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Bulletin of the Seismographic Stations

Volume 54, Nos. 1 and 2, pp. 1 - 88

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--WHISKEYTOWN DAM

Earthquakes and the Registration of Earthquakes

From January 1, 1984 to December 31, 1984

Anthony J. Lomax
Robert A. Uhrhammer

International Seismological Centre

BULLETIN OF THE SEISMOGRAPHIC STATIONS
of the University of California

Volume 54, Nos. 1 and 2
January 1, 1984 to December 31, 1984

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INTRODUCTION

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

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

Note that the No. 1 and No. 2 issues of Volume 54 are published together in the current issue.

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History of the University of California Stations

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

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

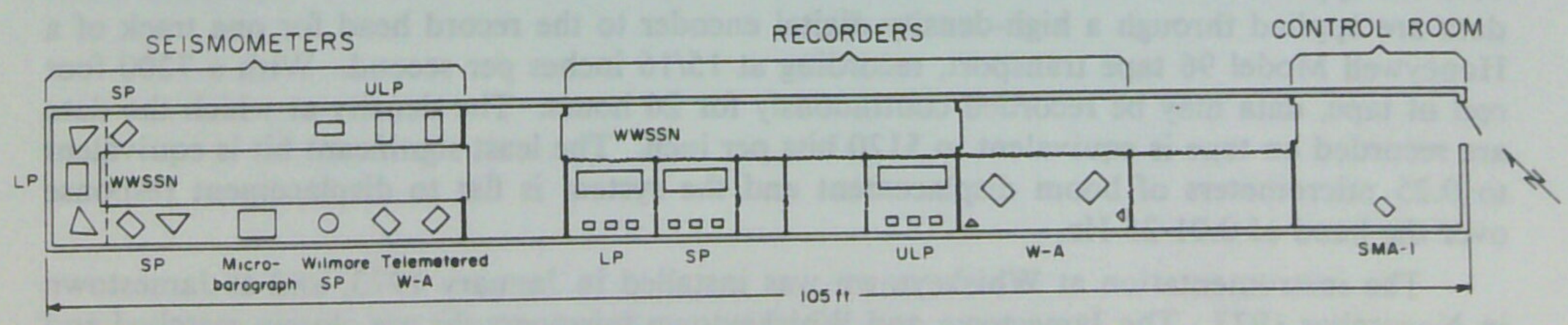
The quotation is from "History of the University of California Seismographic Stations and Related Activities" by Professor George D. Louderback, published in the Bulletin of the Seismological Society of America, Vol. 32, No. 3, pp. 205-229, 1942. In this paper may be found a detailed account of the development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

Since 1942, the number of seismographic stations associated with the University of California has increased from six to 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 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 seventeen 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, Oroville, 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.

The Byerly Seismographic Station (BKS)

Equipment of a WWSSN station began operating in a newly constructed adit 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 adit 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 adit 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.



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Fourteen seismographs are currently operating in the adit. Their free periods range from 0.8 sec to 100 sec and the magnification of the photographic recordings ranges from approximately 500 to 25000. 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.

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 telemetry system are listed on pages 8 and 9. 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), Oroville (ORV), and Whiskeytown (WDC).

At Berkeley, broadband instrumentation has been gradually developed, starting with the installation, in 1963, of a Press-Ewing seismometer operating at a free period of 30 seconds. In 1971, the installation of a 3-component set of special ultra-long period (ULP) seismometers in the Byerly Seismographic Vault was completed. The seismometers are Sprengnether S-5100 operated at a free period of 100 seconds and they utilize electronic recentering feedback for long-term stability and temperature/barometric feedback also for the vertical component. The ultra-long period system generates photographic paper records equivalent to a 100 second pendulum with a velocity transducer recorded by a 300 second galvanometer with a magnification of 500 at a free period of 100 seconds.

Starting in September 1975, low- (±2 mm) and high- (±0.02 mm) gain displacement signals from each of the three components were telemetered to the laboratory and recorded on 0.03 ips, 0-10 Hz, FM magnetic tape. The high-gain displacement signals are high-pass filtered at 500 seconds to reduce tidal signals. In 1980, a digital telemetry system was installed where the displacement signals from the three ULP seismometers are sampled at 99 samples per second each channel, with a resolution of 16 binary digits through a Phoenix Data 6816 ADC. An RCA COSMAC 1802 microprocessor system controls the analog-to-digital conversion process and buffers the incoming data. The digital data are temporarily stored in the microprocessor RAM memory, extra synchronization words are inserted, and finally the data are sent out bit-serially to a modem. The bit-serial digital data are transmitted over a leased phone line by modem pair. At the receiving end, the reconstructed serial data are applied to a PCM encode module which codes the data as DM-M. The coded PCM data are applied through a high-density digital encoder to the record head for one track of a Honeywell Model 96 tape transport, recording at 15/16 inches per second. With a 7200 foot reel of tape, data may be recorded continuously for 26 hours. The density at which the data are recorded on tape is equivalent to 5120 bits per inch. The least significant bit is equivalent to 0.25 micrometers of boom displacement and the system is flat to displacement response over the band of 0.01-25 Hz.

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

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to Berkeley via FM telemetry components and leased telephone lines where they are recorded on analog magnetic tape recorders. Low- (±2 mm) and high- (±0.01 mm) gain displacement signals from JAS and WDC are recorded on 0.03 ips, 0-10 Hz, FM magnetic tape. Velocity signals from JAS (one level) and WDC (two levels) are recorded at Berkeley on the 0.06 ips FM 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. An on-site digital recording system (DRS) was installed at Jamestown in September 1980. The DRS continuously records a three-component long-period (LP) channel at one sample per second each component and records, in an event detect mode, a three-component intermediate-period (IP) channel at 10 samples per second each component, and a vertical short-period (SP) channel at 20 samples per second. The DRS records the filtered output of Teledyne 210 and 200 seismometers operating with 16 bit resolution (no gain-ranging) on 1600 bpi magnetic tape. The DRS was upgraded by the USGS, Albuquerque Seismological Laboratory to allow remote recording, calibration and control over a duplex 2400 bits per second telemetry link and the upgraded version was installed at JAS in February, 1982. At the same time, the control and recording part of the DRS was installed at Berkeley (150 km west of JAS) and a dedicated telephone line was used for the digital telemetry link. On July 26, 1984 the JAS station was moved to a temporary site (JAS1) 3 km to the south and the operation of the Sprengnether S-5100 was discontinued.

Equipment was installed at Oroville in June 1979 to telemeter three-component broadband velocity signals from the Geotech 7505 and 8700 seismometers, operating at a free period of 15 seconds, to Berkeley via FM telemetry over leased telephone lines. In December 1979, the free period of the seisometers was changed to 20 seconds.

Response curves for these broadband instruments are shown on pages 9-12.

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STATIONS IN OPERATION: January 1 to December 31, 1984

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	40°34.8'	124°32.4'	300	Pre-Devonian metavolcanic	WDC	National Park Service 1973
Mineral	40°20.7'	121°36.3'	1495	Volcanic	MIN	National Park Service 1938
Oroville	39°33.3'	121°30.0'	360	Basalt	ORV	Dept. of Water Resources 1969
Mina (Nevada)	38°26.0'	118°09.4'	1529	Limestone	MNA	Univ. of Nevada, Reno 1969
Jamestown	37°56.8'	120°26.3'	457	Metamorphic (serpentine)	JAS	Dept. of Water Resources 1964
	37°55.6'	120°25.2'	427		JAS1	Sonora Mining July 1984
San Pablo Dam	37°56.7'	122°15.4'	119	Middle Miocene marine	ZSP	East Bay M.U.D. 1978
Berkeley (Byerly)	37°52.6'	122°14.1'	276	Claremont shales and cherts	BKS	University of Calif. 1962
Berkeley	37°52.4'	122°15.6'	81	Franciscan sandstone	BRK	University of Calif. 1887
Pilaricitos 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	Granodiorite	PRS	Paraiso Hot Springs 1961
Priest	36°08.5'	120°39.9'	1187	Greenstone basic metamorphic	PRI	Federal Aviation Agency 1961

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STATION INSTRUMENTATION: January 1 to December 31, 1984

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 100kg	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		
	Displacement Digital				- - -				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				
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	x		
GCC	Benioff 14 kg	1.0	0.2	Z	50,000			x	x		
JAS	Sprengnether S-5100	40	-	Z							
	BB velocity								x		
	Displacement								x		
	Filtered Displacement								x		
JAS & JAS1	Benioff 14 kg	1.0	0.2	Z	600,000		x	x	x		
	Teledyne 210 & 200	15	-	N, E, Z	Digital tape					x	
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	0.8	-	S, E	2,000	x					
MIN	Wood-Anderson	0.8	-	S, E	2,000	x					
	Teledyne S-13	1.0	0.2 Filter	Z	150,000			x	x		
MNA	Geotech SL210 filtered to give short-period response	15	1.0 Filter	Z				x	x		
ORV	Benioff 100 kg	1.0	0.2	Z	220,000			x	x		
	Geotech 7505 & 8700	20	BB	N, E, Z	- - -				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	Sprengnether 0.70 kg	0.2	0.05 Filter	Z	1,5000,000		x	x	x		
WDC	Sprengnether S-5100	40	-	Z							
	BB velocity				- - -				x		
	Displacement								x		
	Filtered Displacement								x		
	Short Period (Filter)				500,000		x	x	x		
ZSP	Teledyne S-13	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. Magnification using 20X viewer.
4 Signals recorded on magnetic tape, Berkeley.
5 Signals recorded on digital magnetic tape.
6 Ink recording.

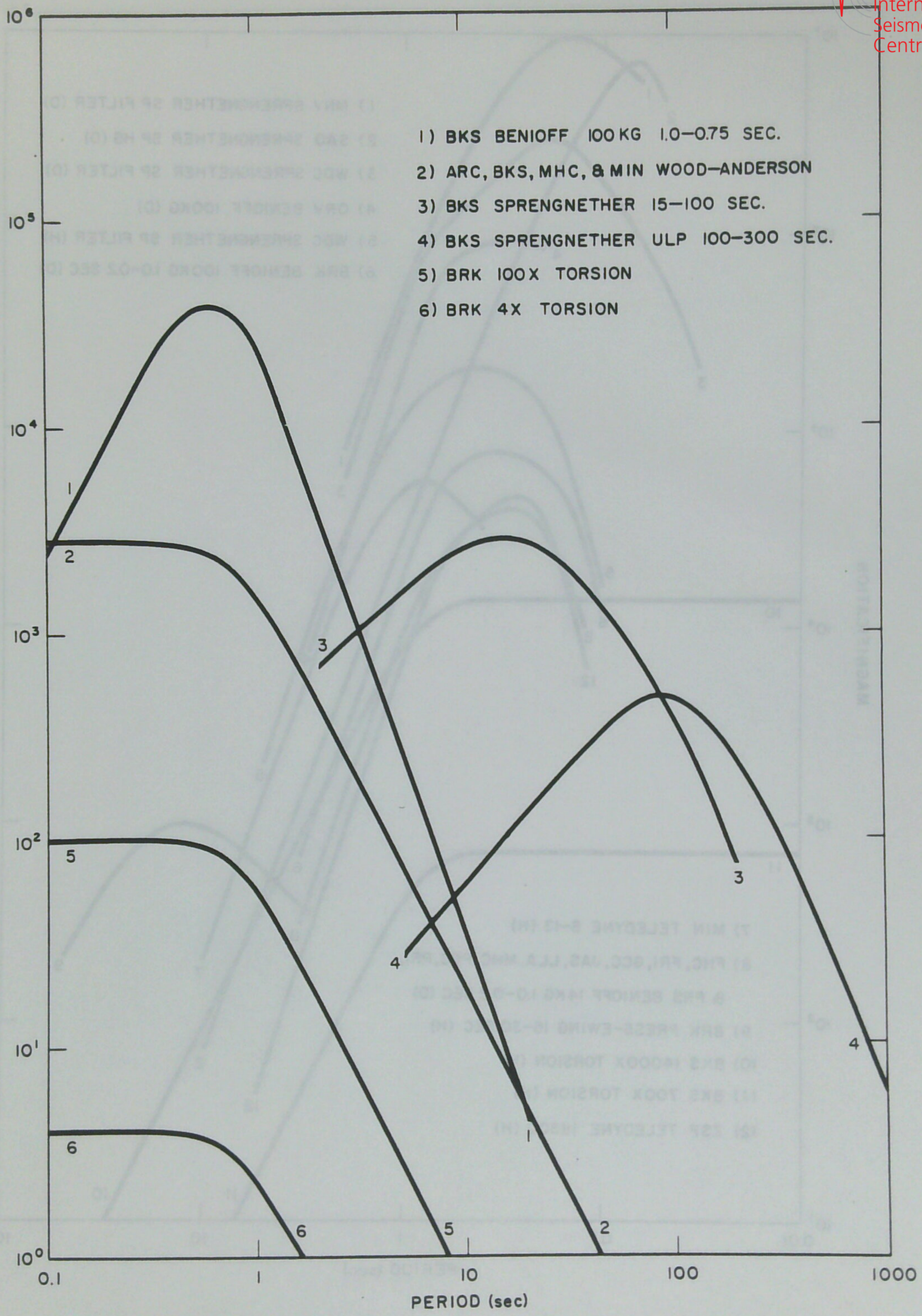
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UNIVERSITY OF CALIFORNIA ACCELEROGRAPH STATIONS

Station Name	Corrdinates	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	03 Aug 76	CRA-1 #148 (Recorder) FBA-3	V Down L North T East	1.90 1.83 1.82	.019 .018 .018	.63 .63 .65	Metal Box	Ground level
EARTH SCIENCES BUILDING	37.87 N 122.26 W	01 Nov 68	Wilmore Seismoscope SR-100	Duplex Horizontal	0.0545 (m/rad)	.75	≈10	Six-story building	Ground level
SAGO CENTRAL USGS #1032	36.76 N 121.45 W	05 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 USGS #1033	36.81 N 121.41 N	05 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) USGS #1110	40.77 N 123.90 W	09 Jul 71	SMA-1 #314	S66W Down S24E	4.24 3.72 4.10	.054 .057 .058	.57 .57 .55	Prefab building	Ground level
BULTER VALLEY STA. 2 (ABUTMENT) USGS #1112	40.79 N 123.88 W	09 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 USGS #1006	37.87 N 122.26 W	15 Apr 76	SMA-1 #2500 with WWVB	N45W Down S45W	1.79 1.73 1.71	.038 .038 .039	.60 .58 .57	Concrete building	Ground level
BERKELEY BYERLY SEISM STATION USGS #1005	37.87 N 122.24 W	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
					Sensitivity (g/F.S.)	Bandwidth (Hz)			
RICHMOND FIELD STATION	37.92 N 122.33 W	12 May 76	Columbia Research Force Balance Accelerometer	Z,H_1^*,H_2^{**} Z,H_1,H_2 Z,H_1,H_2	±0.010 ±0.50 ±0.50	0.5-50 0-50 0-50		5" I.D. uncased backfilled borehole (43.8m deep)	Downhole (43.7m)
			SA-107 (+2g units) (0-50 Hz)	Z,H_1,H_2 Z,H_1,H_2 Z,H_1,H_2 Z,H_1,H_2	±0.010 0.50 ±0.010 ±0.50	.05-50 0-50 .05-50 0-50			Midhole (15.7m) Metal Box Surface

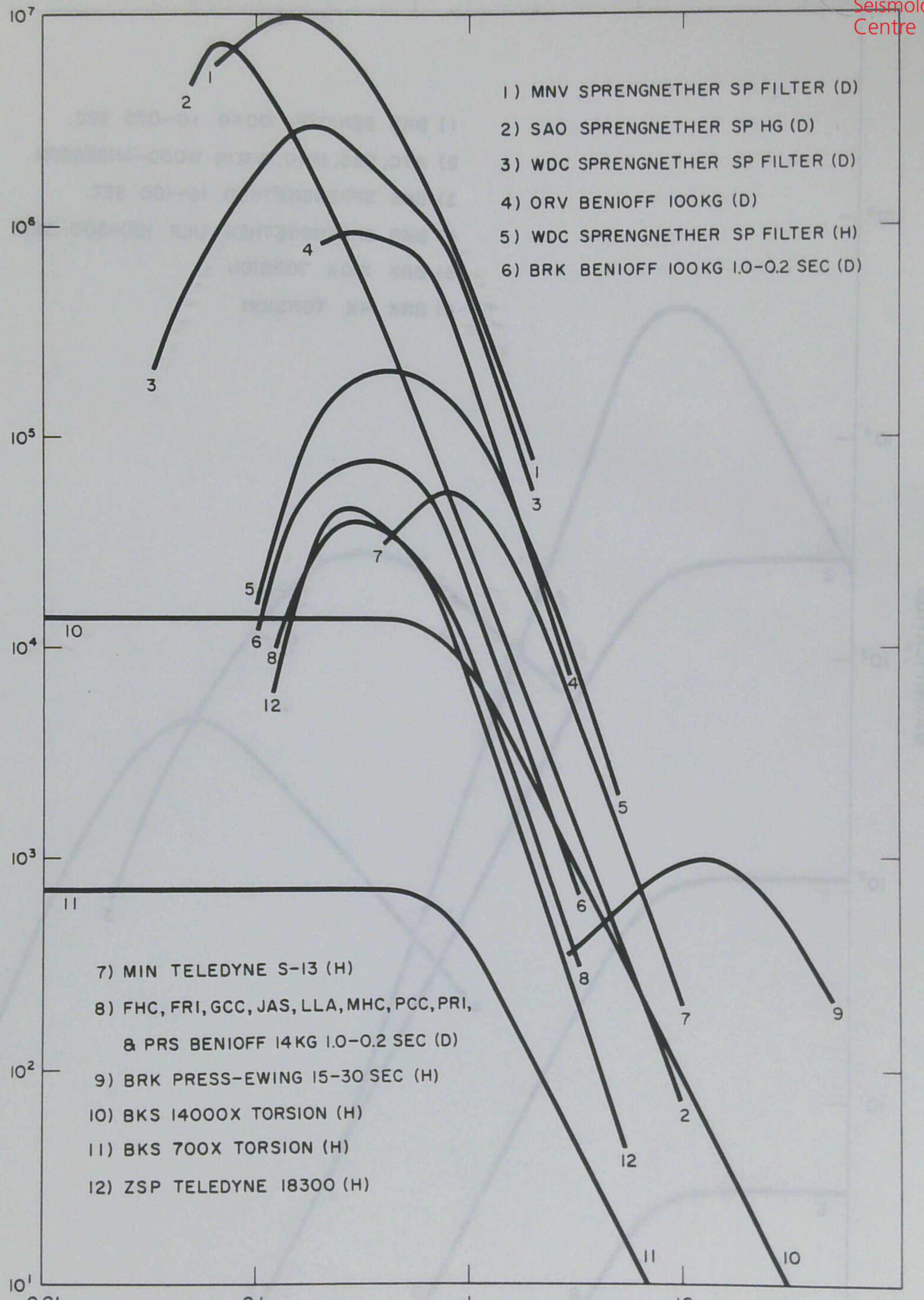
* accelerometer aligned S45W
** accelerometer aligned S45E

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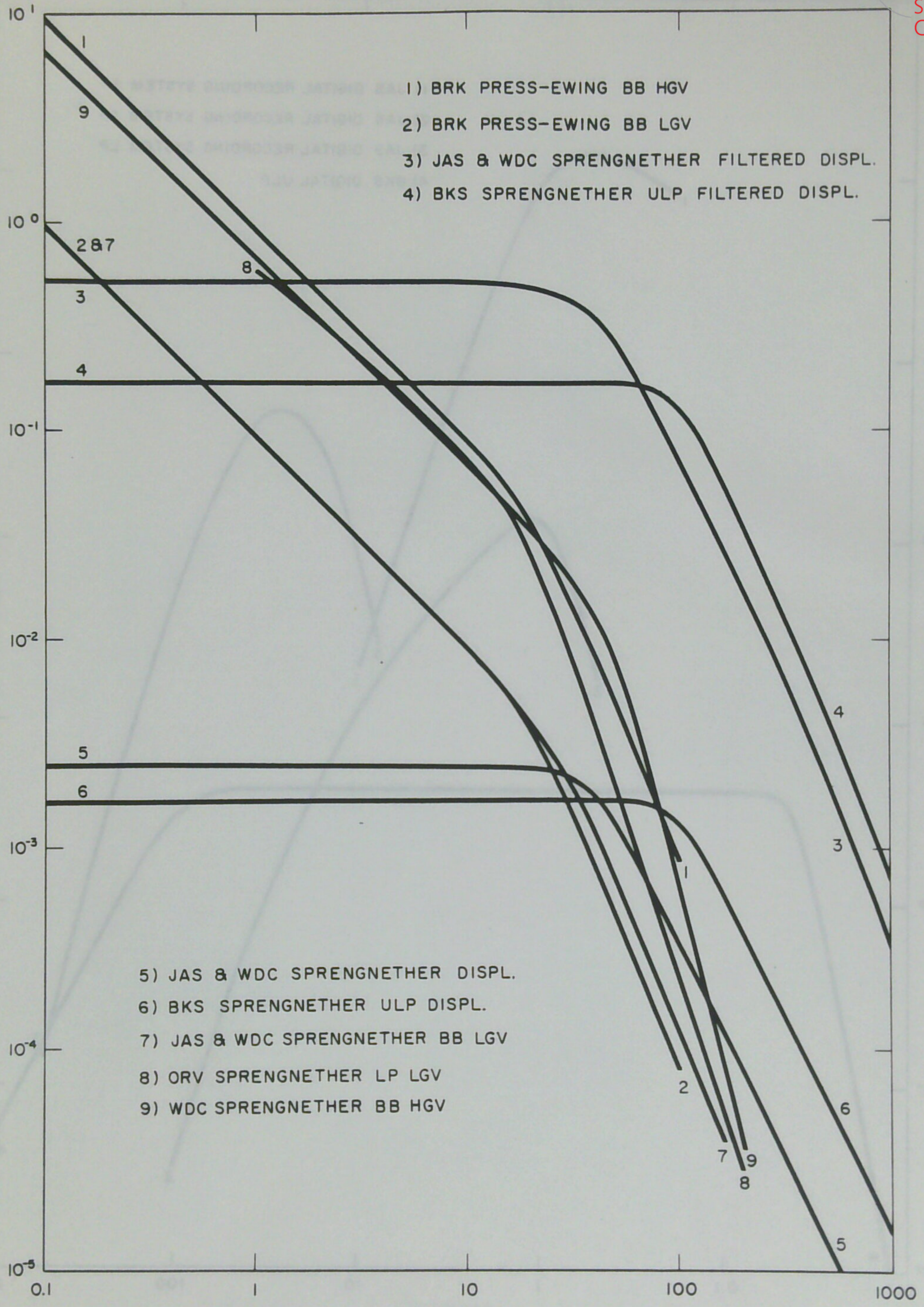
Response curves for photographically recording seismographs. The BKS Benioff and Sprengnether 15 - 100 second instruments are the WWSSN system.

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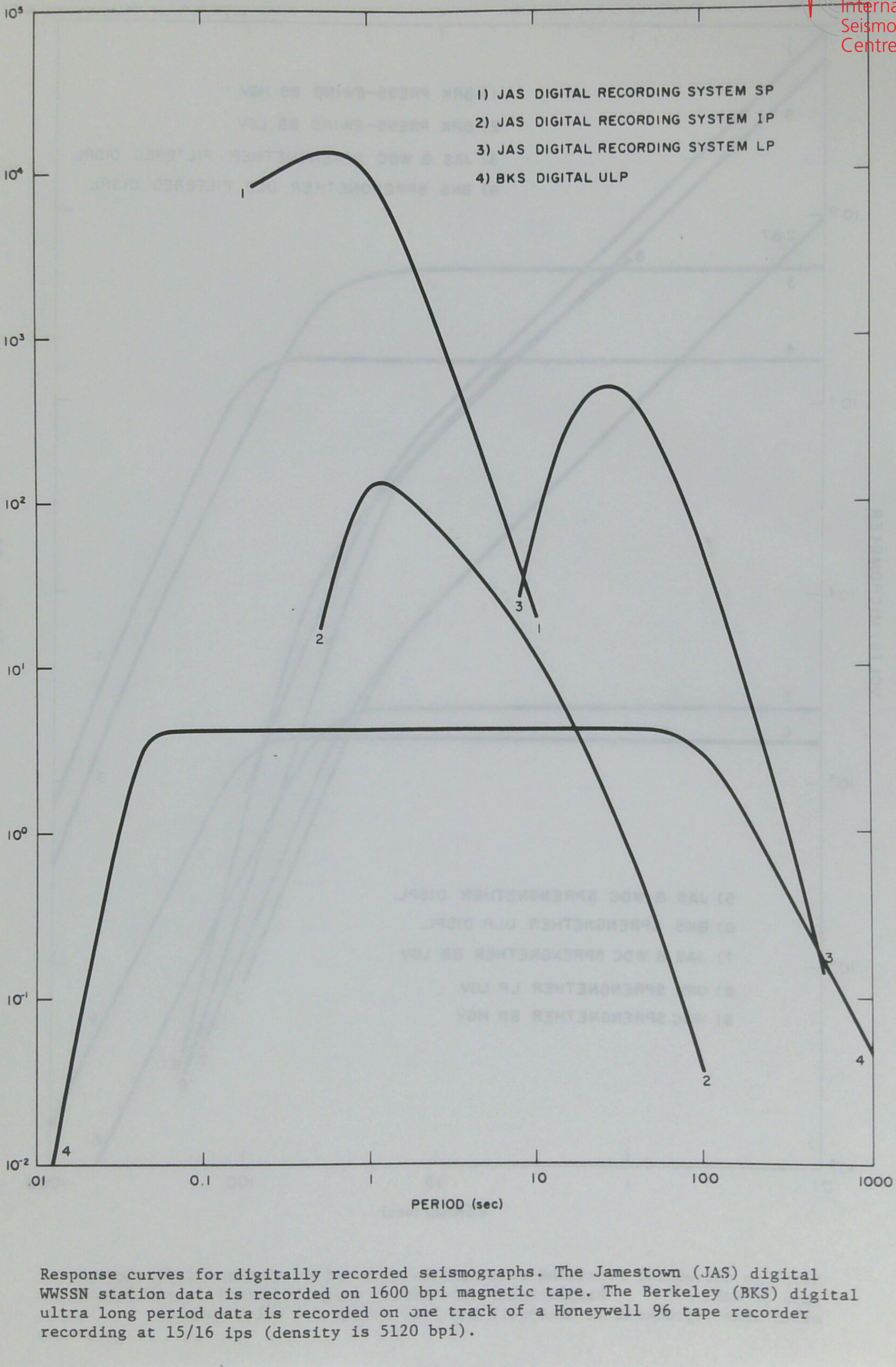
Response curves for Helicorder (HEL) and Develocorder (DEV) channels when viewed at 20X enlargement. The Benioff 14KG curve (8) represents several different stations and is normalized to 10,000 magnification at 1 second period. (See station instrumentation for actual magnification at 1 second period.)

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

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Response curves for digitally recorded seismographs. The Jamestown (JAS) digital WWSSN station data is recorded on 1600 bpi magnetic tape. The Berkeley (BKS) digital ultra long period data is recorded on one track of a Honeywell 96 tape recorder recording at 15/16 ips (density is 5120 bpi).

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Part I. Local Earthquakes in Northern California

This section includes information on earthquakes in Northern California (including adjacent offshore areas) which were well enough recorded at the U.C. stations (sometimes complimented 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 lists (see pages 18-22 and 25-30); epicenters are also plotted on the maps immediately following the lists (pages 23-24 and 31-32).

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 may 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 outlined in the maps of the central coast ranges of California, locatable shocks of magnitude 2.5 or over are included in the tabulation and plotted on these maps. Shocks of magnitude 3.0 or over occurring in the 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 they are of special interest for some other reason. Observed explosions are tabulated, but are not plotted on the maps. Earthquakes which occurred in the Halls Valley earthquake sequence are listed separately in Appendix A.

In the current Bulletin, the epicenters are located individually using the best possible distribution of stations (in both azimuth and distance) and an appropriate velocity model and set of station adjustments from the Tables below. Where possible both P- and S-wave onset times were used. However, the number of P arrivals greatly outnumbered the S arrivals.

Group Location Method. Northern and Central California was provisionally divided up into five regions (a-e as shown on the solution group map on page 17) for grouping the earthquakes. For a group of selected earthquakes within each region, the group location procedure simultaneously locates the hypocenters, estimates the station adjustments, and determines the velocity model. A brief description of the program, called GHYP2, is given in Appendix A of Volume 47, No. 1. Station adjustments and velocity model parameters were initially estimated from the 1980 data (Volume 50, Nos. 1 and 2). Once the station adjustments and velocity parameters are known, the hypocenter locations are individually determined using the program RELP which is described in Appendix D of Volume 50, No. 1. The station adjustments, velocity models, and groups are occasionally revised as required.

Station Adjustments. In the current Bulletin, station adjustments and velocity models were determined for four additional regions (h, k, m and n) for locating hypocenters in the Halls Valley, Coalinga, Mammoth Lakes, and Northwest of Bishop regions, respectively. The station adjustments for the nine regions used in this Bulletin are given in the Table below. The station adjustments are in the form of P/S in units of tenths of seconds. These station adjustments are to be added to the calculated travel times.

Velocity Models. Initially, three different velocity models were used, the first for region a, the second for regions b and e (the Sierra model described in Appendix B of Volume 48), and the third for regions c and d (the Coastal model described in Volume 47, No. 2, page 72). The velocity models are comprised of a layer with a linear velocity gradient ($v_o = a + bz$) over a halfspace ($v_1 = c$) where a is the velocity at the top of the layer, b is the velocity gradient, and c is the velocity in the halfspace. In this Bulletin, six velocity models are used for locating the hypocenters in the nine regions. The parameters for the velocity models are given in the Table below.

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STATION ADJUSTMENTS									
Station	Region								
	a	b	c	d	e	h	k	m	n
ARC	-2/-9								
BKS	1/15		0/5	-1/1					
FHC	-1/-7	3/10	11/		1/-1				
FRI				0/-6			-2/	-1/3	0/-2
GCC			-2/	-4/-5		2/			
JAS		-12/-3	4/4	2/-3	-1/-9	2/	5/	3/3	-8/-15
JAS1		-12/-3	4/4	2/-3	-1/-9	2/	5/	3/3	-8/-15
LLA				-2/0		-6/	-2/	-1/	-8/
MHC			-1/	2/1		0/	3/	-2/	-14/
MIN	-2/15	-2/0	3/3						
MNA					1/1			-1/2	3/4
ORV	-1/13	-4/-3	-5/-7	-6/					
PCC	0/		-1/6	-4/-4		-3/			
PRI				3/3			-1/		-9/
PRS				-2/-4		-2/	2/		
SAO				-2/		2/	5/		-13/
WDC	0/7	-5/0	-4/4						
ZSP	-2/		0/6	1/6					

VELOCITY MODELS							
Region	P-wave			S-wave			Layer Thickness (km)
	a (km/sec)	b (1/sec)	c (km/sec)	a (km/sec)	b (1/sec)	c (km/sec)	
a	5.24	.068	7.98	3.03	.039	4.61	25.
b & e	6.00	.024	7.85	3.46	.014	4.53	45.
c, d & h	5.28	.075	7.70	2.98	.043	4.36	25.
k	5.20	.120	7.50	2.20	.042	4.50	18.
m	5.73	.033	8.50	3.31	.019	4.80	100.
n	6.00	.024	8.50	3.47	.013	4.80	100.

Explanation of the Listing of Earthquakes:

KEY is a letter and number combination which indicates the grid location of the earthquake on the maps. The map key is set up on half-degree grid intervals and a map key index is given at the end of each list as a cross reference (including date, time and magnitude) for identifying the earthquakes plotted on the maps.

DATE and **O-TIME(UTC)** are the date and origin time of the earthquake given in Coordinated Universal Time (UTC). To obtain local time, subtract 8 hours for Pacific Standard Time (PST) and 7 hours for Pacific Daylight Time (PDT).

N LAT and **W LONG** are the north latitude and west longitude of the epicenter. Geographic coordinates are quoted to tenths of a minute for computer-located epicenters. Uncertainties of order five kilometers or more exist in determinations where the depth has been restricted, or where the epicenters lie outside the network.

DEPTH of focus for each earthquake is given to the nearest kilometer. If the depth is restrained, it is indicated by an "R".

SE is the standard error of the observations in seconds.

Region	Number of Earthquakes	Region Name
a	53	Northern coast
b	2	Northern California
c	14	Ukiah-Willits
d	59	Central coast
e	7	Sierra Nevada
h	111	Halls Valley
k	32	Coalinga
m	5	Mammoth Lakes
n	44	Northwest of Bishop
o	8	Outside

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SLN indicates the number of stations and station adjustments and velocity model used in determining the hypocenter. The number indicates the number of stations and the letter (see above Table) indicates the regional station adjustments and velocity model used in determining the location of the hypocenter. A letter "o" is used for the cases where the earthquake was either outside the above regions or no station adjustments were used in the solution.

MAG is the local magnitude (M_L) of the earthquake (on the Richter scale) determined from the maximum trace amplitudes recorded for the shock by standard Wood-Anderson torsion seismographs. The number of observations used to determine M_L is given in parenthesis immediately following the magnitude value. The magnitudes of earthquakes for which no Wood-Anderson records are available are determined from Benioff seismograph maximum trace amplitudes, and are indicated by an asterisk.

MOMENT is the seismic moment (M_o) in dyne-cm for regional earthquakes as calculated from standard Wood-Anderson torsion seismographs recorded within 300 km of the epicenter with peak-to-peak amplitudes of at least 3 mm. Seismic moment in dyne-cm is defined by (Bolt and Herraiz, BSSA, Vol. 73, 735-748, 1983):

$$\log(M_o) = 16.74 + 1.22 \log(CDE)$$

where C is the maximum peak-to-peak amplitude in mm, D is the duration in seconds from the S-wave onset to the last point where the peak-to-peak amplitude exceeds $C/3$, and E is the epicentral distance in kilometers. The number of observations used to determine M_o is given in parenthesis immediately following the moment value.

COMMENTS gives a short descriptive location of the epicenter and felt information.

Recent Rate of Seismicity

Northern and Central California. The Bulletin of the Seismographic Stations lists 3638 earthquakes ($3.0 \leq M_L \leq 6.9$), which occurred in the 280,000km^2 area of northern and central California, from 1949 through 1983. The 3638 earthquakes were declustered into 2312 earthquake sequences (of one or more earthquakes). The cumulative number of earthquake sequences (N) was fit to the Gutenburg-Richter relation by the maximum likelihood method and the result is

$$\log N = 4.23 - .815\, M_L$$

with a corresponding variance of

$$\sigma^2_{\log N} = .000781 - .000792 M_L + .000525 M_L^2$$

(normalized to earthquake sequences per year per 280,000km^2).

The annual rate of seismicity ($r = 10^{\log N}$) in earthquake sequences per year and the percent probability of one or more earthquakes of magnitude M_L or larger occurring in one day, week, month, year or decade is:

Northern and Central California						
$M_L \geq$	r (eq/yr)	Percent Probability in one				
		day	week	month	year	decade
3.0	60.	15.	69.	99.	100.	100.
3.5	24.	6.3	36.	86.	100.	100.
4.0	9.2	2.5	16.	54.	100.	100.
4.5	3.6	0.99	6.7	26.	97.	100.
5.0	1.4	0.39	2.7	11.	76.	100.
5.5	0.55	0.15	1.1	4.5	43.	100.
6.0	0.22	0.059	0.42	1.8	19.	89.
6.5	0.085	0.023	0.16	0.71	8.1	57.
7.0	0.033	0.009	0.064	0.28	3.3	28.

During 1984, 78 earthquake sequences ($M_L \geq 3.0$) occurred in Northern and Central California. Thus the observed rate of seismicity in 1984 is significantly higher than the average annual rate of seismicity during the past 35 years.

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Central Coast Ranges.

The Bulletin of the Seismographic Stations lists 4267 earthquakes $M_L \geq 2.5$, which occurred in the 40,000km^2 area of the central coast ranges, from 1949 through 1983. The 4267 earthquakes were declustered into 2386 sequences (of one or more earthquakes). The cumulative number of sequences (N) was fit to the Gutenburg-Richter relation by the maximum likelihood method and the result is

$$\log N = 3.78 - 0.793 M_L$$

with a corresponding variance of

$$\sigma^2_{\log N} = 0.000615 - 0.000598 M_L + 0.000603 M_L^2$$

(normalized to earthquake sequences per year per 40,000 km^2).

The annual rate of seismicity ($r = 10^{\log N}$) in earthquake sequences per year and the percent probability of one or more earthquakes of magnitude M_L or larger occurring in one day, week, month, year or decade is:

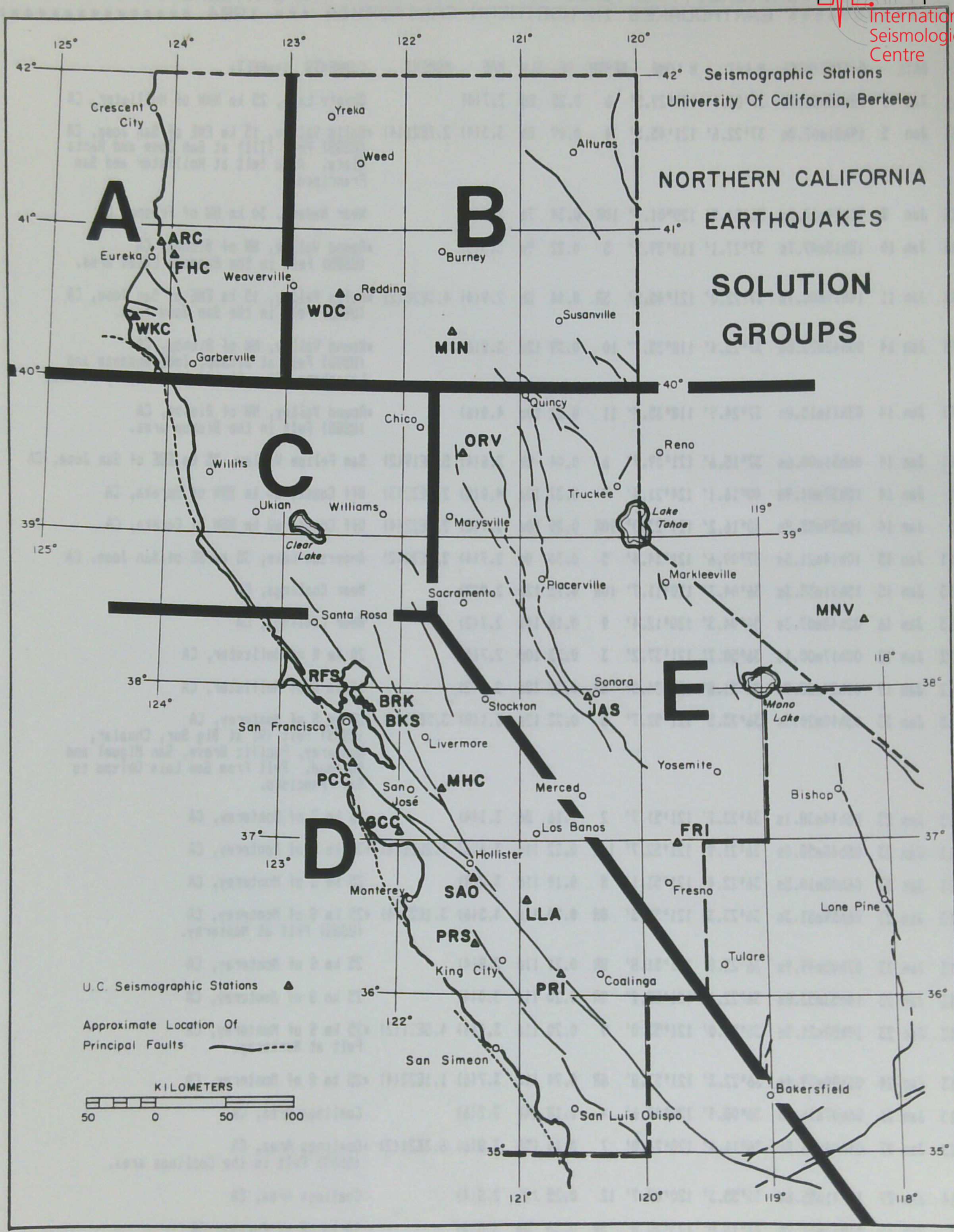
Central Coast Ranges						
$M_L \geq$	r (eq/yr)	Percent Probability in one				
		day	week	month	year	decade
2.5	62.	16.	70.	99.	100.	100.
3.0	25.	6.6	38.	88.	100.	100.
3.5	10.	2.7	17.	57.	100.	100.
4.0	4.0	1.1	7.4	29.	98.	100.
4.5	1.6	0.44	3.0	13.	80.	100.
5.0	0.65	0.18	1.2	5.3	48.	100.
5.5	0.26	0.071	0.50	2.1	23.	93.
6.0	0.10	0.029	0.20	0.87	9.9	65.
6.5	0.042	0.011	0.080	0.35	4.1	34.
7.0	0.017	0.005	0.032	0.14	1.7	15.

During 1984, 61 earthquake sequences ($M_L \geq 2.5$) occurred in the central coast ranges. Thus the observed rate of seismicity in 1984 is not significantly different than the average annual rate of seismicity during the past 35 years.

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; Pacific Gas and Electric Company; Lawrence Livermore National Laboratory; California Division of Mines and Geology; California Department of Water Resources; National Earthquake Information Service, U. S. Geological Survey; and Northern California Seismic Analysis Group, U. S. Geological Survey.

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KEY	DATE	O-TIME(UTC)	N LAT	W LONG	DEPTH	SE	SLN	MAG	MOMENT	COMMENTS (•=FELT)
K11	Jan 1	18h45m06.7s	37°04.1'	121°29.5'	6	0.25	8d	2.7(4)		Coyote Lake, 25 km NNW of Hollister, CA
J11	Jan 5	19h01m07.0s	37°22.6'	121°45.5'	4	0.09	8h	3.3(4)	2.7E21(4)	•Halls Valley, 15 km ENE of San Jose, CA (USGS) Felt (III) at San Jose and Santa Clara. Also felt at Hollister and San Francisco.
M12	Jan 8	11h24m14.2s	36°51.9'	120°01.7'	10R	0.34	7e	2.5(4)		Near Madera, 30 km NW of Fresno, CA
P11	Jan 10	15h15m47.7s	37°27.1'	118°39.5'	5	0.22	9n	3.5(6)		•Round Valley, NW of Bishop, CA (USGS) Felt in the Mammoth Lakes area.
J11	Jan 11	14h19m00.1s	37°22.0'	121°45.5'	5R	0.44	8h	2.9(4)	4.3E20(2)	•Halls Valley, 15 km ENE of San Jose, CA (USGS) Felt in the San Jose area.
P11	Jan 14	00h42m23.6s	37°25.4'	118°35.7'	10	0.39	12o	3.8(6)		•Round Valley, NW of Bishop, CA (USGS) Felt at Bishop, Independance and Lakeshore, CA. Also felt at Dyer, Nevada.
P11	Jan 14	03h11m15.0s	37°24.9'	118°35.2'	11	0.22	10o	4.0(6)		•Round Valley, NW of Bishop, CA (USGS) Felt in the Bishop area.
J11	Jan 14	06h51m00.6s	37°15.6'	121°39.7'	6	0.04	8h	2.6(4)	5.5E19(2)	San Felipe Valley, 25 km ESE of San Jose, CA
E5	Jan 14	10h37m01.9s	40°16.1'	124°21.4'	9	0.37	10a	4.0(8)	2.2E22(3)	Off Coast, 60 km SSW of Eureka, CA
E5	Jan 14	10h39m55.9s	40°16.2'	124°23.0'	10R	0.39	10a	3.9(8)	2.1E22(4)	Off Coast, 60 km SSW of Eureka, CA
J11	Jan 15	10h14m21.5s	37°09.6'	121°34.4'	5	0.30	8d	2.7(4)	2.2E20(2)	Anderson Lake, 35 km SE of San Jose, CA
M13	Jan 15	15h51m33.3s	36°04.3'	120°11.7'	10R	0.15	12k	2.9(2)		Near Coalinga, CA
M13	Jan 16	02h48m07.3s	36°04.3'	120°12.4'	9	0.16	14k	2.7(2)		Near Coalinga, CA
J12	Jan 18	00h17m00.1s	36°50.7'	121°37.2'	3	0.33	10d	2.7(4)		20 km W of Hollister, CA
J12	Jan 19	01h24m55.9s	36°51.8'	121°34.8'	5R	0.29	12d	2.7(2)		15 km W of Hollister, CA
J13	Jan 23	05h40m20.3s	36°23.5'	121°52.7'	8	0.23	12d	5.1(8)	3.5E23(4)	•25 km S of Monterey, CA (USGS) Felt (V) at Big Sur, Chualar, Monterey, Pacific Grove, San Miguel and Soledad. Felt From San Luis Obispo to San Francisco.
J13	Jan 23	05h44m38.1s	36°23.7'	121°51.7'	2	0.16	8d	3.1(4)		25 km S of Monterey, CA
J13	Jan 23	05h48m58.0s	36°21.9'	121°52.7'	10R	0.22	11d	3.6(6)	4.2E21(4)	•30 km S of Monterey, CA
J13	Jan 23	06h05m10.5s	36°22.4'	121°53.1'	8	0.19	11d	3.0(4)		25 km S of Monterey, CA
J13	Jan 23	06h59m51.3s	36°23.3'	121°52.3'	8R	0.24	11d	4.5(6)	3.1E22(4)	•25 km S of Monterey, CA (USGS) Felt at Monterey.
J13	Jan 23	07h05m49.9s	36°22.8'	121°51.8'	8R	0.21	11d	2.8(4)		25 km S of Monterey, CA
J13	Jan 23	10h53m53.8s	36°22.6'	121°52.2'	8R	0.20	11d	3.0(4)		25 km S of Monterey, CA
J13	Jan 23	19h58m21.5s	36°22.0'	121°53.0'	9	0.20	11d	3.6(4)	4.5E21(2)	•25 km S of Monterey, CA Felt at Monterey.
J13	Jan 24	01h00m39.4s	36°22.3'	121°52.8'	8R	0.24	11d	3.7(6)	1.1E22(4)	•25 km S of Monterey, CA
M13	Jan 26	06h07m16.9s	36°08.4'	120°08.6'	4	0.18	14k	3.2(6)		Coalinga Area, CA
M13	Jan 27	04h44m35.8s	36°16.6'	120°24.0'	7	0.16	15k	3.8(6)	6.3E21(2)	•Coalinga Area, CA (USGS) Felt in the Coalinga area.
M14	Jan 27	15h41m55.6s	35°55.3'	120°07.7'	12	0.25	12k	2.8(4)		Coalinga Area, CA
63	Jan 30	01h33m31.2s	41°13.0'	123°20.8'	5R	0.36	4a	3.0(4)		90 km NE of Eureka, CA

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KEY	DATE	O-TIME(UTC)	N LAT	W LONG	DEPTH	SE	SLN	MAG	MOMENT	COMMENTS (•=FELT)
D4	Jan 30	20h15m12.8s	40°49.2'	124°43.1'	5R	1.23	5a	3.2(4)	3.0E20(2)	Off Coast, W of Eureka, CA
K12	Feb 3	18h17m20.2s	36°38.8'	121°19.6'	3	0.26	8d	2.6(2)		Stone Canyon, 25 km SSE of Hollister, CA
O10	Feb 5	10h58m45.9s	37°39.2'	119°03.4'	10R	0.33	9m	3.8(6)		Mammoth Lakes Area, CA
J13	Feb 10	07h23m25.3s	36°23.2'	121°53.0'	12	0.32	12d	4.1(4)	8.6E21(4)	•25 km S of Monterey, CA (USGS) Felt (V) at Monterey and Santa Cruz. Felt (IV) at Big Sur and Pacific Grove.
B10	Feb 10	12h33m04.9s	37°38.7'	125°31.0'	5R	0.47	12o	3.9(2)		Off the Coast, 300 km W of Berkeley, CA This is the first instrumentally recorded earthquake located west of the continental shelf between 36 deg N and 39 deg N latitude since the installation of high-gain stations in the Berkeley network in 1948.
J13	Feb 11	14h10m28.8s	36°23.3'	121°52.9'	9	0.24	12d	3.4(4)		25 km S of Monterey, CA
E5	Feb 11	19h04m30.3s	40°23.0'	124°21.4'	5R	0.10	3a	3.1(2)		SSW of Eureka, CA
K14	Feb 12	13h57m06.8s	35°52.9'	121°19.8'	5R	0.37	7d	2.7(4)		45 km SSW of King City, CA
N8	Feb 17	12h03m56.2s	38°52.8'	119°38.2'	25R	0.35	10e	4.3(6)	3.5E22(4)	•40 km WSW of Yerrington, Nevada (USGS) Felt (V) at Carson City and Wellington, Nevada. Also felt (V) at Topaz, CA. Felt (IV) at South Lake Tahoe, CA and Minden, Nevada.
N8	Feb 17	12h16m46.6s	38°54.1'	119°36.5'	25R	0.68	10e	3.6(6)		40 km WSW of Yerrington, Nevada
M13	Feb 19	09h43m10.7s	36°16.6'	120°19.4'	10	0.18	17k	4.1(6)	2.8E22(4)	•Coalinga Area, CA
P11	Feb 27	01h36m20.6s	37°22.5'	118°35.9'	10	0.14	15o	4.5(5)	2.8E22(1)	•Round Valley, NW of Bishop, CA (USGS) Felt (III) at Bishop, Crowley Lake, Independence and Toms Place.
B5	Feb 28	15h16m06.7s	40°21.4'	125°53.8'	5R	0.31	9a	5.2(8)	1.5E23(2)	•Off the Coast, 160 km WSW of Eureka, CA (USGS) Felt (IV) at Honeydew and Petrolia. Felt (III) at Loleta, Piercy, Rio Dell and Whitehorn.
J11	Feb 29	06h08m43.7s	37°17.2'	121°40.7'	9R	0.04	8h	2.5(4)	3.4E19(2)	San Felipe Valley, 20 km ESE of San Jose, CA
H8	Mar 2	11h39m09.6s	38°48.3'	122°47.7'	5	0.26	12c	3.0(6)	7.6E21(2)	•The Geysers, 25 km S of Clear Lake, CA (USGS) Felt at Cobb.
Q10	Mar 5	10h50m53.4s	37°34.6'	118°29.5'	5R	0.34	11o	3.1(4)		25 km N of Bishop, CA
P11	Mar 5	11h43m19.8s	37°29.3'	118°48.4'	8	0.37	10m	3.4(4)		•Mammoth Lakes Area, CA (USGS) Felt in the Mammoth Lakes area.
P11	Mar 7	08h32m36.5s	37°29.9'	118°49.1'	4	0.46	11e	3.4(4)		•Mammoth Lakes Area, CA (USGS) Felt in the Mammoth Lakes area.
E5	Mar 9	06h35m33.5s	40°20.8'	124°20.2'	5R	0.67	9a	3.2(2)		•60 km SSW of Eureka, CA
J12	Mar 12	05h15m55.1s	36°57.0'	121°36.0'	5	0.26	10d	2.9(4)	4.2E20(2)	•5 km S of Gilroy, CA Felt in Gilroy.
D3	Mar 15	13h35m22.6s	41°05.2'	124°40.4'	4	0.46	8a	3.6(4)	1.9E21(2)	Off Coast, 40 km NW of Eureka, CA
J10	Mar 18	05h27m29.9s	37°47.1'	121°43.5'	10	0.19	13d	4.1(4)	2.8E22(4)	•10 km NNE of Livermore, CA (USGS) Felt (IV) at Bryon Canyon, Danville, Lafayette, Livermore, Oakland and San Jose. Also felt at Antioch, Clayton, Concord, Dublin, Pleasanton, Pittsburg, San Ramon and Walnut Creek,
F4	Mar 19	21h00m28.5s	40°53.6'	123°47.1'	6	0.21	5a	3.4(4)	2.9E21(2)	•35 km NE of Eureka, CA (USGS) Felt Arcata and Eureka.

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KEY	DATE	O-TIME(UTC)	N LAT	W LONG	DEPTH	SE	SLN	MAG	MOMENT	COMMENTS (•=FELT)
M13	Mar 20	10h42m53.8s	36°18.0'	120°29.4'	8R	0.18	12k	2.9(6)		Coalinga Area, CA
L6	Mar 21	11h11m12.2s	39°50.5'	120°38.4'	10	0.30	9b	3.4(6)	5.5E21(2)	30 km SE of Quincy, CA
M13	Mar 24	19h53m18.4s	36°11.8'	120°15.5'	5	0.26	14k	2.6 •		Coalinga Area, CA
G7	Mar 24	22h42m28.0s	39°18.4'	123°12.6'	5R	0.39	13c	3.2(5)		20 km SE of Willits, CA
K12	Mar 26	07h58m39.9s	36°44.8'	121°29.1'	7	0.17	10d	4.0(4)	1.9E22(4)	•15 km SW of Hollister, CA (USGS) Felt (IV) at Chualar, Pacific Grove, Presidio of Monterey, San Martin and Spreckles. Felt (III) at Hollister, San Juan Bautista, Santa Cruz and Seaside.
I10	Mar 27	03h36m35.4s	37°45.3'	122°05.7'	7R	0.15	10d	4.3(6)	4.1E22(4)	•San Leandro Hills, 20 km SE of Berkeley, CA (USGS) Items knocked from shelves at Castro Valley, Hayward, Oakland and San Leandro. Felt (V) at Berkeley, Brisbane, Castro Valley, Diablo, Martinez, Oakland, San Leandro and San Lorenzo. Felt throughout the San Francisco Bay Area including Alameda, Contra Costa, Marin, Santa Clara, San Francisco, San Mateo, Solano and Sonoma Counties.
I10	Mar 27	03h48m39.6s	37°45.3'	122°05.6'	5R	0.14	6d	2.5(6)		San Leandro Hills, 20 km SE of Berkeley, CA
M13	Apr 8	06h20m13.1s	36°17.5'	120°21.3'	6	0.30	15k	2.8(4)		Coalinga, CA
H8	Apr 10	04h02m02.7s	38°47.7'	122°46.7'	3	0.25	18d	3.0(6)		25 km NNE of Santa Rosa, CA
M13	Apr 10	18h12m11.5s	36°15.0'	120°13.3'	5	0.21	10k	3.7(6)		Coalinga Area, CA
M13	Apr 10	18h47m10.8s	36°14.9'	120°14.3'	8	0.20	14k	3.3(6)		Coalinga Area, CA
M13	Apr 11	08h16m00.8s	36°16.6'	120°23.5'	7	0.36	16k	3.0(4)		Coalinga Area, CA
K14	Apr 12	15h40m41.4s	35°42.6'	121°05.9'	5R	0.29	16d	3.0(4)		San Simeon Area, CA
A5	Apr 18	03h30m32.5s	40°26.1'	126°04.8'	5R	0.33	8 a	3.7(6)		Off Coast 170 km SW of Eureka, CA
C5	Apr 18	23h26m02.7s	40°24.8'	125°12.7'	5R	0.28	10a	3.9(4)		Off Coast 100 km SW of Eureka, CA
E5	Apr 21	22h56m14.9s	40°24.3'	124°03.7'	8	.	10a	3.3(4)	9.0E20(2)	60 km S of Eureka, CA
J5	Apr 22	12h11m37.9s	40°16.9'	121°33.7'	8	0.39	11a	3.0(4)	1.5E21(2)	Mineral, CA
M13	Apr 24	04h52m51.5s	36°09.8'	120°17.2'	10	0.21	17k	4.0(6)	1.1E22(2)	Coalinga Area, CA
J11	Apr 24	21h15m19.0s	37°19.2'	121°41.9'	8	0.03	8h	6.2(6)	1.1E25(2)	•Halls Valley Mainshock, 15 km E of San Jose (USGS) Max Intensity (VII) in the Morgan Hill area. Twenty-one people sustained minor injuries in the Morgan Hill-San Jose area. Damage from the earthquake estimated at $7.5 million with the most damage occurring in the Jackson Oaks subdivision east of Morgan Hill. The earthquake was felt from Bakersfield to Sacramento, and from San Francisco to Reno, Nevada.
K12	Apr 26	01h09m19.9s	36°33.1'	121°12.5'	5R	0.40	9d	2.6(4)		Bear Valley Area, 40 km NNE of King City, CA
H8	Apr 26	19h12m02.0s	38°50.1'	122°49.0'	1	0.41	13c	2.8(4)		Near The Geysers, 20 km S of Clear Lake, CA
P10	Apr 28	22h48m21.0s	37°37.3'	118°53.8'	3	0.21	17e	4.7(8)	5.1E22(2)	•Mammoth Lakes Area, CA (USGS) Felt (IV) at Mammoth Lakes. Also felt at Bishop.
P10	Apr 29	00h50m33.8s	37°36.8'	118°54.6'	5	0.24	14e	3.7(3)		•Mammoth Lakes area, CA Felt in the Mammoth Lakes area.

