKA

JUL 21  MNV  iPe    10 53 02.3
        PRI  eP     10 53 03.8
        JAS  ePe    10 53 10.8
        BKS         10 53                  e 03 48      e 07 12      e 10 52
        MIN  e(P)   10 53 30
        WDC  ePe    10 53 33.0
        FHC         10 53                  e 53 44
             USGS 10 46 28.9, 14.2N,  92.2W, h= 73 km, mb=4.9
                  NEAR COAST OF CHIAPAS, MEXICO

JUL 21  FRI  eP     12 18 46.5                PcP 21 32
        MNV  iPd    12 18 48.4                PcP 21 32
        PRI  ePd    12 18 48.9                PcP 21 34
        JAS  iPd    12 18 56.5                PcP 21 36
        SAO  eP     12 18 56.7
        MHC  eP     12 19 00.6                PcP 21 37
        BKS  eP     12 19 07.2  24 44            e 19 22      PP 20 33      Lq 28 56
                                                Lr 29 58
                              MICRON    PERIOD
                         PZ     3.2        7.2
                         LZ     5         20
                         LN     6         20
                         LE     5         20
        MIN  eP     12 19 15.2
        WDC  iPd    12 19 19.2                PcP 21 43
        FHC  eP     12 19 30.5
             Ms=5.5, Distance=37°
             USGS 12 12 14.0, 14.0N,  93.4W, h= 26 km, mb=5.7, Ms=5.5
                  NEAR COAST OF CHIAPAS, MEXICO

JUL 21  FHC  iPe    22 04 48.8  05 00
        WDC  iPe    22 05 03.0
        MIN  eP     22 05 13.0
             BRK  22 04 33.8, 40.4N, 124.9W, h= 24 km, ML=3.0
                  OFF COAST SOUTHWEST OF EUREKA, CALIFORNIA

JUL 22  FRI  ePKP   04 31 13.6
        PRI  ePKP   04 31 14.2
        MNV  iPKPe  04 31 14.4
        JAS  ePKPe  04 31 16.0
        MHC  ePKP   04 31 16.9
        BKS  ePKP   04 31 18.4
        MIN  ePKP   04 31 20.0
        WDC  ePKPe  04 31 20.9
             USGS 04 12 30.7, 56.2S,  27.0W, h= 90 km, mb=5.7
                  SOUTH SANDWICH ISLANDS REGION

JUL 22  SAO  iPe    07 36 14.3
        PRI  eP     07 36 25.6
        MHC  eP     07 36 25.8
        FRI  eP     07 36 35.4  36 53
        JAS  ePe    07 36 37.3
             BRK  07 36 11.4, 36.6N, 121.3W, h=  7 km, ML=2.6
                  SOUTHEAST OF HOLLISTER, CALIFORNIA

JUL 22  WDC  eP     13 31 17.4
        MNV  eP     13 31 26.7
        JAS  e(P)   13 31 33
             USGS 13 11 39.9,  7.0S,  67.2E, h= 10 km, mb=5.4
                  MID-INDIAN RISE

JUL 22  BKS  eP     14 46 41
                              MICRON    PERIOD
                         PZ     0.04       1.0
        PRI  eP     14 46 41.5
        MHC  eP     14 46 41.5
        FRI  eP     14 46 47.0
        JAS  ePe    14 46 47.5                 pP 48 22
        WDC  ePe    14 46 48.5                 pP 48 22
        MIN  eP     14 46 50.6
        MNV  iPe    14 46 57.2                 pP 48 32
             USGS 14 35 41.4, 17.0S, 177.2W, h=421 km, mb=5.1
                  FIJI ISLANDS REGION

JUL 22  MHC  eP     23 32 00.3
        BKS         23 32                  e 01 00
        FRI  eP     23 32 04.1
        JAS  eP     23 32 05.2
        WDC  eP     23 32 08.7
        MNV  e(P)   23 32 13
             USGS 23 19 30.1, 30.2S, 176.6W, h= 47 km, mb=5.1
                  KERMADEC ISLANDS REGION

JUL 24  PRI  eP     01 05 42.2
        SAO         01 05                  e 05 42
        BKS  eP     01 05 42.8  15 28          Lq 25 00      Lr 28 36
                              MICRON    PERIOD
                         PZ     0.04       1.1
                         LZ     6         20
                         LN     4.4       20
                         LE     4.5       20
        MHC  eP     01 05 43.1
        FRI  eP     01 05 48.0
        JAS  eP     01 05 48.6
        WDC  eP     01 05 50.7
        MNV  eP     01 05 58.8
             Ms=5.9, Distance=76°
             USGS 00 53 57.9, 20.5S, 174.2W, h= 33 km, mb=5.7, Ms=5.9
                  TONGA ISLANDS

JUL 24  BKS         09 32                  e 34 50
        PRI  eP     09 32 56.4                pP 34 52
        FRI         09 32                     pP 34 57
        JAS  eP     09 33 01.7                pP 34 58
        WDC  eP     09 33 02.7                pP 34 57
             USGS 09 21 58.0, 17.5S, 178.9W, h=533 km, mb=5.2
                  FIJI ISLANDS REGION

JUL 24  WDC  ePKP   19 50 24.0
        MIN  ePKP   19 50 25.2
        BKS  ePKP   19 50 26.5                 e 51 10      SS 09 40     SSS 13 54
                                               e 17 54      e 20 52      Lq 23 34
                                               Lr 29 00
                              MICRON    PERIOD
                         LZ    30         22
                         LN    23         24
                         LE     8         22
        MHC  ePKP   19 50 28.1
        JAS  ePKP   19 50 29.1                 e 03 12
        PRI  ePKP   19 50 30.9
        FRI  ePKP   19 50 30.9
        MNV  ePKP   19 50 32.5
             Ms=6.9, Distance=126°
             USGS 19 31 19.8, 11.1S, 107.7E, h= 31 km, mb=6.3, Ms=6.9
                  SOUTH OF JAVA

JUL 24  SAO  ePe    20 04 09.7
        BKS  eP     20 04 10.0
        MHC  eP     20 04 10.9
        FHC  eP     20 04 11.2
        PRI  ePe    20 04 11.8
        WDC  iPe    20 04 15.0
        JAS  iPe    20 04 15.8
        FRI  ePe    20 04 16.2
        MIN  ePe    20 04 17.0
        MNV  ePe    20 04 24.5
             USGS 19 51 55.9, 19.1S, 169.2E, h=239 km, mb=5.2
                  NEW HEBRIDES ISLANDS

JUL 24  MNV  eP     22 13 24.3
        PRI  eP     22 13 27.0
        FRI         22 13                  e 13 30
        JAS  eP     22 13 33.0
        MHC  e(P)   22 13 37
        BKS  eP     22 13 42.5  20 46          Lq 26 00      Lr 28 42
        MIN         22 13                  e 13 55
        WDC         22 13                  e 13 53
             USGS 22 05 08.8,  6.8N,  82.6W, h= 33 km, mb=4.9, Ms=5.4
                  SOUTH OF PANAMA

JUL 25  PRI  eP     09 34 15.7
        MHC  eP     09 34 15.8
        JAS  ePd    09 34 21.1
        WDC  ePd    09 34 22.6
        MIN  eP     09 34 24.7
        MNV  ePd    09 34 30.8
             USGS 09 23 11.5, 18.7S, 178.0W, h=479 km, mb=4.9
                  FIJI ISLANDS REGION

JUL 25  PRI  ePe    18 07 12.1
        SAO  eP     18 07 13.6
        MHC  ePe    18 07 18.0
        FRI  ePe    18 07 18.5
        BKS  eP     18 07 20.0
                              MICRON    PERIOD
                         PZ     0.27       1.2
        JAS  iPe    18 07 23.5
        FHC  eP     18 07 35.8
        MIN  eP     18 07 35.8
        WDC  iPe    18 07 36.0
             USGS 17 56 58.3, 21.9S, 139.0W, h=  0 km, mb=6.0, Ms=4.4
                  TUAMOTU ARCHIPELAGO REGION

JUL 27  WDC  eP     04 36 51.6
        MIN         04 37                  e 37 03
        JAS  eP     04 37 16.0
             USGS 04 28 50.3, 63.1N, 172.6E, h= 33 km, mb=4.6
                  EASTERN SIBERIA
```

International Seismological Centre

```
JUL 27  WDC  iPe    05 03 06.0
        MIN  ePe    05 03 10.7
        BRK         05 03                    e 03 20
        MHC  eP     05 03 25.7
        JAS  iPe    05 03 28.0
        FRI  eP     05 03 34.9
        MNV  iP     05 03 35.6
        PRI         05 03                    e 03 36
                    USGS 04 54 01.2, 53.2N, 159.6E, h= 76 km, mb=5.0
                         NEAR EAST COAST OF KAMCHATKA

JUL 27  MNV  eP     18 47 34
        BKS         18 47                    e 53 38     Lq 57 42     Lr 01 30
        JAS         18 47                    e 47 43
                    USGS 18 40 59.4, 14.1N,  92.1W, h= 78 km, mb=4.6
                         NEAR COAST OF CHIAPAS, MEXICO

JUL 27  FRI  iPe    23 23 24.7  23 36
        MNV  iPe    23 23 26.9
        JAS  iPe    23 23 31.0  23 47
        PRI  ePd    23 23 44.9
        MHC  iPd    23 23 47.2
        BKS  eP     23 23 52.7
                    BRK  23 23 06.7, 37.6N, 118.9W, h= 18 km, ML=3.2
                         MAMMOTH LAKES, CALIFORNIA

JUL 28  BKS  eP     05 07 08.5               e 34 24
                              MICRON    PERIOD
                         PZ     0.05       1.0
        PRI  ePe    05 07 09.5
        MHC  ePe    05 07 09.5
        FRI  ePe    05 07 14.6
        JAS  iPe    05 07 14.9
        WDC  iPe    05 07 15.8
        MIN  ePe    05 07 17.9
        MNV  iPe    05 07 24.5
                    USGS 04 56 15.7, 18.1S, 178.4W, h=592 km, mb=5.0
                         FIJI ISLANDS REGION

JUL 28  MHC  iPd    05 05 13.2
        BRK  eP     05 05 27.0
        JAS  eP     05 05 33.3  05 49
                    BRK  05 05 11.9, 37.3N, 121.7W, h=  4 km, ML=2.7
                         EAST OF SAN JOSE, CALIFORNIA

JUL 28  FHC  eP     15 33 17.0
        WDC  iPe    15 33 22.7
        MIN  ePe    15 33 26.7
        BKS  eP     15 33 35.9               e 53 28
                              MICRON    PERIOD
                         PZ     0.24       1.6
        MHC  ePe    15 33 40.5
        JAS  iPe    15 33 42.2
        MNV  iPe    15 33 48.3
        FRI  ePe    15 33 48.8
        PRI  ePe    15 33 50.2
                    USGS 15 22 54.9, 50.0N, 142.6E, h= 25 km, mb=5.5, Ms=5.2
                         SAKHALIN ISLAND

JUL 28  FRI  iPe    20 09 37.7  09 49
        MNV  iPe    20 09 39.6
        JAS  iPe    20 09 43.9  10 00
        PRI  ePd    20 09 57.7
        SAO  iPd    20 09 59.6
        MHC  eP     20 09 59.9
                    BRK  20 09 21.4, 37.6N, 118.9W, h= 11 km, ML=3.1
                         MAMMOTH LAKES, CALIFORNIA

JUL 28  PRI         20 12                    e 12 10
        MNV  eP     20 12 17.8
        JAS  iPe    20 12 21.3               e 15 06
        MHC         20 12                    e 12 22
        BKS  e(P)   20 12 28    18 00        Lq 20 14     e 20 26     e 22 52
                              MICRON    PERIOD
                         LZ     4.1        20
                         LN     8          20
                         LE     7          20
        MIN  eP     20 12 43.0
        WDC  iPe    20 12 49.1
                    USGS 20 05 41.9,  8.5N, 103.2W, h= 10 km, mb=5.2, Ms=4.9
                         OFF COAST OF MEXICO

JUL 29  MNV  iPe    07 54 54.5
        PRI  eP     07 54 55.5
        JAS  ePe    07 55 03.0               PcP 57 42
        MHC  eP     07 55 07.1
        BKS         07 55                    e 08 05     e 08 32
        MIN  eP     07 55 21.5
        WDC  ePe    07 55 25.2               PcP 57 48
                    USGS 07 48 22.5, 14.6N,  92.8W, h= 33 km, mb=4.8, Ms=4.4
                         NEAR COAST OF CHIAPAS, MEXICO

JUL 29  WDC  ePe    09 59 33.3
        MIN  eP     09 59 38.7
        BKS  eP     09 59 48.2
        MHC  eP     09 59 54.0
        JAS  ePe    09 59 57.5
        FRI  eP     10 00 05.3
        PRI  eP     10 00 05.5
        MNV  ePe    10 00 06.4               PcP 02 08
                    USGS 09 52 31.4, 52.0N, 173.5W, h= 44 km, mb=4.8
                         ANDREANOF ISLANDS, ALEUTIAN ISLANDS

JUL 29  SAO  eP     16 43 00.2
        MHC  ePe    16 43 01.9               pP 44 59
        BKS  e(P)   16 43 02
                              MICRON    PERIOD
                         PZ     0.14       1.4
        PRI  ePe    16 43 02.0
        FRI  ePe    16 43 07.2               pP 45 04
        JAS  iPe    16 43 07.8               pP 45 05
        WDC  iPe    16 43 08.8
        MIN  ePe    16 43 10.3
        MNV  iPe    16 43 17.3               pP 45 15
                    USGS 16 32 06.2, 17.7S, 178.5W, h=547 km, mb=5.4
                         FIJI ISLANDS REGION

JUL 30  PRI  eP     00 57 31.0
        JAS  eP     00 57 39.6
        MHC  eP     00 57 40.2
        BKS         00 57                    e 07 16     e 08 00     e 12 00
                                             e 17 45     Lr 20 48
        MNV  eP     00 57 42.0
        MIN  eP     00 57 52
        WDC  eP     00 57 55.5
                    SOUTHERN PACIFIC OCEAN REGION

JUL 30  WDC  eP     05 19 05.6
        MIN  eP     05 19 11.0
        MHC  eP     05 19 25.0
        JAS  eP     05 19 29.0
        FRI  eP     05 19 36.8
        MNV  eP     05 19 38.2
        PRI  eP     05 19 38.5
                    USGS 05 11 49.4, 50.5N, 175.8W, h= 33 km, mb=4.9
                         ANDREANOF ISLANDS, ALEUTIAN ISLANDS

JUL 30  MNV  eP     13 31 19.3
        FRI         13 31                    e 31 30
        JAS  eP     13 31 32.5
        MIN  eP     13 31 32.8
        WDC  eP     13 31 34.9
        MHC         13 31                    e 31 40
                    USGS 13 20 54.5, 28.0N,  42.9W, h= 10 km, mb=4.7
                         NORTH ATLANTIC RIDGE

JUL 31  WDC  eP     07 50 22.2
        MIN  eP     07 50 25.9
        BKS         07 50                    e 50 32
        JAS  iPd    07 50 37.9
        PRI         07 50                    e 50 43
        FRI         07 50                    e 50 44
                    USGS 07 39 10.6, 35.2N, 137.2E, h=286 km, mb=4.8
                         HONSHU, JAPAN

AUG 01  FHC  iP     10 51 06.5  51 38
        WDC  iPe    10 51 22.3
        MIN  ePe    10 51 32.4
        BKS  iPd    10 51 41.4  52 35
        MHC  ePd    10 51 51.0
        SAO  ePd    10 51 57.0
        JAS  iPe    10 51 58.3
        PRI  ePd    10 52 10.2
        FRI  ePd    10 52 12.6
                    BRK  10 50 24.1, 41.1N, 127.4W, h=  5 km, ML=4.7
                         OFF COAST WEST OF EUREKA, CALIFORNIA

AUG 01  PRI  eP     14 06 27.5
        FRI  eP     14 06 30.7
        MHC  eP     14 06 35.7
        JAS  eP     14 06 38.5
        MNV  ePe    14 06 40.6
        WDC  eP     14 06 56.0
                    USGS 13 55 56.3, 26.9S, 112.9W, h= 10 km, mb=5.0
                         EASTER ISLAND REGION

AUG 01  PRI         16 51                    e 51 09
        JAS  eP     16 51 16.0
                    USGS 16 40 54.5, 11.1S,  78.0W, h= 73 km, mb=5.2
                         OFF COAST OF PERU

AUG 02  PRI  eP     07 52 26.3
        MNV  eP     07 52 27.7
        JAS         07 52                    e 52 32
        MHC  eP     07 52 34.0
        WDC  eP     07 52 45.6
                    USGS 07 40 23.8, 27.9S,  71.2W, h= 37 km, mb=5.4, Ms=5.1
                         NEAR COAST OF NORTHERN CHILE

AUG 02  FHC  iPe    12 18 58.0  19 06
        WDC  iPe    12 19 08.1  19 27
        MIN  eP     12 19 17.5
                    BRK  12 18 45.5, 40.2N, 124.3W, h= 24 km, ML=3.3
                         NEAR COAST SOUTH-SOUTHWEST OF EUREKA, CALIFORNIA

AUG 02  SAO  iPd    14 16 58.8
        MHC  iPd    14 17 07.9  17 16
        PRI  eP     14 17 15.0
        BKS  eP     14 17 19.7  17 37
        JAS  iPd    14 17 22.6  17 42
        FRI  iPd    14 17 23.2
                    BRK  14 16 56.6, 36.8N, 121.5W, h=  5 km, ML=2.9
                         SOUTHWEST OF HOLLISTER, CALIFORNIA

AUG 02  SAO  iPd    20 41 37.5
        MHC  iPd    20 41 47.1               i 41 59
        PRI  iPd    20 41 54.0               i 41 54     i 42 11
        BKS  e(P)   20 42 00    42 16
        JAS  iPe    20 42 00.9  42 20        i 42 02
        FRI  iPe    20 42 01.2
                    BRK  20 41 35.7, 36.8N, 121.5W, h=  5 km, ML=3.1
                         SOUTHWEST OF HOLLISTER, CALIFORNIA

AUG 02  SAO  iP     20 52 09.2
        MHC  iPd    20 52 19.1  52 28
        PRI  eP     20 52 25.5               i 52 45
        BKS  e(P)   20 52 31    52 48
        JAS  eP     20 52 32.7  52 52        i 52 40
        FRI  ePe    20 52 32.9
                    BRK  20 52 07.5, 36.8N, 121.5W, h=  5 km, ML=3.0
                         SOUTHWEST OF HOLLISTER, CALIFORNIA

AUG 02  SAO  iPd    21 43 18.3
        MHC  iPd    21 43 27.9
        PRI  iPd    21 43 34.8
        BKS  ePd    21 43 36.4  43 51
        JAS  iPd    21 43 41.5
        FRI  iPe    21 43 42.0
        WDC  eP     21 44 15
                    BRK  21 43 16.4, 36.8N, 121.5W, h=  5 km, ML=3.9
                         SOUTHWEST OF HOLLISTER, CALIFORNIA

AUG 03  SAO  iPd    02 42 55.6
        MHC  ePd    02 43 05.7  43 14
        PRI  eP     02 43 11.9
        BKS  e(P)   02 43 14
        JAS  eP     02 43 19
        FRI  eP     02 43 19.4  43 38
                    BRK  02 42 54.1, 36.8N, 121.5W, h=  6 km, ML=2.8
                         SOUTHWEST OF HOLLISTER, CALIFORNIA

AUG 03  FRI  iPe    04 30 59.4  31 11
        JAS  iPe    04 31 05.5  31 22
        PRI  eP     04 31 18.8               i 31 47
        SAO  ePe    04 31 21.0               e 31 52
        MHC  eP     04 31 21.2               e 31 51
        BKS  e(P)   04 31 27
                    BRK  04 30 43.4, 37.6N, 118.9W, h= 17 km, ML=3.1
                         MAMMOTH LAKES, CALIFORNIA

AUG 03  FRI  iPe    04 34 10.1  34 22        e 34 17
        JAS  iPe    04 34 16.2  34 32
        PRI  eP     04 34 29.6               i 34 57
        SAO  ePe    04 34 31.8               e 35 01
        MHC  ePe    04 34 31.9
        BRK  eP     04 34 37.8
                    BRK  04 33 54.0, 37.6N, 118.9W, h= 20 km, ML=3.3
                         MAMMOTH LAKES, CALIFORNIA

AUG 03  MNV  iPe    15 08 06.7
        FRI  iPe    15 08 18.1
        JAS  iPe    15 08 27.2
        PRI  ePe    15 08 30.8
        SAO  eP     15 08 38.2
        MHC  e(P)   15 08 40
        BKS         15 08                    e 08 46     e 09 04
        MIN  e(P)   15 08 54
        WDC  e(P)   15 09 02
                    ML=4.8, NUCLEAR EXPLOSION, NEVADA TEST SITE
                    USGS 15 07 30.2, 37.1N, 116.1W, h=  0 km, mb=4.5
                         SOUTHERN NEVADA

AUG 03  FRI  eP     17 15 59.2
        MNV  eP     17 15 59.5
        PRI  eP     17 16 02.3
        JAS  eP     17 16 08.3
        MHC  eP     17 16 12.8
        BKS         17 16                    e 16 18
        MIN  eP     17 16 23.4
        WDC  eP     17 16 27.7
        FHC  eP     17 16 37.3
                    USGS 17 07 52.3,  8.3N,  83.0W, h= 33 km, mb=5.2
                         COSTA RICA
```

International Seismological Centre

```
AUG 04  FHC  iPe    04 09 49.1
        WDC  iPe    04 09 50.2
        MIN  iPe    04 09 52.2
        BKS  ePe    04 10 03.8
                              MICRON     PERIOD
                         PZ     0.13        0.9
        JAS  iPe    04 10 04.9
        MNV  iPe    04 10 05.0
        MHC  ePe    04 10 06.7
        SAO  eP     04 10 09.2
        FRI  ePe    04 10 09.3
        PRI  ePe    04 10 13.5
                    USGS 03 56 57.2, 49.9N,  79.0E, h=  0 km, mb=6.1, Ms=4.5
                         UNDERGROUND NUCLEAR EXPLOSION
                         EASTERN KAZAKH, S.S.R.

AUG 04  FHC  iPd    14 48 14.8  48 25
        WDC  iPe    14 48 28.4
        MIN  iPe    14 48 38.2
        BKS  eP     14 48 49.2  49 24
        MHC  eP     14 48 59.0
        JAS  iPd    14 49 04.3
        SAO  eP     14 49 05.5
                    BRK  14 48 01.5, 40.3N, 124.7W, h= 24 km, ML=3.8
                         OFF COAST SOUTHWEST OF EUREKA, CALIFORNIA

AUG 05  SAO  eP     01 05 34.4
        BKS  eP     01 05 34.8  15 23      pP 06 26      sP 06 49      PP 08 34
                                            e 15 46       e 16 11      sS 16 46
                                           Lq 26 16
                              MICRON     PERIOD
                         PZ     0.84        1.0
        MHC  eP     01 05 35.4            pP 06 30
        PRI  iPd    01 05 35.5            pP 06 30
        FRI  eP     01 05 40.0
        JAS  eP     01 05 40.4            pP 06 39 PKPPKP 32 23
        FHC  eP     01 05 40.7
        WDC  eP     01 05 42.5            pP 06 40 PKPPKP 32 24
        MIN  eP     01 05 44.8            pP 06 39
        MNV         01 05                PKPPKP 32 23
                    mb=6.4, h=210 km, Distance=81°
                    USGS 00 53 45.9, 22.7S, 177.5W, h=181 km, mb=6.4
                         SOUTH OF FIJI ISLANDS

AUG 05  BKS         19 27                      e 27 33
        SAO  eP     19 27 32.6
        MHC  eP     19 27 33.9
        FHC  eP     19 27 34.0
        PRI  eP     19 27 37.2
        WDC  iPe    19 27 37.9
        JAS  iPe    19 27 38.9
        FRI  eP     19 27 39.3
        MIN  eP     19 27 48.0
        MNV  eP     19 27 49.5
                    USGS 19 15 16.9, 19.0S, 169.2E, h=220 km, mb=4.9
                         NEW HEBRIDES ISLANDS

AUG 06  MHC  iPe    13 50 50.2
        BKS  eP     13 51 00.5  51 10      e 51 03
        SAO  iP     13 51 01.1
        JAS  iPd    13 51 09.2  51 25
        FRI  eP     13 51 17.1  51 38
                    BRK  13 50 48.1, 37.4N, 121.7W, h=  7 km, ML=2.5
                         NORTHEAST OF SAN JOSE, CALIFORNIA

AUG 06  MHC  iPd    17 05 28.1
        SAO  iPd    17 05 29.8
        BKS  iPd    17 05 40.5  05 54
        PRI  iPe    17 05 44.0
        JAS  iPd    17 05 44.1
        FRI  iPe    17 05 47.7
        MIN  ePd    17 06 13
        WDC  ePd    17 06 15
        FHC  ePd    17 06 26
                    BRK  17 05 22.7, 37.1N, 121.5W, h=  6 km, ML=5.8
                         COYOTE LAKE, CALIFORNIA

AUG 06  MHC  iP     17 10 49.5
        SAO  iP     17 10 50.1
        BKS  eP     17 11 02    11 16
                    BRK  17 10 43.3, 37.1N, 121.5W, h=  6 km, ML=3.7
                         COYOTE LAKE, CALIFORNIA

AUG 06  SAO  iPd    17 22 53.4
        MHC  iPd    17 22 54.2
        BKS  eP     17 23 06.3  23 21
        PRI  ePe    17 23 08.5
        JAS  iPd    17 23 09.5
        FRI  ePe    17 23 11.6
                    BRK  17 22 47.6, 37.0N, 121.5W, h=  7 km, ML=3.3
                         COYOTE LAKE, CALIFORNIA

AUG 06  SAO  iPd    18 17 51.2
        MHC  ePd    18 17 52.3
        BKS  e(P)   18 18 03    18 20
        PRI  eP     18 18 06.4
        JAS  ePe    18 18 07.6
                    BRK  18 17 45.5, 37.0N, 121.5W, h=  6 km, ML=2.5
                         COYOTE LAKE, CALIFORNIA

AUG 06  SAO  iPd    22 21 07.4
        MHC  iPd    22 21 08.6
        BKS  iPe    22 21 20.8  21 36
        PRI  ePe    22 21 22.0
        JAS  iPd    22 21 23.7
        FRI  iPe    22 21 26.0
                    BRK  22 21 01.7, 37.0N, 121.5W, h=  6 km, ML=3.5
                         COYOTE LAKE, CALIFORNIA

AUG 06  SAO  iPd    22 34 00.6
        MHC  iPe    22 34 03.0
        BKS  iPe    22 34 15.0  34 30
        PRI  iPd    22 34 15.6
        JAS  iPd    22 34 17.8
        FRI  iPe    22 34 19.9
                    BRK  22 33 55.4, 37.0N, 121.5W, h=  4 km, ML=4.3
                         COYOTE LAKE, CALIFORNIA

AUG 06  SAO  eP     22 36 02.5
        MHC  eP     22 36 05.0
        BKS  e(P)   22 36 18
                    BRK  22 35 57.6, 37.0N, 121.5W, h=  5 km, ML=2.9
                         COYOTE LAKE, CALIFORNIA

AUG 06  SAO  iP     22 36 10.1
        MHC  iPd    22 36 12.8
        BKS  eP     22 36 25.0  36 40
                    BRK  22 36 04.9, 37.0N, 121.5W, h=  1 km, ML=3.6
                         COYOTE LAKE, CALIFORNIA

AUG 06  SAO  iPe    23 36 06.2
        MHC  iPe    23 36 07.4
        BKS  iPe    23 36 19.4  36 36
        PRI  ePe    23 36 22.1
        JAS  ePe    23 36 22.5
                    BRK  23 36 00.6, 37.0N, 121.5W, h=  3 km, ML=2.7
                         COYOTE LAKE, CALIFORNIA

AUG 07  SAO  iPe    02 32 36.4
        MHC  iPe    02 32 39.6
        BKS  eP     02 32 51.4  33 07
        PRI  eP     02 32 51.8
        JAS  iPd    02 32 54.2
        FRI  ePe    02 32 56.2
                    BRK  02 32 31.6, 37.0N, 121.5W, h=  5 km, ML=3.0
                         COYOTE LAKE, CALIFORNIA

AUG 07  SAO  iPd    05 56 57.9
        MHC  iPd    05 56 58.0
        BKS  ePe    05 57 10.5  57 25
        PRI  eP     05 57 13.1
        JAS  iPd    05 57 13.5
        FRI  ePe    05 57 16.0
                    BRK  05 56 51.6, 37.1N, 121.5W, h=  4 km, ML=2.9
                         COYOTE LAKE, CALIFORNIA

AUG 07  FRI  ePKP   13 53 02.3
        MNV  ePKP   13 53 03.0
        PRI  ePKP   13 53 03.3
        JAS  ePKP   13 53 05.8
        MHC  ePKP   13 53 07.2
        BKS  ePKP   13 53 09.2                e 53 13
        WDC  ePKP   13 53 12.2
                    USGS 13 33 18.8, 52.6S,  18.5E, h= 10 km, mb=5.3
                         SOUTHWEST OF AFRICA

AUG 07  WDC  eP     17 12 08.5
        MIN  eP     17 12 12.8
        JAS  eP     17 12 31.5
        FRI  eP     17 12 39.5
                    USGS 17 03 25.8, 54.8N, 165.1E, h= 33 km, mb=4.7
                         KOMANDORSKY ISLANDS REGION

AUG 07  SAO  iPd    18 51 51.6
        MHC  ePe    18 51 54.4
        BKS  eP     18 52 06.8  52 22
        JAS  eP     18 52 09
                    BRK  18 51 46.5, 37.0N, 121.5W, h=  1 km, ML=2.5
                         COYOTE LAKE, CALIFORNIA

AUG 07  SAO  iPd    19 01 46.0
        MHC  ePe    19 01 49.4
        BKS  eP     19 02 01.6  02 16
        PRI  ePd    19 02 01.8
        JAS  ePd    19 02 04.2
        FRI  ePd    19 02 06.2
                    BRK  19 01 41.3, 37.0N, 121.5W, h=  2 km, ML=2.5
                         COYOTE LAKE, CALIFORNIA

AUG 07  SAO  iPd    19 11 30.6
        MHC  iPe    19 11 33.6
        BKS  eP     19 11 45.5  12 00
        PRI  ePe    19 11 46.1
        JAS  eP     19 11 48.2
        FRI  ePe    19 11 50.3
                    BRK  19 11 25.7, 37.0N, 121.5W, h=  2 km, ML=3.1
                         COYOTE LAKE, CALIFORNIA

AUG 08  SAO  iPd    03 52 19.5
        MHC  iPd    03 52 22.2
        BKS  eP     03 52 34.6  52 51
        PRI  ePe    03 52 34.9
        JAS  ePd    03 52 36.8
                    BRK  03 52 14.4, 37.0N, 121.5W, h=  2 km, ML=2.6
                         COYOTE LAKE, CALIFORNIA

AUG 08  WDC  ePe    09 19 27.1
        MIN  eP     09 19 30.6
        BRK  eP     09 19 32
        MHC  ePe    09 19 35.5
        JAS  ePe    09 19 39.1
        FRI  ePe    09 19 43.3
                    USGS 09 07 46.2, 18.1N, 145.5E, h=273 km, mb=4.6
                         MARIANA ISLANDS

AUG 08  FHC  iPe    10 25 10.8
        WDC  iPe    10 25 23.6
        MIN  iPe    10 25 33.3
        BKS  eP     10 25 43.8  26 18
        MHC  ePe    10 25 54.0
        JAS  eP     10 25 58.2
        SAO  ePe    10 26 00.3
                    BRK  10 24 58.4, 40.3N, 124.6W, h= 24 km, ML=4.2
                         OFF COAST SOUTHWEST OF EUREKA, CALIFORNIA

AUG 08  FRI  iPe    15 00 48.9
        JAS  iPe    15 00 57.9
        PRI  ePe    15 01 01.0
        SAO  eP     15 01 08.5
        MHC  eP     15 01 10.5
        BKS         15 01                     e 01 19
        MIN  eP     15 01 24.5
        WDC  e(P)   15 01 31
                    ML=4.8, NUCLEAR EXPLOSION, NEVADA TEST SITE
                    USGS 15 00 00.1, 37.0N, 116.0W, h=  0 km, mb=4.8
                         SOUTHERN NEVADA

AUG 08  BRK         17 28                     e 28 18
        MHC         17 28                     e 28 18
        PRI         17 28                     e 28 19
        FHC  eP     17 28 23
        JAS  eP     17 28 24.2
        WDC  eP     17 28 26.0
        MIN  eP     17 28 28
                    USGS 17 17 12.4, 21.0S, 178.6W, h=583 km, mb=4.9
                         FIJI ISLANDS REGION

AUG 08  PRI  eP     21 44 49.0
        MHC  eP     21 44 49.3
        BKS  eP     21 44 49.9
                              MICRON     PERIOD
                         PZ     0.05        0.8
        FHC  eP     21 44 53
        FRI  eP     21 44 54.2
        JAS  eP     21 44 54.8            pP 46 19
        WDC  eP     21 44 56.3            pP 46 20
                    USGS 21 33 32.5, 19.7S, 177.6W, h=368 km, mb=5.2
                         FIJI ISLANDS REGION

AUG 08  SAO  iPd    22 56 13.8
        MHC  iPd    22 56 14.9
        BKS  ePe    22 56 27.2  56 44
        PRI  eP     22 56 28.6
        JAS  iPd    22 56 30.0
        FRI  iPe    22 56 32.4
                    BRK  22 56 07.9, 37.0N, 121.5W, h=  4 km, ML=3.2
                         COYOTE LAKE, CALIFORNIA

AUG 09  SAO  iPd    05 28 53.4
        MHC  iPe    05 28 56.6
        PRI  ePe    05 29 08.2
        BKS  eP     05 29 08.5  29 25
        JAS  iPd    05 29 11.4
        FRI  ePe    05 29 13
                    BRK  05 28 48.6, 37.0N, 121.5W, h=  6 km, ML=2.7
                         COYOTE LAKE, CALIFORNIA

AUG 09  SAO  iPd    07 03 25.7
        MHC  iPd    07 03 27.5
        BKS  eP     07 03 39.6  03 56
        PRI  iPe    07 03 40.4
        JAS  iPd    07 03 42.3
        FRI  iPe    07 03 44.5
        MIN  eP     07 04 12.5
        WDC  eP     07 04 14.9
                    BRK  07 03 20.2, 37.0N, 121.4W, h=  5 km, ML=4.2
                         COYOTE LAKE, CALIFORNIA

AUG 09  SAO  iPd    12 49 32.2
        MHC  iPe    12 49 35.7
        BKS  ePe    12 49 47.6  50 03
        PRI  ePd    12 49 47.8
        JAS  iPd    12 49 50.4
        FRI  iPe    12 49 51.2
                    BRK  12 49 27.5, 37.0N, 121.5W, h=  3 km, ML=3.5
                         COYOTE LAKE, CALIFORNIA
```

International Seismological Centre

```
AUG 09  SAO  iPd   12 51 46.2
        MHC  iPe   12 51 49.7
        BKS  eP    12 52 01.5  52 18
        PRI  eP    12 52 02.1
        JAS  iPd   12 52 04.5
        FRI  eP    12 52 06.3
                   BRK  12 51 41.7, 37.0N, 121.5W, h=  5 km, ML=2.8
                        COYOTE LAKE, CALIFORNIA

AUG 09  BKS  eP    14 57 01.1
                        MICRON    PERIOD
                   PZ     0.04       1.0
        MHC  eP    14 57 01.9
        WDC  eP    14 57 05.9              i 57 19
        JAS  eP    14 57 06.8              i 57 20
        FRI  eP    14 57 07.0
        MIN  eP    14 57 07.1
                   USGS 14 44 18.2, 19.9S, 168.2E, h= 42 km, mb=5.1, Ms=4.4
                        NEW HEBRIDES ISLANDS

AUG 10  SAO  iPd   00 25 26.3
        MHC  iPd   00 25 28.0
        BKS  iPe   00 25 40.0  25 57
        PRI  ePe   00 25 41.1
        JAS  ePd   00 25 42.9
        FRI  ePe   00 25 45.1
                   BRK  00 25 20.7, 37.0N, 121.5W, h=  5 km, ML=3.6
                        COYOTE LAKE, CALIFORNIA

AUG 10  FRI        01 40                   e 40 06
        PRI  eP    01 40 08.0
        SAO        01 40                   e 40 12
        JAS  iPd   01 40 13.1
        MHC  eP    01 40 15.7
        BKS  eP    01 40 18.5
                        MICRON    PERIOD
                   PZ     0.06       0.9
        WDC  iPd   01 40 27.3
        FHC  eP    01 40 34.5
                   USGS 01 28 42.0, 21.4S,  66.6W, h=257 km, mb=5.1
                        SOUTHERN BOLIVIA

AUG 10  SAO  iPd   04 50 44.3
        MHC  iPe   04 50 47.8
        BKS  eP    04 50 59.9  51 17
        PRI  iPe   04 51 00.1
        JAS  iPd   04 51 02.7
        FRI  iPd   04 51 04.7
                   BRK  04 50 40.0, 37.0N, 121.5W, h=  5 km, ML=3.0
                        COYOTE LAKE, CALIFORNIA

AUG 10  SAO  iPd   05 10 47.7
        MHC  iPe   05 10 50.4  10 57
        PRI  eP    05 11 02.7  11 21
        BKS  ePd   05 11 03.0  11 20
        JAS  iPd   05 11 05.6  11 22
        FRI  eP    05 11 07.1
                   BRK  05 10 42.9, 37.0N, 121.4W, h=  5 km, ML=2.7
                        COYOTE LAKE, CALIFORNIA

AUG 10  SAO  iPd   12 37 04.5
        MHC  iPe   12 37 08.1  37 14
        BKS  ePd   12 37 20.3  37 38
        PRI  eP    12 37 20.5
        JAS  iPd   12 37 22.9
        FRI  iPd   12 37 24.9
                   BRK  12 37 00.3, 37.0N, 121.5W, h=  5 km, ML=2.5
                        COYOTE LAKE, CALIFORNIA

AUG 10  PRI  ePKP  15 02 31.5
        FRI  ePKP  15 02 32.2              e 02 31
        MHC  ePKP  15 02 35.2
        JAS  ePKP  15 02 35.4              e 02 31
        BRK  ePKP  15 02 36.5              e 02 35
        MIN  ePKP  15 02 40.6
        WDC  ePKP  15 02 42.1              e 02 35
                   USGS 14 42 46.8, 52.8S,  18.5E, h= 10 km, mb=5.8, Ms=5.6
                        SOUTHWEST OF AFRICA

AUG 10  SAO  iPd   19 22 31.6
        MHC  iPe   19 22 35.1  22 41
        BRK  eP    19 22 47.3
        PRI  eP    19 22 47.3
        JAS  iPe   19 22 50.1
        FRI  ePd   19 22 52
                   BRK  19 22 26.8, 37.0N, 121.5W, h=  1 km, ML=2.6
                        COYOTE LAKE, CALIFORNIA

AUG 11  SAO  iPe   09 40 24.2
        MHC  iPe   09 40 27.2
        BRK  eP    09 40 39.5  40 54
        PRI  eP    09 40 39.5
        JAS  iPd   09 40 41.8
        FRI  ePd   09 40 43.7
                   BRK  09 40 19.3, 37.0N, 121.5W, h=  1 km, ML=2.8
                        COYOTE LAKE, CALIFORNIA

AUG 11  SAO  eP    15 29 33.4
        PRI  ePd   15 29 34.6
        BKS  ePe   15 29 35.0
                        MICRON    PERIOD
                   PZ     0.23       1.0
        MHC  eP    15 29 35.0
        FHC  eP    15 29 38.7
        FRI  eP    15 29 39.8
        JAS  iPd   15 29 40.6
        WDC  iPd   15 29 42.2
        MIN  ePd   15 29 43.7
                   USGS 15 18 26.7, 20.6S, 178.4W, h=535 km, mb=5.3
                        FIJI ISLANDS REGION

AUG 11  SAO  iPd   16 42 37.2
        MHC  iPe   16 42 40.4
        PRI  eP    16 42 52.7
        BKS  eP    16 42 52.8              e 43 08
        JAS  iPd   16 42 55.3
        FRI  ePd   16 42 57.3
                   BRK  16 42 32.7, 37.0N, 121.5W, h=  5 km, ML=2.6
                        COYOTE LAKE, CALIFORNIA

AUG 11  FRI  eP    17 15 47.0
        JAS  eP    17 15 48.0
        WDC  eP    17 15 50.5
        MIN  eP    17 15 52.2
                   USGS 17 04 21.2, 16.4S, 172.3W, h= 33 km, mb=4.8
                        SAMOA ISLANDS REGION

AUG 11  MHC  iPd   20 29 40.0
        SAO  iPd   20 29 43.1
        BKS  iPe   20 29 52.5  30 06
        JAS  iPd   20 29 56.5
        PRI  e(P)  20 29 58
        FRI  iPe   20 30 00.5
                   BRK  20 29 35.2, 37.1N, 121.5W, h=  5 km, ML=3.2
                        COYOTE LAKE, CALIFORNIA

AUG 12  FHC  eP    07 24 43.3
        WDC  iPe   07 24 47.0
        MIN  eP    07 24 51.0
        BKS  eP    07 24 56.6  34 32      Lq 43 00     Lr 46 30
                        MICRON    PERIOD
                   PZ     0.06       1.0
                   LZ     1.2        20
                   LN     0.5        20
                   LE     1.1        20
        MHC  eP    07 25 00.5
        SAO  e(P)  07 25 02
        JAS  iPe   07 25 03.2
        PRI  eP    07 25 08.5
        FRI  eP    07 25 08.7
                   USGS 07 13 20.0, 34.5N, 140.2E, h= 61 km, mb=5.8
                        NEAR EAST COAST OF HONSHU, JAPAN

AUG 12  FHC  eP    18 10 40.0
        WDC  eP    18 10 43.9
        MIN  eP    18 10 47.0
        JAS  eP    18 11 04.0
                   USGS 17 59 57.4, 61.9N, 122.2E, h=  0 km, mb=4.9
                        CENTRAL SIBERIA

AUG 13  FHC        03 16                                pP 16 52
        WDC  eP    03 16 35                             pP 16 56     PP 20 02
        BKS  e(P)  03 16 28    26 34                     e 16 35      e 20 27     PPP 21 49
                                                         PS 27 48     e 28 47     Lq 39 00
                                                         Lr 43 20
        MHC        03 16                                pP 16 58
        MIN        03 16                                pP 17 00
        PRI        03 16                                pP 17 01
        JAS  eP    03 16 39                             pP 17 02     PP 20 10
        FRI        03 16                                pP 17 04
                   USGS 03 03 47.9,  4.9S, 153.5E, h= 88 km, mb=5.8
                        NEW IRELAND REGION

AUG 13  FHC        03 31                                e 31 28
        WDC  eP    03 31 27.5
        FRI  eP    03 31 29
        JAS  eP    03 31 29.5
                   USGS 03 18 44.7, 17.9S, 167.8E, h= 33 km
                        NEW HEBRIDES ISLANDS

AUG 13  WDC  ePe   11 03 03.0
        MIN  ePe   11 03 08.3
        JAS  ePe   11 03 34.7
                   USGS 10 58 28.1, 58.1N, 137.5W, h= 15 km, mb=4.0
                        SOUTHEASTERN ALASKA

AUG 13  BKS  iPd   19 18 48.8
        MHC  iPe   19 18 59.4  19 10
        SAO  eP    19 19 08.0
        JAS  eP    19 19 10.1
                   BRK  19 18 46.8, 37.9N, 122.2W, h=  9 km, ML=3.2
                        EAST OF BERKELEY, CALIFORNIA

AUG 14  SAO  iPd   03 16 02.0
        MHC  iPe   03 16 04.8
        BKS  iPe   03 16 16.7  16 33
        PRI  iPd   03 16 17.3
        JAS  iPd   03 16 19.7  16 37
        FRI  iPe   03 16 21.6
                   BRK  03 15 57.0, 37.0N, 121.5W, h=  4 km, ML=3.5
                        COYOTE LAKE, CALIFORNIA

AUG 14  BKS        11 09                                e 09 46
        MHC  eP    11 09 43.4
        PRI        11 09                                e 09 44
        WDC  eP    11 09 47.0
        JAS  eP    11 09 48.4
        FRI  eP    11 09 48.8
        MIN  eP    11 09 49.0
                   USGS 10 57 03.8, 18.5S, 168.2E, h= 39 km, mb=5.3, Ms=4.7
                        NEW HEBRIDES ISLANDS

AUG 15  MHC  iPe   22 58 29.3
        SAO  iPe   22 58 32.2
        BKS  iP    22 58 37.3              e 58 48
        FRI  eP    22 58 45.0
        JAS  iPd   22 58 49.2
                   BRK  22 58 22.7, 37.1N, 121.9W, h= 10 km, ML=2.5
                        SOUTH OF SAN JOSE, CALIFORNIA

AUG 16  FHC        12 06                                e 06 09
        WDC  eP    12 06 12.4                           e 06 22
        BKS  eP    12 06 22.0  15 30                     e 06 28      e 06 45     Lq 25 00
                                                         Lr 28 30
                        MICRON    PERIOD
                   LZ     1.4        20
                   LN     0.9        20
                   LE     1.1        20
        MHC  eP    12 06 26.7                           e 06 36
        JAS  eP    12 06 29.6                           e 06 39
        FRI  eP    12 06 35.5                           e 06 45
        PRI  e(P)  12 06 36                             e 06 45
        MNV  eP    12 06 41                             e 06 50
                   Ms=5.2, Distance=73°
                   USGS 11 55 05.9, 38.7N, 142.9E, h= 31 km, mb=5.5, Ms=5.6
                        NEAR EAST COAST OF HONSHU, JAPAN

AUG 16  MHC  iPd   11 47 49.1  47 52
        SAO  iPd   11 47 53.4
        BKS  ePe   11 48 02.0              e 48 15
        JAS  eP    11 48 06.3  48 22
        PRI  eP    11 48 07.8              e 48 27
        FRI  eP    11 48 10.8  48 30
                   BRK  11 47 44.9, 37.2N, 121.5W, h=  3 km, ML=2.5
                        COYOTE LAKE, CALIFORNIA

AUG 16  FHC  ePe   21 42 02.8                        pP 44 07
        WDC  iPe   21 42 07.3                        pP 44 12     sP 45 08     e 51 21
                                                     e 11 35 PKPPKP 12 02
        MIN  iPe   21 42 10.9                        pP 44 16
        BKS  ePe   21 42 18.2  51 19     PcP 42 33     pP 44 24     sP 45 16
                                          PP 45 24     PPP 47 32    sPP 48 16
                                          ScS 51 35    e 51 44      SP 52 02
                                          sS 54 55     e 55 35      SS 56 36
                                          sSS 59 38    SSS 00 12    Lq 02 35
                                          e 06 15
                        MICRON    PERIOD
                   PZ     1.66       1.0
        MHC  ePe   21 42 22.2                        pP 44 28     sP 45 30
        JAS  iPe   21 42 23.8                        pP 44 30     sP 45 29     e 51 31
                                                  PKPPKP 12 02
        SAO  eP    21 42 24.2                        pP 44 30
        FRI  ePe   21 42 29.2                        pP 44 36
        MNV  iPe   21 42 29.3                        e 51 39
        PRI  ePe   21 42 30.2                        pP 44 37     sP 45 48 PKPPKP 12 03
                   mb=6.4, h=600 km, Distance=77°
                   USGS 21 31 26.3, 41.8N, 130.8E, h=588 km, mb=6.1
                        NORTH KOREA

AUG 17  FHC  eP    06 11 51.2
        WDC  eP    06 11 56.5
        MIN  eP    06 12 00.4
        BRK  eP    06 12 06.5
        MHC  eP    06 12 11
        SAO  eP    06 12 13
        JAS  eP    06 12 13.4
        PRI  eP    06 12 19
        FRI  eP    06 12 19.1
        MNV  eP    06 12 21.5
                   USGS 06 00 33.2, 38.2N, 139.2E, h= 16 km, mb=5.1, Ms=4.8
                        NEAR WEST COAST OF HONSHU, JAPAN

AUG 17  FRI  e(P)  11 46 16                          e 46 18
        PRI  e(P)  11 46 16                          e 46 18
        MNV  e(P)  11 46 22                          i 46 26      i 46 32
        JAS  eP    11 46 30                          e 46 32
        MHC  e(P)  11 46 34                          e 46 40
        BKS        11 46                             e 46 42      e 47 03     Lq 49 48
                                                     Lr 51 08
        MIN  eP    11 47 04
        WDC  eP    11 47 09                          e 47 11
        FHC  e(P)  11 47 21
                   USGS 11 42 57.8, 26.0N, 109.6W, h= 15 km, mb=4.7
                        GULF OF CALIFORNIA
```

International Seismological Centre

```
AUG 17  SAO  eP    13 11 46.5
        BKS  eP    13 11 47    22 16      PS 23 19      SS 28 27      Lq 34 16
                                          Lr 38 00
                          MICRON    PERIOD
                     PZ     4.3       14
                     LZ      12       20
                     LN       6       20
                     LE       7       20
        MHC  eP    13 11 47.2
        FHC  eP    13 11 47.4
        PRI  eP    13 11 49.0
        WDC  eP    13 11 51.4                 e 23 32
        JAS  eP    13 11 52.7                 e 11 57      e 12 04      e 23 33
        FRI  eP    13 11 53.2                 e 11 55      e 23 34
        MIN  eP    13 11 53.4                 e 11 57
        MNV  ePd   13 12 02.2                 e 23 42
                   Ms=6.2, Distance=87°
                   USGS 12 59 07.4, 17.7S, 167.8E, h= 17 km, mb=5.7, Ms=6.1
                        NEW HEBRIDES ISLANDS

AUG 17  BRK  eP    14 31 13.6
        MHC  eP    14 31 14.9
        PRI  eP    14 31 16.4
        WDC  eP    14 31 18.4
        JAS  eP    14 31 20.0
        FRI  eP    14 31 20.5
        MIN        14 31                      e 31 21
        MNV  ePe   14 31 29.3
                   USGS 14 18 34.7, 17.7S, 167.7E, h= 23 km, mb=5.4
                        NEW HEBRIDES ISLANDS

AUG 17  MHC  eP    15 31 03.0
        PRI  eP    15 31 04.3
        BKS  eP    15 31 05.5
        WDC  eP    15 31 06.3
        JAS  eP    15 31 07.8
        FRI  eP    15 31 08.3
        MIN  eP    15 31 09
        MNV  eP    15 31 18.0
                   USGS 15 18 26.5, 17.7S, 167.7E, h= 39 km, mb=5.5, Ms=5.7
                        NEW HEBRIDES ISLANDS

AUG 17  BKS  iPd   15 43 05.0  43 06
        MHC  ePe   15 43 16.9  43 27
        SAO  ePe   15 43 24.7
        JAS  eP    15 43 27.6  43 46
                   BRK  15 43 03.4, 37.8N, 122.2W, h=  9 km, ML=2.9
                        SOUTH OF BERKELEY, CALIFORNIA

AUG 17  PRI  eP    16 44 02.0
        MHC  eP    16 44 02.5
        FRI  eP    16 44 07.6
        JAS  ePd   16 44 08.4
        WDC  ePd   16 44 10.5
        MIN  eP    16 44 12
        MNV  ePd   16 44 18.7
                   USGS 16 32 32.6, 18.1S, 174.9W, h= 99 km, mb=5.3
                        TONGA ISLANDS

AUG 17  WDC  eP    18 30 02.7
        JAS  eP    18 30 02.8
                   USGS 18 17 16.3, 17.9S, 167.7E, h= 15 km, mb=4.8, Ms=5.0
                        NEW HEBRIDES ISLANDS

AUG 18  FHC  eP    03 04 49.2
        WDC  iPe   03 04 50.2
        MIN  iPe   03 04 52.1
        BKS  eP    03 05 03.8
                          MICRON    PERIOD
                     PZ     0.10       0.8
        MNV  iPe   03 05 04.4
        JAS  iPe   03 05 04.7
        MHC  eP    03 05 06.0
        FRI  eP    03 05 09.0
        SAO  eP    03 05 09.0
        PRI  eP    03 05 13.3
                   USGS 02 51 57.3, 50.0N,  79.0E, h=  0 km, mb=6.1, Ms=4.1
                        UNDERGROUND NUCLEAR EXPLOSION
                        EASTERN KAZAKH, S.S.R.

AUG 18  FRI  eP    23 54 07.0
        JAS  eP    23 54 07.6
        WDC  eP    23 54 09.3
        MNV  eP    23 54 15.7
                   USGS 23 42 48.8, 22.1S, 179.5W, h=590 km, mb=5.3
                        SOUTH OF FIJI ISLANDS

AUG 19  WDC  eP    09 39 52.6
        JAS  iPd   09 39 54.2
        FRI  eP    09 39 54.7
        MNV        09 40                      e 40 03
                   USGS 09 27 09.9, 18.0S, 167.9E, h= 33 km, mb=4.8
                        NEW HEBRIDES ISLANDS

AUG 19  SAO  e(P)  23 18 47                   pP 19 05
        PRI  ePe   23 18 49.1                 pP 19 08
        BKS  ePe   23 18 49.5                 pP 19 09      e 46 24      e 47 00
                          MICRON    PERIOD
                     PZ     0.04       0.8
        MHC  eP    23 18 50.0                 pP 19 07
        FRI  ePe   23 18 53.4                 pP 19 13
        JAS  ePe   23 18 54.6                 pP 19 14
        WDC  iPe   23 18 58.0                 pP 19 17
        MNV  iPe   23 19 02.0                 pP 19 22
                   USGS 23 05 59.1, 34.2S, 179.9W, h= 70 km, mb=5.2
                        SOUTH OF KERMADEC ISLANDS

AUG 19  PRI  ePe   23 53 03.9                 pP 53 24
        BKS  ePe   23 53 04.7                 pP 53 24      e 20 00
        MHC  ePe   23 53 05.0                 pP 53 25
        SAO  e(P)  23 53 07                   pP 53 26
        FRI  eP    23 53 07.9                 pP 53 28
        JAS  ePe   23 53 09.6                 pP 53 29
        WDC  ePe   23 53 12.8                 pP 53 32
        MNV  eP    23 53 17.0                 pP 53 37
                   USGS 23 40 14.1, 34.3S, 179.8W, h= 71 km, mb=5.4
                        SOUTH OF KERMADEC ISLANDS

AUG 20  FHC  e(P)  04 04 21                   PKKP 20 26
        WDC  eP    04 04 25.0                 PPP 08 38     SKS 14 40    PKKP 20 24
        MIN  eP    04 04 26.0                 PP 07 22
        JAS  eP    04 04 36.0                 PKKP 20 16 PKPPKP 28 34
        MNV  e(P)  04 04 38                   PPP 08 52     SKS 14 59
        BKS  iPe   04 04 38.7  16 40          e 09 00       e 10 16      e 14 28
                                              e 17 56       e 19 00      PPS 19 28
                                              PKKP 20 17    e 20 52      SS 24 58
                                              Lq 35 18
        MHC  e(P)  04 04 40                   PKKP 20 15
        FRI  eP    04 04 40.5                 PKKP 20 13
        PRI  e(P)  04 04 48                   PKKP 20 11
                   USGS 03 50 52.2, 36.5N,  70.1E, h=229 km, mb=6.1
                        HINDU KUSH REGION

AUG 22  PRI  ePd   02 02 36.2
        FRI  ePe   02 02 37.5
        SAO  eP    02 02 47.8
        MNV  iPd   02 02 49.7
        JAS  ePd   02 02 53.6
        MHC  e(P)  02 02 55
        BKS        02 03                      e 03 10
                   MAG=4.2, SOUTHERN CALIFORNIA
                   PAS  02 01 36.4, 33.7N, 116.8W, h= 16 km, ML=4.0
                        SOUTHERN CALIFORNIA

AUG 22  SAO  iPe   09 42 30.6
        PRI  iPd   09 42 40.2  42 51
        MHC  iPd   09 42 41.8  42 53
        FRI  eP    09 42 49.7  43 06
        JAS  ePe   09 42 52.5  43 10
        BKS  iPd   09 42 53.8  43 12       Sg 43 16
                   BRK  09 42 26.9, 36.6N, 121.3W, h=  9 km, ML=3.1
                        SOUTHEAST OF HOLLISTER, CALIFORNIA

AUG 22  FHC  iPe   18 37 59.5
        WDC  iPe   18 38 05.9                 pP 38 33      sP 38 49      e 39 19
                                              e 39 39       e 40 03
        MIN  iPe   18 38 10.6                 pP 38 39
        BKS  iP    18 38 19.8  46 00          pP 38 48      sP 39 00      PcP 39 18
                                              e 48 00       Lq 52 12
                          MICRON    PERIOD
                     PZ    0.28       1.2
        MHC  ePe   18 38 25.0                 pP 38 53      PcP 39 18
        JAS  iPe   18 38 27.3                 i 38 32       pP 38 56      sP 39 10
                                              PcP 39 20     PP 40 34
        SAO  eP    18 38 27.7
        FRI  ePe   18 38 34.2
        PRI  ePe   18 38 35.1                 e 38 41
                   mb=6.2, h=100 km, Distance=58°
                   USGS 18 28 55.6, 52.3N, 157.3E, h=134 km, mb=5.6
                        KAMCHATKA

AUG 22  SAO        21 56                      e 56 12
        PRI  e(P)  21 56 14
        MHC  eP    21 56 15
        FRI  eP    21 56 20
        JAS  eP    21 56 21
        WDC  eP    21 56 23
                   USGS 21 44 48.4, 17.2S, 173.1W, h= 33 km, mb=5.3
                        TONGA ISLANDS

AUG 22  FHC        22 19                      e 19 04
        WDC  eP    22 19 10
        MIN  eP    22 19 15
        JAS  eP    22 19 37.6
        FRI  eP    22 19 47.3
                   USGS 22 13 38.9, 58.8N, 151.7W, h= 33 km, mb=4.6
                        KODIAK ISLAND REGION

AUG 23  SAO  ePe   00 36 37.4
        BKS  eP    00 36 38.3                 pP 38 38
                          MICRON    PERIOD
                     PZ     0.14       1.2
        MHC  ePe   00 36 39.0                 pP 38 39
        PRI  ePe   00 36 39.2
        FHC  ePe   00 36 41.9
        FRI  ePe   00 36 44.3                 pP 38 45
        JAS  iPe   00 36 44.5                 pP 38 45
        WDC  iPe   00 36 45.0                 pP 38 46
        MIN  eP    00 36 47.5
        MNV  iPe   00 36 54.2
                   USGS 00 25 43.3, 17.8S, 178.8W, h=569 km, mb=5.3
                        FIJI ISLANDS REGION

AUG 23  SAO  eP    14 34 10.4
        BKS  eP    14 34 11.3
                          MICRON    PERIOD
                     PZ     0.02       0.9
        PRI  eP    14 34 11.8
        MHC  ePe   14 34 12.2
        FHC  ePe   14 34 15.9
        FRI  ePe   14 34 16.9
        JAS  ePe   14 34 17.4
        WDC  iPe   14 34 19.2
        MIN  eP    14 34 21
        MNV  ePd   14 34 26.1
                   USGS 14 23 04.8, 21.4S, 179.4W, h=619 km, mb=5.1
                        FIJI ISLANDS REGION

AUG 24  WDC  eP    01 18 53.9
        JAS  eP    01 19 06.9
        FRI  eP    01 19 11.5
        MNV  eP    01 19 15.0
                   USGS 01 07 02.4, 21.8N, 144.1E, h=112 km, mb=4.6
                        MARIANA ISLANDS

AUG 24  FRI  eP    04 34 50.7
        PRI  eP    04 34 54.7
        JAS  eP    04 35 00.1
        SAO  eP    04 35 01.8
        MHC  eP    04 35 05.5
        BKS  eP    04 35 11    42 00      PP 37 08      SS 45 24      Lq 48 00
                                          Lr 51 30
                          MICRON    PERIOD
                     PZ     1.66       2.0
                     LZ       14       20
                     LN       41       20
                     LE       41       20
        MIN  eP    04 35 15.9
        WDC  eP    04 35 19.5
        FHC  eP    04 35 30.9
                   Ms=6.5, Distance=46°
                   USGS 04 26 54.2,  9.0N,  83.5W, h= 40 km, mb=6.1, Ms=6.4
                        COSTA RICA

AUG 24  BKS  iPd   04 46 53.0  46 54
        MHC  ePd   04 47 05.2  47 16
        SAO  iPe   04 47 12.7
        JAS  iPe   04 47 15.7  47 34
                   BRK  04 46 51.4, 37.8N, 122.2W, h=  8 km, ML=2.8
                        SOUTH OF BERKELEY, CALIFORNIA

AUG 24  WDC  eP    11 06 30.0
        MIN        11 06                      e 06 34
        JAS  eP    11 06 47.3
        FRI        11 06                      e 06 53
        MNV  iPd   11 06 54.3
                   USGS 10 55 30.8, 39.3N, 140.8E, h=141 km, mb=4.6
                        HONSHU, JAPAN

AUG 24  FHC  ePd   17 12 09.0
        WDC  ePd   17 12 12.2                 e 12 19
        MIN  ePd   17 12 15.0
        BKS  ePd   17 12 24.2
                          MICRON    PERIOD
                     PZ     0.06       1.0
        MHC  eP    17 12 27.5
        JAS  iPd   17 12 27.8                 e 12 34
        SAO  eP    17 12 29.7
        MNV  iPd   17 12 30.8                 e 12 38
        FRI  ePd   17 12 32.6                 e 12 40
        PRI  ePd   17 12 34.8                 e 12 42
                   USGS 16 59 30.8, 41.1N, 108.1E, h= 33 km, mb=5.8, Ms=5.9
                        NORTHERN CHINA

AUG 24  FHC  e(P)  18 45 50
        WDC  eP    18 46 06.5
        MIN        18 46                      e 46 17
        JAS  eP    18 46 49.6
                   OFF THE OREGON COAST

AUG 25  FRI  ePe   08 55 41.7
        JAS  iPe   08 55 46.2
        PRI  eP    08 55 47.6                 e 59 47
        MIN  ePe   08 55 50.2
        WDC  iPe   08 55 52.9                 e 00 20
        BKS  eP    08 55 54.5  05 44          e 07 08      e 10 16      e 11 20
                                              e 13 51      e 14 10      Lq 16 18
                                          Lr 20 24
                          MICRON    PERIOD
                     PZ     0.11       1.0
                     LZ       12       20
                     LN        7       20
                     LE       11       20
        FHC  eP    08 56 01.5
                   Ms=6.2, Distance=77°
                   USGS 08 44 04.0, 10.7N,  41.7W, h= 10 km, mb=6.1, Ms=6.6
                        NORTH ATLANTIC RIDGE
```

International Seismological Centre

```
AUG 25  SAO   eP      10 18 22.2
        BRK   eP      10 18 23.0
        PRI   eP      10 18 23.7
        FRI   eP      10 18 29.0                pP 19 21
        JAS   iPe     10 18 29.5                pP 19 21
        WDC   ePe     10 18 30.4                pP 19 22
        MIN   eP      10 18 32.3
        MNV   ePe     10 18 38.7                pP 19 30
                 USGS 10 07 34.9, 17.9S, 178.5W, h=639 km, mb=4.5
                      FIJI ISLANDS REGION

AUG 25  PRI   eP      21 17 38.9
        WDC   ePe     21 17 40.3
        JAS   ePe     21 17 42.5
        FRI   eP      21 17 43.0
        MNV   iPe     21 17 51.5
                 USGS 21 05 04.0, 15.6S, 167.1E, h= 33 km, mb=5.5, Ms=5.5
                      NEW HEBRIDES ISLANDS

AUG 26  BKS   eP      12 00 04    10 36       e 08 00    PPS 11 48      e 14 42
                                              e 17 10     Lq 22 22      Lr 26 25
                           MICRON     PERIOD
                      LZ      7         20
                      LN      5         20
                      LE      6         20
        FHC   e(P)    12 00 06
        PRI   eP      12 00 07.2
        WDC   eP      12 00 10.6
        JAS   eP      12 00 11.0                e 03 42
        FRI   eP      12 00 11.7
        MNV   eP      12 00 20.0
                 Ms=6.1, Distance=86°
                 USGS 11 47 24.5, 17.7S, 167.7E, h= 10 km, mb=5.5, Ms=6.0
                      NEW HEBRIDES ISLANDS

AUG 26  FHC   e(P)    13 27 00
        WDC   ePd     13 27 05.3
        MIN   eP      13 27 09.0
        BKS   eP      13 27 11.5
        JAS   ePd     13 27 18.3
        PRI   eP      13 27 21.3
        FRI   ePd     13 27 22.9
        MNV   iPd     13 27 26.8
                 USGS 13 15 08.7, 22.1N, 144.8E, h= 33 km, mb=5.3, Ms=5.0
                      VOLCANO ISLANDS REGION

AUG 26  FHC   eP      14 44 44.7
        WDC   ePe     14 44 48.9          PP 48 45   PKKP 02 13 PKPPKP 09 58
        MIN   eP      14 44 51.8
        BKS   eP      14 44 56.2          pP 45 20    SKS 55 10   SKKS 55 38
                                          Lq 11 52    Lr 15 42
                           MICRON     PERIOD
                      LZ     29         20
                      LN      9         20
                      LE     26         20
        JAS   eP      14 45 01.4          PP 49 10   PKKP 02 02 PKPPKP 09 55
        FRI   eP      14 45 04.5
        PRI   eP      14 45 05.9
        MNV   ePe     14 45 07.3
                 Ms=6.7, Distance=97°
                 USGS 14 31 22.1, 19.1N, 122.1E, h= 15 km, mb=6.1, Ms=7.1
                      PHILIPPINE ISLANDS REGION

AUG 26  FRI           21 06                     e 06 33
        PRI   e(P)    21 06 34
        MNV   ePe     21 06 35.0
        JAS   eP      21 06 42
                 USGS 21 01 20.3, 18.6N, 101.7W, h= 61 km, mb=4.9
                      GUERRERO, MEXICO

AUG 27  SAO   eP      03 20 14.5            pP 20 55
        PRI   eP      03 20 15.9            pP 20 56
        BKS   eP      03 20 16.0            pP 20 56
        FHC   eP      03 20 21.0
        FRI   eP      03 20 21.3            pP 21 02
        JAS   eP      03 20 22.0            pP 21 03
        WDC   ePe     03 20 24.5            pP 21 05
        MIN   eP      03 20 26.0            pP 21 07
                 USGS 03 08 32.3, 21.7S, 176.2W, h=154 km, mb=5.4
                      FIJI ISLANDS REGION

AUG 28  WDC   eP      01 25 00.8
        JAS   eP      01 25 41.8
                 USGS 01 23 56.9, 43.4N, 126.3W, h= 15 km, mb=4.2
                      OFF COAST OF OREGON

AUG 28  FRI   eP      16 56 20.5
        PRI   eP      16 56 23.3
        JAS   eP      16 56 30.0
        WDC   eP      16 56 49.8
        FHC   eP      16 57 02.8
                 USGS 16 49 29.0, 13.2N,  89.9W, h= 80 km, mb=4.7
                      EL SALVADOR

AUG 28  PRI   eP      17 25 25.0
        MNV   eP      17 25 26.7
        JAS   eP      17 25 31.0
        WDC   ePe     17 25 44.2
                 USGS 17 12 49.2, 34.9S,  69.2W, h= 33 km, mb=5.1
                      CHILE-ARGENTINA BORDER REGION

AUG 28  WDC           19 24                     e 24 32
        JAS           19 24                     e 24 33
        FRI           19 24                     e 24 34
        MNV   ePd     19 24 42.5
                 USGS 19 11 48.9, 18.3S, 168.1E, h= 29 km, mb=4.7
                      NEW HEBRIDES ISLANDS

AUG 28  FHC   eP      20 48 27.2
        WDC   ePe     20 48 33.8            pP 48 47
        JAS   eP      20 48 55.1            pP 49 09
        FRI   eP      20 49 02.0
        MNV   iP      20 49 02.5            pP 49 16
        PRI   eP      20 49 02.8
                 USGS 20 39 14.2, 51.1N, 157.7E, h= 61 km, mb=5.0
                      NEAR EAST COAST OF KAMCHATKA

AUG 29  PRI   iPd     04 08 11.9  08 22
        SAO   iPe     04 08 15.0  08 27
        FRI   eP      04 08 28.6
        JAS   ePg     04 08 40
                 BRK  04 07 58.1, 35.8N, 121.4W, h=  7 km, ML=2.9
                      SOUTHWEST OF KING CITY, CALIFORNIA

AUG 29  MNV   iPe     15 08 36.7
        PRI   iPe     15 08 48.2
        JAS   iPe     15 08 57.4
        PRI   eP      15 09 01.0
        SAO   iPe     15 09 08.4
        BKS           15 09       10 44       e 09 18
        MIN   eP      15 09 23
        WDC   e(P)    15 09 32
                 ML=5.0, NUCLEAR EXPLOSION, NEVADA TEST SITE
                 USGS 15 08 00.2, 37.1N, 116.1W, h=  0 km, mb=4.7
                      SOUTHERN NEVADA

AUG 29  SAO   ePe     21 40 38.5
        BKS   ePe     21 40 39.1
                           MICRON     PERIOD
                      PZ     0.06       1.0
        PRI   ePe     21 40 40.2
        FHC   ePe     21 40 42.8
        FRI   ePe     21 40 45.5
        JAS   iPe     21 40 45.7
        MNV   iPe     21 40 55.3
                 USGS 21 29 41.4, 17.6S, 178.9W, h=532 km, mb=5.3
                      FIJI ISLANDS REGION

AUG 30  WDC   eP      14 24 56.1
        MIN   eP      14 25 04.1
        BKS           14 25                     e 25 30
        JAS   eP      14 25 39.0
        MHC   eP      14 25 40.6
        FRI   eP      14 25 53.0
                 USGS 14 22 58.0, 47.6N, 127.8W, h= 15 km, mb=4.8
                      OFF COAST OF WASHINGTON

AUG 31  BKS   iPd     18 53 49.1  53 52
        MHC   iPe     18 53 56.5
        SAO   iPe     18 54 05.7
        JAS   eP      18 54 06.4
                 BRK  18 53 45.1, 37.8N, 122.0W, h=  6 km, ML=2.7
                      EAST OF BERKELEY, CALIFORNIA

AUG 31  FHC           20 48                     e 48 30
        WDC   eP      20 48 31.2                e 48 38
        JAS   eP      20 48 57                  e 49 04
        FRI           20 49                     e 49 12
        PRI           20 49                     e 49 15
                 USGS 20 42 27.4, 54.4N, 161.8W, h= 20 km, mb=5.1, Ms=4.3
                      ALASKA PENINSULA

AUG 31  BKS   ePd     23 44 11.2
                           MICRON     PERIOD
                      PZ     0.02       0.8
        PRI   eP      23 44 11.5
        MHC   eP      23 44 11.9
        FHC   eP      23 44 15.4
        FRI   eP      23 44 16.5
        JAS   iPd     23 44 17.2
        WDC   iPd     23 44 18.8
        MIN   ePd     23 44 20.6
                 USGS 23 33 06.9, 20.6S, 178.5W, h=576 km, mb=4.7
                      FIJI ISLANDS REGION

SEP 01  FHC   iPe     05 33 27.0                PcP 36 23
        WDC   iPe     05 33 34.9                e 33 53     PcP 36 25     ScP 40 01
                                                e 40 37
        MIN   iPe     05 33 40.7                PcP 36 27     e 36 48     ScP 40 03
                                                e 40 39
        BKS   iPe     05 33 51.9  39 12        pP 34 19      PP 35 02     pPP 35 24
                                                PcP 36 31     i 36 36     pPcP 36 52
                                                e 39 33       sS 40 04      e 41 56
                           MICRON     PERIOD
                      PZ     0.58       0.9
        MHC   ePe     05 33 58.0                PcP 36 33     ScP 40 10
        JAS   iPe     05 34 00.9                PcP 36 33     ScP 40 12     e 40 48
        SAO   eP      05 34 01.6                PcP 36 34
        FRI   ePe     05 34 09.7                e 34 27     PcP 36 36       e 36 58
                                                ScP 40 15
        PRI   ePe     05 34 10.7                PcP 36 37     ScP 40 16     e 40 52
                 mb=6.4, h=130 km, Distance=34°
                 USGS 05 27 17.6, 54.0N, 165.2W, h= 69 km, mb=5.8
                      FOX ISLANDS, ALEUTIAN ISLANDS

SEP 01  MIN   eP      13 31 09.2
        BKS           13 31                     Lr 36 10
                           MICRON     PERIOD
                      LZ     1.2        20
                      LN     1.1        20
                      LE     0.9        20
        WDC   eP      13 31 12
        JAS   eP      13 31 15
        FRI   eP      13 31 15.8
        PRI           13 31                     e 31 28
                 USGS 13 20 26.7, 44.9N,  28.2W, h= 10 km, mb=4.7, Ms=5.2
                      NORTH ATLANTIC RIDGE

SEP 01  MIN   eP      13 38 28.0
        WDC   eP      13 38 31
        JAS   eP      13 38 33.9
        BKS           13 38                     Lr 52 00
                           MICRON     PERIOD
                      LZ     2.1        20
                      LN     2.1        20
                      LE     1.8        20
                 USGS 13 27 45.2, 44.9N,  28.1W, h= 10 km, mb=4.7, Ms=5.4
                      NORTH ATLANTIC RIDGE

SEP 01  MIN   eP      14 15 06.9
        JAS   ePe     14 15 12.7
        FRI   eP      14 15 13.6
                 USGS 14 04 23.9, 45.0N,  28.1W, h= 10 km, mb=4.6
                      NORTH ATLANTIC RIDGE

SEP 01  FHC   eP      18 03 55.2                e 04 04
        WDC   ePd     18 04 01.7                e 04 11
        MIN   eP      18 04 06.6                e 04 16
        BKS   ePd     18 04 16.3  11 52         e 04 26     pP 04 36      sP 04 50
                                                e 12 06     ScS 13 36     SS 15 35
                                              SSS 18 13      Lr 19 58
                           MICRON     PERIOD
                      PZ     0.03       0.8
        MHC   eP      18 04 21.7                e 04 31
        JAS   ePd     18 04 24.1                e 04 34
        FRI   eP      18 04 31.2                e 04 41
        PRI   ePd     18 04 32.2                e 04 42
                 mb=5.2, h=80 km, Distance=56°
                 USGS 17 54 57.3, 52.8N, 161.1E, h= 29 km, mb=5.5, Ms=5.4
                      OFF EAST COAST OF KAMCHATKA

SEP 01  WDC   e(P)    18 14 32
        JAS   eP      18 14 54.5
                 USGS 18 05 28.5, 52.9N, 161.0E, h= 33 km, mb=4.9
                      OFF EAST COAST OF KAMCHATKA

SEP 01  FHC   eP      23 16 21.7
        WDC   iPd     23 16 26.6
        MIN   eP      23 16 31.4
        BKS   ePd     23 16 42.1                e 16 46
                           MICRON     PERIOD
                      PZ     0.02       0.9
        MHC   eP      23 16 46.5
        JAS   iPd     23 16 48.9
        FRI   eP      23 16 56.0
        PRI   eP      23 16 57.1
                 USGS 23 07 22.7, 52.8N, 161.0E, h= 33 km, mb=5.0
                      OFF EAST COAST OF KAMCHATKA

SEP 01  WDC   ePd     23 26 37.5
        MHC           23 26                     e 26 58
        JAS   ePd     23 26 59.7
        FRI           23 27                     e 27 08
        PRI   eP      23 27 08
                 USGS 23 17 34.2, 52.9N, 161.2E, h= 33 km, mb=4.7
                      OFF EAST COAST OF KAMCHATKA

SEP 02  FRI   eP      01 17 57                  pP 18 11    PcP 20 20     e 20 35
        PRI   eP      01 17 59.5                pP 18 14    PcP 20 22     e 20 37
        JAS   eP      01 18 06                  pP 18 20    PcP 20 24     e 20 39
        MHC   eP      01 18 11                  pP 18 25
        WDC   eP      01 18 29.5                pP 18 42    PcP 20 31     e 20 46
        FHC   eP      01 18 38                  pP 18 55
                 USGS 01 10 57.6, 13.1N,  88.7W, h= 81 km, mb=4.9
                      EL SALVADOR