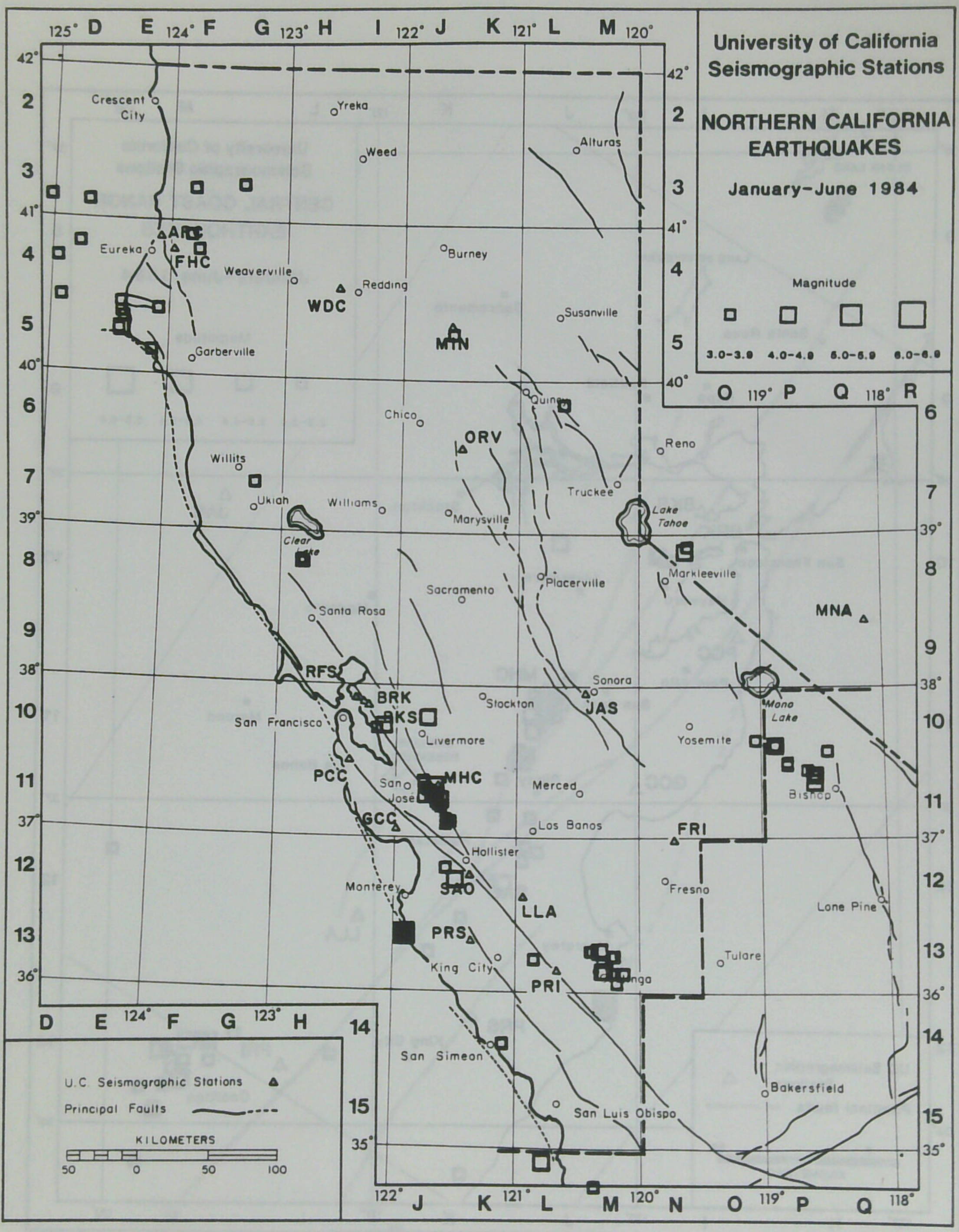
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KEY	DATE	O-TIME(UTC)	N LAT	W LONG	DEPTH	SE	SLN	MAG	MOMENT	COMMENTS (•=FELT)
D5	Apr 29	09h22m46.7s	40°21.9'	124°38.1'	5R	0.78	8 a	2.9(3)		Off Coast 65 km SW of Eureka, CA
M13	May 2	04h32m16.8s	36°13.0'	120°18.6'	7	0.25	20k	3.0(2)		Coalinga area, CA
E5	May 2	14h16m28.2s	40°27.3'	124°22.2'	5R	0.74	6a	3.5(4)	9.8E20(2)	Near Coast 45 km SW of Eureka, CA
I10	May 4	01h05m14.0s	37°44.1'	122°07.4'	6	0.22	14d	2.6(4)		•San Leandro, 20 km SE of Berkeley, CA (USGS) Felt (III) at Castro Valley and Redwood City. Also felt at San Leandro.
E5	May 7	01h25m40.8s	40°08.3'	124°06.6'	5R	0.69	7a	3.5(4)	3.3E21(2)	•NW of Shelter Cove, 75 km S of Eureka, CA (USGS) Felt (II) at Miranda. Also felt at Myers Flat.
M13	May 8	05h50m28.0s	36°17.6'	120°22.9'	11	0.29	16k	3.0(2)		Coalinga Area, CA
M13	May 8	19h21m14.0s	36°10.1'	120°17.8'	8	0.24	17k	4.4(6)	3.1E22(4)	•Coalinga Area, CA (USGS) Felt (V) at Coalinga and (IV) at Avenal, Huron and Stratford.
D4	May 9	10h00m23.1s	40°43.9'	124°53.9'	5R	0.72	5a	3.7(4)	7.6E20(2)	Off coast 60 km W of Eureka, CA
B5	May 13	23h51m52.5s	40°29.2'	125°42.8'	5R	0.32	5 a	4.3(6)	2.9E21(2)	Off Coast 140 km WSW of Eureka, CA
M13	May 16	03h58m21.0s	36°13.8'	120°15.7'	12	0.24	19k	2.9(4)		Coalinga Area, CA
M16	May 16	17h30m14.2s	34°48.2'	120°22.9'	11	0.40	18d	3.5(4)		•15 km SSE of Santa Maria, CA Felt (III) at Vandenburg A.F.B. and Solvang.
M13	May 17	21h23m36.8s	36°04.5'	120°11.9'	7	0.27	18k	3.0(4)		Coalinga Area, CA
L13	May 18	12h47m40.9s	36°14.4'	120°51.2'	6	0.36	19d	3.2(4)		•Peachtree Valley, 25 km E of King City, CA Felt in Avenal.
H8	May 19	07h08m21.1s	38°46.7'	122°46.0'	5	0.26	10c	2.9(4)		•The Geysers area, 20 km S of Clear Lake, CA
M13	May 25	14h50m02.1s	36°13.1'	120°23.8'	5	0.23	14k	2.9(4)		Coalinga Area, CA
J12	May 26	05h41m19.8s	36°49.2'	121°34.2'	4	0.36	15d	3.1(4)		10 km S of Gilroy, CA
H8	May 28	20h15m04.4s	38°47.9'	122°47.9'	1	0.22	19c	2.5(6)		The Geysers, 20 km S of Clear Lake, CA
F4	Jun 1	22h22m14.2s	40°47.1'	123°43.6'	5R	0.53	4a	3.2(2)	2.9E20(2)	40 km E of Eureka, CA
K12	Jun 3	07h21m57.1s	36°57.7'	121°27.9'	6	0.34	14d	2.6(4)		15 km NW of Hollister, CA
H8	Jun 11	09h21m48.6s	38°48.6'	122°47.8'	2	0.23	12c	2.6(6)		The Geysers, 25 km S of Clear Lake, CA
F3	Jun 16	02h28m03.2s	41°11.7'	123°46.9'	5R	0.40	4a	3.3(4)	1.1E21(2)	50 km NE of Eureka, CA
H8	Jun 16	10h44m54.0s	38°48.5'	122°47.6'	5	0.26	20c	3.0(6)	2.2E21(2)	•The Geysers, 20 km S of Clear Lake, CA
L16	Jun 20	19h28m06.2s	34°57.4'	120°46.5'	8	0.34	21d	4.3(6)		•Off Coast 30 km W of Santa Maria, CA (USGS) Felt (IV) at Avila Beach, Cambria, Pas Robles, Pismo Beach and Santa Margarita. Felt in Monterey, Santa Barbara, San Luis Obispo and Ventura Counties.
M13	Jun 22	08h11m00.5s	36°09.0'	120°13.6'	7	0.28	16k	3.4(5)		Coalinga area, CA
D3	Jun 25	01h24m47.8s	41°07.4'	124°58.5'	3	0.21	5a	3.3(3)	2.0E20(2)	Off Coast NW of Eureka, CA
I10	Jun 25	10h13m24.1s	37°43.7'	122°09.1'	7	0.27	13d	3.1(5)	1.7E21(4)	•Lake Chabot area, CA (USGS) Felt (IV) at Alameda and San Leandro. Also felt at Daly City, Hayward, Moraga, Piedmont, San Francisco and San Mateo.
D5	Jun 29	16h20m15.0s	40°28.2'	124°51.6'	5R	0.37	5a	3.1(3)		Off Coast 70 km SW of Eureka, CA

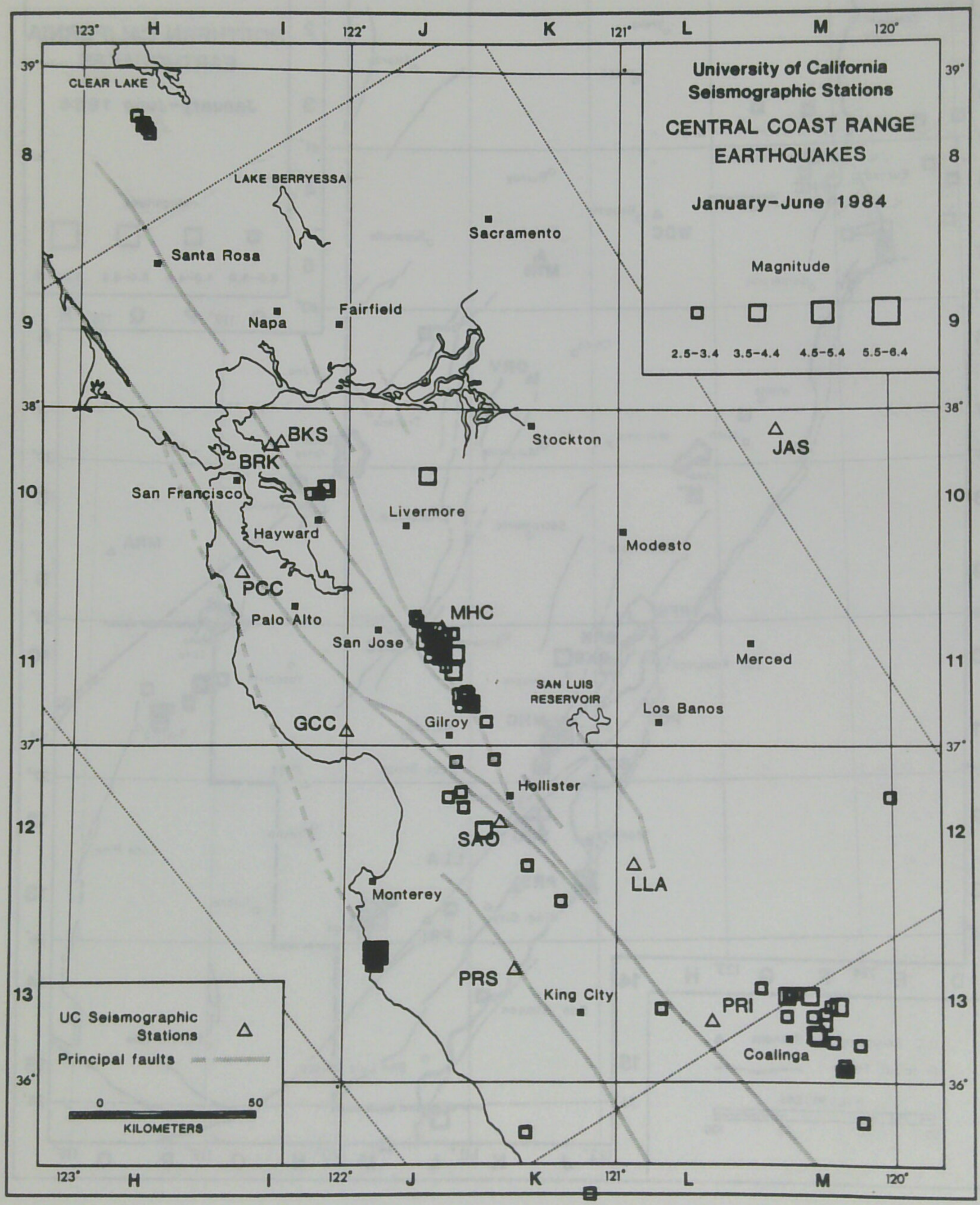
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KEY	DATE	TIME	MAG
A5	Apr 18	03:30	3.7
B10	Feb 10	12:33	3.9
B5	Feb 28	15:16	5.2
	May 13	23:51	4.3
C5	Apr 18	23:26	3.9
D3	Mar 15	13:35	3.6
	Jun 25	01:24	3.3
D4	Jan 30	20:15	3.2
	May 9	10:00	3.7
D5	Apr 29	09:22	2.9
	Jun 29	16:20	3.1
E5	Jan 14	10:37	4.0
	Jan 14	10:39	3.9
	Feb 11	19:04	3.1
	Mar 9	06:35	3.2
	Apr 21	22:56	3.3
	May 2	14:16	3.5
	May 7	01:25	3.5
F3	Jun 16	02:28	3.3
F4	Mar 19	21:00	3.4
	Jun 1	22:22	3.2
G3	Jan 30	01:33	3.0
G7	Mar 24	22:42	3.2
H8	Mar 2	11:39	3.0
	Apr 10	04:02	3.0
	Apr 26	19:12	2.8
	May 19	07:08	2.9
	May 28	20:15	2.5
	Jun 11	09:21	2.6
	Jun 16	10:44	3.0
I10	Mar 27	03:36	4.3
	Mar 27	03:48	2.5
	May 4	01:05	2.6
	Jun 25	10:13	3.1
J10	Mar 18	05:27	4.1
J11	Jan 5	19:01	3.3
	Jan 11	14:19	2.9
	Jan 14	06:51	2.6
	Jan 15	10:14	2.7
	Feb 29	06:08	2.5
	Apr 24	21:15	6.2
J12	Jan 18	00:17	2.7
	Jan 19	01:24	2.7
	Mar 12	05:15	2.9
	May 26	05:41	3.1
J13	Jan 23	05:40	5.1
	Jan 23	05:44	3.1
	Jan 23	05:48	3.6
	Jan 23	06:05	3.0
	Jan 23	06:59	4.5
	Jan 23	07:05	2.8
	Jan 23	10:53	3.0
	Jan 23	19:58	3.6
	Jan 24	01:00	3.7
	Feb 10	07:23	4.1
	Feb 11	14:10	3.4
J5	Apr 22	12:11	3.0
K11	Jan 1	18:45	2.7
K12	Feb 3	18:17	2.6
	Mar 26	07:58	4.0
	Apr 26	01:09	2.6
	Jun 3	07:21	2.6
K14	Feb 12	13:57	2.7
	Apr 12	15:40	3.0
L13	May 18	12:47	3.2
L16	Jun 20	19:28	4.3
L6	Mar 21	11:11	3.4
M12	Jan 8	11:24	2.5
M13	Jan 15	15:51	2.9
	Jan 16	02:48	2.7
	Jan 26	06:07	3.2
	Jan 27	04:44	3.8
	Feb 19	09:43	4.1
	Mar 20	10:42	2.9
	Mar 24	19:53	2.6
	Apr 8	06:20	2.8
	Apr 10	18:12	3.7
	Apr 10	18:47	3.3
	Apr 11	08:16	3.0
	Apr 24	04:52	4.0
	May 2	04:32	3.0
	May 8	05:50	3.0
	May 8	19:21	4.4
	May 16	03:58	2.9
	May 17	21:23	3.0
	May 25	14:50	2.9
	Jun 22	08:11	3.4
M14	Jan 27	15:41	2.8
M16	May 16	17:30	3.5
N8	Feb 17	12:03	4.3
	Feb 17	12:16	3.6
O10	Feb 5	10:58	3.8
P10	Apr 28	22:48	4.7
	Apr 29	00:50	3.7
P11	Jan 10	15:15	3.5
	Jan 14	00:42	3.8
	Jan 14	03:11	4.0
	Feb 27	01:36	4.5
	Mar 5	11:43	3.4
	Mar 7	08:32	3.4
Q10	Mar 5	10:50	3.1

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KEY	DATE	O-TIME(UTC)	N LAT	W LONG	DEPTH	SE	SLN	MAG	MOMENT	COMMENTS (*=FELT)
G5	Jul 2	03h44m04.2s	40°12.8'	123°14.7'	14	0.20	7a	3.2(3)		50 km E of Garberville, CA
L13	Jul 11	03h31m28.2s	36°26.9'	120°39.3'	5R	0.55	11d	3.2(4)		Ciervo Hills, 45 km NW of Coalinga, CA
J10	Jul 13	12h08m18.5s	37°36.9'	121°48.5'	4	0.33	13d	3.3(5)	1.4E21(2)	*Livermore, CA (USGS) Felt in the Livermore-Pleasanton area.
P10	Jul 16	10h14m22.4s	37°37.5'	118°57.6'	7	0.21	14m	3.7(5)		*Mammoth Lakes area, CA Felt (III) in Mammoth Lakes area.
G3	Jul 18	19h47m58.2s	41°22.4'	123°29.0'	13	0.28	12a	4.0(5)	3.1E22(2)	*80 km NE of Eureka, CA (USGS) Felt (III) at Eureka, Forks of Salmon, Gasquet, Hoopa, Orleans and Ti-Bar. Felt in parts of Humboldt and Siskiyou Counties.
D4	Jul 28	06h30m06.4s	40°33.5'	124°44.9'	11	0.33	10a	3.3(2)	3.6E20(2)	Off Coast 60 km SW of Eureka, CA
H8	Jul 30	22h21m07.5s	38°48.8'	122°47.3'	3	0.21	13c	3.0(5)		The Geysers, 20 km S of Clear Lake, CA
M13	Aug 2	03h55m38.8s	36°28.1'	120°20.6'	5R	0.15	15k	2.6(2)		Coalinga Area, CA
E5	Aug 3	17h42m52.6s	40°22.1'	124°02.9'	5R	0.33	4a	3.1(2)		50 km S of Eureka, CA
C4	Aug 4	01h38m49.0s	40°34.8'	125°22.2'	5R	0.20	4a	3.5(4)		100 km W of Eureka, CA
C5	Aug 4	03h00m53.9s	40°25.7'	125°20.1'	5R	0.54	5a	4.0(6)	1.7E21(2)	Off the Coast, 120 km SW of Eureka, CA
D5	Aug 4	21h45m53.2s	40°15.3'	124°34.7'	5R	0.56	7a	4.7(8)	2.0E23(4)	*Off the Coast, 80 km SW of Eureka, CA (USGS) Felt (V) at Miranda and Rio Dell. Felt (IV) at Alderport, Bridgeville, Carlotta, Honeydew and Whitethorn. Also felt at Eureka, Ferndale, Loleta, Myers Flat, Redcrest and Trinidad.
J12	Aug 6	00h06m39.8s	36°59.8'	121°42.8'	8	0.19	9d	3.8(4)	4.0E21(4)	*30 km NW of Hollister, CA (USGS) Felt (III) at Brookdale, Mount Hermon, Santa Cruz, San Jose, San Martin and Watsonville. Also felt at Gilroy, Morgan Hill and Monterey.
L13	Aug 7	08h17m34.8s	36°10.2'	120°47.2'	10	0.35	7d	2.5(2)		40 km E of King City, CA
J11	Aug 14	05h55m34.9s	37°26.8'	121°37.0'	6	0.12	12d	2.8(4)	2.0E20(2)	25 km NW of San Jose, CA
G4	Aug 14	21h05m41.9s	40°56.9'	123°19.9'	5R	0.28	2a	3.2(2)	2.0E20(2)	NW of Weaverville, CA
M13	Aug 16	01h30m54.6s	36°11.4'	120°11.5'	7R	0.34	8k	3.2(4)		*Coalinga Area, CA (USGS) Felt (III) at Avenal.
M13	Aug 16	11h24m44.6s	36°06.7'	120°10.8'	7R	0.17	17k	3.1(4)		Coalinga Area, CA
G4	Aug 16	12h55m37.2s	40°57.7'	123°26.9'	10R	0.38	8a	3.1(3)	3.9E20(1)	60 km E of Eureka, CA
Q9	Aug 19	02h22m34.9s	38°28.6'	118°17.5'	5R	1.36	8o	4.1(6)		*30 km W of Hawthorne, Nevada (USGS) Felt (V) at Lunning, Nevada and (IV) at Mina, Nevada.
P11	Aug 20	16h26m25.5s	37°28.7'	118°34.5'	11	0.36	15m	3.5(4)		20 km NW of Bishop, CA
M13	Aug 23	09h35m10.3s	36°06.1'	120°10.3'	8	0.23	15k	2.9(4)		Coalinga Area, CA
G3	Aug 25	13h00m48.8s	41°07.4'	123°16.5'	21	0.16	9o	3.8(3)	1.0E22(3)	NE of Eureka, CA
M13	Aug 30	20h20m38.6s	36°15.1'	120°18.7'	8R	0.09	14k	2.6 t		Coalinga Area, CA
M13	Aug 30	20h41m22.7s	36°06.3'	120°17.3'	12	0.17	14k	3.0(2)		Coalinga Area, CA
M13	Sep 5	05h56m06.0s	36°18.5'	120°18.9'	5	0.16	17k	2.8 t		20 km N of Coalinga, CA
M13	Sep 7	02h52m19.5s	36°05.6'	120°00.8'	5	0.22	15k	3.5(6)		Coalinga Area, CA

International Seismological Centre

KEY	DATE	O-TIME(UTC)	N LAT	W LONG	DEPTH	SE	SLN	MAG	MOMENT	COMMENTS (•=FELT)
D4	Sep 10	01h53m53.4s	40°41.6'	124°39.4'	5R	0.83	9a	3.2(4)		Off Coast, 40 km SW of Eureka, CA
A5	Sep 10	03h14m07.3s	40°23.4'	127°09.1'	5R	0.45	6a	6.6(6)		•Off Coast, 260 km W of Eureka, CA Felt from San Francisco to Roseburg, Oregon.
A5	Sep 10	06h43m31.8s	40°15.8'	126°41.2'	5R	0.79	6a	4.1(8)		Off Coast, 230 km W of Eureka, CA
A4	Sep 10	06h58m41.6s	40°32.6'	127°19.0'	5R	0.93	6a	4.0(8)		Off Coast, 270 km W of Eureka, CA
A5	Sep 10	07h47m28.1s	40°24.4'	127°27.6'	5R	0.50	6a	4.5(8)		Off Coast, 300 km W of Eureka, CA
A5	Sep 10	23h52m29.0s	40°21.6'	127°14.6'	5R	0.48	6a	4.7(8)		Off Coast W of Eureka, CA
A5	Sep 11	01h31m54.0s	40°22.9'	126°47.0'	5R	0.51	6a	4.2(8)		Off Coast, 230 km W of Eureka, CA
A5	Sep 11	11h23m07.1s	40°29.3'	127°13.9'	5R	1.34	6a	4.6(8)		Off Coast W of Eureka, CA
A5	Sep 11	18h43m58.6s	40°21.1'	126°46.7'	5R	0.76	6a	4.3(8)		Off Coast W of Eureka, CA
A5	Sep 14	09h09m28.7s	40°22.2'	126°58.8'	5R	0.85	6a	4.1(8)		Off Coast, 250 km W of Eureka, CA
A5	Sep 16	21h36m25.6s	40°23.7'	127°20.0'	5R	0.57	5a	4.0(4)		Off Coast, 280 km W of Eureka, CA
B5	Sep 20	18h30m42.5s	40°22.9'	125°37.0'	5R	0.34	12a	4.8(8)	5.6E22(2)	•Off Coast, 130 km WSW of Eureka, CA (USGS) Felt (IV) at Fields Landing and (III) at Eureka. Also felt at Rio Dell.
A5	Sep 20	19h04m37.5s	40°25.6'	127°11.2'	5R	0.61	6a	4.8(8)	5.7E21(2)	Off Coast, 270 km W of Eureka, CA
E4	Sep 21	03h07m21.1s	40°44.2'	124°12.4'	11	0.38	11a	3.2(4)	2.1E21(2)	•Near Coast SW of Eureka, CA (USGS) Felt (V) at Arcata and (IV) at Eureka, Loleta and Salmon. Also felt at Bayside, Cutten, Mckinleyville, Rio Dell, Scotia and Weott.
C5	Sep 22	15h10m28.8s	40°24.3'	125°03.8'	5R	0.30	11a	3.3(4)		Off Coast SW of Eureka, CA
M13	Sep 22	18h50m42.8s	36°12.0'	120°19.4'	5R	0.29	15k	2.8(3)		Coalinga Area, CA
H8	Sep 22	18h52m03.0s	38°48.1'	122°48.4'	1R	0.63	12c	4.0(4)		•The Geysers, 25 km S of Clear Lake, CA (USGS) Felt (V) at Cobb, (IV) at Loch Lomond and Geyserville, (III) at Navarro and Cloverdale.
J12	Sep 25	02h29m57.4s	36°36.1'	121°53.1'	5R	0.38	10d	2.5(4)		•Near Monterey, CA Felt on Monterey Peninsula.
A5	Sep 26	10h13m01.8s	40°26.9'	126°49.7'	5R	0.80	6a	4.0(8)		Off Coast, 230 km W of Eureka, CA
M14	Sep 28	15h11m06.5s	35°58.0'	120°09.1'	13	0.16	11k	2.8(2)		Coalinga Area, CA
H8	Oct 4	07h53m12.5s	38°50.1'	122°46.6'	5R	0.44	12c	2.8(2)		•20 km S of Clear Lake, CA Felt Cobb.
K12	Oct 5	16h16m30.0s	36°34.4'	121°12.2'	9	0.23	15d	4.0(4)	1.8E22(4)	•Bear Valley, 40 km N of King City, CA Felt Hollister.
K12	Oct 8	06h39m20.4s	36°51.3'	121°24.0'	8	0.28	15d	3.1(4)	5.2E20(2)	Near Hollister, CA
J12	Oct 9	01h32m13.3s	36°48.8'	121°32.8'	2	0.38	14d	2.9(4)		15 km WSW of Hollister, CA
L13	Oct 20	15h05m07.0s	36°15.2'	120°52.1'	7	0.22	14d	3.0(2)		Peachtree Valley, 25 km ENE of King City, CA
08	Oct 21	14h51m33.8s	38°48.6'	119°17.8'	16	0.37	9 e	3.9(6)		•Western Nevada (USGS) Felt (IV) at Smith and Wellington, Nevada. Felt (III) at Yerrington, Nevada.
K12	Oct 22	04h06m31.4s	36°34.9'	121°14.1'	10	0.24	12d	3.6(4)	2.6E21(2)	•35 km SSE of Hollister, CA (USGS) Felt (IV) at Chualar and Soledad. Felt (III) at Gonzales.

UNIVERSITY OF CALIFORNIA SEISMOGRAPHIC STATIONS

EARTHQUAKES IN NORTHERN CALIFORNIA — 1984

International Seismological Centre

KEY	DATE	O-TIME(UTC)	N LAT	W LONG	DEPTH	SE	SLN	MAG	MOMENT	COMMENTS (*=FELT)
O6	Oct 22	11h27m42.3s	39°56.4'	119°24.8'	10R	0.67	8o	3.9(6)		*Western Nevada (USGS) Felt (III) at Nixon.
F8	Oct 23	10h08m34.7s	38°42.3'	123°30.0'	5R	0.33	12c	3.1(8)		*Along the Coast, 55 km SW of Ukiah, CA Felt Sea Ranch.
K11	Oct 23	16h23m24.9s	37°03.8'	121°29.1'	3	0.24	14d	2.5(4)		SE of Coyote lake, 25 km NNW of Hollister, CA
K5	Oct 26	05h50m24.1s	40°22.2'	121°22.2'	7	0.19	11b	2.9(2)	2.5E20(2)	70 km SSE of Burney, CA
H9	Oct 30	20h50m06.6s	38°29.7'	122°42.6'	4	0.19	13d	2.7(4)		*Near Santa Rosa, CA Felt at Santa Rosa.
H9	Oct 30	23h44m00.7s	38°30.0'	122°42.3'	5	0.21	12d	2.9(4)		*Near Santa Rosa, CA Felt at Santa Rosa.
I10	Nov 1	10h14m38.1s	37°30.4'	122°11.4'	10	0.18	11d	2.4(4)		*Menlo Park, 35 km SSE of San Francisco, CA Felt at Menlo Park.
K12	Nov 1	23h46m14.3s	36°55.1'	121°18.8'	5	0.37	14d	2.9(4)		10 km NE of Hollister, CA
C5	Nov 3	08h51m46.8s	40°24.9'	125°11.2'	5R	0.48	10a	3.5(6)		Off Coast, 100 km W of Eureka, CA
K12	Nov 4	11h20m20.7s	36°33.2'	121°10.3'	5	.	12d	3.1(4)		Bear Valley, 40 km N of King City, CA
M13	Nov 13	00h04m14.6s	36°17.7'	120°24.7'	9	0.22	17k	2.8(4)		Coalinga Sequence
E5	Nov 15	02h06m32.4s	40°17.9'	124°19.7'	5R	0.34	10a	3.6(6)	1.2E21(2)	Near Petrolia, 60 km SSW of Eureka, CA
K12	Nov 22	23h59m08.0s	36°33.8'	121°11.9'	7	0.23	13d	3.2(4)		Bear Valley, 40 km N of King City, CA
K12	Nov 23	10h00m12.9s	36°56.6'	121°18.5'	2	0.26	7d	2.5(4)		10 km NE of Hollister, CA
P11	Nov 23	18h08m25.5s	37°27.5'	118°36.3'	12	0.18	12n	6.1(8)	2.6E25(2)	*25 km NW of Bishop, CA (USGS) This event caused rock slides and knocked items from shelves in the Bishop-Mammoth Lakes area. Felt (V) in many areas of Calaveras, Fresno, Inyo, Madera, Mariposa, Mono and Tulare counties. Felt throughout a wide area of central California and Western Nevada from San Francisco to Santa Barbara to Las Vegas. This appears to be a complex event with a small foreshock followed by two strong shocks occuring within a few seconds of each other.
P11	Nov 23	18h21m08.6s	37°25.5'	118°36.6'	10R	0.33	6n	3.6(4)		NW of Bishop, CA
P11	Nov 23	18h22m52.3s	37°28.7'	118°35.7'	10R	0.52	7n	3.5(4)		NW of Bishop, CA
P11	Nov 23	19h12m35.2s	37°25.4'	118°36.5'	10	0.07	20n	5.5(8)	5.1E23(4)	*25 km NW of Bishop, CA (USGS) Felt at Bishop, Mammoth Lakes and Fresno, CA.
P11	Nov 23	19h21m29.4s	37°26.2'	118°39.0'	8	0.14	8n	3.6(5)		25 km NW of Bishop, CA
P11	Nov 23	20h08m01.0s	37°27.3'	118°36.3'	9	0.10	12n	3.5(5)		25 km NW of Bishop, CA
P11	Nov 23	20h20m38.6s	37°25.6'	118°37.7'	8R	0.09	10n	3.5(5)		25 km NW of Bishop, CA
G5	Nov 23	20h48m59.8s	40°29.9'	123°10.7'	5R	0.50	4a	3.9(8)	4.1E22(4)	100 km SE of Eureka, CA
P11	Nov 23	21h34m55.4s	37°26.2'	118°36.5'	10R	0.26	7n	3.6(5)		NW of Bishop, CA
P11	Nov 23	22h10m16.9s	37°27.8'	118°36.2'	7	0.13	13n	3.5(5)		NW of Bishop, CA
P11	Nov 23	23h43m10.9s	37°26.4'	118°37.6'	5	0.08	13n	3.8(5)		NW of Bishop, CA
P11	Nov 24	00h30m07.0s	37°25.1'	118°36.9'	10R	0.22	7n	3.6(5)		NW of Bishop, CA

International Seismological Centre

KEY	DATE	O-TIME(UTC)	N LAT	W LONG	DEPTH	SE	SLN	MAG	MOMENT	COMMENTS (*=FELT)
P11	Nov 24	00h31m21.5s	37°25.1'	118°36.9'	10R	.	0 n	3.7(3)		NW of Bishop, CA This event in coda of 00:30 event. 00:30 hypocenter used for this solution.
P11	Nov 24	02h08m15.0s	37°25.8'	118°38.0'	4	0.09	11n	3.5(5)		NW of Bishop, CA
P11	Nov 24	02h10m39.3s	37°27.8'	118°37.5'	10R	0.48	8n	3.7(5)		NW of Bishop, CA
P11	Nov 24	02h12m02.2s	37°25.6'	118°36.3'	5R	0.29	9n	3.5(3)		NW of Bishop, CA
P11	Nov 24	09h21m17.8s	37°27.9'	118°35.0'	8	0.09	19n	4.2(5)	6.3E21(2)	*25 km NW of Bishop, CA (USGS) Felt in the Bishop-Mammoth Lakes area.
P11	Nov 24	10h13m13.0s	37°26.3'	118°37.2'	5	0.07	12n	3.6(5)		NW of Bishop, CA
P11	Nov 24	12h15m32.4s	37°26.8'	118°36.8'	5	0.11	13n	3.6(5)		NW of Bishop, CA
P11	Nov 24	20h25m33.0s	37°25.0'	118°37.8'	10	0.09	18n	4.0(5)	1.1E22(1)	*NW of Bishop, CA (USGS) Felt in the Bishop-Mammoth Lakes area.
P11	Nov 24	21h10m34.3s	37°28.5'	118°35.8'	10R	0.29	10n	3.5(4)		NW of Bishop, CA
P11	Nov 25	10h37m09.9s	37°24.9'	118°36.2'	7	0.13	10n	3.2(2)		NW of Bishop, CA
P11	Nov 25	16h15m20.2s	37°26.5'	118°38.7'	6	0.07	9n	4.1(5)	6.7E21(2)	25 km NW of Bishop, CA
P11	Nov 25	16h22m31.9s	37°27.6'	118°42.1'	9R	0.25	9n	3.7(5)		35 km WNW of Bishop, CA
P11	Nov 25	22h54m58.1s	37°26.4'	118°36.0'	10R	0.18	11n	3.8(6)		NW of Bishop, CA
P11	Nov 25	23h10m09.4s	37°26.8'	118°36.7'	5	0.11	19n	4.8(6)	3.6E22(2)	*25 km NW of Bishop, CA Felt at Bishop.
P11	Nov 26	16h21m41.5s	37°26.9'	118°39.1'	9R	0.16	8n	3.9		NW of Bishop, CA
P11	Nov 26	16h21m47.2s	37°26.9'	118°39.2'	9R	.	n	5.6(8)	2.4E23(2)	*NW of Bishop, CA Hypocenter is from 16:21:41.5 foreshock. (USGS) One man injured in an avalanche triggered by the earthquake. Felt (V) at Bishop. Felt throughout much of Central California and in parts of Western Nevada.
P11	Nov 26	16h28m30.1s	37°28.7'	118°38.1'	10R	0.42	8n	3.7(5)		NW of Bishop, CA
P11	Nov 26	16h31m21.4s	37°25.3'	118°38.1'	10R	0.31	7n	4.5(5)	2.1E22(2)	25 km NW of Bishop, CA
P11	Nov 26	18h25m16.4s	37°26.6'	118°36.1'	6R	0.18	10n	3.5(5)		NW of Bishop, CA
P11	Nov 27	01h41m52.7s	37°26.9'	118°40.0'	5	0.11	18n	4.4(5)	3.1E22(2)	NW of Bishop, CA
P11	Nov 27	07h19m16.1s	37°27.5'	118°35.7'	3	0.10	12n	3.5(5)		NW of Bishop, CA
G6	Nov 27	08h29m43.7s	39°48.5'	123°20.7'	5R	0.33	7c	3.1(7)		45 km N of Willits, CA
P11	Nov 27	17h31m23.1s	37°26.6'	118°36.3'	13	0.25	14n	3.6(5)		NW of Bishop, CA
P11	Nov 28	06h44m36.1s	37°24.9'	118°35.3'	10R	0.27	9n	3.8(4)		NW of Bishop, CA
P11	Nov 28	16h23m26.0s	37°24.0'	118°35.1'	6R	0.13	10n	4.7(5)	4.4E22(2)	*20 km WNW of Bishop, CA (USGS) Felt at Bishop.
P11	Nov 28	16h57m37.9s	37°27.8'	118°34.9'	5	0.08	7n	4.6(5)	4.9E22(2)	25 km NW of Bishop, CA
P11	Nov 29	10h42m28.3s	37°25.5'	118°37.4'	10	0.08	14n	3.6(4)		NW of Bishop, CA
P11	Nov 29	10h45m40.7s	37°25.6'	118°37.7'	10	0.13	14n	3.5(3)		NW of Bishop, CA
A5	Nov 30	01h53m39.9s	40°19.7'	127°09.3'	5R	0.44	6a	4.2(3)		Off Coast 260 km W of Eureka, CA
P11	Dec 1	04h55m54.4s	37°27.4'	118°41.5'	6R	0.31	7n	3.9(6)		35 km WNW of Bishop, CA

EARTHQUAKES IN NORTHERN CALIFORNIA ... 1984

International Seismological Centre

KEY	DATE	O-TIME(UTC)	N LAT	W LONG	DEPTH	SE	SLN	MAG	MOMENT	COMMENTS (•=FELT)
P11	Dec 1	20h14m27.5s	37°24.8'	118°37.1'	5	0.14	7n	3.8(5)		NW of Bishop, CA
P11	Dec 5	06h09m34.0s	37°22.9'	118°34.8'	10R	0.17	7n	3.7(6)		20 km NW of Bishop, CA
I10	Dec 5	10h30m09.9s	37°43.7'	122°07.7'	5R	0.28	7d	2.5(4)	5.3E20(2)	San Leandro, 20 km SE of Berkeley, CA
E5	Dec 14	09h23m57.0s	40°21.4'	124°22.2'	5R	0.49	4a	3.1(4)		30 km SSW of Ferndale, CA
P11	Dec 17	21h17m23.8s	37°25.2'	118°35.8'	7R	0.23	6n	3.8(5)		25 km WNW of Bishop, CA
H8	Dec 19	02h40m04.1s	38°45.3'	122°35.2'	5	0.43	8c	3.0(2)		SE of Clear Lake, CA
P11	Dec 20	08h03m06.2s	37°25.7'	118°35.4'	6R	0.27	6n	3.5(5)		25 km WNW of Bishop, CA
K12	Dec 21	12h39m04.8s	36°31.2'	121°07.4'	5R	0.47	7d	3.0(4)		Bear Valley, 35 km N of King City
E5	Dec 22	02h09m23.5s	40°28.0'	124°13.1'	5	0.44	6a	3.5(2)	7.5E20(2)	Near Ferndale, CA
K12	Dec 23	04h45m20.9s	36°35.7'	121°12.7'	8	0.32	8d	3.0(4)		Bear Valley, 35 km SE of Hollister, CA
P10	Dec 24	19h22m29.5s	37°39.7'	118°58.7'	5	0.46	5m	3.8(6)		•Mammoth Lakes Area, CA (USGS) Felt (III) at Mammoth Lakes.
H9	Dec 28	11h09m51.3s	38°28.8'	122°43.2'	5R	0.12	5d	2.6(4)		Near Santa Rosa, CA
L13	Dec 29	06h49m36.4s	36°15.0'	120°30.1'	5R	0.30	6k	2.6 •		Near Coalinga, CA
H8	Dec 29	16h21m13.1s	38°50.2'	122°47.9'	3	0.33	11c	3.0(2)		The Geysers, 25 km S of Clear Lake, CA
F4	Dec 29	21h42m25.9s	40°58.3'	123°33.0'	5R	0.75	11o	3.1(4)	8.0E20(2)	60 km ENE of Eureka, CA

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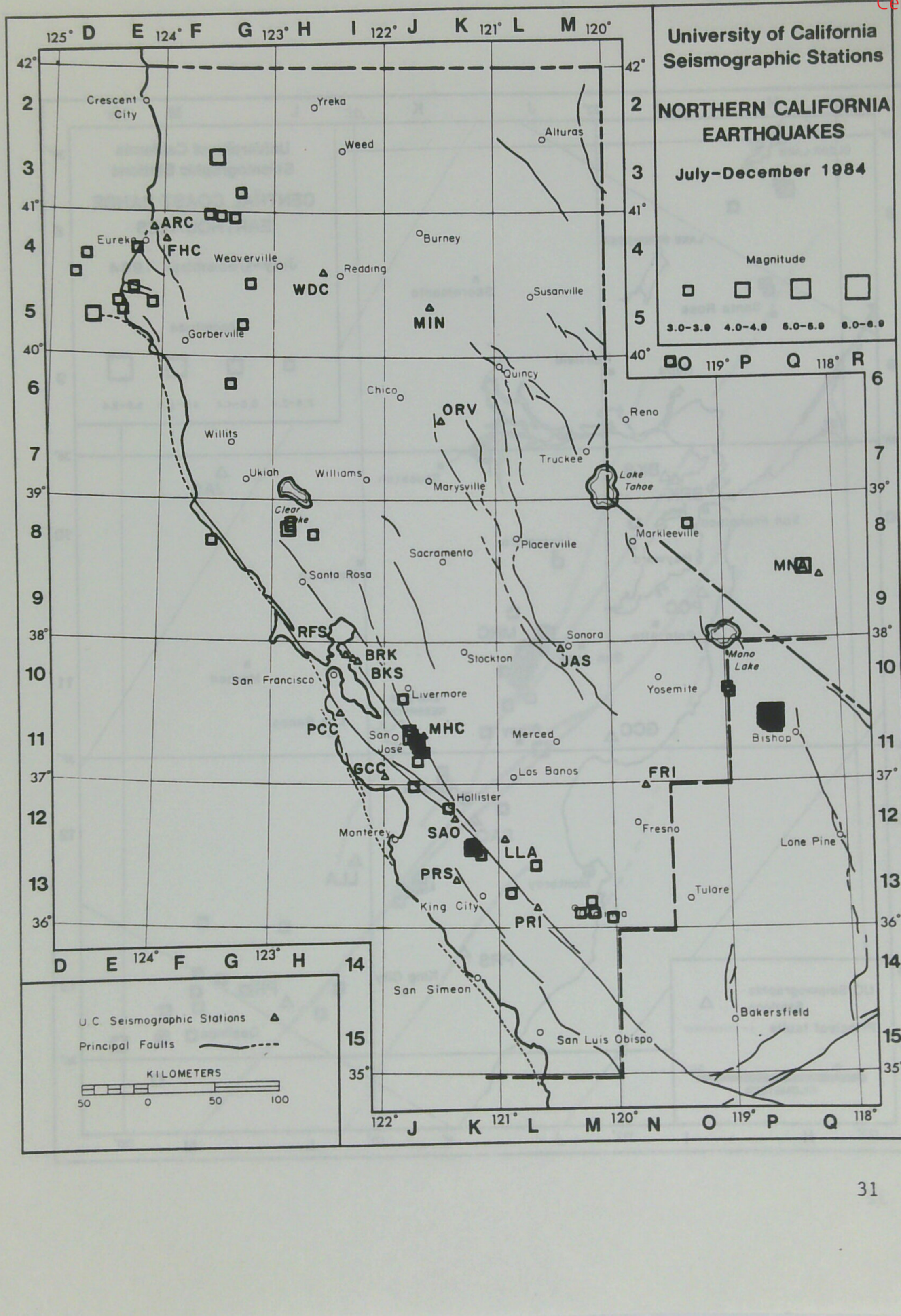
KEY	DATE	TIME	MAG
A4	Sep 10	06:58	4.0
A5	Sep 10	03:14	6.6
	Sep 10	06:43	4.1
	Sep 10	07:47	4.5
	Sep 10	23:52	4.7
	Sep 11	01:31	4.2
	Sep 11	11:23	4.6
	Sep 11	18:43	4.3
	Sep 14	09:09	4.1
	Sep 16	21:36	4.0
	Sep 20	19:04	4.8
	Sep 26	10:13	4.0
	Nov 30	01:53	4.2
B5	Sep 20	18:30	4.8
C4	Aug 4	01:38	3.5
C5	Aug 4	03:00	4.0
	Sep 22	15:10	3.3
	Nov 3	08:51	3.5
D4	Jul 28	06:30	3.3
	Sep 10	01:53	3.2
D5	Aug 4	21:45	4.7
E4	Sep 21	03:07	3.2
E5	Aug 3	17:42	3.1
	Nov 15	02:06	3.6
	Dec 14	09:23	3.1
	Dec 22	02:09	3.5
F4	Dec 29	21:42	3.1
F8	Oct 23	10:08	3.1
G3	Jul 18	19:47	4.0
	Aug 25	13:00	3.8
G4	Aug 14	21:05	3.2
	Aug 16	12:55	3.1
G5	Jul 2	03:44	3.2
	Nov 23	20:48	3.9
G6	Nov 27	08:29	3.1
H8	Jul 30	22:21	3.0
	Sep 22	18:52	4.0
	Oct 4	07:53	2.8
	Dec 19	02:40	3.0
	Dec 29	16:21	3.0
H9	Oct 30	20:50	2.7
	Oct 30	23:44	2.9
	Dec 28	11:09	2.6
I10	Nov 1	10:14	2.4
	Dec 5	10:30	2.5
J10	Jul 13	12:08	3.3
J11	Aug 14	05:55	2.8
J12	Aug 6	00:06	3.8
	Sep 25	02:29	2.5
	Oct 9	01:32	2.9
K11	Oct 23	16:23	2.5
K12	Oct 5	16:16	4.0
	Oct 8	06:39	3.1
	Oct 22	04:06	3.6
	Nov 1	23:46	2.9
	Nov 4	11:20	3.1
	Nov 22	23:59	3.2
	Nov 23	10:00	2.5
	Dec 21	12:39	3.0
	Dec 23	04:45	3.0
K5	Oct 26	05:50	2.9
L13	Jul 11	03:31	3.2
	Aug 7	08:17	2.5
	Oct 20	15:05	3.0
	Dec 29	06:49	2.6
M13	Aug 2	03:55	2.6
	Aug 16	01:30	3.2
	Aug 16	11:24	3.1
	Aug 23	09:35	2.9
	Aug 30	20:20	2.6
	Aug 30	20:41	3.0
	Sep 5	05:56	2.8
	Sep 7	02:52	3.5
	Sep 22	18:50	2.8
	Nov 13	00:04	2.8
M14	Sep 28	15:11	2.8
O6	Oct 22	11:27	3.9
O8	Oct 21	14:51	3.9
P10	Jul 16	10:14	3.7
	Dec 24	19:22	3.8
P11	Aug 20	16:26	3.5
	Nov 23	18:08	6.1
	Nov 23	18:21	3.6
	Nov 23	18:22	3.5
	Nov 23	19:12	5.5
	Nov 23	19:21	3.6
	Nov 23	20:08	3.5
	Nov 23	20:20	3.5
	Nov 23	21:34	3.6
	Nov 23	22:10	3.5
	Nov 23	23:43	3.8
	Nov 24	00:30	3.6
	Nov 24	00:31	3.7
	Nov 24	02:08	3.5
	Nov 24	02:10	3.7
	Nov 24	02:12	3.5
	Nov 24	09:21	4.2
	Nov 24	10:13	3.6
	Nov 24	12:15	3.6
	Nov 24	20:25	4.0
	Nov 24	21:10	3.5
	Nov 25	10:37	3.2
	Nov 25	16:15	4.1
	Nov 25	16:22	3.7
	Nov 25	22:54	3.8
	Nov 25	23:10	4.8
	Nov 26	16:21	3.9
	Nov 26	16:21	5.6
	Nov 26	16:28	3.7
	Nov 26	16:31	4.5
	Nov 26	18:25	3.5
	Nov 27	01:41	4.4
	Nov 27	07:19	3.5
	Nov 27	17:31	3.6
	Nov 28	06:44	3.8
	Nov 28	16:23	4.7
	Nov 28	16:57	4.6
	Nov 29	10:42	3.6
	Nov 29	10:45	3.5
	Dec 1	04:55	3.9
	Dec 1	20:14	3.8
	Dec 5	06:09	3.7
	Dec 17	21:17	3.8
	Dec 20	08:03	3.5
Q9	Aug 19	02:22	4.1

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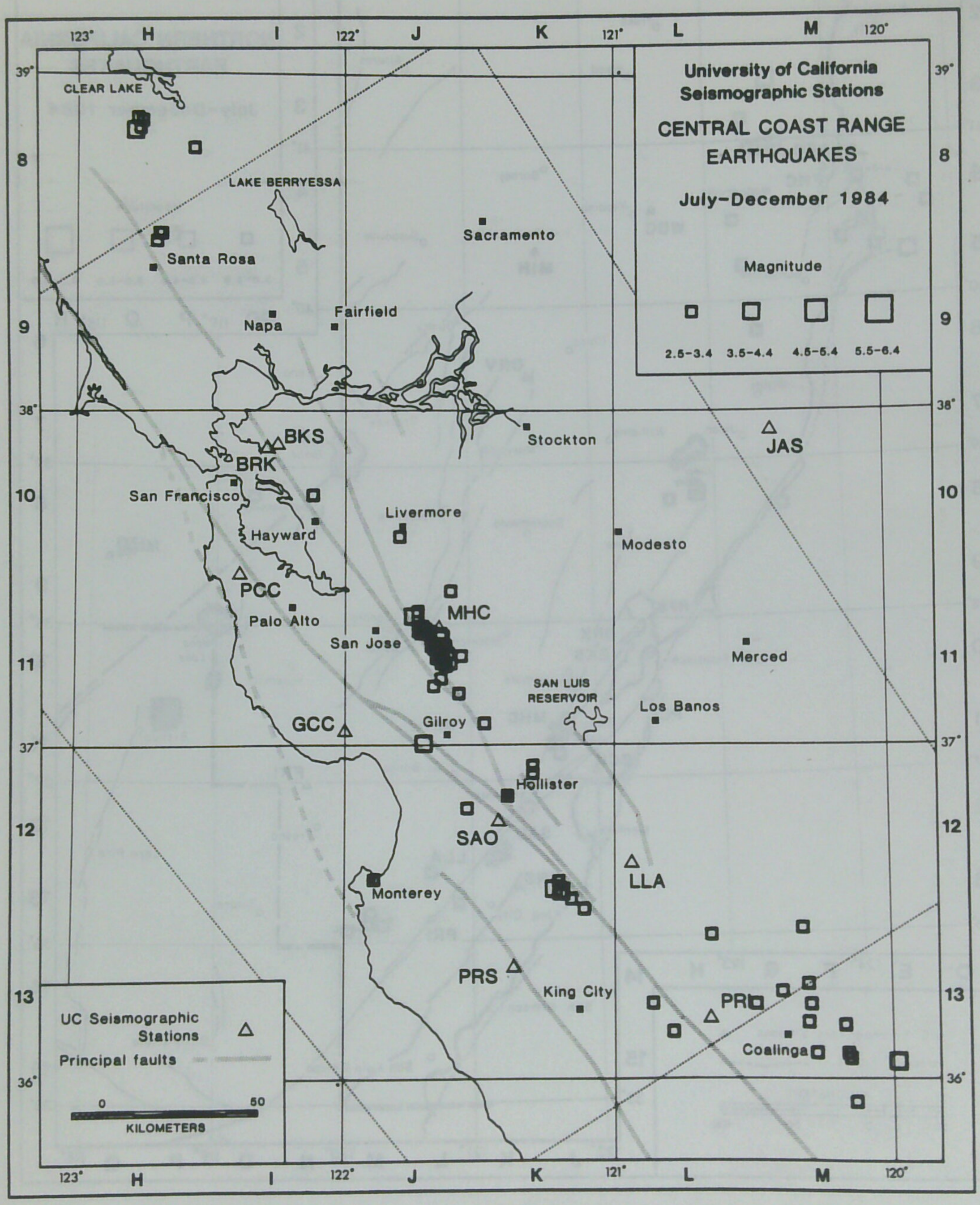
University of California Seismographic Stations

NORTHERN CALIFORNIA EARTHQUAKES

July–December 1984



International Seismological Centre



UNIVERSITY OF CALIFORNIA SEISMOGRAPHIC STATIONS

OBSERVED EXPLOSIONS AT THE NEVADA TEST SITE ▪▪▪▪ 1984

International Seismological Centre

DATE	O-TIME(UTC)	N LAT	W LONG	MAG	COMMENTS
Jan 31	15h30m00.0s	37.113°	116.122°	4.3(6)	Underground Nuclear Explosion, NTS (Gorbea)
Feb 15	17h00m00.1s	37.221°	116.181°	4.7(6)	Underground Nuclear Explosion, NTS (Milagro)
Mar 1	17h45m00.1s	37.066°	116.046°	5.5(8)	Underground Nuclear Explosion, NTS (Tortugas)
Mar 31	14h30m00.1s	37.146°	116.084°	4.2(5)	Underground Nuclear Explosion, NTS (Agrini)
May 1	19h05m00.0s	37.106°	116.022°	5.4(7)	Underground Nuclear Explosion, NTS (Mundo)
May 16	15h59m59.3s	37.091°	115.994°	3.9(2)	Underground Nuclear Explosion, NTS
May 31	13h04m00.1s	37.103°	116.048°	5.6(8)	Underground Nuclear Explosion, NTS (Caprock)
Jun 20	15h15m00.1s	37.000°	116.043°	4.8(4)	Underground Nuclear Explosion, NTS (Duoro)
Jul 12	13h59m59.9s	37.186°	116.012°	4.1(4)	Underground Nuclear Explosion, NTS
Jul 25	15h30m00.0s	37.268°	116.411°	5.3(8)	Underground Nuclear Explosion, NTS (Kappeli)
Aug 2	15h00m00.0s	37.017°	116.008°	4.5(5)	Underground Nuclear Explosion, NTS (Correo)
Aug 30	14h45m00.1s	37.090°	115.998°	4.5(6)	Underground Nuclear Explosion, NTS (Dolcetto)
Sep 13	14h00m00.0s	37.087°	116.071°	4.9(8)	Underground Nuclear Explosion, NTS (Breton)
Oct 2	18h13m59.3s	37.076°	115.989°	4.3(4)	Underground Nuclear Explosion, NTS
Nov 10	16h40m00.0s	37.000°	116.017°	4.5(6)	Underground Nuclear Explosion, NTS (Villita)
Dec 9	19h40m00.0s	37.270°	116.498°	5.3(7)	Underground Nuclear Explosion, NTS (Egmont)
Dec 15	14h45m00.0s	37.281°	116.305°	5.3(7)	Underground Nuclear Explosion, NTS (Tierra)

International Seismological Centre

KEY	DATE	O-TIME(UTC)	N LAT	W LONG	DEPTH	SE	SLN	MAG	MOMENT	COMMENTS (•=FELT)
J11	Apr 24	21h15m19.0s	37°19.2'	121°41.9'	8	0.03	8h	6.2(6)	1.1E25(2)	•Halls Valley Mainshock, 15 km E of San Jose (USGS) Max Intensity (VII) in the Morgan Hill area. Twenty-one people sustained minor injuries in the Morgan Hill-San Jose area. Damage from the earthquake estimated at $7.5 million with the most damage occurring in the Jackson Oaks subdivision east of Morgan Hill. The earthquake was felt from Bakersfield to Sacramento, and from San Francisco to Reno, Nevada.
J11	Apr 24	21h23m40.2s	37°18.5'	121°40.0'	7	0.36	8h	3.4(2)		Halls Valley Sequence
J11	Apr 24	21h24m43.2s	37°16.7'	121°40.4'	9	0.10	8h	3.3(2)	8.0E20(2)	Halls Valley Sequence
J11	Apr 24	21h25m23.0s	37°18.0'	121°41.0'	0R	.	1h	3.1(4)	1.0E21(2)	Halls Valley Sequence
J11	Apr 24	21h41m46.5s	37°15.8'	121°38.6'	6	0.12	7h	2.6(2)	6.1E19(2)	Halls Valley Sequence
J11	Apr 24	22h04m11.5s	37°17.5'	121°39.8'	7	0.23	8h	2.6(2)	5.5E19(2)	Halls Valley Sequence
J11	Apr 24	22h13m58.2s	37°13.4'	121°36.6'	10	0.03	8h	3.5(6)	4.8E21(4)	Halls Valley Sequence
J11	Apr 24	22h20m31.4s	37°16.1'	121°40.1'	5	0.07	8h	2.5(4)	1.3E20(2)	Halls Valley Sequence
J11	Apr 24	22h27m38.6s	37°15.8'	121°39.9'	5	0.06	8h	2.5(4)	3.7E20(2)	Halls Valley Sequence
J11	Apr 24	23h35m26.9s	37°19.4'	121°42.4'	6	0.12	8h	3.1(4)	1.9E20(2)	Halls Valley Sequence
J11	Apr 25	04h09m19.0s	37°15.2'	121°39.0'	4	0.09	8h	2.6(4)	5.8E19(2)	Halls Valley Sequence
J11	Apr 25	04h16m53.6s	37°18.3'	121°41.3'	6	0.16	8h	3.1(4)	2.4E20(2)	Halls Valley Sequence
J11	Apr 25	05h18m47.5s	37°16.5'	121°40.3'	8	0.10	8h	2.5(2)	4.8E19(2)	Halls Valley Sequence
J11	Apr 25	20h26m57.5s	37°16.3'	121°40.0'	6	0.11	8h	2.7(4)	7.4E19(2)	Halls Valley Sequence
J11	Apr 26	00h42m26.6s	37°08.4'	121°34.8'	5	0.07	8h	3.6(6)	4.0E21(4)	•Halls Valley Sequence Felt at Morgan Hill.
J11	Apr 26	00h50m01.3s	37°14.7'	121°38.9'	6	0.12	8h	3.0(5)	2.7E20(2)	Halls Valley Sequence
J11	Apr 26	06h29m51.9s	37°08.3'	121°34.2'	5	0.11	8h	3.7(6)	8.1E21(4)	•Halls Valley Sequence (USGS) Felt (IV) at Gilroy and Saratoga.
J11	Apr 26	06h59m19.2s	37°16.8'	121°41.1'	5	0.10	8h	2.8(4)	9.5E19(2)	Halls Valley Sequence
J11	Apr 26	07h52m03.0s	37°15.7'	121°39.9'	4	0.05	8h	3.0(4)	8.4E20(4)	Halls Valley Sequence
J11	Apr 26	15h35m24.9s	37°16.2'	121°39.6'	7	0.14	7h	2.8(4)	7.7E19(2)	Halls Valley Sequence
J11	Apr 26	20h59m20.9s	37°15.9'	121°41.8'	9	0.42	8h	2.6(4)	1.7E19(2)	Halls Valley Sequence
J11	Apr 27	03h12m55.7s	37°15.1'	121°40.0'	5R	0.40	8h	2.5(4)	3.2E19(2)	Halls Valley Sequence
J11	Apr 27	04h10m23.9s	37°07.3'	121°32.7'	8	0.07	8h	3.5(5)	3.1E21(4)	•Halls Valley Sequence
J11	Apr 27	13h19m05.9s	37°07.1'	121°32.4'	7	0.06	8h	3.0(4)	9.4E19(2)	Halls Valley Sequence
J11	Apr 27	16h48m34.1s	37°16.6'	121°40.2'	10	0.10	8h	3.4(3)	1.1E21(2)	•Halls Valley Sequence
J11	Apr 28	07h18m17.7s	37°06.4'	121°35.1'	5	0.07	8h	2.9(4)	2.9E20(2)	Halls Valley Sequence
J11	Apr 29	23h58m20.2s	37°08.5'	121°34.3'	5	0.08	8h	2.9(4)	4.2E20(2)	Halls Valley Sequence
J11	May 1	02h20m03.1s	37°15.7'	121°39.9'	7	0.10	8h	2.6(4)	7.5E19(2)	Halls Valley Sequence
J11	May 1	04h00m09.7s	37°15.7'	121°39.7'	7	0.13	8h	2.8(4)	1.3E20(2)	Halls Valley Sequence

International Seismological Centre

KEY	DATE	O-TIME(UTC)	N LAT	W LONG	DEPTH	SE	SLN	MAG	MOMENT	COMMENTS (•=FELT)
J11	May 1	15h18m45.2s	37°17.3'	121°38.3'	4	0.03	7h	3.2(3)	4.7E20(3)	•Halls Valley Sequence
J11	May 1	23h23m10.0s	37°13.7'	121°38.3'	6	0.09	8h	3.1(3)	4.7E20(1)	Halls Valley Sequence
J11	May 2	04h44m22.5s	37°17.0'	121°40.8'	9	0.10	8h	3.0(4)	1.6E20(2)	Halls Valley Sequence
J11	May 3	04h01m48.3s	37°16.2'	121°40.2'	6	0.08	8h	2.6(4)	4.1E19(2)	Halls Valley Sequence
J11	May 3	13h02m51.7s	37°17.0'	121°40.6'	9	0.10	8h	3.2(4)	2.1E20(2)	Halls Valley Sequence
J11	May 3	13h07m11.9s	37°17.2'	121°40.2'	10	0.04	8h	4.2(3)	4.1E22(3)	•Halls Valley Sequence (USGS) Felt (IV) at Morgan Hill and (III) at Campbell, Hayward and San Jose.
J11	May 4	18h42m58.4s	37°17.5'	121°41.1'	6	0.10	8h	3.4(4)	1.1E21(4)	•Halls Valley Sequence Felt at Morgan Hill.
J11	May 5	03h31m55.2s	37°17.4'	121°41.0'	4	0.17	8h	2.5(4)	6.0E19(2)	Halls Valley Sequence
J11	May 5	05h50m14.2s	37°06.3'	121°34.9'	5	0.30	8h	3.0(4)	3.5E20(2)	•Halls Valley Sequence Felt at Morgan Hill.
J11	May 6	11h29m08.7s	37°19.6'	121°42.8'	6	0.11	8h	2.9(4)	1.1E20(2)	Halls Valley Sequence
J11	May 7	14h27m20.7s	37°17.5'	121°41.1'	6	0.07	8h	3.1(4)	2.3E20(2)	Halls Valley Sequence
J11	May 10	11h30m54.7s	37°18.9'	121°38.5'	6	0.20	8h	2.8(4)	1.1E20(2)	Halls Valley Sequence
J11	May 11	04h31m29.7s	37°09.3'	121°34.4'	6	0.30	8h	2.7(4)	1.7E20(2)	Halls Valley Sequence
J11	May 11	23h26m06.3s	37°16.9'	121°41.1'	6	0.07	8h	2.7(4)	6.6E19(2)	Halls Valley Sequence
J11	May 12	21h48m35.6s	37°19.5'	121°37.0'	3	0.25	8h	2.5(4)	1.4E19(2)	Halls Valley Sequence
J11	May 15	22h52m28.5s	37°19.7'	121°42.5'	5R	0.36	8h	2.6(4)	2.0E20(2)	Halls Valley Sequence
J11	May 17	08h43m03.6s	37°17.9'	121°41.3'	6	0.07	8h	3.5(6)	3.0E21(4)	•Halls Valley Sequence Felt at Morgan Hill.
J11	May 17	14h14m02.5s	37°20.2'	121°43.6'	5R	0.30	8h	2.6(4)	2.4E20(2)	Halls Valley Sequence
J11	May 18	14h17m14.9s	37°15.7'	121°39.8'	7	0.18	8h	3.0(4)	1.3E20(2)	Halls Valley Sequence
J11	May 18	19h30m24.4s	37°16.7'	121°38.4'	5	0.17	8h	2.6(4)	2.8E19(2)	Halls Valley Sequence
J11	May 19	16h49m50.9s	37°20.6'	121°43.6'	6	0.12	9h	3.2(6)	3.9E20(2)	Halls Valley Sequence Felt in the Morgan Hill area.
J11	May 22	02h54m14.7s	37°15.8'	121°39.8'	6	0.15	8h	2.8(4)	1.5E20(2)	Halls Valley Sequence
J11	May 29	02h54m14.7s	37°15.8'	121°39.8'	6	0.15	8h	2.4(4)	5.8E19(2)	Halls Valley Sequence
J11	May 30	03h28m15.6s	37°15.9'	121°39.9'	7	0.09	8h	3.4(4)	1.4E21(4)	•Halls Valley Sequence Felt at Morgan Hill and San Jose.
J11	May 30	12h38m11.2s	37°17.9'	121°41.2'	6	0.08	8h	3.2(4)	8.0E20(4)	Halls Valley Sequence
J11	Jun 2	17h32m06.8s	37°18.0'	121°41.4'	6	0.12	7h	3.2(4)	3.7E20(2)	Halls Valley Sequence
J11	Jun 3	00h23m55.8s	37°16.1'	121°40.3'	6	0.09	7h	2.9(6)	1.7E20(2)	Halls Valley Sequence
J11	Jun 4	00h02m14.7s	37°17.4'	121°40.8'	7	0.13	7h	3.0(4)	1.6E20(2)	Halls Valley Sequence
J11	Jun 5	16h56m20.8s	37°16.1'	121°36.6'	6	0.10	8h	4.2(6)	2.8E22(2)	•Halls Valley Sequence Felt at Morgan Hill and San Jose.
J11	Jun 9	17h48m28.7s	37°17.2'	121°40.9'	6	0.07	8h	3.0(4)	1.3E20(2)	Halls Valley Sequence
J11	Jun 10	17h10m38.7s	37°13.7'	121°38.2'	5	0.13	7h	2.7(4)	1.3E20(2)	Halls Valley Sequence

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KEY	DATE	O-TIME(UTC)	N LAT	W LONG	DEPTH	SE	SLN	MAG	MOMENT	COMMENTS (•=FELT)
J11	Jun 15	15h50m19.8s	37°19.2'	121°41.7'	7	0.31	8h	2.9(4)	2.0E20(2)	Halls Valley Sequence
J11	Jun 16	03h50m27.4s	37°17.3'	121°41.1'	5	0.05	8h	3.4(4)	1.6E21(4)	Halls Valley Sequence
J11	Jun 16	17h29m50.6s	37°21.7'	121°44.9'	6	0.14	8h	2.6(4)	2.3E19(2)	Halls Valley Sequence
J11	Jun 23	10h16m26.5s	37°07.4'	121°33.1'	7	0.07	8h	2.6(4)	8.0E19(2)	Halls Valley Sequence
J11	Jun 27	23h16m23.6s	37°15.4'	121°39.8'	5	0.08	7h	2.7(4)	1.6E20(2)	Halls Valley Sequence
J11	Jun 30	22h52m27.9s	37°16.2'	121°39.5'	7	0.10	7h	2.7(4)	1.4E20(2)	Halls Valley Sequence
J11	Jul 7	00h17m10.0s	37°17.6'	121°40.5'	3	0.24	8h	3.0(4)	1.7E20(2)	Halls Valley Sequence
J11	Jul 7	07h25m05.2s	37°09.9'	121°40.9'	6	0.11	8h	3.1(5)	1.3E21(2)	Halls Valley Sequence
J11	Jul 7	13h13m37.6s	37°21.6'	121°44.6'	5	0.12	8h	2.4(4)	2.7E19(2)	Halls Valley Sequence
J11	Jul 7	13h13m53.8s	37°21.8'	121°44.6'	4	0.10	7 h	2.8(4)	9.7E19(2)	Halls Valley Sequence
J11	Jul 7	18h02m11.6s	37°11.2'	121°38.9'	5	0.11	8 h	2.8(4)	1.3E20(2)	Halls Valley Sequence
J11	Jul 8	06h56m30.2s	37°14.5'	121°36.5'	1	0.11	10d	3.1(4)	3.7E20(2)	Halls Valley Sequence
J11	Jul 8	12h21m44.5s	37°23.2'	121°44.5'	6	0.16	10d	3.1(4)	5.9E20(2)	Halls Valley Sequence
J11	Jul 8	22h06m32.0s	37°15.9'	121°34.8'	1	0.24	8h	2.8(4)	1.2E20(2)	Halls Valley Sequence
J11	Jul 10	23h01m15.8s	37°15.6'	121°39.7'	5	0.06	7 h	2.9(4)	1.5E20(2)	Halls Valley Sequence
J11	Jul 16	18h50m30.2s	37°15.3'	121°39.4'	6	0.11	7 h	2.9(4)	1.2E20(2)	Halls Valley Sequence
J11	Jul 29	20h59m02.9s	37°15.6'	121°39.5'	6	0.02	6h	3.2(4)	3.1E20(2)	Halls Valley Sequence
J11	Jul 29	21h05m18.2s	37°16.0'	121°39.7'	7	0.02	6h	3.5(4)	8.7E20(2)	Halls Valley Sequence
J11	Jul 30	04h31m01.7s	37°16.7'	121°40.2'	7	0.25	7h	2.9(4)	1.4E20(2)	Halls Valley Sequence
J11	Jul 31	19h43m47.9s	37°15.5'	121°40.4'	5R	0.08	8h	3.2(4)	5.8E20(2)	Halls Valley Sequence
J11	Jul 31	20h59m16.1s	37°22.6'	121°45.9'	6	0.11	8h	3.5(5)	5.5E20(2)	•Halls Valley Sequence (USGS) Felt (IV) at Fremont. Felt (III) at San Jose.
J11	Aug 1	02h38m25.9s	37°15.5'	121°39.7'	5	0.23	8h	2.6(4)	4.9E19(2)	Halls Valley Sequence
J11	Aug 9	13h18m49.3s	37°18.1'	121°39.7'	9R	0.20	11d	3.0(4)	3.8E19(2)	Halls Valley Sequence
J11	Aug 13	09h51m36.1s	37°17.1'	121°40.4'	9	0.10	8h	3.7(4)	6.0E21(4)	•Halls Valley Sequence (USGS) Felt (IV) at Los Gatos and (III) at Fenton, Satatoga and San Jose. Also felt in the Morgan Hill area.
J11	Aug 15	00h26m40.5s	37°20.0'	121°41.5'	6	0.18	8d	3.0(4)	1.2E20(2)	•Halls Valley Sequence Felt at San Jose.
J11	Aug 16	20h45m34.6s	37°15.8'	121°39.8'	6	0.02	8h	3.6(6)	3.8E21(4)	•Halls Valley Sequence Felt at San Jose and Coyote Lake. (USGS) Felt at New Almaden and in the Morgan Hill area.
J11	Aug 18	12h17m33.3s	37°14.8'	121°38.8'	6	0.10	8h	2.9(4)	4.0E20(2)	Halls Valley Sequence
J11	Aug 21	20h01m35.6s	37°13.8'	121°37.8'	10R	0.12	8h	2.9(4)	9.3E19(2)	Halls Valley Sequence
J11	Aug 24	01h05m54.3s	37°15.6'	121°39.3'	6R	0.05	8h	3.6(5)	3.4E22(4)	Halls Valley Sequence
J11	Aug 31	02h48m34.8s	37°15.2'	121°39.6'	4	0.06	8h	2.6(4)	5.6E19(2)	Halls Valley Sequence
J11	Sep 1	04h48m07.2s	37°15.8'	121°39.6'	6	0.05	7h	2.8(4)	7.4E19(2)	Halls Valley Sequence

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KEY	DATE	O-TIME(UTC)	N LAT	W LONG	DEPTH	SE	SLN	MAG	MOMENT	COMMENTS (•=FELT)
J11	Sep 3	12h44m17.1s	37°16.4'	121°37.0'	7	0.19	8h	2.6(4)	4.6E19(2)	Halls Valley Sequence
J11	Sep 4	17h02m02.8s	37°15.6'	121°39.5'	7	0.04	8h	3.4(4)	1.6E21(4)	Halls Valley Sequence
J11	Sep 6	14h05m25.9s	37°17.3'	121°41.1'	8	0.09	8h	2.7(4)	4.4E19(2)	Halls Valley Sequence
J11	Sep 6	19h52m08.4s	37°09.2'	121°35.0'	4	0.16	8h	2.7(4)	1.5E20(2)	Halls Valley Sequence
J11	Sep 26	20h46m06.3s	37°20.4'	121°44.0'	6	0.05	8h	4.4(4)	1.1E23(2)	•Halls Valley Sequence (USGS) Felt (V) at Santa Clara and (III) at San Jose, Boulder Creek Canyon, Fremont, Milpitas, Mount Hamilton, Mountain View, Redwood Estates, San Carlos, and New Almaden. Felt throughout the San Francisco Bay area.
J11	Oct 20	22h01m54.4s	37°19.8'	121°39.1'	7	0.31	8h	2.7(4)	3.4E18(2)	Halls Valley Sequence
J11	Oct 26	00h19m09.4s	37°20.9'	121°44.3'	6	0.10	7h	2.6(4)	1.6E20(2)	Halls Valley Sequence
J11	Oct 27	19h46m38.4s	37°17.6'	121°38.1'	5	0.10	7h	2.9(4)	8.4E19(2)	Halls Valley Sequence
J11	Oct 31	03h05m12.0s	37°17.6'	121°41.1'	5	0.08	7h	3.2(4)	1.9E20(2)	•Halls Valley Sequence Felt at San Jose.
J11	Oct 31	14h12m27.1s	37°18.3'	121°38.9'	8	0.13	8h	3.6(6)	3.1E20(2)	•Halls Valley Sequence Felt at San Jose.
J11	Nov 2	10h24m47.0s	37°16.1'	121°39.9'	5R	0.07	8h	2.9(4)	1.2E20(2)	Halls Valley Sequence
J11	Nov 3	09h11m11.3s	37°16.0'	121°39.8'	6	0.05	8h	3.3(6)	1.4E21(4)	Halls Valley Sequence
J11	Nov 3	09h34m50.0s	37°16.1'	121°39.1'	5R	0.14	8h	3.1(4)	5.5E20(4)	Halls Valley Sequence
J11	Nov 6	00h00m13.9s	37°17.1'	121°41.0'	6	0.11	8h	2.8(3)	9.6E19(1)	Halls Valley Sequence
J11	Nov 10	09h54m09.7s	37°14.1'	121°38.8'	5	0.09	8h	3.0(4)	2.7E20(2)	•Halls Valley Sequence Felt at San Jose.
J11	Nov 15	09h16m31.7s	37°17.3'	121°41.2'	8	0.10	8h	2.6(4)	4.9E19(2)	Halls Valley Sequence
J11	Nov 28	11h54m38.1s	37°17.6'	121°40.9'	6	0.10	8h	3.2(4)	1.9E20(2)	Halls Valley Sequence
J11	Dec 2	11h10m56.3s	37°17.8'	121°40.4'	7R	0.08	8h	3.3(4)	3.1E20(2)	Halls Valley Sequence
J11	Dec 28	07h19m42.4s	37°19.6'	121°43.1'	6R	0.09	8h	3.8(4)	1.6E22(2)	•Halls Valley Sequence Felt in San Jose.
J11	Dec 28	07h35m30.7s	37°20.2'	121°43.2'	5	0.13	8h	2.5(4)	2.3E19(2)	Halls Valley Sequence

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PART II. REGISTRATION OF EARTHQUAKES

This section tabulates measured arrival times of prominant phases of earthquakes and large explosions recorded at stations in the seismographic network operated by the University of California (Berkeley). Information regarding these stations and instrumentation will be found in the introductory section of this Bulletin. Berkeley source parameters from part I (indicated by BRK) are repeated for all earthquakes in Northern California and adjoining areas. For earthquakes in the list that are located outside of Northern and Central California, location information from the California Institute of Technology (CIT) for Southern California earthquakes and the National Earthquake Information Service (USGS) for teleseisms are given as a guide when appropriate.

Phase arrival times are Coordinated Universal 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.

The maximum amplitude of earth displacement in micrometers 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 the 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 20 seconds, according to the formula

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

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. The number of observations used to determine magnitude is given in parenthesis immediately following the magnitude value.

The seismic moment (M_o) is given for local and regional earthquakes as described in Part I.

Distances are given in degrees from the Berkeley station, BKS. 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. Requests for additional data or for copies of seismograms should be addressed to the Director.

DATE	STA	PHASE	TIME (UTC)
Jan 1	FHC	eP	09 14 41.9
	WDC	iPc	09 14 46.8
		i	09 16 32
		i	09 17 43
		e	09 24 02
		eRPKP	10 01 51
	MIN	eP	09 14 50.2
	ORV	iPc	09 14 52.2
	BKS	eP	09 14 55.1
		i	09 14 56
		i	09 14 59
		ePcP	09 15 02
		epP	09 16 30
		epPcP	09 16 41
		e	09 17 11
		ePP	09 18 02
		e	09 18 17
		e	09 18 25
		e	09 19 03
		ePPP	09 19 48
		eS	09 24 20
		e	09 25 57
		esS	09 26 57
		e	09 27 46
		eSS	09 29 42
		esSS	09 31 50
		e	09 32 36
		e	09 35 06
		eLg	09 35 53
		eLr	09 40 00
		ePKPPKP	09 42 03
			AMP(μa) PER(s)
		PZ	1.5 0.9
	MHC	eP	09 14 59.8
	JAS	iPc	09 15 02.0
		i	09 16 44
		i	09 18 07
		e	09 24 32
		e	09 42 01
		eRPKP	10 01 55
	SAO	e	09 15 05
	PRI	eP	09 15 06.4
	FRI	e	09 15 07
	MNA	eP	09 15 07.2
		e	09 24 47
		e	10 02 02

BRK mb=6.8 h=366km Distance=80°
USGS 09h03m38.8s 33.7N 136.9W
h=368km mb=6.5
Near South Coast of Honshu, Japan

Jan 1	MHC	iPd	18 45 12.8
		i	18 45 17.5
	SAO	iPd	18 45 13.1
	GCC	iPc	18 45 14.6
		eS	18 45 20.6
	LLA	iPc	18 45 18.5
		eS	18 45 27.3
	PRS	eP	18 45 20.7
	PCC	eP	18 45 21.8
		eS	18 45 34.6
	BKS	eP	18 45 25.3
		eS	18 45 40.0
	ZSP	eP	18 45 26.4
	PRI	eP	18 45 28.2
	JAS	iPd	18 45 28.6
		iS	18 45 45.6

BRK 18h45m06.7s 37.1N 121.5W
h=6km ML=2.7(4)
Coyote Lake, 25 km NNW of Hollister, CA

Jan 1	MNA	eP	22 19 44.8
	PRI	eP	22 19 45.5
	JAS	eP	22 19 50.6
		epP	22 20 55
	MHC	eP	22 19 53.0
	BKS	eP	22 19 56.9
		eS	22 29 40
		esS	22 31 31
		eSS	22 35 06
		esSS	22 36 43
			AMP(μa) PER(s)
		PZ	0.031 0.8
	ORV	iP	22 19 59.9
		epP	22 21 03
	MIN	eP	22 20 02.7
	WDC	eP	22 20 04.3
		epP	22 21 09
	FHC	e	22 20 10

BRK mb=5.1 h=266km Distance=81°
USGS 22h08m14.1s 22.8S 66.2W
h=272km mb=5.5
Jujuy Province, Argentina

Jan 2	WDC	ePc	16 15 44.0
	MIN	eP	16 15 49.5
	ORV	ePc	16 15 54.5
	JAS	ePc	16 16 11.7
	MNA	ePc	16 16 18.6

USGS 16h10m18.1s 56.4N 153.0W
h=33km mb=5.1
Kodiak Island Region

Jan 4	MHC	eP	13 12 29.2
	PRI	eP	13 12 30.0
	WDC	ePc	13 12 33.0
	ORV	ePc	13 12 33.8
	JAS	ePc	13 12 33.9
	MIN	eP	13 12 35.2

USGS 13h00m19.4s 19.0S 169.6E
h=272km mb=4.4
Vanuatu Islands Region

Jan 4	SAO	eP	18 11 32.7
	BRK	eP	18 11 33.5
	BKS	e	18 31 50
	PRI	eP	18 11 34.2
	MHC	eP	18 11 35.9
	FRI	eP	18 11 39.9
	JAS	ePd	18 11 40.6
		e	18 11 59
	ORV	eP	18 11 42.0
	WDC	eP	18 11 42.2
		e	18 12 01

USGS 18h00m09.2s 15.7S 174.4W
h=33km mb=5.1 Ms=5.3
Tonga Islands

Jan 4	FHC	eP	22 50 42.1
		epP	22 50 54
	WDC	ePc	22 50 48.3
		epP	22 51 00
	MIN	eP	22 50 52.6
		epP	22 51 04
	ORV	ePc	22 50 55.9
		epP	22 51 08
	BKS	eP	22 51 00.9
		epP	22 51 12
		eS	22 59 13
		eScS	23 01 07
		eSS	23 03 31
		eLg	23 06 29
		e	23 09 46
			AMP(μa) PER(s)
		PZ	0.063 1.2

	MHC	eP	22 51 04.9
		epP	22 51 17
		e	22 51 37
	JAS	ePc	22 51 07.3
		epP	22 51 19
		e	22 51 34
		e	22 51 39
		e	22 51 48
	SAO	e(P)	22 51 09
	FRI	eP	22 51 14.1
		epP	22 51 26
	PRI	e(P)	22 51 15
		epP	22 51 26
		e	22 51 41
	MNA	ePc	22 51 15.1
		epP	22 51 27

BRK mb=5.6 h=35km Distance=63°
USGS 22h40m39.3s 45.5N 151.4E
h=20km mb=6.2 Ms=5.8
Kuril Islands

Jan 5	FHC	eP	03 19 34
	WDC	ePd	03 19 40.5
	MIN	ePd	03 19 44.8
	ORV	ePd	03 19 48.2
		e	03 20 02
	BRK	ePd	03 19 52.1
	MHC	eP	03 19 57.0
	JAS	ePd	03 19 59.8
		e	03 20 13
	FRI	eP	03 20 06.2
	MNA	ePd	03 20 07.2

USGS 03h09m34.6s 45.3N 151.6E
h=45km mb=5.0 Ms=4.8
Kuril Islands

Jan 5	MHC	iPc	19 01 09.2
	GCC	iPd	19 01 15.1
	PCC	iPc	19 01 17.0
	BKS	iPc	19 01 19.3
		iS	19 01 30.0
	BRK	iPc	19 01 19.5
	SAO	iP	19 01 20.0
	ZSP	iPc	19 01 20.8
	LLA	iPd	19 01 25.2
	PRS	eP	19 01 26.7
	JAS	iPc	19 01 28.5
	PRI	eP	19 01 33.1
	FRI	eP	19 01 34.4
	ORV	eP	19 01 43.5

BRK 19h01m07.0s 37.4N 121.8W
h=4km ML=3.3(4) Mo=2.7E21(4)
Halls Valley, 15 km ENE of San Jose, CA

Jan 5	WDC	eP	21 49 22.5
	ORV	eP	21 49 29.2
	BKS	e	21 49 42.8
	JAS	eP	21 49 42.8
		i	21 49 52
	MHC	e	21 49 44
	MNA	e	21 49 55

USGS 21h41m48.0s 51.3N 179.2W
h=53km mb=5.2 Ms=4.8
Andreanoff Islands, Aleutian Islands

Jan 5	WDC	eP	23 47 09.5
	MIN	eP	23 47 12.2
	ORV	eP	23 47 15.0
	BKS	e(P)	23 47 24
	JAS	eP	23 47 24.0
	MNA	eP	23 47 26.9

USGS 23h33m59.4s 38.0N 102.2E
h=12km mb=5.5 Ms=4.6
Ganshu Province, China

Jan 6	MNA	eP	11 46 41.1
	JAS	eP	11 46 51.2
	MHC	eP	11 46 56.5
	BKS	e	11 47 01
	ORV	iPc	11 47 01.5
	MIN	eP	11 47 03.5
	WDC	eP	11 47 06.2

USGS 11h37m49.1s 6.8N 73.0W
h=160km mb=5.0
Northern Columbia

Jan 6	PRI	eP	15 13 21.4
		epP	15 13 48
	MNA	eP	15 13 21.7
		epP	15 13 48
	SAO	eP	15 13 25.3
	JAS	iPd	15 13 26.7
		epP	15 13 53
	MHC	eP	15 13 29.0
		epP	15 13 55
	BKS	eP	15 13 32.7
		epP	15 13 59
		e	15 14 09
			AMP(μa) PER(s)
		PZ	0.028 0.8
	ORV	iPd	15 13 36.2
		epP	15 14 03
	WDC	eP	15 13 40.8
	MIN	eP	15 13 41.7
		epP	15 14 05

USGS 15h01m36.0s 23.7S 68.5W
h=102km mb=5.4
Northern Chile

Jan 8	FRI	i(P)	11 24 19.7
		i	11 24 22
		i	11 24 23
	LLA	ePc	11 24 27.8
	PRI	iPd	11 24 30.0
		eS	11 24 42.6
	JAS	iPd	11 24 34.1
		iS	11 24 49.1
	SAO	iPd	11 24 34.7
	MNA	e(P)	11 24 49
		e	11 24 54

BRK 11h24m14.2s 36.9N 120.0W
h=10kmR ML=2.5(4)
Near Madera, 30 km NW of Fresno, CA

Jan 8	BKS	ePdif	15 39 12
		epPdiff	15 39 33
		ePKP	15 42 53.4
		epPP	15 44 14
		ePPP	15 46 46
		e	15 50 53
		eS	15 51 32
		ePS	15 53 30
		e	15 54 53
		e	15 59 11
		eSS	15 59 49
		ePKPPKP	16 03 44
		eSKPPKP	16 07 06
		eLg	16 10 37
		eLr	16 16 14
		ePP	16 43 52
			AMP(μa) PER(s)
		PPZ	0.54 2.5
		LZ	11 20.
		LNE	9.0 20.
		LNW	16 20.

	WDC	ePKP	15 42 49.5
		ePP	15 43 44
	MIN	ePKP	15 42 51.8
		ePP	15 43 49
	ORV	ePKP	15 42 52.3
		ePP	15 43 51
	MHC	ePKP	15 42 53.3
	JAS	ePKP	15 42 55.5
		ePP	15 44 00
	PRI	ePKP	15 42 57.2
	MNA	ePKP	15 42 57.8

BRK Ms=6.7 Distance=115°
USGS 15h24m13.5s 2.8S 118.8E
h=33km mb=6.0 Ms=6.6
Sumatera Region

Jan 10	SAO	eP	05 25 09.0
	BKS	ePd	05 25 09.8
			AMP(μa) PER(s)
		PZ	0.046 1.1
	PRI	eP	05 25 10.8
	JAS	eP	05 25 16.3
	WDC	eP	05 25 17.1
	ORV	eP	05 25 17.4
	MNA	eP	05 25 26.0

USGS 05h14m17.9s 17.6S 178.5W
h=587km mb=5.3
Fiji Islands Region

Jan 10	FRI	iPc	15 16 05.2
		iS	15 16 17.5
	MNA	iPd	15 16 07.6
		i(S)	15 16 21.0
	JAS	iPc	15 16 14.3
		iS	15 16 32.3
	LLA	ePc	15 16 22.8
	PRI	ePc	15 16 24.0
	SAO	iPc	15 16 27.7
	PRS	ePc	15 16 29.2
	GCC	ePd	15 16 32.4
	BKS	iPgc	15 16 35.0
		e	15 16 51.3
		eSg	15 17 13.8
	ZSP	eP	15 16 36.0
	ORV	e(P)	15 16 40

BRK 15h15m47.7s 37.5N 118.7W
h=5km ML=3.5(6)
Round Valley, NW of Bishop, CA

Jan 11	SAO	eP	09 13 32.0
	PRI	eP	09 13 33.6
	BKS	ePc	09 13 33.9
			AMP(μa) PER(s)
		PZ	0.038 0.6
	FRI	eP	09 13 39.0
	JAS	ePc	09 13 39.1
	ORV	eP	09 13 40.5
	WDC	ePc	09 13 40.6
	MIN	eP	09 13 42.3
	MNA	eP	09 13 48.4

USGS 09h02m26.9s 21.0S 178.7W
h=576km mb=5.2
Fiji Islands Region

Jan 11	JAS	eP	11 44 03.4
	ORV	eP	11 44 18.1
	WDC	eP	11 44 28.7
	BKS	eLq	11 54 52
		eLr	11 57 05
			AMP(μa) PER(s)
		LZ	4.6 20.
		LN	4.3 20.
		LE	1.8 20.

USGS 11h35m54.7s 2.8S 102.8W
h=10km mb=5.1 Ms=4.9
Northern Easter Islands Cordillera

Jan 11	MHC	iP	14 19 01.4
		iS	14 19 03.1
	GCC	ePc	14 19 07.8
		iS	14 19 13.3
	PCC	iPc	14 19 10.1
	BKS	iPd	14 19 12.7
		iS	14 19 23.0
	BRK	iPd	14 19 12.7
	SAO	iPd	14 19 13.0
	ZSP	eP	14 19 14.5
		iS	14 19 25.5
	LLA	ePd	14 19 18.5
	PRS	ePd	14 19 20.1
	JAS	iPc	14 19 22.2
		eS	14 19 38.2
	PRI	e(P)	14 19 27

BRK 14h19m00.1s 37.4N 121.8W
h=5kmR ML=2.9(4) Mo=4.3E20(2)
Halls Valley, 15 km ENE of San Jose, CA

Jan 12	WDC	eP	01 40 05.5
	ORV	eP	01 40 13.6
	JAS	eP	01 40 26.2
	MNA	eP	01 40 33.5
	PRI	e	01 40 35

USGS 01h30m29.7s 49.6N 155.8E
h=33km mb=5.4 Ms=4.9
Kuril Islands

Jan 12	WDC	eP	03 29 03.6
	JAS	eP	03 29 04.3
	ORV	eP	03 29 05.0
	MNA	eP	03 29 15.2

USGS 03h16m36.7s 13.6S 167.4E
h=57km mb=4.8
Vanuatu Islands

Jan 13	WDC	eP	01 15 40.3
	ORV	eP	01 15 44.8
	BKS	eP	01 15 46.6
		eLr	01 39 40
			AMP(μa) PER(s)
		PZ	0.052 1.0
		LZ	2.9 20.
		LN	1.1 20.
		LE	3.2 20.
	MIN	e	01 15 48
	JAS	eP	01 15 52.5
	MHC	e	01 15 54
	PRI	e	01 15 56
	MNA	eP	01 16 01.5

USGS 01h03m42.5s 23.3N 143.4E
h=48km mb=5.3 Ms=5.3
Volcano Islands Region

Jan 13	FRI	e	02 38 29
	MNA	iPd	02 38 30.4
		e	02 39 07
	PRI	eP	02 38 31.2
	SAO	eP	02 38 36.9
	JAS	iPd	02 38 37.3
		e	02 39 11
		e	02 44 11
	MHC	iPd	02 38 41.8
	BKS	ePd	02 38 45.8
			AMP(μa) PER(s)
		PZ	0.[illegible] 1.2
	ORV	iPd	02 38 49.5

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)
		e	02 39 14
		e	02 44 19
	MIN	eP	02 38 52.0
	WDC	iPd	02 38 55.6
	FHC	eP	02 39 05.3
USGS 02h29m00.9s 3.9S 78.5W			
h=103km mb=5.8			
Peru-Ecuador Border Region			
Jan 14	FRI	iPc	00 42 41.3
		iS	00 42 55.0
	MNA	iPd	00 42 42.7
	JAS	iPc	00 42 51.0
		iS	00 43 11.0
	LLA	ePd	00 42 58.6
	PRI	ePc	00 42 59.3
	SAO	ePc	00 43 03.4
	MHC	ePd	00 43 04.5
	PRS	ePd	00 43 04.7
	GCC	ePd	00 43 08.5
	BKS	ePn	00 43 10.3
		eS#	00 43 52.3
	PCC	ePd	00 43 11.5
	ZSP	e(P)	00 43 12
	ORV	e(P)c	00 43 13
BRK 00h42m23.6s 37.4N 118.6W			
h=10km ML=3.8(6)			
Round Valley, NW of Bishop, CA			
Jan 14	FRI	iPc	03 11 32.9
	MNA	iPd	03 11 34.3
	JAS	iPc	03 11 42.6
	LLA	ePc	03 11 50.0
	PRI	iPc	03 11 50.9
	SAO	ePc	03 11 54.9
	MHC	ePd	03 11 56.0
	PRS	ePd	03 11 56.3
	GCC	ePd	03 12 00.0
	BKS	ePn	03 12 02.2
		e(P#)	03 12 09.9
		ePg	03 12 14.5
		eS#	03 12 44.0
		eSg	03 12 55.6
	PCC	ePc	03 12 02.9
	ZSP	e(P)	03 12 04
	ORV	ePc	03 12 05.2
	MIN	e(P)	03 12 17
	WDC	e(P)	03 12 23
BRK 03h11m15.0s 37.4N 118.6W			
h=11km ML=4.0(6)			
Round Valley, NW of Bishop, CA			
Jan 14	MHC	iPd	06 51 02.7
		iS	06 51 04.7
	GCC	ePd	06 51 08.0
	SAO	iPd	06 51 11.1
	PCC	iPc	06 51 12.5
		eS	06 51 22.5
	BKS	iPc	06 51 15.5
		iS	06 51 26.9
	BRK	ePc	06 51 15.6
		eS	06 51 27.0
	LLA	ePd	06 51 16.5
	ZSP	e(P)	06 51 17.0
	PRS	ePc	06 51 18.3
	JAS	ePd	06 51 22.0
		eS	06 51 37.3
	ORV	e(P)c	06 51 40
BRK 06h51m00.6s 37.3N 121.7W			
h=6km ML=2.6(4) Mo=5.5E19(2)			
San Felipe Valley, 25 km ESE of San Jose, CA			

DATE	STA	PHASE	TIME (UTC)
Jan 14	WDC	ePc	06 59 41.0
		epP	06 59 54
	MIN	ePc	06 59 46.8
	ORV	ePc	06 59 50.8
	BKS	ePc	06 59 55.7
			AMP(μm) PER(s)
		PZ	0.019 0.8
	MHC	ePc	07 00 02.3
	JAS	ePc	07 00 05.8
		epP	07 00 18
	MNA	ePc	07 00 15.3
	PRI	eP	07 00 16.2
USGS 06h53m05.4s 51.9N 168.3W			
h=33km mb=4.8			
Fox Islands, Aleutian Islands			
Jan 14	FHC	iPc	10 37 14.1
	WDC	iPc	10 37 25.5
		eS	10 37 44.5
	MIN	iPc	10 37 35.0
	ORV	iPd	10 37 37.5
	ZSP	e(P)	10 37 46
	BKS	eP	10 37 47.4
		e	10 38 46.3
		e	10 39 10.6
	PCC	ePc	10 37 49.5
	MHC	ePd	10 37 56.7
	GCC	ePc	10 37 57.2
	JAS	e(P)	10 38 00.0
	SAO	ePc	10 38 03.3
BRK 10h37m01.9s 40.3N 124.4W			
h=9km ML=4.0(8) Mo=2.2E22(3)			
Off Coast, 60 km SSW of Eureka, CA			
Jan 14	FHC	iPc	10 40 08.1
	WDC	iPc	10 40 19.6
		e(S)	10 40 38.6
	MIN	iPc	10 40 29.3
	ORV	iPc	10 40 31.7
	BKS	eP	10 40 39.7
		e	10 41 05.3
		e	10 41 25.3
		e	10 41 53.3
	ZSP	eP	10 40 40.0
	PCC	ePd	10 40 43.4
	MHC	ePd	10 40 50.9
	GCC	ePc	10 40 51.4
	JAS	ePc	10 40 54.5
	SAO	iPd	10 40 57.5
	LLA	e(P)d	10 41 03.3
	PRS	e(P)c	10 41 04.7
	PRI	e(P)	10 41 12.0
	MNA	e(P)	10 41 13.7
BRK 10h39m55.9s 40.3N 124.4W			
h=10kmR ML=3.9(8) Mo=2.1E22(4)			
Off Coast, 60 km SSW of Eureka, CA			
Jan 14	MNA	ePd	13 44 33.5
	PRI	eP	13 44 33.8
	JAS	ePd	13 44 39.7
	MHC	eP	13 44 42.9
	BKS	ePd	13 44 46.4
			AMP(μm) PER(s)
		PZ	0.033 0.9
	ORV	ePd	13 44 51.0
	WDC	ePd	13 44 56.3
	FHC	eP	13 45 05.1
USGS 13h34m04.8s 11.5S 74.3W			
h=97km mb=4.9			
Peru			
Jan 15	MNA	eP	07 12 28.3
	JAS	eP	07 12 41.8

DATE	STA	PHASE	TIME (UTC)
	MIN	eP	07 12 42.2
	ORV	eP	07 12 43.0
	WDC	eP	07 12 46.7
	MHC	eP	07 12 50.0
	BRK	eP	07 12 52.5
	FHC	eP	07 12 53.3
USGS 07h02m10.5s 28.9N 43.4W			
h=10km mb=4.9 Ms=4.8			
North Atlantic Ridge			
Jan 15	FHC	eP	07 16 10.6
	WDC	eP	07 16 16.6
	MIN	eP	07 16 22.2
		e	07 17 38
	ORV	eP	07 16 27.6
	BKS	e(P)	07 16 38
		eS	07 21 33
		e	07 22 49
		e	07 23 08
		eLr	07 23 44
			AMP(μm) PER(s)
		LZ	2.3 20.
		LN	2.1 20.
		LE	2.7 20.
	JAS	eP	07 16 44.0
		e	07 18 04
	MNA	eP	07 16 51.0
USGS 07h10m52.7s 56.6N 152.4W			
h=33km mb=5.1 Ms=5.1			
Kodiak Island Region			
Jan 15	MNA	eP	07 24 28.4
	MIN	e	07 24 42
	JAS	eP	07 24 42.0
	ORV	eP	07 24 43.0
	WDC	eP	07 24 45.7
	MHC	eP	07 24 49.9
	BKS	eP	07 24 52.8
USGS 07h14m10.6s 28.8N 43.5W			
h=10km mb=5.4 Ms=5.5			
North Atlantic Ridge			
Jan 15	MHC	iPd	10 14 25.5
		iS	10 14 28.6
	GCC	iPc	10 14 28.9
		iS	10 14 33.8
	SAO	iPc	10 14 30.0
	PCC	iPc	10 14 35.2
	LLA	eP	10 14 35.3
		iS	10 14 47.0
	PRS	eP	10 14 37.4
	BRK	ePd	10 14 39.1
	BKS	iPnc	10 14 39.6
		iSg	10 14 52.4
		i	10 14 58.2
	ZSP	eP	10 14 39.7
	JAS	iPd	10 14 43.2
		iS	10 14 57.9
	PRI	eP	10 14 44.8
BRK 10h14m21.5s 37.2N 121.6W			
h=5km ML=2.7(4) Mo=2.2E20(2)			
Anderson Lake, 35 km SE of San Jose, CA			
Jan 15	FHC	eP	12 33 55.2
	WDC	eP	12 34 03.0
	MIN	eP	12 34 08.7
	ORV	eP	12 34 13.7
	BKS	eP	12 34 26.3
		eS	12 39 20
		eLq	12 40 38
		eLr	12 41 46
			AMP(μm) PER(s)

DATE	STA	PHASE	TIME (UTC)
		PZ	0.044 0.9
	JAS	eP	12 34 30.6
	MNA	eP	12 34 37.4
	PRI	eP	12 34 42.7
USGS 12h28m39.5s 56.5N 152.3W			
h=33km mb=5.3 Ms=4.7			
Kodiak Island Region			
Jan 15	PRI	iPc	15 51 40.5
	LLA	iPc	15 51 47.6
		iS	15 51 59.0
	FRI	iPd	15 51 49.9
	PRS	eP	15 51 50.2
	SAO	eP	15 51 53.7
	MHC	e	15 52 00.9
	JAS	iPd	15 52 03.7
BRK 15h51m33.3s 36.1N 120.2W			
h=10kmR ML=2.9(2)			
Near Coalinga, CA			
Jan 15	ORV	ePKP	18 59 12.0
	JAS	ePKP	18 59 17.8
	MNA	ePKP	18 59 19.0
USGS 18h39m31.8s 6.8S 71.4E			
h=10km mb=4.9			
Chagos Archipelago Region			
Jan 16	PRI	iPc	02 48 14.5
	LLA	ePc	02 48 21.5
		iS	02 48 32.8
	FRI	iPd	02 48 24.0
	PRS	iP	02 48 24.5
	SAO	iPd	02 48 27.6
	MHC	e	02 48 34.7
	JAS	iPd	02 48 37.5
BRK 02h48m07.3s 36.1N 120.2W			
h=9km ML=2.7(2)			
Near Coalinga, CA			
Jan 16	FRI	iPc	04 06 40.0
		iS	04 07 00.2
	PRI	iPd	04 06 46.6
		iS	04 07 12.2
	LLA	eP	04 06 50.4
	PRS	eP	04 06 54.4
	JAS	ePc	04 06 58.0
	MHC	eP	04 07 02.7
	BKS	eP	04 07 11
BRK ML=3.8(6)			
PAS 04h06m12.3s 35.9N 118.3W			
h=0km ML=3.4			
Near Lake Isabella, CA			
Jan 16	PRI	eP	12 38 04.0
	SAO	eP	12 38 07.4
	FRI	eP	12 38 07.5
	MHC	eP	12 38 12.3
	JAS	eP	12 38 15.0
		ePKPPKP	13 06 37
	MNA	eP	12 38 17.0
		ePKPPKP	13 06 37
	BKS	eP	12 38 20.4
		e	12 38 29
		e	12 38 43
		eS	12 47 24
		e	12 47 50
		eScS	12 48 16
		eSS	12 51 51
		eSSS	12 55 08
		eLq	12 55 40
		i	12 56 23
		e	12 57 25
		eLr	12 58 36

DATE	STA	PHASE	TIME (UTC)
		AMP(μm)	PER(s)
	PZ	0.57	2.0
	LZ	13	20.
	LN	11	20.
	LE	3.6	20.
	ORV	eP	12 38 25.4
		ePKPPKP	13 06 30
	MIN	eP	12 38 29.6
	WDC	eP	12 38 31.7
		ePKPPKP	13 06 27
BRK Ms=6.1 Distance=71°			
USGS 12h27m14.0s 30.0S 112.3W			
h=10km mb=6.0 Ms=6.2			
Easter Island Region			
Jan 16	PRI	eP	13 42 23.7
	JAS	ePc	13 42 34.7
	MNA	ePc	13 42 37.0
	WDC	ePc	13 42 51.5
USGS 13h31m34.2s 29.9S 111.0W			
h=10km mb=5.2			
Easter Island Region			
Jan 16	SAO	eP	15 12 26.0
	MHC	eP	15 12 27.6
	JAS	ePc	15 12 33.0
	WDC	eP	15 12 34.2
	ORV	eP	15 12 34.7
	MNA	ePc	15 12 42.9
USGS 15h01m33.9s 17.5S 178.9W			
h=582km mb=4.3			
Fiji Islands Region			
Jan 17	MNA	iPd	03 41 45.6
		ePP	03 43 46
	PRI	ePd	03 41 47.4
	SAO	eP	03 41 52.3
	JAS	iPd	03 41 52.4
		ePP	03 44 53
	MHC	ePd	03 41 56.0
	BKS	iPd	03 42 00.2
		AMP(μm)	PER(s)
	PZ	0.072	0.8
	ORV	iPd	03 42 03.0
		ePP	03 44 04
	MIN	ePd	03 42 04.8
	WDC	iPd	03 42 08.2
	FHC	eP	03 42 16.8
USGS 03h32m07.6s 8.9S 71.4W			
h=614km mb=5.3			
Western Brazil Region			
Jan 17	FHC	e(P)	11 24 55
		e	11 25 06
	WDC	ePc	11 24 59.7
		e	11 25 08
		e	11 25 12
		e	11 25 16
	MIN	eP	11 25 03.7
		e	11 25 16
	ORV	ePc	11 25 06.3
		e	11 25 16
	BKS	eP	11 25 10
		e	11 25 21
		eLr	11 47 36
	JAS	eP	11 25 16.5
		e	11 25 24
		e	11 25 33
	PRI	e(P)	11 25 22
	MNA	ePc	11 25 23.5
		e	11 25 31
		e	11 25 40
USGS 11h13m40.3s 36.4N 141.2E			

DATE	STA	PHASE	TIME (UTC)
h=40km mb=5.6 Ms=5.3			
Near East Coast of Honshu, Japan			
Jan 17	FHC	ePc	15 43 09.9
		e	15 43 26
	WDC	iPc	15 43 15.4
		e	15 43 27
		e	15 43 32
	MIN	eP	15 43 19.3
	ORV	ePc	15 43 22.2
		e	15 43 35
	BKS	eP	15 43 25.6
		e	15 43 38
		e	15 43 41
		eS	15 52 54
		eScS	15 53 36
		eLg	16 02 22
		eLr	16 05 32
			AMP(μm) PER(s)
		PZ	0.029 0.9
	MHC	ePc	15 43 29.4
		e	15 43 41
	JAS	iPc	15 43 32.2
		e	15 43 43
		e	15 43 48
	FRI	e(P)	15 43 37
	PRI	ePc	15 43 37.5
	MNA	ePc	15 43 39.3
BRK mb=5.3 h=33km Distance=76°			
USGS 15h31m56.2s 36.4N 141.3E			
h=42km mb=5.9 Ms=5.5			
Near East Coast of Honshu, Japan			
Jan 17	FRI	ePc	16 28 28.0
	PRI	ePc	16 28 29.8
		ePcP	16 29 34
	MNA	ePc	16 28 30.2
		ePcP	16 29 34
	SAO	eP	16 28 35.4
	JAS	iPc	16 28 36.8
		ePcP	16 29 37
	MHC	ePc	16 28 40.0
		ePcP	16 29 39
	BKS	iPc	16 28 44.6
		ePcP	16 29 42
		eS	16 36 42
		esS	16 38 43
			AMP(μm) PER(s)
		PZ	0.14 1.5
	ORV	iPc	16 28 49.3
	MIN	ePc	16 28 52.0
	WDC	iPc	16 28 55.7
		ePcP	16 29 48
	FHC	ePc	16 29 05.2
USGS 16h19m03.3s 3.9S 81.4W			
h=18km mb=5.9 Ms=4.9			
Near Coast of Northern Peru			
Jan 17	SAO	eP	20 01 10.4
	PRI	ePc	20 01 11.9
	BKS	eP	20 01 12.1
			AMP(μm) PER(s)
		PZ	0.14 1.3
	MHC	ePc	20 01 12.2
	FHC	ePc	20 01 16.1
	FRI	ePc	20 01 16.8
	JAS	ePc	20 01 17.4
		ePP	20 01 [illegible]
	ORV	ePc	20 01 [illegible]
	WDC	ePc	20 01 [illegible]
	MIN	ePc	20 01 21.0
	MNA	ePc	20 01 26.3
		ePP	20 01 [illegible]

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DATE	STA	PHASE	TIME (UTC)
USGS 19h49m58.6s 22.2S 179.7W			
h=586km mb=5.5			
South of Fiji Islands			
Jan 17	PRI	eP	20 06 26.3
	BKS	eP	20 06 26.7
		AMP(µm)	PER(s)
		PZ 0.014	0.5
	MHC	eP	20 06 26.9
	JAS	eP	20 06 31.5
	ORV	eP	20 06 33.5
	WDC	eP	20 06 34.5
	MNA	eP	20 06 39.2
Kermadec Islands Region			
Jan 18	SAO	iPd	00 17 03.2
	GCC	iPc	00 17 07.0
	MHC	iPd	00 17 10.3
	PRS	iPd	00 17 10.7
	LLA	iPc	00 17 11.5
	PCC	ePc	00 17 16.3
	PRI	ePc	00 17 20.1
	BKS	e(P)	00 17 21
		eS	00 17 38
	ZSP	eP	00 17 21.5
	JAS	iP	00 17 26.1
BRK 00h17m00.1s 36.8N 121.6W			
h=3km ML=2.7(4)			
20 km W of Hollister, CA			
Jan 19	SAO	iPd	01 24 59.0
	GCC	iPc	01 25 02.9
	MHC	iPd	01 25 06.2
		eS	01 25 12.6
		e	01 25 14.8
	PRS	iPd	01 25 06.5
	LLA	eP	01 25 07.2
		eS	01 25 15.3
	PCC	eP	01 25 12.2
		e	01 25 25.5
	PRI	ePc	01 25 15.5
	BKS	eP‡	01 25 16.2
		ePn	01 25 17.8
		eSg	01 25 33.6
	BRK	eP	01 25 17.5
		eS	01 25 33.8
	ZSP	e(P)	01 25 19.2
		eS	01 25 36.6
	JAS	eP	01 25 22.1
		e	01 25 38.5
		eS	01 25 41.6
BRK 01h24m55.9s 36.9N 121.6W			
h=5kmR ML=2.7(2)			
15 km W of Hollister, CA			
Jan 19	SAO	eP	16 26 53.3
	PRI	iPc	16 26 54.6
	BKS	iPc	16 26 54.7
		ePcP	16 27 01
		epP	16 28 12
		esP	16 28 42
		e	16 29 12
		ePP	16 30 03
		e	16 32 51
		eS	16 36 38
		eSKS	16 36 47
		eScS	16 36 57
		e	16 37 13
		eSP	16 37 53
		e	16 38 25
		e	16 38 44
		esS	16 38 53
		e	16 39 32

DATE	STA	PHASE	TIME (UTC)
		eSS	16 41 55
		AMP(µm)	PER(s)
		PZ 0.45	1.2
	MHC	iPc	16 26 55.2
		e	16 28 13
	FRI	iPc	16 26 59.6
	FHC	eP	16 26 59.6
	JAS	iPc	16 27 00.4
		ePP	16 30 11
		eS	16 36 49
		eSKPPKP	16 56 30
	ORV	iPc	16 27 02.3
		ePP	16 30 14
		eSKPPKP	16 56 30
	WDC	iPc	16 27 02.6
		ePP	16 30 13
		eS	16 36 37
		eSKPPKP	16 56 30
	MIN	ePc	16 27 04.0
BRK mb=6.2 h=328km Distance=82°			
USGS 16h15m16.3s 23.6S 178.3W			
h=332km mb=5.8			
South of Fiji Islands			
Jan 19	FHC	eP	16 47 24.7
	WDC	eP	16 47 29.4
	BKS	ePc	16 47 31.3
		e	16 47 47
		e	16 48 12
		e	16 48 46
		e	16 49 33
		e	16 49 45
		e	16 50 05
		e	16 51 28
		e	16 56 25
		e	16 56 41
		eS	16 58 07
		eScS	16 58 37
		ePS	16 58 50
		e	16 59 18
		ePPS	16 59 40
		e	17 03 19
		eSS	17 04 20
		e	17 04 37
		eLq	17 10 14
		eLr	17 13 50
		AMP(µm)	PER(s)
		PZ 0.074	1.0
		LZ 8.2	20.
		LN 2.1	20.
		LE 7.1	20.
	MIN	eP	16 47 32.3
	ORV	eP	16 47 33.3
	MHC	eP	16 47 34.2
	JAS	eP	16 47 38.9
	PRI	e	16 47 40
BRK Ms=6.1 Distance=86°			
USGS 16h34m45.1s 6.0N 146.5E			
h=30km mb=5.7 Ms=5.8			
Caroline Islands Region			
Jan 20	BKS	e	00 07 31
		e	00 07 39
	JAS	ePKP	00 07 29.5
		e	00 09 25
	ORV	ePKP	00 07 32.5
	WDC	ePKP	00 07 34.1
USGS 23h48m20.2s 59.3S 17.9W			
h=10km mb=5.5 Ms=4.7			
Southwestern Atlantic Ocean			
Jan 20	SAO	eP	04 03 59.6
	BKS	ePc	04 04 00.5