SEP 02  FHC   eP      08 08 56.2
        WDC   ePd     08 09 02.8
        MIN   eP      08 09 07.5
        BKS   eP      08 09 16.5  16 45       pP 09 27      SS 22 30
                           MICRON     PERIOD
                      PZ     0.02       1.2
        MHC   eP      08 09 22.5
        JAS   iPd     08 09 25.0
        FRI   eP      08 09 30.2
        PRI   eP      08 09 33.4
                 USGS 07 59 59.0, 52.7N, 161.2E, h= 34 km, mb=5.3, Ms=5.0
                      OFF EAST COAST OF KAMCHATKA
```

International Seismological Centre

```
SEP 02  WDC  e(P)   10 22 02
        MIN  eP     10 22 06.5
        BKS         10 22                    e 22 30
        JAS  eP     10 22 23.5
                 USGS 10 12 58.4, 53.1N, 161.0E, h= 33 km, mb=4.9, Ms=4.3
                      OFF EAST COAST OF KAMCHATKA

SEP 02  WDC  ePe    12 31 08.5
        JAS  ePe    12 31 30.8
                 USGS 12 22 04.8, 53.0N, 161.0E, h= 33 km, mb=4.6
                      OFF EAST COAST OF KAMCHATKA

SEP 02  PRI  eP     14 41 09.8
        FRI  eP     14 41 11.3
        JAS  eP     14 41 15.3
        MHC  eP     14 41 17.8
        BKS  ePe    14 41 21.6
                          MICRON    PERIOD
                      PZ    0.01       0.8
        WDC  ePe    14 41 29.7
        FHC  eP     14 41 37.8
                 USGS 14 29 40.5, 20.5S,  68.6W, h=126 km, mb=4.8
                      CHILE-BOLIVIA BORDER REGION

SEP 03  MHC  iPd    06 40 22.6
        SAO  iPd    06 40 22.7
        BKS  iPe    06 40 35.3  40 50
        PRI  ePd    06 40 37.5
        JAS  ePd    06 40 38.1
        FRI  ePe    06 40 41.0
                 BRK  06 40 16.2, 37.1N, 121.5W, h=  3 km, ML=3.1
                      COYOTE LAKE, CALIFORNIA

SEP 04  BKS  ePe    21 15 48                 SKS 26 35     Lq 39 34     Lr 43 00
                          MICRON    PERIOD
                      PZ    0.87       8.0
                      LZ    3.9        20
                      LN    2.3        20
                      LE    2.5        20
        MHC  ePe    21 15 48.9
        PRI  ePe    21 15 49.5
        FHC  e(P)   21 15 51
        JAS  ePe    21 15 53.7
        FRI  ePe    21 15 53.8
        WDC  ePe    21 15 53.8
        MIN  eP     21 15 56.0
                 Ms=5.8, Distance=89°
                 USGS 21 03 07.4, 22.9S, 171.7E, h= 44 km, mb=5.5, Ms=5.6
                      LOYALTY ISLANDS REGION

SEP 05  BKS  ePd    03 43 40.5  54 20       PS 55 30     SS 59 56     Lq 07 15
                                            Lr 10 40
                          MICRON    PERIOD
                      PZ    0.71       7
                      LZ    1.8        20
                      LN    1.2        20
                      LE    1.2        20
        MHC  eP     03 43 41.6
        FRI  ePd    03 43 47.8
        JAS  ePd    03 43 47.8
        WDC  ePd    03 43 48.0
        MIN  eP     03 43 49.8
        MNV  iPd    03 43 56.6
                 Ms=5.5, Distance=88°
                 USGS 03 31 01.5, 22.8S, 171.6E, h= 46 km, mb=5.3, Ms=5.3
                      LOYALTY ISLANDS REGION

SEP 05  FHC  iPd    09 42 31.4  42 52
        WDC  iPe    09 42 46.7
        MIN  eP     09 42 57.0
        BKS  iPe    09 43 13.8  44 10
        MHC  ePe    09 43 23.9
        JAS  ePe    09 43 27.2
        SAO  eP     09 43 31.0
        FRI  eP     09 43 43
                 BRK  09 42 02.2, 41.7N, 125.9W, h=  5 km, ML=4.2
                      OFF COAST NORTHWEST OF EUREKA, CALIFORNIA

SEP 05  FRI  ePd    14 07 46.5
        MNV  iPd    14 07 48.2
        PRI  ePd    14 07 48.4
        SAO  eP     14 07 51.5
        JAS  iPd    14 07 53.0
        MHC  ePd    14 07 55.1
        BKS  iPe    14 07 58.6  17 43
                          MICRON    PERIOD
                      PZ    0.12       1.1
        MIN  ePd    14 08 03.1
        WDC  iPd    14 08 05.8
        FHC  ePd    14 08 12.5
                 USGS 13 56 18.1, 27.6S,  63.3W, h=556 km, mb=5.5
                      SANTIAGO DEL ESTERO PROVINCE, ARGENTINA

SEP 05  MHC  iPe    15 50 39.4  50 45
        BKS  iPd    15 50 41.0  50 48
        SAO  ePe    15 50 49.9
        JAS  ePd    15 50 50.3  51 02
                 BRK  15 50 31.9, 37.7N, 121.7W, h=  2 km, ML=2.5
                      LIVERMORE, CALIFORNIA

SEP 05  BKS  ePne   20 16 14.1  16 26       e 16 17
                 BRK  20 15 57.6, 37.8N, 123.3W, h=  7 km, ML=2.6
                      OFF COAST WEST OF SAN FRANCISCO, CALIFORNIA

SEP 06  BKS  ePe    08 22 42    33 36       PP 26 20     PS 34 28     PPS 35 06
                                            SS 39 56     Lq 47 20     Lr 51 30
                          MICRON    PERIOD
                      PZ    0.48       7
                      LZ    2.4        20
                      LN    0.5        20
                      LE    2.3        20
        WDC         08 22                    e 22 48
        JAS         08 22                    e 22 52
        FRI         08 22                    e 22 53
        MNV         08 22                    e 22 59
                 Ms=5.6, Distance=93°
                 USGS 08 09 37.7,  6.0S, 149.7E, h= 42 km, mb=5.6, Ms=5.8
                      NEW BRITAIN REGION

SEP 06  MNV  iPe    15 00 36.9
        FRI  iPe    15 00 48.4
        JAS  iPe    15 00 57.3
        PRI  iPe    15 01 01.0
        SAO  ePe    15 01 07.5
        MHC  iPe    15 01 10.2
        BKS  iPe    15 01 16.8
        MIN  ePe    15 01 23.1
        WDC  ePe    15 01 32.5
        FHC  e(P)   15 01 48
                 ML=5.5, NUCLEAR EXPLOSION, NEVADA TEST SITE
                 USGS 15 00 00.1, 37.1N, 116.1W, h=  0 km, mb=5.8, Ms=4.1
                      SOUTHERN NEVADA

SEP 06  WDC  ePe    15 26 08.3
        JAS  ePe    15 26 30.5
                 USGS 15 17 04.9, 53.4N, 160.2E, h= 60 km, mb=4.9
                      NEAR EAST COAST OF KAMCHATKA

SEP 06  FHC  eP     18 11 13
        WDC  e(P)   18 11 16
        MIN  eP     18 11 17.8
        BKS  ePe    18 11 33.0
                          MICRON    PERIOD
                      PZ    0.03       0.8
        JAS  eP     18 11 34.2
        MNV  iPe    18 11 34.3
        MHC  eP     18 11 36
        FRI  eP     18 11 40
        PRI  eP     18 11 44.8
                 USGS 17 59 57.7, 64.1N,  99.6E, h=  0 km, mb=4.9
                      CENTRAL SIBERIA

SEP 07  WDC  ePd    00 54 06.0               pP 55 44
        MIN  eP     00 54 09.6
        BKS  ePd    00 54 13.7
                          MICRON    PERIOD
                      PZ    0.03       0.8
        MHC  eP     00 54 17.2
        SAO  e(P)   00 54 19
        JAS  ePd    00 54 20.0               pP 55 58
        FRI  ePd    00 54 24.8
        MNV         00 54                    e 54 25
                 USGS 00 42 54.0, 28.3N, 139.6E, h=435 km, mb=4.9
                      BONIN ISLANDS REGION

SEP 07  FRI  iPe    09 44 04.9
        MNV  iPe    09 44 06.8
        JAS  iPe    09 44 11.0
        PRI  iPe    09 44 24.4
        SAO  iPe    09 44 26.6
        MHC  iPe    09 44 26.7
        BKS  iPe    09 44 33.0  45 03
        MIN  e(P)   09 44 45
        WDC  e(P)   09 44 54
                 BRK  09 43 48.7, 37.6N, 118.9W, h= 16 km, ML=4.1
                      MAMMOTH LAKES, CALIFORNIA

SEP 07  BRK  eP     10 23 08.2
        PRI  eP     10 23 08.3
        FHC  eP     10 23 12.8
        FKI  eP     10 23 13.2
        JAS  eP     10 23 13.7
        WDC  eP     10 23 15.9
        MIN  eP     10 23 18
        MNV  eP     10 23 22.0
                 USGS 10 11 35.7, 24.8S, 179.6E, h=496 km, mb=4.9
                      SOUTH OF FIJI ISLANDS

SEP 07  WDC  eP     12 56 31.2
        JAS  ePd    12 56 39.6
        FRI  eP     12 56 40
        MNV  eP     12 56 46.4
                 USGS 12 43 27.3,  5.9S, 147.0E, h=139 km, mb=5.0
                      EAST PAPUA, NEW GUINEA, REGION

SEP 07  MHC  iPe    18 13 33.7  13 38
        BKS  iPe    18 13 39.5  13 48
        SAO  eP     18 13 44.7
        JAS  iPd    18 13 47.7  14 02
                 BRK  18 13 29.2, 37.5N, 121.7W, h=  8 km, ML=2.6
                      SOUTHEAST OF LIVERMORE, CALIFORNIA

SEP 07  WDC  iPe    21 47 55.9
        BRK  eP     21 48 00.0
        MHC  ePe    21 48 03.3
        JAS  iPe    21 48 07.3
        PRI  ePe    21 48 09.3
        FRI  ePe    21 48 11.2
        MNV  iPe    21 48 15.6
                 USGS 21 35 45.0, 15.3N, 147.1E, h= 33 km, mb=5.1
                      MARIANA ISLANDS REGION

SEP 08  MNV  ePe    01 23 47.7               e 24 04
        PRI  ePe    01 23 47.9
        JAS  ePe    01 23 53.5               e 24 10
        WDC  ePe    01 24 10.0
                 USGS 01 13 06.1, 14.4S,  75.9W, h= 67 km, mb=4.7
                      NEAR COAST OF PERU

SEP 08  MNV  eP     04 24 08.7               e 24 18
        JAS  eP     04 24 17
        BKS         04 24                    Lq 28 00
        WDC  e(P)   04 24 46
                 USGS 04 17 27.4, 13.7N,  91.5W, h= 70 km, mb=4.8
                      NEAR COAST OF GUATEMALA

SEP 08  BKS  e(P)   13 59 31
        PRI  eP     13 59 31.5
        MHC  eP     13 59 31.5
        FRI  eP     13 59 35.9
        JAS  iPd    13 59 36.8
        WDC  iPd    13 59 38.6
        MIN  eP     13 59 40.0
        MNV  iPd    13 59 45.5
                 USGS 13 48 02.7, 22.9S, 179.0W, h=429 km, mb=5.1
                      SOUTH OF FIJI ISLANDS

SEP 08  MNV  iPe    17 02 36.6
        FRI  ePe    17 02 48.5
        JAS  eP     17 02 57.6               e 03 07
        PRI  e(P)   17 03 02
                 MAG=3.7, NUCLEAR EXPLOSION, NEVADA TEST SITE
                 USGS 17 02 00.1, 37.2N, 116.0W, h=  0 km
                      SOUTHERN NEVADA

SEP 09  WDC  ePe    07 08 58.2
        MIN  eP     07 09 02
        BKS         07 09                    Lr 40 27
        MHC  e(P)   07 09 06
        JAS  ePe    07 09 08.3
        FRI  eP     07 09 12.2
        MNV  iPe    07 09 16.3
                 USGS 06 56 03.5, 10.1N, 139.7E, h= 33 km, mb=5.1
                      WEST CAROLINE ISLANDS

SEP 09  WDC  eP     07 30 53.4
        JAS  eP     07 31 19.0
        MNV  ePe    07 31 27.9
                 USGS 07 24 23.5, 53.0N, 166.8W, h= 15 km, mb=4.6, Ms=4.4
                      FOX ISLANDS, ALEUTIAN ISLANDS

SEP 09  BKS  iPe    20 48 35.0  48 38
        MHC  iPe    20 48 42.5
        JAS  ePe    20 48 52.6
        SAO  eP     20 48 53.0
                 BRK  20 48 31.1, 37.8N, 122.0W, h=  5 km, ML=2.8
                      EAST OF BERKELEY, CALIFORNIA

SEP 10  MHC  iPd    06 16 08.6  16 12
        SAO  iPe    06 16 12.2
        BKS  ePd    06 16 21.2  16 35
        JAS  ePd    06 16 25.2
        PRI  e(P)   06 16 26
        FRI  ePd    06 16 29.5
                 BRK  06 16 04.1, 37.1N, 121.5W, h=  6 km, ML=3.0
                      COYOTE LAKE, CALIFORNIA

SEP 10  MNV         07 40                    e 40 36
        JAS  ePd    07 40 47.8
        WDC  ePd    07 40 50.3
        MIN  e(P)   07 40 51
                 USGS 07 29 54.8, 42.7N,  29.2W, h= 10 km, mb=4.4
                      AZORES ISLANDS REGION

SEP 10  BRK  eP     07 50 19.1
        PRI  eP     07 50 19.2
        FRI  eP     07 50 23.9
        JAS  ePe    07 50 24.7
        WDC  ePe    07 50 26.8
                 USGS 07 38 40.6, 25.6S, 179.8E, h=461 km, mb=5.1
                      SOUTH OF FIJI ISLANDS

SEP 10  MNV  eP     08 13 37.7
        JAS  eP     08 13 49.8
                 USGS 08 02 54.2, 42.7N,  29.4W, h= 10 km, mb=4.4
                      AZORES ISLANDS REGION

SEP 10  MNV  eP     09 15 29.5
        JAS  eP     09 15 37.5
                 USGS 09 04 46.2, 42.7N,  29.4W, h= 10 km, mb=4.4
                      AZORES ISLANDS REGION
```

International Seismological Centre

```
SEP 10  PRI   e(P)    09 37 31
        JAS   eP      09 37 37.0
        FRI   eP      09 37 37.5
        WDC   eP      09 37 38.5
        MNV   eP      09 37 48.0
                  USGS 09 26 00.9, 15.0S, 176.5W, h= 35 km, mb=4.9
                       FIJI ISLANDS REGION

SEP 10  PRI   e(P)    09 44 00
        FRI   eP      09 44 05.7
        JAS   eP      09 44 06.2
        WDC   eP      09 44 07.2
        MNV   eP      09 44 16.0
                  USGS 09 32 29.5, 15.0S, 176.4W, h= 33 km, mb=4.9
                       FIJI ISLANDS REGION

SEP 10  MHC   iPd     14 11 24.6   11 32
        SAO   iPd     14 11 28.1
        JAS   iPd     14 11 31.3   11 43
        BKS   e(P)    14 11 36
        FRI   ePc     14 11 36.4
        PRI   eP      14 11 38.6
                  BRK  14 11 15.8, 37.3N, 121.1W, h=  7 km, ML=2.8
                       SOUTH-SOUTHWEST OF MODESTO, CALIFORNIA

SEP 11  MNV   iPc     02 03 05.4                e 03 12
        MIN   eP      02 03 12.5
        FRI   eP      02 03 17.3
        JAS   iPc     02 03 17.5                e 03 23
        MHC   eP      02 03 25.0
                  USGS 01 52 26.5, 42.7N,  29.3W, h= 10 km, mb=5.0, Ms=4.7
                       AZORES ISLANDS REGION

SEP 11  WDC   ePc     22 06 57.9
        MIN   eP      22 07 02
        MHC   eP      22 07 14
        JAS   ePc     22 07 16.0
        PRI   eP      22 07 22.2
        FRI   eP      22 07 22.3
        MNV   ePc     22 07 22.8
                  USGS 21 56 14.1, 42.4N, 144.1E, h= 69 km, mb=4.9
                       HOKKAIDO, JAPAN, REGION

SEP 12  FHC   eP      05 31 33.6
        WDC   eP      05 31 39.4                PKKP 48 31
        BKS   ePc     05 31 41.4   42 24          PP 35 42     PS 44 42     SS 50 15
                                                  e 54 12     Lq 58 32     Lr 02 48
                            MICRON    PERIOD
                       PZ     0.07       1.5
                       LZ     500         20
                       LNE    270         20
                       LNW    280         20
        MIN   eP      05 31 42.0
        MHC   eP      05 31 44.1
        JAS   ePc     05 31 48.7             PKKP 48 34
        PRI   eP      05 31 49.4
        FRI   eP      05 31 50.5
        MNV   e(P)    05 31 56
                  Ms=7.9, Distance=99°
                  USGS 05 17 51.4,  1.7S, 136.0E, h=  5 km, mb=6.3, Ms=7.9
                       WEST IRIAN REGION

SEP 12  JAS   ePc     11 09 20.2
        MNV   eP      11 09 27.7

SEP 13  BKS   eP      03 51 16.6
                            MICRON    PERIOD
                       PZ     0.07       1.4
        PRI   eP      03 51 18
        MHC   eP      03 51 18.3
        FRI   eP      03 51 23.0
        JAS   eP      03 51 23.5
        WDC   eP      03 51 25.3
        MIN   eP      03 51 27
        MNV   eP      03 51 32.2
                  USGS 03 39 57.8, 23.3S, 180.0W, h=566 km, mb=4.5
                       SOUTH OF FIJI ISLANDS

SEP 13  MNV   eP      04 50 48.2
        PRI   eP      04 50 49
        JAS   eP      04 50 55.5
        MHC   eP      04 50 59
        BKS   eP      04 51 03.3
                            MICRON    PERIOD
                       PZ     0.02       0.9
        MIN   e(P)    04 51 10
        WDC   eP      04 51 13.3
                  USGS 04 40 58.7,  5.4S,  77.5W, h= 34 km, mb=5.0
                       NORTHERN PERU

SEP 14  MHC   iPd     01 04 11.9
        SAO   iPc     01 04 14.3
        BKS   iPd     01 04 20.0   04 31
        PRI   eP      01 04 29.9
        JAS   e(P)    01 04 30
        FRI   eP      01 04 33.8
                  BRK  01 04 05.0, 37.1N, 121.9W, h= 12 km, ML=3.1
                       SOUTH OF SAN JOSE, CALIFORNIA

SEP 14  BRK   eP      02 01 29.6
        PRI   eP      02 01 29.7
        MHC   eP      02 01 30.1
        FRI   eP      02 01 34.7
        JAS   eP      02 01 35.2
        WDC   eP      02 01 37.0
        MIN   eP      02 01 38.7
                  USGS 01 50 18.3, 22.0S, 179.5W, h=596 km, mb=5.2
                       SOUTH OF FIJI ISLANDS

SEP 14  FHC   eP      07 36 49.4                e 36 56
        WDC   iPd     07 36 56.3                e 37 04     ScP 42 22
        MIN   eP      07 37 01.4                e 37 09     ScP 42 25
        BKS   eP      07 37 10.8   44 24          pP 37 17     ScS 47 00     Lq 49 16
                            MICRON    PERIOD
                       PZ     0.02       0.7
                       LZ     4.1         20
                       LN     1.6         20
                       LE     4.1         20
        MHC   eP      07 37 16.8                e 37 24      PP 39 16
        JAS   iPd     07 37 19.5             PP 39 20     ScP 42 35
        SAO   e(P)    07 37 20
        FRI   eP      07 37 27.0                e 37 35     PcP 38 45      e 38 53
                                             ScP 42 40
        MNV   iPd     07 37 27.2                e 37 34
        PRI   eP      07 37 27.8             PcP 38 46
                  Ms=5.5, Distance=52°
                  USGS 07 28 32.0, 53.7N, 169.7E, h= 27 km, mb=5.9, Ms=5.7
                       KOMANDORSKY ISLANDS REGION

SEP 14  JAS   eP      10 31 04.5
        FRI   eP      10 31 04.7
        WDC   eP      10 31 04.7
        MNV   iPd     10 31 13.4
                  USGS 10 18 16.5, 23.0S, 171.7E, h= 33 km, mb=4.6
                       LOYALTY ISLANDS REGION

SEP 14  FHC   eP      15 03 11.4
        WDC   iPc     15 03 15.2
        BKS   ePc     15 03 23.4
                            MICRON    PERIOD
                       PZ     0.03       1.0
        MHC   eP      15 03 27.7
        JAS   iPc     15 03 29.7
        PRI   eP      15 03 34.6
        FRI   ePc     15 03 34.7
        MNV   iPc     15 03 36.3
                  USGS 14 50 58.0, 30.6N, 131.2E, h= 33 km, mb=5.5, Ms=5.5
                       KYUSHU, JAPAN

SEP 15  SAO   iPd     02 45 19.3
        MHC   iPd     02 45 19.4   45 24
        BKS   ePc     02 45 31.8   45 47
        PRI   iPc     02 45 34.6                Sg 45 56
        JAS   iPd     02 45 34.9   45 51
        FRI   ePc     02 45 37.5
                  BRK  02 45 12.9, 37.1N, 121.5W, h=  3 km, ML=2.7
                       COYOTE LAKE, CALIFORNIA

SEP 15  FRI   ePc     10 13 06.3
        PRI   ePc     10 13 08.2
        SAO   ePc     10 13 13.0
        JAS   ePc     10 13 13.5
        MHC   ePc     10 13 16.7
        BKS   ePc     10 13 20.7
                            MICRON    PERIOD
                       PZ     0.15       0.9
        MIN   ePc     10 13 25.7
        WDC   iPc     10 13 29.0
        FHC   ePc     10 13 37.3
                  USGS 10 02 13.1, 15.6S,  69.6W, h=214 km, mb=5.6
                       PERU-BOLIVIA BORDER REGION

SEP 16  FRI   ePKP    00 39 17.5
        PRI   ePKP    00 39 18.3
        SAO   ePKP    00 39 19
        JAS   ePKP    00 39 20.2                PP 42 49
        MHC   ePKP    00 39 21
        BKS   ePKP    00 39 22.2
                            MICRON    PERIOD
                       PKPZ   0.05       1.0
        MIN   ePKP    00 39 24.0
        WDC   ePKP    00 39 25.0
                  USGS 00 20 31.4, 58.6S,  25.6W, h= 92 km, mb=5.6
                       SOUTH SANDWICH ISLANDS REGION

SEP 16  FRI   e(P)    09 18 28
        PRI   eP      09 18 30.1
        JAS   eP      09 18 36.0
        MHC   eP      09 18 39.9
        BRK   eP      09 18 44.4
        MIN   eP      09 18 50.8
        WDC   ePd     09 18 54.6
        FHC   eP      09 19 04.0
                  USGS 09 09 09.6,  2.3S,  79.1W, h= 92 km, mb=4.8
                       NEAR COAST OF ECUADOR

SEP 16  BRK   e(P)    12 57 02
        BKS           12 57                     e 16 24
        PRI   eP      12 57 03.0
        MHC   eP      12 57 03.3
        FRI   e(P)    12 57 09
        JAS   eP      12 57 09.2
        WDC   ePc     12 57 10.6
        MIN   eP      12 57 12.4
                  USGS 12 45 23.6, 17.1S, 176.9W, h= 33 km, mb=5.2, Ms=5.4
                       FIJI ISLANDS REGION

SEP 16  WDC   ePKP    16 49 29.5
        MIN   ePKP    16 49 31.8
        JAS   ePKP    16 49 35.0
        MHC   ePKP    16 49 35.4
        FRI   ePKP    16 49 38.0
                  USGS 16 30 28.3,  5.7S, 103.0E, h= 35 km, mb=5.6, Ms=5.3
                       SOUTHERN SUMATERA

SEP 16  BKS           18 09                     e 42 46
        WDC   e(P)    18 09 40                PP 13 52     SKS 20 19
        JAS   e(P)    18 09 51              PKKP 25 53
                  USGS 17 55 47.4,  3.5N, 128.1E, h= 45 km, mb=5.9, Ms=5.6
                       NORTH OF HALMAHERA

SEP 16  SAO   iPd     23 24 25.4
        MHC   iPc     23 24 29.4   24 35
        PRI   ePc     23 24 40.8
        BKS   iPd     23 24 41.9   24 58
        JAS   ePd     23 24 43.9
        FRI   ePc     23 24 45.7
                  BRK  23 24 20.9, 37.0N, 121.4W, h= 12 km, ML=2.6
                       COYOTE LAKE, CALIFORNIA

SEP 17  WDC   ePc     09 05 51.7
        MIN   ePc     09 05 56.5
        MHC   eP      09 06 11.9
        JAS   ePc     09 06 14.2
        FRI   eP      09 06 21.0
        PRI   eP      09 06 22.2
                  USGS 08 56 55.2, 54.1N, 160.4E, h= 98 km, mb=4.6
                       NEAR EAST COAST OF KAMCHATKA

SEP 17  SAO   iPc     15 53 47.4
        PRI   ePd     15 53 52.3   54 03
        MHC   eP      15 53 58.6
        FRI   iPd     15 54 03.5   54 19
        JAS   eP      15 54 07.9   54 28
                  BRK  15 53 41.5, 36.5N, 121.2W, h=  8 km, ML=2.7
                       SOUTHEAST OF HOLLISTER, CALIFORNIA

SEP 17  FRI   eP      17 52 04.3
        PRI   eP      17 52 04.5
        MNV   iPd     17 52 11.5
        JAS   eP      17 52 16.0
        WDC   eP      17 52 42.9
                  USGS 17 47 29.2, 19.2N, 108.6W, h= 33 km, mb=4.5
                       REVILLA GIGEDO ISLANDS REGION

SEP 17  SAO   iPd     19 19 19.0
        MHC   iPd     19 19 19.6   19 24
        BKS   ePc     19 19 31.8   19 46      Sg 19 48
        PRI   iPc     19 19 34.4
        JAS   iPd     19 19 35.1   19 51
        FRI   eP      19 19 37.5
                  BRK  19 19 13.1, 37.0N, 121.5W, h=  5 km, ML=2.9
                       COYOTE LAKE, CALIFORNIA

SEP 18  SAO   eP      21 06 56.6
        BRK   eP      21 06 57.7
        BKS           21 06                     e 27 45
                            MICRON    PERIOD
                       LZ     1.4         20
                       LN     0.7         20
                       LE     1.1         20
        PRI   eP      21 06 58.1
        MHC   eP      21 06 58.7
        FRI   ePc     21 07 04.0
        JAS   ePc     21 07 04.7
        WDC   ePc     21 07 06.7
        MNV   iPc     21 07 15.1
                  USGS 20 55 39.1, 15.7S, 172.9W, h= 33 km, mb=5.4, Ms=4.9
                       SAMOA ISLANDS REGION

SEP 18  JAS   eP      23 40 06.1
        MNV   eP      23 40 07.6
        WDC   eP      23 40 22.2
                  USGS 23 28 40.0, 33.6S, 109.0W, h= 10 km, mb=4.8
                       EASTER ISLAND CORDILLERA

SEP 19  MIN   iPd     02 44 56.7
        WDC   iPc     02 45 08.8   45 29
        JAS   ePd     02 45 12.7   45 36
        BKS   eP      02 45 17.8   45 45
        MHC   eP      02 45 22                  e 45 53
        FRI   e(P)    02 45 29                  e 46 08
        SAO   e(P)    02 45 30
                  BRK  02 44 40.4, 39.8N, 120.6W, h=  4 km, ML=3.2
                       SOUTHEAST OF QUINCY, CALIFORNIA
```

International Seismological Centre

```
SEP 19  BKS  iPe    03 22 46.4  22 50
        MHC  ePe    03 22 54.0
        SAO  eP     03 23 03.1
        JAS  eP     03 23 04.2  23 36
                    BRK  03 22 42.6, 37.8N, 122.0W, h=  6 km, ML=2.7
                         EAST OF BERKELEY, CALIFORNIA

SEP 19  FRI  eP     04 39 37.4              e 39 46
        MNV  eP     04 39 45.4              e 39 53
        MHC  e(P)   04 39 49                e 39 56
        JAS  eP     04 39 49.8
        MIN  eP     04 40 17                e 40 25
        WDC  eP     04 40 19                e 40 28
                    USGS 04 34 40.1, 17.1N, 108.2W, h= 10 km, mb=4.2
                         REVILLA GIGEDO ISLANDS REGION

SEP 19  MHC  eP     18 56 55.6
        PRI  eP     18 56 56.4
        WDC  ePe    18 56 59.2
        JAS  ePe    18 57 00.3
        FRI  eP     18 57 01.2
        MNV  iPe    18 57 09.8
                    USGS 18 44 20.0, 17.4S, 168.5E, h= 33 km, mb=5.0
                         NEW HEBRIDES ISLANDS

SEP 19  MIN  e(P)   21 48 25
        WDC  eP     21 48 28
        MNV  eP     21 48 29
        JAS  eP     21 48 35
        FRI  eP     21 48 37.8
        BKS  eP     21 48 38    59 30      PP 52 15     PS 00 32     SS 05 14
                          MICRON    PERIOD
                    LZ      3.2       20
                    LN      3.0       20
                    LE      3.6       20
        PRI  eP     21 48 46.5
                    Ms=5.9, Distance=89°
                    USGS 21 35 37.2, 42.8N,  13.1E, h= 16 km, mb=5.9, Ms=5.8
                         CENTRAL ITALY

SEP 20  FRI         22 58                   e 58 42
        JAS         22 58                   e 58 48
        MNV  iPd    22 58 49.5
        WDC         22 59                   e 59 10
                    USGS 22 47 29.6, 32.3S, 108.4W, h= 10 km, mb=5.2
                         EASTER ISLAND CORDILLERA

SEP 21  BKS         01 23                   e 23 40
        FRI         01 23                   e 23 44
        JAS         01 23                   e 23 44
        WDC         01 23                   e 23 46
        MNV  iPe    01 23 53.7
                    USGS 01 12 32.3, 17.8S, 177.2W, h=392 km, mb=5.1
                         FIJI ISLANDS REGION

SEP 21  FHC  iPe    08 01 11.5  01 27
        WDC  iPe    08 01 26.6  01 55
        MIN  eP     08 01 36.5
        BKS  e(P)   08 02 20
                    BRK  08 00 49.2, 40.4N, 125.5W, h=  5 km, ML=3.6
                         OFF COAST SOUTHWEST OF EUREKA, CALIFORNIA

SEP 21  PRI  eP     12 07 33.0
        MHC  eP     12 07 34.4
        BKS  ePe    12 07 34.5
        FRI  eP     12 07 37.2
        JAS  eP     12 07 38.4
        WDC  eP     12 07 41.4
        MNV         12 07                   e 07 46
                    USGS 11 54 44.1, 33.8S, 178.3W, h= 33 km, mb=4.8
                         SOUTH OF KERMADEC ISLANDS

SEP 21  MHC  iPd    12 56 04.9
        SAO  iP     12 56 15.6
        BKS  iPe    12 56 17.3  56 28
        JAS  iPd    12 56 23.4  56 38
        FRI  eP     12 56 30.5  56 50
                    BRK  12 56 03.5, 37.4N, 121.6W, h=  7 km, ML=2.9
                         EAST OF SAN JOSE, CALIFORNIA

SEP 22  BKS  ePe    08 06 22.8  11 47      Lq 13 37
                          MICRON    PERIOD
                    PZ      0.04      0.8
        SAO  eP     08 06 23.8
        FHC  eP     08 06 24.6
        MHC  ePe    08 06 25.2
        PRI  ePe    08 06 27.9
        WDC  iPe    08 06 31.6
        JAS  iPe    08 06 34.7
        MIN  eP     08 06 35.7
        FRI  ePe    08 06 36.1
        MNV  iPe    08 06 50.7
                    Note: "T" Phase recorded at 08:41.
                    USGS 07 59 37.6, 19.3N, 155.1W, h=  9 km, mb=5.7, Ms=4.8
                         HAWAII

SEP 22  BKS         12 22       29 19      Lq 33 30     Lr 35 30
                          MICRON    PERIOD
                    LZ      2.3       20
                    LN      1.8       20
                    LE      0.7       20
        JAS  eP     12 22 26
        WDC  eP     12 22 53
                    Ms=5.0, Distance=47°
                    USGS 12 14 07.7,  4.8S, 105.0W, h= 10 km, mb=4.9
                         NORTHERN EASTER ISLAND CORDILLERA

SEP 22  PRI  eP     16 33 44.5
        FRI  eP     16 33 47.0
        MNV  e(P)   16 33 56
        JAS  eP     16 33 57.1
        BKS         16 33       40 47      Lq 44 20     Lr 46 50
                          MICRON    PERIOD
                    LZ      2.4       20
                    LN      2.1       20
                    LE      0.4       20
                    Ms=5.1, Distance=47°
                    USGS 16 25 44.5,  3.7S, 103.0W, h= 10 km, mb=4.6
                         NORTHERN EASTER ISLAND CORDILLERA

SEP 22  WDC  eP     23 33 11.0
        MNV  iPe    23 33 37.0
                    USGS 23 22 43.7, 43.7N, 147.7E, h= 39 km, mb=5.0
                         KURIL ISLANDS

SEP 23  WDC  eP     10 25 25.8              ScP 31 00
        MIN  eP     10 25 31.3
        BKS  e(P)   10 25 41    32 22      PP 27 19     Lq 35 50     Lr 38 20
                          MICRON    PERIOD
                    PZ      0.04      0.7
                    LZ      7         20
                    LN      2.2       20
                    LE      6         20
        MHC  eP     10 25 46.4
        JAS  eP     10 25 49.4              ScP 31 12
        FRI  eP     10 25 57.1              ScP 31 16
        PRI  eP     10 25 57.5              ScP 31 18
                    Ms=5.5, Distance=46°
                    USGS 10 17 20.8, 52.3N, 174.0E, h= 43 km, mb=5.8, Ms=5.6
                         NEAR ISLANDS, ALEUTIAN ISLANDS

SEP 23  WDC  ePe    14 44 04.5              PP 47 52
        BKS  eP     14 44 05.3              e 55 20
                          MICRON    PERIOD
                    PZ      0.01      0.6
        MHC  eP     14 44 06.8
        MIN  eP     14 44 07.0
        PRI  eP     14 44 10.3
        JAS  ePe    14 44 10.9              PP 48 02
        FRI  eP     14 44 13.3
                    USGS 14 31 57.7,  4.6S, 149.5E, h=577 km, mb=5.4
                         BISMARCK SEA

SEP 23  BKS  ePKP   23 22 06.6              e 22 17      PS 32 57     Lr 57 40
                          MICRON    PERIOD
                    LZ      3.2       20
                    LN      2.8       20
                    LE      1.1       20
        WDC         23 22                   e 22 04      e 23 21
        JAS         23 22                   e 22 05      e 23 08
                    USGS 23 03 25.1, 60.5S,  50.3W, h= 10 km, mb=5.7, Ms=6.2
                         SCOTIA SEA

SEP 24  FHC  eP     03 40 49.8
        WDC  iPe    03 40 49.9          PKPPKP 09 24
        MIN  ePe    03 40 51.7
        MNV  iPe    03 41 03.8
        JAS  iPe    03 41 07.2          PKPPKP 09 14
        BKS  ePe    03 41 08.0
                          MICRON    PERIOD
                    PZ      0.04      0.8
        MHC  ePe    03 41 11.2
        FRI  ePe    03 41 12.7          PKPPKP 09 15
        SAO  eP     03 41 14.4
        PRI  ePe    03 41 19.3          PKPPKP 09 13
                    USGS 03 29 58.3, 73.4N,  54.7E, h=  0 km, mb=5.7
                         UNDERGROUND NUCLEAR EXPLOSION
                         NOVAYA ZEMLYA

SEP 24  BRK  eP     06 25 23
        BKS         06 25           34 55      Lr 49 50
        PRI  eP     06 25 24.5
        JAS  iPe    06 25 29.5
        WDC  iPe    06 25 29.5
        FRI  eP     06 25 29.6
        MNV  iPe    06 25 39.2
                    USGS 06 13 15.5, 17.6S, 176.3E, h= 33 km, mb=5.0
                         FIJI ISLANDS REGION

SEP 24  FHC  e(P)   06 37 20
        BKS  eP     06 37 25.2
                          MICRON    PERIOD
                    PZ      0.03      0.8
        WDC  eP     06 37 25.5
        MHC  eP     06 37 26.5
        MIN  eP     06 37 29.5
        PRI  eP     06 37 30.0
        JAS  ePd    06 37 31.0
        FRI  eP     06 37 32.9
        MNV  iPd    06 37 40.0
                    USGS 06 24 30.2,  7.2S, 154.3E, h= 33 km, mb=5.5
                         SOLOMON ISLANDS

SEP 24  FHC  iPe    08 07 34.3  07 53
        WDC  iPd    08 07 50.2              Sg 08 23
        MIN  ePe    08 07 59.5
        BRK  ePe    08 08 05.8
        BKS  e(P)   08 08 07                e 08 14      e 08 54
        MHC  ePe    08 08 15.5
        SAO  ePd    08 08 22.3
        JAS  ePd    08 08 24.0
        FRI  eP     08 08 37
                    BRK  08 07 10.0, 40.3N, 125.7W, h=  5 km, ML=3.8
                         OFF COAST SOUTHWEST OF EUREKA, CALIFORNIA

SEP 24  FRI  iPe    13 05 21.1
        MNV  iPe    13 05 23.0
        JAS  iPe    13 05 27.3
        PRI  iPe    13 05 40.6  06 08
        SAO  iPe    13 05 42.9
        MHC  iPe    13 05 43.0
        BKS  ePe    13 05 49.1              Sg 06 28
        MIN  eP     13 06 02.0
        WDC  e(P)   13 06 10
                    BRK  13 05 04.8, 37.6N, 118.9W, h=  8 km, ML=4.1
                         MAMMOTH LAKES, CALIFORNIA

SEP 24  WDC         13 18                   e 18 17
        BKS         13 18                   e 31 12      Lr 45 50
                          MICRON    PERIOD
                    LR      1.5       20
                    LN      0         20
                    LE      1.4       20
        JAS         13 18                   e 18 26
        MNV  iPd    13 18 31.2
                    USGS 13 05 19.8,  5.7S, 153.6E, h= 33 km, mb=5.8, Ms=5.5
                         NEW IRELAND REGION

SEP 24  FRI  iPe    14 26 36.3
        MNV  iPe    14 26 38.4
        JAS  ePe    14 26 42.4
        PRI  iPe    14 26 55.8
        MHC  ePe    14 26 58.0
        SAO  iPe    14 26 58.1
        BKS  ePe    14 27 04.3
                    BRK  14 26 20.1, 37.6N, 118.9W, h=  8 km, ML=3.6
                         MAMMOTH LAKES, CALIFORNIA

SEP 24  FRI  iPe    15 01 37.1
        MNV  iPe    15 01 39.1
        JAS  eP     15 01 43.3
        PRI  ePe    15 01 56.4
        SAO  ePe    15 01 58.7
        MHC  ePe    15 01 58.8
        BKS  iPe    15 02 05.0
                    BRK  15 01 20.9, 37.6N, 118.9W, h=  7 km, ML=3.0
                         MAMMOTH LAKES, CALIFORNIA

SEP 25  PRI  eP     01 36 56.0
        BKS         01 37                   Lq 00 15     Lr 04 00
                          MICRON    PERIOD
                    LZ      1.6       20
                    LN      1.2       20
                    LE      0.9       20
        FRI  eP     01 37 00.7
        JAS  iPd    01 37 01.0
        WDC  iPd    01 37 01.3
        MIN         01 37                   e 37 04
        MNV  iPd    01 37 08.8
                    USGS 01 24 11.9, 23.1S, 171.5E, h= 33 km, mb=5.1, Ms=5.4
                         LOYALTY ISLANDS REGION

SEP 25  FHC  eP     13 19 02.9
        WDC  iPe    13 19 03.9              i 19 18      i 22 52
        MIN  eP     13 19 05.8              i 19 18
        BKS  eP     13 19 17.3              e 19 29      Lr 55 20
                          MICRON    PERIOD
                    PZ      0.07      1.0
        MNV  iPe    13 19 17.6              e 19 30
        JAS  iPe    13 19 17.8              i 19 30
        MHC  eP     13 19 19.7
        FRI  eP     13 19 22.6
        PRI  eP     13 19 26.3
                    USGS 13 05 53.6, 45.1N,  77.0E, h= 40 km, mb=5.9, Ms=5.5
                         EASTERN KAZAKH, S.S.R.