DATE	STA	PHASE	TIME (UTC)
		AMP(µm)	PER(s)
		PZ 0.087	1.1
	MHC	eP	04 04 00.5
	PRI	eP	04 04 00.6
	FHC	eP	04 04 04.2
	FRI	i	04 04 06
	JAS	iPc	04 04 06.8
		e	04 06 01
	WDC	eP	04 04 07.0
		e	04 06 01
	ORV	eP	04 04 07.6
	MIN	eP	04 04 09.1
USGS 03h53m02.8s 17.8S 178.6W			
h=534km mb=5.2			
Fiji Islands Region			
Jan 20	MHC	e	12 16 05
	JAS	eP	12 16 10.3
	ORV	eP	12 16 12.1
	WDC	eP	12 16 12.3
USGS 12h04m48.1s 19.4S 176.6W			
h=331km mb=4.8			
Fiji Islands Region			
Jan 20	JAS	eP	13 46 07.0
	ORV	eP	13 46 07.9
	WDC	eP	13 46 07.9
USGS 13h35m06.0s 17.6S 178.8W			
h=569km mb=4.6			
Fiji Islands Region			
Jan 21	WDC	eP	20 46 24.3
	MIN	eP	20 46 26.8
	ORV	eP	20 46 27.1
	BKS	eP	20 46 27.3
		e	20 46 42
		e	20 47 10
		AMP(µm)	PER(s)
		PZ 0.076	1.3
	MHC	eP	20 46 29.7
	JAS	eP	20 46 33.0
	PRI	eP	20 46 35.4
	MNA	eP	20 46 41.8
USGS 20h33m57.8s 13.0N 145.3E			
h=45km mb=5.4 Ms=5.3			
South of Mariana Islands			
Jan 22	SAO	eP	14 03 36.2
	PRI	eP	14 03 37.6
	MHC	eP	14 03 38.4
	BKS	eP	14 03 39.0
		AMP(µm)	PER(s)
		PZ 0.088	1.2
		LZ 1.4	20.
		LN 1.1	20.
		LE 0.71	20.
	JAS	ePc	14 03 44.1
	ORV	ePc	14 03 46.0
	WDC	ePc	14 03 46.5
	MIN	eP	14 03 48.5
	MNA	eP	14 03 53.8
USGS 13h51m51.3s 21.4S 174.2W			
h=51km mb=5.3			
Tonga Islands			
Jan 23	PRS	iPc	05 40 28.1
	SAO	iPd	05 40 30.1
	GCC	iPd	05 40 32.4
	LLA	iPc	05 40 35.3
	MHC	iPd	05 40 38.6
	PRI	iPc	05 40 38.8
	PCC	iPc	05 40 40.3
	BKS	iPd	05 40 45.2

DATE	STA	PHASE	TIME (UTC)
		iS	05 41 08.7
	ZSP	iPd	05 40 46.6
	FRI	iPd	05 40 50.6
	JAS	iPd	05 40 52.2
	ORV	ePd	05 41 09.0
	MNA	eP	05 41 16.5
	MIN	eP	05 41 20.3
	WDC	ePd	05 41 22.2
	FHC	eP	05 41 30
BRK 05h40m20.3s 36.4N 121.9W			
h=8km ML=5.1(8) Mo=3.5E23(4)			
25 km S of Monterey, CA			
Jan 23	PRS	iPc	05 44 45.9
	SAO	iPd	05 44 48.0
	GCC	iPd	05 44 50.5
	LLA	iPd	05 44 53.3
	MHC	iPd	05 44 56.9
	PRI	iP	05 44 57.2
	PCC	e(P)	05 44 59.0
	BRK	ePd	05 45 03.0
	ZSP	eP	05 45 04.5
	BKS	eS	05 45 27
BRK 05h44m38.1s 36.4N 121.9W			
h=2km ML=3.1(4)			
25 km S of Monterey, CA			
Jan 23	PRS	iPc	05 49 05.7
	SAO	iPd	05 49 07.8
	GCC	iPd	05 49 10.3
	LLA	iPc	05 49 13.0
	MHC	iPd	05 49 16.4
	PRI	iPc	05 49 16.5
	PCC	iPc	05 49 18.3
	BKS	eP	05 49 22.9
		eS	05 49 48.0
	ISP	iPc	05 49 24.0
	JAS	iPd	05 49 30.0
	ORV	eP	05 49 47.3
BRK 05h48m58.0s 36.4N 121.9W			
h=10kmR ML=3.6(6) Mo=4.2E21(4)			
30 km S of Monterey, CA			
Jan 23	PRS	iPc	06 05 18.4
		iS	06 05 23.4
	SAO	iPd	06 05 20.4
	GCC	iPd	06 05 22.7
		eS	06 05 31.0
	LLA	iPc	06 05 25.7
		eS	06 05 36.5
	MHC	ePc	06 05 29.0
		eS	06 05 42.4
	PRI	ePc	06 05 29.2
	PCC	eP	06 05 31.0
	BKS	eP	06 05 35.4
		eS	06 06 00.3
	ISP	ePd	06 05 36.8
	JAS	iPd	06 05 42.5
BRK 06h05m10.5s 36.4N 121.9W			
h=8km ML=3.0(4)			
25 km S of Monterey, CA			
Jan 23	PRS	iPc	06 59 59.0
	SAO	iPd	07 00 01.0
	GCC	iPd	07 00 03.4
	LLA	iPc	07 00 06.4
	MHC	iPd	07 00 09.6
	PRI	iPc	07 00 09.8
	PCC	eP	07 00 11.3
	BKS	iPd	07 00 15.9
		iS	07 00 40.8
	ISP	iPd	07 00 17.3
	JAS	iPd	07 00 23.2

DATE	STA	PHASE	TIME (UTC)
	FRI	i(P)d	07 00 23.5
	ORV	ePc	07 00 40.3
	MNA	eP	07 00 51.7
	MIN	eP	07 00 52.0
	WDC	eP	07 00 53.0
BRK 06h59m51.3s 36.4N 121.9W			
h=8kmR ML=4.5(6) Mo=3.1E22(4)			
25 km S of Monterey, CA			
Jan 23	PRS	iPc	07 05 57.4
		eS	07 06 02.7
	SAO	iPd	07 05 59.5
	GCC	iPd	07 06 02.0
	LLA	ePc	07 06 04.7
	MHC	eP	07 06 08.2
	PRI	ePd	07 06 08.6
	PCC	eP	07 06 10.4
	BKS	eP	07 06 14.5
		eS	07 06 38.6
	ZSP	eP	07 06 16.0
	JAS	iPd	07 06 21.7
BRK 07h05m49.9s 36.4N 121.9W			
h=8kmR ML=2.8(4)			
25 km S of Monterey, CA			
Jan 23	FHC	eP	07 47 16.6
	WDC	ePc	07 47 21.3
		e	07 47 33
	MIN	eP	07 47 24.4
	ORV	ePc	07 47 26.8
	BKS	eP	07 47 29.3
		e	07 47 41
		e	07 48 07
		e	07 48 30
		eS	07 57 56
		eLq	08 10 14
		eLr	08 14 30
		AMP(µm)	PER(s)
		PZ 0.12	1.4
		LZ 1.1	20.
		LN 0.36	20.
		LE 1.3	20.
	MHC	eP	07 47 33.4
	SAO	eP	07 47 34.9
	JAS	ePc	07 47 35.2
		e	07 47 47
	PRI	eP	07 47 40.2
		e	07 47 52
	FRI	ePc	07 47 40.2
	MNA	ePc	07 47 41.9
USGS 07h34m57.7s 29.3N 130.4E			
h=37km mb=5.8 Ms=5.6			
Ryukyu Islands			
Jan 23	WDC	eP	09 38 01.5
	MIN	eP	09 38 04.6
	ORV	iPc	09 38 07.2
		e	09 38 11
	BKS	eP	09 38 09.2
		AMP(µm)	PER(s)
		PZ 0.036	0.9
	MHC	eP	09 38 12.9
	JAS	iPc	09 38 15.9
	FRI	i(P)c	09 38 21
	MNA	eP	09 38 23.6
		e	09 38 27
USGS 09h26m15.7s 29.4N 141.1E			
h=33km mb=5.1			
South of Honshu, Japan			
Jan 23	PRS	iPc	10 54 01.5
		iS	10 54 06.8
	SAO	iPd	10 54 03.5

DATE	STA	PHASE	TIME (UTC)
	GCC	iPd	10 54 05.9
	LLA	iPc	10 54 08.7
	MHC	ePc	10 54 12.2
	PRI	ePc	10 54 12.3
	PCC	ePc	10 54 14.4
	BKS	eP	10 54 18.5
		eS	10 54 43.5
	ZSP	eP	10 54 20.0
	JAS	iPd	10 54 25.6
	ORV	eP	10 54 43.0
BRK 10h53m53.8s 36.4N 121.9W			
h=8kmR ML=3.0(4)			
25 km S of Monterey, CA			
Jan 23	PRS	iPc	19 58 29.3
	SAO	iPd	19 58 31.4
	GCC	iPd	19 58 33.8
	LLA	iPc	19 58 36.6
	MHC	eP	19 58 40.0
		iS	19 58 53.8
	PRI	iPc	19 58 40.0
		iS	19 58 53.9
	PCC	eP	19 58 41.8
	BKS	eP	19 58 46.4
		ePg	19 58 49.5
		eS	19 59 09.7
	ZSP	eP	19 58 48.0
	JAS	ePd	19 58 53.5
BRK 19h58m21.5s 36.4N 121.9W			
h=9km ML=3.6(4) Mo=4.5E21(2)			
25 km S of Monterey, CA			
Jan 23	FHC	eP	22 12 34.5
	WDC	iPd	22 12 42.7
		ePcP	22 15 17
		eScP	22 18 52
	MIN	eP	22 12 48.3
	ORV	ePd	22 12 52.7
		ePcP	22 15 21
		eScP	22 18 56
	BRK	eP	22 12 58.3
		eScP	22 18 59
	BKS	eP	22 12 58.5
		e	22 21 56
		AMP(µm)	PER(s)
		PZ 0.091	1.0
	MHC	eP	22 13 04.5
	JAS	iPd	22 13 07.9
		ePcP	22 15 26
		eScP	22 19 03
	MNA	ePd	22 13 16.5
		ePcP	22 15 30
		eScP	22 19 08
	PRI	eP	22 13 16.8
		eScP	22 19 08
	FRI	eP	22 13 17.5
		ePcP	22 15 30
USGS 22h06m06.5s 53.3N 169.6W			
h=103km mb=5.3			
Fox Islands, Aleutian Islands			
Jan 24	PRS	iPc	01 00 47.2
	SAO	iPd	01 00 49.4
	GCC	iPd	01 00 51.7
	LLA	iPc	01 00 54.7
	MHC	iPd	01 00 58.1
		iS	01 01 11.9
	PRI	iPc	01 00 58.1
		iS	01 01 02.1
	PCC	ePd	01 00 59.6
	BKS	eP	01 01 04.4
		ePg	01 01 07.4
		eS	01 01 18.1

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DATE	STA	PHASE	TIME (UTC)
	ISP	eP	01 01 05.8
	FRI	i(P)c	01 01 11.3
	JAS	iPd	01 01 11.5
	ORV	ePc	01 01 28.3
	MNA	ePc	01 01 40.0
	MIN	ePd	01 01 41.0

BRK 01h00m39.4s 36.4N 121.9W
h=8kmR ML=3.7(6) Mo=1.1E22(4)
25 km S of Monterey, CA

Jan 24	FRI	ePKPd	23 25 51.5
	PRI	ePKPd	23 25 51.8
	MNA	ePKPd	23 25 52.2
	SAO	ePKPd	23 25 52.9
	JAS	iPKPd	23 25 53.7
	MHC	ePKPd	23 25 54.5
	BKS	ePKPd	23 25 55.4
		e	23 26 24
		AMP(μm)	PER(s)
		PKPZ 0.11	1.0
	ORV	ePKP	23 25 56.8
	MIN	ePKPd	23 25 57.7
	WDC	iPKPd	23 25 58.7

USGS 23h07m10.9s 56.6S 26.6W
h=125km mb=5.6
South Sandwich Islands Region

Jan 25	FHC	eP	09 45 49.8
	WDC	eP	09 45 54.3
	MIN	eP	09 45 58.3
	ORV	ePc	09 46 01.5
	JAS	ePc	09 46 12.5
	MNA	eP	09 46 19.5

USGS 09h35m06.3s 42.3N 143.1E
h=67km mb=5.3
Kuril Islands Region

Jan 26	PRI	iPd	06 07 25.2
	LLA	ePc	06 07 31.4
		i	06 07 38.6
	FRI	iPd	06 07 33.2
	PRS	iPc	06 07 34.8
	SAO	eP	06 07 38.1
	MHC	eP	06 07 44.8
	GCC	e(P)	06 07 45
	JAS	ePc	06 07 47.4
		eS	06 08 09.6
	PCC	e(P)c	06 07 52
	BRK	e(P)	06 07 55
	ISP	e(P)	06 07 56

BRK 06h07m16.9s 36.1N 120.1W
h=4km ML=3.2(6)
Coalinga Area, CA

Jan 26	PRI	ePKPc	18 13 03.2
	MNA	ePKP	18 13 03.7
	JAS	ePKPc	18 13 05.1
	MHC	ePKP	18 13 05.8
	BKS	ePKP	18 13 06.8
		AMP(μm)	PER(s)
		PKPZ 0.053	0.8
	ORV	ePKP	18 13 08.4
	WDC	ePKPc	18 13 10.0
	FHC	ePKP	18 13 13.6

USGS 17h54m08.8s 57.9S 24.1W
h=33km mb=5.3 Ms=5.0
South Sandwich Islands Region

Jan 26	PRI	eP	19 41 24.0
		epP	19 41 40
	MNA	eP	19 41 24.6
		epP	19 41 40
	JAS	eP	19 41 30.3
		epP	19 41 47
	MHC	eP	19 41 34.8
		epP	19 41 51
	BKS	e(P)	19 41 37
		epP	19 41 54
	ORV	ePc	19 41 41.9
		epP	19 41 58
	WDC	eP	19 41 47.5
		epP	19 42 03

USGS 19h30m57.9s 12.2S 76.9W
h=58km mb=5.3
Near Coast of Peru

Jan 27	PRI	iPd	04 44 40.8
	LLA	iPc	04 44 45.9
	PRS	iPd	04 44 49.9
	FRI	iPc	04 44 51.4
	SAO	iPc	04 44 53.2
	MHC	ePc	04 45 00.0
		eS	04 45 18.8
	GCC	ePc	04 45 00.0
	JAS	iPc	04 45 03.9
		eS	04 45 25.5
	PCC	eP	04 45 08.0
	BKS	ePd	04 45 10.1
		eS	04 45 37.1
	ISP	eP	04 45 11.0
	MNA	ePc	04 45 21.0
	ORV	iPd	04 45 28.7

BRK 04h44m35.8s 36.3N 120.4W
h=7km ML=3.8(6) Mo=6.3E21(2)
Coalinga Area, CA

Jan 27	PRI	iPc	15 42 04.7
	LLA	iPd	15 42 11.8
	PRS	ePc	15 42 13.5
	FRI	iPd	15 42 14.0
	SAO	iPd	15 42 18.1
	MHC	e	15 42 25.5
	GCC	e	15 42 25.5
	JAS	iPd	15 42 28.0
	MNA	e	15 42 46
	ORV	e	15 42 50

BRK 15h41m55.6s 35.9N 120.1W
h=12km ML=2.8(4)
Coalinga Area, CA

Jan 28	WDC	ePc	12 53 11.0
	MIN	eP	12 53 16.7
	ORV	ePc	12 53 21.6
	JAS	ePc	12 53 38.4
	MNA	eP	12 53 45.8

USGS 12h47m41.2s 55.8N 154.3W
h=33km mb=4.7
South of Alaska

Jan 28	PRI	eP	19 28 59.5
	MNA	eP	19 29 01.4
	JAS	eP	19 29 08.5
	MHC	eP	19 29 11.8
	ORV	eP	19 29 24.5
	WDC	eP	19 29 33.4
	FHC	eP	19 29 41.8

USGS 19h23m30.3s 17.5N 100.1W
h=72km mb=4.9
Guerrero, Mexico

Jan 29	SAO	eP	10 26 06.0
	PRI	ePc	10 26 06.6
	MHC	eP	10 26 07.7
	BKS	eP	10 26 08.1
		AMP(μm)	PER(s)
		PZ 0.072	1.0
	FRI	iPc	10 26 11.3
	JAS	iPc	10 26 12.4
	ORV	ePc	10 26 14.5
	WDC	iPc	10 26 15.6
	MIN	e(P)	10 26 17
	MNA	ePc	10 26 20.4

USGS 10h13m26.6s 31.4S 178.6W
h=42km mb=5.6
Kermadec Islands Region

Jan 29	WDC	eP	16 24 46.7
	MIN	eP	16 24 47.6
	ORV	eP	16 24 52.3
	MNA	eP	16 24 54.3
	JAS	eP	16 25 01.4
	BKS	eP	16 25 05.0
		eLg	16 49 45
		eLr	16 51 40
		AMP(μm)	PER(s)
		LZ 3.6	20.
		LN 4.3	20.
		LE 1.1	20.
	MHC	eP	16 25 07.7
	PRI	eP	16 25 14.2

USGS 16h14m36.2s 71.9N 1.6W
h=10km mb=5.3 Ms=5.4
Jan Mayen Island Region

Jan 30	FHC	iPc	01 33 43.2
		iS	01 33 52.7
	WDC	iPd	01 33 48.4
		eS	01 34 01.5
	MIN	iPc	01 33 58.1
		eS	01 34 18.5

BRK 01h33m31.2s 41.2N 123.3W
h=5kmR ML=3.0(4)
90 km NE of Eureka, CA

Jan 30	WDC	iPKPc	17 52 47.7
	ORV	ePKP	17 52 48.8
	JAS	e	17 52 52
	MHC	ePKP	17 52 52.1
	PRI	ePKP	17 52 55.0
	MNA	ePKP	17 52 56.4

USGS 17h34m20.6s 6.7S 109.0E
h=264km mb=5.0
Java

Jan 30	FHC	iP	20 15 25.2
		iS	20 15 32.2
	WDC	ePc	20 15 40.4
	MIN	ePc	20 15 50.5
	ORV	ePd	20 15 54.7

BRK 20h15m12.8s 40.8N 124.7W
h=5kmR ML=3.2(4) Mo=3.0E20(2)
Off Coast, W of Eureka, CA

Jan 31	MNA	iPc	15 30 36.4
	FRI	iPc	15 30 47.1
	JAS	iPc	15 30 56.6
	PRI	ePc	15 31 01.5
	LLA	eP	15 31 02.7
	SAO	eP	15 31 07.5
	PRS	eP	15 31 08.9
	MHC	eP	15 31 09.8
	GCC	eP	15 31 15
	ORV	eP	15 31 15.7
	BKS	eP	15 31 18.0
		ePg	15 31 39
		eSg	15 32 43
	MIN	eP	15 31 23.3

BRK ML=4.3(6)
USGS 15h30m00.0s 37.1N 116.1W
h=0km mb=4.1
Underground Nuclear Explosion, NTS
(Gorbea)

Feb 1	SAO	eP	03 31 56.6
	BKS	ePd	03 31 58.1
		AMP(μm)	PER(s)
		PZ 0.036	0.9
	PRI	eP	03 31 58.2
	MHC	eP	03 31 58.3
	FRI	eP	03 32 02.9
	JAS	ePd	03 32 03.4
	ORV	ePd	03 32 04.8
	WDC	ePd	03 32 05.3
	MIN	eP	03 32 06.7
	MNA	eP	03 32 12.2

USGS 03h20m33.7s 23.2S 179.1E
h=554km mb=5.1
South of Fiji Islands

Feb 1	FHC	iPc	07 37 45.4
	WDC	iPc	07 37 51.0
		epP	07 39 48
		eS	07 45 30
	MIN	iPc	07 37 55.1
	ORV	iPc	07 37 58.7
		eS	07 45 44
	BKS	iPc	07 38 03.5
		i	07 38 25
		i	07 38 36
		i	07 38 41
		eS	07 45 52
		eScS	07 47 00
		esS	07 49 14
		eSS	07 50 14
		i	07 50 50
		e	07 50 58
		esSS	07 53 20
		i	08 00 22
		AMP(μm)	PER(s)
		PZ 1.1	0.9
	MHC	ePc	07 38 08.1
	JAS	iPc	07 38 10.1
		epP	07 40 07
		eS	07 46 07
		esS	07 49 40
		eSS	07 50 36
	SAO	ePc	07 38 10.7
	FRI	iPc	07 38 16.4
		eS	07 46 19
	MNA	iPc	07 38 16.6
		eS	07 46 19
	PRI	iPc	07 38 17.3

BRK ab=6.3 h=600km Distance=61°
USGS 07h28m28.7s 49.1N 146.6E
h=573km mb=5.9
Sea of Okhotsk

Feb 1	JAS	e(Pdif)	14 36 20
		e(PKP)	14 40 36
		e	15 18 00
		eSP	15 51 24
		eSS	15 57 00
	WDC	e	14 40 28.5
		e	15 36 30
	MIN	e	14 40 32.5
	ORV	e	14 40 34
	MNA	e	14 40 38

USGS 14h22m07.9s 34.6N 70.5E
h=33km mb=5.9 Ms=5.8
Afghanistan

Feb 3	WDC	e	05 02 27
	ORV	eP	05 02 32.9
	JAS	eP	05 02 39.6
	PRI	e	05 02 41
	MNA	eP	05 02 48.5

USGS 04h50m27.0s 17.5N 147.4E
h=50km mb=5.2 Ms=5.2
Mariana Islands Region

Feb 3	FRI	e	08 41 56
	PRI	ePc	08 41 57.6
	MNA	eP	08 41 59.1
	SAO	e	08 42 02
	MHC	eP	08 42 04.8
	BKS	iPc	08 42 08.0
		i	08 42 22
		AMP(μm)	PER(s)
		PZ 0.29	1.6
	ORV	ePc	08 42 12.3
	MIN	e	08 42 14
	WDC	eP	08 42 17.6

USGS 08h29m49.3s 29.5S 71.3W
h=46km mb=5.6 Ms=5.2
Near Coast of Central Chile

Feb 3	PRI	e	11 39 36
	BKS	iPc	11 39 36.4
		AMP(μm)	PER(s)
		PZ 0.024	0.75
	MHC	e	11 39 37
	JAS	eP	11 39 41.9
	ORV	eP	11 39 42.4
	WDC	eP	11 39 43.6

USGS 11h28m10.5s 23.7S 180.0W
h=522km mb=4.6
South of Fiji Islands

Feb 3	SAO	eP	14 35 54.9
	BKS	iPc	14 35 55.8
		AMP(μm)	PER(s)
		PZ 0.087	0.9
	PRI	ePc	14 35 56.3
	MHC	eP	14 35 56.3
	FRI	eP	14 36 01.6
	JAS	iPc	14 36 02.1
	ORV	ePc	14 36 03.3
	WDC	iPc	14 36 03.6
	MIN	eP	14 36 05.3
	MNA	iPc	14 36 11.6

USGS 14h25m00.5s 19.3S 177.4W
h=579km mb=5.3
Fiji Islands Region

Feb 3	SAO	iPc	18 17 23.2
	LLA	iPc	18 17 26.5
	PRS	iPd	18 17 26.8
	GCC	ePd	18 17 32.6
	PRI	ePd	18 17 34.5
		eS	18 17 46.5
	MHC	ePd	18 17 34.8
		eS	18 17 46.8
	PCC	ePc	18 17 41.7
	JAS	iPc	18 17 46.4

BRK 18h17m20.2s 36.6N 121.3W
h=3km ML=2.6(2)
Stone Canyon, 25 km SSE of
Hollister, CA

Feb 3	BRK	e(P)	19 17 56
	MHC	eP	19 17 57.6
	PRI	eP	19 17 59.0
	WDC	eP	19 17 59.0
	ORV	eP	19 18 00.5
	JAS	eP	19 18 01.7
	MNA	eP	19 18 11.2
	BKS	e	19 18 16
		eLr	19 43 24
		AMP(μm)	PER(s)
		LZ 5.0	20.
		LN 1.8	20.
		LE 5.4	20.

USGS 19h05m35.7s 11.5S 166.3E
h=62km mb=5.4
Santa Cruz Islands

Feb 4	FRI	iPc	22 48 09.4
		eS	22 48 31.7
	PRI	ePc	22 48 16.5
	LLA	ePd	22 48 20.5
	MNA	eP	22 48 24.5
	JAS	ePd	22 48 26.8
	SAO	iPd	22 48 27.0

BRK ML=3.7(1)
PAS 22h47m39.1s 36.0N 118.0W
h=6km ML=3.5
60 km NE of Lake Isabella, CA

Feb 5	FRI	iPd	10 59 02.1
		iS	10 59 13.5
	MNA	iPc	10 59 06.3
	JAS	iPd	10 59 07.3
		iS	10 59 22.1
	LLA	iP	10 59 19.4
	PRI	ePc	10 59 22.0
	MHC	ePd	10 59 23.4
	SAO	iPd	10 59 23.6
	PRS	ePd	10 59 25.9
	GCC	ePd	10 59 27.5
	BKS	iPd	10 59 29.6
		i	10 59 32.5
		i	10 59 34.1
		i	10 59 36.6
		i	11 00 03
		iS	11 00 05.1
	ZSP	eP	10 59 30.0
	PCC	ePd	10 59 30.7
	ORV	ePd	10 59 31.8
	MIN	eP	10 59 41.4
	WDC	ePd	10 59 50.0

BRK 10h58m45.9s 37.7N 119.1W
h=10kmR ML=3.8(6)
Mammoth Lakes Area, CA

Feb 5	FHC	ePc	18 49 54.5
	WDC	iPc	18 50 01.1
	MIN	ePc	18 50 05.8
	ORV	iPc	18 50 10.1
	BKS	eP	18 50 16.4
		AMP(μm)	PER(s)
		PZ 0.057	1.0
	MHC	ePc	18 50 21.9
	JAS	iPc	18 50 23.9
	SAO	ePc	18 50 25.2
	MNA	iPc	18 50 30.7
	FRI	iPc	18 50 31.4
	PRI	ePc	18 50 32.7

USGS 18h41m06.1s 55.6N 161.7E
h=33km mb=5.4
Near East Coast of Kamchatka

Feb 6	FHC	eP	11 08 43.7
	WDC	ePd	11 08 50.2
	MIN	ePd	11 08 54.9
	ORV	ePd	11 08 58.2
	MHC	ePd	11 09 [illegible]
	JAS	iPd	11 09 [illegible]
	MNA	iPd	11 09 [illegible]

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)
	FRI	iPd	11 09 20.7
	PRI	ePd	11 09 23.6
USGS 10h59m54.4s 55.0N 161.4E			
h=33km mb=5.2			
Near East Coast of Kamchatka			
Feb 6	WDC	ePc	14 50 16.9
	MIN	eP	14 50 21.3
	ORV	ePc	14 50 24.6
	MHC	eP	14 50 33.4
	JAS	ePc	14 50 36.1
	MNA	ePc	14 50 43.7
	PRI	e(P)	14 50 44
USGS 14h40m12.1s 45.5N 150.2E			
h=96km mb=5.6			
Kuril Islands			
Feb 7	PRI	eP	05 25 05.0
	MHC	eP	05 25 05.7
	BKS	ePd	05 25 06.2
			AMP(µm) PER(s)
		PZ	0.087 1.0
	FRI	e	05 25 10
	FHC	eP	05 25 10.6
	JAS	eP	05 25 10.9
		e	05 26 37
	ORV	eP	05 25 12.6
	WDC	eP	05 25 13.1
		e	05 26 39
	MIN	eP	05 25 14.5
	MNA	eP	05 25 19.2
USGS 05h13m19.3s 25.0S 178.0W			
h=352km mb=5.3			
South of Fiji Islands			
Feb 7	FHC	eP	21 46 00.5
	BKS	eP	21 46 02.9
		e	21 47 22
		e	21 49 17
		ePP	21 49 32
		e	21 49 38
		e	21 55 15
		eS	21 56 42
		e	21 56 52
		eScS	21 57 06
		ePPS	21 57 52
		e	21 58 13
		eSS	22 01 30
		e	22 04 37
		eSSS	22 05 58
		eLq	22 08 32
		eLr	22 12 06
		e	22 57 44
			AMP(µm) PER(s)
		PZ	0.44 0.8
		LZ	150 20.
		LNE	340 20.
		LNW	110 20.
	SAO	eP	21 46 03.4
	MHC	eP	21 46 04.2
		eS	21 56 45
	WDC	iPc	21 46 04.8
		eS	21 56 43
		ePKPPKP	22 12 38
	PRI	iPc	21 46 06.6
		eS	21 56 51
	ORV	iPc	21 46 06.8
		eS	21 56 50
		ePKKP	22 04 57
	MIN	eP	21 46 07.0
	JAS	iPc	21 46 08.8
		ePP	21 49 35
		eS	21 56 58

DATE	STA	PHASE	TIME (UTC)
		ePKKP	22 04 56
		ePKPPKP	22 12 34
	FRI	iPc	21 46 10.4
		eS	21 56 57
	MNA	iPc	21 46 18.0
BRK Ms=7.5 Distance=86°			
USGS 21h33m21.4s 10.0S 160.5E			
h=18km mb=6.6 Ms=7.5			
Solomon Islands			
Feb 7	BRK	e(P)	22 59 40
	WDC	ePc	22 59 42.3
	PRI	ePc	22 59 44.2
	ORV	ePc	22 59 44.2
	JAS	ePc	22 59 46.2
USGS 22h47m00.1s 10.2S 160.7E			
h=33km mb=5.3			
Solomon Islands			
Feb 8	FHC	ePc	00 52 31.3
	BKS	ePc	00 52 33.0
			AMP(µm) PER(s)
		PZ	0.41 1.0
	SAO	ePc	00 52 34.2
	MHC	ePc	00 52 34.8
	WDC	iPc	00 52 35.3
		ePP	00 55 58
	ORV	iPc	00 52 37.1
	PRI	ePc	00 52 37.4
	MIN	ePc	00 52 37.8
	JAS	iPc	00 52 39.4
		ePP	00 56 02
	FRI	ePc	00 52 41.1
	MNA	iPc	00 52 48.7
		ePP	00 56 18
USGS 00h39m51.0s 9.8S 160.3E			
h=27km mb=6.0 Ms=6.4			
Solomon Islands			
Feb 8	PRI	eP	08 10 37.0
	WDC	eP	08 10 37.8
	ORV	eP	08 10 38.2
	MIN	eP	08 10 38.7
	JAS	eP	08 10 39.0
	MNA	eP	08 10 49.6
USGS 07h57m48.2s 10.2S 160.2E			
h=16km mb=5.1			
Solomon Islands			
Feb 9	FRI	eP	01 29 37.2
	PRI	ePc	01 29 38.4
		ePcP	01 30 07
	MNA	ePc	01 29 39.0
		ePcP	01 30 08
	JAS	iPc	01 29 45.0
		ePcP	01 30 14
	MHC	ePc	01 29 47.5
		ePcP	01 30 17
	BKS	eP	01 29 52.4
		ePcP	01 30 21
			AMP(µm) PER(s)
		PZ	0.061 1.0
	ORV	iPc	01 29 56.1
		ePcP	01 30 25
	MIN	eP	01 30 01.7
	WDC	ePc	01 30 01.8
		ePcP	01 30 31
	FHC	eP	01 30 10.5
USGS 01h19m08.9s 12.8S 76.0W			
h=84km mb=5.4			
Peru			
Feb 9	PRI	ePc	04 41 59.8

DATE	STA	PHASE	TIME (UTC)
		epP	04 42 12
	MNA	ePc	04 42 00.6
		epP	04 42 12
	JAS	iPc	04 42 06.3
		epP	04 42 18
	MHC	eP	04 42 08.9
		epP	04 42 21
	BKS	eP	04 42 13.3
		epP	04 42 30
	ORV	iPc	04 42 17.5
		epP	04 42 29
	MIN	ePc	04 42 19.9
	WDC	ePc	04 42 23.2
		epP	04 42 35
USGS 04h31m17.7s 14.2S 76.2W			
h=33km mb=5.4 Ms=4.7			
Near Coast of Peru			
Feb 10	PRS	iPc	07 23 33.1
	SAO	iPd	07 23 34.9
	GCC	iPd	07 23 37.1
	LLA	iPd	07 23 40.4
	PRI	iPc	07 23 42.8
	MHC	iPd	07 23 43.3
	PCC	ePc	07 23 44.8
	BKS	iPnc	07 23 49.7
		ePg	07 23 52.6
		e	07 23 58.2
		eS	07 24 08.7
		eSg	07 24 14.4
	ISP	iPd	07 23 50.9
		iSg	07 24 15.7
	FRI	i(P)	07 23 56.2
	JAS	iPd	07 23 56.9
		iS	07 24 17.7
	ORV	iPc	07 24 14.0
	MNA	e(P)	07 24 25.3
	MIN	e(P)	07 24 27.3
	WDC	e(P)	07 24 27.5
BRK 07h23m25.3s 36.4N 121.9W			
h=12km ML=4.1(4) Mo=8.6E21(4)			
25 km S of Monterey, CA			
Feb 10	PCC	eP	12 33 44.98
		eS	12 34 16.40
	BKS	eP	12 33 46.62
		eS	12 34 18.68
	GCC	eP	12 33 51.14
		eS	12 34 25.44
	MHC	eP	12 33 54.02
		eS	12 34 31.48
	SAO	iPc	12 33 56.78
		eS	12 34 36.56
	PRS	eP	12 34 00.38
	ORV	eP	12 34 02.30
	WDC	iPd	12 34 02.94
		eS	12 34 46.96
	LLA	eP	12 34 04.22
		eS	12 34 47.20
	JAS	eP	12 34 07.34
		iS	12 34 54.52
	MIN	eP	12 34 07.90
		eS	12 34 57.36
	PRI	eP	12 34 09.34
		eS	12 34 57.68
	FRI	eP	12 34 14.86
BRK 12h33m04.9s 37.6N 125.5W			
h=5kmR ML=3.9(2)			
Off the Coast, 300 km W of Berkeley, CA			
Feb 10	PRI	ePc	16 53 57.1
		e	16 57 17

DATE	STA	PHASE	TIME (UTC)
	FRI	ePc	16 54 00.0
	MNA	ePc	16 54 08.4
	SAO	e	16 54 12
	MHC	eP	16 54 14.2
	JAS	iPc	16 54 15.2
		e	16 57 38
		e	16 58 00
	BKS	e(P)	16 54 24
		eS	16 57 00
			AMP(µm) PER(s)
		PZ	0.063 1.2
	ORV	eP	16 54 41.0
	MIN	eP	16 54 49.6
	WDC	ePc	16 54 56.6
		e	16 59 45
	FHC	eP	16 55 09.0
BRK mb=4.7 h=33km Distance=15°			
USGS 16h51m20.8s 28.3N 112.1W			
h=10km mb=5.6 Ms=6.2			
Gulf of California			
Feb 10	WDC	ePc	20 01 10.0
		e	20 01 25
	JAS	ePc	20 01 25.5
		e	20 01 41
	PRI	eP	20 01 30.0
	FRI	eP	20 01 30.8
		e	20 01 46
	MNA	ePc	20 01 32.5
		e	20 01 48
USGS 19h49m23.5s 34.0N 135.7E			
h=63km mb=5.1			
Near South Coast of Southern Honshu, Japan			
Feb 11	MIN	e(P)	13 40 58
	WDC	eP	13 40 59.0
	ORV	ePc	13 41 06.7
	MNA	ePc	13 41 09.0
	JAS	eP	13 41 24.5
	FRI	e	13 41 33
USGS 13h38m27.0s 49.2N 114.4W			
h=10km mb=4.5			
British Colombia			
Feb 11	MNA	ePc	14 07 31.6
	JAS	ePc	14 07 42.9
		e	14 08 33
	MHC	eP	14 07 49.6
	ORV	ePc	14 07 50.5
	MIN	ePc	14 07 51.4
	WDC	eP	14 07 55.8
	FHC	eP	14 08 05.1
USGS 13h57m45.0s 12.1N 60.0W			
h=63km mb=5.3			
Windward Islands			
Feb 11	PRS	iPc	14 10 36.6
	SAO	iPd	14 10 38.4
	GCC	ePd	14 10 40.8
	LLA	iPc	14 10 43.8
	MHC	ePd	14 10 47.2
	PRI	ePc	14 10 47.4
	PCC	ePc	14 10 48.8
	BRK	eP	14 10 53.6
		e	14 10 57
		e	14 11 17
	ISP	e(P)	14 10 54
	JAS	ePd	14 11 00.5
BRK 14h10m28.8s 36.4N 121.9W			
h=9km ML=3.4(4)			
25 km S of Monterey, CA			

DATE	STA	PHASE	TIME (UTC)
Feb 11	JAS	ePc	15 31 16.0
	ORV	eP	15 31 17.8
	WDC	ePc	15 31 18.4
	FRI	e(P)	15 31 21
	MNA	eP	15 31 26.0
USGS 15h19m46.9s 16.5S 173.0W			
h=33km mb=5.2			
Samoa Islands Region			
Feb 11	FHC	iPd	19 04 40.3
		eS	19 04 47.4
	WDC	eP	19 04 54.5
BRK 19h04m30.3s 40.4N 124.4W			
h=5kmR ML=3.1(2)			
SSW of Eureka, CA			
Feb 12	WDC	eP	00 08 22.6
	ORV	iPd	00 08 28.1
	JAS	iPd	00 08 36.7
	PRI	e(P)	00 08 40
USGS 23h55m59.6s 29.3N 130.4E			
h=53km mb=5.1			
Ryukyu Islands			
Feb 12	FHC	eP	11 52 21.0
	WDC	eP	11 52 36.0
	MIN	eP	11 52 45.0
	ORV	eP	11 52 55.0
		e	11 53 49
	BKS	e	11 53 08
	MHC	e	11 53 13
	JAS	eP	11 53 20.0
	MNA	eP	11 53 33.2
USGS 11h51m42.0s 42.4N 126.4W			
h=10km mb=4.6 Ms=4.0			
Off Coast of Oregon			
Feb 12	PRS	iPd	13 57 15.7
		eS	13 57 22.2
	PRI	iPd	13 57 18.2
	LLA	ePd	13 57 22.2
		eS	13 57 34.2
	SAO	iPd	13 57 23.3
	GCC	e(P)	13 57 30
	MHC	eP	13 57 32.5
	FRI	eP	13 57 36.4
		eS	13 57 57.9
	JAS	eP	13 57 42.5
BRK 13h57m06.8s 35.9N 121.3W			
h=5kmR ML=2.7(4)			
45 km SSW of King City, CA			
Feb 12	JAS	eP	19 10 29.0
	MNA	eP	19 10 31.2
	ORV	eP	19 10 40.0
	WDC	eP	19 10 47.5
USGS 18h58m54.3s 34.9S 107.6W			
h=10km mb=5.1			
Easter Island Cordillera			
Feb 13	FHC	eP	05 01 28.7
	WDC	ePd	05 01 32.7
	MIN	eP	05 01 35.5
	ORV	ePd	05 01 37.8
	BKS	eP	05 01 42.6
			AMP(µm) PER(s)
		PZ	0.057 1.0
	MHC	eP	05 01 44.0
	SAO	e(P)	05 01 45
	JAS	ePd	05 01 45.8
	FRI	eP	05 01 50.2
	PRI	eP	05 01 50.5
	MNA	eP	05 01 51.5

DATE	STA	PHASE	TIME (UTC)
USGS 04h48m57.5s 25.5N 122.4E			
h=269km mb=5.5			
Taiwan Region			
Feb 13	FHC	eP	09 51 48.3
	WDC	iPc	09 51 49.6
	ORV	iPc	09 51 56.0
	BKS	eP	09 51 58.9
			AMP(µm) PER(s)
		PZ	0.057 1.0
	MHC	eP	09 52 02.6
	JAS	iPc	09 52 05.5
	PRI	eP	09 52 10.3
	FRI	eP	09 52 10.7
	MNA	eP	09 52 12.8
USGS 09h40m26.1s 34.3N 140.0E			
h=115km mb=5.2			
Near South Coast of Honshu, Japan			
Feb 13	FHC	e(P)	10 22 47
	WDC	e(P)	10 22 55
	MIN	eP	10 23 05.5
	ORV	ePc	10 23 13.2
	JAS	ePc	10 23 38.7
USGS 10h21m55.0s 43.2N 126.2W			
h=10km mb=4.2 Ms=4.3			
Off Coast of Oregon			
Feb 13	WDC	eP	18 11 21.7
	ORV	eP	18 11 32.6
	JAS	eP	18 11 49.7
	MNA	eP	18 11 57.1
	PRI	eP	18 12 01.2
USGS 18h05m52.1s 55.7N 154.3W			
h=33km mb=4.9 Ms=4.8			
South of Alaska			
Feb 14	MHC	eP	00 21 49.0
	BKS	eP	00 21 49.5
			AMP(µm) PER(s)
		PZ	0.076 1.5
	JAS	eP	00 21 54.0
	FRI	eP	00 21 54.1
	WDC	e	00 21 57
	ORV	eP	00 21 57.0
	MNA	eP	00 22 04.2
USGS 00h09m44.6s 24.6S 176.1W			
h=67km mb=5.0			
South of Fiji Islands			
Feb 14	FRI	eP	00 28 46.9
	MNA	eP	00 28 47.2
	JAS	eP	00 28 48.8
	ORV	e	00 29 08
USGS 00h24m03.6s 19.5N 108.8W			
h=10km mb=4.3			
Revilla Gigedo Islands Region			
Feb 14	WDC	e	07 16 12
	ORV	eP	07 16 16.5
	BKS	eP	07 16 20.0
			AMP(µm) PER(s)
		PZ	0.056 1.2
	JAS	eP	07 16 23.1
	MNA	eP	07 16 49.4
USGS 07h10m02.8s 30.7N 157.1W			
h=10km mb=5.0			
North Pacific Ocean			
Feb 15	MNA	iPc	17 00 13.6
	FRI	iPc	17 00 17.7
	JAS	iPnc	17 00 18.5
		iPg	17 01 03.3

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DATE	STA	PHASE	TIME (UTC)
	PRI	iPnc	17 01 00.0
		iP$	17 01 08.1
	LLA	e(Pn)	17 01 01
		iP$	17 01 09.5
	SAO	iPn	17 01 06.3
		iP$	17 01 14.1
		iSn	17 02 17.5
	PRS	ePc	17 01 06.5
	MHC	iPnc	17 01 08.6
		iP$	17 01 20.6
		iPg	17 01 35.9
		iSn	17 02 20.5
	GCC	e(P)	17 01 12
	ORV	ePc	17 01 13.7
	BKS	ePn	17 01 15.6
		eP$	17 01 24.1
	PCC	ePc	17 01 15.8
	ZSP	ePn	17 01 16.2
		eP$	17 01 26.2
	MIN	eP	17 01 20.8
	WDC	eP	17 01 30.5

BRK ML=4.7(6)
USGS 17h00m00.1s 37.2N 116.2W
h=0km ab=5.0
Underground Nuclear Explosion, NTS (Milagro)

Feb 15	MHC	eP	18 38 48.4
	PRI	ePd	18 38 49.1
	WDC	eP	18 38 52.7
	JAS	ePd	18 38 53.2
	ORV	eP	18 38 53.4
	FRI	eP	18 38 53.5
	MIN	eP	18 39 02.0

USGS 18h26m11.1s 20.8S 169.7E
h=79km ab=5.0
Vanuatu Islands

Feb 16	MNA	iPc	11 15 25.4
		iS	11 15 46.4
	JAS	iPd	11 15 43.9
		i	11 15 49.2
	ORV	ePc	11 15 44.3
	MIN	iP	11 15 46.6
	FRI	iPd	11 15 50.9
	WDC	ePd	11 15 56.1
		i	11 16 05.8
	MHC	ePd	11 16 00.3
	ZSP	eP	11 16 00.4
	BKS	ePd	11 16 01.4
	LLA	ePd	11 16 02.2
	SAO	iPd	11 16 04.2
	PCC	eP	11 16 04.9
	GCC	eP	11 16 05.5
	PRI	eP	11 16 07.2
		i	11 16 21.6
	PRS	ePd	11 16 08.3

BRK ML=5.2(8)
USGS 11h14m57.8s 39.9N 117.8W
h=8km ab=4.8
Dixie Valley Region, Nevada

Feb 16	FHC	ePc	13 52 57.0
	WDC	iPc	13 53 02.1
	MIN	e(P)	13 53 06
	ORV	iPc	13 53 08.2
	BKS	ePc	13 53 11.1
		e	13 53 30
		AMP(μm)	PER(s)
		PZ 0.14	0.8
	MHC	iPc	13 53 15.1
	SAO	ePc	13 53 16.8
	JAS	iPc	13 53 17.4

DATE	STA	PHASE	TIME (UTC)
	PRI	iPc	13 53 22.4
	FRI	iPc	13 53 22.5
	MNA	ePc	13 53 24.1

USGS 13h41m51.7s 34.0N 137.1E
h=345km ab=5.4
Near South Coast of Honshu, Japan

Feb 16	WDC	ePdiff	17 32 19.5
		ePKP	17 36 19.7
		ePKKP	17 48 14.8
	MIN	ePdiff	17 32 23.3
		ePKP	17 36 17.5
	ORV	ePdiff	17 32 24.0
		ePKKP	17 48 12.0
	JAS	ePdiff	17 32 28.0
		iPKP	17 37 43.4
		ePKKP	17 48 05.9
	MNA	ePdiff	17 32 29.1
	FRI	ePdiff	17 32 36.2
	PRI	ePKKP	17 48 04.6
	MHC	ePKKP	17 48 05.0

USGS 17h18m41.6s 36.4N 70.8E
h=208km ab=6.1
Hindu Kush Region

Feb 17	JAS	eP	10 45 03.4
	ORV	eP	10 45 05.5

USGS 10h32m25.6s 30.2S 177.7W
h=50km ab=5.0 Ms=4.9
Kermadec Islands

Feb 17	JAS	iPc	12 04 15.7
	MNA	iPc	12 04 18.4
	ORV	iPc	12 04 23.9
	FRI	iPd	12 04 28.3
	MIN	eP	12 04 31.7
	MHC	eP	12 04 33.3
	ZSP	eP	12 04 33.5
		iS	12 05 04.6
	BKS	iPc	12 04 33.9
		eP$	12 04 36.4
		e	12 05 03.0
	LLA	eP	12 04 36.3
	SAO	iPc	12 04 37.6
	PCC	eP	12 04 37.7
	GCC	eP	12 04 39.6
	WDC	ePc	12 04 40.5
	PRS	eP	12 04 42.0
	PRI	eP	12 04 44.1

BRK 12h03m56.2s 38.9N 119.6W
h=25kmR ML=4.3(6) Mo=3.5E22(4)
40 km WSW of Yerrington, Nevada

Feb 17	JAS	iPc	12 17 06.0
	MNA	iPc	12 17 08.8
	ORV	iPc	12 17 14.6
	FRI	iPc	12 17 19.0
	MIN	iPc	12 17 21.2
	MHC	eP	12 17 24.4
	BKS	eP	12 17 26.0
		eS	12 17 53
	ZSP	eP	12 17 26.1
	LLA	eP	12 17 26.7
	SAO	eP	12 17 28.4
	PCC	eP	12 17 30.0
	WDC	eP	12 17 31.8
	GCC	eP	12 17 33.1
	PRS	eP	12 17 36.7
	PRI	eP	12 17 37.9

BRK 12h16m46.6s 38.9N 119.6W
h=25kmR ML=3.6(6)
40 km WSW of Yerrington, Nevada

DATE	STA	PHASE	TIME (UTC)
Feb 17	MNA	ePKKP1	17 01 36.6
		ePKKP2	17 01 46.2
	BKS	e	17 01 38
	JAS	ePKKP1	17 01 40.9
		ePKKP2	17 01 53.6
	ORV	ePKKP1	17 01 43.6
		ePKKP2	17 01 57.8
	MIN	ePKKP1	17 01 43.8
	WDC	ePKKP1	17 01 46.6
		ePKKP2	17 02 00.5

USGS 16h32m21.3s 6.6S 130.1E
h=158km ab=6.1
Banda Sea

Feb 17	PRI	ePc	20 38 02.0
	FRI	ePc	20 38 05.5
	MNA	eP	20 38 10.8
	JAS	ePc	20 38 16.4
		e	20 38 57
	MHC	ePc	20 38 17.2
	BKS	eP	20 38 24.4
		eS	20 42 24
		e	20 44 00
		eLr	20 45 00
		AMP(μm)	PER(s)
		PZ 0.19	1.5
		LZ 22	20.
		LN 38	20.
		LE 31	20.
	ORV	iPc	20 38 36.5
	MIN	ePc	20 38 44.5
	WDC	ePc	20 38 48.7
		e	20 39 29

BRK Ms=6.0 Distance=23°
USGS 20h33m42.2s 20.6N 109.1W
h=10km ab=5.5 Ms=5.5
Gulf of California Region

Feb 18	SAO	ePc	18 37 28.6
	BKS	eP	18 37 29.8
		e	18 37 35
		AMP(μm)	PER(s)
		PZ 0.072	1.1
	PRI	ePc	18 37 30.2
	MHC	ePc	18 37 30.2
	FRI	ePc	18 37 35.4
	JAS	iPc	18 37 35.7
	WDC	iPc	18 37 36.7
	ORV	iPc	18 37 36.7
	MIN	eP	18 37 38.8
	MNA	iPc	18 37 45.5

USGS 18h36m37.7s 18.0S 178.5W
h=606km ab=5.0
Fiji Islands Region

Feb 19	FHC	ePc	04 09 55.8
	WDC	iPc	04 09 56.8
	MIN	iPc	04 09 58.8
	ORV	iPc	04 10 02.2
	BKS	eP	04 10 10.2
		AMP(μm)	PER(s)
		PZ 0.047	0.8
	JAS	iPc	04 10 11.3
	MHC	eP	04 10 13.4
	SAO	eP	04 10 15.7
	FRI	iPc	04 10 16.1
	PRI	ePc	04 10 20.0

USGS 03h57m03.4s 49.9N 78.8E
h=0km ab=5.8 Ms=4.3
Eastern Kazach, S.S.R.

Feb 19	PRI	iPd	09 43 16.6
	LLA	iPd	09 43 21.7

DATE	STA	PHASE	TIME (UTC)
	FRI	iPd	09 43 25.0
	PRS	iPd	09 43 25.6
	SAO	iPd	09 43 28.4
	MHC	ePd	09 43 35.0
		iS	09 43 54.9
	GCC	ePd	09 43 35.2
	JAS	iPc	09 43 38.1
	PCC	ePc	09 43 42.5
	BKS	eP	09 43 44.7
		e	09 43 58.5
		eS	09 44 12.0
	ORV	ePc	09 44 03.5
	MIN	e(P)	09 44 16.0

BRK 09h43m10.7s 36.3N 120.3W
h=10km ML=4.1(6) Mo=2.8E22(4)
Coalinga Area, CA

Feb 19	ORV	e	19 35 08
		e	19 35 19
	WDC	e	19 35 11
	JAS	eP	19 35 13.4
	FRI	e	19 35 16
	MNA	eP	19 35 21.1

USGS 19h22m00.6s 6.1S 150.5E
h=34km ab=5.3 Ms=5.4
New Britain Region

Feb 20	JAS	iPKPc	18 02 15.5
	ORV	ePKP	18 02 20.4
	WDC	ePKP	18 02 23.2

USGS 17h42m37.1s 52.4S 14.0E
h=10km ab=4.8
Southwest of Africa

Feb 20	FHC	eP	18 41 56.7
	WDC	eP	18 41 57.8
	MIN	eP	18 42 00.1
		e	18 42 09
	ORV	eP	18 42 05.3
	MNA	eP	18 42 15.5
	BKS	e	18 42 18
	JAS	iPd	18 42 18.0
		i	18 42 27
	MHC	eP	18 42 22.0
	PRI	eP	18 42 31.6

USGS 18h32m35.5s 85.1N 97.1E
h=10km ab=4.9 Ms=4.3
North of Severnaya Zealya, S.S.R.