SEP 26  FHC         04 17                   e 17 38
        WDC  eP     04 17 29.2              e 17 43
        MIN         04 17                   e 17 47
        BKS         04 17                   e 17 54
        MHC         04 17                   e 18 00
        JAS  eP     04 17 49.0              e 18 02
        PRI         04 17                   e 18 09
        FRI  eP     04 17 55.8              e 18 09
        MNV  e(P)   04 17 56                i 18 10
                    USGS 04 07 28.1, 46.4N, 152.6E, h= 17 km, mb=4.8, Ms=4.6
                         KURIL ISLANDS
```

International Seismological Centre

```
SEP 26  MNV  iPe    15 00 33.2
        FRI  iPe    15 00 44.8
        JAS  iPe    15 00 53.6                 i 01 38      i 01 43      i 01 49
        PRI  iPe    15 00 58.0
        SAO  ePe    15 01 04.0                 i 01 11
        MHC  iPe    15 01 06.5                 i 01 14
        BKS  iPe    15 01 12.9                Pg 01 24      e 02 52      e 02 30
        MIN  ePe    15 01 19.3
        WDC  iPe    15 01 28.8
        FHC  eP     15 01 43.7
                    ML=5.5, NUCLEAR EXPLOSION, NEVADA TEST SITE
                    USGS 15 00 00.1, 37.2N, 116.4W, h=  0 km, mb=5.6, Ms=4.1
                         SOUTHERN NEVADA

SEP 26  FRI  iPe    21 45 51.6  46 03
        MNV  iPe    21 45 53.4
        JAS  iPe    21 45 57.6
        PRI  ePe    21 46 11.0  46 40
        SAO  iPe    21 46 13.2  46 44
        MHC  ePe    21 46 13.3                 e 46 42
        BKS  eP     21 46 19.7
                    BRK  21 45 35.3, 37.6N, 118.9W, h= 10 km, ML=3.4
                         MAMMOTH LAKES, CALIFORNIA

SEP 26  MIN  iPe    23 25 19.3
        WDC  eP     23 25 31.0  25 46
        JAS  eP     23 25 48.5                 e 26 21
        MNV  eP     23 25 58.6                 e 26 04      i 26 44
                    BRK  23 25 11.1, 40.0N, 121.2W, h= 12 km, ML=3.0
                         NORTHWEST OF QUINCY, CALIFORNIA

SEP 27  SAO  iPd    06 14 52.7
        MHC  iPd    06 15 01.7
        PRI  eP     06 15 09.1
        BKS  iPe    06 15 11.5  15 26          e 15 13      Sg 15 30     e 16 21
        JAS  ePe    06 15 15.6  15 35          i 15 17
        FRI  eP     06 15 16
                    BRK  06 14 50.5, 36.8N, 121.6W, h=  5 km, ML=2.9
                         WEST OF HOLLISTER, CALIFORNIA

SEP 27  BKS  iPe    14 12 27.0  22 45       pP 12 40      e 24 10      Lq 35 00
                                            Lr 39 00
                                MICRON      PERIOD
                            PZ    0.09        1.0
                            LZ    2.4         20
                            LN    2.2         20
                            LE    2.6         20
        SAO  eP     14 12 27.6
        MHC  ePe    14 12 28.8                pP 12 42
        PRI  ePe    14 12 29.9
        WDC  iPe    14 12 32.7                pP 12 46     PP 15 56
        JAS  iPe    14 12 33.6                pP 12 47     PP 15 57
        FRI  iPe    14 12 34.1
        MIN  ePe    14 12 34.4
        MNV  iPe    14 12 42.6
                    Ms=5.7, Distance=85°
                    USGS 13 59 52.6, 19.1S, 168.7E, h= 74 km, mb=5.8
                         NEW HEBRIDES ISLANDS

SEP 27  JAS         15 09                      e 09 42
        MNV  eP     15 09 58.7
                    Note: "T" Phase recorded at 16:17.

SEP 27  FHC  iPe    22 32 46.6  32 55
        WDC  iPe    22 32 59.4
        MIN  iP     22 33 09.1
        SAO  eP     22 33 36.0
                    BRK  22 32 35.1, 40.3N, 124.4W, h= 20 km, ML=3.4
                         NEAR COAST SOUTHWEST OF EUREKA, CALIFORNIA

SEP 29  FHC  iPe    02 22 39.4  22 54
        WDC  iPe    02 22 54.3  23 20
        JAS  e(P)   02 23 29
                    BRK  02 22 19.1, 40.4N, 125.3W, h=  5 km, ML=3.7
                         OFF COAST SOUTHWEST OF EUREKA, CALIFORNIA

SEP 29  MNV  iPe    03 25 37.9
        FRI  eP     03 25 39.4
        PRI  e(P)   03 25 43
        JAS  eP     03 25 47.8
        MHC         03 25                      e 25 52
        BRK  e(P)   03 25 57
        MIN  eP     03 26 02.2
        WDC  eP     03 26 08.5
        FHC  eP     03 26 16.2
                    USGS 03 17 16.2,  9.8N,  78.0W, h= 33 km, mb=4.9
                         PANAMA

SEP 29  WDC  eP     11 03 41.0
        BRK  e(P)   11 03 42
        MIN  e(P)   11 03 45
        PRI  eP     11 03 47.2
        JAS  eP     11 03 48.5
        FRI  eP     11 03 50.3
        MNV  eP     11 03 57.3
                    USGS 10 50 49.0,  7.2S, 154.8E, h= 33 km, mb=5.3, Ms=4.2
                         SOLOMON ISLANDS

SEP 29  WDC  ePKP   13 00 27.2                PP 01 12
        MIN  ePKP   13 00 28.6
        BKS         13 00                     e 01 20
        JAS  ePKP   13 00 32.0                PP 01 28   PKKP 11 14
        FRI  e(PKP) 13 00 34
        PRI  ePKP   13 00 34.0
        MNV  ePKP   13 00 34.2                PP 01 32
                    USGS 12 41 48.5,  2.8S, 119.6E, h= 21 km, mb=5.9, Ms=5.6
                         SULAWESI

SEP 29  FHC  ePKP   18 56 15.2
        WDC  ePKP   18 56 16.0                PP 58 17
        MIN  ePKP   18 56 17.5
        BRK  e(PKP) 18 56 20
        BKS         18 56                     e 56 30     PP 58 25     PS 08 45
                                              e 10 16      e 15 17     SS 15 50
                                              e 16 28      i 20 18     SSS 20 34
                                              i 23 56      i 27 23     Lq 30 36
                                              e 33 32     Lr 35 40      e 37 40
                                MICRON      PERIOD
                            LZ    15          20
                            LN    10          20
                            LE    12          20
        JAS  ePKP   18 56 21.4                PP 58 43
        MHC  e(PKP) 18 56 22                  PP 58 45
        FRI  e(PKP) 18 56 24
        MNV  ePKP   18 56 25.1
        PRI  ePKP   18 56 25.8
                    Ms=6.6, Distance=126°
                    USGS 18 37 12.5,  1.2N,  94.2E, h= 27 km, mb=6.2, Ms=6.8
                         OFF WEST COAST OF NORTHERN SUMATERA

SEP 30  FHC  e(P)   08 49 41
        WDC  eP     08 49 47.3
        MIN  eP     08 49 51.2
        BKS         08 50                     e 50 19
        JAS  eP     08 50 04.9
        FRI         08 50                     e 50 07
        PRI  e(P)   08 50 08
        MNV  eP     08 50 12
                    USGS 08 38 53.2, 41.5N, 141.9E, h= 74 km, mb=5.1
                         HOKKAIDO, JAPAN, REGION

OCT 01  FRI  e(P)   11 52 38    52 49
        MNV  e(P)   11 52 39
        JAS  e(P)   11 52 44                                  e 53 01
        PRI  e(P)   11 52 57
        SAO  e(P)   11 53 00
        MHC  e(P)   11 53 00
        BKS  e(P)   11 53 05
                    BRK  11 52 20.6, 37.5N, 118.8W, h=  6 km, ML=3.2
                         MAMMOTH LAKES, CALIFORNIA

OCT 01  FRI  iPe    12 37 18.9  37 30
        MNV  e(P)   12 37 20
        JAS  iPe    12 37 25.8  37 43
        PRI  ePd    12 37 39.0
        SAO  ePe    12 37 40.9
        MHC  eP     12 37 41.3
        BKS  eP     12 37 47.8
                    BRK  12 37 02.3, 37.6N, 118.8W, h= 12 km, ML=3.0
                         MAMMOTH LAKES, CALIFORNIA

OCT 01  MNV  iPe    14 20 25.4                pP 20 59
        FRI  ePe    14 20 25.5                pP 21 00     PeP 23 12
        PRI  eP     14 20 28.4                pP 21 02     sP 21 19     PeP 23 14
        JAS  iPe    14 20 35.1                pP 21 09     sP 21 26     PeP 23 15
                                             pPeP 23 55    ScP 26 43
        SAO  eP     14 20 36.0                pP 21 10
        MHC  ePe    14 20 39.8                pP 21 14     sP 21 31     PeP 23 17
        BKS  e(P)   14 20 46                  pP 21 20     sP 21 38     PeP 23 17
                                             pPeP 23 58     e 26 00      SS 29 00
                                MICRON      PERIOD
                            PZ    0.03        0.7
        MIN  ePe    14 20 53.3                pP 21 28     ScP 26 50
        WDC  ePe    14 20 57.0                pP 21 32     sP 21 49     PeP 23 22
                                             pPeP 24 02    ScP 26 52
        FHC  ePe    14 21 08.8                pP 21 43     PeP 23 27
                    mb=5.2, h=150 km, Distance=34°
                    USGS 14 14 10.3, 15.8N,  92.2W, h=161 km, mb=5.4
                         MEXICO-GUATEMALA BORDER REGION

OCT 01  WDC  eP     23 49 45.5
        JAS  eP     23 50 03.1
        FRI  eP     23 50 08.5
                    USGS 23 38 43.3, 40.1N, 141.9E, h= 52 km, mb=4.9
                         NEAR EAST COAST OF HONSHU, JAPAN

OCT 02  MIN  eP     06 32 57.7
        JAS  eP     06 33 15.6
        FRI  eP     06 33 23.6
        MNV  eP     06 33 24.6
                    USGS 06 07 57.6, 51.1N, 178.9E, h= 50 km, mb=4.5
                         RAT ISLANDS, ALEUTIAN ISLANDS

OCT 02  BKS  e(P)   19 29 16
                                MICRON      PERIOD
                            PZ    0.02        0.7
        PRI  eP     19 29 16.8
        MHC  eP     19 29 16.9
        FRI  eP     19 29 21.7
        JAS  eP     19 29 22.4
        MNV  ePe    19 29 31.2
                    USGS 19 18 11.5, 20.6S, 178.7W, h=576 km, mb=5.0
                         FIJI ISLANDS REGION

OCT 03  JAS  ePe    00 14 04.9
        MNV  ePe    00 14 11.3

OCT 03  MNV  iP     00 40 31.0
        FRI  eP     00 40 37.5
        JAS  eP     00 40 43.8
        PRI  eP     00 40 44.0
        MHC  eP     00 40 51.0
                    USGS 00 31 56.8, 19.0N,  67.8W, h= 42 km, mb=5.0
                         MONA PASSAGE

OCT 03  FRI  iPe    08 54 41.2  54 53
        MNV  iPe    08 54 42.9
        JAS  iPe    08 54 47.4  55 03
        PRI  ePd    08 55 00.8
        SAO  iPd    08 55 03.1
        MHC  ePd    08 55 03.3
        BKS  eP     08 55 09.3
                    BRK  08 54 24.8, 37.6N, 118.9W, h= 12 km, ML=3.0
                         MAMMOTH LAKES, CALIFORNIA

OCT 03  FRI  iPe    08 58 47.1  58 59
        MNV  iPe    08 58 48.9
        JAS  iPe    08 58 53.4  59 09
        PRI  ePd    08 59 06.8
        SAO  iPd    08 59 09.1
        MHC  ePd    08 59 09.5
        BKS  eP     08 59 15.0
                    BRK  08 58 30.8, 37.6N, 118.9W, h= 10 km, ML=3.1
                         MAMMOTH LAKES, CALIFORNIA

OCT 03  MNV  eP     11 53 53.4                e 54 10
        MIN         11 53                     e 53 56
        JAS         11 54                     e 54 01      e 54 36
        WDC         11 54                     e 54 01
                    USGS 11 35 14.1, 18.1N,  94.8E, h= 56 km, mb=5.6
                         BURMA

OCT 03  JAS  iPe    21 14 54.7
        MNV  eP     21 15 01.4
        FRI  eP     21 15 02.0
                    USGS 21 04 17.4, 44.8N, 146.3E, h=139 km, mb=4.6
                         KURIL ISLANDS

OCT 04  WDC  eP     01 01 45.8
        MHC         01 01                     e 01 49
        JAS  eP     01 01 52.9
        FRI         01 01                     e 01 55
        MNV  eP     01 02 01.8
                    USGS 00 48 46.3,  1.2S, 148.7E, h= 22 km, mb=5.2, Ms=4.6
                         ADMIRALTY ISLANDS REGION

OCT 04  FRI  eP     09 21 42.2
        JAS  eP     09 21 43.4
        WDC  eP     09 21 46.1
        MNV  eP     09 21 52.3
                    USGS 09 09 51.6, 20.4S, 174.4W, h= 33 km, mb=4.9
                         TONGA ISLANDS

OCT 04  MNV  eP     11 30 18.2
        JAS  eP     11 30 23.5
        WDC  eP     11 30 38.3
                    USGS 11 18 30.9, 23.3S,  70.2W, h= 28 km, mb=5.1
                         NEAR COAST OF NORTHERN CHILE

OCT 04  FHC         16 12                     e 12 02
        MNV  ePe    16 12 15.7
        JAS  ePe    16 12 17.4
        BKS         16 12                     e 12 19
        FRI  eP     16 12 22.8
        PRI  eP     16 12 27.2
                    USGS 15 59 57.9, 60.7N,  71.5E, h=  0 km, mb=5.4
                         UNDERGROUND NUCLEAR EXPLOSION
                         WESTERN SIBERIA

OCT 05  WDC  eP     14 54 26.2
        JAS  eP     14 54 47.6
        MNV  eP     14 54 52.5
                    USGS 14 45 48.1, 55.4N, 166.5E, h= 33 km, mb=4.7
                         KOMANDORSKY ISLANDS REGION
```

International Seismological Centre

```
OCT 05  FRI  ePd    16 52 51.6
        MNV  iPd    16 52 52.3              pP 53 21
        PRI  ePd    16 52 54.0              pP 53 23
        JAS  ePd    16 52 59.7              pP 53 28
        MHC  ePd    16 53 03.6              pP 53 32
        BKS  iPd    16 53 08.1              pP 53 36
                        MICRON     PERIOD
                    PZ     0.04       0.9
        MIN  ePd    16 53 13.7
        FHC  ePd    16 53 26.9
                    USGS 16 43 16.2,  3.6S,  76.3W, h=116 km, mb=5.5
                        NORTHERN PERU

OCT 07  FHC  eP     01 38 59.1
        WDC  ePc    01 39 03.9
        MIN  eP     01 39 07.8
        BKS  eP     01 39 22.0
                        MICRON     PERIOD
                    PZ     0.01       0.8
        JAS  eP     01 39 26.4
        MNV  iPc    01 39 29.5
        FRI  eP     01 39 33.8
        PRI         01 39                   e 39 35
                    USGS 01 29 29.5, 64.9N, 143.8E, h= 33 km, mb=4.8, Ms=4.1
                        EASTERN SIBERIA

OCT 07  PRI         10 54                   e 54 14
        FRI  eP     10 54 17.2
        JAS  eP     10 54 21.5
        BRK         10 54                   e 54 22
                    USGS 10 41 05.8, 54.7S, 136.9W, h= 10 km
                        SOUTH PACIFIC CORDILLERA

OCT 07  BRK  e(P)   14 19 15
        MHC  eP     14 19 16.6
        WDC  ePc    14 19 18.4
        PRI  eP     14 19 18.8
        JAS  ePc    14 19 21.6
        FRI  eP     14 19 23.0
        MNV  eP     14 19 31.0
                    USGS 14 06 52.6, 10.7S, 165.7E, h= 36 km, mb=5.3, Ms=4.8
                        SANTA CRUZ ISLANDS

OCT 07  FHC  ePKP   19 46 24.6
        BRK  ePKP   19 46 28.4
        MHC  ePKPc  19 46 29.9
        JAS  ePKPc  19 46 30.8
        PRI  ePKPc  19 46 32.8
        FRI  ePKPc  19 46 32.9
        MNV  ePKPc  19 46 34.5
                    USGS 19 27 49.0,  7.7S, 110.8E, h=180 km, mb=5.2
                        JAVA

OCT 07  JAS  iPc    20 54 57.7  55 10
        MNV  iPc    20 54 58.7
        FRI  iPd    20 55 04.4  55 21
        MHC  ePc    20 55 17.0
        SAO  iPd    20 55 19.8
        BKS  iPc    20 55 21.1  55 50
        PRI  ePd    20 55 22.1
        MIN  ePd    20 55 27.4
        WDC  e(P)   20 55 35
        FHC  e(P)   20 55 53
                    BRK  20 54 41.4, 38.2N, 119.3W, h=  9 km, ML=5.0
                        BRIDGEPORT, CALIFORNIA

OCT 07  JAS  eP     21 05 24.0
        MNV  eP     21 05 24.8
        FRI  iPd    21 05 30.9
        MHC  eP     21 05 44.0
        SAO  iPd    21 05 46.4
        BKS  ePd    21 05 48.0
                    BRK  21 05 08.1, 38.2N, 119.3W, h= 14 km, ML=3.0
                        BRIDGEPORT, CALIFORNIA

OCT 07  JAS  iPc    21 10 16.2
        MNV  iPc    21 10 17.5
        FRI  iPd    21 10 23.1  10 39
        MHC  ePc    21 10 35.5
        SAO  ePc    21 10 38.3
        BKS  iPc    21 10 39.5
        PRI  eP     21 10 41.0
        MIN  ePg    21 10 49
        WDC  ePg    21 10 55.5
                    BRK  21 10 00.0, 38.2N, 119.3W, h= 10 km, ML=4.0
                        BRIDGEPORT, CALIFORNIA

OCT 07  FRI  eP     21 12 06.2
        MHC  eP     21 12 19.5
        SAO  eP     21 12 22.1
        BRK  eP     21 12 23.0
                    BRK  21 11 43,   38.2N, 119.3W, h= 10 km, ML=3.1
                        BRIDGEPORT, CALIFORNIA

OCT 07  JAS  iPc    21 21 09.2
        MNV  e(P)   21 21 11
        FRI  iPd    21 21 16.0  21 32
        MHC  ePc    21 21 28.5
        SAO  iPd    21 21 31.4
        BKS  iPc    21 21 32.8  22 05
        PRI  ePc    21 21 34.3
        MIN  ePg    21 21 43
        WDC  ePgd   21 21 49
                    BRK  21 20 53.0, 38.2N, 119.4W, h= 11 km, ML=4.4
                        BRIDGEPORT, CALIFORNIA

OCT 07  JAS  iPc    21 31 52.2
        MNV  iPc    21 31 53.3
        FRI  iPd    21 31 59.0
        MHC  eP     21 32 11.8
        SAO  eP     21 32 14.1
        BKS  ePd    21 32 16.1
        PRI  eP     21 32 17
                    BRK  21 31 36.0, 38.2N, 119.3W, h= 12 km, ML=3.0
                        BRIDGEPORT, CALIFORNIA

OCT 07  JAS  iPc    21 45 40.2
        FRI  iPd    21 45 46.5  46 03
        MHC  eP     21 45 59.4
        SAO  eP     21 46 02.2
        BKS  iPc    21 46 03.6  46 34
        PRI  eP     21 46 04.3
        MIN  ePg    21 46 13
                    BRK  21 45 23.8, 38.2N, 119.3W, h=  8 km, ML=4.1
                        BRIDGEPORT, CALIFORNIA

OCT 07  JAS  iPc    22 49 20.9
        MNV  iPc    22 49 21.7
        FRI  iPd    22 49 27.5
        MHC  ePd    22 49 40.5
        SAO  iPd    22 49 43.0
        BKS  iPd    22 49 45.0  50 16
        PRI  eP     22 49 45.3
        MIN  ePg    22 49 56
                    BRK  22 49 04.6, 38.2N, 119.3W, h= 10 km, ML=3.2
                        BRIDGEPORT, CALIFORNIA

OCT 07  JAS  iPc    23 32 01.3
        MNV  iPc    23 32 02.0
        FRI  iPd    23 32 07.6  32 24
        MHC  ePc    23 32 20.5
        SAO  iPd    23 32 23.3
        BKS  iPc    23 32 24.6  32 53
        PRI  eP     23 32 25.5
        MIN  ePg    23 32 35
        WDC  e(P)   23 32 41
                    BRK  23 31 44.8, 38.2N, 119.3W, h= 10 km, ML=3.8
                        BRIDGEPORT, CALIFORNIA

OCT 07  JAS  iPc    23 44 25.5
        MNV  iPc    23 44 26.3
        FRI  iPd    23 44 31.9
        MHC  eP     23 44 45.0
        SAO  iPd    23 44 47.4
        BKS  iPd    23 44 49.4  45 18
        PRI  eP     23 44 50.2
        MIN  ePg    23 44 59
        WDC  ePg    23 45 09
                    BRK  23 44 09.1, 38.2N, 119.3W, h=  9 km, ML=3.4
                        BRIDGEPORT, CALIFORNIA

OCT 07  FRI  iPd    23 45 40.4
        MHC  eP     23 45 53
        SAO  eP     23 45 54.7
        BRK  eP     23 45 57.4
        MIN  ePg    23 46 08
                    BRK  23 45 17.7, 38.2N, 119.3W, h= 11 km, ML=3.5
                        BRIDGEPORT, CALIFORNIA

OCT 07  FRI  iP     23 45 58.5
        MHC  eP     23 46 11
        SAO  eP     23 46 14.9
        BRK  eP     23 46 15.3
        MIN  ePg    23 46 26
                    BRK  23 45 33,   38.2N, 119.3W, h=  9 km, ML=3.5
                        BRIDGEPORT, CALIFORNIA

OCT 08  JAS  iPc    00 24 10.8
        MNV  iPc    00 24 11.9
        FRI  iPd    00 24 17.8  24 34
        MHC  ePc    00 24 30.2
        SAO  ePc    00 24 32.9
        BKS  iPd    00 24 34.5  25 04
        PRI  eP     00 24 35.2
        MIN  ePg    00 24 44
        WDC  ePg    00 24 54
                    BRK  00 23 54.6, 38.2N, 119.4W, h= 10 km, ML=3.7
                        BRIDGEPORT, CALIFORNIA

OCT 08  JAS  iPc    00 48 01.2
        MNV  iPc    00 48 02.3
        FRI  iPd    00 48 07.8  48 24
        MHC  ePc    00 48 20.4
        SAO  iPd    00 48 23.2
        BKS  iPc    00 48 24.3  48 52
        PRI  iPd    00 48 25.7
        MIN  ePg    00 48 34.3
        WDC  ePg    00 48 41
                    BRK  00 47 44.8, 38.2N, 119.4W, h=  9 km, ML=4.0
                        BRIDGEPORT, CALIFORNIA

OCT 08  JAS  iPc    01 30 03.3
        MNV  iPc    01 30 04.4
        FRI  iPd    01 30 10.1
        MHC  eP     01 30 23.5
        SAO  iPd    01 30 25.4
        BKS  iPd    01 30 27.0  30 57
                    BRK  01 29 47.1, 38.2N, 119.3W, h=  9 km, ML=3.0
                        BRIDGEPORT, CALIFORNIA

OCT 08  JAS  iPc    02 02 05.9
        MNV  iPc    02 02 07.2
        FRI  iPd    02 02 12.8
        MHC  eP     02 02 25.0
        SAO  iPc    02 02 28.0
        BKS  iPd    02 02 29.6
                    BRK  02 01 49.7, 38.2N, 119.3W, h=  7 km, ML=3.0
                        BRIDGEPORT, CALIFORNIA

OCT 08  JAS  iPc    02 03 10.0
        MNV  iPc    02 03 11.1
        FRI  iPd    02 03 16.8
        MHC  eP     02 03 30.1
        SAO  iPd    02 03 32.1
        BKS  iPd    02 03 33.6
                    BRK  02 02 53.7, 38.2N, 119.3W, h= 11 km, ML=3.5
                        BRIDGEPORT, CALIFORNIA

OCT 08  JAS  iPc    02 03 47.0
        MNV  iPc    02 03 48.1
        FRI  iPd    02 03 54.0
        MHC  iPc    02 04 07.1
        SAO  iPd    02 04 09.1
                    BRK  02 03 31.0, 38.2N, 119.3W, h= 16 km, ML=3.5
                        BRIDGEPORT, CALIFORNIA

OCT 08  JAS  iPc    03 34 40.5
        MNV  iPc    03 34 41.1
        FRI  iPd    03 34 46.7  35 03
        MHC  eP     03 34 59.8
        SAO  iPc    03 35 02.3
        BKS  iPc    03 35 03.7
        PRI  eP     03 35 04.8
        MIN  eP     03 35 10.4
        WDC  eP     03 35 18.5
                    BRK  03 34 24.0, 38.2N, 119.3W, h=  9 km, ML=4.6
                        BRIDGEPORT, CALIFORNIA

OCT 08  JAS  iPc    03 57 11.5  57 23
        MNV  iP     03 57 12.8
        FRI  iPd    03 57 18.2
        SAO  eP     03 57 33.4
        BKS  ePc    03 57 35.5
        PRI  eP     03 57 36.7
                    BRK  03 56 55.1, 38.2N, 119.4W, h=  5 km, ML=3.0
                        BRIDGEPORT, CALIFORNIA

OCT 08  WDC  eP     05 16 20.2
        MIN  eP     05 16 22.1
        JAS  eP     05 16 32.1
        FRI         05 16                   e 16 37
                    USGS 05 03 09.8, 23.9N, 121.8E, h= 31 km, mb=5.0
                        TAIWAN

OCT 08  JAS  iPc    09 29 12.8
        MNV  iPc    09 29 13.4
        FRI  iPd    09 29 18.9
        MHC  eP     09 29 32.7
        SAO  eP     09 29 34.5
        PRI  eP     09 29 36.8
                    BRK  09 28 56.1, 38.2N, 119.3W, h=  7 km, ML=3.2
                        BRIDGEPORT, CALIFORNIA

OCT 08  JAS  iP     09 38 52.9
        MNV  iPc    09 38 53.6
        FRI  iPd    09 38 59.2  39 16
        MHC  eP     09 39 12.0
        SAO  iPc    09 39 14.7
        BKS  iPd    09 39 16.0
        PRI  eP     09 39 17.3
                    BRK  09 38 36.4, 38.2N, 119.3W, h= 10 km, ML=3.7
                        BRIDGEPORT, CALIFORNIA

OCT 08  JAS  iPc    09 48 33.9  48 46
        MNV  iPc    09 48 34.9
        FRI  iPd    09 48 40.7
        MHC  eP     09 48 53.8
        SAO  eP     09 48 55.9
        BKS  iPd    09 48 57.7
        PRI  eP     09 48 59.7
                    BRK  09 48 17.5, 38.2N, 119.3W, h=  5 km, ML=3.1
                        BRIDGEPORT, CALIFORNIA
```

International Seismological Centre

```
OCT 08  JAS   iPe    12 14 18.2   14 31
        MNV   iPe    12 14 19.5
        FRI   iPd    12 14 25.0
        MHC   eP     12 14 37.5
        SAO   eP     12 14 40.0
        BKS   iPe    12 14 41.1
        PRI   eP     12 14 42.8
                     BRK  12 14 02.0, 38.2N, 119.3W, h=  9 km, ML=4.1
                          BRIDGEPORT, CALIFORNIA

OCT 09  MNV   ePd    07 56 18.1
        PRI   eP     07 56 21.7
        JAS   eP     07 56 36.7
        MHC          07 56                    e 56 34
        WDC   e(P)   07 56 51
                     USGS 07 49 29.2, 14.3N,  90.1W, h= 33 km, mb=5.0, Ms=4.7
                          GUATEMALA

OCT 09  JAS   iPe    22 00 26.8
        MNV   iPe    22 00 27.8
        FRI   iPd    22 00 33.3   00 50
        MHC   iPe    22 00 46.2
        SAO   iPe    22 00 48.8
        BKS   iPe    22 00 49.0
        PRI   ePd    22 00 51
        MIN   ePg    22 01 01
        WDC   ePg    22 01 07
                     BRK  22 00 10.4, 38.2N, 119.3W, h=  8 km, ML=4.2
                          BRIDGEPORT, CALIFORNIA

OCT 09  MNV   iPe    22 33 15.1
        FRI   ePe    22 33 21.4                pP 34 23
        JAS   iPe    22 33 27.2                pP 34 27
        PRI   ePe    22 33 27.5                pP 34 27
        SAO   eP     22 33 31.9
        MHC   ePe    22 33 34.4
        MIN   ePe    22 33 35.1
        BKS   iPe    22 33 37.5             Lq 54 00     Lr 55 30
                          MICRON    PERIOD
                     PZ     0.05       0.8
                     LZ      1.1        20
                     LN      1.1        20
                     LE      1.2        20
        WDC   iPe    22 33 38.5                pP 34 32
        FHC   ePe    22 33 48.9
                     USGS 22 23 54.1, 16.6N,  61.2W, h= 62 km, mb=5.3
                          LEEWARD ISLANDS

OCT 10  FHC   ePKP   13 58 12.2
        WDC   ePKP   13 58 13.6
        MIN   ePKP   13 58 15.5
        BKS   ePKP   13 58 17.7             Lr 42 30
                          MICRON    PERIOD
                     PKPZ   0.02       0.8
        MHC   ePKP   13 58 18.2
        JAS   ePKP   13 58 19.0
        FRI   ePKP   13 58 21.0
        PRI   ePKP   13 58 21.2
        MNV   ePKP   13 58 22.4
                     USGS 13 39 14.0,  7.2S, 106.0E, h= 33 km, mb=5.9, Ms=5.5
                          JAVA

OCT 10  JAS   iPe    14 41 48.2   42 00
        MNV   iPe    14 41 49.0
        FRI   iPd    14 41 54.7   42 11
        MHC   eP     14 42 07.2                e 42 32
        SAO   ePd    14 42 10.1
        BKS   ePd    14 42 11.8
        PRI   eP     14 42 12.4
                     BRK  14 41 31.6, 38.2N, 119.3W, h=  5 km, ML=3.0
                          BRIDGEPORT, CALIFORNIA

OCT 10  JAS   iPe    19 26 23.5   26 35
        MNV   iPe    19 26 24.5
        FRI   ePd    19 26 30.4   26 47
        MHC   eP     19 26 42.7                e 27 08
        SAO   eP     19 26 45.2
        BKS   iPd    19 26 47.2
        PRI   e(P)   19 26 48
        MIN   eP     19 26 52
                     BRK  19 26 07.2, 38.2N, 119.4W, h=  9 km, ML=3.1
                          BRIDGEPORT, CALIFORNIA

OCT 11  PRI   eP     09 08 19.7
        MNV   eP     09 08 21.3
        FRI          09 08                    e 08 22
        JAS   eP     09 08 25.4
        WDC   eP     09 08 39.2
                     USGS 08 55 56.1, 33.4S,  71.7W, h= 41 km, mb=5.1, Ms=5.3
                          NEAR COAST OF CENTRAL CHILE

OCT 12  FHC          07 06                    e 06 40
        WDC   iPd    07 06 44.3
        MIN          07 06                    e 06 48
        JAS   ePd    07 07 00.0
        FRI          07 07                    e 07 04
                     USGS 06 55 35.6, 32.7N, 136.0E, h=445 km, mb=4.8
                          SOUTHEAST OF SHIKOKU, JAPAN

OCT 12  PRI          10 39                    e 39 35
        BKS   eP     10 39 33.2   51 40    PP 43 50    PPP 46 00    SKS 50 10
                                           PS 53 20     SS 59 16    SSS 03 20
                                           Lq 08 30     Lr 13 00
                          MICRON    PERIOD
                     LZ     170         22
                     LNE    140         22
                     LNW     11         22
        FRI          10 39                 e 39 47      e 55 30
        JAS          10 39                 e 39 40      e 44 04      e 55 28
        WDC          10 39                 e 39 39      e 43 56      e 55 22
        MIN          10 39                 e 39 43      e 55 23
        MNV          10 39                 e 39 48      e 44 13
                     Ms=7.5, Distance=106°
                     USGS 10 25 22.3, 46.7S, 165.7E, h= 33 km, mb=6.1, Ms=7.4
                          OFF WEST COAST OF SOUTH ISLAND, NEW ZEALAND

OCT 13  WDC   ePe    07 10 48.4
        BKS   eP     07 11 03.1
                          MICRON    PERIOD
                     PZ     0.02       0.9
        JAS   ePe    07 11 12.0
        FRI   eP     07 11 19.8
        PRI   e(P)   07 11 20
        MNV   ePe    07 11 20.6
                     USGS 07 03 19.7, 52.0N, 179.8W, h=100 km, mb=4.6
                          ANDREANOF ISLANDS, ALEUTIAN ISLANDS

OCT 13  PRI   eP     08 12 30.8
        MNV   iPe    08 12 40.5
        JAS   ePe    08 12 41.0
        WDC   iPe    08 12 56.8
                     SOUTH PACIFIC OCEAN REGION

OCT 13  PRI   eP     14 59 11.2
        MNV   eP     14 59 18.9
        JAS   eP     14 59 19.5
        BKS   eP     14 59 22.5
                          MICRON    PERIOD
                     PZ     0.01       0.7
        WDC   eP     14 59 34.8
                     USGS 14 47 10.7, 38.3S,  93.9W, h= 10 km, mb=4.7
                          WEST CHILE RISE

OCT 13  MNV   eP     15 21 04.1
        JAS   eP     15 21 04.6
        WDC   eP     15 21 20.0
                     WEST CHILE RISE REGION

OCT 13  SAO   iPd    20 46 13.8
        MHC   iPd    20 46 23.6
        PRI   iPd    20 46 30.5
        BKS   iPd    20 46 33.3   46 52
        JAS   eP     20 46 37.2
        FRI   eP     20 46 37.8
                     BRK  20 46 12.0, 36.8N, 121.5W, h=  4 km, ML=3.4
                          WEST OF HOLLISTER, CALIFORNIA

OCT 14  BKS   eP     04 46 27.8                pP 47 18
                          MICRON    PERIOD
                     PZ     0.02       0.8
        SAO          04 46                    pP 47 18
        PRI   eP     04 46 28.2               pP 47 18
        MHC   eP     04 46 28.7               pP 47 19
        FRI   eP     04 46 33.7               pP 47 24
        JAS   ePd    04 46 34.3               pP 47 25
        WDC   ePd    04 46 36.3               pP 47 27
        MIN   eP     04 46 38.3               pP 47 29
        MNV   ePd    04 46 44.0               pP 47 35
                     USGS 04 34 57.8, 20.2S, 175.9W, h=206 km, mb=5.4
                          TONGA ISLANDS

OCT 14  BKS   ePe    06 21 30.5
                          MICRON    PERIOD
                     PZ     0.01       0.7
        MHC   eP     06 21 31.7
        WDC   iPe    06 21 34.7
        JAS   iPe    06 21 36.7
        FRI   eP     06 21 37.6
        MNV   iPe    06 21 46.0
                     USGS 06 09 01.1, 15.1S, 168.1E, h= 25 km, mb=4.9
                          NEW HEBRIDES ISLANDS

OCT 14  BKS   ePe    11 46 47.0                e 00 04
                          MICRON    PERIOD
                     PZ     0.05       1.4
        PRI   eP     11 46 47.7
        MHC   eP     11 46 48.0                pP 48 58
        FRI   eP     11 46 52.7                pP 49 03
        JAS   iPe    11 46 53.2
        WDC   iPe    11 46 55.2
        MIN   eP     11 46 56.7
        MNV   iPe    11 47 02.0                pP 49 10
                     USGS 11 35 37.3, 22.1S, 179.5W, h=616 km, mb=5.2
                          SOUTH OF FIJI ISLANDS

OCT 14  FHC   iPd    17 04 01.6   04 12
        WDC   iPe    17 04 15.2   04 35
        MIN   eP     17 04 25.3
                     BRK  17 03 48.0, 41.4N, 124.5W, h= 24 km, ML=3.7
                          OFF COAST NORTHWEST OF EUREKA, CALIFORNIA

OCT 14  WDC   ePd    22 10 10.4
        BKS   ePe    22 10 19.0
                          MICRON    PERIOD
                     PZ     0.04       1.0
        MHC   eP     22 10 22.6
        JAS   ePd    22 10 25.6
        PRI   eP     22 10 30.2
        FRI   eP     22 10 30.8
        MNV   ePd    22 10 33.0
                     USGS 21 58 34.4, 31.3N, 141.8E, h= 33 km, mb=5.2, Ms=5.1
                          SOUTH OF HONSHU, JAPAN

OCT 14  FHC   iPd    23 04 17.2   04 27
        WDC   iPe    23 04 30.6   04 51
        MIN   eP     23 04 41.3
                     BRK  23 04 04.1, 41.4N, 124.4W, h= 24 km, ML=3.4
                          OFF COAST NORTHWEST OF EUREKA, CALIFORNIA

OCT 14  FHC   eP     23 22 08.3
        MHC   eP     23 22 10.9
        WDC   ePe    23 22 12.2
        PRI   eP     23 22 13.1
        JAS   ePe    23 22 15.8
        FRI   eP     23 22 17.0
        MNV   eP     23 22 25.9
                     USGS 23 09 36.1, 11.2S, 163.0E, h= 43 km, mb=5.1
                          SOLOMON ISLANDS

OCT 15  MHC   eP     01 15 58.0
        BKS   ePe    01 15 58.2
        FRI   eP     01 16 02.2
        JAS   eP     01 16 02.8
        WDC   eP     01 16 04.8
        MNV   eP     01 16 11.9
                     TONGA ISLANDS

OCT 15  BKS   eP     15 35 05.6                e 35 40
                          MICRON    PERIOD
                     PZ     0.02       0.8
        MHC   eP     15 35 07.1
        PRI   eP     15 35 08.8
        WDC   eP     15 35 10.0
        JAS   eP     15 35 11.6
        FRI   eP     15 35 12.0
        MNV   eP     15 35 20.6
                     USGS 15 23 50.1, 13.0S, 169.1E, h=635 km, mb=4.9
                          NEW HEBRIDES ISLANDS REGION

OCT 15  MNV   eP     16 44 41.8
        PRI   eP     16 44 42.0
        JAS   eP     16 44 48.5
        MHC          16 44                    e 44 51
        BKS   eP     16 44 55.6
                          MICRON    PERIOD
                     PZ     0.02       0.7
        WDC   eP     16 45 05.5
                     USGS 16 34 08.8, 13.4S,  76.6W, h= 61 km, mb=5.0
                          NEAR COAST OF PERU

OCT 15  PRI   eP     23 18 18.5
        FRI   eP     23 18 19.1                i 18 26
        MNV   iP     23 18 28.0
        SAO   eP     23 18 29.4
        JAS   eP     23 18 33.8
        MHC   eP     23 18 38.5
        BKS   eP     23 18 46.4   20 18
        MIN          23 19                    e 19 16
        WDC   eP     23 19 23.5
        FHC          23 19                    e 19 34
                     ML=7.0, IMPERIAL VALLEY AREA, CALIFORNIA
                     PAS  23 16 54.5, 32.6N, 115.3W, h= 12 km, ML=6.6
                          SOUTHERN CALIFORNIA

OCT 16  PRI          01 01                    e 01 36
        FRI   ePg    01 01 53                 e 01 32
        SAO          01 01                    e 01 59
        JAS   eP     01 01 48
        MHC          01 01                    e 01 55
        BKS   e(P)   01 02 10                 i 02 15
                     ML=5.1, IMPERIAL VALLEY AREA, CALIFORNIA
                     PAS  01 00 13.9, 32.9N, 115.6W, h=  5 km, ML=4.6
                          SOUTHERN CALIFORNIA

OCT 16  PRI          01 15                    e 15 48
        FRI   ePg    01 16 02                 e 15 48
        MNV          01 16                    e 16 09
        JAS   eP     01 15 55
        BKS   e(P)   01 16 15
                     ML=4.9, IMPERIAL VALLEY AREA, CALIFORNIA
                     PAS  01 14 23.0, 32.9N, 115.4W, h=  4 km, ML=4.3
                          SOUTHERN CALIFORNIA
```

International Seismological Centre

```
OCT 16  PRI          03 12                    e 12 18
        FRI   ePg    03 12 28                 e 12 19
        MNV          03 12                    e 12 38
        SAO          03 12                    e 12 39
        JAS   eP     03 12 21
        BKS   e(P)   03 12 41                 e 14 16
                     ML=4.9, IMPERIAL VALLEY AREA, CALIFORNIA
                     PAS  03 10 47.1, 33.0N, 115.5W, h=  9 km, ML=4.5
                          SOUTHERN CALIFORNIA

OCT 16  PRI          03 40                    e 40 56
        FRI   ePg    03 41 15                 e 40 56
        MNV          03 41                    e 41 11
        JAS   eP     03 41 10
        MHC          03 41                    e 41 23
        BKS   e(P)   03 41 31                 e 43 28      e 44 06
                     ML=4.9, IMPERIAL VALLEY AREA, CALIFORNIA
                     PAS  03 39 34.8, 33.0N, 115.6W, h= 10 km, ML=4.4
                          SOUTHERN CALIFORNIA

OCT 16  FRI   eP     05 50 29.6               Pg 50 52
        PRI   eP     05 50 30.5
        MNV          05 50                    e 50 38
        SAO          05 50                    e 50 44
        JAS   eP     05 50 46.0
        MHC          05 50                    e 50 50
        BKS   e(P)   05 51 03
        MIN          05 51                    e 51 31
        WDC          05 51                    e 51 42
                     ML=5.6, IMPERIAL VALLEY AREA, CALIFORNIA
                     PAS  05 49 10.8, 33.0N, 115.6W, h=  5 km, ML=5.0
                          SOUTHERN CALIFORNIA

OCT 16  PRI   ePg    06 21 30
        FRI   ePg    06 21 30
        JAS   eP     06 21 22                 Pg 21 51
        BKS   e(P)   06 20 41                 e 23 28
                     ML=5.5, IMPERIAL VALLEY AREA, CALIFORNIA
                     PAS  06 19 48.7, 32.9N, 115.5W, h=  9 km, ML=5.1
                          SOUTHERN CALIFORNIA

OCT 16  PRI   ePg    06 57 07                 e 56 50
        FRI   ePg    06 57 03.5               e 56 49
        MNV   ePg    06 57 18
        SAO          06 57                    e 57 12
        JAS   eP     06 57 04                 Pg 57 26
        MHC          06 57                    e 57 15
        BKS   e(P)   06 57 14
                     ML=4.9, IMPERIAL VALLEY AREA, CALIFORNIA
                     PAS  06 55 23.6, 33.0N, 115.6W, h=  5 km, ML=4.5
                          SOUTHERN CALIFORNIA

OCT 16  FRI   eP     07 00 01.8               Pg 00 24
        PRI   eP     07 00 04                 Pg 00 24
        SAO          07 00                    e 00 15
        JAS   eP     07 00 19
        MHC          07 00                    e 00 22
        BKS   eP     07 00 31                 Pg 00 56     Sg 02 48
                     ML=6.1, IMPERIAL VALLEY AREA, CALIFORNIA
                     PAS  06 58 43.2, 33.0N, 115.6W, h=  5 km, ML=5.4
                          SOUTHERN CALIFORNIA

OCT 16  MNV   eP     08 38 26.0
        JAS   eP     08 38 39.5
        WDC   eP     08 38 42.2
        BKS          08 38                    e 38 56


OCT 16  PRI   eP     11 48 14.5               Pg 48 35
        FRI   ePg    11 48 33                 e 48 14
        MNV          11 48                    e 48 30
        SAO          11 48                    e 48 38
        JAS   eP     11 48 31.3
        MHC          11 48                    e 48 39
        BKS   e(P)   11 48 48                 e 50 28
        MIN          11 49                    e 49 28
                     ML=5.2, IMPERIAL VALLEY AREA, CALIFORNIA
                     PAS  11 46 56.2, 32.9N, 115.6W, h=  5 km, ML=4.8
                          SOUTHERN CALIFORNIA

OCT 16  SAO   iPe    16 21 38.6
        PRI   ePd    16 21 48.7
        MHC   ePd    16 21 49.8
        FRI   ePe    16 21 58.4
        JAS   iPe    16 22 01.0
        BKS   ePd    16 22 02.5   22 22
                     BRK  16 21 35.1, 36.6N, 121.3W, h=  8 km, ML=2.8
                          SOUTHEAST OF HOLLISTER, CALIFORNIA

OCT 16  PRI   eP     17 45 51.8
        FRI   eP     17 45 56.2
        MHC   eP     17 46 00.5
        JAS   eP     17 46 03.7
        MNV   eP     17 46 06.4
        WDC   eP     17 46 21.3
                     USGS 17 35 32.7, 25.5S, 116.5W, h= 10 km, mb=4.7
                          EASTER ISLAND CORDILLERA

OCT 16  BKS   eP     18 56 32.8
                          MICRON     PERIOD
                     PZ     0.04        1.0
        PRI   eP     18 56 33.0
        MHC   eP     18 56 33.3
        FHC   eP     18 56 37.0
        FRI   eP     18 56 38.2
        JAS   ePd    18 56 38.6
        WDC   ePd    18 56 40.4
        MIN   eP     18 56 42.0
        MNV   iPd    18 56 47.7
                     USGS 18 45 26.8, 20.8S, 178.6W, h=571 km, mb=4.9
                          FIJI ISLANDS REGION

OCT 16  FHC          21 24                    e 24 02
        WDC   eP     21 24 05.0               e 24 13      e 29 41
        MIN          21 24                    e 24 13
        BKS   eP     21 24 23.0               e 24 39      Lr 37 28
                          MICRON     PERIOD
                     PZ     0.02        0.8
                     LZ     2.1          20
                     LN     1.4          20
                     LE     0            20
        JAS   eP     21 24 29.8               e 29 53
        MHC          21 24                    e 24 31
        FRI   eP     21 24 36.5               e 29 58
        PRI   eP     21 24 39.0
        MNV   eP     21 24 43.5
                     Ms=4.9, Distance=48°
                     USGS 21 16 05.2, 51.8N, 175.4E, h= 34 km, mb=5.3, Ms=5.2
                          RAT ISLANDS, ALEUTIAN ISLANDS

OCT 16  FRI   eP     23 17 49.3               Pg 18 12
        PRI   eP     23 17 51.7               Pg 18 15
        MNV   eP     23 17 58.2
        SAO          23 18                    e 18 13
        JAS   eP     23 18 07
        MHC          23 18                    e 18 10
        BKS   e(P)   23 18 20                 e 20 36
        MIN          23 18                    e 18 55
        WDC          23 18                    e 18 58
                     ML=5.5, IMPERIAL VALLEY AREA, CALIFORNIA
                     PAS  23 16 32.7, 33.1N, 115.6W, h=  7 km, ML=4.9
                          SOUTHERN CALIFORNIA

OCT 17  FHC   ePd    05 54 06.3               PcP 54 16
        WDC   ePd    05 54 11.3               PcP 54 20    pP 56 23    sP 57 02
                                                SP 03 30   PKKP 13 01  PKPPKP 21 08
                                             SKPPKP 23 40   RPKP 41 20
        MIN   ePd    05 54 14.7
        BKS   ePd    05 54 16.5   03 37       PcP 54 25    pP 56 26    sP 57 18
                                             pPP 59 22    sPP 00 22    e 01 53
                                             SKS 03 43    SP 04 30     e 05 42
                                              e 06 10     sS 07 20     e 08 06
                                              SS 09 12     e 09 22     sSS 11 41
                                             SSS 12 25    Lq 15 53
                          MICRON     PERIOD
                     PZ     0.47        0.8
        MHC   ePd    05 54 19.6               PcP 54 28    pP 56 31    SP 03 50
        SAO   ePd    05 54 21.2
        JAS   iPd    05 54 23.1               PcP 54 32    pP 56 35    sP 57 13
                                                SP 03 57   PKKP 12 57  PKPPKP 21 02
                                             SKPPKP 23 30   RPKP 41 20
        PRI   ePd    05 54 25.5               PcP 54 35    SP 04 05    PKKP 12 57
        FRI   ePd    05 54 27.2                 SP 04 06   PKKP 12 55    RPKP 41 20
        MNV   iPd    05 54 31.3               PKKP 12 54   RPKP 41 25
                     mb=6.0, h=600 km, Distance=90°
                     USGS 05 43 02.7, 18.5N, 145.3E, h=601 km, mb=6.1
                          MARIANA ISLANDS

OCT 17  WDC   eP     12 42 00.4
        MIN   eP     12 42 04.7
        JAS   eP     12 42 19.3                  e 42 32
        FRI   eP     12 42 25.5
        PRI   eP     12 42 25.9
        MNV   eP     12 42 26.5
                     USGS 12 31 37.8, 44.1N, 148.2E, h= 52 km, mb=5.1
                          KURIL ISLANDS

OCT 17  FHC   eP     13 34 21.9
        WDC   eP     13 34 28.2
        JAS   eP     13 34 38.5
        FRI   eP     13 34 42.8
        MNV   eP     13 34 46.8
                     USGS 13 23 16.0, 18.6N, 145.0E, h=579 km, mb=4.6
                          MARIANA ISLANDS

OCT 17  WDC   eP     14 46 24.7
        BKS   eP     14 46 30.4
        JAS   eP     14 46 36.6
        FRI   eP     14 46 40.9
        MNV   eP     14 46 45.0
                     USGS 14 35 14.9, 18.7N, 145.3E, h=581 km, mb=4.9
                          MARIANA ISLANDS

OCT 17  SAO   eP     16 23 02.3
        BKS   eP     16 23 03.2
                          MICRON     PERIOD
                     PZ     0.05        0.8
        PRI   ePd    16 23 03.7
        MHC   eP     16 23 04.0
        FHC   eP     16 23 07.5
        FRI   eP     16 23 09.1
        JAS   iPd    16 23 09.5
        WDC   ePd    16 23 10.6
        MIN   eP     16 23 13.0
        MNV   iPd    16 23 19.0
                     USGS 16 12 02.9, 19.0S, 177.7W, h=521 km, mb=5.2
                          FIJI ISLANDS REGION

OCT 17  PRI   iPe    20 53 20.7
        FRI   iPe    20 53 26.8
        SAO   iPd    20 53 32.0
        MHC          20 53                    e 53 40
        JAS   ePd    20 53 42.6
        BKS   iPd    20 53 49.5
                     ML=4.2, SOUTH OF MALIBU, CALIFORNIA
                     PAS  20 52 36.8, 33.9N, 118.6W, h=  6 km, ML=4.2
                          SOUTHERN CALIFORNIA

OCT 17  FHC   eP     22 24 53.3
        WDC   iPe    22 24 59.8
        MIN   eP     22 25 04.2
        BKS   eP     22 25 14.1
                          MICRON     PERIOD
                     PZ     0.03        0.8
        MHC   eP     22 25 18.7
        JAS   iPe    22 25 21.2
        FRI   eP     22 25 28.0
        MNV   iPd    22 25 28.1
        PRI   eP     22 25 28.3
                     USGS 22 15 44.4, 51.6N, 158.0E, h= 77 km, mb=4.8
                          NEAR EAST COAST OF KAMCHATKA

OCT 17  WDC   ePd    22 42 44.7
        MIN   ePd    22 42 48.0
        BKS   eP     22 42 49.2                  e 45 20
                          MICRON     PERIOD
                     PZ     0.03        0.7
        MHC   ePd    22 42 53.0
        JAS   iPd    22 42 56.6
        PRI   eP     22 42 59.1
        FRI   ePd    22 43 00.7
        MNV   ePd    22 43 04.5
                     USGS 22 31 34.6, 19.0N, 145.0E, h=577 km, mb=4.7
                          MARIANA ISLANDS

OCT 17  PRI   eP     22 46 53                 P* 47 08     Pg 47 16      i 47 22
        FRI   eP     22 46 53.7               Pg 47 15
        MNV          22 47                    e 47 57
        SAO          22 47                    e 47 15
        JAS   eP     22 47 07.5               P* 47 23     Pg 47 37     Sg 48 58
        MHC          22 47                    e 47 17      e 47 37     Sg 49 09
        BKS   eP     22 47 22
        MIN          22 48                    e 48 10
        WDC          22 48                   Sg 50 35
                     ML=5.0, IMPERIAL VALLEY AREA, CALIFORNIA
                     PAS  22 45 33.4, 33.1N, 115.6W, h=  5 km, ML=4.5
                          SOUTHERN CALIFORNIA

OCT 17  FHC   iPd    23 38 23.7
        WDC   iPd    23 38 38.7
        MIN   eP     23 38 49.0
                     BRK  23 38 17.9, 40.7N, 124.2W, h= 24 km, ML=3.0
                          NEAR COAST SOUTH OF EUREKA, CALIFORNIA

OCT 18  SAO   iPd    02 04 21.6
        MHC   iPd    02 04 24.8
        BKS   iPd    02 04 36.2   04 50
        PRI   ePe    02 04 38.5
        JAS   ePd    02 04 40.8
        FRI   eP     02 04 43
                     BRK  02 04 16.7, 36.9N, 121.6W, h=  7 km, ML=2.5
                          NORTHWEST OF HOLLISTER, CALIFORNIA

OCT 18  FHC   ePe    03 43 07.4                  pP 43 23
        WDC   iPe    03 43 15.0                  pP 43 31    PcP 44 53    SeP 48 53
                                                 SP 53 13
        MIN   ePe    03 43 20.2                  pP 43 36    SeP 48 55
        BKS   ePe    03 43 29.8   49 30          pP 43 45    SeP 49 02     Lq 53 00
                                                 Lr 55 20
                          MICRON     PERIOD
                     PZ     0.37        1.0
                     LZ     2.7          20
                     LN     0            20
                     LE     3.0          20
        MHC   eP     03 43 35.0                  pP 43 51    SeP 49 04
        SAO   eP     03 43 38.0
        JAS   iPe    03 43 38.2                  pP 43 54    SeP 49 05
        FRI   eP     03 43 45.6                  pP 44 02    SeP 49 09
        PRI   ePe    03 43 46.2                  pP 44 02    SeP 49 10
        MNV   iPe    03 43 46.7                 SeP 49 10
                     mb=6.2, h=80 km, Distance=41°
                     USGS 03 35 26.9, 51.9N, 177.1E, h= 62 km, mb=6.0
                          RAT ISLANDS, ALEUTIAN ISLANDS
```

International Seismological Centre

```
OCT 18  WDC   ePc    04 29 52.0
        MIN   eP     04 29 53.8
        BKS   ePc    04 30 05.5
        MNV   iPc    04 30 06.1
        JAS   ePc    04 30 06.6
        FRI   eP     04 30 11.0
              USGS 04 16 57.6, 49.8N,  78.1E, h=  0 km, mb=5.2
                   EASTERN KAZAKH, S.S.R.

OCT 18  MHC   iPd    05 33 16.3
        SAO   iPd    05 33 26.4
        BKS   eP     05 33 28.7  33 39
        JAS   eP     05 33 36.0
        FRI   ePc    05 33 42.4
              BRK  05 33 14.8, 37.3N, 121.7W, h=  7 km, ML=3.0
                   EAST OF SAN JOSE, CALIFORNIA

OCT 18  WDC   ePc    07 20 49.9          PKPPKP 49 25
        FHC   ePc    07 20 51.0
        MIN   ePc    07 20 51.9
        MNV   iPc    07 21 04.0          PKPPKP 49 18
        JAS   ePc    07 21 07.5          PKPPKP 49 18
        BKS   ePc    07 21 08
                          MICRON    PERIOD
                     PZ     0.05       0.9
        MHC   ePc    07 21 11.3
        FRI   ePc    07 21 13.0          PKPPKP 49 16
        SAO   ePc    07 21 14.6
        PRI   ePc    07 21 19.5
              USGS 07 09 58.3, 73.3N,  54.8E, h=  0 km, mb=5.8
                   UNDERGROUND NUCLEAR EXPLOSION
                   NOVAYA ZEMLYA

OCT 18  MNV   ePc    13 12 40.5
        JAS          13 12                    e 12 48
        WDC          13 13                    e 13 10
              USGS 13 04 16.9,  5.4N,  82.7W, h= 33 km, mb=4.9
                   SOUTH OF PANAMA

OCT 19  PRI   eP     12 23 28.2
        FRI   eP     12 23 29.6
        SAO   eP     12 23 40.2
        MNV   iPd    12 23 44.5
        MHC          12 23                    e 23 47
        BKS          12 23                    e 23 57
        JAS   eP     12 23 45.9
              ML=4.2, SAN BERNADINO AREA, CALIFORNIA
              PAS  12 22 37.7, 34.2N, 117.5W, h=  7 km, ML=4.1
                   SOUTHERN CALIFORNIA

OCT 19  JAS   eP     22 59 57.7
        MNV   iPc    23 00 06.6
              USGS 22 47 00.0,  6.2S, 154.4E, h= 34 km, mb=5.0
                   SOLOMON ISLANDS

OCT 20  WDC   ePKPd  01 59 56.7
        BRK   ePKP   01 59 59.2
        BKS          01 59       08 30      PP 01 24      e 04 45     SP 11 09
                                            SS 17 56      e 18 15     Lq 31 00
                                            Lr 35 30
                          MICRON    PERIOD
                     LZ     5         20
                     LN     0         20
                     LE     6         20
        MIN   ePKPd  01 59 59.5
        MHC   ePKP   02 00 00.8
        JAS   ePKPd  02 00 01.5          PKKP 10 05   PKKP 10 14
        PRI   ePKP   02 00 03.1
        FRI   ePKP   02 00 03.2
        MNV   ePKPd  02 00 05.3
              Ms=6.2, Distance=120°
              USGS 01 41 10.4,  8.3S, 115.8E, h= 38 km, mb=6.0, Ms=6.2
                   BALI ISLAND REGION

OCT 20  SAO   iPc    06 25 43.8
        PRI   iPd    06 25 50.3                    i 26 02
        MHC   ePd    06 25 55.0  26 07
        FRI   iPc    06 26 00.7
        JAS   eP     06 26 04.4
        BKS   iP     06 26 05.0  26 25        i 26 08      e 26 31
        MNV   eP     06 26 31.8
              BRK  06 25 38.5, 36.6N, 121.2W, h=  9 km, ML=3.4
                   SOUTHEAST OF HOLLISTER, CALIFORNIA

OCT 20  SAO   iP     06 32 34.0
        MHC   iPc    06 32 36.8  32 44
        BKS   iPd    06 32 48.9                    e 33 07
        PRI   iPc    06 32 49.4  33 05
        JAS   iPd    06 32 51.7  33 08
        FRI   eP     06 32 53.8
              BRK  06 32 29.3, 37.0N, 121.5W, h=  5 km, ML=3.0
                   COYOTE LAKE, CALIFORNIA

OCT 20  JAS   iPc    09 40 38.1  40 50
        MNV   iPc    09 40 39.4
        FRI   iPd    09 40 45.2  41 02
        MHC   ePc    09 40 57.5  41 24
        SAO   iPd    09 41 00.3
        BKS   ePc    09 41 02.1                    i 41 08      e 41 34
        PRI   eP     09 41 02.5
        MIN   ePg    09 41 11
              BRK  09 40 21.8, 38.2N, 119.4W, h=  7 km, ML=3.3
                   BRIDGEPORT, CALIFORNIA

OCT 21  FHC   iPc    11 34 59.7  35 10
        WDC   iPc    11 35 14.0
        MIN   ePc    11 35 23.8
        BKS   iPd    11 35 33.6                    e 36 14
        SAO   eP     11 35 50.0
        JAS   e(P)   11 35 51
              BRK  11 34 46.0, 40.3N, 124.8W, h= 24 km, ML=3.6
                   OFF COAST SOUTHWEST OF EUREKA, CALIFORNIA

OCT 21  SAO   iPd    14 21 46.9
        MHC   iPd    14 21 55.1  22 03
        PRI   ePc    14 22 04.0
        BKS   ePc    14 22 05.7  22 25
        JAS   eP     14 22 09.4
        FRI   eP     14 22 11.4
              BRK  14 21 44.3, 36.8N, 121.6W, h=  2 km, ML=2.6
                   WEST OF HOLLISTER, CALIFORNIA

OCT 22  FHC   e(P)   06 12 47
        WDC   e(P)   06 12 55                PP 17 14   PKKP 28 57
        MIN   e(P)   06 13 01              PKKP 28 48
        BKS   ePc    06 13 05.5              e 13 11     PP 17 34     e 17 44
                                             e 17 50     e 18 20   PPP 19 32
                                             e 19 44     e 19 52     SP 26 40
                                             e 35 30     Lq 42 48     e 43 30
                          MICRON    PERIOD
                     LZ     8         20
                     LN     1.8       20
                     LE     7         20
        MHC   eP     06 13 05.5
        JAS   eP     06 13 09.6             PP 17 40   PKKP 28 41
        PRI          06 13                    e 13 23     e 28 43
        FRI   eP     06 13 12.0
        MNV   eP     06 13 16               PP 17 50
              Ms=6.3, Distance=110°
              USGS 05 58 48.9,  0.7N, 125.9E, h= 33 km, mb=6.2, Ms=6.3
                   MOLUCCA PASSAGE

OCT 23  SAO   eP     01 49 20.3
        PRI   eP     01 49 21.6
        BKS   iPd    01 49 21.9
                          MICRON    PERIOD
                     PZ     0.05       0.8
        MHC   eP     01 49 22.0
        FRI   eP     01 49 26.7
        JAS   iPc    01 49 27.4
        WDC   iPc    01 49 29.0
        MIN          01 49                    e 49 30
        MNV   iP     01 49 36.2
              USGS 01 38 14.1, 20.9S, 179.3W, h=586 km, mb=5.4
                   FIJI ISLANDS REGION

OCT 23  BKS   ePd    08 31 41.8  42 24        e 43 28     SS 48 20     Lq 54 30
                                             Lr 57 44
                          MICRON    PERIOD
                     PZ     0.03       0.8
                     LZ     8         20
                     LNE    8         20
                     LNW    3.7       20
        SAO          08 31                    e 31 43
        MHC   eP     08 31 43.0
        WDC   eP     08 31 44.0
        PRI   eP     08 31 44.0
        JAS   eP     08 31 47.2
        FRI   eP     08 31 48.6
        MNV   eP     08 31 56.2
              Ms=6.2, Distance=90°
              USGS 08 19 01.4, 10.6S, 161.3E, h= 33 km, mb=5.4, Ms=5.9
                   SOLOMON ISLANDS

OCT 23  FHC          10 03                    e 03 42
        BKS   iPd    10 03 46.5  14 26        e 03 52     i 03 59      i 04 12
                                 PP 07 16     e 13 10     SP 15 18
                                 e 19 36     SS 20 24     Lq 26 12
                                 Lr 10 30     Lq 46 00
                          MICRON    PERIOD
                     PZ     0.05       0.9
                     LZ     90        20
                     LNE    90        20
                     LNW    30        20
        MHC   eP     10 03 49.7
        WDC   eP     10 03 49.8
        SAO   eP     10 03 50.6
        PRI   eP     10 03 52.5
        MIN          10 03                    e 03 53
        JAS   eP     10 03 53.7
        FRI   eP     10 03 55.1
        MNV   eP     10 04 02.7
              Ms=7.2, Distance=90°
              NOTE: BKS U.L.P. Recorded "G2" at 11:46:00 and "R2" at
                    12:01:00; "G3" at 12:53:00 and "R3" at 13:03:00.
              USGS 09 51 06.7, 10.6S, 161.3E, h= 22 km, mb=6.1, Ms=7.1
                   SOLOMON ISLANDS

OCT 23  BKS   ePc    10 16 22.5
                          MICRON    PERIOD
                     PZ     0.04       1.0
        MHC   eP     10 16 24.5
        JAS   eP     10 16 25.6
        PRI   eP     10 16 27.5
        FRI   eP     10 16 29.9
              USGS 10 03 42.1, 10.6S, 161.0E, h= 33 km, mb=5.6
                   SOLOMON ISLANDS

OCT 23  FHC          10 20                    e 20 05
        BKS   iPc    10 20 05.6
                          MICRON    PERIOD
                     PZ     0.07       1.0
        MHC   eP     10 20 05.7
        WDC          10 20                    e 20 06
        PRI   eP     10 20 08.5
        MIN   eP     10 20 09.3
        JAS   iPc    10 20 10.5
        FRI   eP     10 20 12.0
        MNV   iPc    10 20 19.5
              USGS 10 07 24.7, 10.6S, 161.2E, h= 33 km, mb=5.7
                   SOLOMON ISLANDS

OCT 23  BKS   iP     10 24                    i 24 24
        MHC          10 24 18
        WDC   eP     10 24 19
        PRI   eP     10 24 20.5
        JAS   eP     10 24 22.9
        FRI   eP     10 24 24.2
              USGS 10 11 39.5, 10.7S, 161.9E, h= 33 km, mb=5.8
                   SOLOMON ISLANDS

OCT 23  MHC   eP     10 50 47.7
        WDC   eP     10 50 48.7
        PRI   eP     10 50 50.0
        JAS   eP     10 50 51.5
        FRI          10 50                    e 50 56
              USGS 10 38 05.0, 10.8S, 161.2E, h= 33 km, mb=5.3
                   SOLOMON ISLANDS

OCT 23  BKS   eP     10 53 07
                          MICRON    PERIOD
                     PZ     0.04       1.0
        MHC          10 53                    e 53 08
        WDC   eP     10 53 08.1
        PRI   eP     10 53 09.8
        MIN   eP     10 53 10.5
        JAS   eP     10 53 11.8
        FRI   eP     10 53 13.5
              USGS 10 40 26.1, 10.7S, 161.2E, h= 33 km, mb=5.5
                   SOLOMON ISLANDS

OCT 23  FHC   iPc    10 55 47.0  55 52
        WDC   iPc    10 56 01.1  56 16
        MIN   iPc    10 56 11.0
        BKS   iPc    10 56 22.8                    i 57 10
        MHC   eP     10 56 33.0
        JAS   iPc    10 56 37.6
        SAO   iPc    10 56 39.3
        FRI   eP     10 56 52.7
              BRK  10 55 37.9, 40.4N, 124.3W, h= 19 km, ML=4.0
                   SOUTH OF EUREKA, CALIFORNIA

OCT 23  BKS   iPc    14 07 49.2
                          MICRON    PERIOD
                     PZ     0.04       0.7
        MHC   eP     14 07 51.4
        WDC   eP     14 07 52.3
        PRI   eP     14 07 53.8
        JAS   eP     14 07 56.0
        FRI   eP     14 07 57.4
        MNV   eP     14 08 05.2
              USGS 13 55 10.3, 10.6S, 161.2E, h= 33 km, mb=5.4, Ms=5.2
                   SOLOMON ISLANDS

OCT 23  FHC   iPc    15 32 43.0  33 02
        WDC   iPd    15 32 58.5  33 28
        MIN   ePc    15 33 06.1
        BRK   e(P)   15 33 13
        MHC   eP     15 33 25.2
        SAO   eP     15 33 31
        JAS   ePc    15 33 33.5
              BRK  15 32 18.6, 40.5N, 125.7W, h=  5 km, ML=3.8
                   OFF COAST SOUTHWEST OF EUREKA, CALIFORNIA
```

International Seismological Centre

```
OCT 24  WDC  ePe    06 13 06.4
        MIN  eP     06 13 07.7
        MNV  iPe    06 13 15.2
        JAS  ePe    06 13 18.5
        BKS  iPd    06 13 20.1
                        MICRON    PERIOD
                    PZ    0.03      0.6
        MHC  eP     06 13 21.9
        FRI  eP     06 13 22.3
        PRI  eP     06 13 27.5
                    USGS 05 59 56.6, 47.8N,  48.2E, h=  0 km, mb=5.8
                        UNDERGROUND NUCLEAR EXPLOSION
                        WESTERN KAZAKH, S.S.R.

OCT 24  FHC  iPe    15 24 02.6  24 12
        WDC  iPe    15 24 16.8
        MIN  iPe    15 24 26.8
        BKS  iPd    15 24 38.0
        MHC  ePd    15 24 48.5
        JAS  iPe    15 24 52.8
        SAO  eP     15 24 54.8
        PRI  eP     15 25 08.5
        FRI  ePd    15 25 08.6
                    BRK  15 23 50.6, 40.4N, 124.7W, h= 24 km, ML=4.5
                        OFF COAST SOUTHWEST OF EUREKA, CALIFORNIA

OCT 24  PRI  eP     16 43 02.1
        FRI         16 43                   e 43 04
        JAS  eP     16 43 12.9              e 45 15
        MHC         16 43                   e 43 13
        BKS  iP     16 43       49 41       Lr 55 00
        WDC  eP     16 43 38.5
                    USGS 16 35 31.8,  1.4N, 101.3W, h= 10 km, mb=5.2, Ms=5.5
                        EAST CENTRAL PACIFIC OCEAN

OCT 25  FHC  iPe    09 01 50.8  01 58
        WDC  iPe    09 02 04.9
        MIN  iPe    09 02 14.8
        BKS  iPe    09 02 26.5
        MHC  eP     09 02 37.0
        JAS  iPe    09 02 41.2
        SAO  eP     09 02 42.7
        FRI  eP     09 02 56.7
                    BRK  09 01 40.3, 40.4N, 124.5W, h= 24 km, ML=4.0
                        NEAR COAST SOUTHWEST OF EUREKA, CALIFORNIA

OCT 26  FRI         04 51                   e 51 33
        JAS  eP     04 51 33.8
        WDC         04 51                   e 51 36
        BKS         04 51                   e 51 40
                    USGS 04 40 01.6, 16.6S, 173.2W, h= 22 km, mb=5.1, Ms=4.9
                        TONGA ISLANDS

OCT 26  PRI  eP     12 00 59.1
        WDC  eP     12 01 01.7
        JAS  ePe    12 01 03.0
        FRI  eP     12 01 03.6
        MIN  eP     12 01 03.6
                    USGS 11 48 15.4, 18.0S, 167.1E, h= 33 km, mb=4.2
                        NEW HEBRIDES ISLANDS

OCT 26  WDC  iPd    18 43 10.7
        MIN  eP     18 43 14.2
        BKS  ePd    18 43 16.0              e 44 49
                        MICRON    PERIOD
                    PZ    0.02      0.7
        MHC  eP     18 43 19.7
        JAS  iPd    18 43 22.7
        PRI  eP     18 43 25.2
        FRI  ePd    18 43 27.0
                    USGS 18 31 40.4, 18.8N, 145.0E, h=366 km, mb=4.9
                        MARIANA ISLANDS

OCT 26  BKS  e(P)   21 56 15                e 05 14
        MHC  eP     21 56 16.2
        PRI  eP     21 56 17.3
        WDC  iPe    21 56 20.5
        JAS  iPe    21 56 21.4
        FRI  ePe    21 56 21.8
        MIN  ePe    21 56 22.4
                    USGS 21 43 51.6, 19.2S, 169.2E, h=155 km, mb=5.2
                        NEW HEBRIDES ISLANDS

OCT 26  FRI  eP     21 58 35.9
        JAS  ePe    21 58 46.3


OCT 27  FRI  ePKPe  04 23 40.2
        PRI  ePKP   04 23 41.0
        JAS  ePKPe  04 23 42.9
        MHC  ePKPe  04 23 43.5
        BKS  ePKPe  04 23 44.7              e 23 46     e 23 57     e 24 06
                        MICRON    PERIOD
                    PKPZ  0.07      0.8
        MIN  ePKP   04 23 47.0
        WDC  ePKPe  04 23 47.5
                    USGS 04 04 46.4, 58.8S,  25.2W, h= 33 km, mb=5.5, Ms=4.5
                        SOUTH SANDWICH ISLANDS REGION

OCT 27  BKS  ePe    07 21 36.0              e 23 38     e 29 34
                        MICRON    PERIOD
                    PZ    0.06      1.1
        MHC  eP     07 21 37.9
        SAO  e(P)   07 21 38
        WDC  ePe    07 21 39.0
        PRI  eP     07 21 40.5
        MIN  eP     07 21 41.3
        JAS  iPe    07 21 42.7
        FRI  eP     07 21 44.2
                    USGS 07 08 56.8, 10.7S, 161.3E, h= 33 km, mb=5.3, Ms=5.1
                        SOLOMON ISLANDS

OCT 27  FRI  ePe    14 42 40.6              PeP 45 18   ScP 49 04
        PRI  e(P)   14 42 44
        SAO         14 42                   e 42 50
        JAS  ePe    14 42 50.2              PeP 45 21   ScP 49 09
        MHC  eP     14 42 54.8              PeP 45 22   ScP 49 11
        BKS  eP     14 43 00.7  48 53       e 43 04     e 43 06     PeP 45 24
                                            ScP 49 13   Lr 51 28
                        MICRON    PERIOD
                    PZ    0.31      0.8
                    LZ    130       20
                    LNE   120       20
                    LNW   110       20
        MIN  eP     14 43 08.1
        WDC  ePe    14 43 12.0              PeP 45 28   ScP 49 18
        FHC  ePe    14 43 24.0              PeP 45 33   ScP 49 24
                    Ms=6.8, Distance=35°
                    USGS 14 35 57.3, 13.8N,  90.9W, h= 58 km, mb=5.7, Ms=6.8
                        NEAR COAST OF GUATEMALA

OCT 27  FRI  eP     15 09 12.8              PeP 11 48
        JAS  eP     15 09 22.2              PeP 11 50
        MHC  eP     15 09 26.8
        BKS  eP     15 09 32.8              e 11 54
                        MICRON    PERIOD
                    PZ    0.02      0.8
        WDC  eP     15 09 45.3              PeP 11 56
        FHC  eP     15 09 57.0
                    USGS 15 02 28.4, 14.2N,  90.4W, h= 59 km, mb=4.9
                        GUATEMALA

OCT 27  FRI  eP     16 17 40.8              PeP 20 16
        PRI  eP     16 17 42.8              PeP 20 17
        JAS  eP     16 17 50.3              PeP 20 19
        BKS  eP     16 18 01.0              e 20 22
                        MICRON    PERIOD
                    PZ    0.02      0.8
        FHC  eP     16 18 24.5
                    USGS 16 10 58.5, 13.7N,  90.9W, h= 84 km, mb=4.9
                        NEAR COAST OF GUATEMALA

OCT 27  FRI  eP     21 50 10.5              PeP 52 44   ScP 56 32
        PRI  eP     21 50 12.9              pP 50 23    PeP 52 49
        SAO  eP     21 50 19.5
        JAS  ePe    21 50 20.2              pP 50 30    PeP 52 49   ScP 56 36
        MHC  ePe    21 50 24.6
        BKS  ePe    21 50 30.5  56 17       e 50 41     PeP 52 51   e 53 10
                                            ScP 56 40   Lr 59 00
                        MICRON    PERIOD
                    PZ    0.17      0.8
                    LZ    130       20
                    LNE   110       20
                    LNW   100       20
        MIN  ePe    21 50 37.9
        WDC  ePe    21 50 41.7              pP 50 52    PeP 52 52   ScP 56 45
        FHC  ePe    21 50 53.2              pP 51 03    PcP 53 00
                    Ms=6.8, Distance=36°
                    USGS 21 43 24.9, 13.8N,  90.7W, h= 65 km, mb=5.6, Ms=6.6
                        NEAR COAST OF GUATEMALA

OCT 28  FHC  ePe    03 29 48.8
        WDC  iPe    03 29 49.7              PP 33 18
        MIN  ePe    03 29 51.8
        BKS  ePe    03 30 03.4              e 30 16     e 31 33     e 33 26
                        MICRON    PERIOD
                    PZ    0.08      0.8
        JAS  iPe    03 30 04.3
        MHC  ePe    03 30 06.2
        FRI  ePe    03 30 08.9
        SAO  eP     03 30 09.7
        PRI  ePe    03 30 13.0              PP 33 56
                    USGS 03 16 56.9, 50.0N,  79.1E, h=  0 km, mb=6.0, Ms=4.4
                        UNDERGROUND NUCLEAR EXPLOSION
                        EASTERN KAZAKH, S.S.R.