Feb 22	MNA	eP	17 52 18.1
		epP	17 52 32
	JAS	ePc	17 52 20.9
		epP	17 52 35
	ORV	eP	17 52 29.6
		epP	17 52 44
	WDC	epP	17 52 48

USGS 17h39m43.6s 36.1S 72.5W
h=45km ab=5.2
Near Coast of Central Chile

Feb 22	FHC	iPd	23 51 34.7
	WDC	iPc	23 51 41.3
	MIN	ePd	23 52 02.1
	ORV	eP	23 52 05.7

Feb 24	BRK	e	21 33 45
	PRI	e	21 33 47
	MHC	epP	21 34 09
	WDC	ePc	21 33 50.2
		epP	21 34 15
	FRI	epP	21 34 16
	ORV	ePc	21 33 51.0
		epP	21 34 16

DATE	STA	PHASE	TIME (UTC)
	JAS	ePc	21 33 51.1
		epP	21 34 15
	MNA	ePc	21 33 59.8
		epP	21 34 24

USGS 21h21m09.6s 21.3S 170.0E
h=92km ab=5.4
Loyalty Islands Region

Feb 24	PRI	eP	23 28 05.0
	FRI	e(P)	23 28 06
	MNA	ePc	23 28 13.8
	JAS	ePc	23 28 19.1
	MHC	ePc	23 28 20.0
	ORV	ePc	23 28 37.5
	WDC	ePc	23 28 49.3

USGS 23h23m02.2s 18.6N 107.0W
h=33km ab=5.0
Off Coast of Jalisco, Mexico

Feb 25	FRI	iPKPc	07 35 57.9
		e	07 36 25
	MNA	ePKPc	07 35 58.2
		e	07 36 25
	PRI	ePKPc	07 35 58.3
		e	07 36 27
	JAS	iPKPc	07 35 58.9
		e	07 36 30
	BKS	e	07 36 35

USGS 07h16m00.1s 47.9S 31.8E
h=10km ab=5.5 Ms=5.6
South of Africa

Feb 25	SAO	ePc	15 40 19.0
	BKS	eP	15 40 19.5
		epP	15 41 20
		AMP(μm)	PER(s)
		PZ 0.31	2.0
	PRI	ePc	15 40 20.5
	MHC	ePc	15 40 20.8
	FHC	ePc	15 40 25.0
	FRI	iPc	15 40 26.1
	JAS	iPc	15 40 26.8
		epP	15 41 27
	ORV	iPc	15 40 28.3
		epP	15 41 28
	WDC	iPc	15 40 28.5
		epP	15 41 29
	MIN	ePc	15 40 30.3
	MNA	iPc	15 40 37.0
		epP	15 41 37

USGS 15h29m14.5s 16.7S 174.8W
h=257km ab=5.5
Tonga Islands

Feb 26	FRI	ePd	08 29 27.3
	MNA	iPd	08 29 29.2
	PRI	ePd	08 29 29.2
		e	08 30 02
	SAO	ePd	08 29 33.8
	JAS	iPd	08 29 34.6
		e	08 32 28
	MHC	iPd	08 29 37.8
	BKS	iPd	08 29 41.4
		e	08 29 48
		AMP(μm)	PER(s)
		PZ 0.42	1.0
	ORV	iPd	08 29 44.7
	MIN	ePd	08 29 46.9
	WDC	iPd	08 29 50.4
	FHC	iPd	08 29 50.4

USGS 08h18m19.8s 17.3S 70.5W
h=113km ab=5.8
Near Coast of Peru

DATE	STA	PHASE	TIME (UTC)
Feb 26	WDC	eP	19 08 53.5
		e	19 09 04
	ORV	eP	19 09 03.5
		e	19 09 11
	JAS	eP	19 09 11.0
		e	19 09 21

USGS 18h57m58.8s 40.6N 143.8E
h=32km ab=5.1 Ms=4.6
Off East Coast of Honshu, Japan

Feb 27	MNA	eP	00 55 55.7
	PRI	e	00 55 59.5
	JAS	eP	00 56 04.0
	ORV	eP	00 56 19.0
	MIN	eP	00 56 23.0
	WDC	eP	00 56 26.5
	FHC	eP	00 56 38

USGS 00h49m09.1s 13.9N 91.0W
h=33km ab=4.8 Ms=3.7
Near Coast of Guatemala

Feb 27	FRI	iPc	01 36 38.6
	MNA	iPd	01 36 41.5
	JAS	iPc	01 36 48.9
	LLA	iPc	01 36 56.0
	PRI	iPc	01 36 57.0
	SAO	iPc	01 37 01.2
	PRS	ePc	01 37 02.3
	MHC	ePc	01 37 02.6
	GCC	ePc	01 37 05.9
	BKS	ePd	01 37 09.5
	ZSP	eP	01 37 10.0
	PCC	ePc	01 37 10.0
	ORV	eP	01 37 11.5
	MIN	ePd	01 37 21.0
	WDC	ePc	01 37 30.0

BRK 01h36m20.6s 37.4N 118.6W
h=10km ML=4.5(5) Mo=2.8E22(1)
Round Valley, NW of Bishop, CA

Feb 27	BRK	eP	09 52 30.5
	MHC	eP	09 52 32.0
	PRI	eP	09 52 33.6
	WDC	ePc	09 52 35.4
	ORV	ePc	09 52 36.3
	JAS	ePc	09 52 37.0
	MIN	eP	09 52 37.5
	FRI	eP	09 52 38.0
	MNA	ePc	09 52 44.3

USGS 09h40m18.3s 16.1S 168.0E
h=201km ab=5.5
Vanuatu Islands

Feb 27	PRI	ePc	10 19 07.6
	FRI	e(P)	10 19 12
	PRS	eP	10 19 13.8
	LLA	ePc	10 19 15.0
	SAO	eP	10 19 19.3
	GCC	ePc	10 19 25.3
	JAS	iPd	10 19 29.0
	MNA	e	10 19 46

BRK ML=3.9(4)
PAS 10h18m15.0s 33.5N 118.1W
h=6km ML=3.9
Southern California

Feb 27	PRI	ePKP	18 13 35.8
	JAS	ePKP	18 13 37.8
	FRI	e(PKP)	18 13 38
	ORV	ePKP	18 13 41.8
	WDC	e	18 13 42
	BRK	e	18 13 42

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DATE	STA	PHASE	TIME (UTC)
	MNA	ePKP	18 13 44.2
USGS 17h53m53.5s 47.5S 102.7E			
h=10km mb=4.7 Ms=5.3			
Southeast Indian Rise			
Feb 28	BRK	e	00 18 20
	WDC	e	00 18 21.4
	ORV	eP	00 18 23.6
	MIN	e	00 18 24
	PRI	e	00 18 24.3
	JAS	e	00 18 26.4
	FRI	e	00 18 28
	MNA	eP	00 18 35.6
USGS 00h05m25.2s 8.9S 156.2E			
h=33km mb=5.5 Ms=5.4			
Solomon Islands			
Feb 28	FHC	iPc	15 16 32.3
	WDC	iPc	15 16 47.1
	MIN	iPc	15 16 56.8
	ORV	iPd	15 16 59.1
	ZSP	eP	15 17 03.0
		e(S)	15 17 44.5
	BRK	ePc	15 17 03.8
		e(S)	15 17 40.8
	BKS	eP	15 17 03.8
		e(S)	15 17 43.5
	PCC	ePc	15 17 06.5
	MHC	ePc	15 17 14.4
	GCC	eP	15 17 14.5
	JAS	iPd	15 17 21.1
		e(S)	15 18 15.0
	SAO	eP	15 17 21.3
	LLA	ePc	15 17 27.0
	PRI	ePc	15 17 34.9
	FRI	ePd	15 17 35.2
	MNA	ePc	15 17 40.2
BRK 15h16m06.7s 40.4N 125.9W			
h=5kmR ML=5.2(8) Mo=1.5E23(2)			
Off the Coast, 160 km WSW of Eureka, CA			
Feb 29	FRI	e(P)	02 08 48.5
		e	02 09 00
		eSg	02 10 05
	PRI	e(P)	02 08 50
		e	02 09 02
	JAS	ePd	02 09 02.0
		e	02 09 13
		iSg	02 10 35.3
BRK ML=4.1(4)			
PAS 02h07m31.7s 33.1N 116.1W			
h=7km ML=4.3			
California-Mexico Border			
Feb 29	MHC	iPd	06 08 45.7
	GCC	iPd	06 08 51.2
	SAO	iPd	06 08 54.6
	PCC	ePc	06 08 55.0
	BRK	eP	06 08 58.0
		eS	06 09 09.0
	ZSP	eP	06 08 59.5
		eS	06 09 11.5
	LLA	ePd	06 08 59.7
	PRS	ePc	06 09 01.4
	JAS	ePc	06 09 04.7
		eS	06 09 11.5
	PRI	e(P)	06 09 08
BRK 06h08m43.7s 37.3N 121.7W			
h=9kmR ML=2.5(4) Mo=3.4E19(2)			
San Felipe Valley, 20 km ESE of San Jose, CA			

DATE	STA	PHASE	TIME (UTC)
Mar 1	WDC	eP	13 25 46.0
	MIN	eP	13 25 49.2
	BRK	eP	13 25 49.9
	ORV	ePc	13 25 50.5
	MHC	ePc	13 25 53.1
	JAS	ePc	13 25 56.6
	FRI	eP	13 25 56.9
	PRI	ePc	13 25 58.7
USGS 13h13m28.0s 13.1N 143.8E			
h=146km mb=4.8			
South of Mariana Islands			
Mar 1	FRI	iP	17 45 48.3
	JAS	iPc	17 45 57.4
	PRI	iPc	17 46 01.0
	LLA	iPc	17 46 02.1
	SAO	iPc	17 46 07.6
	PRS	iPc	17 46 07.8
	MHC	iPc	17 46 10.2
	GCC	eP	17 46 12.7
	ORV	iPc	17 46 16.3
	BKS	ePc	17 46 16.6
		e	17 46 33.4
		e	17 47 12
	PCC	eP	17 46 17.5
	MIN	iPc	17 46 23.6
	WDC	iPc	17 46 33.0
BRK ML=5.5(8)			
USGS 17h45m00.1s 37.1N 116.0W			
h=0km mb=5.9 Ms=4.4			
Underground Nuclear Explosion, NTS (Tortugas)			
Mar 1	PRI	eP	19 29 25.8
	FRI	eP	19 29 29.3
	SAO	e	19 29 32
	MNA	e	19 29 37
	MHC	eP	19 29 37.7
	JAS	iPd	19 29 38.5
	BKS	e(P)	19 29 42
		e	19 29 51
		e	19 36 26
		e	19 39 10
		eLr	19 40 02
			AMP(µm) PER(s)
		LZ	20 20.
		LN	16 20.
		LE	11 20.
	ORV	eP	19 29 53.2
	MIN	e	19 30 00
	WDC	e	19 30 01
USGS 19h21m25.2s 4.5S 106.0W			
h=10km mb=5.5 Ms=5.9			
Northern Easter I. Cordillera			
Mar 2	SAO	e	00 12 11
	PRI	eP	00 12 12.2
		epP	00 13 07
	BKS	eP	00 12 12.2
		epP	00 13 07
	MHC	eP	00 12 12.6
		epP	00 13 08
	FRI	eP	00 12 17.5
		epP	00 13 12
	JAS	iPd	00 12 18.3
		ipP	00 13 13
	ORV	iPd	00 12 19.9
	WDC	iPd	00 12 20.3
		ipP	00 13 15
	MIN	eP	00 12 22.1
		epP	00 13 17
	MNA	iPd	00 12 27.8
		ipP	00 13 23

DATE	STA	PHASE	TIME (UTC)
USGS 00h00m38.0s 21.1S 176.4W			
h=228km mb=5.4			
Fiji Islands Region			
Mar 2	WDC	e	02 28 00
	ORV	iPKP	02 28 00.9
	JAS	iPKP	02 28 07.1
	MNA	iPKP	02 28 08.4
	FRI	iPKP	02 28 10.3
USGS 02h08m22.3s 6.9S 72.3E			
h=10km mb=5.0			
Chagos Archipelago Region			
Mar 2	ZSP	eP	11 39 27.6
		iS	11 39 41.8
	BKS	eP	11 39 28.8
		e(S)	11 39 43.2
	ORV	eP	11 39 31.4
	PCC	eP	11 39 33.6
	MHC	eP	11 39 39.2
	MIN	eP	11 39 42.0
	JAS	eP	11 39 43.4
BRK 11h39m09.6s 38.8N 122.8W			
h=5km ML=3.0(6) Mo=7.6E21(2)			
The Geysers, 25 km S of Clear Lake, CA			
Mar 3	WDC	eP	14 14 43.1
		e	14 14 55
	ORV	eP	14 14 50.4
		e	14 15 02
	JAS	eP	14 15 01.5
		e	14 15 13
	MNA	eP	14 15 08.7
		e	14 15 21
USGS 14h04m10.4s 43.3N 146.4E			
h=57km mb=5.3			
Kuril Islands			
Mar 4	PRI	e	22 46 23
	JAS	eP	22 46 29.0
		e	22 46 38
	MNA	eP	22 46 29.7
		e	22 46 39
	ORV	eP	22 46 38.5
		e	22 46 48
	WDC	eP	22 46 43.5
		e	22 46 53
USGS 22h34m23.7s 26.7S 70.8W			
h=33km mb=5.4 Ms=4.8			
Near Coast of Northern Chile			
Mar 5	FHC	ePdiffd	03 46 35.7
		ePP	03 50 59
	WDC	iPdiffd	03 46 39.9
		ePP	03 51 03
		eSKS	03 56 21
		eSP	03 59 07
		ePKPPKP	04 11 05
	MIN	ePdiffd	03 46 42.8
	ORV	iPdiffd	03 46 44.5
	BKS	ePdiffd	03 46 45.3
		epP	03 49 04
		ePKP	03 51 04
		ePP	03 51 31
		eSKS	03 56 26
		eS	03 57 40
		eSP	03 59 17
		ePKKP	04 02 56
		eSS	04 05 11
		esSS	04 08 38
		e	04 12 10
		e	04 15 52

DATE	STA	PHASE	TIME (UTC)
		AMP(µm)	PER(s)
	PZ	0.23	1.1
	MHC	ePdiffd	03 46 48.7
		ePP	03 51 18
		ePKKP	04 02 38
	SAO	ePdiff	03 46 49.5
	JAS	iPdiffd	03 46 51.1
		ePP	03 51 19
		eSKS	03 56 32
		eSP	03 59 30
		ePKKP	04 02 35
		eSS	04 05 24
	PRI	ePdiff	03 46 54.2
		ePP	03 51 28
		ePKKP	04 02 35
	FRI	iPdiffd	03 46 55.0
		ePKKP	04 02 35
	MNA	iPdiffd	03 46 58.0
		eSP	03 59 48
BRK mb=6.5 h=646km Distance=103°			
USGS 03h33m50.9s 8.1N 123.8E			
h=649km mb=6.5			
Mindanao, Philippine Islands			
Mar 5	BKS	e(P)	05 00 38
	PRI	eP	05 00 40.5
	WDC	eP	05 00 42.8
	ORV	eP	05 00 43.8
	JAS	eP	05 00 44.3
	FRI	eP	05 00 44.7
	MNA	eP	05 00 53.5
USGS 04h48m04.3s 17.0S 168.3E			
h=33km mb=5.2			
Vanuatu Islands			
Mar 5	FHC	ePd	07 07 56.2
	WDC	iPd	07 08 02.9
	MIN	iPd	07 08 07.7
	ORV	iPd	07 08 11.5
	BKS	eP	07 08 16.5
		e	07 09 09
		AMP(µm)	PER(s)
	PZ	0.10	1.2
	MHC	ePd	07 08 21.9
	JAS	iPd	07 08 24.6
	SAO	eP	07 08 24.9
	FRI	iPd	07 08 31.5
	PRI	ePd	07 08 32.2
	MNA	iPd	07 08 32.2
USGS 06h58m51.9s 50.9N 160.5E			
h=33km mb=5.6 Ms=5.0			
Kuril Islands Region			
Mar 5	MNA	iPd	10 51 10.2
		iS	10 51 22.2
	FRI	iPc	10 51 14.1
		iS	10 51 28.8
	JAS	iPc	10 51 22.2
		iS	10 51 43.2
	LLA	eP	10 51 31.6
	PRI	ePd	10 51 32.8
	SAO	iPd	10 51 36.3
	MHC	ePd	10 51 37.4
	PRS	ePd	10 51 38.0
	BKS	e(P)	10 51 43
	ORV	e(P)	10 51 43.3
	PCC	e(P)	10 51 44.2
BRK 10h50m53.4s 37.6N 118.5W			
h=5kmR ML=3.1(4)			
25 km N of Bishop, CA			
Mar 5	FHC	eP	11 12 04.4
	WDC	iPc	11 12 09.4

DATE	STA	PHASE	TIME (UTC)
	ORV	iPc	11 12 15.3
	BKS	eP	11 12 17.2
		AMP(µm)	PER(s)
	PZ	0.12	0.7
	MHC	ePc	11 12 20.8
	SAO	eP	11 12 22.3
	JAS	iPc	11 12 23.5
	PRI	ePc	11 12 27.8
	FRI	iPc	11 12 28.4
	MNA	iPc	11 12 30.8
USGS 11h00m59.8s 28.7N 139.3E			
h=460km mb=5.1			
Bonin Islands Region			
Mar 5	FRI	iPc	11 43 37.0
		iS	11 43 48.4
	MNA	iPc	11 43 40.5
		eS	11 43 54.7
	JAS	iPc	11 43 45.0
		iS	11 44 02.5
	LLA	ePc	11 43 54.7
	PRI	iPd	11 43 56.8
	SAO	iP	11 43 59.5
	MHC	ePd	11 44 00.6
	PRS	eP	11 44 01.2
	GCC	e(P)	11 44 04.0
	PCC	ePd	11 44 07.8
	BKS	eP	11 44 07.9
	ORV	e(P)	11 44 12.0
BRK 11h43m19.8s 37.5N 118.8W			
h=8km ML=3.4(4)			
Mammoth Lakes Area, CA			
Mar 6	SAO	eP	00 37 27.2
	PRI	iPd	00 37 28.3
	BKS	eP	00 37 29.0
		AMP(µm)	PER(s)
	PZ	0.15	0.9
	MHC	eP	00 37 29.3
	FRI	iPd	00 37 32.9
	JAS	iPd	00 37 33.9
	FHC	eP	00 37 34.2
	ORV	iPd	00 37 35.9
	WDC	iPd	00 37 36.7
USGS 00h25m23.2s 29.2S 179.0W			
h=294km mb=5.0			
Kermadec Islands			
Mar 6	FHC	iPc	02 28 24.9
	WDC	iPc	02 28 30.1
		ePcP	02 28 35
		epP	02 30 12
		ePP	02 31 40
		eSKS	02 38 30
		ePKPPKP	02 55 37
		eSKPPKP	02 58 17
	MIN	iPc	02 28 33.4
	ORV	iPc	02 28 35.8
		ePKKP	02 47 35
	BKS	iPc	02 28 37.8
		epP	02 30 18
		esP	02 31 06
		ePP	02 31 49
		eS	02 37 58
		esS	02 40 32
		eSS	02 43 19
		eLq	02 49 27
		AMP(µm)	PER(s)
	LZ	5.3	20.
	LN	3.3	20.
	LE	5.3	20.
	MHC	iPc	02 28 41.7
	SAO	eP	02 28 43.6

DATE	STA	PHASE	TIME (UTC)
		T	03 55
	JAS	iPc	02 28 44.3
		ePcP	02 28 50
		epP	02 30 26
		ePP	02 32 00
		eSKS	02 38 18
		ePKKP	02 47 27
		ePKPPKP	02 55 26
		eSKPPKP	02 58 18
		eRPKP	03 15 43
	PRI	iP	02 28 48.8
		ePcP	02 28 56
		epP	02 30 33
		eSKS	02 38 28
		eSKPPKP	02 58 13
	FRI	iPc	02 28 49.2
	MNA	iPc	02 28 51.5
BRK mb=6.6 h=440km Distance=78°			
USGS 02h17m21.2s 29.4N 138.9E			
h=457km mb=6.2			
South of Honshu, Japan			
Mar 6	SAO	e	06 03 25
	BKS	e(P)	06 03 27
	PRI	eP	06 03 27.0
	MHC	eP	06 03 27.1
	FRI	eP	06 03 32.5
	JAS	iPc	06 03 33.0
		e	06 04 37
	ORV	eP	06 03 34.0
	WDC	eP	06 03 34.2
		e	06 04 38
	MIN	eP	06 03 36.5
	MNA	eP	06 03 43.3
		e	06 04 47
USGS 05h52m25.9s 16.0S 174.9E			
h=282km mb=5.2			
Tonga Islands			
Mar 6	FHC	eP	15 05 54.1
	WDC	eP	15 06 00.1
	ORV	eP	15 06 06.9
	BKS	e(P)	15 06 12
	MHC	eP	15 06 15.9
	JAS	eP	15 06 17.9
	FRI	eP	15 06 23.9
	PRI	eP	15 06 24.3
	MNA	eP	15 06 24.8
USGS 14h55m16.5s 42.6N 142.8E			
h=103km mb=5.5			
Hokkaido, Japan Region			
Mar 6	PRI	eP	18 08 00.9
	FRI	e	18 08 03
	JAS	eP	18 08 03.0
	WDC	eP	18 08 05.0
	ORV	eP	18 08 05.0
	MIN	eP	18 08 07.1
	MNA	eP	18 08 11.7
USGS 17h56m10.6s 18.8S 176.6W			
h=33km mb=5.3 Ms=5.0			
Fiji Islands Region			
Mar 7	FHC	e	02 51 57
	WDC	eP	02 51 58.8
	MIN	eP	02 52 00.7
	ORV	eP	02 52 04.0
	JAS	eP	02 52 10.1
	BKS	e(P)	02 52 13.1
		AMP(µm)	PER(s)
	PZ	0.039	1.0
	MHC	eP	02 52 15.4
	FRI	eP	02 52 18.0

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DATE	STA	PHASE	TIME (UTC)
	PRI	eP	02 52 21.7
USGS 02h39m06.4s 50.1N 79.0E			
h=0km mb=5.7			
Eastern Kazakh, S.S.R.			
Mar 7	FRI	iPc	08 32 52.0
		iPc	08 33 05.5
	JAS	iPc	08 33 00.7
		iS	08 33 16.9
	LLA	iPd	08 33 10.3
	PRI	eP	08 33 11.3
	SAO	iPc	08 33 14.7
	PRS	eP	08 33 16.0
	BKS	e(P)	08 33 22.0
	PCC	eP	08 33 22.8
BRK 08h32m36.5s 37.5N 118.8W			
h=4km ML=3.4(4)			
Mammoth Lakes Area, CA			
Mar 8	SAO	eP	00 53 58.4
	PRI	eP	00 53 59.4
		e	00 54 25
	MHC	eP	00 54 00.4
		e	00 54 26
	BKS	eP	00 54 01.2
		e	00 54 26
		e	01 06 36
		e	01 24 00
	FRI	eP	00 54 03.8
		e	00 54 28
	JAS	ePd	00 54 04.7
		e	00 54 30
	FHC	eP	00 54 06.0
		e	00 54 31
	ORV	eP	00 54 07.2
		e	00 54 32
	WDC	ePd	00 54 08.4
		e	00 54 34
	MIN	eP	00 54 09.0
		e	00 54 35
USGS 00h40m50.5s 38.3S 177.2E			
h=80km mb=5.9			
North Island, New Zealand			
Mar 9	FHC	iPd	06 35 44.7
	WDC	iPc	06 35 58.0
		eS	06 36 15.0
	MIN	iPc	06 36 07.7
	ORV	ePd	06 36 10.9
	PCC	ePc	06 36 22.1
	MHC	ePc	06 36 29.6
	GCC	eP	06 36 29.8
	JAS	ePd	06 36 34.2
	SAO	iPd	06 36 35.8
BRK 06h35m33.5s 40.3N 124.3W			
h=5kmR ML=3.2(2)			
60 km SSW of Eureka, CA			
Mar 10	WDC	ePKPd	09 20 58.4
	MIN	ePKP	09 20 59.4
	ORV	ePKPd	09 21 00.0
	BKS	ePKPd	09 21 02.0
	MHC	ePKP	09 21 02.7
	JAS	ePKPd	09 21 03.5
		eSKP	09 24 53
		ePKKS	09 34 40
	FRI	ePKPd	09 21 05.5
	PRI	ePKPd	09 21 05.6
USGS 09h02m00.6s 7.6S 107.0E			
h=52km mb=5.7			
Java Region			
Mar 10	WDC	ePKPc	15 38 50.5

DATE	STA	PHASE	TIME (UTC)
	MIN	ePKPc	15 38 52.2
	ORV	ePKPc	15 38 54.3
	JAS	ePKPc	15 39 00.8
	FRI	ePKPc	15 39 03.8
	PRI	ePKPc	15 39 06.0
USGS 15h19m15.4s 6.9S 72.2E			
h=10km mb=5.2 Ms=4.7			
Chagos Archipelago Region			
Mar 11	BKS	ePc	10 29 22.3
			AMP(µm) PER(s)
		PZ	0.022 0.8
	WDC	eP	10 29 25.8
	JAS	eP	10 29 26.0
	ORV	eP	10 29 26.2
Mar 11	PRI	ePd	13 53 29.7
	FRI	ePd	13 53 33.0
	SAO	eP	13 53 33.6
	MHC	ePd	13 53 38.7
	JAS	iPd	13 53 40.8
	BKS	eP	13 53 42.0
			AMP(µm) PER(s)
		PZ	0.094 1.2
	ORV	ePd	13 53 51.8
	MIN	eP	13 53 56.0
	WDC	iPd	13 53 58.5
	FHC	ePd	13 54 02.6
USGS 13h42m56.4s 26.7S 108.5W			
h=10km mb=5.7 Ms=4.4			
Easter Island Region			
Mar 11	FHC	ePc	22 33 19.9
	WDC	iPc	22 33 25.2
	MIN	ePc	22 33 28.5
	ORV	iPc	22 33 31.7
	BKS	ePc	22 33 35.1
			AMP(µm) PER(s)
		PZ	0.12 1.0
	MHC	ePc	22 33 39.4
	SAO	eP	22 33 41.1
	JAS	iPc	22 33 41.5
	FRI	ePc	22 33 46.9
	PRI	ePc	22 33 47.2
USGS 22h22m25.7s 38.4N 135.5E			
h=351km mb=5.3			
Sea of Japan			
Mar 12	FHC	eP	02 45 57.7
	WDC	iPc	02 46 03.0
	MIN	ePc	02 46 06.3
	ORV	iPc	02 46 08.4
	BKS	ePc	02 46 09.1
			AMP(µm) PER(s)
		PZ	0.14 0.9
	MHC	ePc	02 46 12.6
	SAO	eP	02 46 13.7
	JAS	ePc	02 46 15.9
	PRI	iPc	02 46 19.2
	FRI	iPc	02 46 20.5
USGS 02h34m17.9s 22.3N 143.1E			
h=188km mb=5.2			
Volcano Islands Region			
Mar 12	SAO	iPd	05 15 59.7
	GCC	iPd	05 16 01.6
	MHC	iPd	05 16 03.2
		iS	05 16 10.2
	LLA	ePc	05 16 06.8
	PRS	ePd	05 16 07.3
	PCC	eP	05 16 10.5
		i	05 16 10.9
	BKS	eP	05 16 14.3

DATE	STA	PHASE	TIME (UTC)
		i	05 16 15.1
		eS	05 16 29.7
	ZSP	eP	05 16 15.5
		eS	05 16 31.5
	PRI	ePd	05 16 15.7
	JAS	iPc	05 16 18.9
		eS	05 16 36.9
	FRI	ePc	05 16 21.6
		eS	05 16 41.6
BRK 05h15m55.1s 36.9N 121.6W			
h=5km ML=2.9(4) Mo=4.2E20(2)			
5 km S of Gilroy, CA			
Mar 12	SAO	eP	11 02 09.9
	PRI	ePc	11 02 11.2
		epP	11 04 13
	BKS	ePc	11 02 11.4
		i	11 02 13
		ePcP	11 02 18
		epP	11 04 11
		e	11 04 37
		e	11 04 58
		eSKS	11 11 42
		e	11 16 05
		eLg	11 24 06
			AMP(µm) PER(s)
		PZ	0.17 0.7
	MHC	iPc	11 02 11.6
		epP	11 04 14
	FRI	iPc	11 02 16.4
		epP	11 04 18
	JAS	iPc	11 02 17.0
		epP	11 04 19
		e	11 05 38
	ORV	iPc	11 02 18.5
	WDC	ePc	11 02 18.9
		epP	11 04 21
	MIN	ePc	11 02 20.3
BRK mb=5.6 h=555km Distance=79°			
USGS 10h50m48.8s 23.4S 180.0W			
h=547km mb=5.5			
South of Fiji Islands			
Mar 14	SAO	ePd	11 47 31.6
	BKS	iPd	11 47 32.6
		e	11 47 45
			AMP(µm) PER(s)
		PZ	0.20 0.8
	PRI	iPd	11 47 33.0
		epP	11 49 33
	MHC	ePd	11 47 33.2
	FHC	eP	11 47 37.0
	FRI	ePd	11 47 38.2
		epP	11 49 39
	JAS	iPd	11 47 38.8
		epP	11 49 40
	ORV	iPd	11 47 40.2
	WDC	iPd	11 47 40.2
		epP	11 49 44
USGS 11h36m30.9s 20.1S 178.1W			
h=570km mb=5.7			
Fiji Islands Region			
Mar 15	FHC	ePKP	03 41 13.5
	WDC	iPKPc	03 41 14.6
	MIN	ePKP	03 41 16.0
	ORV	ePKPc	03 41 16.7
	BKS	ePKP	03 41 18.5
	MHC	ePKP	03 41 19.4
	JAS	ePKP	03 41 20.1
	FRI	ePKPc	03 41 22.1
	PRI	ePKP	03 41 22.5
USGS 03h22m18.5s 6.6S 105.3E			

DATE	STA	PHASE	TIME (UTC)
h=60km mb=5.5			
Sunda Strait			
Mar 15	FHC	iPd	13 35 34.3
		iS	13 35 44.0
	WDC	eP	13 35 50.2
	MIN	eP	13 36 01.7
	ORV	eP	13 36 07.0
	BRK	eP	13 36 19.4
	PCC	eP	13 36 22.6
	GCC	ePc	13 36 30.3
	MHC	ePc	13 36 30.5
	JAS	ePc	13 36 31.4
	SAO	eP	13 36 37.3
	LLA	eP	13 36 42.4
BRK 13h35m22.6s 41.1N 124.7W			
h=4km ML=3.6(4) Mo=1.9E21(2)			
Off Coast, 40 km NW of Eureka, CA			
Mar 16	WDC	e	23 06 40
	JAS	eP	23 06 45.0
		e	23 06 54
	ORV	eP	23 06 45.0
	FRI	eP	23 06 47.5
	MNA	ePd	23 06 56.2
		e	23 07 06
USGS 22h53m57.4s 20.6S 169.9E			
h=11km mb=5.2 Ms=5.4			
Vanuatu Islands			
Mar 18	BKS	iPc	05 27 38.2
		iS	05 27 44.2
	MHC	iPc	05 27 38.9
	ZSP	iPc	05 27 39.0
	PCC	iPc	05 27 41.4
	GCC	ePd	05 27 44.1
	SAO	iPc	05 27 48.2
	JAS	iPc	05 27 48.3
	LLA	ePd	05 27 52.5
	PRS	ePc	05 27 54.8
	ORV	iPc	05 27 58.6
	FRI	iPc	05 27 59.2
	PRI	ePc	05 28 00.6
	MIN	ePc	05 28 11.4
	WDC	ePc	05 28 13.4
BRK 05h27m29.9s 37.8N 121.7W			
h=10km ML=4.1(4) Mo=2.8E22(4)			
10 km NNE of Livermore, CA			
Mar 18	SAO	eP	08 05 57.3
	PRI	eP	08 05 58.8
	MHC	eP	08 05 59.3
	BKS	iPc	08 05 59.4
			AMP(µm) PER(s)
		PZ	0.11 1.0
	FRI	ePd	08 06 03.9
	JAS	iPd	08 06 04.7
	ORV	iPd	08 06 06.3
	WDC	iPd	08 06 06.8
	MIN	eP	08 06 08.4
	MNA	eP	08 06 14.1
USGS 07h54m25.9s 21.8S 177.2W			
h=287km mb=5.2			
Fiji Islands Region			
Mar 19	JAS	ePd	12 23 53.0
	WDC	ePd	12 24 04.0
USGS 12h14m46.9s 19.5N 64.9W			
h=14km mb=5.0 Ms=4.2			
Virgin Islands			
Mar 19	PRI	eP	19 27 15.8
	MHC	e	19 27 16

DATE	STA	PHASE	TIME (UTC)
	FRI	eP	19 27 21.0
	JAS	eP	19 27 21.4
	ORV	eP	19 27 22.0
	MNA	eP	19 27 30.8
USGS 19h16m21.0s 18.0S 179.4W			
h=614km mb=4.8			
Fiji Islands Region			
Mar 19	WDC	eP	20 42 21.0
		e	20 47 24
	FHC	e	20 42 22
	ORV	eP	20 42 25.6
	MIN	i	20 42 29
	MNA	eP	20 42 32.4
	JAS	eP	20 42 33.8
		ePKKP	20 59 05
		ePKPPKP	21 21 07
	BKS	i	20 42 42
		ePP	20 46 45
		e	20 56 00
		e	21 01 20
		e	21 11 30
		e	21 17 00
			AMP(µm) PER(s)
		LZ	15 20.
		LNE	37 20.
		LNW	49 20.
	MHC	e	20 42 42
	FRI	e	20 42 47
	PRI	e	20 42 48
BRK Ms=7.1 Distance=100°			
USGS 20h28m38.2s 40.3N 63.4E			
h=15km mb=6.5 Ms=7.0			
Uzbek, S.S.R.			
Mar 19	FHC	iPd	21 00 32.3
	WDC	iPc	21 00 47.1
		iS	21 01 01.1
	MIN	iP	21 00 57.4
	ORV	iP	21 01 03.2
		i	21 01 04.3
BRK 21h00m28.5s 40.9N 123.8W			
h=6km ML=3.4(4) Mo=2.9E21(2)			
35 km NE of Eureka, CA			
Mar 20	BKS	eP	08 46 36.0
			AMP(µm) PER(s)
		PZ	0.041 1.1
	PRI	eP	08 46 37.7
	WDC	eP	08 46 40.7
	ORV	eP	08 46 41.5
	JAS	iPc	08 46 41.5
		e	08 46 57
	FRI	eP	08 46 41.7
	MIN	e	08 46 42
	MNA	e	08 46 50
USGS 08h33m56.5s 20.1S 169.3E			
h=51km mb=5.3			
Vanuatu Islands			
Mar 20	PRI	iPd	10 42 58.0
	LLA	eP	10 43 02.9
	PRS	eP	10 43 06.5
	FRI	eP	10 43 09.4
	SAO	eP	10 43 09.9
	JAS	eP	10 43 21.4
	BKS	eP	10 43 51.0
BRK 10h42m53.8s 36.3N 120.5W			
h=8kmR ML=2.9(6)			
Coalinga Area, CA			
Mar 20	PRI	iPd	10 43 16.1
	LLA	eP	10 43 20.9

DATE	STA	PHASE	TIME (UTC)
	PRS	eP	10 43 25.5
	JAS	i	10 43 40.3
		i	10 43 59.3
BRK Mag=2.6			
Coalinga Area, CA			
Mar 20	JAS	ePd	17 30 46.3
	PRI	ePd	17 30 49.0
	ORV	ePd	17 30 50.2
	MIN	ePd	17 30 50.4
	WDC	ePd	17 30 53.1
USGS 17h19m06.3s 10.8N 42.3W			
h=10km mb=5.1 Ms=4.8			
North Atlantic Ridge			
Mar 21	FHC	ePc	02 53 55.7
	WDC	iPc	02 54 02.0
		eS	03 02 18
		ePKPPKP	04 23 59
	MIN	ePc	02 54 06.7
	ORV	iPc	02 54 10.2
		ePKPPKP	03 23 58
	BKS	iPd	02 54 15.3
		e	02 55 12
		e	03 08 54
		eLg	03 09 00
		eLr	03 13 00
			AMP(µm) PER(s)
		PZ	0.55 2.
		LZ	2.7 20.
		LN	1.6 20.
		LE	2.3 20.
	MHC	ePc	02 54 20.1
	SAO	eP	02 54 22.7
	JAS	iPc	02 54 24.6
		eS	03 02 22
		ePKPPKP	04 23 57
	FRI	iPc	02 54 29.3
	PRI	ePc	02 54 29.8
	MNA	ePc	02 54 30.0
USGS 02h44m24.3s 49.2N 155.4E			
h=41km mb=6.0 Ms=5.7			
Kuril Islands			
Mar 21	WDC	ePKPc	08 47 56.8
		ePKP2	08 48 52.0
	ORV	ePKPc	08 47 57.2
		ePKP2	08 48 52.5
	FRI	ePKPc	08 47 57.7
		ePKP2	08 48 52.6
	JAS	ePKPc	08 47 58.2
		ePKP2	08 48 51.8
	PRI	ePKPc	08 47 59.2
		ePKP2	08 48 48.7
	MNA	ePKPc	08 48 00.1
		ePKP2	08 49 00.8
	SAO	ePKP2	08 48 47
	MHC	ePKP2	08 48 48
	BKS	ePKP	08 48 48.5
		e	09 14 30
		e	09 19 54
		e	09 26 22
		eSSS	10 19 30
		eLg	10 46 00
		eLr	11 08 00
			AMP(µm) PER(s)
		PKPZ	0.20 1.4
		LZ	4.5 20.
		LN	2.4 20.
		LE	3.0 20.
	MIN	ePKP	08 48 54
USGS 08h27m51.4s 44.0			E
h=10km mb=5.9 M			

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REGISTRATION OF EARTHQUAKES 1984

DATE	STA	PHASE	TIME (UTC)
Mid-Indian Rise			
Mar 21	MHC	e	10 22 28
	WDC	e	10 22 31
	FRI	e	10 22 31
	JAS	e	10 22 31
	ORV	ePg	10 22 34.0
	MNA	ePg	10 22 41.8
USGS 10h10m48.7s 19.2S 173.7W			
h=33km mb=5.3 Ms=5.8			
Tonga Islands			
Mar 21	ORV	iPc	11 11 25.1
	MIN	ePc	11 11 28.6
	WDC	ePd	11 11 40.5
		iSg	11 12 02.4
	JAS	iPd	11 11 44.9
		e	11 12 07.7
		iS	11 12 10.4
	BKS	iPc	11 11 52.1
		ePS	11 11 53.4
		ePg	11 11 56.0
		eSn	11 12 19.4
		eSS	11 12 21.3
		eSg	11 12 23.9
	MHC	eP	11 11 54.7
	MNA	eP	11 11 54.9
		e	11 12 26.0
	PCC	eP	11 11 57.0
	FHC	e(P)	11 11 58.0
	FRI	eP	11 12 00.7
	SAO	e(P)	11 12 02.5
BRK 11h11m12.2s 39.8N 120.6W			
h=10km ML=3.4(6) Mo=5.5E21(2)			
30 km SE of Quincy, CA			
Mar 21	SAO	eP	14 10 12.7
	BRK	ePc	14 10 13.6
	MHC	ePc	14 10 14.2
	FHC	ePc	14 10 17.4
	FRI	ePc	14 10 18.9
	JAS	ePc	14 10 19.4
	ORV	iPc	14 10 20.9
	WDC	ePc	14 10 21.1
		e	14 10 29
	MNA	ePc	14 10 28.0
USGS 13h58m51.0s 23.0S 179.4W			
h=509km mb=5.1			
South of Fiji Islands			
Mar 21	MHC	eP	17 17 25.9
	PRI	eP	17 17 28.7
		e	17 17 44
	WDC	eP	17 17 29.3
	ORV	eP	17 17 31.0
		e	17 17 46
	JAS	eP	17 17 31.0
		e	17 17 47
		e	17 18 06
	FRI	eP	17 17 31.8
		e	17 17 47
	MNA	eP	17 17 40.0
		e	17 17 56
USGS 17h04m47.0s 17.2S 167.2E			
h=32km mb=5.3 Ms=4.6			
Vanuatu Islands			
Mar 21	SAO	ePc	18 32 35.6
	BRK	eP	18 32 36.0
	MHC	eP	18 32 36.3
	PRI	ePc	18 32 36.7
	JAS	eP	18 32 41.7
	FRI	ePc	18 32 42.5
	WDC	ePc	18 32 42.9
	ORV	ePc	18 32 43.2
	MNA	ePc	18 32 52.9
USGS 18h20m37.7s 16.3S 178.4E			
h=9km mb=5.0			
Fiji Islands			
Mar 22	BKS	iPd	07 57 08.1
			AMP(μa) PER(s)
		PZ	0.039 1.0
	FRI	eP	07 57 11.4
	JAS	ePd	07 57 12.4
	ORV	ePd	07 57 14.3
	WDC	ePd	07 57 15.2
	MIN	eP	07 57 16.6
	MNA	eP	07 57 20.4
USGS 07h44m55.7s 29.5S 178.7W			
h=238km mb=4.8			
Kermadec Islands			
Mar 22	SAO	e(P)	14 24 29
	BKS	iPc	14 24 29.4
		ePPP	14 33 16
			AMP(μa) PER(s)
		PZ	0.061 1.0
	PRI	ePd	14 24 29.5
	MHC	eP	14 24 29.8
	FRI	eP	14 24 35.4
	JAS	ePd	14 24 36.2
		epP	14 24 49
	ORV	iPd	14 24 37.9
	WDC	ePd	14 24 38.2
	MIN	ePd	14 24 40.4
	MNA	ePd	14 24 46.9
USGS 14h13m16.1s 15.2S 172.2W			
h=42km mb=5.4 Ms=5.2			
Samoa Islands Region			
Mar 23	FHC	e	05 56 38
	WDC	eP	05 56 45.3
	MIN	eP	05 56 52.7
	ORV	eP	05 57 02.2
Mar 23	FRI	iPc	07 53 48.9
	PRI	eP	07 53 55.3
	LLA	eP	07 53 59.6
	PRS	eP	07 54 03.3
	JAS	eP	07 54 06.0
	SAO	eP	07 54 06.1
	MNA	iPc	07 54 07.8
	MHC	eP	07 54 11.7
	PCC	eP	07 54 19.7
	BKS	ePd	07 54 20.6
		ePg	07 54 27.8
		eSn	07 55 04.0
		eS	07 55 09.9
		eSg	07 55 17.6
BRK ML=4.3(6)			
PAS 07h53m21.7s 36.0N 118.3W			
h=0km ML=3.8			
Southern California			
Mar 23	FRI	iPd	08 08 26.5
	PRI	iPd	08 08 33.3
	PRS	eP	08 08 41.1
	SAO	iPd	08 08 43.7
	JAS	iPd	08 08 43.9
	MHC	eP	08 08 49.0
	BKS	ePnc	08 08 58.6
		ePg	08 09 07.2
		eSn	08 09 42.2
		eSg	08 09 56.6
BRK ML=4.2(6)			
PAS 08h07m59.3s 36.0N 118.3W			
h=0km ML=3.8			
Southern California			
Mar 23	FRI	iPc	08 24 52.5
	PRI	eP	08 24 59.1
	LLA	eP	08 25 03.5
	PRS	eP	08 25 07.0
	SAO	iPc	08 25 09.9
	JAS	iPc	08 25 10.1
	BKS	ePnc	08 25 24.4
		ePS	08 25 27.7
		ePg	08 25 32.6
		eSn	08 26 07.5
		eS	08 26 14.0
		eSg	08 26 22.5
BRK ML=4.2(6)			
PAS 08h24m25.3s 36.0N 118.3W			
h=0km ML=3.8			
Southern California			
Mar 23	FHC	eP	08 43 32.8
	WDC	iPd	08 43 39.9
		i	08 43 43
		i	08 44 05
		ePcP	08 46 56
		eScP	08 50 26
	MIN	iPd	08 43 45.0
		e	08 44 10
		ePcP	08 46 58
		eScP	08 50 28
	ORV	iPd	08 43 50.3
	BKS	iPd	08 44 00.3
		e	08 44 42
		eLg	08 50 48
		eLr	08 52 10
			AMP(μa) PER(s)
		PZ	0.35 1.0
		LZ	1.5 20.
		LN	0.89 20.
		LE	1.1 20.
	MNA	iPd	08 44 03.1
		i	08 44 39
		ePcP	08 46 07
		eScP	08 50 38
	MHC	iPd	08 44 06.7
	JAS	iPd	08 44 07.1
		i	08 44 13
		e	08 44 33
		ePcP	08 47 05
		eScP	08 50 36
	SAO	eP	08 44 11.3
	FRI	iPd	08 44 16.7
		e	08 44 43
		ePcP	08 46 08
		eScP	08 50 39
	PRI	iPd	08 44 20.0
USGS 08h38m05.8s 59.0N 154.2W			
h=119km mb=5.3			
Alaska Peninsula			
Mar 23	SAO	eP	20 42 49.9
	BKS	eP	20 42 51.5
		e	20 43 44
		eS	20 52 06
		eLg	21 00 24
		eLr	21 03 38
			AMP(μa) PER(s)
		PZ	0.17 1.0
		LZ	7.9 20.
		LN	4.4 20.
		LE	5.9 20.
	PRI	ePc	20 42 51.6
	MHC	ePc	20 42 51.8
	FHC	eP	20 42 56.0
	FRI	iPc	20 42 57.6
	JAS	iPc	20 42 58.0
		ePP	20 45 50
	ORV	iPc	20 42 59.7
	WDC	iPc	20 42 59.9
		ePP	20 45 51
	MIN	eP	20 43 01.9
	MNA	ePc	20 43 08.6
BRK Ms=5.9 Distance=71°			
USGS 20h31m33.4s 15.2S 173.7W			
h=45km mb=5.6 Ms=5.9			
Tonga Islands			
Mar 24	FHC	e(P)	09 54 19
	WDC	ePc	09 54 24.7
		i	09 54 44
		i	09 54 53
		i	09 55 08
		ePKPPKP	10 23 34
	MIN	eP	09 54 29.0
	ORV	ePc	09 54 32.2
	BKS	eP	09 54 39.2
		e	09 55 06
		e	09 55 20
		eS	10 03 18
		eScS	10 05 20
		eSS	10 07 44
		eLg	10 10 36
		eLr	10 13 28
		e	10 20 00
		e	10 54 49
		e	10 54 56
		e	10 54 59
			AMP(μa) PER(s)
		PZ	0.087 1.0
		LZ	22 20.
		LNE	37 20.
		LNW	37 20.
	MHC	e(P)	09 54 41
	JAS	ePc	09 54 43.8
		ipP	09 54 56
		i	09 55 06
		i	09 55 18
		ePP	09 57 28
		ePKPPKP	10 23 20
	PRI	e(P)	09 54 50
	FRI	e(P)	09 54 50
	MNA	eP	09 54 51.0
BRK Ms=6.7 Distance=66°			
USGS 09h44m02.6s 44.1N 148.2E			
h=44km mb=6.7 Ms=7.0			
Kuril Islands			
Mar 24	PRI	iPd	19 53 24.7
	LLA	iPc	19 53 31.3
	FRI	iPc	19 53 33.7
		eS	19 53 44.7
	PRS	iPd	19 53 35.0
	SAO	iPc	19 53 37.7
	MHC	e	19 53 45
	JAS	iPc	19 53 47.2
BRK 19h53m18.4s 36.2N 120.3W			
h=5km Mag=2.6			
Coalinga Area, CA			
Mar 24	FHC	e(P)	21 11 10
	WDC	eP	21 11 18.2
	MIN	eP	21 11 24.0
	ORV	eP	21 11 28.0
	BKS	e(P)	21 11 34
		eS	21 17 14
		eLq	21 19 50
		eLr	21 21 11
			AMP(μa) PER(s)
		PZ	0.065 1.0
		LZ	1.6 20.
		LN	1.4 20.
		LE	1.8 20.
	MHC	eP	21 11 40.0
	JAS	eP	21 11 43.5
	PRI	eP	21 11 51.8
	FRI	eP	21 11 52.0
	MNA	eP	21 11 52.5
BRK Ms=5.0 Distance=37°			
USGS 21h04m41.1s 52.3N 168.5W			
h=29km mb=5.4 Ms=5.0			
Fox Islands, Aleutian Islands			
Mar 24	ORV	iPc	22 42 50.8
	WDC	iPc	22 42 52.6
	BKS	eP	22 42 54.9
		e	22 43 00
		e	22 43 26
		e	22 43 33
	FHC	ePc	22 42 55.0
		e	22 43 03.0
	MIN	iPc	22 42 57.1
	PCC	iPc	22 42 58.5
	MHC	ePd	22 43 05.2
	JAS	ePc	22 43 08.9
	SAO	ePd	22 43 13.0
BRK 22h42m28.0s 39.3N 123.2W			
h=5kmR ML=3.2(5)			
20 km SE of Willits, CA			
Mar 24	SAO	eP	23 01 31.0
	PRI	eP	23 01 32.4
	BKS	eP	23 01 32.4
			AMP(μa) PER(s)
		PZ	0.071 1.0
	MHC	eP	23 01 32.8
	FRI	eP	23 01 37.4
	JAS	iPd	23 01 38.0
	ORV	iPd	23 01 39.5
	WDC	iPd	23 01 39.7
	MIN	eP	23 01 41.5
	MNA	ePd	23 01 47.3
USGS 22h50m27.8s 20.9S 178.7W			
h=597km mb=4.9			
Fiji Islands Region			
Mar 25	WDC	ePc	19 10 47.3
		i	19 11 00
	MIN	eP	19 10 51.0
		e	19 11 04
	ORV	eP	19 10 53.8
		e	19 11 07
	JAS	eP	19 11 04.1
		i	19 11 17
	FRI	eP	19 11 09.8
		e	19 11 23
	MNA	eP	19 11 11.5
		e	19 11 25
USGS 18h59m34.5s 37.3N 141.5E			
h=57km mb=5.4			
Near East Coast of Honshu, Japan			
Mar 26	SAO	ePc	02 23 15.5
	PRI	eP	02 23 16.3
	BKS	eP	02 23 16.3
		e	02 23 23
		e	02 23 27
			AMP(μa) PER(s)
		PZ	0.054 1.0
	MHC	ePc	02 23 16.5
	FRI	eP	02 23 21.4
	JAS	iPc	02 23 22.0
	ORV	ePc	02 23 23.4
	WDC	ePc	02 23 23.5
	MIN	eP	02 23 25.6
	MNA	ePc	02 23 31.4
USGS 02h12m11.8s 20.4S 178.0W			
h=550km mb=5.1			
Fiji Islands Region			
Mar 26	SAO	iPc	07 58 41.0
	PRS	iPd	07 58 48.3
	LLA	iPc	07 58 48.9
	GCC	iPd	07 58 49.3
	MHC	iPd	07 58 52.3
	PRI	iP	07 58 56.9
	PCC	iPc	07 58 58.5
	BKS	ePd	07 59 01.9
		e(S)	07 59 23.5
	FRI	iPc	07 59 04.7
	JAS	iPd	07 59 05.1
	ORV	eP	07 59 24.8
BRK 07h58m39.9s 36.7N 121.5W			
h=7km ML=4.0(4) Mo=1.9E22(4)			
15 km SW of Hollister, CA			
Mar 26	WDC	e	20 18 20
	ORV	ePd	20 18 28.8
	JAS	eP	20 18 41.6
	FRI	eP	20 18 48.7
	MNA	eP	20 18 49.2
USGS 20h09m05.9s 50.5N 160.0E			
h=43km mb=5.2 Ms=4.1			
Kuril Islands Region			
Mar 26	WDC	eP	23 21 24.1
	ORV	eP	23 21 33.1
	JAS	eP	23 21 47.4
	MNA	eP	23 21 53.3
	FRI	e	23 21 53.8
USGS 23h12m35.2s 56.0N 163.0E			
h=32km mb=5.6 Ms=5.0			
Near East Coast of Kamchatka			
Mar 27	MHC	e	01 48 54
	JAS	eP	01 48 59.7
	WDC	eP	01 49 00.2
	ORV	eP	01 49 00.3
	FRI	e	01 49 01
	MNA	eP	01 49 09.0
USGS 01h37m57.9s 17.5S 179.5E			
h=616km mb=4.8			
Fiji Islands			
Mar 27	FRI	e	02 02 45
	JAS	iPd	02 02 52.6
	MNA	ePd	02 02 55.4
	ORV	e	02 60 30
		e	03
	WDC	e	02 03 10
USGS 01h52m13.2s 26.6S 114.8W			
h=10km mb=5.2 Ms=4.3			
Easter Island Region			
Mar 27	BKS	iPc	03 36 38.7
		e	03 36 39.0
	BRK	iPc	03 36 39.2
	ZSP	iPd	03 36 40.1
	PCC	iP	03 36 42.2
	MHC	iPd	03 36 46.1
	GCC	iPd	03 36 49.1
	SAO	e	03 36 54.4

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DATE	STA	PHASE	TIME (UTC)
		iPd	03 36 55.1
	JAS	iPc	03 36 58.9
	LLA	eP	03 37 00.4
	PRS	eP	03 37 01.0
	ORV	iP	03 37 05.4
	PRI	eP	03 37 08.4
	FRI	eP	03 37 09.0
BRK 03h36m35.4s 37.8N 122.1W			
h=7kmR ML=4.3(6) Mo=4.1E22(4)			
San Leandro Hills, 20 km SE of Berkeley, CA			
Mar 27	BKS	iPc	03 48 42.8
		eS	03 48 45.8
		i	03 50 12
	ZSP	iPc	03 48 44.4
		eS	03 48 48.7
	PCC	iPd	03 48 46.0
		iS	03 48 51.6
	MHC	iPc	03 48 50.7
		iS	03 48 59.1
	GCC	iP	03 48 53.3
		iS	03 49 05.0
	SAO	iPc	03 48 59.4
BRK 03h48m39.6s 37.8N 122.1W			
h=5kmR ML=2.5(6)			
San Leandro Hills, 20 km SE of Berkeley, CA			
Mar 27	WDC	eP	13 37 18.7
	ORV	eP	13 37 26.3
	JAS	eP	13 37 37.4
	MNA	eP	13 37 43.6
USGS 13h26m53.9s 43.8N 149.2E			
h=41km mb=5.3 Ms=4.7			
Kuril Islands Region			
Mar 27	WDC	ePd	17 56 10.9
	ORV	eP	17 56 27.0
	JAS	eP	17 56 55.0
	MNA	eP	17 56 59.0
	PRI	eP	17 57 12.5
USGS 17h53m55.4s 48.9N 128.3W			
h=10km mb=4.5			
Vancouver Island Region			
Mar 27	SAO	eP	18 18 58.0
	FRI	ePc	18 19 04.6
	JAS	ePc	18 19 05.1
	ORV	ePc	18 19 06.6
	WDC	ePc	18 19 06.7
	MNA	ePc	18 19 14.1
USGS 18h07m49.3s 21.7S 179.3W			
h=591km mb=5.2			
Fiji Islands Region			
Mar 27	WDC	eP	20 19 52.0
		e	20 20 01
		ePP	20 23 50
	BKS	e(P)	20 19 53
		eS	20 31 08
		eLq	20 44 48
		e	20 45 22
		eLr	20 51 20
		AMP(μa)	PER(s)
		LZ 34	20.
		LN 9.3	20.
		LE 28	20.
	ORV	eP	20 19 54.6
		e	20 20 04
	FHC	e	20 19 57
	JAS	eP	20 19 59.1
		e	20 20 09

DATE	STA	PHASE	TIME (UTC)
		ePP	20 23 54
	FRI	e(P)	20 20 01
		e	20 20 10
	MHC	e	20 20 03
	MIN	e	20 20 03
	PRI	e	20 20 07
	MNA	eP	20 20 07.2
		e	20 20 16
BRK Ms=6.7 Distance=94°			
USGS 20h06m33.2s 4.6S 145.8E			
h=28km mb=5.8 Ms=6.6			
Near N Coast of Papua New Guinea			
Mar 27	FRI	eP	21 01 50.2
	JAS	ePc	21 01 58.0
	MNA	eP	21 02 00.7
	ORV	eP	21 02 10.1
	WDC	ePc	21 02 15.7
USGS 20h51m37.7s 23.8S 115.4W			
h=10km mb=5.2 Ms=5.6			
Easter Island Cordillera			
Mar 28	WDC	eP	09 24 25.8
	ORV	eP	09 24 30.0
	JAS	eP	09 24 36.7
	FRI	eP	09 24 41.3
	MNA	eP	09 24 42.6
USGS 09h11m19.4s 24.1N 122.6E			
h=44km mb=5.4 Ms=5.9			
Taiwan Region			
Mar 29	FHC	ePc	05 32 00.0
	WDC	iPc	05 32 01.2
	MIN	iPc	05 32 03.1
	ORV	iPc	05 32 06.6
	MNA	iPc	05 32 15.5
	JAS	iPc	05 32 15.5
	MHC	ePc	05 32 17.8
	SAO	eP	05 32 20.0
	FRI	iPc	05 32 20.4
	PRI	ePc	05 32 24.5
USGS 05h19m08.2s 49.9N 79.0E			
h=0km mb=5.9 Ms=4.3			
Eastern Kazakh, S.S.R.			
Mar 29	WDC	e	22 11 54.0
	ORV	e	22 12 01.8
	JAS	eP	22 12 12.3
	MNA	e	22 12 20.8
USGS 22h01m32.6s 43.7N 149.1E			
h=46km mb=5.0 Ms=4.9			
Kuril Islands Region			
Mar 30	WDC	eP	04 39 30.3
	ORV	eP	04 39 48.1
	BKS	eP	04 39 59.5
		AMP(μa)	PER(s)
		PZ 0.041	1.0
	JAS	eP	04 40 12.7
	FRI	eP	04 40 27.9
USGS 04h38m18.4s 43.7N 127.2W			
h=10km mb=4.4 Ms=3.6			
Off Coast of Oregon			
Mar 30	MNA	eP	08 09 24.4
	FRI	eP	08 09 31.0
	JAS	eP	08 09 36.2
	SAO	e	08 09 42
	ORV	eP	08 09 42.9
	MHC	eP	08 09 44.0
	WDC	eP	08 09 46.7
	BKS	e(P)	08 09 48
	FHC	eP	08 09 57.5

DATE	STA	PHASE	TIME (UTC)
USGS 07h59m52.9s 17.4N 59.6W			
h=26km mb=5.8 Ms=5.0			
Leeward Islands			
Mar 30	FHC	eP	13 52 05.7
	WDC	eP	13 52 21.8
	MIN	eP	13 52 35.5
	BKS	eP	13 52 35.7
	ORV	eP	13 52 37.7
	MHC	eP	13 52 46.0
		eSg	13 53 44
	SAO	eP	13 52 51.8
	JAS	eP	13 52 54.8
Off the Coast of Oregon			
Mar 31	MNA	iPc	14 30 36.3
	FRI	iPc	14 30 48.2
	JAS	iPc	14 30 57.1
	PRI	iPc	14 31 02.0
	LLA	iPc	14 31 03.9
	SAO	iPc	14 31 08.0
	ORV	iP	14 31 15.6
	BKS	eP	14 31 17.8
BRK ML=4.2(5)			
USGS 14h30m00.1s 37.1N 116.1W			
h=0km mb=4.3			
Underground Nuclear Explosion, NTS (Agrini)			
Apr 1	WDC	ePKPd	10 16 28.6
		e	10 17 17.3
	ORV	ePKPd	10 16 30.2
		e	10 17 23.8
	MHC	ePKP	10 16 32.0
	PRS	ePKP	10 16 32.6
	JAS	ePKPd	10 16 32.9
		e	10 17 31.5
	LLA	ePKP	10 16 33.2
	PRI	ePKPd	10 16 34.2
	FRI	ePKPd	10 16 34.5
		e	10 17 36.5
	MNA	ePKPd	10 16 36.8
		e	10 17 43.7
USGS 09h59m01.3s 5.7S 124.8E			
h=601km mb=5.7			
Banda Sea			
Apr 2	WDC	ePc	00 34 09.0
	ORV	ePc	00 34 17.5
	JAS	ePc	00 34 29.7
USGS 00h24m36.2s 49.7N 156.0E			
h=46km mb=5.0 Ms=4.8			
Kuril Islands			
Apr 2	WDC	e	20 15 28.5
	ORV	eP	20 15 35.7
	BRK	e	20 15 40.5
	JAS	eP	20 15 47.3
	FRI	eP	20 15 53.4
	MNA	eP	20 15 53.7
USGS 20h04m43.9s 46.3N 141.1E			
h=33km mb=5.1			
Sakhalin Island			
Apr 2	WDC	e	22 52 18.2
	ORV	e	22 52 22.6
	JAS	e	22 52 37.3
	MNA	e	22 52 59.5
USGS 22h41m54.6s 44.8N 149.6E			
h=33km mb=5.3 Ms=4.8			
Kuril Islands			
Apr 3	PCC	eP	03 21 57.7

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	BRK	eP	03 21 58.1
	GCC	eP	03 21 58.4
	PRS	eP	03 21 58.9
	SAO	eP	03 21 59.6
	MHC	eP	03 21 59.8
	LLA	e	03 22 00.8
	PRI	eP	03 22 01.4
	WDC	ePc	03 22 02.3
	ORV	ePc	03 22 03.6
	MIN	eP	03 22 04.7
	JAS	iPc	03 22 04.9
	FRI	eP	03 22 05.7
	MNA	eP	03 22 13.5
USGS 03h09m44.2s 14.3S 167.2E			
h=156km mb=5.5			
Vanuatu Islands			
Apr 3	LLA	eP	05 15 32.0
	JAS	iPd	05 15 35.3
	MHC	eP	05 15 38.2
	BRK	e	05 15 42.0
	ORV	eP	05 15 45.8
	WDC	ePc	05 15 51.4
USGS 05h04m33.0s 16.0S 73.1W			
h=96km mb=5.1			
Near Coast of Peru			
Apr 4	WDC	eP	19 32 36.7
	ORV	ePc	19 33 01.6
	MHC	eP	19 33 04.7
	JAS	ePc	19 33 08.4
	PRI	eP	19 33 11.8
	FRI	eP	19 33 12.5
	MNA	eP	19 33 16.7
USGS 19h21m16.4s 18.2N 145.3E			
h=277km mb=4.3			
Mariana Islands			
Apr 5	MNA	eP	02 02 07.2
		e	02 02 25.3
	JAS	e(P)	02 02 20.2
		e	02 02 24.1
	ORV	ePd	02 02 27.0
	MIN	eP	02 02 27.7
	WDC	ePd	02 02 31.7
USGS 01h53m15.7s 19.4N 64.9W			
h=33km mb=5.0			
Virgin Islands			
Apr 5	WDC	ePKPd	03 21 08.1
	MIN	ePKPd	03 21 10.0
	ORV	ePKPd	03 21 12.6
	PCC	e(PKP)	03 21 17
	BKS	ePKPd	03 21 17.0
		AMP(μa)	PER(s)
		PKPZ 0.27	1.8
	JAS	ePKPd	03 21 18.6
	MHC	ePKPd	03 21 19.5
	MNA	iPKPd	03 21 20.0
	FRI	ePKPd	03 21 21.6
	PRI	ePKP	03 21 23.8
USGS 03h01m33.8s 6.9S 72.4E			
h=10km mb=5.4 Ms=5.3			
Chagos Archipelago Region			
Apr 5	PRI	eP	03 34 15.7
	FRI	eP	03 34 16.7
	PRS	eP	03 34 19.7
	MNA	e(P)	03 34 24.2
	JAS	eP	03 34 27.8
	MHC	eP	03 34 29.0
	BRK	e	03 34 36
	ORV	eP	03 34 47.5

DATE	STA	PHASE	TIME (UTC)
	MIN	eP	03 34 53.5
	WDC	eP	03 34 56.8
USGS 03h29m31.0s 18.8N 107.6W			
h=10km mb=4.1 Ms=4.9			
Off Coast of Jalisco, Mexico			
Apr 5	WDC	eP	08 41 30.8
	MIN	eP	08 41 35.0
	ORV	eP	08 41 39.9
	MHC	eP	08 41 51.0
	JAS	eP	08 41 53.4
	PRS	eP	08 41 57
	MNA	eP	08 42 00.7
	FRI	eP	08 42 00.7
USGS 08h32m33.6s 54.1N 161.8E			
h=33km mb=4.8			
Near East Coast of Kamchatka			
Apr 5	MIN	eP	09 14 50.0
	JAS	eP	09 14 55.5
Apr 6	FHC	eP	01 20 16.5
	WDC	iPc	01 20 21.6
	MIN	eP	01 20 24.8
	ORV	ePc	01 20 27.7
	BRK	eP	01 20 30.9
	BKS	ePc	01 20 31.0
		AMP(μa)	PER(s)
		PZ 0.15	0.9
	PCC	eP	01 20 31.3
	GCC	eP	01 20 34.0
	MHC	eP	01 20 34.9
	JAS	ePc	01 20 37.0
	SAO	eP	01 20 37.0
	PRS	eP	01 20 39.0
	LLA	eP	01 20 39.6
	FRI	eP	01 20 41.8
	PRI	eP	01 20 42.7
	MNA	eP	01 20 44.0
USGS 01h09m03.8s 35.1N 138.5E			
h=191km mb=5.1			
Honshu, Japan			
Apr 6	PRS	e	20 36 56.2
	SAO	e	20 36 57.1
	MHC	eP	20 36 58.8
	FRI	eP	20 37 03.5
	JAS	iPd	20 37 04.4
	ORV	ePd	20 37 06.1
	WDC	iPd	20 37 06.6
	MIN	eP	20 37 08.5
	MNA	iPd	20 37 14.1
Fiji Islands Region			
Apr 6	PCC	ePc	23 20 40.7
	GCC	ePc	23 20 41.0
	SAO	eP	23 20 41.8
	BRK	ePc	23 20 42.0
	PRS	ePc	23 20 42.0
		epP	23 21 30
	BKS	eP	23 20 42.8
		iPcP	23 20 46
		ipP	23 21 31.8
		isP	23 21 47
		ePP	23 24 05.6
		epPP	23 24 46
		esPP	23 25 25
		ePPP	23 26 05
		eSKS	23 30 38
		iS	23 30 54
		iSP	23 31 57
		ipS	23 32 04
		esS	23 32 09

DATE	STA	PHASE	TIME (UTC)
		iPS	23 32 13
		esSP	23 33 15
		i	23 33 48
		i	23 34 59
		e	23 35 50
		e	23 36 07
		e	23 36 43
		eSS	23 37 04
		esSS	23 37 56
		eSSS	23 40 07
		eG	23 43 34
		iLr	23 47 39
		AMP(μa)	PER(s)
		PZ 0.13	1.2
		LZ 8.4	20.
		LN 8.6	20.
		LE 8.9	20.
	MHC	ePc	23 20 43.2
		epP	23 21 31
	FHC	ePc	23 20 43.5
		epP	23 21 31.8
	LLA	ePc	23 20 44.1
	PRI	ePc	23 20 44.4
		epP	23 21 31
	WDC	iPc	23 20 47.3
		epP	23 21 35
		ePP	23 24 14
	ORV	ePc	23 20 48.4
	JAS	iPc	23 20 48.5
		epP	23 21 36
		ePP	23 24 17
	FRI	iPc	23 20 48.8
	MIN	eP	23 20 49.5
	MNA	iPc	23 20 57.5
BRK mb=5.5 h=184km Distance=86°			
USGS 23h08m22.3s 18.9S 168.9E			
h=182km mb=5.7			
Vanuatu Islands			
Apr 7	FHC	eP	04 26 38.0
		e	04 26 52.7
	WDC	ePd	04 26 51.0
	MIN	ePd	04 27 02.3
	ORV	iPc	04 27 09.8
	BRK	ePd	04 27 23.2
	BKS	e(P)d	04 27 23.4
	PCC	eP	04 27 27.5
	MHC	eP	04 27 33.5
	GCC	eP	04 27 34.0
	JAS	iPc	04 27 37.0
	FRI	ePc	04 27 51.8
USGS 04h25m52.1s 43.2N 126.3W			
h=10km mb=4.7			
Off The Oregon Coast			
Apr 7	FRI	eP	19 48 51.2
		e	19 48 56.9
	PRI	eP	19 48 52.5
		e	19 48 58.2
	MNA	ePc	19 48 54.8
		e	19 49 00.8
	JAS	eP	19 49 01.5
		e	19 49 07.5
	MHC	eP	19 49 04.6
		e	19 49 10.5
	ORV	ePc	19 49 17.0
		e	19 49 23.5
USGS 19h43m13.7s 16.8N 99.9W			
h=33km mb=4.9			
Near Coast of Guerrero, Mexico			
Apr 8	FRI	iPc	01 33 [illegible]
		iS	01 34 [illegible]

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DATE	STA	PHASE	TIME (UTC)
	PRI	ePd	01 03 55.9
	LLA	ePd	01 04 00.8
	PRS	ePd	01 04 05.0
	SAO	eP	01 04 06.5
	JAS	iPd	01 04 07.5
		iS	01 04 40.3
	MNA	ePd	01 04 07.7
	MHC	ePc	01 04 11.7
	ORV	e	01 04 34
BRK ML=3.5(4)			
PAS 01h03m21.9s 36.0N 118.3W			
h=0km ML=3.2			
Lake Isabella Area, CA			
Apr 8	PRI	iPd	06 20 18.8
	LLA	iPd	06 20 24.1
	PRS	ePd	06 20 27.7
	FRI	iPc	06 20 27.9
		iS	06 20 40.7
	SAO	iPd	06 20 31.1
	MHC	e(P)	06 20 37.5
	GCC	e(P)	06 20 37.5
	JAS	ePc	06 20 40.8
		iS	06 21 02.8
BRK 06h20m13.1s 36.3N 120.4W			
h=6km ML=2.8(4)			
Coalinga, CA			
Apr 8	PRI	ePc	07 14 59.8
	FRI	ePc	07 15 00.3
	MNA	ePc	07 15 08.8
	JAS	ePc	07 15 12.1
	ORV	ePc	07 15 33.4
Apr 9	MNA	ePd	12 57 37.0
	FRI	ePd	12 57 37.5
	JAS	ePd	12 57 46.0
	ORV	iPd	12 57 58.7
USGS 12h49m34.7s 8.5N 82.9W			
h=55km mb=5.1 Ms=5.0			
Panama-Costa Rica Border Region			
Apr 10	ZSP	iPc	04 02 20.7
	BKS	eP*d	04 02 21.3
		iPgc	04 02 22.5
		iS*	04 02 35.0
		eSg	04 02 36.5
	BRK	eP	04 02 21.5
		i	04 02 22.5
	ORV	eP	04 02 25.0
	PCC	eP	04 02 26.0
		i	04 02 27.3
	MHC	eP	04 02 32.5
	GCC	e	04 02 33.5
	MIN	iPc	04 02 34.4
	WDC	e	04 02 36.0
	JAS	eP	04 02 36.8
	SAO	eP	04 02 39.0
	LLA	e	04 02 44.7
	FHC	e	04 02 50.0
	FRI	e	04 02 51.7
	PRI	e	04 02 54.1
	MNA	i	04 03 08.9
BRK 04h02m02.7s 38.8N 122.8W			
h=3km ML=3.0(6)			
25 km NNE of Santa Rosa, CA			
Apr 10	MNA	eP	17 44 27.0
	ORV	eP	17 44 39.2
	JAS	eP	17 44 39.7
	MIN	eP	17 44 49.5
USGS 17h33m54.3s 35.3N 36.2W			
h=10km mb=4.8 Ms=4.7			

DATE	STA	PHASE	TIME (UTC)
North Atlantic Ridge			
Apr 10	PRI	iPd	18 12 18.8
	LLA	ePc	18 12 23.9
	FRI	iPd	18 12 26.5
	PRS	iPc	18 12 28.9
	SAO	ePc	18 12 31.0
	MHC	ePd	18 12 37.8
	GCC	ePd	18 12 38.0
	JAS	iPd	18 12 40.2
		iS	18 13 21.7
	PCC	ePc	18 12 45.0
	BRK	eP	18 12 47.5
	BKS	ePnc	18 12 47.7
		iSn	18 13 15.9
		i(Sg)	18 13 32.8
	MNA	eP	18 12 56.7
	ORV	ePc	18 13 06.0
BRK 18h12m11.5s 36.2N 120.2W			
h=5km ML=3.7(6)			
Coalinga Area, CA			
Apr 10	PRI	iPd	18 47 17.8
	LLA	ePc	18 47 22.8
	FRI	iPd	18 47 25.5
	PRS	ePd	18 47 27.0
	SAO	ePc	18 47 29.8
	MHC	ePd	18 47 36.7
	GCC	ePd	18 47 36.8
	JAS	iPc	18 47 39.4
		iS	18 48 00.9
	PCC	e	18 47 42
	BRK	e	18 47 46
	BKS	ePN	18 47 46.4
		eSn	18 48 14.2
	MNA	e	18 47 55.5
	ORV	ePd	18 48 04.5
BRK 18h47m10.8s 36.2N 120.2W			
h=8km ML=3.3(6)			
Coalinga Area, CA			
Apr 10	PRI	eP	20 56 35.7
	FRI	ePd	20 56 41.0
	JAS	ePd	20 56 41.5
	WDC	eP	20 56 41.8
	ORV	eP	20 56 42.5
	MNA	ePd	20 56 51.3
USGS 20h45m45.5s 17.9S 177.9W			
h=599km mb=4.6			
Fiji Islands Region			
Apr 11	PRI	iPd	08 16 05.8
	LLA	ePd	08 16 11.0
	PRS	eP	08 16 14.8
	FRI	iPd	08 16 15.6
	SAO	iPc	08 16 18.0
	MHC	e(P)	08 16 25.5
	GCC	e(P)	08 16 26.0
	JAS	iPc	08 16 28.4
		iS	08 16 49.9
BRK 08h16m00.8s 36.3N 120.4W			
h=7km ML=3.0(4)			
Coalinga Area, CA			
Apr 12	PRI	iPd	15 40 52.3
	PRS	iPd	15 40 53.9
		iS	15 41 06.5
	LLA	iPd	15 40 59.2
	SAO	iPd	15 41 01.0
	GCC	eP	15 41 06.8
	MHC	eP	15 41 10.2
	FRI	eP	15 41 10.4
	JAS	iPd	15 41 18.8

DATE	STA	PHASE	TIME (UTC)
		iS	15 41 46.9
BRK 15h40m41.4s 35.7N 121.1W			
h=5kmR ML=3.0(4)			
San Simeon Area, CA			
Apr 13	FHC	eP	22 17 59.5
	BRK	eP	22 18 03.4
	WDC	ePc	22 18 03.8
		ePP	22 21 55
	GCC	eP	22 18 04.2
	BKS	iPd	22 18 04.2
		e	22 18 12.6
		eS	22 28 25
		ePPS	22 30 00
		eSPP	22 30 12
		eSSS	22 37 30
		e	22 43 15
		e	22 45 00
		e	22 46 38
		e	22 47 48
		AMP(μa)	PER(s)
	PZ	0.094	1.2
	PCC	e	22 18 04.7
	SAO	eP	22 18 05.7
	MHC	ePc	22 18 05.9
	MIN	eP	22 18 06.4
	ORV	eP	22 18 06.6
	PRS	eP	22 18 06.7
	LLA	eP	22 18 08.8
	PRI	eP	22 18 09.6
	JAS	ePc	22 18 10.0
		ePP	22 22 05
	FRI	ePc	22 18 12.4
	MNA	eP	22 18 18.9
BRK mb=5.9 h=33km Distance=87°			
USGS 22h05m07.8s 5.6S 148.3E			
h=168km mb=5.8			
New Britain Region			
Apr 14	WDC	e	14 59 54
	ORV	ePc	15 00 07.8
	JAS	e	15 00 33
USGS 14h58m17.8s 44.2N 129.3W			
h=10km mb=4.3			
Off Coast of Oregon			
Apr 15	FHC	eP	03 30 02.6
	WDC	iPc	03 30 03.8
	MIN	iPc	03 30 05.6
	ORV	iPc	03 30 08.9
	BRK	ePc	03 30 17.1
	BKS	iPc	03 30 17.4
		AMP(μa)	PER(s)
	PZ	0.065	1.0
	MNA	iPc	03 30 17.9
	JAS	iPc	03 30 18.2
	PCC	eP	03 30 18.3
	MHC	ePc	03 30 20.0
	GCC	eP	03 30 21.0
	SAO	eP	03 30 22.5
	FRI	iPc	03 30 22.9
	LLA	eP	03 30 24.1
	PRS	eP	03 30 24.7
	PRI	eP	03 30 26.7
BRK mb=5.8 h=33km Distance=90°			
USGS 03h17m09.1s 49.7N 78.2E			
h=0km mb=5.7			
Eastern Kazakh, S.S.R.			
Apr 15	FHC	ePc	07 44 47.5
	WDC	iPc	07 44 52.1
	MIN	iPc	07 44 55.5
	ORV	iPc	07 44 58.8

DATE	STA	PHASE	TIME (UTC)
	BRK	ePc	07 45 03.2
		epP	07 46 58.5
	BKS	iPc	07 45 03.5
		e	07 45 08.2
		e	07 45 10.0
		AMP(μa)	PER(s)
	PZ	0.094	0.75
	PCC	ePc	07 45 03.8
	GCC	ePc	07 45 07.0
	MHC	ePc	07 45 07.3
	JAS	ePc	07 45 08.9
		epP	07 47 04.5
	SAO	eP	07 45 09.6
	PRS	ePc	07 45 11.8
	LLA	ePc	07 45 12.4
	FRI	iPc	07 45 14.3
	MNA	iPc	07 45 14.5
		epP	07 47 11.4
	PRI	ePc	07 45 15.5
USGS 07h34m12.0s 42.9N 131.1E			
h=538km mb=5.0			
E USSR - NE China Border Region			
Apr 15	FRI	eP	21 36 02.0
	MNA	iPd	21 36 02.8
		epP	21 36 28.7
	PRI	eP	21 36 03.8
	LLA	eP	21 36 06.6
		epP	21 36 33.3
	PRS	eP	21 36 07.8
	JAS	iPd	21 36 10.4
		epP	21 36 37.5
	GCC	eP	21 36 13.4
	MHC	eP	21 36 13.5
	BRK	eP	21 36 18.0
	BKS	iPd	21 36 18.6
		AMP(μa)	PER(s)
	PZ	0.095	0.9
	ORV	iPd	21 36 21.9
		epP	21 36 48.0
	MIN	eP	21 36 24.3
	WDC	ePd	21 36 27.8
	FHC	eP	21 36 37.4
USGS 21h26m32.2s 3.7S 77.8W			
h=110km mb=5.5			
Peru-Ecuador Border Region			
Apr 16	MNA	eP	06 24 01.4
	PRI	eP	06 24 02.2
	LLA	eP	06 24 03.6
	PRS	eP	06 24 04.0
	JAS	ePd	06 24 06.5
	ORV	ePd	06 24 16.0
	WDC	ePd	06 24 21.0
	FHC	eP	06 24 28.5
USGS 06h12m24.4s 21.5S 68.6W			
h=100km mb=4.8			
Chile-Bolivia Border Region			
Apr 16	PRS	eP	06 34 22.1
	SAO	eP	06 34 22.6
	BKS	ePc	06 34 23.1
	BRK	eP	06 34 23.4
	PRI	eP	06 34 24.3
	FRI	ePc	06 34 29.6
	JAS	ePc	06 34 29.8
	ORV	ePc	06 34 30.8
	WDC	ePc	06 34 31.0
	MIN	eP	06 34 32.8
	MNA	eP	06 34 39.5
USGS 06h23m30.0s 18.2S 178.4W			
h=586km mb=4.7			
Fiji Islands Region			

DATE	STA	PHASE	TIME (UTC)
Apr 16	MNA	ePd	14 27 05.8
	JAS	ePd	14 27 15.6
	BKS	ePd	14 27 24.8
		e	14 27 46.7
		ePP	14 29 30
		eS	14 34 27
		eSS	14 37 37
		e	14 40 27
		e	14 41 45
		e	14 42 09
		e	14 43 58
		AMP(μa)	PER(s)
	LZ	2.1	20.
	LN	1.4	20.
	LE	3.6	20.
	ORV	ePd	14 27 26.8
BRK Ms=5.4 Distance=47°			
USGS 14h18m45.5s 6.8N 82.3W			
h=10km mb=5.1 Ms=4.7			
South of Panama			
Apr 17	ORV	eP	09 56 06.0
	WDC	eP	09 56 06.5
	JAS	eP	09 56 07.3
Apr 18	FRI	ePKP	03 15 24.6
	MNA	ePKP	03 15 25.7
	JAS	ePKP	03 15 27.1
	MHC	ePKP	03 15 28.3
	BRK	ePKP	03 15 28.8
	BKS	ePKP	03 15 29.1
		AMP(μa)	PER(s)
	PKPI	0.036	0.7
	MIN	ePKP	03 15 31.8
	WDC	ePKP	03 15 32.5
USGS 02h56m40.6s 59.7S 26.8W			
h=101km mb=5.5			
South Sandwich Islands Region			
Apr 18	FHC	iPc	03 31 00.5
		eS	03 31 21.5
	WDC	iPc	03 31 16.0
		eS	03 31 49.0
	MIN	iPc	03 31 25.8
	ORV	iPc	03 31 29.1
	BRK	ePc	03 31 31.8
	ZSP	eP	03 31 32
	BKS	iP	03 31 32.3
		e	03 31 39.5
		e	03 32 22.0
	PCC	eP	03 31 33.6
	GCC	iPc	03 31 41.6
	MHC	ePd	03 31 41.8
	SAO	iPc	03 31 48.0
	JAS	iPc	03 31 50.5
	PRS	ePd	03 31 53.0
	LLA	ePc	03 31 54.0
	PRI	ePc	03 32 02.0
	FRI	ePd	03 32 03.5
BRK 03h30m32.5s 40.4N 126.1W			
h=5kmR ML=3.7(6)			
Off Coast 170 km SW of Eureka, CA			
Apr 18	GCC	iPc	07 00 24.2
	PCC	iPc	07 00 24.3
	PRS	iPc	07 00 24.4
	BKS	eP	07 00 25
		ePcP	07 00 47.7
		epP	07 01 02
		e	07 01 32.2
		ePP	07 03 08.2
		eScS	07 09 40

DATE	STA	PHASE	TIME (UTC)
		eSP	07 10 13
		ePS	07 10 19
		e	07 13 34
		eSS	07 14 04
		eSSS	07 17 30
		eLg	07 19 15
		eLr	07 22 08
		AMP(μa)	PER(s)
	PZ	1.2	2.0
	SAO	ePc	07 00 25.0
		ePcP	07 00 48
		epP	07 01 05
	BRK	iPc	07 00 26.2
		epP	07 01 05
	PRI	iPc	07 00 26.4
		ePcP	07 00 47
		epP	07 01 05
	LLA	ePc	07 00 26.7
	MHC	iPc	07 00 27.0
		ePcP	07 00 48
		epP	07 01 05
		e	07 01 24
	FHC	ePc	07 00 31.0
	FRI	iPc	07 00 32.4
		ePKPPKP	07 28 15.5
	JAS	iPc	07 00 33.1
		ePcP	07 00 55
		epP	07 01 09
		ePP	07 03 15
		epPP	07 03 56
		eS	07 09 40
	ORV	iPc	07 00 34.5
	WDC	iPc	07 00 34.8
		ePcP	07 00 57
		epP	07 01 11
		e	07 02 05
		ePKPPKP	07 28 13
	MIN	iPc	07 00 36.8
	MNA	iPc	07 00 43.4
		ePKPPKP	07 28 07
BRK mb=6.4 h=159km Distance=72°			
USGS 06h49m13.9s 15.9S 174.4W			
h=150km mb=6.0			
Tonga Islands			
Apr 18	MNA	ePc	16 21 00.3
	FRI	eP	16 21 06.4
	JAS	ePc	16 21 12.5
	LLA	ePc	16 21 14.2
	PRS	eP	16 21 16.3
	ORV	ePc	16 21 19.2
	MHC	eP	16 21 19.5
	MIN	eP	16 21 20.0
	PCC	eP	16 21 23.3
	WDC	ePc	16 21 23.5
	FHC	eP	16 21 34.0
USGS 16h11m39.0s 16.8N 61.2W			
h=58km mb=4.9			
Leeward Islands			
Apr 18	WDC	eP	19 37 09.5
		e	19 37 33
	MIN	e	19 37 33
	JAS	eP	19 37 33.3
		e	19 37 54
	MNA	eP	19 37 37.9
		e	19 38 00.3
	FRI	eP	19 37 43
		e	19 [illegible]
	PRI	eP	19 [illegible]
		e	19 [illegible]
USGS 19h31m28.7s 60.8N 52.			
h=95km mb=5.1			

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DATE	STA	PHASE	TIME (UTC)
Southern Alaska			
Apr 18	WDC	eP	23 19 47.0
		e	23 20 02
		e	23 20 30
	MIN	eP	23 19 56.7
	ORV	eP	23 20 04.5
	BKS	ePd	23 20 18.4
		e	23 22 00
		e	23 23 52
			AMP(μa) PER(s)
		PZ	0.078 0.8
	PCC	eP	23 20 21.0
	MHC	eP	23 20 28.0
	JAS	eP	23 20 31.6
	SAO	eP	23 20 34.5
	MNA	eP	23 20 45.0
	FRI	eP	23 20 46.6
	PRI	eP	23 20 50.0
USGS 23h18m47.2s 43.1N 126.3W			
h=10km mb=4.8 Ms=3.8			
Off Coast of Oregon			
Apr 18	FHC	iPc	23 26 21.7
		iS	23 26 35.5
	WDC	iPd	23 26 36.6
		eS	23 27 02.1
	MIN	iPd	23 26 46.6
	ORV	ePd	23 26 49.0
	BKS	eP	23 26 55
		e	23 27 26.0
	ZSP	eP	23 26 55
	PCC	eP	23 26 58.0
	MHC	eP	23 27 04.9
	GCC	eP	23 27 04.9
	JAS	ePd	23 27 10.5
	SAO	eP	23 27 11.4
	LLA	e	23 27 17
	PRS	e	23 27 19
	FRI	eP	23 27 25.0
BRK 23h26m02.7s 40.4N 125.2W			
h=5kmR ML=3.9(4)			
Off Coast 100 km SW of Eureka, CA			
Apr 19	FRI	eP	08 41 09.5
	PRI	eP	08 41 10.3
	MNA	eP	08 41 12.5
	LLA	eP	08 41 12.5
	PRS	eP	08 41 12.8
	JAS	ePc	08 41 16.1
	MHC	eP	08 41 18.0
	BRK	eP	08 41 21.0
	ORV	eP	08 41 25.3
	MIN	eP	08 41 27.4
	WDC	eP	08 41 30.4
USGS 08h28m53.4s 31.8S 71.8W			
h=33km mb=5.5 Ms=5.6			
Near Coast of Central Chile			
Apr 20	FHC	ePd	06 40 15.4
	WDC	ePd	06 40 20.8
		epP	06 42 15
		e	06 44 05
	MIN	iPd	06 40 25.1
	ORV	iPd	06 40 28.1
		e	06 44 10
	BRK	ePd	06 40 33.6
	BKS	iPd	06 40 33.9
		e	06 40 54.5
		e	06 41 08.6
		e	06 41 28.1
		e	06 49 31.0
			AMP(μa) PER(s)
		PZ	0.23 1.2
	PCC	ePd	06 40 34.5
	GCC	ePd	06 40 38.2
	MHC	ePd	06 40 38.5
	JAS	iPd	06 40 40.5
		e	06 41 01
		eS	06 48 29
	SAO	ePd	06 40 41.9
	PRS	iPd	06 40 43.9
	LLA	ePd	06 40 44.5
	FRI	ePd	06 40 46.9
		e	06 44 23
	MNA	iPd	06 40 47.0
	PRI	ePd	06 40 47.8
		epP	06 42 44
		e	06 44 21
USGS 06h31m10.6s 50.1N 148.7E			
h=582km mb=6.0			
Sea of Okhotsk			
Apr 21	PRI	e(P)	12 47 29.5
	BKS	eP	12 47 31.5
		e	12 47 56.4
		e	12 48 35.8
		e	12 56 49.8
		iS	12 56 59.2
		e	12 57 09.7
		i	12 57 24.0
		e6	13 05 34.5
		eLr	13 08 23
			AMP(μa) PER(s)
		PZ	0.031 0.8
		LZ	5.7 20.
		LN	5.0 20.
		LE	4.3 20.
	JAS	iPc	12 47 36.4
	ORV	eP	12 47 37.9
	WDC	eP	12 47 38.3
	MNA	ePc	12 47 46.9
USGS 12h36m16.0s 15.7S 173.0W			
h=73km mb=5.4			
Samoa Islands Region			
Apr 21	FHC	iPd	22 56 22.5
		iS	22 56 29.5
	WDC	iPc	22 56 34.9
		iS	22 56 50.9
	MIN	eP	22 56 46
	ORV	iPd	22 56 48.4
	MHC	e	22 57 10
	JAS	e	22 57 25.5
BRK 22h56m14.9s 40.4N 124.1W			
h=8km ML=3.3(4) Mo=9.0E20(2)			
60 km S of Eureka, CA			
Apr 22	GCC	ePc	03 44 09.7
	PCC	ePc	03 44 09.8
	PRS	ePc	03 44 09.9
	SAO	ePc	03 44 10.5
	BRK	iPc	03 44 11.6
		epP	03 46 16.5
	BKS	eP	03 44 11.7
		e	03 44 15.6
		epP	03 46 20.8
		iS	03 46 32.8
		e	03 53 54.4
		e	03 54 36
		esS	03 57 14.1
		e	03 58 00
			AMP(μa) PER(s)
		PZ	0.26 1.0
	PRI	ePc	03 44 11.8
		epP	03 46 17.2
		LLA	ePc	03 44 12.1
		MHC	iPc	03 44 12.2
		FHC	ePc	03 44 16.1
		FRI	iPc	03 44 16.9
			epP	03 46 22.3
		JAS	iPc	03 44 17.5
			epP	03 46 23.2
		ORV	iPc	03 44 18.8
			epP	03 46 24.5
		WDC	iPc	03 44 19.2
			epP	03 46 24.7
		MIN	ePc	03 44 20.8
			epP	03 46 26.5
		MNA	iPc	03 44 26.4
			epP	03 46 33.0
USGS 03h33m00.5s 21.9S 179.4W			
h=593km mb=5.7			
Fiji Islands Region			
Apr 22	JAS	eP	06 28 05.7
		ePP	06 32 10
		eS	06 38 45
		eSP	06 41 05
		eSS	06 46 27
		eLr	07 00 40
	BKS	e	06 41 15.5
		e	06 42 00
		e	06 46 50.0
		eLr	07 01 38
USGS 06h14m21.5s 0.5S 19.9W			
h=10km mb=5.0 Ms=5.7			
Central Mid-Atlantic Ridge			
Apr 22	JAS	e(P)	07 45 08.5
	ORV	ePc	07 45 24.8
	MIN	eP	07 45 37.0
	WDC	eP	07 45 42.0
USGS 07h38m29.0s 8.4N 102.9W			
h=33km mb=4.9			
Off Coast of Mexico			
Apr 22	MIN	iPd	12 11 39.9
		iS	12 11 41.4
	ORV	iPd	12 11 51.2
	WDC	iPc	12 11 52.2
	BKS	e(P)	12 12 19.0
		eS	12 12 51.3
	JAS	ePc	12 12 19.9
BRK 12h11m37.9s 40.3N 121.6W			
h=8km ML=3.0(4) Mo=1.5E21(2)			
Mineral, CA			
Apr 23	FHC	iPc	21 50 10.3
	WDC	iPc	21 50 15.5
		ePKPPKP	22 19 14.3
	MIN	eP	21 50 19.7
	ORV	iPc	21 50 22.5
		i	21 50 55.0
	BRK	ePc	21 50 28.0
	BKS	eP	21 50 28.2
		e	21 50 41.9
		epP	21 51 56.8
		esP	21 52 55.6
		iS	21 58 33.7
		e	21 59 09
		esS	21 59 56.8
		e	22 01 18.0
		e	22 06 08.0
		e	22 07 57.3
			AMP(μa) PER(s)
		PZ	1.0 1.1
	PCC	eP	21 50 28.7
	GCC	ePc	21 50 31.9
		MHC	iPc	21 50 32.8
		JAS	iPc	21 50 34.5
			ipP	21 52 07.6
			isP	21 53 03.3
			eS	21 58 46.8
			ePKPPKP	22 19 06.0
		SAO	eP	21 50 35.5
		PRS	eP	21 50 37.5
		LLA	eP	21 50 38.2
		FRI	eP	21 50 40.7
			epP	21 52 12.0
		MNA	eP	21 50 41.3
			isP	21 53 08.8
			eS	21 59 00.5
		PRI	iPc	21 50 42.0
USGS 21h40m35.5s 47.5N 146.7E			
h=414km mb=6.0			
Northwest of Kuril Islands			
Apr 24	FHC	iPc	04 22 35.0
	WDC	ePc	04 22 39.2
		ipP	04 24 10.4
		e	04 48 50.7
		eSKPPKP	04 52 24.0
	MIN	ePc	04 22 42.9
	ORV	iPc	04 22 44.9
		eS	04 32 10.5
		e	04 48 47.0
	BKS	eP	04 22 47.6
		epP	04 24 09.0
		esP	04 25 48.6
		eS	04 32 08.9
		eScS	04 32 25.6
		eSP	04 32 52
		e	04 33 30.6
		e	04 33 57
		e	04 34 38
		eSPS	04 35 33
		eSS	04 37 35.5
		e6	04 43 38
			AMP(μa) PER(s)
		PZ	0.94 0.7
	BRK	ePd	04 22 47.6
	PCC	eP	04 22 48.3
	GCC	iPc	04 22 51.3
	MHC	eP	04 22 51.6
	SAO	iPc	04 22 53.9
	JAS	ePc	04 22 54.0
		ipP	04 24 23.4
		iPP	04 26 03.8
		eS	04 32 20
		e	04 48 39
		ePKPPKP	04 49 39
		eSKPPKP	04 52 33
	PRS	eP	04 22 55.3
	LLA	eP	04 22 56.0
	PRI	eP	04 22 58.9
	FRI	eP	04 22 59.0
	MNA	eP	04 23 01.0
		ePP	04 26 19.5
		e	04 48 35.1
USGS 04h11m29.0s 30.9N 138.4E			
h=403km mb=6.1			
South of Honshu, Japan			
Apr 24	PRI	iPc	04 52 57.5
	LLA	iPd	04 53 03.6
	PRS	iPc	04 53 06.9
	FRI	iPd	04 53 07.1
	SAO	iPc	04 53 10.6
	GCC	eP	04 53 17.2
	MHC	iPc	04 53 17.4
	JAS	iPd	04 53 20.4
		PCC	eP	04 53 25.5
		BRK	eP	04 53 27.2
		BKS	eP	04 53 27.3
			ePg	04 53 33.5
			eS	04 53 55.6
		ZSP	iP	04 53 28.4
		MNA	iPd	04 53 36.5
		ORV	eP	04 53 45.1
		MIN	e	04 53 58.8
BRK 04h52m51.5s 36.2N 120.3W			
h=10km ML=4.0(6) Mo=1.1E22(2)			
Coalinga Area, CA			
Apr 24	MNA	eP	18 39 21.2
	PRI	eP	18 39 21.2
	LLA	eP	18 39 23.4
	JAS	iPd	18 39 26.3
	GCC	eP	18 39 28.2
	MHC	eP	18 39 28.5
	BRK	e(P)	18 39 31.7
	ORV	ePd	18 39 36.0
	WDC	iPd	18 39 40.0
	FHC	eP	18 39 47.2
USGS 18h27m35.2s 24.5S 67.1W			
h=170km mb=5.2			
Chile-Argentina Border Region			
Apr 24	MHC	iPd	21 15 20.9
	GCC	iPd	21 15 26.7
	PCC	iPc	21 15 30.0
	SAO	iPd	21 15 30.7
	BKS	iPd	21 15 32.6
		eS	21 15 40.6
	BRK	iPd	21 15 32.7
	ZSP	iPd	21 15 33.0
	LLA	iPc	21 15 35.6
	PRS	iPd	21 15 37.3
	JAS	iPc	21 15 40.0
	PRI	iPc	21 15 43.7
	FRI	iPc	21 15 45.9
	ORV	ePd	21 15 54.2
	MNA	eP	21 16 06.8
	MIN	eP	21 16 07.2
	WDC	eP	21 16 09.5
	FHC	eP	21 16 19.9
BRK 21h15m19.0s 37.3N 121.7W			
h=8km ML=6.2(6) Mo=1.1E25(2)			
Halls Valley Mainshock, 15 km E of San Jose			
Apr 24	BKS	e	21 20
	MHC	e	21 20
BRK ML=3.6(4)			
Halls Valley Sequence, CA			
Apr 24	MHC	iPd	21 23 41.8
	GCC	iPd	21 23 47.7
	SAO	i(P)c	21 23 51.4
	PCC	iPc	21 23 51.65
	BKS	eP	21 23 54.8
		eS	21 24 06.1
	BRK	iPd	21 23 54.8
	LLA	ePc	21 23 57.1
	PRS	iPc	21 23 58.7
	JAS	i	21 24 00.5
	PRI	e	21 24 04.6
	FRI	i	21 24 07.6
BRK 21h23m40.2s 37.3N 121.7W			
h=7km ML=3.4(2)			
Halls Valley Sequence, CA			
Apr 24	MHC	iPd	21 24 45.3
	GCC	iPd	21 24 50.7
		SAO	i(P)	21 24 54.2
		PCC	iPc	21 24 54.6
		BRK	iPc	21 24 57.8
		BKS	eP	21 24 57.9
			eS	21 25 09.1
		PRS	eP	21 25 00.7
		JAS	iPd	21 25 04.3
		PRI	i	21 25 06.6
		LLA	ePd	21 25 59.1
BRK 21h24m43.2s 37.3N 121.7W			
h=9km ML=3.3(2) Mo=8.0E20(2)			
Halls Valley Sequence, CA			
Apr 24	BKS	e(P)	21 25 37.0
		eS	21 25 48.0
BRK 21h25m23.0s 37.3N 121.7W			
h=0kmR ML=3.1(4) Mo=1.0E21(2)			
Halls Valley Sequence, CA			
Apr 24	MHC	iPc	21 41 48.6
	GCC	eP	21 41 54.0
	SAO	iPd	21 41 57.0
	PCC	iPd	21 41 58.6
	BRK	eP	21 42 01.5
	BKS	eP	21 42 01.8
		eS	21 42 13.5
	LLA	eP	21 42 02.0
	ZSP	eP	21 42 03.0
	PRS	eP	21 42 04.3
BRK 21h41m46.5s 37.3N 121.6W			
h=6km ML=2.6(2) Mo=6.1E19(2)			
Halls Valley Sequence, CA			
Apr 24	MHC	iPd	22 04 13.3
	GCC	ePd	22 04 19.0
	SAO	iPd	22 04 22.4
	PCC	iPc	22 04 23.0
	BRK	ePd	22 04 26.2
	ZSP	eP	22 04 27.2
	LLA	ePd	22 04 27.9
	PRS	ePc	22 04 29.7
	JAS	ePc	22 04 32.1
	FRI	ePd	22 04 39.0
BRK 22h04m11.5s 37.3N 121.7W			
h=7km ML=2.6(2) Mo=5.5E19(2)			
Halls Valley Sequence, CA			
Apr 24	MHC	iPd	22 14 01.3
	GCC	iPd	22 14 05.7
	SAO	iP	22 14 07.75
	PCC	iPc	22 14 10.8
	LLA	iPc	22 14 12.85
	BKS	iPd	22 14 13.6
		eS	22 14 26.8
	BRK	iPd	22 14 13.85
	PRS	iPd	22 14 14.75
	ZSP	iPd	22 14 14.9
	JAS	iPc	22 14 18.9
	PRI	ePc	22 14 20.8
	FRI	iPc	22 14 23.65
	ORV	ePc	22 14 35.1
	MNA	eP	22 14 51.6
BRK 22h13m58.2s 37.2N 121.6W			
h=10km ML=3.5(6) Mo=4.8E21(4)			
Halls Valley Sequence, CA			
Apr 24	MHC	iPd	22 20 33.25
	GCC	iPd	22 20 38.8
	SAO	iPd	22 20 42.1
	PCC	iPc	22 20 43.2
	BRK	iP	22 20 46.35
	ZSP	eP	22 20 47.1
	LLA	iPd	22 20 47.65

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DATE	STA	PHASE	TIME (UTC)
	BKS	e(P)	22 20 48.1
		eS	22 20 59.3
	PRS	iPd	22 20 49.2
	JAS	iPc	22 20 52.8
	PRI	e	22 20 58
	FRI	e	22 20 59

BRK 22h20m31.4s 37.3N 121.7W
h=5km ML=2.5(4) Mo=1.3E20(2)
Halls Valley Sequence, CA

Apr 24	MHC	iPd	22 27 40.6
	GCC	iPd	22 27 45.9
	SAO	e	22 27 49.2
	PCC	ePd	22 27 50.5
	BKS	eP	22 27 53.4
		eS	22 28 05.6
	BRK	iPd	22 27 53.5
	LLA	ePd	22 27 54.6
	ZSP	ePd	22 27 55.0
	PRS	eP	22 27 56.5
	JAS	iPc	22 28 00.0

BRK 22h27m38.6s 37.3N 121.7W
h=5km ML=2.5(4) Mo=3.7E20(2)
Halls Valley Sequence, CA

Apr 24	MHC	iPc	23 35 28.55
	GCC	iPd	23 35 34.5
	PCC	iPc	23 35 37.8
	SAO	iPd	23 35 38.65
	BRK	iPd	23 35 40.6
	BKS	e(P)	23 35 41.5
		eS	23 35 50.6
	ZSP	eP	23 35 41.8
	LLA	iPc	23 35 43.7
	PRS	iPc	23 35 45.8
	JAS	iPc	23 35 48.1
	PRI	ePd	23 35 52.3
	FRI	iPc	23 35 54.7
	ORV	e	23 36 06

BRK 23h35m26.9s 37.3N 121.7W
h=6km ML=3.1(4) Mo=1.9E20(2)
Halls Valley Sequence, CA

Apr 25	FHC	ePc	01 21 55.6
	WDC	iPc	01 21 56.7
	MIN	ePc	01 21 58.4
	ORV	ePc	01 22 02.0
	BRK	eP	01 22 10.0
	MNA	ePc	01 22 10.9
	JAS	iPc	01 22 11.1
	MHC	ePc	01 22 13.9
	SAO	eP	01 22 15.6
	FRI	eP	01 22 15.9
	PRS	ePc	01 22 17.8
	PRI	eP	01 22 20.0

USGS 01h04m03.5s 50.0N 78.9E
h=0km ab=5.9 Ms=4.7
Eastern Kazakh, S.S.R.

Apr 25	MHC	iPd	04 09 21.0
	GCC	eP	04 09 26.3
	SAO	iPd	04 09 29.5
	PCC	iPc	04 09 31.0
	BRK	iPc	04 09 34.4
	LLA	ePd	04 09 35.0
	BKS	e(P)	04 09 35.6
		iS	04 09 46.2
	ZSP	eP	04 09 36.0
	PRS	ePc	04 09 36.7
	JAS	iPd	04 09 40.4
	PRI	e	04 09 45
	FRI	eP	04 09 46.2

BRK 04h09m19.0s 37.3N 121.7W
h=4km ML=2.6(4) Mo=5.8E19(2)
Halls Valley Sequence, CA

Apr 25	MHC	iPd	04 16 55.2
	GCC	iPd	04 17 01.3
	SAO	iPd	04 17 05.0
	PCC	iPc	04 17 05.1
	BRK	ePc	04 17 07.5
	BKS	e(P)	04 17 09.1
		eS	04 17 19.6
	ZSP	ePc	04 17 09.5
	LLA	ePc	04 17 10.2
	PRS	ePd	04 17 12.0
	JAS	iPc	04 17 15.1
	PRI	eP	04 17 18.7
	FRI	ePc	04 17 22.6
	ORV	e	04 17 33

BRK 04h16m53.6s 37.3N 121.7W
h=6km ML=3.1(4) Mo=2.4E20(2)
Halls Valley Sequence, CA

Apr 25	PCC	ePc	04 30 31.0
	GCC	iPc	04 30 31.0
	PRS	ePc	04 30 31.3
	SAO	iPc	04 30 32.0
	BRK	ePc	04 30 32.7
		epP	04 32 02.0
	BKS	ePc	04 30 32.8
			AMP(μm) PER(s)
		PZ	0.23 1.0
	PRI	ePc	04 30 33.6
		epP	04 32 04.3
	MHC	iPc	04 30 33.6
		epP	04 32 04.3
	LLA	ePc	04 30 33.6
	FHC	ePc	04 30 37.0
	FRI	iPc	04 30 38.9
		epP	04 32 09.6
	JAS	iPc	04 30 39.2
		epP	04 32 10.0
	ORV	ePc	04 30 40.4
		epP	04 32 11.2
	WDC	ePc	04 30 40.5
		epP	04 32 11.5
	MIN	ePc	04 30 42.5
		epP	04 32 13.5
	MNA	ePc	04 30 49.2
		epP	04 32 20.4

USGS 04h19m32.0s 17.3S 177.2W
h=415km ab=5.7
Fiji Islands Region

Apr 25	MHC	iPd	05 18 49.3
	GCC	iPd	05 18 54.7
	SAO	iPd	05 18 58.0
	PCC	ePc	05 18 58.6
	BRK	iPc	05 19 01.9
	BKS	e(P)	05 19 02.3
		eS	05 19 13.1
	LLA	ePc	05 19 03.0
	ZSP	ePd	05 19 03.5
	PRS	ePd	05 19 05.0
	JAS	iPc	05 19 08.4
		iS	05 19 33.4
	PRI	e(P)	05 19 13
	FRI	ePc	05 19 14.3
	ORV	e	05 19 26

BRK 05h18m47.5s 37.3N 121.7W
h=8km ML=2.5(2) Mo=4.8E19(2)
Halls Valley Sequence, CA

Apr 25	MHC	iPd	20 26 59.4
	GCC	ePd	20 27 05.0
	SAO	iPd	20 27 08.2
	PCC	ePc	20 27 09.1
	BKS	eP	20 27 12.3
		eS	20 27 22.9
	BRK	iPd	20 27 12.5
	LLA	ePd	20 27 13.7
	ZSP	eP	20 27 13.8
	PRS	ePd	20 27 15.3
	JAS	iPc	20 27 18.8
	PRI	e(P)	20 27 22.3
	FRI	ePc	20 27 24.5

BRK 20h26m57.5s 37.3N 121.7W
h=6km ML=2.7(4) Mo=7.4E19(2)
Halls Valley Sequence, CA

Apr 26	MHC	iPd	00 42 30.9
	GCC	iPd	00 42 33.8
	SAO	iPd	00 42 34.7
	LLA	ePc	00 42 40.2
	PCC	iPc	00 42 40.7
	PRS	ePd	00 42 42.3
	BKS	iPd	00 42 43.9
		iS	00 42 57.0
	BRK	iPd	00 42 43.9
	ZSP	iPc	00 42 45.0
	JAS	iPd	00 42 48.4
	PRI	e(P)	00 42 49.2
	FRI	iPc	00 42 52.5
	ORV	e	00 43 07

BRK 00h42m26.6s 37.1N 121.6W
h=5km ML=3.6(6) Mo=4.0E21(4)
Halls Valley Sequence, CA

Apr 26	MHC	iPd	00 50 03.6
	GCC	iPd	00 50 08.8
	SAO	iPd	00 50 11.5
	PCC	iPc	00 50 13.5
	BKS	eP	00 50 16.6
		eS	00 50 28.3
	BRK	iPc	00 50 16.6
	LLA	ePd	00 50 17.0
	ZSP	iPc	00 50 18.0
	PRS	ePd	00 50 18.5
	JAS	iPc	00 50 22.8
	PRI	ePc	00 50 24.6
	ORV	iPc	00 50 41

BRK 00h50m01.3s 37.2N 121.6W
h=6km ML=3.0(5) Mo=2.7E20(2)
Halls Valley Sequence, CA

Apr 26	LLA	iPd	01 09 23.9
	PRS	iPd	01 09 25.3
	SAO	iPd	01 09 25.5
	PRI	iPd	01 09 31.5
	GCC	eP	01 09 35.0
	MHC	ePd	01 09 36.5
	PCC	ePd	01 09 43.4
	FRI	eP	01 09 43.4
	JAS	iPd	01 09 46.1
		eS	01 10 05.6
	BRK	e	01 09 48
	BKS	e(P)	01 09 50.1
		eS	01 10 07.1

BRK 01h09m19.9s 36.6N 121.2W
h=5kmR ML=2.6(4)
Bear Valley Area, 40 km NNE of King City, CA

Apr 26	MHC	iPd	06 29 56.3
	GCC	iPd	06 29 59.2
	SAO	iPc	06 30 00.0
	LLA	iPc	06 30 05.5
	PCC	iPc	06 30 06.0
	PRS	iPd	06 30 07.5
	BKS	ePd	06 30 09.3
		eS	06 30 22.5
	BRK	iPd	06 30 09.5
	ZSP	iP	06 30 10.0
	JAS	iPd	06 30 13.5
	PRI	iPd	06 30 14.2
	FRI	iPc	06 30 17.3
	ORV	iPd	06 30 31.5
	MNA	e	06 30 41
	MIN	e	06 30 44
	WDC	eP	06 30 46.8

BRK 06h29m51.9s 37.1N 121.6W
h=5km ML=3.7(6) Mo=8.1E21(4)
Halls Valley Sequence, CA

Apr 26	MHC	iPd	06 59 21.0
	GCC	ePd	06 59 26.5
	SAO	iPd	06 59 30.1
	PCC	ePc	06 59 30.6
	BKS	ePc	06 59 33.6
		eS	06 59 44.5
	BRK	iPd	06 59 33.8
	ZSP	eP	06 59 35.5
	LLA	iPc	06 59 35.7
	PRS	iPc	06 59 37.3
	JAS	iPd	06 59 40.5
	PRI	e(P)	06 59 46.3
	FRI	ePc	06 59 46.3
	ORV	e	06 59 58

BRK 06h59m19.2s 37.3N 121.7W
h=5km ML=2.8(4) Mo=9.5E19(2)
Halls Valley Sequence, CA

Apr 26	MHC	iPd	07 52 04.9
	GCC	ePd	07 52 10.4
	SAO	iPd	07 52 13.65
	PCC	iPc	07 52 14.9
	BRK	iPc	07 52 18.0
	BKS	eP	07 52 18.2
		eS	07 52 29.9
	LLA	ePd	07 52 19.0
	ZSP	eP	07 52 19.0
	PRS	ePd	07 52 20.8
	JAS	iPd	07 52 24.6
	PRI	ePd	07 52 27.7
	FRI	iPd	07 52 30.4
	ORV	e	07 52 43

BRK 07h52m03.0s 37.3N 121.7W
h=4km ML=3.0(4) Mo=8.4E20(4)
Halls Valley Sequence, CA

Apr 26	WDC	iPKPd	10 30 46.1
		e	10 34 02
	MIN	e	10 30 47.8
		iPKPd	10 30 48.2
	ORV	iPKPd	10 30 50.2
	JAS	i	10 30 53.0
		iPKPd	10 30 56.2
		i	10 31 19.5
		e	10 34 20
	BKS	ePKPd	10 30 54.9
		e	10 31 16.8
			AMP(μm) PER(s)
		PKPZ	0.24 0.9
	MHC	e	10 30 55
		ePKPd	10 30 57.2
	BRK	iPKPd	10 30 55.0
		e	10 31 16.7
	SAO	ePKP	10 30 55.1
	PCC	ePKPd	10 30 55.4
	MNA	i	10 30 55.4
		iPKPd	10 30 57.5

DATE	STA	PHASE	TIME (UTC)
	FRI	i	10 30 56.2
		iPKPd	10 30 59.2
		e	10 31 21.2
	PRS	e	10 30 56.7
		ePKPd	10 30 59.5
	GCC	ePKPd	10 30 57.2
	LLA	ePKPd	10 30 59.4
	PRI	iPKPd	10 31 01.3

USGS 10h11m10.2s 6.8S 71.5E
h=10km mb=6.0 Ms=5.3
Chagos Archipelago Region

Apr 26	WDC	eP	13 48 33.0
	ORV	ePc	13 48 50.5
	JAS	ePc	13 49 15.0

USGS 13h47m07.2s 44.2N 128.3W
h=10km mb=4.0
Off Coast of Oregon

Apr 26	MHC	iPd	15 35 26.8
	GCC	eP	15 35 32.4
	SAO	iPd	15 35 35.7
	PCC	eP	15 35 36.6
		iS	15 35 47.7
	BKS	eP	15 35 39.7
		eS	15 35 51.2
	BRK	eP	15 35 39.8
		iS	15 35 53.0
	LLA	eP	15 35 40.5
	ZSP	iP	15 35 41.9
	PRS	e	15 35 42.5
	JAS	eP	15 35 46.2
	PRI	e	15 35 50.9
	FRI	e	15 35 51.4
	ORV	e	15 36 04.4

BRK 15h35m24.9s 37.3N 121.7W
h=7km ML=2.8(4) Mo=7.7E19(2)
Halls Valley Sequence, CA

Apr 26	MHC	eP	17 13 28.7
	FRI	eP	17 13 33.5
	JAS	iPd	17 13 34.2
	ORV	eP	17 13 35.9
	WDC	eP	17 13 36.1
	MIN	eP	17 13 37.9
	MNA	e	17 13 43.8

USGS 17h02m12.5s 21.2S 177.3W
h=429km ab=4.8
Fiji Islands Region

Apr 26	ZSP	iPd	19 12 20.6
		iS	19 12 35.8
	BRK	eP	19 12 21.1
		iS	19 12 36.9
	BKS	ePc	19 12 21.6
		eS	19 12 36.4
	ORV	iPd	19 12 24.1
		i	19 12 30.8
	PCC	eP	19 12 27.5
		iS	19 12 45.6
	MHC	e	19 12 33.4
	JAS	iPd	19 12 36.5
	SAO	e	19 12 39.8

BRK 19h12m02.0s 38.8N 122.8W
h=1km ML=2.8(4)
Near The Geysers, 20 km S of Clear Lake, CA

Apr 26	MHC	iPd	20 59 23.4
		iS	20 59 25.6
	GCC	iPd	20 59 28.0
	SAO	iPd	20 59 31.2
	PCC	eP	20 59 32.8
	BRK	iPc	20 59 34.6
	BKS	iPd	20 59 36.5
		eS	20 59 47.8
	LLA	eP	20 59 37.2
	ZSP	eP	20 59 37.7
	PRS	eP	20 59 38.4
	JAS	iPd	20 59 42.5

BRK 20h59m20.9s 37.3N 121.7W
h=9km ML=2.6(4) Mo=1.7E19(2)
Halls Valley Sequence, CA

Apr 27	MHC	iPd	03 12 57.8
		iS	03 12 59.6
	GCC	ePd	03 13 03.3
	SAO	iPd	03 13 05.3
	PCC	eP	03 13 07.4
		i	03 13 08.0
		i	03 13 09.1
		iS	03 13 18.5
	BRK	eP	03 13 10.8
	BKS	eP	03 13 10.9
		eS	03 13 22.3
	LLA	eP	03 13 11.9
	ZSP	eP	03 13 12.9
	PRS	eP	03 13 13.7
	JAS	iPd	03 13 17.5
		iS	03 13 33.0
	FRI	e	03 13 23.1

BRK 03h12m55.7s 37.3N 121.7W
h=5kmR ML=2.5(4) Mo=3.2E19(2)
Halls Valley Sequence, CA

Apr 27	MHC	iPd	04 10 28.8
	SAO	iPc	04 10 31.5
	GCC	iPc	04 10 31.6
	LLA	iPc	04 10 36.7
	PCC	iPc	04 10 38.2
		iS	04 10 50.2
	PRS	iPc	04 10 39.1
	BKS	ePd	04 10 41.3
		eS	04 10 55.2
	BRK	iPc	04 10 41.5
	ZSP	iPd	04 10 42.3
		iS	04 10 59.0
	JAS	iPd	04 10 45.4
	PRI	iPd	04 10 46.2
	FRI	ePd	04 10 48.9
	ORV	e	04 11 03.5
	MIN	e	04 11 16.0
	WDC	e	04 11 19.0

BRK 04h10m23.9s 37.1N 121.5W
h=8km ML=3.5(5) Mo=3.1E21(4)
Halls Valley Sequence, CA

Apr 27	ORV	eP	04 15 26.1
	JAS	eP	04 15 27.7
	FRI	eP	04 15 29.6
	MNA	eP	04 15 37.2

USGS 04h02m45.9s 10.6S 161.3E
h=62km ab=5.2
Solomon Islands

Apr 27	MHC	iPd	13 19 10.8
	SAO	iPc	13 19 13.1
	GCC	iPc	13 19 13.[illegible]
	LLA	iPc	13 19 [illegible]
	PCC	iPd	13 19 20.4
	PRS	iPc	13 19 21.[illegible]
	BKS	ePd	13 19 [illegible]
		eS	13 19 [illegible]
	BRK	eP	13 19 [illegible]
		iS	13 19 [illegible]
	ZSP	iP	13 19 [illegible]

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)
		iS	13 19 41.3
	JAS	iPd	13 19 27.4
		iS	13 19 41.6
	PRI	eP	13 19 28.0
	FRI	eP	13 19 30.9
	ORV	eP	13 19 47.2

BRK 13h19m05.9s 37.1N 121.5W
h=7km ML=3.0(4) Mo=9.4E19(2)
Halls Valley Sequence, CA

Apr 27	MHC	iPd	16 48 36.4
	GCC	iPd	16 48 41.65
	SAO	iPd	16 48 44.8
	PCC	iPc	16 48 45.6
	BRK	iPd	16 48 48.4
	BKS	iPd	16 48 48.6
		iS	16 49 00.0
		iSg	16 49 01.0
	ZSP	iPd	16 48 49.4
	PRS	iPd	16 48 51.5
	LLA	ePc	16 48 51.5
	JAS	iPc	16 48 55.15
	PRI	ePc	16 48 57.7
	FRI	iPc	16 49 01.0
	ORV	eP	16 49 09.9
	MIN	e	16 49 21.5
	MNA	e	16 49 22.6
	WDC	ePc	16 49 25.3

BRK 16h48m34.1s 37.3N 121.7W
h=10km ML=3.4(3) Mo=1.1E21(2)
Halls Valley Sequence, CA

Apr 28	MHC	iPd	07 18 22.7
	GCC	iPd	07 18 24.8
	SAO	iPd	07 18 25.2
	LLA	eP	07 18 30.9
	PCC	iPd	07 18 31.8
	PRS	iPc	07 18 32.9
	BKS	eP	07 18 35.4
		eS	07 18 49.1
	BRK	iPd	07 18 35.5
	ZSP	iP	07 18 36.8
	JAS	iPd	07 18 39.9
	PRI	eP	07 18 40.7
	FRI	eP	07 18 43.4