OCT 28  WDC  eP     05 50 57.0
        MIN  eP     05 51 00.9
        BKS  eP     05 51 06.5
                        MICRON    PERIOD
                    PZ    0.08      1.1
        MHC  eP     05 51 10.7
        JAS  eP     05 51 13.3              PP 54 02
        PRI  eP     05 51 18.5
        FRI  eP     05 51 18.7
                    USGS 05 39 35.9, 35.0N, 140.6E, h= 88 km, mb=5.5
                        NEAR EAST COAST OF HONSHU, JAPAN

OCT 28  SAO  eP     20 37 21.0
        MHC  eP     20 37 21.8
        BKS  eP     20 37 22.3
                        MICRON    PERIOD
                    PZ    0.06      0.9
        PRI  eP     20 37 22.5
        FRI  eP     20 37 28.2
        JAS  ePe    20 37 28.7              pP 38 31
        WDC  ePe    20 37 30.6              pP 38 32
        MIN  eP     20 37 32.5
                    USGS 20 26 17.8, 16.6S, 174.8W, h=263 km, mb=5.0
                        TONGA ISLANDS

OCT 29  BKS  eP     22 52 13.3              e 01 49     e 04 34
                        MICRON    PERIOD
                    PZ    0.03      0.8
        MHC  eP     22 52 14.2
        FRI  eP     22 52 19.1
        WDC  eP     22 52 19.6
        JAS  eP     22 52 19.6
                    USGS 22 41 11.3, 20.4S, 178.6W, h=607 km, mb=5.3
                        FIJI ISLANDS REGION

OCT 30  FHC  eP     01 48 11.2
        WDC  eP     01 48 16.3              pP 50 16    e 57 39
        MIN  eP     01 48 20.3
        BKS  eP     01 48 21.3              e 50 24     e 50 31     e 57 23
                                            e 57 41     e 58 28     e 01 10
                        MICRON    PERIOD
                    PZ    0.10      0.7
        MHC  eP     01 48 24.8              e 50 37
        SAO         01 48                   e 48 27
        JAS  eP     01 48 28.3
        PRI  eP     01 48 30.8
        FRI  eP     01 48 32.4              pP 50 36
                    USGS 01 37 06.1, 18.8N, 145.1E, h=579 km, mb=5.6
                        MARIANA ISLANDS

OCT 30  BKS  eP     06 48 57.0
                        MICRON    PERIOD
                    PZ    0.10      0.8
        FHC         06 48                   e 48 57
        SAO  eP     06 48 58.5
        MHC  eP     06 48 58.6
        PRI  eP     06 49 00.4
        WDC  iPe    06 49 01.0
        MIN  eP     06 49 03.3
        JAS  iPe    06 49 03.8
        FRI  eP     06 49 04.8
                    USGS 06 37 05.8, 12.0S, 167.3E, h=297 km, mb=5.1
                        SANTA CRUZ ISLANDS

OCT 31  FHC  eP     18 44 22.2
        WDC  e(P)   18 44 36,
        MIN         18 44                   e 44 42
        BKS  e(P)   18 45 04                e 46 21     e 46 40     e 46 58
                                            e 48 45     e 50 45     e 53 05
        JAS  eP     18 45 18
        FRI  eP     18 45 33
                    USGS 18 43 12.9, 44.0N, 128.3W, h= 15 km, mb=4.7
                        OFF COAST OF OREGON

OCT 31  MIN  eP     20 06 42.5
        WDC  iPd    20 06 49.1  07 06
        BKS  eP     20 06 54.2  07 15       e 07 12
        JAS  iP     20 06 55.0  07 16
        MHC  eP     20 07 00.5
        FHC  eP     20 07 06.6
        SAO  eP     20 07 09.5
        FRI  eP     20 07 11.2              e 07 15
                    BRK  20 06 25.6, 39.5N, 121.4W, h=  9 km, ML=3.1
                        OROVILLE, CALIFORNIA

NOV 01  WDC  eP     06 36 49.3
        MIN  e(P)   06 37 01
        JAS  ePe    06 37 29.7
        FRI  eP     06 37 43.0
                    USGS 06 35 08.9, 44.6N, 129.8W, h= 15 km, mb=4.2
                        OFF COAST OF OREGON

NOV 02  BKS  eP     01 44 46.1  55 07       e 45 00     PS 56 00    PPS 56 26
                                            e 04 05     Lq 06 39    e 07 18
                                            Lr 10 00
                        MICRON    PERIOD
                    PZ    0.04      0.8
                    LZ    10        20
                    LN    3.8       20
                    LE    8         20
        MHC         01 44                   e 44 47
        WDC  eP     01 44 48.7
        PRI         01 44                   e 44 52
        MIN         01 44                   e 44 51
        JAS  eP     01 44 51.4
        FRI         01 44                   e 44 52
                    Ms=6.2, Distance=85°
                    USGS 01 32 19.7, 13.3S, 166.7E, h= 33 km, mb=6.1, Ms=5.8
                        NEW HEBRIDES ISLANDS

NOV 02  WDC  eP     03 28 31.9
        MIN         03 28                   e 28 37
        JAS  eP     03 28 55.3
        FRI         03 29                   e 29 03
                    USGS 03 21 04.1, 51.2N, 178.0W, h= 33 km, mb=4.8, Ms=4.6
                        ANDREANOF ISLANDS, ALEUTIAN ISLANDS
```

International Seismological Centre

```
NOV 02  FHC   ePKPd  16 11 56.7
        WDC   iPKPd  16 11 58.1
        MIN   ePKPd  16 11 59.6
        BKS   ePKP   16 12 01.0                    e 13 51     PP 14 08     e 20 43
                                                   e 25 17     SS 31 00     Lq 45 21
                                                  Lr 50 40
                           MICRON    PERIOD
                     PKPZ    0.06       0.6
                     LZ      3.8         20
                     LN      1.2         20
                     LE      3.5         20
        MHC   iPKPd  16 12 02.7
        JAS   iPKPd  16 12 03.6
        FRI   iPKPd  16 12 05.3
        PRI   ePKPd  16 12 05.5
        SAO   ePKPd  16 12 05.5
                     USGS 15 53 03.5,  7.7S, 108.3E, h= 62 km, mb=6.1
                          JAVA

NOV 03  PRI   eP     04 34 49.9
        FRI   eP     04 34 50.4
        JAS   eP     04 34 56.9                    e 44 28
        MIN   eP     04 35 10.0
        WDC   eP     04 35 12.0
                     USGS 04 22 15.1, 41.8S,  84.0W, h= 10 km, mb=5.2
                          WEST CHILE RISE

NOV 03  FHC   iPd    05 46 12.8  46 20
        WDC   iPe    05 46 17.1  46 28
        MIN   e(P)   05 46 27
                     BRK  05 46 02.7, 40.4N, 123.6W, h= 24 km, ML=3.0
                          SOUTHEAST OF EUREKA, CALIFORNIA

NOV 03  FRI          06 59                         e 59 12
        JAS   ePd    06 59 13.9
        MIN          06 59                         e 59 18
        WDC   ePd    06 59 17.2
                     USGS 06 46 46.2, 29.4S, 177.1W, h=106 km, mb=3.9
                          KERMADEC ISLANDS

NOV 03  SAO   eP     23 31 24.5
        BKS   ePe    23 31 25.2                    e 45 39     Lr 36 36
                           MICRON    PERIOD
                     PZ      0.05       1.1
        PRI   ePe    23 31 26.1
        MHC   ePe    23 31 26.3
        FHC   eP     23 31 30.2
        FRI   ePe    23 31 31.0
        JAS   iPe    23 31 31.6
        WDC   iPe    23 31 33.3
        MIN   eP     23 31 35.1
                     USGS 23 20 13.1, 22.2S, 179.5W, h=590 km, mb=5.3
                          SOUTH OF FIJI ISLANDS

NOV 04  SAO   eP     14 55 30.9
        BKS   eP     14 55 32.5                   Lr 16 30
                           MICRON    PERIOD
                     PZ      0.06       0.8
                     LZ      2.9         22
                     LN      2.1         22
                     LE      2.6         22
        PRI   ePd    14 55 32.8                    e 55 45     e 55 55
        MHC   ePd    14 55 33.0
        FHC   eP     14 55 37.3
        FRI   ePd    14 55 38.3
        JAS   iPd    14 55 39.2                    e 55 51     e 56 01
        WDC   iPd    14 55 41.1                    e 55 53     e 56 03
        MIN   ePd    14 55 43.1
                     Ms=5.5, Distance=71°
                     USGS 14 44 12.1, 15.6S, 173.1W, h= 27 km, mb=5.5, Ms=5.2
                          TONGA ISLANDS

NOV 05  FRI   eP     01 59 46.8                   ScP 04 58
        PRI   eP     01 59 52.8                   PcP 01 15     ScP 05 02
        JAS   ePe    01 59 53.0                     e 00 22     PcP 01 16     ScP 05 02
        SAO   eP     01 59 57.8                   ScP 05 04
        MHC   eP     02 00 00.3                   ScP 05 06
        MIN   eP     02 00 02.2                   ScP 05 07
        BKS   eP     02 00 05.2  07 14                e 03 14     ScP 05 08     sS 07 56
                                                  ScS 09 48       e 11 40     Lq 13 07
                                                   Lr 15 24
                           MICRON    PERIOD
                     PZ      0.04       1.0
                     LZ      9           22
                     LN      16          20
                     LE      10          22
        WDC   ePe    02 00 05.6                     e 00 34     ScP 05 10
        FHC   eP     02 00 17.1                   ScP 05 16
                     USGS 01 51 12.9, 17.8N,  68.6W, h=104 km, mb=5.9
                          MONA PASSAGE

NOV 05  PRI          18 54                         e 54 43
        FRI          18 54                         e 54 44
        JAS   iPd    18 54 48.4
        MHC   eP     18 54 51.2
        WDC   iPd    18 55 03.3
                     USGS 18 43 06.9, 21.2S,  68.3W, h=100 km, mb=5.0
                          CHILE-BOLIVIA BORDER REGION

NOV 06  SAO   eP     01 36 06.8
        BKS   eP     01 36 07.6
                           MICRON    PERIOD
                     PZ      0.19       0.8
        PRI   eP     01 36 07.9
        MHC   eP     01 36 08.3
        FHC   iPd    01 36 12.1
        FRI   eP     01 36 12.9
        JAS   iPd    01 36 13.5                    e 38 18
        WDC   iPd    01 36 15.1                    e 38 19
        MIN   eP     01 36 16.8
        MNV   iPd    01 36 22.6
                     USGS 01 25 00.9, 21.1S, 178.8W, h=589 km, mb=5.7
                          FIJI ISLANDS REGION

NOV 06  WDC   ePKP   05 13 58.0
        MIN   ePKP   05 13 58.6
        JAS   ePKP   05 14 02.7
        FRI   ePKP   05 14 03.8
        MHC          05 14                         e 14 06
        PRI   ePKP   05 14 07.4
                     USGS 04 54 09.0, 12.6S,  41.2E, h= 10 km, mb=4.9
                          NORTHWEST OF MADAGASCAR

NOV 06  MNV   iPe    09 05 03.6
        FRI          09 05                         e 05 04
        PRI          09 05                         e 05 04
        JAS   eP     09 05 12.6
                     USGS 08 58 18.9, 13.6N,  91.3W, h= 64 km, mb=4.8
                          NEAR COAST OF GUATEMALA

NOV 06  FHC          11 51                         e 51 14
        BKS   eP     11 51 15.5  01 42              SS 07 48     Lq 14 09     Lr 18 00
                           MICRON    PERIOD
                     PZ      0.04       0.6
                     LZ      7           20
                     LN      2.8         20
                     LE      6           20
        MHC   eP     11 51 17.5
        SAO   eP     11 51 17.6
        WDC   eP     11 51 17.8                    e 09 09     e 17 12
        PRI          11 51                         e 51 20
        MIN   eP     11 51 20.5
        JAS   eP     11 51 22.1                    e 09 08     e 17 18
        FRI   eP     11 51 23.4                    e 09 07
        MNV   eP     11 51 31.1
                     Ms=6.0, Distance=86°
                     USGS 11 38 31.5,  9.5S, 159.2E, h= 30 km, mb=6.0, MS=6.1
                          SOLOMON ISLANDS

NOV 07  FRI   iPe    06 27 40.6  27 51
        MNV   iP     06 27 42.2
        JAS   iPe    06 27 46.9  28 03
        PRI   ePe    06 27 59.9  28 25
        MHC   ePe    06 28 02.4
        SAO   iPe    06 28 02.4
        BKS   ePe    06 28 08.6  28 42
        MIN   ePg    06 28 26
        WDC   eP     06 28 30
                     BRK  06 27 24.0, 37.6N, 118.9W, h= 11 km, ML=3.8
                          MAMMOTH LAKES, CALIFORNIA

NOV 08  FHC   iPe    04 30 46.8
        WDC   iPe    04 31 01.6  31 27
        MIN   iPe    04 31 11.3  31 45
        BKS   eP     04 31 19.3  32 02
        MHC   eP     04 31 29.8
        JAS   iPd    04 31 35    32 30
        SAO   eP     04 31 36.0                    e 32 30
        FRI   eP     04 31 50.0
        MNV   iPe    04 31 55.1
                     BRK  04 30 27.9, 40.3N, 125.2W, h=  5 km, ML=4.5
                          OFF COAST SOUTHWEST OF EUREKA, CALIFORNIA

NOV 08  WDC   e(P)   11 02 07                      e 02 16
        MIN   e(P)   11 02 14                      e 02 23
        BKS          11 03                         e 05 32
        JAS          11 03                         e 03 04
        PRI          11 03                         e 03 14     e 03 23
        FRI          11 03                         e 03 15
                     USGS 10 59 33.7, 50.5N, 129.6W, h= 10 km, mb=4.3, Ms=4.1
                          VANCOUVER ISLAND REGION

NOV 08  SAO   eP     16 08 49.1
        PRI   ePd    16 08 50.1
        BKS   ePd    16 08 50.6  19 04            sP 10 32     SS 25 09
                           MICRON    PERIOD
                     PZ      0.66       1.0
        MHC   ePd    16 08 51.0
        FRI   ePd    16 08 54.4                    e 10 36
        JAS   iPd    16 08 55.4                    i 10 33     i 11 23     PP 12 42
        FHC   eP     16 08 56.1
        WDC   iPd    16 08 58.4                    i 12 40
        MIN   eP     16 08 59.3
        MNV   iPd    16 09 03.1
                     USGS 15 56 43.9, 32.3S, 179.2E, h=440 km, mb=5.7
                          SOUTH OF KERMADEC ISLANDS

NOV 08  WDC   ePe    21 45 14.8                    i 45 43
        MIN   eP     21 45 18.2
        BKS          21 45                         e 45 21
        MHC          21 45                         e 45 24     e 45 53
        JAS   eP     21 45 28.1                    i 45 57
        FRI   eP     21 45 32.4                    e 46 01
                     USGS 21 33 25.2, 23.4N, 143.0E, h=112 km, mb=5.0
                          VOLCANO ISLANDS REGION

NOV 09  FRI   iPe    09 01 09.3  01 21
        JAS   iPe    09 01 15.6
        PRI   eP     09 01 29.2
        SAO   eP     09 01 31.0
        MHC   eP     09 01 31.2
        BKS   eP     09 01 36.8  02 10
                     BRK  09 00 52.8, 37.6N, 118.9W, h=  7 km, ML=3.3
                          MAMMOTH LAKES, CALIFORNIA

NOV 09  FRI   iPe    10 13 10.6
        JAS   iPe    10 13 17.8
        PRI   iPe    10 13 31.0
        SAO   iPe    10 13 33.2
        MHC   iPe    10 13 33.4
        BKS   ePe    10 13 39.4  14 10
        MIN   e(P)   10 13 52
        WDC   ePe    10 14 00.0
                     BRK  10 12 54.5, 37.6N, 118.9W, h=  3 km, ML=4.0
                          MAMMOTH LAKES, CALIFORNIA

NOV 09  BRK          13 34                         e 34 35
        WDC   eP     13 34 37.8
                     USGS 13 21 51.6,  9.8S, 159.6E, h= 52 km, mb=4.6
                          SOLOMON ISLANDS

NOV 09  WDC   iPd    13 54 32.4                    e 54 42
        MIN   ePd    13 54 37.3                    e 54 47
        BKS   eP     13 54 48.4  02 10             Lq 07 36     Lr 09 28
                           MICRON    PERIOD
                     PZ      0.06       1.0
                     LZ      2.1        20
                     LN      1.1        20
                     LE      1.7        20
        MHC   ePd    13 54 53.4
        JAS   iPd    13 54 55.4                    e 55 05
        SAO   e(P)   13 54 57
        FRI   ePd    13 55 03.0                    e 55 12
        PRI   eP     13 55 04.7
                     Ms=5.1, Distance=52°
                     USGS 13 45 47.6, 55.6N, 164.1E, h= 33 km, mb=5.7, Ms=5.5
                          KOMANDORSKY ISLANDS REGION

NOV 09  SAO   ePe    14 49 16.9
        BKS   ePe    14 49 17.7                   pP 51 17
                           MICRON    PERIOD
                     PZ      0.17       1.2
        MHC   ePe    14 49 18.5                   pP 51 18
        PRI   iPe    14 49 18.8                   pP 51 18
        FRI   ePe    14 49 23.7                   pP 51 24
        JAS   iPe    14 49 24.1                   pP 51 24
        WDC   iPe    14 49 24.9                   pP 51 25
        MIN   ePe    14 49 26.8
                     USGS 14 38 22.7, 17.8S, 178.7W, h=564 km, mb=5.5
                          FIJI ISLANDS REGION

NOV 09  BKS   eP     16 51 50.4  02 10             pP 52 06     SKS 02 06     sS 02 49
                                                  SP 03 06     PS 03 28      e 03 57
                                                  SS 07 45     Lq 13 48      Lr 17 24
                           MICRON    PERIOD
                     PZ      0.32       1.2
                     LZ      17         20
                     LN      7          20
                     LE      13         20
        MHC   eP     16 51 51.1
        WDC   ePe    16 51 53.9
        PRI   ePe    16 51 54.5
        JAS   ePe    16 51 56.3
        FRI   eP     16 51 57.3
        MIN   ePe    16 51 57.4
                     mb=6.2, h=60 km, Distance=84°
                     USGS 16 39 25.0, 13.3S, 166.7E, h= 45 km, mb=6.1, Ms=6.1
                          NEW HEBRIDES ISLANDS

NOV 09  FRI   iPe    17 47 14.8
        PRI   iPe    17 47 34.1
        SAO   ePe    17 47 36.3
        MHC   ePe    17 47 36.7
        BKS   ePe    17 47 42.6  48 18
                     BRK  17 46 58.3, 37.6N, 118.9W, h= 14 km, ML=4.0
                          MAMMOTH LAKES, CALIFORNIA

NOV 09  FRI   iPe    17 54 31.4
        PRI   iPe    17 54 50.7
        MHC   ePe    17 54 52.9
        SAO   iPe    17 54 53.3
        BKS   eP     17 55 01.2  55 34
        WDC   eP     17 55 20.9
                     BRK  17 54 15.0, 37.6N, 118.9W, h=  3 km, ML=4.3
                          MAMMOTH LAKES, CALIFORNIA
```

International Seismological Centre

```
NOV 09  FRI  iPe    20 11 14.6  11 26
        JAS  iPe    20 11 20.9  11 37
        PRI  ePe    20 11 33.8  12 00
        MHC  ePe    20 11 36.5
        SAO  iPd    20 11 36.5
        BKS  eP     20 11 42.9
                    BRK  20 10 58.2, 37.6N, 118.9W, h= 15 km, ML=3.1
                         MAMMOTH LAKES, CALIFORNIA

NOV 09  FRI  iPe    20 39 11.0
        MNV  iPe    20 39 12.6  39 26
        JAS  iPe    20 39 17.7
        PRI  ePd    20 39 30.4
        SAO  iPd    20 39 32.9
        MHC  eP     20 39 33.3
                    BRK  20 38 54.6, 37.6N, 118.9W, h= 15 km, ML=3.3
                         MAMMOTH LAKES, CALIFORNIA

NOV 09  FRI  iPe    21 05 05.8  05 17
        MNV  iPe    21 05 07.2
        JAS  iPe    21 05 12.1  05 28
        PRI  ePe    21 05 25.0  05 52
        SAO  iPd    21 05 27.5
        MHC  iPd    21 05 28.1
        BKS  eP     21 05 34                e 06 09
                    BRK  21 04 49.2, 37.6N, 118.9W, h= 13 km, ML=3.6
                         MAMMOTH LAKES, CALIFORNIA

NOV 09  FRI  iPe    22 27 10.7  27 22
        MNV  iP     22 27 12.6
        JAS  iPe    22 27 17.2  27 33
        PRI  ePe    22 27 30.0  27 57
        SAO  iPd    22 27 32.6
        MHC  ePe    22 27 32.7
        BKS  eP     22 27 39
                    BRK  22 26 54.4, 37.6N, 118.9W, h= 14 km, ML=3.4
                         MAMMOTH LAKES, CALIFORNIA

NOV 09  FRI  iPe    22 59 49.8
        MNV  iPe    22 59 51.2
        JAS  iPe    22 59 56.1
        PRI  eP     23 00 09.0
        MHC  eP     23 00 11.5
        SAO  iPd    23 00 11.5
                    BRK  22 59 33.3, 37.6N, 118.9W, h= 16 km, ML=3.6
                         MAMMOTH LAKES, CALIFORNIA

NOV 10  FRI  iPe    09 45 25.4
        MNV  iPe    09 45 27.5
        JAS  iPe    09 45 31.9  45 47
        PRI  ePe    09 45 44.7  46 10
        SAO  eP     09 45 47.0
        MHC  ePe    09 45 47.4  46 15
        BKS  eP     09 45 53.4  46 29
        MIN  e(P)   09 46 06                Pg 46 13
                    BRK  09 45 08.9, 37.6N, 118.9W, h= 17 km, ML=4.0
                         MAMMOTH LAKES, CALIFORNIA

NOV 10  WDC  eP     11 21 02.8
        JAS  eP     11 21 30.7
        MNV  eP     11 21 34.0
                    USGS 11 15 55.6, 60.4N, 141.4W, h= 15 km, mb=4.7, Ms=3.9
                         SOUTHEASTERN ALASKA

NOV 10  WDC  eP     15 42 39.5              pP 43 07
        BRK  eP     15 42 44.5
        JAS  eP     15 42 51.9              pP 43 20
        FRI  eP     15 42 56.4              pP 43 25
                    USGS 15 30 47.2, 23.1N, 142.9E, h=110 km, mb=4.7
                         VOLCANO ISLANDS REGION

NOV 11  PRI  eP     13 14 59.0
        FRI  eP     13 15 03.6
        MNV  iPd    13 15 12.3
        JAS  eP     13 15 15.5
        MHC  eP     13 15 16.5
        BKS  eP     13 15 24.5                e 19 07
                        MICRON    PERIOD
                    PZ    0.05      1.0
                    LZ    1.1       20
                    LN    1.4       20
                    LE    0.9       20
        WDC  eP     13 15 44.0
                    USGS 13 10 33.1, 19.6N, 109.4W, h= 10 km, mb=4.6, Ms=4.1
                         REVILLA GIGEDO ISLANDS REGION

NOV 11  PRI  eP     16 42 57.7              pP 43 50
        BKS  eP     16 42 58
                        MICRON    PERIOD
                    PZ    0.02      1.0
        MHC  eP     16 42 58.3              pP 43 50
        FRI  eP     16 43 03.4              pP 43 55
        JAS  ePd    16 43 03.9              pP 43 56
        WDC  ePd    16 43 06.1              pP 43 58
        MNV  iPd    16 43 13.7              pP 44 06
                    USGS 16 31 22.1, 20.3S, 176.1W, h=169 km, mb=5.5
                         FIJI ISLANDS REGION

NOV 11  BRK  eP     19 32 38.2
        PRI  eP     19 32 38.2
        FRI  eP     19 32 44.0
        JAS  ePd    19 32 44.6
        WDC  ePd    19 32 46.8
        MNV  eP     19 32 54.5
                    USGS 19 21 02.6, 18.6S, 174.3W, h= 45 km, mb=5.0
                         TONGA ISLANDS

NOV 12  FRI  eP     01 47 07.3
        MNV  iPe    01 47 07.9              PcP 49 41
        PRI  eP     01 47 09.1
        JAS  eP     01 47 16.7              PcP 49 44
        MHC  eP     01 47 21.2
        WDC  eP     01 47 38.3              PcP 49 52
        FHC  eP     01 47 50.7
                    USGS 01 40 25.1, 13.7N,  90.9W, h= 92 km, mb=4.7
                         NEAR COAST OF GUATEMALA

NOV 12  FRI  iPe    14 10 08.2  10 20
        MNV  iPe    14 10 10.0
        JAS  iPe    14 10 14.4  10 31
        PRI  ePd    14 10 27.7  10 55
        MHC  eP     14 10 29.9
        SAO  iPd    14 10 30.0
        BKS  eP     14 10 36.2
                    BRK  14 09 51.9, 37.6N, 118.9W, h= 12 km, ML=3.2
                         MAMMOTH LAKES, CALIFORNIA

NOV 13  MNV         06 31                   e 31 25
        PRI  eP     06 31 30.0
        JAS  eP     06 31 34.8
        MHC  eP     06 31 38.8
        BKS         06 31                   e 31 44
        MIN         06 31                   e 31 49
        WDC  iPe    06 31 52.5              i 32 26
                    USGS 06 22 02.6,  2.3S,  76.7W, h=140 km, mb=4.7
                         PERU-ECUADOR BORDER REGION

NOV 13  SAO  iPd    07 56 58.4
        MHC  iPd    07 57 04.5
        PRI  eP     07 57 14.2              i 57 33
        BKS  eP     07 57 15.3  57 33
        JAS  eP     07 57 18.8  57 37
        FRI  iPe    07 57 20.3
                    BRK  07 56 55.1, 36.9N, 121.5W, h= 10 km, ML=2.8
                         NORTHWEST OF HOLLISTER, CALIFORNIA

NOV 13  FRI         09 42                   e 42 20
        MNV  eP     09 42 20.2
        PRI         09 42                   e 42 23
        JAS         09 42                   e 42 28
        MHC         09 42                   e 42 34
        MIN         09 42                   e 42 48
        WDC         09 42                   e 42 51
        FHC         09 43                   e 43 04
                    USGS 09 35 36.0, 13.8N,  90.5W, h= 85 km, mb=4.6
                         NEAR COAST OF GUATEMALA

NOV 13  FHC  iPe    12 46 45.3
        WDC  iP     12 46 59.7  47 27
        MIN  eP     12 47 09.5
        BKS  eP     12 47 19
        MHC  eP     12 47 28.9
        SAO  iP     12 47 35.3
        FRI  eP     12 47 49.5
                    BRK  12 46 21.2, 40.4N, 125.7W, h=  5 km, ML=3.5
                         OFF COAST SOUTHWEST OF EUREKA, CALIFORNIA

NOV 13  FHC  ePKP   19 24 01.4
        WDC  ePKPe  19 24 02.5              PP 25 54
        MIN  ePKPe  19 24 03.6
        BKS  ePKP   19 24 06.2              PP 26 08    PKS 27 26    SKS 31 13
                                            PPS 37 30    SS 43 14     Lr 03 30
                        MICRON    PERIOD
                    PKPZ  0.04      1.0
                    LZ    4.1       20
                    LN    2.9       20
                    LE    4.3       20
        MHC  ePKP   19 24 07.5              PP 26 10    SKP 27 22
        SAO  ePKP   19 24 07.6
        JAS  ePKPe  19 24 08.0              PP 26 13
        FRI  ePKPe  19 24 10.0             SKP 27 29
        PRI  ePKPe  19 24 10.5             SKP 27 28
        MNV  ePKPe  19 24 11.0              PP 26 21
                    Ms=6.2, Distance=128°
                    USGS 19 05 02.5,  4.4S, 102.0E, h= 47 km, mb=5.8, Ms=6.3
                         SOUTHERN SUMATERA

NOV 13  SAO  eP     20 55 37.4
        PRI  iPd    20 55 38.8                  e 55 50 PKPPKP 22 47
        BKS  ePd    20 55 39.6  05 42           e 56 07     PP 58 45    SeS 06 20
                                                Lq 15 35    Lr 19 00
                        MICRON    PERIOD
                    PZ    0.43      1.3
                    LZ    7         18
                    LN    6         18
                    LE    7         18
        MHC  iPd    20 55 39.8             PKPPKP 22 44
        FRI  iPd    20 55 44.3             PKPPKP 22 43
        FHC  ePd    20 55 45.3
        JAS  iPd    20 55 45.5                pP 55 54 PKPPKP 22 43
        WDC  iPd    20 55 48.3             PcP 55 54    pP 55 58    sP 56 07
                                           PKPPKP 22 28
        MIN  iPd    20 55 50.0
        MNV  iPd    20 55 54.6
                    Ms=6.1, Distance=78°
                    USGS 20 43 38.8, 23.6S, 174.9W, h= 32 km, mb=6.5, Ms=6.6
                         TONGA ISLANDS REGION

NOV 13  FRI  iPe    22 15 03.7  15 16
        MNV  iPe    22 15 05.6
        JAS  iPe    22 15 10.1  15 25
        PRI  ePe    22 15 23.1
        SAO  iPe    22 15 25.6
        MHC  eP     22 15 25.8
                    BRK  22 14 47.3, 37.6N, 118.9W, h= 10 km, ML=3.3
                         MAMMOTH LAKES, CALIFORNIA

NOV 14  FRI  iPe    01 06 00.9  06 12
        MNV  iPe    01 06 03.0
        JAS  iPe    01 06 07.2  06 23
        PRI  eP     01 06 20.4
        SAO  iPe    01 06 22.7
        MHC  ePe    01 06 22.8
        BKS  eP     01 06 29
        MIN  e(P)   01 06 47                e 07 03
        WDC  e(P)   01 06 56
                    BRK  01 05 44.7, 37.6N, 118.9W, h= 10 km, ML=3.4
                         MAMMOTH LAKES, CALIFORNIA

NOV 14  PRI  eP     01 33 47
        MHC  eP     01 33 47
        FRI  eP     01 33 52
        JAS  eP     01 33 52.8
        WDC  eP     01 33 55.8                  e 34 08     e 34 16     e 34 23
                                                pP 35 58
        MIN  eP     01 33 58
        MNV  e(P)   01 34 02                    e 34 23     pP 36 04
                    USGS 01 21 48.2, 23.2S, 174.9W, h= 33 km, mb=4.9
                         TONGA ISLANDS REGION

NOV 14  MHC  eP     02 31 55
        PRI  eP     02 31 57.4
        WDC  eP     02 31 57.0
        JAS  eP     02 32 00.8
        FRI  eP     02 32 02
        MIN         02 32                   e 32 07
        MNV  eP     02 32 09.8
                    USGS 02 19 14.4, 10.9S, 161.2E, h= 33 km, mb=4.9
                         SOLOMON ISLANDS

NOV 14  SAO  eP     07 05 26.2
        BKS  eP     07 05 28.0
                        MICRON    PERIOD
                    PZ    0.04      0.9
        PRI  ePd    07 05 28.0
        MHC  ePd    07 05 28.4
        FHC  eP     07 05 31.6
        FRI  ePd    07 05 33.7
        JAS  iPd    07 05 34.4
        WDC  iPd    07 05 36.4
        MIN  eP     07 05 38.3
        MNV  iPd    07 05 44.5
                    USGS 06 54 04.0, 16.9S, 174.3W, h= 81 km, mb=5.4
                         TONGA ISLANDS

NOV 14  MHC  eP     22 50 31.0
        WDC  ePd    22 50 34.0
        JAS  ePd    22 50 36.1
        FRI  eP     22 50 37.0
                    USGS 22 38 10.4, 14.8S, 167.1E, h=126 km, mb=5.2
                         NEW HEBRIDES ISLANDS

NOV 14  FHC  eP     23 06 13.0
        WDC  iPd    23 06 19.5
        MIN  iPd    23 06 24.2
        BKS  eP     23 06 41.2
                        MICRON    PERIOD
                    PZ    0.04      0.8
        JAS  iPd    23 06 47.0
        MHC  eP     23 06 47.6
        FRI  ePd    23 06 56.3
        PRI  ePd    23 07 01.0
                    USGS 23 00 42.8, 61.4N, 150.1W, h= 57 km, mb=5.1
                         SOUTHERN ALASKA

NOV 15  FRI  iP     12 46 11.3  46 24
        MNV  eP     12 46 13.7
        JAS  iPe    12 46 17.6  46 33
        PRI  eP     12 46 31.6
        SAO  eP     12 46 33.3
        MHC  eP     12 46 33.6
        BKS  eP     12 46 39.5
                    BRK  12 45 54.9, 37.6N, 118.9W, h= 10 km, ML=3.0
                         MAMMOTH LAKES, CALIFORNIA
```

International Seismological Centre

```
NOV 15  PRI   eP      13 47 28.4
        FRI   e(P)    13 47 29
        MNV   eP      13 47 29.0
        MHC   e(P)    13 47 32
        JAS   eP      13 47 33.0
        WDC   eP      13 47 56.0
                      USGS 13 36 29.7, 16.4S,  74.8W, h= 33 km, mb=5.4, Ms=4.8
                           NEAR COAST OF PERU

NOV 15  MHC   iPd     15 08 59.0
        BKS   iPe     15 09 09.6  09 19
        SAO   ePe     15 09 10.1
        JAS   iPd     15 09 16.7  09 31
        PRI   eP      15 09 22.9
        FRI   iPe     15 09 24.3          e 09 44
                      BRK  15 08 57.1, 37.4N, 121.6W, h=  8 km, ML=2.9
                           EAST-NORTHEAST OF SAN JOSE, CALIFORNIA

NOV 15  FRI   iPe     20 51 50.4  52 02
        MNV   iP      20 51 52.0
        JAS   iPe     20 51 57.0  52 13
        PRI   eP      20 52 09.5
        MHC   eP      20 52 11.0
        SAO   iPd     20 52 12.2
        BKS   eP      20 52 18.7
                      BRK  20 51 33.8, 37.6N, 118.9W, h= 17 km, ML=3.3
                           MAMMOTH LAKES, CALIFORNIA

NOV 16  SAO   eP      15 33 13.8
        BKS   eP      15 33 14.0  43 07      i 31 21     PP 36 06    PPS 43 49
                                             SS 47 26     Lq 52 38     Lr 55 55
                                  MICRON     PERIOD
                            PZ      0.30       0.8
                            LN       45         20
                            LE       60         20
        MHC   eP      15 33 15.5
        PRI   ePd     15 33 15.7          PKPPKP 00 40
        FHC   eP      15 33 18.1
        FRI   eP      15 33 21.2          PKPPKP 00 38
        JAS   ePd     15 33 21.4          PKPPKP 00 38
        WDC   ePd     15 33 21.8          PKPPKP 00 36
        MIN   eP      15 33 24.0
        MNV   e(P)    15 33 31
                      Ms=7.0, Distance=76°
                      USGS 15 21 25.7, 16.8S, 180.0W, h= 33 km, mb=6.1, Ms=6.9
                           FIJI ISLANDS REGION

NOV 16  MNV   iPe     17 29 40.6          PcP 32 21
        PRI   eP      17 29 42.0
        JAS   ePe     17 29 49.0          PcP 32 24
        MHC   eP      17 29 53.4
        MIN   eP      17 30 05.8
        WDC   ePe     17 30 11.1          PcP 32 32
        FHC   eP      17 30 22.7
                      USGS 17 23 15.9, 14.8N,  91.8W, h=148 km, mb=5.0
                           GUATEMALA

NOV 16  WDC   ePe     18 24 38.5
        JAS   e(P)    18 24 50
        FRI   eP      18 24 50.6
        PRI           18 24                 e 24 52
                      USGS 18 10 48.5,  1.9S, 134.2E, h= 33 km, mb=5.8, Ms=5.8
                           WEST IRIAN REGION

NOV 16  FRI   iPe     21 48 42.1  48 54
        MNV   i(P)    21 48 44
        JAS   iPe     21 48 48.9  49 05
        PRI   ePe     21 49 01.3  49 27
        MHC   ePe     21 49 04.0  49 32
        SAO   iPd     21 49 04.0
        BKS   e(P)    21 49 08          Pg 49 10     e 49 45     Sg 49 45
                      BRK  21 48 25.6, 37.6N, 118.9W, h= 18 km, ML=3.8
                           MAMMOTH LAKES, CALIFORNIA