BRK 07h18m17.7s 37.1N 121.6W
h=5km ML=2.9(4) Mo=2.9E20(2)
Halls Valley Sequence, CA

Apr 28	WDC	eP	10 12 35.7
	MIN	eP	10 12 41.6
	ORV	eP	10 12 45.5
	JAS	eP	10 13 00.2
	MNA	eP	10 13 10.0

USGS 10h05m51.8s 51.9N 169.8W
h=33km ab=5.4 Ms=5.7
Fox Islands, Aleutian Islands

Apr 28	MIN	e	13 24 42.2
	WDC	ePKP	13 24 42.6
	ORV	ePKP	13 24 44.4
	JAS	ePKP	13 24 50.4
	MNA	ePKP	13 24 51.8

USGS 13h05m05.1s 7.0S 72.4E
h=10km ab=4.8
Chagos Archipelago Region

Apr 28	MNA	eP	20 21 31.3
	FRI	eP	20 21 31.6
	PRI	eP	20 21 32.9
	LLA	eP	20 21 35.7
	PRS	e	20 21 38.0
	JAS	eP	20 21 40.0

DATE	STA	PHASE	TIME (UTC)
	SAO	e	20 21 41.0
	MHC	eP	20 21 42.8
	GCC	e	20 21 43.8
	BRK	eP	20 21 48.3
	BKS	eP	20 21 49.0
		eS	20 29 50.0
		e	20 37 44
		eLr	20 40 32
			AMP(pa) PER(s)
		PZ	0.12 1.4
		LZ	1.8 20.
		LN	0.0 20.
		LE	2.5 20.
	ORV	eP	20 21 51.0
	MIN	eP	20 21 54.4
	WDC	eP	20 21 57.0
	FHC	eP	20 22 08.2

USGS 20h12m06.3s 1.8S 78.1W
h=47km ab=5.6 Ms=4.9
Ecuador

Apr 28	FRI	iPc	22 48 37.4
	MNA	iPc	22 48 39.6
	JAS	iPc	22 48 43.6
	LLA	iPc	22 48 55.0
	PRI	iPc	22 48 57.0
	SAO	iPc	22 48 59.2
	MHC	iPc	22 48 59.4
	PRS	iPc	22 49 02.6
	GCC	iPc	22 49 03.5
	BKS	ePc	22 49 05.6
		e	22 49 28.0
		e	22 49 41.0
		e	22 49 47.0
	BRK	iPc	22 49 05.8
	ZSP	iPc	22 49 06.3
	PCC	iPc	22 49 06.7
	ORV	iPc	22 49 07.7
	MIN	eP	22 49 17.4
	WDC	iPc	22 49 26.0

BRK 22h48m21.0s 37.6N 118.9W
h=3km ML=4.7(8) Mo=5.1E22(2)
Mammoth Lakes Area, CA

Apr 29	FRI	iPc	00 50 50.2
		iS	00 51 01.6
	MNA	iPc	00 50 52.5
	JAS	iPc	00 50 56.3
	PRI	iPc	00 51 02.0
	LLA	iPc	00 51 07.8
	SAO	iPc	00 51 12.0
	MHC	iPc	00 51 12.1
	PRS	eP	00 51 14.0
	GCC	eP	00 51 16.1
	BRK	eP	00 51 18.0
	BKS	iPc	00 51 18.3
		eS	00 51 56.0
	ZSP	iPd	00 51 18.9
	PCC	e	00 51 19.2
	ORV	e	00 51 21.1
	MIN	e	00 51 35.4
	WDC	e	00 51 45.8

BRK 00h50m33.8s 37.6N 118.9W
h=5km ML=3.7(3)
Mammoth Lakes area, CA

Apr 29	FHC	iPc	09 23 00.7
		iS	09 23 08.4
	WDC	eP	09 23 15.1
	MIN	eP	09 23 24.9
	ORV	eP	09 23 28.1

BRK 09h22m46.7s 40.4N 124.6W
h=5kmR ML=2.9(3)

DATE	STA	PHASE	TIME (UTC)

Off Coast 65 km SW of Eureka, CA

Apr 29	FRI	e(P)	17 31 44.0
		e	17 32 08
		e	17 32 47.2
	JAS	e(P)	17 31 45.7
		e	17 32 08.2
		e	17 32 38.0
	ORV	e(P)	17 31 47
		e	17 32 09
		e	17 32 39.2
	MNA	ePc	17 31 55.6
		e	17 32 04.6
		e	17 32 17.8
		e	17 32 48.0
	PRS	e	17 32 29.4
	GCC	e	17 32 29.5
	MHC	e	17 32 32.0
	WDC	e	17 32 39.8

Tonga Islands

Apr 29	MHC	iPd	23 58 24.6
	GCC	iPd	23 58 27.6
	SAO	iPd	23 58 28.4
	LLA	eP	23 58 33.9
	PCC	iPd	23 58 34.3
		eS	23 58 46.5
	PRS	e(P)	23 58 36.0
	BKS	eP	23 58 37.7
		e	23 58 41.0
		e	23 58 43.0
		eS	23 58 51.0
	BRK	eP	23 58 37.8
	ZSP	iPd	23 58 39.0
		eS	23 58 53.0
		i	23 58 54.5
	JAS	iPd	23 58 41.9
		eS	23 58 55.6
		i	23 58 57.2
	PRI	e(P)	23 58 42.4
	FRI	e(P)	23 58 45.1
	ORV	eP	23 58 59.8
	MNA	e	23 59 15

BRK 23h58m20.2s 37.1N 121.6W
h=5km ML=2.9(4) Mo=4.2E20(2)
Halls Valley Sequence, CA

Apr 30	BRK	eP	02 38 51.8
	GCC	eP	02 38 52.8
	BKS	eP	02 38 52.9
			AMP(pa) PER(s)
		PZ	0.057 1.0
	MHC	eP	02 38 54.5
	PRS	eP	02 38 54.5
	WDC	eP	02 38 55.4
	PRI	eP	02 38 57.4
	ORV	eP	02 38 57.5
	MIN	eP	02 38 58.0
	JAS	eP	02 38 59.5
	FRI	eP	02 39 01.0
	MNA	e	02 39 08.5

USGS 02h26m24.0s 10.2S 161.1E
h=115km ab=5.2
Solomon Islands

May 1	WDC	ePc	01 27 03.5
		epP	01 27 17.7
	ORV	ePc	01 27 10.0
		epP	01 27 24.5
	BRK	eP	01 27 13.0
		epP	01 27 27.5
	JAS	ePc	01 27 19.8
		epP	01 27 34.5

DATE	STA	PHASE	TIME (UTC)
	PRI	eP	01 27 25.5
		epP	01 27 40.2
	FRI	ePc	01 27 25.8
		epP	01 27 40.2
	MNA	eP	01 27 27.4
		epP	01 27 41.7

USGS 01h15m51.5s 37.5N 141.4E
h=62km ab=5.3
Near East Coast of Honshu, Japan

May 1	MHC	iPc	02 20 05.2
	GCC	eP	02 20 10.5
	SAO	iPd	02 20 13.7
	PCC	iPc	02 20 14.8
	BRK	iPc	02 20 18.0
	LLA	ePc	02 20 18.7
	ZSP	ePc	02 20 20.0
	PRS	ePd	02 20 20.7
	JAS	iPd	02 20 24.5
	FRI	eP	02 20 29.0
	BKS	eP	02 23 18.5
		e	02 23 23.3
		iS	02 23 30.1

BRK 02h20m03.1s 37.3N 121.7W
h=7km ML=2.6(4) Mo=7.5E19(2)
Halls Valley Sequence, CA

May 1	MHC	iPd	04 00 11.7
	GCC	ePd	04 00 17.0
	SAO	iPd	04 00 20.3
	PCC	ePc	04 00 21.5
	BRK	iPc	04 00 24.7
		iS	04 00 37.5
	BKS	eP	04 00 25.1
		eS	04 00 36.0
	LLA	ePd	04 00 25.7
	ZSP	eP	04 00 26.0
	PRS	ePd	04 00 27.0
	JAS	ePc	04 00 30.9
		iS	04 00 46.9
	PRI	e	04 00 34.4
	FRI	eP	04 00 36.7
	ORV	e	04 00 49.0

BRK 04h00m09.7s 37.3N 121.7W
h=7km ML=2.8(4) Mo=1.3E20(2)
Halls Valley Sequence, CA

May 1	MHC	iPc	15 18 46.6
	GCC	iPd	15 18 53.2
	SAO	iPc	15 18 56.2
	PCC	ePc	15 18 57.3
	BKS	eP	15 19 00.0
		eS	15 19 11.8
		e	15 19 13.5
	BRK	iPd	15 19 00.2
	LLA	iPc	15 19 01.4
	ZSP	iPc	15 19 01.8
	JAS	iPd	15 19 06.3
	PRI	eP	15 19 10.4
	ORV	e	15 19 25

BRK 15h18m45.2s 37.3N 121.6W
h=4km ML=3.2(3) Mo=4.7E20(3)
Halls Valley Sequence, CA

May 1	MNA	iPc	19 05 36.9
	FRI	iPc	19 05 48.6
	JAS	iPc	19 05 57.6
	PRI	iPc	19 06 01.3
	LLA	ePc	19 06 02.1
	PRS	iPc	19 06 08.0
	SAO	iP	19 06 08.1
	MHC	ePc	19 06 10.3
	GCC	ePc	19 06 13.0

DATE	STA	PHASE	TIME (UTC)
	ORV	iPc	19 06 16.0
	PCC	ePc	19 06 17.6
	BKS	eP	19 06 17.8
		e	19 06 22.5
	BRK	eP	19 06 18.0
	ZSP	iP	19 06 18.0
	MIN	eP	19 06 23.0
	WDC	ePc	19 06 32.7
	FHC	e	19 06 53

BRK ML=5.4(7)
USGS 19h05m00.0s 37.1N 116.0W
h=0km ab=5.3 Ms=4.2
Underground Nuclear Explosion, NTS
(Mundo)

May 1	MHC	iPd	23 23 12.5
	GCC	iPd	23 23 17.4
	SAO	iPc	23 23 20.0
	PCC	iPc	23 23 22.4
	LLA	ePc	23 23 25.2
	BKS	iPc	23 23 25.7
		e	23 23 33.3
		iS	23 23 37.4
	BRK	ePd	23 23 25.7
	ZSP	iPc	23 23 27.0
	PRS	ePd	23 23 27.1
	JAS	iPd	23 23 31.6
	PRI	eP	23 23 33.9
	FRI	eP	23 23 36.6
	ORV	i	23 23 49

BRK 23h23m10.0s 37.2N 121.6W
h=6km ML=3.1(3) Mo=4.7E20(1)
Halls Valley Sequence, CA

May 2	PRI	iPd	04 32 22.6
	LLA	ePc	04 32 28.3
	FRI	iPd	04 32 31.9
	PRS	ePd	04 32 32.1
	SAO	iPd	04 32 35.4
	MHC	ePd	04 32 42.2
	GCC	ePd	04 32 42.2
	JAS	iPc	04 32 45.2
		iS	04 33 07.2
	BRK	e	04 32 54
	PCC	e	04 32 55
	ORV	e	04 33 10

BRK 04h32m16.8s 36.2N 120.3W
h=7km ML=3.0(2)
Coalinga area, CA

May 2	MHC	iPd	04 44 24.5
	GCC	iPd	04 44 29.9
	SAO	iPd	04 44 33.3
	PCC	iPc	04 44 33.9
	BRK	ePd	04 44 36.6
	BKS	iPc	04 44 36.8
		e	04 44 45.0
		iS	04 44 48.6
	ZSP	ePc	04 44 38.0
	LLA	iPd	04 44 38.4
	PRS	iPd	04 44 40.1
	JAS	iPd	04 44 43.6
	PRI	ePc	04 44 46.6
	FRI	iPc	04 44 49.5
	ORV	e	04 45 02

BRK 04h44m22.5s 37.3N 121.7W
h=9km ML=3.0(4) Mo=1.6E20(2)
Halls Valley Sequence, CA

May 2	FHC	iPd	14 16 38.8
	WDC	iPc	14 16 52.6
	MIN	iPc	14 17 02.4
	ORV	iPc	14 17 05.3

DATE	STA	PHASE	TIME (UTC)
	BRK	e	14 17 14.0
	PCC	e	14 17 19.3
	MHC	e	14 17 24.5
	GCC	e	14 17 26.7
	JAS	e	14 17 29

BRK 14h16m28.2s 40.5N 124.4W
h=5kaR ML=3.5(4) Mo=9.8E20(2)
Near Coast 45 km SW of Eureka, CA

May 2	WDC	ePd	19 03 08.5
	MIN	ePd	19 03 14.5
	ORV	eP	19 03 23.2
	JAS	iPd	19 03 43.0
	MHC	eP	19 03 45.5
	MNA	ePd	19 03 47.0
	FRI	eP	19 03 54.5
	PRI	eP	19 04 00.5

USGS 18h59m05.7s 55.6N 135.0W
h=10km ab=4.9 Ms=4.0
Off Coast of Southeastern Alaska

May 3	MHC	iPd	04 01 50.2
	GCC	ePc	04 01 55.7
	SAO	iPd	04 01 58.9
	PCC	ePd	04 02 00.0
	BRK	iPd	04 02 03.1
	BKS	eP	04 02 03.2
		eS	04 02 14.8
	LLA	ePc	04 02 04.5
	ZSP	eP	04 02 05.0
	PRS	ePc	04 02 06.1
	JAS	ePd	04 02 09.6
	PRI	e	04 02 15
	FRI	ePc	04 02 15.0
	ORV	ePd	04 02 27.6

BRK 04h01m48.3s 37.3N 121.7W
h=6km ML=2.6(4) Mo=4.1E19(2)
Halls Valley Sequence, CA

May 3	FHC	ePKP	12 47 39.2
	WDC	ePKPc	12 47 40.4
	MIN	iPKPc	12 47 41.8
	ORV	ePKPc	12 47 42.4
	PCC	ePKP	12 47 42.7
	BRK	ePKPc	12 47 42.9
	BKS	ePKP	12 47 43.9
			AMP(pa) PER(s)
		PZ	0.074 1.0
	SAO	ePKP	12 47 44.4
	MHC	ePKPc	12 47 44.5
	JAS	ePKPc	12 47 45.3
	PRS	ePKPc	12 47 45.5
	LLA	ePKPc	12 47 46.0
	FRI	ePKPc	12 47 47.3
	PRI	ePKPc	12 47 47.4
	MNA	ePKP	12 47 49.3

USGS 12h28m51.7s 8.6S 111.3E
h=86km ab=5.7
Java

May 3	MHC	iPd	13 02 53.8
	GCC	iPd	13 02 59.3
	SAO	iPd	13 03 02.6
	PCC	iPc	13 03 03.1
	BKS	iP	13 03 06.0
		e	13 03 14.4
		iS	13 03 17.5
	BRK	ePd	13 03 06.0
	ZSP	ePc	13 03 [illegible]
	LLA	ePc	13 03 [illegible]
	PRS	ePd	13 03 [illegible]
	JAS	iPc	13 03 [illegible]
	PRI	ePc	13 03 [illegible]

International Seismological Centre

UNIVERSITY OF CALIFORNIA SEISMOGRAPHIC STATIONS
REGISTRATION OF EARTHQUAKES 1984

DATE	STA	PHASE	TIME (UTC)
	FRI	iPc	13 03 18.7
	ORV	eP	13 03 29
BRK 13h02m51.7s 37.3N 121.7W			
h=9km ML=3.2(4) Mo=2.1E20(2)			
Halls Valley Sequence, CA			
May 3	MHC	iPd	13 07 14.0
	GCC	iPd	13 07 19.4
	SAO	iPd	13 07 22.7
	PCC	iPc	13 07 23.3
	BKS	iPd	13 07 26.0
		iS	13 07 37.1
	BRK	iPd	13 07 26.1
	ZSP	iPd	13 07 27.2
	LLA	ePc	13 07 27.7
	PRS	iPd	13 07 29.4
	JAS	iPd	13 07 32.6
	PRI	ePc	13 07 35.8
	FRI	ePc	13 07 38.1
	ORV	ePc	13 07 47.4
	MIN	e(P)	13 08 00
	MNA	e(P)	13 08 00
	WDC	eP	13 08 03
	FHC	eP	13 08 03.5
BRK 13h07m11.9s 37.3N 121.7W			
h=10km ML=4.2(3) Mo=4.1E22(3)			
Halls Valley Sequence, CA			
May 4	BKS	iPc	01 05 17.1
		iS	01 05 20.4
	BRK	iPc	01 05 17.6
		iS	01 05 19.2
	ZSP	iPc	01 05 19.1
		iS	01 05 23.5
	PCC	iPd	01 05 20.3
	MHC	eP	01 05 24.8
	GCC	iPd	01 05 27.5
	SAO	eP	01 05 33.7
	JAS	iPc	01 05 37.6
		iS	01 05 54.9
	PRS	e	01 05 40.3
	LLA	e	01 05 41.3
	ORV	e	01 05 45.3
BRK 01h05m14.0s 37.7N 122.1W			
h=6km ML=2.6(4)			
San Leandro, 20 km SE of Berkeley, CA			
May 4	WDC	eP	02 31 29.6
	MIN	eP	02 31 31.0
	ORV	eP	02 31 35.1
	MNA	eP	02 31 38.8
	JAS	eP	02 31 45.0
	LLA	eP	02 31 50.0
	FRI	eP	02 31 50.3
	MHC	eP	02 31 51.3
USGS 02h21m13.1s 73.5N 7.4E			
h=10km mb=5.0 Ms=4.8			
Greenland Sea			
May 4	ORV	eP	04 10 00.3
	JAS	eP	04 10 03.6
	FRI	eP	04 10 05.9
	WDC	eP	04 10 07.6
	MNA	eP	04 10 12.1
USGS 03h56m57.4s 6.5S 152.6E			
h=33km mb=5.6			
New Britain Region			
May 4	FHC	iP	12 03 52.6
	WDC	iPd	12 04 07.7
	MIN	iPd	12 04 17.4
	ORV	eP	12 04 20.3

DATE	STA	PHASE	TIME (UTC)
BRK ML=3.0(3)			
Off Coast 55 km SW of Eureka, CA			
May 4	MHC	iPd	18 43 00.0
	GCC	iPd	18 43 05.9
	SAO	iPd	18 43 09.5
	PCC	iPc	18 43 09.8
	BKS	iPc	18 43 12.7
		iS	18 43 23.5
	BRK	iPc	18 43 12.7
	ZSP	iPc	18 43 14.0
	LLA	iPd	18 43 15.0
	PRS	ePd	18 43 16.4
	JAS	iPc	18 43 19.7
	PRI	ePd	18 43 23.3
	FRI	ePc	18 43 25.8
	ORV	ePc	18 43 37.8
BRK 18h42m58.4s 37.3N 121.7W			
h=6km ML=3.4(4) Mo=1.1E21(4)			
Halls Valley Sequence, CA			
May 5	MHC	iPd	03 31 56.8
	GCC	iPd	03 32 02.7
	SAO	iPd	03 32 06.4
	PCC	ePc	03 32 06.6
	BRK	ePc	03 32 10.0
		eS	03 32 21.0
	BKS	iPc	03 32 10.5
		iS	03 32 20.8
	ZSP	eP	03 32 11.0
	LLA	e(P)c	03 32 12.1
	PRS	iPc	03 32 13.7
	JAS	ePd	03 32 16.5
	PRI	e	03 32 23
	FRI	e	03 32 23
	ORV	e	03 32 35
BRK 03h31m55.2s 37.3N 121.7W			
h=4km ML=2.5(4) Mo=6.0E19(2)			
Halls Valley Sequence, CA			
May 5	MHC	iPd	05 50 19.2
	GCC	iPd	05 50 21.3
		iS	05 50 26.8
	SAO	iPd	05 50 21.4
	LLA	iPc	05 50 28.1
	PCC	ePc	05 50 28.5
		eS	05 50 39.5
	PRS	iPc	05 50 29.1
	BKS	iPd	05 50 32.0
		iS	05 50 45.5
	BRK	iPd	05 50 32.2
	ZSP	iPd	05 50 33.0
	JAS	iPd	05 50 36.0
		iS	05 50 52.3
	PRI	ePd	05 50 36.6
	FRI	ePd	05 50 39.4
	ORV	e	05 50 56
BRK 05h50m14.2s 37.1N 121.6W			
h=5km ML=3.0(4) Mo=3.5E20(2)			
Halls Valley Sequence, CA			
May 6	WDC	ePc	08 30 25.1
	ORV	ePc	08 30 34.0
	JAS	ePc	08 30 47.3
	MNA	ePc	08 30 54.5
USGS 08h21m19.1s 53.1N 160.4E			
h=33km mb=5.0			
Near East Coast of Kamchatka			
May 6	MHC	iPc	11 29 10.4
	GCC	iPd	11 29 16.4
	PCC	iPc	11 29 19.5
	SAO	iPd	11 29 20.6

DATE	STA	PHASE	TIME (UTC)
	BRK	iPc	11 29 22.3
	BKS	iPc	11 29 22.5
		iS	11 29 32.8
	ZSP	ePc	11 29 23.8
	LLA	ePc	11 29 25.6
	PRS	iPc	11 29 27.7
	JAS	iPc	11 29 30.1
	PRI	e	11 29 35.5
	FRI	ePc	11 29 36.5
	ORV	e	11 29 47
BRK 11h29m08.7s 37.3N 121.7W			
h=6km ML=2.9(4) Mo=1.1E20(2)			
Halls Valley Sequence, CA			
May 6	FHC	eP	20 02 01.5
		ePcP	20 04 16.2
	WDC	iPc	20 02 07.3
		ePcP	20 04 18.7
		eScP	20 08 01.4
	MIN	ePc	20 02 12.7
	ORV	iPc	20 02 16.7
		ePcP	20 04 22.2
		eScP	20 08 05.5
	BRK	eP	20 02 21.2
		ePcP	20 04 24.6
		eScP	20 08 08.5
	BKS	iPc	20 02 21.5
		ipP	20 02 36.5
		ePcP	20 04 24.8
		epPcP	20 04 36.5
		eScP	20 08 12
		eS	20 08 28
		eLq	20 11 30
		eLr	20 13 24
		AMP(μm)	PER(s)
		PZ 0.034	0.8
		LZ 3.0	20.
		LN 1.4	20.
		LE 2.5	20.
	GCC	eP	20 02 26.8
	MHC	eP	20 02 27.6
		ePcP	20 04 27
	JAS	iPc	20 02 31.1
		e	20 02 48.0
		ePcP	20 04 28
		eScP	20 08 12.7
	PRS	eP	20 02 33.8
	LLA	eP	20 02 35.0
	FRI	iPc	20 02 39.1
		ePcP	20 04 31.5
		eScP	20 08 16.7
	PRI	eP	20 02 39.2
		ePcP	20 04 32
	MNA	ePc	20 02 40.2
		ePcP	20 04 32.5
		eScP	20 08 17.8
BRK Ms=5.1 Distance=40°			
USGS 19h54m49.1s 51.7N 176.8W			
h=58km mb=5.6			
Andreanof Islands, Aleutian Islands			
May 7	FHC	iPd	01 25 53.9
		iS	01 26 04.1
	WDC	iPc	01 26 03.0
	MIN	iPc	01 26 12.5
	ORV	iPd	01 26 14.0
	PCC	eP	01 26 26.5
	BRK	e	01 26 34
	JAS	eP	01 26 36.5
	BKS	e	01 26 40
		e	01 27 27
	SAO	eP	01 26 40.3
BRK 01h25m40.8s 40.1N 124.1W			

DATE	STA	PHASE	TIME (UTC)
h=5kmR ML=3.5(4) Mo=3.3E21(2)			
NW of Shelter Cove, 75 km S of Eureka, CA			
May 7	MHC	iPd	14 27 22.3
	GCC	iPd	14 27 28.2
		iS	14 27 34.2
	SAO	iPd	14 27 31.9
	PCC	iPc	14 27 32.1
	BKS	iPgc	14 27 35.0
		iS	14 27 46.0
	BRK	ePc	14 27 35.0
	ZSP	ePc	14 27 36.0
	LLA	ePd	14 27 37.2
	PRS	ePd	14 27 38.7
	JAS	iPc	14 27 42.0
		iS	14 27 57.6
	PRI	e	14 27 48
	FRI	ePd	14 27 48.3
	ORV	e	14 28 00
BRK 14h27m20.7s 37.3N 121.7W			
h=6km ML=3.1(4) Mo=2.3E20(2)			
Halls Valley Sequence, CA			
May 7	WDC	eP	18 02 38.0
	JAS	eP	18 02 45.5
	FRI	eP	18 02 47.5
	BKS	e(P)	18 02 49
		ePP	18 06 27
		eSKS	18 13 30
		eSP	18 14 45
		ePS	18 15 00
		e	18 27 00
		AMP(μm)	PER(s)
		LZ 2.5	20.
		LN 1.3	20.
		LE 3.6	20.
BRK Ms=5.8 Distance=91°			
USGS 17h49m41.6s 41.8N 13.9E			
h=10km mb=5.5 Ms=5.8			
Southern Italy			
May 7	PRI	iPc	19 32 59.5
	PRS	iPc	19 33 04.8
	LLA	ePc	19 33 06.9
	SAO	iPc	19 33 09.8
	FRI	iPc	19 33 10.3
	GCC	eP	19 33 15.7
	MHC	eP	19 33 18.5
	PCC	eP	19 33 23.5
	JAS	iPc	19 33 24.3
	BKS	iPd	19 33 27.5
	BRK	eP	19 33 27.5
	ZSP	iPd	19 33 29.0
	MNA	e	19 33 39.0
	MIN	i	19 34 00.7
BRK ML=4.1(6)			
PAS 19h32m32.7s 34.7N 120.0W			
h=10km ML=4.2			
Southern California			
May 8	PRS	eP	03 49 47.5
		i	03 50 07.0
	PRI	e	03 49 49.9
	BKS	iPc	03 49 50
		ipP	03 50 12
		eS	04 00 16
		ePPS	04 01 45
		eSS	04 06 15
		eSSS	04 09 45
		eLq	04 12 00
		eLr	04 16 00
		AMP(μm)	PER(s)

DATE	STA	PHASE	TIME (UTC)
		PZ 0.065	1.0
		LZ 6.1	20.
		LN 3.9	20.
		LE 4.3	20.
	MHC	eP	03 49 50.5
	FRI	eP	03 49 54.1
	JAS	eP	03 49 54.8
	FHC	eP	03 49 56.0
	ORV	eP	03 49 57.5
	WDC	eP	03 49 58.0
	MIN	eP	03 49 59.8
	MNA	eP	03 50 03.5
BRK Ms=6.0 Distance=87°			
USGS 03h37m14.5s 30.3S 177.7W			
h=33km mb=5.6 Ms=6.0			
Kermadec Islands			
May 8	PRI	iPd	05 50 33.3
	LLA	eP	05 50 37.8
	PRS	iPc	05 50 41.9
	FRI	iPd	05 50 42.3
	SAO	iPd	05 50 44.9
	MHC	eP	05 50 51.8
	GCC	eP	05 50 52.1
	JAS	iPd	05 50 54.9
	PCC	e	05 50 59.7
	BKS	e(P)	05 51 03
		eSg	05 51 41
	MNA	e	05 51 12.5
	ORV	e	05 51 20.4
BRK 05h50m28.0s 36.3N 120.4W			
h=11km ML=3.0(2)			
Coalinga Area, CA			
May 8	PRI	iPd	19 21 19.9
	LLA	iPd	19 21 26.1
	PRS	iPc	19 21 29.4
	FRI	iPd	19 21 29.7
	SAO	ePc	19 21 32.9
	MHC	ePd	19 21 40.0
	GCC	ePd	19 21 40.0
	JAS	iPd	19 21 43.0
	PCC	iPd	19 21 47.4
	BKS	iPc	19 21 49.5
	BRK	ePd	19 21 50.2
	ZSP	eP	19 21 51.0
	MNA	iPd	19 21 59.1
	ORV	ePd	19 22 07.8
	MIN	e	19 22 19.5
	WDC	e	19 22 25
BRK 19h21m14.0s 36.2N 120.3W			
h=8km ML=4.4(6) Mo=3.1E22(4)			
Coalinga Area, CA			
May 8	WDC	ePKP	19 53 50.4
	ORV	e	19 53 53.4
	JAS	ePKP	19 53 59.0
	MNA	ePKP	19 53 59.5
	FRI	ePKP	19 54 00.5
	PRI	ePKP	19 54 03.7
	BKS	e	19 55 00
USGS 19h34m04.5s 8.6S 68.0E			
h=10km mb=5.0			
Mid-Indian Rise			
May 9	FHC	iPc	10 00 37.6
		iS	10 00 47.5
	WDC	ePc	10 00 53.3
		iS	10 01 14.3
	MIN	ePd	10 01 03.3
	ORV	ePc	10 01 06.8
BRK 10h00m23.1s 40.7N 124.9W			
h=5kmR ML=3.7(4) Mo=7.6E20(2)			

DATE	STA	PHASE	TIME (UTC)
Off coast 60 km W of Eureka, CA			
May 9	FHC	ePc	12 04 05.5
	WDC	ePc	12 04 12.3
		e	12 04 21.9
	MIN	ePc	12 04 17.0
		e	12 04 26.6
	ORV	ePc	12 04 21.3
		e	12 04 31.0
	MHC	eP	12 04 33.5
		e	12 04 43.2
	JAS	iPc	12 04 35.5
		e	12 04 45.2
	PRS	eP	12 04 39.9
	LLA	eP	12 04 40.6
	MNA	ePc	12 04 42.2
		e	12 04 51.8
	FRI	eP	12 04 43.0
USGS 11h55m29.5s 56.1N 164.5E			
h=33km mb=5.2			
Komandorsky Islands Region			
May 10	FRI	e	00 08 30.3
	PRI	eP	00 08 30.7
	LLA	eP	00 08 32.6
	MNA	ePd	00 08 32.7
	PRS	eP	00 08 33.0
	JAS	iPd	00 08 36.2
	GCC	eP	00 08 37.1
	MHC	eP	00 08 37.8
	PCC	e	00 08 39.7
	BRK	eP	00 08 40.0
	BKS	ePd	00 08 41.0
		AMP(μm)	PER(s)
		PZ 0.13	1.0
	ORV	iPd	00 08 44.9
	MIN	e	00 08 47
	WDC	iPd	00 08 49.7
	FHC	e	00 08 55.7
USGS 23h56m08.9s 34.2S 70.3W			
h=113km mb=5.5			
Chile-Argentina Border Region			
May 10	FRI	e	10 02 49.5
	MNA	eP	10 02 54.3
	JAS	eP	10 02 54.4
	ORV	e	10 03 06.4
	WDC	e	10 03 10.0
USGS 09h51m02.4s 36.3S 98.9W			
h=10km mb=5.0 Ms=5.0			
Southern Pacific Ocean			
May 10	MHC	iPc	11 30 56.0
	GCC	iPd	11 31 02.9
	SAO	iPc	11 31 05.8
	PCC	eP	11 31 06.3
	BRK	eP	11 31 09.2
		iS	11 31 21.7
	BKS	iPc	11 31 09.5
		eS	11 31 21.0
	LLA	iPc	11 31 11.0
	ZSP	iPc	11 31 11.3
		iS	11 31 24.4
	PRS	eP	11 31 13.6
	JAS	eP	11 31 15.[illegible]
	PRI	eP	11 31 21.[illegible]
	FRI	eP	11 31 21.6
		iS	11 31 41.[illegible]
	ORV	e	11 31 11.[illegible]
BRK 11h30m54.7s 37.3N [illegible]W			
h=6km ML=2.8(4) Mo=[illegible]E20(2)			
Halls Valley Sequence, [illegible]			

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)
May 11	MHC	iPc	04 31 34.0
		iS	04 31 37.6
	GCC	iPd	04 31 36.9
	SAO	iPc	04 31 37.8
	LLA	eP	04 31 43.1
	PCC	eP	04 31 43.3
	PRS	iPc	04 31 46.1
	BKS	iP	04 31 47.0
		iS	04 32 00.0
	BRK	eP	04 31 47.0
	ZSP	iPd	04 31 48.2
		iS	04 32 03.7
	JAS	eP	04 31 50.9
	PRI	eP	04 31 52.4
	FRI	eP	04 31 55.2
		iS	04 32 14.6

BRK 04h31m29.7s 37.2N 121.6W
h=6km ML=2.7(4) Mo=1.7E20(2)
Halls Valley Sequence, CA

May 11	WDC	e	10 54 45.2
	MNA	e	10 54 45.8
	ORV	eP	10 54 47.8
	JAS	eP	10 54 52.3
	FRI	e	10 54 54.2

USGS 10h41m49.9s 41.8N 14.0E
h=14km mb=5.2 Ms=5.2
Southern Italy

May 11	MHC	iPd	23 26 08.1
	GCC	ePd	23 26 13.7
	SAO	iPd	23 26 17.2
	PCC	ePc	23 26 17.7
	BRK	ePc	23 26 20.8
	BKS	eP	23 26 20.9
		eS	23 26 32.2
	ZSP	ePd	23 26 22.0
	LLA	ePd	23 26 22.7
	PRS	ePc	23 26 24.4
	JAS	iPd	23 26 27.7
	PRI	e	23 26 36

BRK 23h26m06.3s 37.3N 121.7W
h=6km ML=2.7(4) Mo=6.6E19(2)
Halls Valley Sequence, CA

May 12	PRS	ePc	17 41 11.9
	PRI	ePc	17 41 12.5
	SAO	ePc	17 41 14.4
	LLA	ePc	17 41 14.8
	GCC	ePc	17 41 15.1
	PCC	eP	17 41 17.0
	MHC	ePc	17 41 17.8
	FRI	ePc	17 41 18.2
	BRK	eP	17 41 19.4
	BKS	eP	17 41 19.6
			AMP(μa) PER(s)
		PZ	0.065 0.9
	JAS	ePc	17 41 23.5
	MNA	ePc	17 41 30.9
	ORV	ePc	17 41 31.1
	WDC	ePc	17 41 35.5

USGS 17h30m58.3s 21.9S 139.0W
h=0km mb=5.7 Ms=3.8
Tuamotu Archipelago Region

May 12	PRS	eP	19 01 23.9
	PRI	eP	19 01 25.7
	BRK	eP	19 01 26.2
	MHC	eP	19 01 26.9
	FRI	eP	19 01 31.0
	JAS	ePc	19 01 32.0
	ORV	eP	19 01 34.0
	WDC	ePc	19 01 35.0
	MIN	eP	19 01 36.4
	MNA	ePc	19 01 40.6

USGS 18h49m06.3s 27.1S 176.7W
h=33km mb=5.3 Ms=5.0
Kermadec Islands Region

May 12	MHC	iPc	21 48 36.5
	GCC	iPd	21 48 44.0
	SAO	iPd	21 48 47.3
	PCC	eP	21 48 48.3
	BKS	ePc	21 48 50.2
	BRK	iPc	21 48 50.3
	ZSP	eP	21 48 51.5
	LLA	eP	21 48 52.5
	PRS	e(P)	21 48 54.5
	JAS	ePd	21 48 56.1

BRK 21h48m35.6s 37.3N 121.6W
h=3km ML=2.5(4) Mo=1.4E19(2)
Halls Valley Sequence, CA

May 12	FHC	ePc	22 32 18.6
	WDC	iPc	22 32 24.9
		epP	22 33 20
	MIN	ePc	22 32 29.1
	ORV	iPc	22 32 32.8
		epP	22 33 28.3
	BRK	eP	22 32 37.7
	GCC	eP	22 32 42.3
	MHC	eP	22 32 42.8
	JAS	ePc	22 32 45.2
	PRS	eP	22 32 48.2
	LLA	eP	22 32 49.0
	FRI	eP	22 32 51.8
	MNA	ePc	22 32 52.2
		epP	22 33 48.0
	PRI	eP	22 32 52.5

USGS 22h23m03.9s 50.2N 153.4E
h=251km mb=4.8
Kuril Islands

May 13	MNA	eP	07 06 57.8
	PRI	eP	07 06 58.0
	JAS	ePd	07 07 02.9
	ORV	eP	07 07 12.0
	WDC	ePd	07 07 16.8

USGS 06h55m24.7s 22.9S 66.3W
h=262km mb=4.8
Jujuy Province, Argentina

May 13	PRS	eP	15 05 27.9
	GCC	eP	15 05 28.3
	SAO	eP	15 05 28.5
	PCC	eP	15 05 28.6
	PRI	ePc	15 05 29.6
	BRK	eP	15 05 30.5
	BKS	eP	15 05 30.6
			AMP(μa) PER(s)
		PZ	0.041 0.8
	MHC	eP	15 05 30.7
		epP	15 05 51.3
	FRI	ePc	15 05 34.2
		epP	15 05 54.5
	JAS	iPc	15 05 35.1
		epP	15 05 55.5
	ORV	ePc	15 05 37.5
	WDC	ePc	15 05 38.4
	MIN	eP	15 05 39.6
	MNA	ePc	15 05 43.3
		epP	15 06 04

USGS 14h52m39.0s 33.3S 179.4W
h=33km mb=5.4 Ms=4.5
South of Kermadec Islands

May 13	FHC	iPc	23 52 16.5
		iS	23 52 34.6
	WDC	iPc	23 52 31.7
	MIN	iPd	23 52 41.8
	ORV	iPd	23 52 44.8
	BRK	e(P)	23 52 48.0
	BKS	e(P)	23 52 49.4
	PCC	eP	23 52 50.5
	MHC	eP	23 52 58.7
	SAO	eP	23 53 05.0
	JAS	iPc	23 53 07.0

BRK 23h51m52.5s 40.5N 125.7W
h=5kmR ML=4.3(6) Mo=2.9E21(2)
Off Coast 140 km WSW of Eureka, CA

May 14	PRI	ePc	00 02 57.0
	MNA	ePc	00 02 57.2
		epP	00 03 07.8
	JAS	ePc	00 03 04.4
		epP	00 03 14.5
	MHC	eP	00 03 07.0
		epP	00 03 17.5
	ORV	eP	00 03 16.1
		epP	00 03 36.8
	WDC	eP	00 03 22.4
		epP	00 03 33.2

USGS 23h53m29.6s 3.9S 80.8W
h=35km mb=5.3
Peru-Ecuador Border Region

May 15	PRI	eP	07 37 36.0
	FRI	e	07 37 39.8
	MNA	eP	07 37 46.5
	JAS	eP	07 37 47.5
	ORV	eP	07 38 02.2
	WDC	e	07 38 10

USGS 07h29m33.9s 4.4S 104.9W
h=10km mb=5.1 Ms=4.9
Northern Easter Island Cordillera

May 15	MHC	iPd	22 52 29.3
	GCC	ePc	22 52 36.0
	PCC	iPd	22 52 39.3
	SAO	iPd	22 52 40.4
	BRK	ePc	22 52 42.5
	BKS	ePc	22 52 42.7
	LLA	ePd	22 52 46.0
	PRS	eP	22 52 47.7
	JAS	ePd	22 52 50.2
	PRI	e	22 52 59

BRK 22h52m28.5s 37.3N 121.7W
h=5kmR ML=2.6(4) Mo=2.0E20(2)
Halls Valley Sequence, CA

May 16	FRI	eP	03 56 55.5
	PRI	eP	03 56 56.7
	MNA	ePd	03 56 57.4
	LLA	eP	03 56 58.9
	JAS	iPd	03 57 01.9
	GCC	ePd	03 57 03.6
	MHC	ePd	03 57 04.0
	BRK	eP	03 57 07.1
	BKS	eP	03 57 07.5
			AMP(μa) PER(s)
		PZ	0.016 0.5
	ORV	iPd	03 57 10.7
	MIN	eP	03 57 12.7
	WDC	iPd	03 57 15.5

USGS 03h44m57.8s 27.4S 67.2W
h=158km mb=5.4
Catamarca Province, Argentina

May 16	PRI	iPd	03 58 27.5
	LLA	iPc	03 58 32.7
		i	03 58 33.3
	FRI	iPd	03 58 35.5
		iS	03 58 46.6
	PRS	ePd	03 58 36.5
		i	03 58 37.0
	SAO	iPd	03 58 39.7
	MHC	eP	03 58 46.2
	GCC	eP	03 58 46.4
	JAS	ePc	03 58 48.8
	MNA	e	03 59 09

BRK 03h58m21.0s 36.2N 120.3W
h=12km ML=2.9(4)
Coalinga Area, CA

May 16	MNA	iPc	16 00 36.8
		iS?	16 01 09.3
	FRI	ePn	16 00 47.9
		eP?	16 00 55.5
		iPg	16 01 02.1
	JAS	e(Pn)	16 00 57.2
		eP?	16 01 06.3
		iPg	16 01 16.2
	PRI	ePnc	16 01 02.1
	LLA	e(Pn)	16 01 03.7
	PRS	ePn	16 01 09
	MHC	ePn	16 01 12.2
	ORV	ePn	16 01 16.5
	MIN	e	16 01 24

BRK ML=3.9(2)
USGS 15h59m59.3s 37.1N 116.0W
h=5km
Underground Nuclear Explosion,
N.T.S.

May 16	PRI	eP	17 30 37.8
		eS	17 30 53.9
	PRS	ePd	17 30 42.5
	LLA	iPc	17 30 45.2
	SAO	ePc	17 30 47.9
	FRI	ePc	17 30 50.3
	GCC	eP	17 30 53.5
	MHC	eP	17 30 56.8
	JAS	e(P)	17 31 03
	MNA	e	17 31 24.4
	ORV	eP	17 31 27.0

BRK 17h30m14.2s 34.8N 120.4W
h=11km ML=3.5(4)
15 km SSE of Santa Maria, CA

May 17	WDC	eP	08 05 36.2
	FHC	e(P)	08 05 37
	MIN	eP	08 05 37.3
	ORV	e(P)	08 05 42
	MNA	eP	08 05 47.6
	JAS	eP	08 05 49.8
	BRK	eP	08 05 56.0
	FRI	eP	08 05 59.0
	MHC	eP	08 05 59.2
	LLA	eP	08 06 03.5
	PRS	eP	08 06 05.3
	PRI	e(P)	08 06 07

USGS 07h55m55.7s 79.8N 3.1E
h=10km mb=5.3 Ms=5.1
Greenland Sea

May 17	MHC	iPd	08 43 05.3
	GCC	iPd	08 43 11.2
	PCC	iPc	08 43 14.9
	SAO	iPd	08 43 14.9
	BKS	ePc	08 43 17.8
		eS	08 43 28.9
	BRK	iPc	08 43 17.8
	ZSP	iPc	08 43 19.3
		iS	08 43 32.0
	LLA	iPc	08 43 20.2
	PRS	ePd	08 43 21.7
	JAS	iPc	08 43 24.9
		iS	08 43 40.6
	PRI	ePd	08 43 28.3
	FRI	eP	08 43 30.8
	ORV	ePd	08 43 40.1
	MIN	e(P)	08 43 53.1
	MNA	e	08 43 57

BRK 08h43m03.6s 37.3N 121.7W
h=6km ML=3.5(6) Mo=3.0E21(4)
Halls Valley Sequence, CA

May 17	BKS	eP	09 34 25.0
		ePPS	09 46 02
		eLg	09 56 30
		eLr	09 59 48
			AMP(μa) PER(s)
		LZ	7.5 20.
		LN	3.1 20.
		LE	5.6 20.
	PRI	eP	09 34 26.2
	PRS	eP	09 34 27.1
	MHC	eP	09 34 28
	WDC	ePc	09 34 30.9
	ORV	ePc	09 34 32.2
	JAS	ePc	09 34 33.1
	MIN	ePc	09 34 33.3
	FRI	eP	09 34 34.1
	MNA	ePc	09 34 42.7

BRK Ms=6.0 Distance=82°
USGS 09h21m55.0s 14.1S 166.6E
h=25km mb=5.5 Ms=5.6
Vanuatu Islands

May 17	MHC	iPc	14 14 03.7
	GCC	iPd	14 14 10.0
	PCC	ePc	14 14 13.2
		eP?	14 14 14.5
	SAO	iPd	14 14 14.7
	BKS	ePc	14 14 16.0
		eS	14 14 27.9
	BRK	ePc	14 14 16.0
	ZSP	eP	14 14 17.8
		e(S)	14 14 30.6
	LLA	eP	14 14 20.4
		eS	14 14 34.8
	PRS	ePd	14 14 21.7
		eS	14 14 37.6
	JAS	iPc	14 14 24.2
		eS	14 14 41.6
	PRI	eP	14 14 28.4
	FRI	eP	14 14 31.3
		e(S?)	14 14 53.4
	ORV	e	14 14 39
	MNA	e	14 14 58.6

BRK 14h14m02.5s 37.3N 121.7W
h=5kmR ML=2.6(4) Mo=2.4E20(2)
Halls Valley Sequence, CA

May 17	WDC	ePKPdf	17 14 04.7
	MIN	ePKPdf	17 14 04.8
	ORV	ePKPdf	17 14 05.2
	MNA	ePKPdf	17 14 05.4
	FRI	ePKPdf	17 14 05.5
	JAS	ePKPdf	17 14 05.7
	GCC	ePKPdf	17 14 06.1
	BRK	ePKPdf	17 14 06.2
	PRS	ePKPdf	17 14 06.2
	LLA	ePKPdf	17 14 06.4
	PRI	ePKPdf	17 14 06.6
	MHC	ePKPdf	17 14 06.6
	BKS	ePKPdf	17 14 06.8
		e	17 14 41
		e	17 14 48
		ePKPab	17 15 54
		e	17 16 23.5
		e	17 18 13
		ePP	17 19 42
		e	17 30 02
		e	17 35 32
		eSS	17 37 09
		eSSS	17 48 20
		e	17 49 01
		e	17 50 18
		e	17 53 28
		eSSSS	17 54 20
		e	17 58 40
		e	18 00 30
		e	18 02 12
		e	18 03 04
		e	18 04 02
		eLg	18 07 00
		eLr	18 19 00
			AMP(μa) PER(s)
		LZ	19 20.
		LN	15 20.
		LE	6.8 20.

USGS 16h53m46.3s 36.4S 52.4E
h=10km mb=5.7 Ms=6.2
Atlantic-Indian Rise

May 17	WDC	eP	20 15 45.5
	MIN	eP	20 15 50.3
	ORV	eP	20 15 54.9
	JAS	eP	20 16 08.5
	MNA	eP	20 16 16.5
	FRI	eP	20 16 17.7

USGS 20h07m51.2s 51.3N 176.6E
h=33km mb=4.9
Rat Islands, Aleutian Islands

May 17	PRI	iPc	21 23 44.2
	LLA	iPc	21 23 51.0
	FRI	iPd	21 23 53.3
		iS	21 24 05.6
	PRS	eP	21 23 53.6
	SAO	iPc	21 23 57.8
	MHC	eP	21 24 04.4
	GCC	e	21 24 06.0
	JAS	iPd	21 24 07.1
		iS	21 24 29.8
	PCC	e	21 24 18.0
	MNA	e	21 24 22.5

BRK 21h23m36.8s 36.1N 120.2W
h=7km ML=3.0(4)
Coalinga Area, CA

May 18	ORV	eP	10 07 44.5
	WDC	eP	10 07 45.2
	JAS	eP	10 07 46.7
	MNA	eP	10 07 55.3

USGS 09h55m05.1s 17.7S 168.1E
h=43km mb=5.2
Vanuatu Islands Region

May 18	FRI	e	12 36 28.7
	MNA	eP	12 36 37.4
	JAS	eP	12 36 51.4
	ORV	eP	12 36 51.7
	WDC	e	12 37 00.0

USGS 12h28m10.0s 5.2S 103.1W
h=10km mb=5.1
Northern Easter Island Cordillera

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)
May 18	PRI	iPd	12 47 44.7
	LLA	iPd	12 47 48.6
	PRS	iPc	12 47 49.2
	SAO	iP	12 47 53.8
	FRI	iPc	12 48 02.0
	GCC	eP	12 48 02.4
	MHC	eP	12 48 03.0
	PCC	eP	12 48 10.5
	JAS	iPd	12 48 12.0
	BKS	ePc	12 48 13.5
	BRK	eP	12 48 13.6
	ZSP	e	12 48 14.7
	ORV	e	12 48 34.0
	MNA	e	12 48 34.7
BRK 12h47m40.9s 36.2N 120.9W h=6km ML=3.2(4) Peachtree Valley, 25 km E of King City, CA			
May 18	BKS	e	13 31 03.6
	WDC	e	13 31 06.8
	ORV	eP	13 31 08.5
	MIN	e	13 31 09.4
	JAS	eP	13 31 09.6
	MNA	e	13 31 20
USGS 13h18m38.5s 10.9S 165.0E h=33km mb=4.9 Santa Cruz Islands Region			
May 18	MHC	iP	14 17 16.8
	GCC	eP	14 17 22.3
	SAO	iPd	14 17 25.4
	PCC	iPc	14 17 26.7
	BRK	iPc	14 17 29.8
	BKS	eP	14 17 30.4
	LLA	iPd	14 17 31.0
		iS	14 17 41.5
	ZSP	iPc	14 17 31.1
		iS	14 17 44.1
	PRS	eP	14 17 32.1
	JAS	iPc	14 17 36.2
	PRI	eP	14 17 39.0
	FRI	eP	14 17 41.5
	ORV	e	14 17 52.8
BRK 14h17m14.9s 37.3N 121.7W h=7km ML=3.0(4) Mo=1.3E20(2) Halls Valley Sequence, CA			
May 18	MNA	eP	17 08 27.0
		ePcP	17 11 38.8
	PRI	eP	17 08 29.5
		ePcP	17 11 40.6
	JAS	eP	17 08 35.5
		ePcP	17 11 42.5
	MHC	eP	17 08 39.5
		ePcP	17 11 44.5
	ORV	eP	17 08 49.3
		ePcP	17 11 47.1
	MIN	e	17 08 54
	FHC	e(P)	17 09 07.3
		ePcP	17 11 55.6
	BKS	e	17 10 46.5
	FRI	ePcP	17 11 39.2
	LLA	ePcP	17 11 41.7
	PRS	ePcP	17 11 42.0
	BRK	ePcP	17 11 46.5
	WDC	ePcP	17 11 50.4
USGS 17h01m06.8s 11.7N 86.6W h=72km mb=5.3 Near Coast of Nicaragua			
May 18	MHC	iPd	19 30 26.1
	GCC	iPd	19 30 32.1
	SAO	iPd	19 30 35.2
	PCC	iPc	19 30 36.9
	BKS	eP	19 30 39
		eS	19 30 50.6
	BRK	iPc	19 30 39.2
	ZSP	ePc	19 30 40.0
	LLA	ePd	19 30 40.5
	PRS	ePd	19 30 42.4
	JAS	iPc	19 30 45.5
		iS	19 31 00.5
	PRI	ePc	19 30 48.8
	FRI	ePc	19 30 51.6
	ORV	ePd	19 31 03.5
BRK 19h30m24.4s 37.3N 121.6W h=5km ML=2.6(4) Mo=2.8E19(2) Halls Valley Sequence, CA			
May 19	ZSP	eP	07 08 39.2
		iS	07 08 53.5
	BKS	eP	07 08 40.0
		eS	07 08 53.9
	BRK	iPc	07 08 40.4
		iS	07 08 54.7
	ORV	iPc	07 08 43.5
	PCC	eP	07 08 44.1
	MHC	eP	07 08 51.1
	JAS	ePc	07 08 54.8
	SAO	eP	07 08 57.5
BRK 07h08m21.1s 38.8N 122.8W h=5km ML=2.9(4) The Geysers area, 20 km S of Clear Lake, CA			
May 19	WDC	ePc	11 15 19.1
	PRI	e	11 15 20
	ORV	ePc	11 15 20.9
	JAS	ePc	11 15 22.3
	FRI	eP	11 15 23.8
	MNA	ePc	11 15 32.0
USGS 11h02m51.8s 10.9S 165.0E h=47km mb=4.8 Santa Cruz Islands			
May 19	GCC	eP	14 57 28.3
	BRK	ePc	14 57 28.4
	MHC	eP	14 57 30.8
	WDC	ePc	14 57 32.1
	PRI	ePc	14 57 32.7
	ORV	ePc	14 57 34.0
	JAS	ePc	14 57 35.5
	FRI	eP	14 57 37.0
	MNA	ePc	14 57 45.1
USGS 14h45m03.7s 10.8S 164.9E h=33km mb=5.5 Ms=4.8 Santa Cruz Islands Region			
May 19	MHC	iPc	16 49 52.7
	GCC	iPd	16 49 58.7
	PCC	iPc	16 50 01.4
	SAO	iPd	16 50 03.1
	BKS	iPc	16 50 04.0
		eS	16 50 13.5
	BRK	iPc	16 50 04.1
		iS	16 50 13.1
	ZSP	iPc	16 50 05.4
	LLA	ePd	16 50 08.1
	PRS	ePc	16 50 10.2
	JAS	iPc	16 50 12.2
	PRI	eP	16 50 16.8
	FRI	ePc	16 50 18.8
	ORV	eP	16 50 26.5
BRK 16h49m50.9s 37.3N 121.7W h=6km ML=3.2(6) Mo=3.9E20(2) Halls Valley Sequence, CA			
May 20	BRK	eP	22 17 56.4
	SAO	eP	22 17 57.0
	WDC	eP	22 18 01.0
	ORV	ePc	22 18 02.2
	JAS	ePc	22 18 03.0
	FRI	eP	22 18 04.0
USGS 22h05m37.0s 15.4S 167.5E h=132km mb=5.5 Vanuatu Islands			
May 21	FHC	eP	15 51 38.6
	WDC	ePc	15 51 41.3
	MIN	eP	15 51 44.3
	ORV	eP	15 51 46.6
	BKS	eP	15 51 50
		ePP	15 55 34
		eS	16 02 38.4
		e	16 04 46
		e(Lq)	16 14 28
		e(Lr)	16 19 20
		AMP(μm)	PER(s)
		PZ 0.26	2.0
		LZ 9.6	20.
		LN 2.5	20.
		LE 2.7	20.
	BRK	ePc	15 51 52.0
	MHC	eP	15 51 54.3
	JAS	ePc	15 51 55.7
	FRI	eP	15 52 00.9
	MNA	eP	15 52 01.0
	PRI	eP	15 52 02.7
BRK Ms=5.8 Distance=90° USGS 15h38m58.7s 32.7N 121.5E h=18km mb=5.7 Ms=6.0 Eastern China			
May 21	FHC	ePc	22 20 18.0
	WDC	ePc	22 20 23.0
	ORV	ePc	22 20 28.6
	BKS	ePc	22 20 30.2
		AMP(μm)	PER(s)
		PZ 0.063	0.8
	PCC	eP	22 20 30.3
	BRK	ePc	22 20 30.3
	GCC	eP	22 20 33.1
	MHC	ePc	22 20 34.0
	SAO	eP	22 20 35.4
	JAS	ePc	22 20 36.8
	PRS	ePc	22 20 37.4
	LLA	ePc	22 20 38.4
	PRI	ePc	22 20 40.7
	FRI	ePc	22 20 41.6
	MNA	ePc	22 20 43.9
USGS 22h09m14.3s 27.4N 139.8E h=497km mb=5.0 Bonin Islands Region			
May 22	MHC	iPd	02 54 16.6
	GCC	ePd	02 54 22.3
		iS	02 54 27.7
	SAO	iPd	02 54 25.3
	PCC	iPc	02 54 26.5
	BKS	eP	02 54 29.5
		eS	02 54 40.7
	BRK	ePc	02 54 29.6
	LLA	ePd	02 54 30.7
	ZSP	ePd	02 54 31.0
	PRS	ePd	02 54 32.2
	JAS	iPd	02 54 36.3
		iS	02 54 51.8
	PRI	ePc	02 54 40.9
	FRI	ePc	02 54 41.6
	ORV	eP	02 54 54
BRK 02h54m14.7s 37.3N 121.7W h=6km ML=2.8(4) Mo=1.5E20(2) Halls Valley Sequence, CA			
May 23	FRI	eP	02 02 25.3
	JAS	eP	02 02 26.5
	ORV	eP	02 02 28.7
	WDC	eP	02 02 29.5
	MNA	eP	02 02 35.3
South of Tonga Islands			
May 23	JAS	ePd	05 35 11.3
	ORV	ePd	05 35 13.2
	WDC	ePd	05 35 13.5
	MNA	e	05 35 15.3
	BKS	e	05 35 52.4
		e(S)	05 45 36
		e(PPS)	05 47 42
		e(SS)	05 51 14.5
		e(SSS)	05 56 06
		eLq	05 59 20.2
		e	06 01 58
		e(Lr)	06 13 36
		AMP(μm)	PER(s)
		LZ 3.2	20.
		LN 2.9	20.
		LE 2.3	20.
USGS 05h16m33.1s 52.0S 161.1E h=10km mb=5.9 Ms=5.9 North of Macquarie Island			
May 24	PCC	iPd	08 00 57.8
		iS	08 01 00.4
	BRK	iPd	08 01 02.0
		iS	08 01 07.4
	BKS	eP	08 01 02.1
		e(S)	08 01 07.5
	MHC	iPc	08 01 03.7
		iS	08 01 10.7
	ZSP	iPc	08 01 03.8
		iS	08 01 10.4
	GCC	ePd	08 01 04.0
		iS	08 01 10.8
	SAO	ePc	08 01 11.3
	PRS	e	08 01 18
	LLA	e	08 01 19
	JAS	eP	08 01 19.9
		iS	08 01 39.0
	PRI	e	08 01 30
	ORV	ePc	08 01 30.0
BRK ML=2.8(4) Mo=5.9E20(2) Menlo Park, 35 km SE of San Francisco, CA			
May 25	PRS	eP	02 45 18.2
		epP	02 45 35.6
	PRI	eP	02 45 20.6
		epP	02 45 37.1
	BRK	eP	02 45 21.4
		epP	02 45 38.0
	FRI	eP	02 45 25.3
		epP	02 45 42.1
	JAS	eP	02 45 26.4
		epP	02 45 43.1
	ORV	eP	02 45 28.2
		epP	02 45 45.4
	WDC	eP	02 45 29.5
		epP	02 45 46.1
	MIN	eP	02 45 30.2
		epP	02 45 47.2
	MNA	eP	02 45 34.4
		epP	02 45 51.3
	SAO	epP	02 45 36.0
	BKS	epP	02 45 38.2
	MHC	epP	02 45 38.2
USGS 02h32m45.9s 30.7S 178.2W h=59km mb=5.5 Kermadec Islands			
May 25	FRI	eP	13 33 16.6
	PRI	eP	13 33 16.8
	PRS	eP	13 33 18.7
	MNA	eP	13 33 20.7
		epP	13 33 32.0
	JAS	eP	13 33 23.1
		epP	13 33 34.5
	ORV	eP	13 33 31.7
	WDC	eP	13 33 36.4
USGS 13h20m23.8s 42.6S 75.2W h=31km mb=5.5 Ms=4.5 Off Coast of Southern Chile			
May 25	PRI	iPd	14 50 06.7
	LLA	iPc	14 50 13.1
	PRS	ePc	14 50 16.4
	FRI	iPd	14 50 18.3
	SAO	iPc	14 50 20.2
	MHC	e	14 50 28
	GCC	e	14 50 29
	JAS	iPc	14 50 31.0
		eS	14 50 50.8
	BKS	e	14 50 48
	MNA	e	14 50 52
	ORV	e	14 50 58
BRK 14h50m02.1s 36.2N 120.4W h=5km ML=2.9(4) Coalinga Area, CA			
May 25	MNA	ePKPc	22 08 47.6
	JAS	iPKPc	22 08 48.8
	FRI	e	22 08 52.6
	WDC	ePKPc	22 08 53.5
	BKS	e	22 08 57
		e	22 28 20
		eLr	22 38 15
USGS 21h49m52.2s 60.1S 26.9W h=33km mb=5.7 Ms=5.2 South Sandwich Islands Region			
May 26	JAS	eP	00 07 10.5
	BKS	e	00 07 14
		e	00 08 10
		e	00 12 09.2
		e	00 15 10
		i(S)	00 18 12.5
		e	00 19 28
		iSS	00 24 36
		i	00 27 40
		iLq	00 31 22
		iLr	00 36 32
		i	00 44 10
		AMP(μm)	PER(s)
		LZ 15	20.
		LN 13	20.
		LE 6.4	20.
	MNA	eP	00 07 14.2
	WDC	e(P)	00 07 20.8
USGS 23h53m51.9s 55.0S 135.7W h=10km mb=5.8 Ms=6.3 South Pacific Cordillera			
May 26	FHC	ePc	03 26 04.0
	WDC	ePc	03 26 05.2
		ePP	03 29 33
	MIN	ePc	03 26 07.3
	ORV	ePc	03 26 10.6
	BRK	ePc	03 26 18.6
	BKS	iPd	03 26 18.7
		i	03 26 29.6
		AMP(μm)	PER(s)
		PZ 0.12	0.8
	MNA	iPc	03 26 19.5
	JAS	iPc	03 26 19.7
		ePP	03 29 57
	PCC	eP	03 26 20.0
	MHC	ePc	03 26 21.7
	GCC	eP	03 26 22.5
	SAO	eP	03 26 24.0
	FRI	iPc	03 26 24.5
	LLA	ePc	03 26 25.5
	PRS	eP	03 26 26.3
	PRI	ePc	03 26 28.4
USGS 03h13m12.4s 50.0N 79.1E h=0km mb=6.0 Eastern Kazakh, S.S.R.			
May 26	FRI	ePKPdf	04 18 59.1
		ePKPab	04 20 54.3
	MNA	ePKPdf	04 18 59.2
		ePKPab	04 19 53.8
	JAS	ePKPdfc	04 19 00.0
		ePKPab	04 20 00.0
	LLA	ePKPdf	04 19 00.3
	MIN	ePKPdf	04 19 00.4
	PRS	ePKPdf	04 19 00.5
	ORV	ePKPdf	04 19 00.5
		ePKPab	04 20 05.2
	PRI	ePKPdf	04 19 00.5
		ePKPab	04 19 57
	WDC	ePKPdfc	04 19 00.8
		ePKPab	04 20 10
	MHC	ePKPdf	04 19 01.0
	BKS	ePKPdfc	04 19 06
		e	04 20 01.1
		ePKPabd	04 20 02
		ePP	04 25 02
		eSSS	04 50 00
		eSSSS	04 57 00
		eSSSSS	05 02 00
		eSSSSSS	05 05 30
		e?S	05 07 45
		eLq	05 11 30
		eLr	05 17 30
		AMP(μm)	PER(s)
		LZ 24	20.
		LN 23	20.
		LE 11	20.
	BRK	ePKPdf	04 19 06.0
	FHC	ePKP	04 19 07.8
USGS 03h58m56.9s 43.5S 38.9E h=10km mb=5.7 Ms=6.4 Prince Edward Islands Region			
May 26	SAO	iPd	05 41 22.1
	GCC	iPc	05 41 27.6
	PRS	ePd	05 41 29.8
	LLA	ePd	05 41 30.8
	MHC	iPc	05 41 30.9
	PCC	ePd	05 41 37.2
	PRI	iPd	05 41 39.1
	BRK	ePd	05 41 40.8
	BKS	iPc	05 41 41.0
		iS	05 41 50.0
	ZSP	eP	05 41 50.0
	JAS	iPc	05 41 49.3
	FRI	e(P)c	05 41 49.5