NOV 16  FRI   iPe     21 50 26.4
        MNV   iPe     21 50 27.9
        JAS   ePe     21 50 32.7  50 49
        PRI   ePe     21 50 45.1  51 11
        MHC   iPe     21 50 47.8  51 16
        SAO   iPe     21 50 47.8
                      BRK  21 50 09.7, 37.6N, 118.9W, h= 10 km, ML=3.2
                           MAMMOTH LAKES, CALIFORNIA

NOV 17  FRI   eP      12 16 10.7
        MNV   iPe     12 16 17.5
        JAS   eP      12 16 22.6
                      USGS 12 12 48.3, 25.7N, 109.7W, h= 15 km, mb=4.1
                           GULF OF CALIFORNIA

NOV 17  MNV   iPe     14 25 48.0          pP 26 11
        FRI   eP      14 25 54.3
        PRI   e(P)    14 26 00
        JAS   eP      14 26 00.6          pP 26 24
        MHC   e(P)    14 26 08
        WDC   eP      14 26 13.3          pP 26 36
                      USGS 14 17 29.4, 18.7N,  69.6W, h= 99 km, mb=5.1
                           DOMINICAN REPUBLIC

NOV 17  FRI   iPe     18 46 57.2  47 09
        MNV   iPe     18 46 59.0
        JAS   iPe     18 47 03.9  47 20
        PRI   ePe     18 47 16.2  47 43
        SAO   iPd     18 47 19.1
        MHC   eP      18 47 19.4  47 47
        BKS   e(Pg)   18 47 26          e 47 50
                      BRK  18 46 40.7, 37.6N, 118.9W, h= 18 km, ML=3.3
                           MAMMOTH LAKES, CALIFORNIA

NOV 17  FRI   iPe     21 48 09.0  48 21
        MNV   iPe     21 48 10.5
        JAS   iPe     21 48 15.6  48 32
        PRI   ePd     21 48 28.3  48 55
        SAO   iPd     21 48 30.8
        MHC   eP      21 48 31.0  48 59
                      BRK  21 47 52.3, 37.6N, 118.9W, h= 10 km, ML=3.1
                           MAMMOTH LAKES, CALIFORNIA

NOV 17  FHC   eP      22 09 01.1
        BKS   eP      22 09 01.8
        MHC   eP      22 09 03.5
        PRI   eP      22 09 05.5
        WDC   ePe     22 09 05.6
        JAS   ePe     22 09 08.2
        FRI   eP      22 09 09.5
        MNV   ePe     22 09 18.0
                      USGS 21 56 55.7, 11.2S, 166.3E, h=167 km, mb=5.0
                           SANTA CRUZ ISLANDS

NOV 18  FRI   ePKP    18 01 08.8
        PRI   ePKP    18 01 09.5
        MNV   ePKP    18 01 09.6
        JAS   ePKP    18 01 11.2
        MHC   ePKP    18 01 11.8
        BKS   ePKP    18 01 13.2
                                  MICRON     PERIOD
                            PKPZ    0.02       0.6
        WDC   ePKP    18 01 16.3
                      USGS 17 42 19.3, 58.8S,  25.1W, h= 69 km, mb=5.2
                           SOUTH SANDWICH ISLANDS REGION

NOV 19  FRI   iPe     04 56 08.6  56 20
        MNV   iPe     04 56 10.6
        JAS   iPe     04 56 14.9  56 31
        PRI   ePd     04 56 28.0  56 55
        SAO   ePd     04 56 30.3
        MHC   ePd     04 56 30.7  56 59
        BKS   e(Pg)   04 56 36          e 57 12
                      BRK  04 55 52.4, 37.6N, 118.9W, h= 18 km, ML=3.2
                           MAMMOTH LAKES, CALIFORNIA

NOV 19  FRI   iPe     08 17 51.7  18 04
        MNV   iPe     08 17 53.3
        JAS   iPd     08 17 58.2  18 14
        PRI   ePd     08 18 11.1  18 38
        MHC   eP      08 18 13.5  18 42
        SAO   iPd     08 18 13.5
        BKS   e(Pg)   08 18 21          e 18 54
                      BRK  08 17 35.2, 37.6N, 118.9W, h= 19 km, ML=3.2
                           MAMMOTH LAKES, CALIFORNIA

NOV 19  BKS   eP      17 54 09.2
                                  MICRON     PERIOD
                            PZ      0.04       0.8
        FRI           17 54                 e 54 15
        JAS   eP      17 54 15.4
        WDC   eP      17 54 17.1
        MNV   iPd     17 54 25.4
                      USGS 17 42 55.8, 16.9S, 174.6W, h=192 km, mb=5.0
                           TONGA ISLANDS

NOV 19  MIN           22 31                 PP 35 32
        WDC           22 31                 e 31 13     e 31 32     PP 35 26
                                            SKS 42 26
        MNV           22 31                 e 47 12
        JAS           22 31                 e 31 21     PKKP 47 18
        BKS   eP      22 31 15              PP 35 46    e 36 42     SKS 41 45
                                            SKKS 42 25  PS 44 26     e 47 56
                                            SS 50 18    e 53 19     e 53 49
                                            SSS 54 30   e 57 21     Lq 00 14
                                            Lr 04 40
                                  MICRON     PERIOD
                            LZ      2.7        20
                            LN      0.8        20
                            LE      2.3        20
                              e 31 27
        FRI           22 31
                      USGS 22 17 20.2,  5.9N, 125.3E, h= 85 km, mb=6.1
                           MINDANAO, PHILIPPINE ISLANDS

NOV 19  WDC   eP      22 57 56.7                e 58 25
        FRI           22 57                     e 57 57
        JAS   eP      22 57 57.0                e 58 23
        MNV   eP      22 58 06.0                e 58 34
                      USGS 22 45 17.8, 21.1S, 170.1E, h=105 km, mb=5.0
                           LOYALTY ISLANDS REGION

NOV 20  PRI           06 55                     e 55 44
        FRI   eP      06 55 50.0
        JAS   ePe     06 55 54.9
        MNV           06 56                     e 56 00
        WDC   ePe     06 56 07.3
                      USGS 06 45 07.1, 26.1S, 139.3W, h= 33 km, mb=5.3
                           SOUTH PACIFIC OCEAN

NOV 20  FRI   iPe     17 24 15.5  24 27
        MNV   iPe     17 24 17.5
        JAS   iPe     17 24 22.1  24 38
        PRI   ePe     17 24 34.8  25 01
        SAO   iPe     17 24 37.4
        MHC   iPe     17 24 37.6  25 05
        BKS   iPe     17 24 43.5          P• 24 46    Pg 24 54    S• 25 19
                                          Sg 25 27
                      BRK  17 23 59.0, 37.6N, 118.9W, h= 14 km, ML=4.2
                           MAMMOTH LAKES, CALIFORNIA

NOV 20  WDC   iPe     17 46 03.6                e 46 12
        MIN   eP      17 46 04.2
        FHC   ePe     17 46 06
        MNV   ePe     17 46 10.3
        JAS   iPe     17 46 18.0                e 46 24
        BKS   eP      17 46 22.4  54 48         e 46 29     ScS 56 14    SS 58 48
                                                e 59 43     Lq 01 16     e 01 44
                                                e 04 00     Lr 04 24
                                  MICRON     PERIOD
                            PZ      0.01       0.5
                            LZ       7         20
                            LN       6         20
                            LE       7         20
        FRI   ePe     17 46 22.9                e 46 33
        MHC   ePe     17 46 24.5
        SAO   eP      17 46 27.2
        PRI   ePe     17 46 30.7                e 46 38
                      Ms=6.0, Distance=63°
                      USGS 17 36 01.2, 71.2N,   8.0W, h= 10 km, mb=5.6, Ms=5.4
                           JAN MAYEN ISLAND REGION

NOV 21  FRI   iPe     09 00 03.0  00 15
        MNV   iPe     09 00 04.8
        JAS   iPe     09 00 09.5  00 26
        PRI   ePd     09 00 22.8  00 50
        SAO   ePe     09 00 24.8
        MHC   ePe     09 00 25.1  00 54
        BKS   iP•d    09 00 31.4          Pg 00 38    e 00 44     S• 01 06
                      BRK  08 59 46.6, 37.6N, 118.9W, h=  9 km, ML=3.1
                           MAMMOTH LAKES, CALIFORNIA

NOV 21  FHC   iPd     09 22 42.9  22 52
        WDC   ePe     09 22 55.1
        MIN   ePd     09 23 05.2
                      BRK  09 22 31.9, 40.3N, 124.4W, h= 21 km, ML=3.4
                           NEAR COAST SOUTH-SOUTHWEST OF EUREKA, CALIFORNIA

NOV 21  WDC   ePe     10 38 03.4
        MIN   e(P)    10 38 05
        BKS   e(P)    10 38 10          e 38 18     e 50 52     e 56 44
                                        Lr 09 00
                                  MICRON     PERIOD
                            PZ      0.01       0.9
                            LZ      2.1        20
                            LN      0.5        20
                            LE      1.8        20
        JAS           10 38                 e 38 14
        MNV           10 38                 e 38 23
                      USGS 10 24 31.9,  3.4S, 139.7E, h= 70 km, mb=5.5
                           WEST IRIAN

NOV 22  FRI   eP      02 52 59.2          PKPPKP 20 02
        MNV   ePd     02 53 01.0
        PRI   eP      02 53 01.0          PKPPKP 20 03
        SAO   eP      02 53 04.9
        JAS   ePd     02 53 06.2          PKPPKP 20 00
        MHC   eP      02 53 08.4
        BKS   eP      02 53 11.2  04 12      pP 53 56    e 55 51     e 56 23
                                             e 02 56    e 03 06     e 03 58
                                             SP 05 11   e 05 18     PS 05 38
                                             e 08 36    e 08 46     SS 09 42
                                          SSS 13 42     e 20 50
                                  MICRON     PERIOD
                            PZ      0.23       1.0
        MIN   eP      02 53 17.0
        WDC   ePd     02 53 20.2
        FHC   eP      02 53 27.0
                      mb=5.9, h=200 km, Distance=81°
                      USGS 02 41 16.7, 24.3S,  67.4W, h=169 km, mb=5.8
                           CHILE-ARGENTINA BORDER REGION

NOV 22  SAO   iPe     06 52 06.7
        PRI   ePd     06 52 17.2
        MHC   ePd     06 52 18.0
        FRI   ePd     06 52 27.0
        JAS   ePd     06 52 29.1
                      BRK  06 52 03.4, 36.6N, 121.3W, h=  7 km, ML=2.5
                           SOUTHEAST OF HOLLISTER, CALIFORNIA
```

International Seismological Centre

```
NOV 23  MNV  iPd    23 49 20.5
        FRI  ePd    23 49 21.7
        PRI  ePd    23 49 24.9                 e 49 38      e 49 57
        JAS  iPd    23 49 29.6                 e 49 42      e 50 14 PKPPKP 20 20
                                              P4KP 26 57
        SAO  ePd    23 49 30.7
        MHC  ePd    23 49 34.8                 e 49 47
        BKS  iPd    23 49 39.3  57 07          sP 50 14     sS 57 55    SeS 59 06
                                               e 00 07     SS 00 57    sSS 01 40
                                              Lq 03 10     Lr 05 16
                                    MICRON    PERIOD
                                PZ    0.64      1.0
        MIN  ePd    23 49 43.3
        WDC  iPd    23 49 47.1                 e 49 59      e 50 19 PKPPKP 20 04
                                              P4KP 27 14
        FHC  ePd    23 49 57.7                 e 50 10      e 50 30
                    mb=6.6, h=110 km, Distance=55°
                    USGS 23 40 29.8,  4.8N,  76.2W, h=108 km, mb=6.4
                         COLOMBIA

NOV 24  FRI  iPe    04 29 47.4  29 59
        MNV  iPe    04 29 47.9
        JAS  iPe    04 29 54.0  30 10
        PRI  eP     04 30 06.4
        SAO  iPd    04 30 09.3
        MHC  ePd    04 30 09.6
                    BRK  04 29 30.1, 37.6N, 118.8W, h=  7 km, ML=3.1
                         MAMMOTH LAKES, CALIFORNIA

NOV 24  BRK  eP     05 12 46.4
        MHC  eP     05 12 48.2
        PRI  eP     05 12 50.3
        WDC  ePe    05 12 50.3
        MIN  eP     05 12 52.5
        JAS  ePe    05 12 53.3
        FRI  eP     05 12 54.8
        MNV  ePe    05 13 02.9
                    USGS 05 00 41.8, 10.7S, 166.0E, h=173 km, mb=4.6
                         SANTA CRUZ ISLANDS

NOV 24  BRK  eP     05 16 36.7
        WDC  eP     05 16 40.6
        PRI  eP     05 16 41.1
        JAS  eP     05 16 44.0
        FRI  eP     05 16 44.9
        MNV  eP     05 16 53.5
                    USGS 05 04 26.4, 10.1S, 166.1E, h=102 km, mb=4.6
                         SANTA CRUZ ISLANDS

NOV 24  BKS  e(P)   19 30 51    40 42        e 32 18      e 41 20     Lq 50 12
                                              Lr 53 52
                                    MICRON    PERIOD
                                PZ    0.05      1.0
                                LZ    19        20
                                LN    13        20
                                LE    16        20
        MHC  eP     19 30 53.0
        PRI         19 30                    e 30 55
        FRI  eP     19 30 57.0
        JAS  iP     19 30 57.0
        WDC  eP     19 30 58.4                i 31 04
        MNV  eP     19 31 06.4                i 31 12
                    Ms=6.4, Distance=77°
                    USGS 19 19 04.3, 18.9S, 176.6W, h= 33 km, mb=5.8, Ms=6.2
                         FIJI ISLANDS REGION

NOV 25  JAS  iPe    08 43 52.5  44 04
        MNV  iPe    08 43 53.6
        FRI  iPd    08 43 59.4  44 16
        MHC  eP     08 44 12.5  44 41
        BKS  iPd    08 44 16.4  44 47
                    BRK  08 43 36.2, 38.2N, 119.4W, h= 13 km, ML=3.0
                         BRIDGEPORT, CALIFORNIA

NOV 25  WDC         10 26                    e 26 36
        JAS         10 26                    e 26 52
        FRI         10 26                    e 26 58
        MNV  iPd    10 26 59.4
                    USGS 10 15 22.3, 36.6N, 140.9E, h= 93 km, mb=5.1
                         NEAR EAST COAST OF HONSHU, JAPAN

NOV 25  SAO  eP     11 49 13.3
        BKS  iPe    11 49 14.1
                                    MICRON    PERIOD
                                PZ    0.06      1.0
        PRI  eP     11 49 14.2
        MHC  eP     11 49 14.7
        FRI  eP     11 49 19.3
        JAS  iPe    11 49 20.0                 e 51 26
        WDC  iPe    11 49 21.6                 e 51 28
        MIN  eP     11 49 23.0
        MNV  iPe    11 49 28.5
                    USGS 11 38 00.9, 22.0S, 179.5W, h=577 km, mb=5.4
                         SOUTH OF FIJI ISLANDS

NOV 25  PRI  eP     13 01 30.5
        JAS  eP     13 01 36.5
        FRI  eP     13 01 36.9
        WDC  eP     13 01 36.9
        MNV  eP     13 01 47.0
                    FIJI ISLANDS REGION

NOV 25  FRI  eP     14 31 53.5
        JAS  eP     14 31 53.6
        WDC  eP     14 31 54.4
        MNV  eP     14 32 02.7
                    USGS 14 20 17.7, 17.0S, 180.0E, h=231 km, mb=4.3
                         FIJI ISLANDS

NOV 25  SAO  eP     23 26 11.7
        BKS  eP     23 26 12.0
        MHC  eP     23 26 12.6
        PRI  eP     23 26 13.0
        FRI  eP     23 26 18.4
        JAS  eP     23 26 18.4
        WDC  eP     23 26 19.0
        MNV  eP     23 26 28.4
                    USGS 23 14 24.7, 15.5S, 179.4E, h= 33 km, mb=4.7
                         FIJI ISLANDS

NOV 26  BKS  iPe    12 40 12.6  40 16
        MHC  iPe    12 40 20.2  40 30
        SAO  eP     12 40 29.0
        JAS  iP     12 40 30.0
        FRI  eP     12 40 41.4
                    BRK  12 40 08.6, 37.9N, 122.0W, h=  7 km, ML=3.0
                         EAST OF BERKELEY, CALIFORNIA

NOV 26  BKS  iPe    12 44 01.6  44 05
        MHC  iPe    12 44 09.2  44 18
        SAO  eP     12 44 18.2
        JAS  ePe    12 44 18.8
        FRI  eP     12 44 30
                    BRK  12 43 57.6, 37.9N, 122.0W, h=  7 km, ML=2.8
                         EAST OF BERKELEY, CALIFORNIA

NOV 26  FRI  iPe    17 26 47.8  27 00
        MNV  iP     17 26 48.6
        JAS  iPe    17 26 54.5
        PRI  iPd    17 27 07.9
        SAO  ePe    17 27 09.9
        MHC  iPd    17 27 10.7
        BKS  eP     17 27 16.6
        MIN  eP     17 27 33.9
                    BRK  17 26 30.9, 37.6N, 118.8W, h= 12 km, ML=3.1
                         MAMMOTH LAKES, CALIFORNIA

NOV 27  FHC  eP     11 24 30.6
        WDC  eP     11 24 36.5                 e 28 21
        BKS  eP     11 24 37.2
                                    MICRON    PERIOD
                                PZ    0.06      1.2
        MHC         11 24                    e 24 39
        MIN         11 24                    e 24 40
        PRI         11 24                    e 24 43
        JAS  eP     11 24 43.0               e 28 35
        FRI  eP     11 24 45.2               e 28 39
        MNV  eP     11 24 50.8               e 28 49
                    USGS 11 11 41.7,  5.6S, 147.3E, h=205 km, mb=5.5
                         EAST PAPUA NEW GUINEA REGION

NOV 27  MNV  iP     14 39 16.6
        JAS  iPe    14 39 24.5  39 40
        FRI  iPd    14 39 30.9  39 51          i 39 35
        MHC  eP     14 39 43.4
        SAO  eP     14 39 46.3
        BKS  iPe    14 39 48.5  40 22
        MIN  eP     14 39 52.2
        PRI  eP     14 39 53.0
                    BRK  14 39 03.5, 38.4N, 119.1W, h=  8 km, ML=3.1
                         NORTH OF MONO LAKE, CALIFORNIA-NEVADA BORDER

NOV 27  FHC         17 25                                PP 29 06
        WDC  e(P)   17 24 58                             PP 29 11   P4KP 40 29 PKPPKP 50 14
                                                          e 50 22
        MNV  e(P)   17 25 12                             PP 29 34 PKPPKP 49 56      e 50 05
        JAS  e(P)   17 25 20                             PP 29 17   P4KP 40 20 PKPPKP 50 00
                                                          e 50 09
        BRK  eP     17 25 25                       PKPPKP 50 05
        BKS         17 25       37 16                 e 29 36      e 29 46      e 29 52
                                                      PP 29 57    SKS 35 24    PPS 39 28
                                                       e 41 34     e 45 02     e 45 10
                                                       e 45 44     e 48 52     e 50 07
                                                       e 50 14     Lq 55 07    e 56 36
                                                      Lr 00 14
                                    MICRON    PERIOD
                                LZ    120       20
                                LNE   110       20
                                LNW   110       20
        MHC         17 25                  PP 29 38 PKPPKP 50 02      e 50 11
        FRI         17 25                PKPPKP 49 53      e 50 02
        PRI         17 25                   PP 29 36 PKPPKP 49 55      e 50 04
                    Ms=7.5, Distance=107°
                    USGS 17 10 32.9, 34.0N,  59.7E, h= 10 km, mb=6.1, Ms=7.1
                         IRAN

NOV 28  SAO  iPd    00 57 04.9
        MHC  iPd    00 57 05.5
        BKS  iPe    00 57 17.7  57 34
        PRI  eP     00 57 19.6
        JAS  ePd    00 57 20.7  57 37
        FRI  eP     00 57 23
                    BRK  00 56 58.6, 37.0N, 121.5W, h=  1 km, ML=2.9
                         COYOTE LAKE, CALIFORNIA

NOV 28  SAO  eP     05 32 25.4
        BKS  eP     05 32 26.1
                                    MICRON    PERIOD
                                PZ    0.03      0.7
        PRI  eP     05 32 26.7
        MHC  eP     05 32 27.1
        FHC  eP     05 32 30.5
        FRI  eP     05 32 31.9
        JAS  iPe    05 32 32.3
        WDC  iPe    05 32 33.8
        MIN  eP     05 32 35.7
        MNV  ePe    05 32 40.9
                    USGS 05 21 25.4, 20.8S, 179.1W, h=655 km, mb=5.4
                         FIJI ISLANDS REGION

NOV 28  MNV  ePd    07 22 32.0                       pP 23 06
        PRI  eP     07 22 32.0                       pP 23 06
        JAS  iPd    07 22 37.5                       pP 23 11
        MHC  eP     07 22 39.8
        WDC  iPd    07 22 51.9                       pP 23 26
                    USGS 07 10 48.4, 23.4S,  69.1W, h= 95 km, mb=4.8
                         NORTHERN CHILE

NOV 28  PRI  eP     15 06 30.8
        BKS  eP     15 06 31.0                 e 06 42
                                    MICRON    PERIOD
                                LZ    2.3       20
                                LN    1.8       20
                                LE    1.1       20
        MHC  eP     15 06 31.3
        FRI  eP     15 06 34.5
        JAS  eP     15 06 36.3                 e 06 47
        WDC  eP     15 06 39.3                 e 06 50
        MIN  eP     15 06 41.6
        MNV  eP     15 06 44.4
                    USGS 14 54 07.2, 28.0S, 176.7W, h= 33 km, mb=5.4, Ms=5.3
                         KERMADEC ISLANDS REGION

NOV 28  MHC  iPd    22 51 38.7  51 47
        PRI  eP     22 51 46.4
                    BRK  22 51 27.6, 36.8N, 121.6W, h=  5 km, ML=2.5
                         WEST OF HOLLISTER, CALIFORNIA

NOV 29  PRI         00 28                    e 28 40
        MHC         00 28                    e 28 41
        FRI  eP     00 28 44.7
        JAS  eP     00 28 45.2
        WDC  eP     00 28 49.8
        MIN         00 28                    e 28 51
        MNV  iPe    00 28 55.0
                    USGS 00 16 16.9, 28.2S, 176.5W, h= 33 km, mb=5.0, Ms=5.1
                         KERMADEC ISLANDS REGION

NOV 29  SAO  eP     01 44 16.0
        BKS  ePe    01 44 16.2
                                    MICRON    PERIOD
                                PZ    0.04      1.0
        PRI  eP     01 44 17.2
        MHC  eP     01 44 17.6
        FRI  eP     01 44 22.8
        JAS  eP     01 44 23.3
        WDC  eP     01 44 24.1
        MIN  eP     01 44 26.4
        MNV  iPe    01 44 35.6
                    USGS 01 33 23.3, 15.8S, 177.5W, h=445 km, mb=4.9
                         FIJI ISLANDS REGION

NOV 29  FRI  iPe    08 23 48.6  24 00
        MNV  iPe    08 23 49.0
        JAS  iPe    08 23 55.3
        PRI  eP     08 24 07.7
        MHC  iPd    08 24 11.2
        SAO  iPd    08 24 11.6
        BKS  eP     08 24 17.0
                    BRK  08 23 31.3, 37.6N, 118.8W, h=  2 km, ML=3.3
                         MAMMOTH LAKES, CALIFORNIA

NOV 29  PRI  eP     10 32 12.4
        BKS  ePe    10 32 13.0                 e 32 27
        MHC  eP     10 32 13.0                 e 32 27
        FRI  eP     10 32 17.0                 e 32 31
        JAS  eP     10 32 18.1                 i 32 32
        WDC  eP     10 32 21.1                 i 32 35
        MIN  eP     10 32 22.3                 e 32 37
        MNV  eP     10 32 26.3                 e 32 40
                    USGS 10 19 47.4, 28.5S, 177.2W, h= 49 km, mb=5.1, Ms=4.9
                         KERMADEC ISLANDS REGION
```

International Seismological Centre

```
NOV 29  FHC  eP     17 20 09.0
        WDC  iPd    17 20 14.1
        MIN  ePd    17 20 17.7
        BKS  eP     17 20 20.2                    e 20 53
                                MICRON    PERIOD
                           PZ     0.03       0.7
        MHC  eP     17 20 24.0
        JAS  iPd    17 20 27.1
        PRI  eP     17 20 30.4
        FRI  ePd    17 20 31.8
        MNV  iPd    17 20 35.3
                    USGS 17 08 23.7, 22.4N, 143.3E, h=130 km, mb=5.3
                         VOLCANO ISLANDS REGION

NOV 29  PRI  eP     19 48 41.2
        BRK  eP     19 48 41.7
        MHC  eP     19 48 42.2
        FRI  eP     19 48 46.7
        JAS  iPd    19 48 47.5
        WDC  iPd    19 48 50.5
        MNV  iPd    19 48 56.5
                    USGS 19 36 33.4, 24.8S, 175.9W, h= 33 km, mb=4.9, Ms=4.9
                         SOUTH OF TONGA ISLANDS

NOV 29  SAO  eP     23 38 33.3
        PRI  eP     23 38 34.4
        BKS  eP     23 38 35.0
                                MICRON    PERIOD
                           PZ     0.03       0.8
        MHC  eP     23 38 35.4
        FRI  eP     23 38 39.8
        FHC  eP     23 38 40.7
        JAS  eP     23 38 40.8
        WDC  eP     23 38 43.7
        MIN  eP     23 38 45.0
        MNV  eP     23 38 49.9
                    USGS 23 26 28.7, 24.5S, 176.0W, h= 44 km, mb=5.3, Ms=4.9
                         SOUTH OF FIJI ISLANDS

NOV 30  FRI  iPe    05 25 51.5  26 03
        MNV  iPe    05 25 53.0
        JAS  iPe    05 25 58.1  26 14
        PRI  eP     05 26 10.7  26 39
        SAO  iPd    05 26 13.4
        MHC  eP     05 26 13.7
        BKS  eP     05 26 19.6
                    BRK  05 25 35.0, 37.6N, 118.9W, h= 12 km, ML=3.1
                         MAMMOTH LAKES, CALIFORNIA

NOV 30  PRI  eP     22 59 03.0                pP 59 16
        BRK  eP     22 59 03.5
        MHC  eP     22 59 04.0
        FRI  eP     22 59 08.4                pP 59 22
        JAS  eP     22 59 09.3                pP 59 23
        WDC  iPd    22 59 12.2                pP 59 25
        MNV  iPd    22 59 18.5                pP 59 32
                    USGS 22 47 06.4, 23.1S, 175.0W, h= 47 km, mb=5.0, Ms=4.8
                         TONGA ISLANDS REGION

DEC 02  SAO  iPe    03 54 31.3
        PRI  ePd    03 54 41.0
        MHC  ePd    03 54 42.6  54 53
        FRI  ePe    03 54 50.6  55 08
        BKS  ePd    03 54 53.0                e 54 14      e 54 18
        JAS  ePd    03 54 53.0
                    BRK  03 54 27.5, 36.6N, 121.3W, h=  8 km, ML=3.0
                         SOUTHEAST OF HOLLISTER, CALIFORNIA

DEC 02  FHC  ePe    04 49 49.8
        WDC  iPe    04 49 50.8
        MIN  iPe    04 49 52.8
        BKS  iP     04 50 04.7
                                MICRON    PERIOD
                           PZ     0.11       0.9
        MNV  iPe    04 50 05.0
        JAS  iPe    04 50 05.3
        MHC  ePe    04 50 07.3
        SAO  ePe    04 50 09.8
        FRI  ePe    04 50 10.0
        PRI  ePe    04 50 14.0
                    USGS 04 36 57.5, 49.9N,  78.8E, h=  0 km, mb=6.0, Ms=4.4
                         UNDERGROUND NUCLEAR EXPLOSION
                         EASTERN KAZAKH, S.S.R.

DEC 03  SAO  eP     02 35 30.6
        PRI  eP     02 35 32.0
        BKS  eP     02 35 32.2
        MHC  eP     02 35 32.3
        FRI  eP     02 35 37.2
        JAS  eP     02 35 37.5
        WDC  eP     02 35 39.1
        MIN  eP     02 35 41.0
                    USGS 02 24 29.1, 19.9S, 179.1W, h=585 km, mb=4.8
                         FIJI ISLANDS REGION

DEC 03  SAO  eP     04 11 30.7
        PRI  ePe    04 11 31.3
        BKS  ePd    04 11 32.0
        MHC  ePe    04 11 32.2
        FRI  ePe    04 11 37.5
        JAS  iPe    04 11 37.8
        WDC  iPe    04 11 39.0
        MIN  ePe    04 11 40.7
                    USGS 04 00 39.9, 18.1S, 178.5W, h=605 km, mb=5.2
                         FIJI ISLANDS REGION

DEC 04  PRI  eP     18 50 02.1
        MHC  eP     18 50 03.0
        BKS         18 50                     e 19 00      e 24 50
                                MICRON    PERIOD
                           LZ     0.2        18
                           LN     0.2        18
                           LE     0.2        18
        FRI  eP     18 50 06.5
        JAS  eP     18 50 07.7
        WDC  eP     18 50 10.8
        MNV  eP     18 50 15.3
                    USGS 18 37 14.9, 33.1S, 178.6W, h= 33 km, mb=5.2, Ms=5.3
                         SOUTH OF KERMADEC ISLANDS

DEC 05  JAS  eP     09 06 36.5
        FRI  eP     09 06 37.0
        MNV  eP     09 06 45.2
                    USGS 08 53 54.8, 18.1S, 168.3E, h= 48 km, mb=5.1
                         NEW HEBRIDES ISLANDS

DEC 05  WDC  eP     12 42 28.1
        BRK  eP     12 42 31.7
        MHC  eP     12 42 35.0
        JAS  eP     12 42 38.7
        PRI  eP     12 42 40.7
        FRI  eP     12 42 42.5
        MNV  eP     12 42 47.0
                    USGS 12 29 55.1, 12.2N, 144.0E, h= 34 km, mb=5.2, Ms=5.2
                         SOUTH OF MARIANA ISLANDS

DEC 05  BRK  e(P)   19 12 45
        BKS         19 12                     e 35 46
        PRI  e(P)   19 12 45
        MHC  e(P)   19 12 45
        FRI  ePe    19 12 50.4
        JAS  ePe    19 12 51.1
        WDC  ePe    19 12 53.2
        MIN  eP     19 12 55.2
        MNV  ePe    19 12 59.0
                    USGS 19 01 00.7, 19.6S, 175.0W, h= 33 km, mb=5.3
                         TONGA ISLANDS

DEC 06  MHC  iPd    07 14 53.7                i 14 57
        SAO  iPe    07 14 57.4
        BKS  ePe    07 15 06.5  15 20
        JAS  iPd    07 15 10.6  15 26
        PRI  eP     07 15 10.7
        FRI  eP     07 15 14.5
        MNV  e(P)   07 15 43
                    BRK  07 14 49.3, 37.1N, 121.5W, h=  9 km, ML=3.6
                         COYOTE LAKE, CALIFORNIA

DEC 06  FRI  iPe    19 32 55.5                i 33 07
        MNV  iPe    19 32 56.8
        JAS  iPe    19 33 02.2
        PRI  iPe    19 33 14.8
        SAO  iPe    19 33 17.3
        MHC  iPe    19 33 17.6
        BKS  eP     19 33 23.5                e 33 58
        MIN  iPe    19 33 41.7
                    BRK  19 32 38.9, 37.6N, 118.9W, h= 15 km, ML=4.2
                         MAMMOTH LAKES, CALIFORNIA

DEC 06  BKS         23 23                     e 53 40
        FRI  eP     23 23 10.2
        JAS  eP     23 23 11.5
        WDC  eP     23 23 14.4
        MIN         23 23                     e 23 17
        MNV         23 23                     e 23 19
                    USGS 23 10 33.4, 30.0S, 177.4W, h= 33 km, mb=4.6
                         KERMADEC ISLANDS

DEC 08  MNV  ePe    04 19 36.5
        MIN  ePe    04 19 36.6
        WDC  ePe    04 19 37.0
        JAS  ePe    04 19 43.7
        BKS         04 19                     e 51 00
        MHC  eP     04 19 49
        PRI  ePe    04 19 51.7
                    USGS 04 06 34.3, 38.3N,  11.7E, h= 33 km, mb=5.4, Ms=5.3
                         SICILY

DEC 08  BKS  iPe    08 44 03.9                Lr 09 45
                                MICRON    PERIOD
                           PZ     0.11       0.9
        SAO  ePe    08 44 04.0
        FHC  ePe    08 44 04.4
        MHC  ePe    08 44 05.1
        PRI  ePe    08 44 06.5
        WDC  iPe    08 44 08.4
        JAS  iPe    08 44 10.2                e 47 27
        MIN  ePe    08 44 10.6
        MNV  iPe    08 44 19.6
                    USGS 08 31 33.7, 15.8S, 168.3E, h= 34 km, mb=5.6, Ms=5.0
                         NEW HEBRIDES ISLANDS

DEC 08  FHC  ePd    13 10 56.6
        WDC  iPd    13 11 01.9
        MIN  ePd    13 11 05.3
        BKS  iPd    13 11 06.3
                                MICRON    PERIOD
                           PZ     0.08       1.0
        MHC  ePd    13 11 09.6
        JAS  iPd    13 11 13.5
        PRI  ePd    13 11 15.5
        MNV  iPd    13 11 22.0
                    USGS 12 58 54.2, 15.9N, 147.1E, h= 43 km, mb=5.5, Ms=4.5
                         MARIANA ISLANDS

DEC 08  MNV  i(P)   13 19 38
        JAS  iPe    13 19 42.8  19 59
        PRI  eP     13 19 55.5  20 24
        SAO  iPd    13 19 58.2  20 28
        MHC  eP     13 19 58.6  19 29
        BKS  eP     13 20 04.8                Sg 20 40
                    BRK  13 19 19.8, 37.6N, 118.9W, h=  8 km, ML=3.0
                         MAMMOTH LAKES, CALIFORNIA

DEC 08  MNV  iPe    13 21 08.5
        JAS  iPe    13 21 13.3  21 30
        PRI  ePd    13 21 26.8
        SAO  iPd    13 21 28.8  21 59
        MHC  eP     13 21 29.3  21 59
        BKS  eP     13 21 34.4                Sg 22 11
                    BRK  13 20 50.3, 37.6N, 118.9W, h= 10 km, ML=3.0
                         MAMMOTH LAKES, CALIFORNIA

DEC 08  FHC  iPe    17 28 19.9  28 29
        WDC  iPe    17 28 32.7
        MIN  eP     17 28 42.5  29 09
        MHC  eP     17 29 03.3
        SAO  eP     17 29 09.5
                    BRK  17 28 07.7, 40.3N, 124.5W, h= 24 km, ML=3.1
                         OFF COAST SOUTHWEST OF EUREKA, CALIFORNIA

DEC 08  MNV  iPe    21 39 10.7
        JAS  iPd    21 39 15.2  39 32
        PRI  iPe    21 39 28.0  39 56
        SAO  iPe    21 39 30.4
        MHC  ePe    21 39 30.7  40 00
        BKS  iP     21 39 37.0  40 10
                    BRK  21 38 52.4, 37.6N, 118.9W, h= 16 km, ML=4.3
                         MAMMOTH LAKES, CALIFORNIA

DEC 08  MNV  ePKPd  23 01 46.5
        JAS  ePKPd  23 01 48.1
        MHC  ePKP   23 01 48.7
        BRK  ePKP   23 01 49.5
        WDC  ePKP   23 01 53.1
                    USGS 22 42 58.1, 60.1S,  26.1W, h= 98 km, mb=4.8
                         SOUTH SANDWICH ISLANDS REGION

DEC 08  WDC  iPKPe  23 43 42.8
        MIN  ePKP   23 43 44.4
        BRK  ePKP   23 43 50.5
        JAS  ePKP   23 43 51.3
        MNV  iPKPe  23 43 51.6
        MHC  ePKP   23 43 52.2
        PRI  ePKP   23 43 55.8
                    USGS 23 23 50.4,  9.4S,  67.0E, h= 10 km, mb=5.0
                         MID-INDIAN RISE

DEC 09  SAO  eP     01 20 46.3
        BKS  ePe    01 20 47.4
        PRI  eP     01 20 47.8
        MHC  eP     01 20 48.2
        FRI  eP     01 20 52.7
        JAS  ePe    01 20 53.4
        WDC  iPe    01 20 55.0
        MIN  eP     01 20 56.7
        MNV  eP     01 21 01.6
                    USGS 01 09 18.2, 23.7S, 179.4E, h=499 km, mb=5.0
                         SOUTH OF FIJI ISLANDS

DEC 09  FRI  iPe    02 08 33.2  08 45
        MNV  iPe    02 08 34.8
        JAS  iPe    02 08 40.0  08 57
        PRI  ePe    02 08 52.4  09 18
        SAO  ePe    02 08 54.9
        MHC  ePe    02 08 55.3  09 23
        BKS  eP     02 09 01.7
                    BRK  02 08 16.8, 37.6N, 118.9W, h= 14 km, ML=3.5
                         MAMMOTH LAKES, CALIFORNIA

DEC 09  WDC  eP     07 08 52
        MIN  eP     07 08 58
        BKS         07 09                     Lr 14 00
        JAS  eP     07 09 21
        MNV  eP     07 09 24
        PRI         07 09                     e 09 46
                    USGS 07 03 48.4, 60.3N, 140.9W, h= 15 km, mb=4.9, Ms=4.1
                         SOUTHEASTERN ALASKA
```

International Seismological Centre

```
DEC 09  FRI   iPe    08 32 19.5  32 31
        MNV   i(P)   08 32 21
        JAS   iPe    08 32 26.4
        PRI   ePd    08 32 39
        SAO   iPd    08 32 41.5
        MHC   ePd    08 32 42.0
        BKS   eP     08 32 48.1  33 24
                BRK  08 32 03.3, 37.6N, 118.9W, h= 10 km, ML=3.2
                     MAMMOTH LAKES, CALIFORNIA

DEC 09  PRI   ePd    09 23 38.9
        FRI   ePd    09 23 41.1
        MNV   iPd    09 23 49.5
        JAS   ePd    09 23 53.0
        MHC   eP     09 23 54.0
        BKS   eP     09 24 02                Lq 28 20     Lr 29 50
        MIN   eP     09 24 19.8
        WDC   e(P)   09 24 23
                USGS 09 19 10.1, 19.6N, 109.1W, h= 10 km, mb=4.5, Ms=4.2
                     REVILLA GIGEDO ISLANDS REGION

DEC 09  BRK   eP     13 19 10.2
        BKS          13 19                   e 44 30
        PRI   eP     13 19 13.8
        WDC   eP     13 19 14.7
        JAS   eP     13 19 16.9
        MIN   eP     13 19 17.1
        FRI   eP     13 19 18.0
        MNV   eP     13 19 26.5
                USGS 13 06 53.6, 12.6S, 166.6E, h= 98 km, mb=5.3
                     SANTA CRUZ ISLANDS

DEC 09  SAO   eP     16 45 18.2
        BKS   eP     16 45 18.8
        MHC   eP     16 45 19.9
        PRI   ePd    16 45 20.3
        JAS   iPd    16 45 25.2
        FRI   ePd    16 45 25.3
        WDC   iPd    16 45 25.4
        MIN   eP     16 45 27.4
        MNV   iPd    16 45 34.8
                USGS 16 33 03.5, 19.2S, 175.8E, h= 33 km, mb=5.4, Ms=4.9
                     SOUTH OF FIJI ISLANDS

DEC 09  PRI   ePe    21 43 46.6
        BKS   eP     21 43 46.8
        MHC   ePe    21 43 47.3
        FRI   ePe    21 43 51.8
        JAS   iPe    21 43 52.9
        WDC   iPe    21 43 55.5
        MIN   eP     21 43 57.2
        MNV   iPe    21 44 02.1
                USGS 21 31 42.5, 23.9S, 175.7W, h= 33 km, mb=5.1
                     TONGA ISLANDS REGION

DEC 09  FHC   ePe    22 32 21.2
        WDC   iPe    22 32 29.7              PeP 35 28    SeP 38 39      e 39 37
        MIN   ePe    22 32 35.0
        BKS   iPe    22 32 45.3              SeP 38 46     Lq 41 10      Lr 42 40
                        MICRON    PERIOD
                PZ      0.09       1.0
        MHC   ePe    22 32 51.4              SeP 38 49
        JAS   iPe    22 32 54.7                e 33 31     e 34 20     PeP 35 35
                                             SeP 38 50     e 39 36
        SAO   eP     22 32 54.9
        MNV   iPe    22 33 03.1              SeP 38 54
        FRI   iPe    22 33 03.2              PeP 35 40    SeP 38 54      e 39 39
        PRI   ePe    22 33 03.4                e 34 13    SeP 38 54
                USGS 22 25 50.7, 53.0N, 170.2W, h=102 km, mb=5.4
                     FOX ISLANDS, ALEUTIAN ISLANDS

DEC 10  FRI   e(P)   06 20 04                  e 20 40
        MNV   eP     06 20 04.0                e 20 41    SeP 26 11
        PRI   eP     06 20 06.5                e 20 42
        JAS   eP     06 20 13.0                e 20 49    PeP 22 46    SeP 26 15
        MHC   eP     06 20 19.0                e 20 55
        BKS          06 20                   SeP 26 20
        MIN   eP     06 20 31
        WDC   eP     06 20 35                  e 21 13    PeP 22 53    SeP 26 24
        FHC   eP     06 20 47.2
                USGS 06 13 43.1, 15.2N,  91.4W, h=185 km, mb=4.9
                     MEXICO-GUATEMALA BORDER REGION

DEC 10  SAO   iPd    14 11 23.6
        MHC   iPd    14 11 33.1  11 41
        PRI   eP     14 11 40.4
        BKS   iP     14 11 44.6  12 02
        JAS   eP     14 11 46.7
        FRI   eP     14 11 48.0
                BRK  14 11 21.7, 36.8N, 121.5W, h=  5 km, ML=2.7
                     WEST-SOUTHWEST OF HOLLISTER, CALIFORNIA

DEC 11  MHC   eP     05 40 58.0
        PRI          05 40                   e 40 58
        WDC   eP     05 41 02.0
        FRI   eP     05 41 03.0
        JAS   eP     05 41 03.0
        MIN          05 41                   e 41 10
        MNV          05 41                   e 41 12
                USGS 05 28 19.5, 19.1S, 168.7E, h= 51 km, mb=5.1
                     NEW HEBRIDES ISLANDS

DEC 11  BKS   iP     12 05 05.7  05 08
        MHC   iPe    12 05 13.3  05 22       i 05 14
        SAO   iPe    12 05 21.9
        JAS   eP     12 05 26.0
                BRK  12 05 02.2, 37.7N, 122.1W, h=  6 km, ML=2.5
                     SOUTHEAST OF BERKELEY, CALIFORNIA

DEC 11  FHC   iPe    17 37 51.9
        WDC   iPe    17 37 56.7              SP 47 44
        MIN   iPe    17 38 00.8
        BKS   iPe    17 38 05.1  47 50       pP 38 40     SS 52 30     Lq 57 00
                                             Lr 01 30
                        MICRON    PERIOD
                PZ      0.75       0.9
        MHC   ePe    17 38 08.8
        SAO   ePe    17 38 10.3
        JAS   iPe    17 38 11.4                e 39 06     e 41 13     SP 48 01
        PRI   iPe    17 38 16.1
        FRI   ePe    17 38 16.5              SP 48 10
        MNV   iPe    17 38 18.9              SP 48 09
                USGS 17 26 16.8, 28.9N, 140.7E, h=110 km, mb=6.1
                     BONIN ISLANDS REGION

DEC 12  FRI   eP     08 08 04.3
        MNV   eP     08 08 06.3
        PRI   eP     08 08 08.2
        JAS   eP     08 08 14.0          PKPPKP 49 50
        SAO   eP     08 08 14.0
        MHC   eP     08 08 18.5
        BKS   eP     08 08 23.3  15 58       e 08 32     e 08 44     PeP 09 18
                                             PP 10 30    PPP 11 30    SeS 18 24
                                             Lq 22 27     Lr 26 06
                        MICRON    PERIOD
                PZ      0.30       1.9
                LZ       500        20
                LNE      600        20
                LNW      220        20
        MIN   eP     08 08 29.0
        WDC   eP     08 08 32.7
        FHC   eP     08 08 43.0
                Ms=7.7, Distance=54°
                USGS 07 59 03.3, 01.6N,  79.4W, h= 24 km, mb=6.4, Ms=7.7
                     NEAR EAST COAST OF ECUADOR

DEC 12  MNV   iP     12 02 47.3
        JAS   eP     12 02 54.5
        MIN   eP     12 03 10.5
        WDC   e(P)   12 03 14
                USGS 11 53 49.4,  2.4N,  79.4W, h= 33 km, mb=5.2
                     SOUTH OF PANAMA

DEC 12  MNV   iPd    12 12 47.3
        PRI   eP     12 12 49.4
        JAS   eP     12 12 55.7
        MHC   eP     12 12 59.6
        BRK   e(P)   12 13 03
        MIN   eP     12 13 10.0
        WDC   eP     12 13 12.7
                USGS 12 03 45.1,  1.5N,  79.4W, h= 33 km, mb=5.0
                     NEAR COAST OF ECUADOR

DEC 12  FHC          14 40                   e 40 11
        WDC   e(P)   14 40 25
        JAS   eP     14 41 08.0
                USGS 14 39 11.4, 43.9N, 127.3W, h= 15 km
                     OFF COAST OF OREGON

DEC 13  WDC   eP     01 23 03.3              pP 23 51
        JAS   eP     01 23 05.7              pP 23 54
        FRI   eP     01 23 06.7
        MNV   eP     01 23 15.0              pP 24 04
                USGS 01 10 52.7, 13.1S, 167.0E, h=194 km, mb=4.9
                     NEW HEBRIDES ISLANDS

DEC 13  FRI   ePe    02 52 10.1
        MNV   iPe    02 52 10.5
        PRI   ePe    02 52 13.5
        JAS   iPe    02 52 19.6
        MHC   ePe    02 52 24.0
        BKS   iPe    02 52 29.6  59 40       pP 52 35     Lq 05 10     Lr 07 50
                        MICRON    PERIOD
                PZ      0.08       1.2
                LZ         5         20
                LN         6         20
                LE         7         20
        MIN   ePe    02 52 34.5
        WDC   ePe    02 52 38.1
        FHC   eP     02 52 49.0
                Ms=5.8, Distance=54°
                USGS 02 43 37.9,  5.5N,  80.5W, h= 33 km, mb=5.4, Ms=5.5
                     SOUTH OF PANAMA

DEC 13  MNV   eP     04 55 45.0
        JAS   eP     04 55 54
        WDC   e(P)   04 56 12
                USGS 04 46 45.6,  2.1N,  79.1W, h= 33 km, mb=5.0
                     SOUTH OF PANAMA

DEC 13  MNV   eP     05 46 43.5
        JAS   eP     05 46 52.0
        BKS   e(P)   05 47 02    54 40      Lq 00 30     Lr 03 30
                        MICRON    PERIOD
                LZ         8         20
                LN         6         20
                LE         9         20
        WDC   eP     05 47 11
                USGS 05 37 47.8,  2.6N,  79.2W, h= 33 km, mb=5.0, Ms=5.8
                     SOUTH OF PANAMA

DEC 13  JAS   iPe    11 35 45.1  35 57
        MNV   iPe    11 35 45.7
        FRI   iPd    11 35 52.0  36 09
        MHC   eP     11 36 04.7
        SAO   eP     11 36 07.1
        BKS   eP     11 36 08.9  36 42
        PRI   eP     11 36 10.6
                BRK  11 35 28.5, 38.2N, 119.3W, h=  5 km, ML=3.1
                     BRIDGEPORT, CALIFORNIA

DEC 13  MNV          13 25                   e 25 48
        JAS   eP     13 25 55
        MHC   e(P)   13 26 01
        WDC   e(P)   13 26 14
                USGS 13 16 53.1,  3.0N,  79.3W, h= 33 km, mb=4.9
                     SOUTH OF PANAMA

DEC 13  SAO   iPd    16 14 37.1
        MHC   iPe    16 14 38.9  14 46       i 14 41
        JAS   iPd    16 14 48.0  15 02
        FRI   iPe    16 14 49.3
        BKS   eP     16 14 51.3  15 06
                BRK  16 14 29.1, 37.1N, 121.1W, h= 10 km, ML=2.8
                     NORTHEAST OF HOLLISTER, CALIFORNIA

DEC 13  FRI          18 17                   e 17 09    PeP 20 15
        PRI   eP     18 17 10.0
        MNV   iPd    18 17 11.7              PeP 20 16
        JAS   eP     18 17 18.8              PeP 20 18
        MHC   eP     18 17 22.4
        BKS          18 17       22 40
        WDC          18 17                   e 17 43    PeP 20 25
                USGS 18 11 09.0, 15.3N,  97.6W, h= 33 km, mb=5.0, Ms=5.0
                     NEAR COAST OF OAXACA, MEXICO

DEC 14  WDC   eP     03 01 37.1
        MIN   eP     03 01 43.0
        JAS   eP     03 02 02.9
        MNV   eP     03 02 12.0
                USGS 02 55 26.5, 52.4N, 163.8W, h= 33 km, mb=4.8
                     SOUTH OF ALASKA

DEC 14  FRI   iPe    06 02 27.3  02 38
        JAS   iPe    06 02 33.5  02 50
        PRI   eP     06 02 46.8  03 14
        SAO   eP     06 02 48.2
        MHC   eP     06 02 49.0
        BKS   iP     06 02 55.3              S° 03 30
        MIN   eP     06 03 13.3
                BRK  06 02 11.4, 37.6N, 118.9W, h=  6 km, ML=3.3
                     MAMMOTH LAKES, CALIFORNIA

DEC 14  MNV          06 23                   e 23 07
        JAS   eP     06 23 18.9
        WDC   eP     06 23 36.8
                USGS 06 14 12.0,  2.5N,  79.0W, h= 33 km, mb=4.9
                     SOUTH OF PANAMA

DEC 14  MNV          06 25                   e 25 04
        FRI   eP     06 25 05.7
        JAS   eP     06 25 11.8
        MHC          06 25                   e 25 16
        MIN   eP     06 25 26.8
        WDC   eP     06 25 30.3
                USGS 06 16 05.8,  2.5N,  79.0W, h= 33 km, mb=5.2
                     SOUTH OF PANAMA

DEC 14  FHC   eP     07 29 49.7
        WDC   iPd    07 29 55.1              i 30 10
        MIN   eP     07 29 59.2
        BKS   eP     07 30 05.9            PeP 30 22
                        MICRON    PERIOD
                PZ      0.09       1.2
        MHC   eP     07 30 10.9
        JAS   iPd    07 30 13.5
        FRI   eP     07 30 19.5
        MNV   iPd    07 30 20.5
        PRI          07 30                   e 30 27
                USGS 07 19 14.3, 42.8N, 144.3E, h= 67 km, mb=5.5
                     HOKKAIDO, JAPAN, REGION

DEC 14  MNV   iPe    18 00 36.3
        FRI   ePe    18 00 48.3
        JAS   ePe    18 00 57.4
                ML=4.1, NUCLEAR EXPLOSION, NEVADA TEST SITE
                USGS 18 00 00.1, 37.1N, 116.1W, h=  0 km
                     SOUTHERN NEVADA

DEC 14  FHC   iPd    20 34 55.2  35 04
        WDC   iPe    20 35 02.9
        MIN   iPe    20 35 12.4
                BRK  20 34 45.2, 40.3N, 123.8W, h= 24 km, ML=3.1
                     SOUTH-SOUTHEAST OF EUREKA, CALIFORNIA
```

International Seismological Centre

```
DEC 15  FHC  ePKP   00 21 38.5                  e 21 49
        WDC  ePKP   00 21 39.7                  e 21 50      e 23 36
        MIN  ePKP   00 21 40.9                  e 21 51
        BKS  e(PKP) 00 21 44                    e 24 53      SS 40 16    SSS 45 30
                                                Lq 54 00     Lr 01 00
                              MICRON    PERIOD
                         LZ     10        20
                         LN     14        20
                         LE      8        20
        MHC          00 21                      e 21 55
        JAS  ePKP    00 21 45.5                 e 21 56      e 34 47
        FRI  ePKP    00 21 47.4                 e 21 58
        PRI  ePKP    00 21 48.0                 e 21 58
        MNV  ePKP    00 21 48.2                 e 21 59
                     Ms=6.6, Distance=123°
                     USGS 00 02 41.6,  3.3S, 102.7E, h= 33 km, mb=5.8, Ms=6.6
                          SOUTHERN SUMATERA

DEC 15  WDC  eP      13 56 32.7                 pP 56 47
        MIN          13 56                      pP 56 51
        JAS  eP      13 56 52.0                 pP 57 06
        PRI          13 56                      pP 57 13
        FRI          13 56                      pP 57 14
                     USGS 13 46 12.0, 44.5N, 148.3E, h= 51 km, mb=5.1
                          KURIL ISLANDS

DEC 15  JAS  ePc     20 10 56.0
                     USGS 20 01 50.9,  2.9N,  78.8W, h= 33 km, mb=5.0
                          NEAR WEST COAST OF COLOMBIA

DEC 15  FRI          20 35                      e 35 30
        PRI  eP      20 35 20.3
        JAS  eP      20 35 26.5
        MHC          20 35                      e 35 30
        WDC  eP      20 35 44.5
                     USGS 20 26 22.7,  2.7N,  79.4W, h= 33 km, mb=5.0, Ms=4.6
                          SOUTH OF PANAMA

DEC 16  FRI  iPe     06 29 43.7  29 55
        JAS  iPe     06 29 50.5
        PRI  iPd     06 30 03.8  30 32
        SAO  iPd     06 30 05.8
        MHC  iPd     06 30 06.5  30 36
        BKS  eP      06 30 11.5  30 46
        MIN  e(P)    06 30 32
                     BRK  06 29 27.0, 37.6N, 118.9W, h=  2 km, ML=3.6
                          MAMMOTH LAKES, CALIFORNIA

DEC 16  FRI  iPe     06 52 09.7  52 21
        JAS  ePe     06 52 22.5
        PRI  ePe     06 52 27.5  52 54
        SAO  iPd     06 52 33.0
        MHC  eP      06 52 35.2
                     BRK  06 51 53.3, 37.1N, 118.6W, h=  7 km, ML=3.4
                          SOUTHWEST OF BISHOP, CALIFORNIA

DEC 16  FRI  iPe     10 44 32.3  44 44
        JAS  iPe     10 44 39.1  44 55
        PRI  ePe     10 44 51.5  45 20
        MHC  eP      10 44 54.3  44 24
        SAO  iPd     10 44 54.3
        BKS  eP      10 45 00.7                 e 45 33      e 45 36
                     BRK  10 44 15.8, 37.6N, 118.9W, h= 13 km, ML=3.4
                          MAMMOTH LAKES, CALIFORNIA

DEC 16  FHC  eP      11 02 46.6
        WDC  iPd     11 02 51.7
        MIN  eP      11 02 55.2
        BKS  ePd     11 02 56.2
                              MICRON    PERIOD
                         PZ     0.05      0.8
        MHC  ePd     11 02 59.7
        JAS  iPd     11 03 03.4
        PRI  ePd     11 03 05.6
        FRI  ePd     11 03 07.5
                     USGS 10 50 46.6, 16.6N, 145.9E, h= 86 km, mb=5.1
                          MARIANA ISLANDS

DEC 16  FRI  eP      12 56 21.5                 PcP 59 07
        PRI  eP      12 56 24.0                 PcP 59 08
        JAS  ePe     12 56 31.0                 PcP 59 09
        MHC  eP      12 56 35.5
        BRK  e(P)    12 56 41                   PcP 59 12
        MIN  eP      12 56 49.2
        WDC  ePe     12 56 53.2                 PcP 59 16
        FHC  eP      12 57 04.7                 PcP 59 21
                     USGS 12 50 00.9, 15.3N,  92.1W, h=133 km, mb=4.9
                          MEXICO-GUATEMALA BORDER REGION

DEC 16  SAO  e(P)    13 15 50
        BRK  e(P)    13 15 51
        PRI  ePd     13 15 51.9
        MHC  eP      13 15 52.1
        FRI  eP      13 15 57.1
        JAS  ePd     13 15 57.5
        WDC  ePd     13 15 59.0
        MIN  eP      13 16 01.0
                     USGS 13 04 51.2, 18.8S, 177.7W, h=508 km, mb=4.8
                          FIJI ISLANDS REGION

DEC 16  BKS  eP      21 39 38.8
                              MICRON    PERIOD
                         PZ     0.01      0.6
        PRI  eP      21 39 38.8                 e 39 50
        MHC  eP      21 39 39.1
        FRI  eP      21 39 44.0                 e 39 55
        JAS  ePe     21 39 45.0                 e 39 56
        WDC  ePe     21 39 47.4                 e 39 59
        MIN  eP      21 39 49.2
        MNV  iPe     21 39 54.7                 e 40 06
                     USGS 21 27 56.6, 20.4S, 173.7W, h= 39 km, mb=5.3, Ms=5.5
                          TONGA ISLANDS

DEC 17  PRI  eP      01 45 38.4
        BKS  eP      01 45 39.0                 Lq 16 00
                              MICRON    PERIOD
                         PZ     0.02      1.0
                         LZ     2.7       20
                         LN     2.1       20
                         LE     1.0       20
        MHC  eP      01 45 39.5
        FRI  eP      01 45 43.3
        JAS  ePe     01 45 44.5
        WDC  iPe     01 45 47.7
        MIN  eP      01 45 50.1
        MNV  iPe     01 45 52.5
                     USGS 01 33 14.0, 28.3S, 176.8W, h= 33 km, mb=5.1, Ms=5.5
                          KERMADEC ISLANDS REGION

DEC 17  MHC  iPd     06 54 59.1
        SAO  iPd     06 54 59.4
        BKS  iPe     06 55 11.4  55 26
        PRI  eP      06 55 14.0
        JAS  iPd     06 55 14.7
        FRI  eP      06 55 17.5
                     BRK  06 54 53.1, 37.1N, 121.5W, h= 11 km, ML=2.9
                          COYOTE LAKE, CALIFORNIA

DEC 17  WDC  iPd     07 40 34.9
        MIN  eP      07 40 38.5
        BKS  eP      07 40 41.7
                              MICRON    PERIOD
                         PZ     0.03      1.0
        MHC  eP      07 40 45.5
        JAS  iPd     07 40 48.9
        PRI  eP      07 40 52.5
        FRI  ePd     07 40 53.7
        MNV  iPd     07 40 56.8
                     USGS 07 28 48.3, 25.4N, 144.4E, h= 33 km, mb=5.1
                          VOLCANO ISLANDS REGION

DEC 17  BKS          20 17                      e 17 24      PS 28 44    SS 35 00
                                                SSS 39 16    Lq 48 20    Lr 58 44
                              MICRON    PERIOD
                         LZ     5         20
                         LN     1.8       20
                         LE     2.8       20
        WDC  ePKP    20 17 06.8                 e 19 00      e 21 07
        MHC  ePKP    20 17 14.3
        JAS  e(PKP)  20 17 16
        PRI          20 17                      e 25 00
        FRI  ePKP    20 17 16.5
        MNV  ePKP    20 17 18.0                 e 19 10
                     Ms=6.1, Distance=122°
                     USGS 19 58 23.8,  8.4S, 115.9E, h= 33 km, mb=5.6, Ms=6.3
                          BALI ISLAND REGION

DEC 18  MNV  eP      10 45 21.1                 PcP 47 30
        FRI  eP      10 45 22.0                 PcP 47 31
        PRI  eP      10 45 24.5
        JAS  eP      10 45 30.0                 PcP 47 34
        SAO  eP      10 45 31.8
        MHC  eP      10 45 36.1                 PcP 47 37
        BKS  eP      10 45 41.6  52 00          PcP 47 38    Lq 55 00    Lr 57 20
                              MICRON    PERIOD
                         PZ     0.10      1.0
                         LZ     6         20
                         LN     8         20
                         LE     10        20
        MIN  eP      10 45 46.4                 PcP 47 40
        WDC  eP      10 45 51.7                 PcP 47 41
                     USGS 10 37 57.8, 11.4N,  86.5W, h= 68 km, mb=5.5
                          NEAR COAST OF NICARAGUA

DEC 19  FRI  ePe     06 51 15.0
        PRI  ePe     06 51 16.0
        JAS  ePe     06 51 21.8
        MHC  ePe     06 51 24.8
        WDC  ePe     06 51 37.8
        FHC  ePe     06 51 46.2
                     USGS 06 40 23.4, 14.5S,  71.5W, h=117 km, mb=5.2
                          PERU

DEC 20  FRI  iPe     02 27 52.6  28 04
        MNV  iPe     02 27 55.5
        JAS  iPd     02 27 58.8
        PRI  eP      02 28 12
        SAO  ePe     02 28 14.2
        MHC  eP      02 28 14.5
                     BRK  02 27 36.8, 37.6N, 119.0W, h= 10 km, ML=3.5
                          MAMMOTH LAKES, CALIFORNIA

DEC 20  BKS  iPd     05 02 39.0  02 54
        MHC  eP      05 02 48.9
        WDC  eP      05 02 50.0
        MIN  eP      05 02 50.9
        FHC  eP      05 02 53
        JAS  eP      05 02 53.9
                     BRK  05 02 19.6, 38.8N, 122.8W, h=  4 km, ML=3.0
                          NORTH OF SANTA ROSA, CALIFORNIA

DEC 20  BKS  eP      13 24 24                   e 48 00      e 53 00
                              MICRON    PERIOD
                         PZ     0.04      1.0
        MHC  eP      13 24 24.9
        FHC  eP      13 24 25.5
        PRI  ePe     13 24 25.7
        WDC  iPe     13 24 29.2
        JAS  iPe     13 24 29.9
        FRI  ePe     13 24 30.1
        MIN  eP      13 24 30.3
        MNV  eP      13 24 38.7
                     USGS 13 11 41.7, 20.5S, 169.2E, h= 33 km, mb=5.2, Ms=5.5
                          NEW HEBRIDES ISLANDS

DEC 21  PRI          20 41                      e 41 50      Pg 42 08
        FRI          20 41                      e 41 52      Pg 42 13
        MNV          20 41                      e 42 06
        JAS  eP      20 42 10
        BKS          20 42                      e 44 38
                     MAG=4.6, IMPERIAL VALLEY AREA, CALIFORNIA
                     PAS  20 40 25.3, 32.8N, 115.4W, h=  5 km, ML=4.6
                          SOUTHERN CALIFORNIA

DEC 22  SAO  iPe     18 54 17.6
        MHC  iPd     18 54 29.5  54 40
        PRI  ePd     18 54 30.8                 e 54 45
        BKS  eP      18 54 39.5                 e 54 54
        FRI  ePe     18 54 40.0
        JAS  ePd     18 54 40.6  54 59
                     BRK  18 54 15.7, 36.7N, 121.4W, h=  5 km, ML=3.3
                          SOUTH OF HOLLISTER, CALIFORNIA

DEC 23  FHC  ePe     05 09 49.6
        WDC  iPe     05 09 50.6                 e 13 19
        MIN  ePe     05 09 52.6
        BKS  ePe     05 10 04.5
                              MICRON    PERIOD
                         PZ     0.14      0.9
        MNV  iPe     05 10 05.0
        JAS  iPe     05 10 05.2                 e 13 45
        MHC  ePe     05 10 07.3
        SAO  ePe     05 10 09.6
        FRI  ePe     05 10 09.9
        PRI  ePe     05 10 13.8
                     USGS 04 56 57.6, 50.0N,  78.8E, h=  0 km, mb=6.1, Ms=4.1
                          UNDERGROUND NUCLEAR EXPLOSION
                          EASTERN KAZAKH, S.S.R.

DEC 23  WDC  ePe     08 47 58.1
        BRK  ePe     08 48 02.5
        BKS          08 48                      e 21 40
        MHC  ePe     08 48 05.7
        JAS  ePe     08 48 08.6
        FRI  ePe     08 48 12.3
        MNV  ePe     08 48 16.0
                     USGS 08 33 59.1,  3.5N, 126.8E, h= 33 km, mb=5.8, Ms=5.5
                          TALAUD ISLANDS

DEC 24  MNV          00 25                      e 25 49
        JAS  eP      00 26 07.0
                     USGS 00 13 41.2, 29.6S,  67.0W, h= 49 km, mb=5.4
                          LA RIOJA PROVINCE, ARGENTINA

DEC 24  JAS  ePe     01 34 51.0
        FRI  eP      01 34 55.8
        MNV  ePe     01 34 58.6
                     USGS 01 22 49.4, 25.2N, 141.1E, h=142 km, mb=4.8
                          VOLCANO ISLANDS REGION

DEC 24  JAS  ePe     01 58 02.3
        FRI  ePe     01 58 10.0
        MNV  iPe     01 58 10.5
                     USGS 01 50 11.0, 52.2N, 179.1E, h=167 km, mb=4.5
                          RAT ISLANDS, ALEUTIAN ISLANDS

DEC 24  PRI  ePe     12 18 31.5
        JAS  ePe     12 18 35.2
        FRI  ePe     12 18 35.9
        MNV  ePe     12 18 44.2
                     USGS 12 05 49.3, 18.2S, 167.9E, h= 26 km, mb=5.0
                          NEW HEBRIDES ISLANDS

DEC 24  MHC  iPd     13 09 52.1
        SAO  iPd     13 09 52.5
        BKS  iPe     13 09 56.9  10 10
        PRI  eP      13 10 05.8
        JAS  iPd     13 10 09.3
        FRI  ePe     13 10 13.2
                     BRK  13 09 40.1, 37.0N, 122.2W, h=  8 km, ML=3.8
                          WEST OF SANTA CRUZ, CALIFORNIA
```

International Seismological Centre

```
DEC 24  BRK  eP      18 36 02.1
        JAS  ePe     18 36 09.2
        PRI  eP      18 36 14.0
        FRI  eP      18 36 14.5
        MNV  ePe     18 36 16.5
             USGS 18 24 23.0, 33.3N, 141.4E, h= 33 km, mb=5.4, Ms=5.3
                  OFF EAST COAST OF HONSHU, JAPAN

DEC 25  FHC  ePe     03 47 27.5
        MIN  ePe     03 47 35.5
        BKS  e(P)    03 47 44
                        MICRON    PERIOD
                     PZ   0.06      0.8
        MHC  eP      03 47 47.5
        JAS  iPe     03 47 49.1            pP 49 44
        FRI  ePe     03 47 54.4            pP 49 50
        MNV  iPe     03 47 54.5            pP 49 50
        PRI  ePe     03 47 55.7
             USGS 03 36 53.2, 43.2N, 131.2E, h=535 km, mb=5.0
                  EASTERN U.S.S.R.-NORTHEASTERN CHINA BORDER REGION

DEC 25  MNV  iPe     14 17 37.8
        FRI  ePe     14 17 47.0            i 17 51
        JAS  ePe     14 17 56.5            i 18 02
        PRI  eP      14 18 02.0            i 18 10
        SAO          14 18                 e 18 15
        MHC          14 18                 e 18 17
        BKS          14 18                 e 18 26
             ML=4.4, NUCLEAR EXPLOSION, NEVADA TEST SITE
             USGS 14 17 10.8, 37.3N, 117.1W, h=  5 km
                  SOUTHERN NEVADA

DEC 26  WDC  ePKP    00 06 03.5
        MNV  ePKP    00 06 10.0
        JAS  ePKP    00 06 10.2
        FRI  ePKP    00 06 13.5
        PRI  ePKP    00 06 16.3
             USGS 23 46 33.5,  2.7S,  68.0E, h= 10 km, mb=5.3, Ms=5.6
                  CARLSBERG RIDGE

DEC 26  FRI  iPd     08 09 21.0
        JAS  iPe     08 09 28.6
        PRI  eP      08 09 40.0
        SAO  eP      08 09 42.9
        MHC  eP      08 09 43.5
        BKS  eP      08 09 49.9            e 10 26
             BRK  08 09 04.4, 37.5N, 118.8W, h= 19 km, ML=3.9
                  MAMMOTH LAKES, CALIFORNIA

DEC 26  FRI  ePd     19 56 05.4            pP 56 30
        PRI  ePd     19 56 06.2            pP 56 31
        MNV  eP      19 56 08.1            pP 56 34
        SAO  eP      19 56 09.7
        JAS  iPd     19 56 12.0            pP 56 37
        MHC  ePd     19 56 13.2            pP 56 38
        BKS  ePd     19 56 16.3
                        MICRON    PERIOD
                     PZ   0.04      1.0
        MIN  eP      19 56 22.5
        WDC  ePd     19 56 25.2            pP 56 50
             USGS 19 43 37.8, 36.0S,  71.3W, h= 92 km, mb=5.6
                  CENTRAL CHILE

DEC 27  BKS          03 36                 e 36 06
        MHC  eP      03 36 01.5
        FRI  eP      03 36 05.5
        JAS  eP      03 36 06.2
        WDC  eP      03 36 08.2
        MIN  eP      03 36 10
             SOUTH OF FIJI ISLANDS

DEC 27  FRI  e(P)    07 56 52
        JAS  eP      07 56 52
        WDC  eP      07 56 53
        MNV  eP      07 57 02.2
             USGS 07 45 25.6, 15.4S, 173.1W, h= 33 km, mb=5.3, Ms=5.4
                  TONGA ISLANDS

DEC 27  BRK  e(P)    11 15 22
        BKS          11 15                 e 15 27      e 15 32
        PRI  e(P)    11 15 23
        MHC  e(P)    11 15 23
        FRI  eP      11 15 29.0
        JAS  ePd     11 15 29.7            i 15 41
        WDC  eP      11 15 32.0            i 15 43
        MIN  eP      11 15 33.7
        MNV  eP      11 15 40.1
             USGS 11 03 53.0, 18.2S, 172.8W, h= 33 km, mb=5.3, Ms=5.2
                  TONGA ISLANDS REGION

DEC 28  FRI  iPe     03 30 06.5  30 19
        MNV  iPe     03 30 07.0
        JAS  iPd     03 30 12.5
        PRI  iPe     03 30 25.9
        SAO  eP      03 30 28.0
        MHC  eP      03 30 28.7
        BKS  eP      03 30 34.3            e 31 12
             BRK  03 29 49.5, 37.7N, 118.9W, h= 15 km, ML=3.7
                  MAMMOTH LAKES, CALIFORNIA

DEC 28  FRI  iPe     04 40 55.8  41 08
        MNV  iPe     04 40 56.2
        JAS  iPd     04 41 01.7
        PRI  eP      04 41 15.7
        SAO  eP      04 41 17.3
        MHC  eP      04 41 17.8
        BKS  eP      04 41 23.6            e 42 00
             BRK  04 40 38.7, 37.6N, 118.9W, h=  7 km, ML=3.2
                  MAMMOTH LAKES, CALIFORNIA

DEC 28  FRI  eP      13 58 05.8            e 58 28
        PRI  eP      13 58 06.5
        MNV  eP      13 58 07.0            i 58 29
        JAS  eP      13 58 11.8
        MHC  eP      13 58 14.2            e 58 36
        BKS  eP      13 58 17.0
        MIN  eP      13 58 23.5
        WDC  eP      13 58 26.4            i 58 48
        FHC  eP      13 58 33.9
             USGS 13 46 18.3, 24.4S,  69.4W, h= 83 km, mb=5.3
                  NORTHERN CHILE

DEC 28  FHC  iPe     19 33 01.2            e 33 12
        WDC  iPe     19 33 14.8
        MIN  ePe     19 33 25.1
        BKS  eP      19 33 34.8
        MHC  eP      19 33 45
        SAO  eP      19 33 51
             BRK  19 32 47.8, 40.3N, 124.7W, h= 24 km, ML=3.0
                  OFF COAST SOUTHWEST OF EUREKA, CALIFORNIA

DEC 29  MHC  e(P)    07 14 22
        PRI  e(P)    07 14 23
        JAS  ePd     07 14 26.5            e 14 36
        FRI  e(P)    07 14 27
        MNV  ePd     07 14 35.2            e 14 44
             USGS 07 01 35.6, 21.5S, 169.2E, h= 33 km
                  LOYALTY ISLANDS REGION

DEC 29  FHC  e(P)    15 16 49
        WDC  eP      15 16 55.0            pP 17 12
        MIN  eP      15 16 59.0
        BKS  eP      15 17 05.4
                        MICRON    PERIOD
                     PZ   0.02      0.8
        MHC  eP      15 17 10.7
        JAS  eP      15 17 13.1            pP 17 30
        FRI  eP      15 17 19.2            pP 17 36
        PRI  eP      15 17 19.6
             USGS 15 06 07.2, 42.4N, 143.0E, h= 66 km, mb=5.1
                  HOKKAIDO, JAPAN, REGION

DEC 29  MNV  eP      22 17 01.8
        JAS  eP      22 17 11.7
             USGS 22 08 03.6,  2.2N,  79.3W, h= 33 km, mb=5.0
                  SOUTH OF PANAMA

DEC 30  FHC  eP      04 27 19.5                  pP 29 07
        WDC  iPe     04 27 25.3                  pP 29 14
        MIN  eP      04 27 29.7                  pP 29 17
        BKS  ePe     04 27 38.8
                        MICRON    PERIOD
                     PZ   0.25      1.0
        MHC  eP      04 27 43.7                  pP 29 33
        JAS  iPe     04 27 45.8                  pP 29 34    pPP 31 36
        SAO  eP      04 27 46.7
        MNV  iPe     04 27 52.0                  pP 29 41
        FRI  ePe     04 27 52.3                  pP 29 42    pPP 31 40
        PRI  eP      04 27 53.6
             USGS 04 18 33.8, 52.5N, 152.3E, h=555 km, mb=5.4
                  NORTHWEST OF KURIL ISLANDS

DEC 30  FRI  eP      06 38 06.3
        PRI  ePd     06 38 07.3
        MNV  iPd     06 38 09.3
        JAS  iPd     06 38 13.1
        MHC  eP      06 38 14.5
        BRK  eP      06 38 17.8
        WDC  iPd     06 38 26.7
        FHC  e(P)    06 38 33
             USGS 06 25 48.7, 32.6S,  70.5W, h= 78 km, mb=5.2
                  CHILE-ARGENTINA BORDER REGION

DEC 31  FHC  e(P)    02 58 40
        WDC  iPd     02 58 45.3
        BKS  eP      02 58 56.2
                        MICRON    PERIOD
                     PZ   0.10      0.9
        MHC  eP      02 59 00.5
        SAO  eP      02 59 02.5
        JAS  iPd     02 59 02.9
        FRI  ePd     02 59 08.9
        PRI  eP      02 59 09.2
        MNV  iPd     02 59 10.3
             USGS 02 47 50.4, 40.2N, 144.1E, h= 33 km, mb=5.5, Ms=4.5
                  OFF EAST COAST OF HONSHU, JAPAN

DEC 31  MNV  i(P)    08 27 56
        JAS  iPd     08 28 22.0  28 44
        FRI  iPd     08 28 23.9
        MHC  ePd     08 28 38.3
        SAO  iPd     08 28 41.0
        PRI  ePd     08 28 41.5
        BKS  ePd     08 28 41.7                  Pg 28 51    S* 29 27    Sg 29 30
        MIN  ePe     08 28 42.5
        WDC  iPe     08 28 52.0
             BRK  08 27 52.5, 38.5N, 118.4W, h=  8 km, ML=4.8
                  NORTHEAST OF MONO LAKE, CALIFORNIA (NEVADA)

DEC 31  SAO  iPd     17 15 41.1
        MHC  iPd     17 15 47.1  15 54
        PRI  ePe     17 15 57.0
        BKS  eP      17 15 58.2  16 15
        JAS  eP      17 16 02
        FRI  ePd     17 16 03
             BRK  17 15 37.8, 36.9N, 121.5W, h=  8 km, ML=2.5
                  NORTHWEST OF HOLLISTER, CALIFORNIA

DEC 31  MNV  iPd     23 16 23.7
        FRI  eP      23 16 23.8
        PRI  eP      23 16 26.4
        JAS  ePd     23 16 32.1
        MHC  eP      23 16 36.5
        BKS          23 16          24 16      SS 28 08    Lq 30 34    Lr 33 40
                        MICRON    PERIOD
                     LZ   3.4       20
                     LNE  3.7       20
                     LNW  3.0       20
        WDC          23 16                 e 16 50
             Ms=5.5, Distance=54°
             USGS 23 07 23.4,  2.1N,  79.0W, h= 33 km, mb=5.3, Ms=5.5
                  SOUTH OF PANAMA
```