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DATE	STA	PHASE	TIME (UTC)
	ORV	e	05 42 05

BRK 05h41m19.8s 36.8N 121.6W
h=4km ML=3.1(4)
10 km S of Gilroy, CA

DATE	STA	PHASE	TIME (UTC)
May 26	BKS	iPc	22 55 15.5
		e	22 55 54
		iPP	22 58 31
		ipPP	22 59 22
		iS	23 05 44
		iSS	23 10 40
		eSSS	23 14 45
		eLq	23 17 08
		eLr	23 20 25
			AMP(μa) PER(s)
		PZ	0.059 1.0
		LZ	7.1 20.
		LN	1.8 20.
		LE	5.7 20.
	FHC	eP	22 55 15.7
	GCC	eP	22 55 16.3
	BRK	eP	22 55 16.5
	SAO	eP	22 55 17.4
	PRS	eP	22 55 17.8
	MHC	eP	22 55 18.4
	LLA	eP	22 55 19.8
	WDC	ePc	22 55 20.0
		ePP	22 58 43
	PRI	eP	22 55 20.8
	ORV	ePc	22 55 21.7
	MIN	eP	22 55 22.5
	JAS	ePc	22 55 23.2
		ePP	22 58 45.5
	FRI	eP	22 55 24.7
	MNA	ePc	22 55 33.0
		ePP	22 58 57

USGS 22h42m47.3s 10.9S 164.2E
h=27km mb=5.8 Ms=6.2
Santa Cruz Islands Region

DATE	STA	PHASE	TIME (UTC)
May 26	GCC	eP	23 13 19.1
	BRK	eP	23 13 19.3
	PRS	eP	23 13 20.7
	MHC	eP	23 13 21.4
	WDC	eP	23 13 22.9
	ORV	eP	23 13 24.6
	JAS	ePc	23 13 26.2
	FRI	eP	23 13 27.6
	MNA	ePc	23 13 35.7

USGS 23h00m51.3s 10.9S 164.1E
h=39km mb=5.5 Ms=5.7
Santa Cruz Islands Region

DATE	STA	PHASE	TIME (UTC)
May 26	WDC	ePd	23 33 23.1
	GCC	eP	23 33 23.5
	MHC	eP	23 33 25.3
	ORV	e(P)	23 33 26
	PRI	eP	23 33 28.8
	JAS	eP	23 33 29.2
	FRI	eP	23 33 31.6
	MNA	eP	23 33 38.0

USGS 23h20m10.7s 6.2S 147.8E
h=55km mb=5.6
East Papua New Guinea Region

DATE	STA	PHASE	TIME (UTC)
May 27	FHC	eP	03 52 01.3
	WDC	ePd	03 52 05.9
		epP	03 52 09.8
	MIN	eP	03 52 09.0
	ORV	ePd	03 52 11.5
		epP	03 52 15.3
	BKS	iPc	03 52 13.6
			AMP(μa) PER(s)
		PZ	0.041 0.8
	BRK	ePd	03 52 14.0
		epP	03 52 18.0
	MHC	eP	03 52 17.7
		epP	03 52 22.0
	JAS	eP	03 52 19.9
		epP	03 52 23.8
		ePP	03 55 45
	PRS	ePd	03 52 21.3
	LLA	eP	03 52 22.0
	FRI	eP	03 52 24.5
		epP	03 52 28.2
	PRI	eP	03 52 24.7
	MNA	ePd	03 52 26.2
		epP	03 52 30.0

USGS 03h39m30.5s 28.8N 128.5E
h=13km mb=5.7 Ms=5.7
Ryukyu Islands

DATE	STA	PHASE	TIME (UTC)
May 28	ZSP	eP	20 15 22.8
		iS	20 15 37.1
	BRK	eP	20 15 23.2
		i	20 15 29.2
	BKS	iPc	20 15 23.7
		iS	20 15 30.5
	ORV	eP	20 15 27.2
		i	20 15 33.6
	PCC	e	20 15 31.0
	MHC	eP	20 15 33.7
	MIN	e	20 15 35.1
	JAS	iPd	20 15 39.0
		iS	20 16 03.8
	WDC	ePg	20 15 40.0

BRK 20h15m04.4s 38.8N 122.8W
h=1km ML=2.5(6)
The Geysers, 20 km S of Clear Lake, CA

DATE	STA	PHASE	TIME (UTC)
May 29	WDC	ePKP	04 55 00.3
	ORV	ePKP	04 55 01.3
	BKS	iPKPc	04 55 04.4
	JAS	ePKP	04 55 05.3
	MHC	ePKP	04 55 05.4
	MIN	ePKP	04 55 05.6
	LLA	e	04 55 07.0
	PRS	e	04 55 07.5
	FRI	ePKP	04 55 07.8
	MNA	ePKP	04 55 08.1
	PRI	e	04 55 08.5

USGS 04h36m09.0s 3.6N 97.1E
h=71km mb=5.8
Northern Sumatra

DATE	STA	PHASE	TIME (UTC)
May 29	PRI	eP	19 24 28.3
	BRK	eP	19 24 28.7
	BKS	iPd	19 24 29.1
			AMP(μa) PER(s)
		PZ	0.017 1.0
	MHC	eP	19 24 29.3
	FRI	eP	19 24 33.8
	JAS	iPd	19 24 34.9
	ORV	eP	19 24 37.1
	WDC	ePd	19 24 37.9
	MNA	iPd	19 24 44.7

USGS 19h12m42.2s 21.2S 173.7W
h=33km mb=5.0 Ms=5.4
Tonga Islands

DATE	STA	PHASE	TIME (UTC)
May 29	MNA	ePc	20 21 06.4
	ORV	e(P)	20 21 30.5
	JAS	ePc	20 21 31.3
	WDC	ePc	20 21 32.2
	FRI	e	20 21 43.5
	FHC	ePc	20 21 46.3
	MHC	eP	20 21 54.0
	LLA	ePc	20 21 55.8

USGS 20h18m32.6s 44.2N 106.0W
h=18km mb=5.0
Wyoming

DATE	STA	PHASE	TIME (UTC)
May 29	MHC	iPd	21 32 23.0
	GCC	iPd	21 32 25.9
	SAO	iPd	21 32 27.0
	BKS	iPd	21 32 31.6
		iS	21 32 49.5
	PCC	ePc	21 32 32.5
	LLA	ePc	21 32 32.5
	PRS	eP	21 32 34.8
	BRK	ePd	21 32 36.0
	ZSP	eP	21 32 37.5
	JAS	iPd	21 32 40.5
	PRI	eP	21 32 41.6
	FRI	e	21 32 45

BRK 02h54m14.7s 37.3N 121.7W
h=6km ML=2.4(4) Mo=5.8E19(2)
Halls Valley Sequence, CA

DATE	STA	PHASE	TIME (UTC)
May 30	WDC	ePc	00 51 42.0
	ORV	eP	00 51 49.0
	BKS	iPc	00 51 52.5
		i	00 52 25.5
			AMP(μa) PER(s)
		PZ	0.035 1.0
	JAS	iPc	00 51 58.9
	FRI	eP	00 52 04.0
	MNA	eP	00 52 05.5

USGS 00h39m45.2s 34.9N 134.6E
h=26km mb=5.0 Ms=4.5
Near S. Coast of Southern Honshu, Japan

DATE	STA	PHASE	TIME (UTC)
May 30	MHC	iPd	03 28 17.6
	GCC	iPd	03 28 23.0
	SAO	iPd	03 28 26.3
	PCC	iPc	03 28 27.4
	BKS	iPc	03 28 30.2
		iS	03 28 42.5
	BRK	iPc	03 28 30.4
		eS	03 28 41.2
	LLA	ePc	03 28 31.3
	ZSP	iPc	03 28 31.8
		eS	03 28 43.8
	PRS	iPd	03 28 33.3
	JAS	iPd	03 28 37.0
		eS	03 28 53.0
	PRI	ePc	03 28 40.3
	FRI	iPc	03 28 42.6
	ORV	e	03 28 55

BRK 03h28m15.6s 37.3N 121.7W
h=7km ML=3.4(4) Mo=1.4E21(4)
Halls Valley Sequence, CA

DATE	STA	PHASE	TIME (UTC)
May 30	FHC	e(P)	08 02 20.5
		epP	08 03 04.5
	PCC	e(P)	08 02 23.8
	BKS	ePc	08 02 24.5
		i	08 02 31
		ipP	08 03 07.5
		i	08 03 14.6
		i	08 05 28.0
		iPP	08 06 03.5
		i(PPP)	08 08 10
		iSKS	08 12 42
		iS	08 13 10
		e	08 13 47
		isS	08 14 28
		eSS	08 18 59
		iSSS	08 21 40
		e	08 22 32
		i	08 24 00
		i6	08 25 42
		i	08 26 22
		i	08 30 14
		iLq	08 31 00
		iLr	08 33 35
			AMP(μa) PER(s)
		PZ	0.33 1.0
		LZ	39 20.
		LN	11 20.
		LE	34 20.
	BRK	eP	08 02 24.6
		epP	08 03 07.5
	WDC	iPc	08 02 25.0
		epP	08 03 08
		ePP	08 06 09
		eSKS	08 12 52
		eSP	08 14 22
		ePKKP	08 19 58
		ePKPPKP	08 28 10
	GCC	e(P)	08 02 25.5
	MHC	e(P)	08 02 27.1
		epP	08 03 12.0
	MIN	eP	08 02 27.5
	ORV	ePc	08 02 27.5
		eSP	08 14 29
	PRS	eP	08 02 27.7
	SAO	e(P)	08 02 28.5
	LLA	eP	08 02 29.3
	PRI	eP	08 02 30.6
		epP	08 03 13.1
	JAS	ePc	08 02 31.0
		epP	08 03 14.0
		ePP	08 06 16
		eSP	08 14 37
		ePKKP	08 19 56
		ePKPPKP	08 28 09
	FRI	iPc	08 02 33.5
		epP	08 03 16.7
		ePKPPKP	08 28 08
	MNA	ePc	08 02 40.0
		eSKS	08 13 14
		ePKKP	08 19 52
		ePKPPKP	08 28 06

BRK ab=6.2 h=170km Distance=90°
USGS 07h49m43.6s 4.8S 151.6E
h=174km mb=6.2
New Britain Region

DATE	STA	PHASE	TIME (UTC)
May 30	GCC	eP	09 29 09.3
	MHC	eP	09 29 11.6
	BKS	eP	09 29 11.8
	PRI	eP	09 29 11.8
	BRK	eP	09 29 12.1
	FRI	ePd	09 29 16.2
	JAS	ePd	09 29 17.0
	ORV	ePd	09 29 18.4
	WDC	ePd	09 29 18.9
	MIN	eP	09 29 20.4
	MNA	ePd	09 29 25.6

USGS 09h17m38.5s 23.8S 179.3W
h=424km mb=4.8
South of Fiji Islands

DATE	STA	PHASE	TIME (UTC)
May 30	MHC	iPd	12 38 12.8
	GCC	iPd	12 38 18.7
	SAO	iPd	12 38 22.4
	PCC	iPc	12 38 22.5
	BKS	eP	12 38 25.2
		iS	12 38 36.5
	BRK	iPc	12 38 25.4
		eS	12 38 36.5
	ZSP	iPc	12 38 26.8
		eS	12 38 38.8
	LLA	eP	12 38 27.7
	PRS	ePd	12 38 29.6
	JAS	iPc	12 38 32.4
		eS	12 38 48.4
	PRI	eP	12 38 36.0
	FRI	ePc	12 38 38.4
	ORV	e	12 38 50

BRK 12h38m11.2s 37.3N 121.7W
h=6km ML=3.2(4) Mo=8.0E20(4)
Halls Valley Sequence, CA

DATE	STA	PHASE	TIME (UTC)
May 31	MNA	iPc	13 04 36.7
	FRI	iPc	13 04 48.3
	JAS	iPc	13 04 57.1
	PRI	ePc	13 05 00.9
	LLA	e(P)	13 05 01.9
	SAO	iPc	13 05 07.5
	PRS	ePc	13 05 07.7
	MHC	ePc	13 05 10.0
		i	13 05 19.1
		iS	13 06 23.7
	GCC	eP	13 05 14.5
	ORV	iPc	13 05 15.8
	BKS	eP	13 05 16.5
		i	13 05 35.5
		e	13 05 37
		i	13 07 08
		i	13 07 22
	BRK	ePc	13 05 16.8
	ZSP	ePc	13 05 17.2
	PCC	iPc	13 05 17.4
	MIN	iPc	13 05 22.9
	WDC	iPc	13 05 32.3
	FHC	e(P)	13 05 50.7

BRK ML=5.6(8)
USGS 13h04m00.1s 37.1N 116.0W
h=0km mb=5.7 Ms=4.5
Underground Nuclear Explosion, NTS (Caprock)

DATE	STA	PHASE	TIME (UTC)
Jun 1	FHC	eP	06 03 47.6
	WDC	iPc	06 03 54.2
		i	06 04 28.6
	MIN	eP	06 03 58.8
	ORV	iPc	06 04 03.0
	BRK	e	06 04 06.6
	BKS	iPc	06 04 08.7
			AMP(μa) PER(s)
		PZ	0.055 0.9
	MHC	eP	06 04 14.2
	JAS	iPc	06 04 16.3
		i	06 04 51.0
	SAO	e	06 04 17.5
	PRS	eP	06 04 20.3
		e	06 04 54.7
	LLA	eP	06 04 20.8
		e	06 04 55.3
	FRI	eP	06 04 23.4

USGS 05h54m51.7s 53.7N 159.3E
h=98km mb=5.2
Near East Coast of Kamchatka

DATE	STA	PHASE	TIME (UTC)
Jun 1	WDC	eP	12 23 12.8
	ORV	eP	12 23 20.0
	JAS	eP	12 23 30.4

USGS 12h12m44.3s 43.6N 147.8E
h=35km mb=5.3 Ms=4.6
Kuril Islands

DATE	STA	PHASE	TIME (UTC)
Jun 1	WDC	ePKP	21 37 10.6
		e	21 37 17.7
	MIN	ePKP	21 37 13.2
		e	21 37 20.5
	ORV	ePKP	21 37 15.5
		e	21 37 22.6
	BRK	e	21 37 20
	BKS	ePKPc	21 37 20.5
	JAS	ePKP	21 37 21.8
		e	21 37 28.8
	MHC	ePKP	21 37 22.5
	FRI	ePKP	21 37 24.9
		e	21 37 32.0
	PRS	ePKP	21 37 25.2
	PRI	ePKP	21 37 26.9
		e	21 37 34.1

USGS 21h17m36.5s 6.8S 72.1E
h=10km mb=5.4 Ms=4.7
Chagos Archipelago Region

DATE	STA	PHASE	TIME (UTC)
Jun 1	FHC	iPd	22 22 17.6
		eS	22 22 21.9
	WDC	eP	22 22 31.3
		eS	22 22 44.8
	MIN	e(P)	22 22 43.5

BRK 22h22m14.2s 40.8N 123.7W
h=5kmR ML=3.2(2) Mo=2.9E20(2)
40 km E of Eureka, CA

DATE	STA	PHASE	TIME (UTC)
Jun 2	PRI		03 58
	MHC	eP	03 58 20.3
	FRI	eP	03 58 23.3
	JAS	eP	03 58 24.8
	ORV	eP	03 58 27.0
	WDC	eP	03 58 28.1
	BKS	eS	04 08 47
		eLq	04 21 38
		e	04 24 08
			AMP(μa) PER(s)
		LZ	2.5 20.
		LN	2.1 20.
		LE	2.5 20.

USGS 03h45m33.2s 32.7S 178.7E
h=33km mb=5.3 Ms=5.1
South of Kermadec Islands

DATE	STA	PHASE	TIME (UTC)
Jun 2	JAS	eP	14 27 29.0
	FRI	eP	14 27 31.0
	ORV	eP	14 27 33.0
	WDC	eP	14 27 35.0
	BKS	e(Lq)	14 46 40
		e(Lr)	14 50 56
			AMP(μa) PER(s)
		LZ	0.71 20.

USGS 14h15m38.2s 20.8S 174.2W
h=33km mb=5.0 Ms=5.0
Tonga Islands

DATE	STA	PHASE	TIME (UTC)
Jun 2	MHC	iPd	17 32 08.4
	GCC	iPd	17 32 14.4
		eS	17 32 20.5
	SAO	iPd	17 32 17.9
	BRK	ePc	17 32 20.9
		eS	17 32 31.5
	BKS	ePc	17 32 21.2
		eS	17 32 31.9
	ZSP	ePc	17 32 22.0
	LLA	eP	17 32 23.4
	PRS	ePd	17 32 25.[illegible]
	JAS	iPc	17 32 28.[illegible]
		eS	17 32 41.8
	PRI	e	17 33 [illegible]
	FRI	ePc	17 33 14.2

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)
	ORV	e	17 32 46
BRK 17h32m06.8s 37.3N 121.7W			
h=6km ML=3.2(4) Mo=3.7E20(2)			
Halls Valley Sequence			
Jun 3	MHC	iPd	00 23 57.8
	GCC	ePd	00 24 03.2
	SAO	iPd	00 24 06.4
	BRK	ePd	00 24 10.5
		eS	00 24 21.5
	BKS	ePc	00 24 11.0
		iS	00 24 22.2
	LLA	ePd	00 24 11.9
	ZSP	ePc	00 24 12.0
	PRS	ePd	00 24 13.5
	JAS	iPd	00 24 17.2
		eS	00 24 32.5
	PRI	e(P)	00 24 20
	FRI	ePd	00 24 23.0
	ORV	ePd	00 24 35.4
BRK 00h23m55.8s 37.3N 121.7W			
h=6km ML=2.9(6) Mo=1.7E20(2)			
Halls Valley Sequence			
Jun 3	PRI	eP	04 20 33.3
	LLA	eP	04 20 36.1
	JAS	ePc	04 20 39.7
		e	04 20 48.2
	MHC	eP	04 20 42.8
	ORV	iPc	04 20 51.3
		e	04 20 59.4
	WDC	ePc	04 20 57.0
USGS 04h10m26.8s 7.8S 76.8W			
h=34km mb=5.3			
Northern Peru			
Jun 3	SAO	iPd	07 22 01.6
	MHC	iPc	07 22 05.4
	GCC	ePc	07 22 05.5
		eS	07 22 12.2
	LLA	ePc	07 22 07.3
	PRS	ePd	07 22 09.2
	PRI	eP	07 22 17.0
	BKS	ePc	07 22 17.4
		eS	07 22 32.6
	BRK	ePc	07 22 17.7
	ZSP	eP	07 22 19.0
	JAS	iPd	07 22 20.0
		eS	07 22 37.0
	FRI	ePc	07 22 21.5
		eS	07 22 39.5
	ORV	eP	07 22 52.3
BRK 07h21m57.1s 37.0N 121.5W			
h=6km ML=2.6(4)			
15 km NW of Hollister, CA			
Jun 3	ZSP	iPd	13 24 28.0
	BRK	iPd	13 24 29.1
	BKS	iPd	13 24 29.2
		iS	13 24 35.6
	MHC	eP	13 24 38.5
	GCC	ePc	13 24 42.4
	JAS	ePc	13 24 44.5
	ORV	e(P)	13 24 46.5
	SAO	eP	13 24 47.3
BRK ML=2.5(4)			
Suisun Slough, 35 km NE of Berkeley, CA			
Jun 3	FRI	eP	14 59 23.6
	JAS	eP	14 59 23.9
	WDC	eP	14 59 24.1
	ORV	eP	14 59 24.3

DATE	STA	PHASE	TIME (UTC)
	MIN	ePc	14 59 25.9
	BKS	eLg	15 22 10
			AMP(μm) PER(s)
		LZ	1.6 20.
		LN	1.1 20.
		LE	1.3 20.
USGS 14h46m35.7s 22.6S 171.9E			
h=24km mb=5.3 Ms=5.4			
Loyalty Islands Region			
Jun 4	MHC	iPd	00 02 16.5
	GCC	iPd	00 02 22.2
	SAO	iPd	00 02 25.6
	BRK	ePc	00 02 29.1
	BKS	eP	00 02 29.2
		iS	00 02 40.6
	ZSP	ePc	00 02 30.5
	LLA	eP	00 02 31.1
	PRS	iPc	00 02 32.9
	JAS	ePc	00 02 35.8
	PRI	e	00 02 39.5
	FRI	ePc	00 02 41.7
	ORV	ePc	00 02 53.6
BRK 00h02m14.7s 37.3N 121.7W			
h=7km ML=3.0(4) Mo=1.6E20(2)			
Halls Valley Sequence			
Jun 4	FRI	eP	04 39 36.4
		ePcP	04 43 00.7
		epPcP	04 43 17.8
	PRI	eP	04 39 38.6
	PRS	eP	04 39 43.3
	JAS	ePd	04 39 46.5
		esP	04 40 07.9
		ePcP	04 43 03.5
		epPcP	04 43 20.7
	GCC	eP	04 39 50.6
	MHC	eP	04 39 50.7
	BRK	eP	04 39 56.8
	BKS	ePc	04 39 57.0
		esP	04 40 20
		epPP	04 41 15
		e	04 42 21
		eS	04 44 40
		e	04 45 35
		eScP	04 46 42
		esScP	04 47 13
		e(Lr)	04 48 22
			AMP(μm) PER(s)
		PZ	0.050 1.0
		LZ	1.3 20.
		LN	0.89 20.
		LE	1.2 20.
	ORV	ePd	04 40 02.0
		esP	04 40 23.8
	MIN	eP	04 40 06.6
	WDC	ePd	04 40 10.3
		ePcP	04 43 10.2
		epPcP	04 43 27.0
	FHC	eP	04 40 22.0
BRK mb=5.1 h=62km Distance=28°			
USGS 04h34m03.4s 18.3N 98.2W			
h=60km mb=5.4			
Central Mexico			
Jun 4	FHC	eP	18 45 05.8
	WDC	iPc	18 45 11.6
	MIN	eP	18 45 12.8
	ORV	iPc	18 45 19.5
	BKS	ePc	18 45 24.5
		e	18 45 29.4
			AMP(μm) PER(s)
		PZ	0.039 0.7

DATE	STA	PHASE	TIME (UTC)
	BRK	eP	18 45 24.6
	PCC	eP	18 45 25.5
	GCC	eP	18 45 29.3
	MHC	eP	18 45 29.6
	JAS	iPc	18 45 31.7
	SAO	eP	18 45 32.5
	PRS	eP	18 45 35.1
	LLA	eP	18 45 35.4
	FRI	iPc	18 45 38.2
USGS 18h36m05.8s 51.2N 150.8E			
h=499km mb=5.2			
Sea of Okhotsk			
Jun 5	WDC	eP	01 50 03.5
	MIN	eP	01 50 09.2
	ORV	eP	01 50 14.2
	JAS	eP	01 50 30.6
	BKS	eS	01 55 21
		e(Lg)	01 57 19
		e	01 58 52
		e	01 59 11
USGS 01h44m21.4s 56.9N 157.3W			
h=94km mb=5.3			
Alaska Peninsula			
Jun 5	FRI	eP	04 25 29.0
	PRI	ePc	04 25 30.9
	LLA	eP	04 25 33.7
	PRS	eP	04 25 34.7
	SAO	e	04 25 36.5
	JAS	ePc	04 25 37.1
	GCC	eP	04 25 40.3
	MHC	eP	04 25 40.5
	PCC	e	04 25 43.5
	BRK	eP	04 25 44.6
	BKS	ePc	04 25 45
		e	04 25 52.4
		e	04 25 55.8
		e	04 25 56
		ePcP	04 26 23.4
		eS	04 34 08
		e	04 36 24
		eSSP	04 39 16
		eSSS	04 41 26
		e	04 42 08
		e	04 43 08
		e	04 45 08
		i	04 47 04
			AMP(μm) PER(s)
		PZ	0.17 1.0
		LZ	0.68 20.
		LN	1.2 20.
		LE	0.29 20.
	ORV	eP	04 25 48.9
		i	04 25 57.0
	WDC	eP	04 25 54.7
	FHC	eP	04 26 04.0
BRK Ms=5.1 Distance=64°			
USGS 04h15m24.3s 7.8S 76.7W			
h=33km mb=5.8 Ms=5.1			
Northern Peru			
Jun 5	MHC	iPc	16 56 22.8
	GCC	iPd	16 56 28.8
	SAO	iPc	16 56 31.2
	PCC	iPc	16 56 33.5
	BRK	ePc	16 56 36.0
	BKS	iPd	16 56 36.2
		eS	16 56 48.7
	LLA	iPc	16 56 36.4
	ZSP	iPc	16 56 37.3
	PRS	iPc	16 56 38.5
	JAS	iPd	16 56 41.6

DATE	STA	PHASE	TIME (UTC)
	PRI	iPc	16 56 44.7
	FRI	iPc	16 56 47.2
	ORV	ePc	16 56 58.0
	MIN	iPgd	16 57 12.5
	WDC	ePd	16 57 14.5
BRK 16h56m20.8s 37.3N 121.6W			
h=6km ML=4.2(6) Mo=2.8E22(2)			
Halls Valley Sequence			
Jun 6	JAS	eP	03 26 16.0
		e	03 26 42.0
	ORV	eP	03 26 24.5
		e	03 26 50.5
USGS 03h13m46.1s 35.6S 70.8W			
h=124km mb=5.0			
Chile-Argentina Border Region			
Jun 6	PRI	eP	11 05 42.0
	FRI	eP	11 05 44.0
	LLA	eP	11 05 46.3
	PRS	eP	11 05 46.6
	JAS	eP	11 05 49.0
	GCC	eP	11 05 51.0
	MHC	eP	11 05 51.4
	BRK	eP	11 05 54.5
	BKS	eP	11 05 54.6
			AMP(μm) PER(s)
		PZ	0.022 0.7
	ORV	ePd	11 05 58.2
	WDC	eP	11 06 02.8
USGS 10h54m01.9s 24.1S 66.8W			
h=200km mb=5.0			
Salta Province, Argentina			
Jun 6	GCC	ePc	11 10 12.4
	BKS	ePc	11 10 12.5
			AMP(μm) PER(s)
		PZ	0.086 0.7
	BRK	iPc	11 10 12.5
	SAO	eP	11 10 13.9
	PRS	ePc	11 10 14.1
	MHC	ePc	11 10 14.3
	WDC	iPc	11 10 15.1
	LLA	ePc	11 10 16.0
	PRI	iPc	11 10 16.9
	ORV	iPc	11 10 17.2
	MIN	ePc	11 10 17.7
	JAS	iPc	11 10 19.1
	FRI	iPc	11 10 20.7
USGS 10h57m38.6s 10.3S 161.2E			
h=73km mb=5.3			
Solomon Islands			
Jun 8	PRI	e	10 14 50.6
	MNA	eP	10 14 50.7
	ORV	eP	10 15 09.7
	BKS	e	10 15 14
USGS 10h05m21.8s 5.1S 80.1W			
h=106km mb=4.9			
Near Coast of Northern Peru			
Jun 8	MNA	eP	12 22 52.8
	JAS	e	12 22 57.9
	ORV	eP	12 23 15.7
	BKS	eLr	12 29 43
			AMP(μm) PER(s)
		LZ	0.89 20.
		LN	0.89 20.
		LE	0.71 20.
Jun 8	MNA	eP	12 38 28.5
	JAS	e	12 38 30.2
	ORV	eP	12 38 51.6

DATE	STA	PHASE	TIME (UTC)
	MIN	eP	12 38 58.5
	WDC	eP	12 39 02.1
	BKS	eLr	12 45 06
			AMP(μm) PER(s)
		LZ	3.2 20.
		LN	3.0 20.
		LE	2.1 20.
USGS 12h33m25.3s 18.1N 106.5W			
h=10km mb=4.6			
Off Coast of Jalisco, Mexico			
Jun 9	WDC	ePc	03 39 00.3
	MIN	eP	03 39 04.5
	ORV	ePc	03 39 07.5
	JAS	ePc	03 39 18.0
	MNA	ePc	03 39 24.8
USGS 03h27m50.7s 41.3N 139.2E			
h=34km mb=4.9			
Hokkaido, Japan Region			
Jun 9	MHC	iPd	17 48 30.5
	GCC	iPd	17 48 36.2
	SAO	iPd	17 48 39.7
	PCC	iPc	17 48 40.2
	BRK	iPc	17 48 43.1
		eS	17 48 53.3
	BKS	iPd	17 48 43.3
		eS	17 48 54.2
	LLA	iPd	17 48 45.1
	PRS	ePd	17 48 46.8
	JAS	iPc	17 48 50.0
		eS	17 49 05.0
	PRI	e(P)c	17 48 53.6
	FRI	ePd	17 48 55.7
	ORV	iPd	17 49 08.0
BRK 17h48m28.7s 37.3N 121.7W			
h=6km ML=3.0(4) Mo=1.3E20(2)			
Halls Valley Sequence			
Jun 10	PRS	eP	03 49 24.7
	PRI	ePd	03 49 27.0
	BKS	eP	03 49 27.1
			AMP(μm) PER(s)
		PZ	0.031 0.8
	MHC	eP	03 49 27.2
	FRI	eP	03 49 32.7
	JAS	ePd	03 49 33.3
	ORV	ePd	03 49 34.3
	WDC	ePd	03 49 34.8
	MIN	eP	03 49 36.7
	MNA	ePd	03 49 43.5
USGS 03h38m26.2s 15.9S 175.0W			
h=282km mb=5.0			
Tonga Islands			
Jun 10	MHC	iPd	17 10 41.2
	GCC	eP	17 10 46.1
	SAO	iPc	17 10 48.8
	PCC	iPc	17 10 51.2
	LLA	eP	17 10 53.8
	BRK	ePc	17 10 54.4
		eS	17 11 06.9
	BKS	iPd	17 10 55.0
		eS	17 11 06.7
	ZSP	ePd	17 10 56.0
	JAS	ePc	17 11 00.4
		eS	17 11 16.9
	PRI	eP	17 11 03.1
	FRI	eP	17 11 05.0
	ORV	e(P)	17 11 17.0
BRK 17h10m38.7s 37.2N 121.6W			
h=5km ML=2.7(4) Mo=1.3E20(2)			
Halls Valley Sequence			

DATE	STA	PHASE	TIME (UTC)
Jun 11	FRI	iPc	02 17 46.3
	PRI	ePc	02 17 47.1
		epP	02 18 01.1
	MNA	iPc	02 17 49.2
	LLA	ePc	02 17 49.4
	SAO	eP	02 17 50.7
	JAS	iPc	02 17 53.0
		epP	02 18 06.0
	GCC	ePc	02 17 53.8
	MHC	ePc	02 17 54.6
		epP	02 18 07.6
	PCC	eP	02 17 56.5
	BRK	iPc	02 17 58.0
	BKS	iPc	02 17 58.2
		epP	02 18 11.0
		eS	02 28 19.2
		e	02 29 29.2
		eSS	02 34 12.0
		eSSS	02 37 48.8
		eLg	02 40 36.0
		eLr	02 45 25.8
			AMP(μm) PER(s)
		PZ	0.62 1.5
		LZ	2.5 20.
		LN	4.6 20.
		LE	3.0 20.
	ORV	iPc	02 18 02.1
	MIN	ePc	02 18 04.1
	WDC	iPc	02 18 07.1
		epP	02 18 21.1
	FHC	ePc	02 18 13.5
BRK Ms=6.0 Distance=86°			
USGS 02h05m34.0s 30.7S 71.2W			
h=46km mb=6.3 Ms=5.8			
Near Coast of Central Chile			
Jun 11	ZSP	ePd	09 22 07.0
	BRK	iPc	09 22 08.0
		eS	09 22 22.5
	BKS	iPc	09 22 08.3
		eS	09 22 24.0
	ORV	ePd	09 22 10.5
	PCC	eP	09 22 13.0
	MHC	eP	09 22 18.0
	MIN	ePd	09 22 19.5
	GCC	eP	09 22 20.0
	JAS	iPd	09 22 23.2
	WDC	e	09 22 24.1
	SAO	iPd	09 22 28.0
	LLA	e	09 22 31
	FRI	e	09 22 33
	FHC	e	09 22 34
	PRI	e	09 22 45
	MNA	e	09 22 54.5
BRK 09h21m48.6s 38.8N 122.8W			
h=2km ML=2.6(6)			
The Geysers, 25 km S of Clear Lake, CA			
Jun 11	WDC	ePc	09 57 51.5
	ORV	ePc	09 57 56.3
		e	09 58 06.8
	MHC	eP	09 58 00.7
	JAS	ePc	09 58 04.0
		e	09 58 14.4
	PRI	eP	09 58 07.0
	BKS	e	09 58 07.6
		e	09 58 08.8
	FRI	eP	09 58 08.4
		e	09 58 09.2
	MNA	ePc	09 58 22.0
		e	09 58 22.8

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REGISTRATION OF EARTHQUAKES 1984

DATE	STA	PHASE	TIME (UTC)
USGS 09h45m53.4s 23.3N 143.7E			
h=33km mb=5.1			
Volcano Islands Region			
Jun 11	WDC	eP	22 34 13.1
	ORV	eP	22 34 18.5
	MHC	eP	22 34 23.3
	JAS	eP	22 34 24.5
	MNA	eP	22 34 34.6
	BKS	eR	22 58 18
		AMP(µm)	PER(s)
	LZ	0.89	20.
	LN	0.54	20.
	LE	0.71	20.
USGS 22h22m16.0s 23.4N 143.7E			
h=33km mb=5.1 Ms=5.1			
Volcano Islands Region			
Jun 12	PRI	iPd	00 28 27.1
	FRI	iPc	00 28 32.7
	PRS	ePc	00 28 33.4
	LLA	ePc	00 28 34.0
	SAO	iPc	00 28 38.4
	GCC	eP	00 28 44.7
	MHC	eP	00 28 46.7
	JAS	iP	00 28 48.8
	PCC	ePc	00 28 52.4
	MNA	ePd	00 28 55.8
	BRK	eP	00 28 56.0
	BKS	eP	00 28 56.6
	ZSP	eP	00 28 58.3
	ORV	iPc	00 29 14.0
	MIN	e	00 29 26.0
BRK ML=4.1(6)			
PAS 00h27m52.3s 34.5N 119.0W			
h=12km ML=4.1			
Southern California			
Jun 12	FHC	e	11 15 27.0
	WDC	eP	11 15 34.6
	MIN	eP	11 15 40.2
	ORV	eP	11 15 44.5
	BKS	eP	11 15 51.3
		eS	11 21 14.0
		e	11 22 18.2
		eLg	11 23 22
		eLr	11 24 17.2
		AMP(µm)	PER(s)
		PZ	0.051 0.9
		LZ	4.6 20.
		LN	1.8 20.
		LE	4.3 20.
	MHC	e	11 15 58.0
	JAS	eP	11 16 00.5
	PRS	e	11 16 04.7
	LLA	e	11 16 06.0
	MNA	eP	11 16 09.1
	FRI	eP	11 16 09.7
	PRI	e	11 16 10.1
BRK Ms=5.2 Distance=33°			
USGS 11h09m15.4s 53.6N 165.2W			
h=43km mb=5.3 Ms=4.8			
Fox Islands, Aleutian Islands			
Jun 12	WDC	ePd	17 22 34.8
	ORV	ePd	17 22 40.9
	BKS	eP	17 22 44.3
		eS	17 32 27.6
		eScS	17 33 20.0
		eLr	17 45 38.8
		AMP(µm)	PER(s)
	PZ	0.034	0.8
	LZ	0.79	20.
		LN	0.54 20.
		LE	0.61 20.
	JAS	ePd	17 22 49.9
	FRI	eP	17 22 55.1
	PRI	eP	17 22 55.8
	MNA	ePd	17 22 57.5
BRK Ms=5.0 Distance=77°			
USGS 17h10m55.7s 30.6N 141.6E			
h=29km mb=5.3 Ms=5.2			
South of Honshu, Japan			
Jun 13	WDC	eP	02 41 06.0
	MIN	e(P)	02 41 10
	ORV	eP	02 41 13.0
	BRK	e(P)	02 41 14.5
	BKS	eP	02 41 17
		eS	02 51 12.2
		eScS	02 51 53.6
		eSS	02 56 34
		eLr	03 04 32
		AMP(µm)	PER(s)
	PZ	0.062	1.1
	LZ	0.89	20.
	LN	0.0	20.
	LE	0.89	20.
	MHC	e(P)	02 41 19.0
	JAS	eP	02 41 21.5
	FRI	eP	02 41 26.0
	PRI	e(P)	02 41 26.5
	MNA	eP	02 41 29.0
BRK Ms=5.1 Distance=78°			
USGS 02h29m25.3s 31.4N 140.0E			
h=41km mb=5.5 Ms=5.5			
South of Honshu, Japan			
Jun 14	MNA	eP	10 13 36.0
	PRI	e(P)	10 13 44
	JAS	eP	10 13 46.5
	MHC	eP	10 13 52.8
	ORV	e	10 13 56
	BKS	eP	10 13 56.2
		AMP(µm)	PER(s)
	PZ	0.053	0.8
	BRK	eP	10 13 57.0
	MIN	e	10 13 59
	WDC	eP	10 14 02.0
USGS 10h04m26.4s 10.0N 69.7W			
h=12km mb=5.3 Ms=4.4			
Venezuela			
Jun 15	FHC	eP	04 34 23.1
	WDC	iPc	04 34 30.8
		iPcP	04 36 33.6
		eScP	04 40 04.6
	MIN	iPc	04 34 36.0
		eScP	04 40 07.0
	ORV	iPc	04 34 40.2
		iPcP	04 36 37.6
		eScP	04 40 09.0
	BRK	iPc	04 34 45.3
	BKS	iPc	04 34 45.8
		ePcP	04 36 39.9
		AMP(µm)	PER(s)
	PZ	0.20	0.8
	PCC	eP	04 34 46.2
	GCC	eP	04 34 50.8
	MHC	eP	04 34 51.3
		eScP	04 40 15.0
	JAS	iPc	04 34 54.4
		iScP	04 40 16.1
	SAO	eP	04 34 54.6
	PRS	eP	04 34 57.8
	LLA	eP	04 34 58.7
	FRI	iPc	04 35 02.4
		i	04 36 47.3
	PRI	eP	04 35 02.7
		eScP	04 40 21.0
	MNA	iPc	04 35 03.3
		eScP	04 40 21.0
USGS 04h27m14.9s 52.3N 178.6W			
h=170km mb=5.1			
Andreanof Islands, Aleutian Islands			
Jun 15	GCC	iPd	14 33 24.3
	PCC	ePd	14 33 24.5
	PRS	iPd	14 33 24.6
	SAO	eP	14 33 25.4
	BKS	iP	14 33 26
		e	14 33 39.5
		e	14 34 11.8
		ipP	14 34 24
		esP	14 34 53
		esPP	14 37 30
		eS	14 42 34
		eScS	14 43 08
		esS	14 44 08
		esSP	14 44 37
		esPS	14 44 44
		eSS	14 47 13
		esSS	14 48 03
		eSSS	14 50 34
		eG	14 52 11
		AMP(µm)	PER(s)
	PZ	0.68	1.3
	BRK	ePd	14 33 26.2
	PRI	iPd	14 33 27.0
		ePKPPKP	15 01 06.5
	MHC	iPd	14 33 27.1
	LLA	iPd	14 33 27.1
	FHC	ePd	14 33 31.0
	FRI	iPd	14 33 32.5
		ePKPPKP	15 01 04.5
	JAS	iPd	14 33 33.1
		ipP	14 34 31.6
		ePKPPKP	15 01 04.5
	ORV	iPd	14 33 34.3
		ePKPPKP	15 01 04.5
	WDC	iPd	14 33 34.6
		ePKPPKP	15 01 04.5
	MIN	ePd	14 33 36.5
	MNA	iPd	14 33 43.3
		epP	14 34 41.0
		ePKPPKP	15 01 02
BRK ab=6.2 h=219km Distance=75°			
USGS 14h22m23.0s 15.8S 174.8W			
h=247km mb=6.1			
Tonga Islands			
Jun 15	MHC	iPc	15 50 21.5
	GCC	iPd	15 50 27.4
	PCC	iPc	15 50 30.4
	SAO	iPd	15 50 31.4
	BKS	eP	15 50 33.6
		eS	15 50 43.2
	BRK	iPc	15 50 34.1
		eS	15 50 45.3
	LLA	ePc	15 50 36.3
	PRS	iPc	15 50 38.7
	JAS	ePc	15 50 40.5
BRK 15h50m19.8s 37.3N 121.7W			
h=7km ML=2.9(4) Mo=2.0E20(2)			
Halls Valley Sequence			
Jun 15	PRS	iPd	19 53 52.1
		iS	19 53 59.6
	PRI	iPd	19 53 57.0
		eS	19 54 08.5
	SAO	iPc	19 53 59.2
	LLA	ePc	19 53 59.8
	GCC	ePc	19 54 04.5
		eS	19 54 21.5
	MHC	eP	19 54 09.4
	PCC	ePc	19 54 15.0
	BKS	eP	19 54 21.1
		eS	19 54 50.0
	JAS	eP	19 54 22
BRK ML=2.9(4)			
Off Coast 60 km SW of King City, CA			
Jun 16	WDC	iPc	02 28 23.8
		eS	02 28 39.8
	MIN	eP	02 28 33.9
	ORV	iPc	02 28 41.8
		eS	02 29 10.8
BRK 02h28m03.2s 41.2N 123.8W			
h=5kmR ML=3.3(4) Mo=1.1E21(2)			
50 km NE of Eureka, CA			
Jun 16	MHC	iPd	03 50 29.1
	GCC	iPd	03 50 34.8
	SAO	iP	03 50 38.7
	PCC	iPc	03 50 38.9
	BKS	iP	03 50 41.8
		eS	03 50 52.5
	BRK	iP	03 50 41.9
	ZSP	iPc	03 50 43.0
	LLA	e(P)c	03 50 43.9
	PRS	iPd	03 50 45.6
	JAS	iPc	03 50 48.8
	PRI	ePc	03 50 52.2
	FRI	iPc	03 50 54.8
	ORV	i	03 51 06.8
BRK 03h50m27.4s 37.3N 121.7W			
h=5km ML=3.4(4) Mo=1.6E21(4)			
Halls Valley Sequence			
Jun 16	ZSP	iPd	10 45 12.5
		i	10 45 27.0
	BRK	eP	10 45 13.2
		eS	10 45 26.7
	BKS	iPc	10 45 13.7
		eS	10 45 28.3
	ORV	iPd	10 45 15.8
	PCC	eP	10 45 17.3
	MHC	ePc	10 45 23.8
	MIN	ePc	10 45 24.4
	GCC	eP	10 45 25.3
	JAS	ePc	10 45 28.0
	WDC	e	10 45 28.0
	SAO	iPc	10 45 31.7
	LLA	ePc	10 45 36.5
BRK 10h44m54.0s 38.8N 122.8W			
h=5km ML=3.0(6) Mo=2.2E21(2)			
The Geysers, 20 km S of Clear Lake, CA			
Jun 16	MHC	iPc	17 29 52.7
	GCC	ePd	17 29 58.6
		eS	17 30 05.2
	PCC	ePc	17 30 00.8
	SAO	iPd	17 30 03.2
	BKS	eP	17 30 03.4
		eS	17 30 13.2
	BRK	eP	17 30 03.4
		eS	17 30 14.0
	ZSP	eP	17 30 05.0
	LLA	ePd	17 30 08.2
	PRS	ePd	17 30 10.3
	JAS	iPd	17 30 12.1
		eS	17 30 27.6
BRK 17h29m50.6s 37.4N 121.7W			
h=6km ML=2.6(4) Mo=2.3E19(2)			
Halls Valley Sequence			
Jun 16	PRS	ePc	17 54 11.3
	PRI	ePc	17 54 11.8
	SAO	eP	17 54 13.5
	GCC	ePc	17 54 14.5
	PCC	ePc	17 54 16.8
	MHC	ePc	17 54 17.5
	FRI	ePc	17 54 18.0
	BRK	ePc	17 54 19.5
	JAS	iPc	17 54 23.2
	MNA	ePc	17 54 30.7
	ORV	ePc	17 54 31.0
	WDC	ePc	17 54 35.7
USGS 17h43m57.9s 21.9S 139.0W			
h=0km mb=5.3			
Tuamotu Archipelago Region			
Jun 17	WDC	eP	08 19 38.0
	MIN	eP	08 19 42.5
	ORV	eP	08 19 47.0
	JAS	eP	08 19 59.0
	LLA	eP	08 20 05.5
	MNA	eP	08 20 07.5
	PRI	e	08 20 14.0
USGS 08h10m34.7s 54.6N 160.2E			
h=33km mb=4.9 Ms=4.7			
Near East Coast of Kamchatka			
Jun 17	WDC	ePc	16 33 53.1
		epP	16 34 05.5
	MIN	eP	16 33 58.8
		epP	16 34 11.4
	ORV	ePc	16 34 02.6
		epP	16 34 15.4
	BRK	eP	16 34 07.4
	BKS	eP	16 34 07.9
		epP	16 34 21.0
		e	16 34 41.3
		eS	16 39 56
		eLq	16 42 52
		eLr	16 44 19
		AMP(µm)	PER(s)
	PZ	0.093	1.3
	MHC	eP	16 34 13.8
	JAS	ePc	16 34 17.3
		epP	16 34 30.0
	PRS	eP	16 34 20.4
	LLA	eP	16 34 21.3
	PRI	eP	16 34 25.6
	FRI	eP	16 34 25.6
		epP	16 34 38.1
	MNA	ePc	16 34 26.6
		epP	16 34 39.4
BRK ab=5.4 h=33km Distance=38°			
USGS 16h26m50.4s 51.7N 173.4W			
h=33km mb=5.4 Ms=5.2			
Andreanof Islands, Aleutian Islands			
Jun 18	WDC	ePd	00 24 51.2
		epP	00 25 04.2
	MIN	eP	00 24 56.9
		epP	00 25 10.0
	ORV	ePd	00 25 00.8
		epP	00 25 13.9
	BRK	eP	00 25 05.7
		epP	00 25 18.7
	BKS	eP	00 25 06.1
		epP	00 25 18.9
		e	00 25 33.3
		e	00 34 59
		AMP(µm)	PER(s)
	PZ	0.073	0.9
	MHC	eP	00 25 11.8
		epP	00 25 25.0
	JAS	ePd	00 25 15.4
		epP	00 25 28.6
	PRS	eP	00 25 18.5
	LLA	eP	00 25 19.4
	FRI	eP	00 25 23.1
		epP	00 25 36.5
	PRI	eP	00 25 23.5
		epP	00 25 36.9
	MNA	eP	00 25 24.7
		epP	00 25 37.8
USGS 00h17m48.5s 51.6N 173.3W			
h=33km mb=5.4 Ms=4.9			
Andreanof Islands, Aleutian Islands			
Jun 18	FRI	ePd	11 31 10.1
		ePKPPKP	11 59 25
	MNA	iPd	11 31 12.0
		epP	11 31 41
		ePKPPKP	11 59 26
	PRI	eP	11 31 12.1
	LLA	ePd	11 31 14.8
	PRS	ePd	11 31 15.4
	JAS	iPd	11 31 17.9
		epP	11 31 49
		ePKPPKP	11 59 23
	GCC	ePd	11 31 20.4
	MHC	ePd	11 31 20.8
	PCC	eP	11 31 23.5
	BKS	eP	11 31 24.5
		e(pP)	11 31 51.0
		e	11 32 34.9
		ePP	11 34 42
		eS	11 40 36
		eScS	11 41 11
		esSS	11 46 05
		e	11 49 23
		e	11 49 24
		eLq	11 51 18
		eLr	11 55 24
		AMP(µm)	PER(s)
	PZ	0.15	1.3
	BRK	ePd	11 31 26.6
	ORV	iPd	11 31 28.4
	MIN	eP	11 31 30.7
	WDC	ePd	11 31 33.8
		epP	11 32 04
BRK ab=5.7 h=115km Distance=74°			
USGS 11h20m17.9s 15.7S 72.5W			
h=117km mb=5.8			
Southern Peru			
Jun 18	MNA	eP	23 08 18.3
	JAS	eP	23 08 32.0
	MIN	eP	23 08 32.4
	ORV	eP	23 08 33.5
	WDC	eP	23 08 34.2
	LLA	eP	23 08 37.5
	MHC	eP	23 08 40.0
	BKS	e	23 08 41.8
USGS 22h58m00.3s 28.9N 43.4W			
h=10km mb=5.0 Ms=4.6			
North Atlantic Ridge			
Jun 19	MNA	ePd	16 24 42.7
	PRI	eP	16 24 45.4
		ePcP	16 27 02.3
	JAS	ePd	16 25 52.0
		ePcP	16 27 04.2

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DATE	STA	PHASE	TIME (UTC)
	MHC	eP	16 24 56.7
	ORV	ePd	16 25 05.4
	WDC	eP	16 25 12.0
		ePcP	16 27 11.8
	FHC	eP	16 25 23.8
	FRI	ePcP	16 27 01.0

USGS 16h17m34.6s 12.6N 87.7W
h=80km mb=5.4
Near Coast of Nicaragua

Jun 20	MNA	iPc	15 15 39.0
	FRI	iPc	15 15 49.7
	JAS	iPc	15 15 58.8
		i	15 16 10.0
	PRI	ePc	15 16 02.4
	LLA	ePc	15 16 04.6
	PRS	ePc	15 16 08.8
	SAO	eP	15 16 09.1
	MHC	eP	15 16 11.5
	GCC	ePc	15 16 15.5
	ORV	iP	15 16 18.0
	BRK	e(P)	15 16 18.6
	BKS	e	15 16 20.6
	PCC	e(P)	15 16 21.3
	MIN	eP	15 16 23.1
	ZSP	e	15 16 25.5
	WDC	ePc	15 16 34.5
		e	15 17 01.9
		e	15 18 19.5

BRK ML=4.8(4)
USGS 15h15m00.1s 37.0N 116.0W
h=0km
Underground Nuclear Explosion, NTS
(Pugro)

Jun 20	MNA	iPd	16 10 39.9
		i	16 11 16.6
	JAS	ePc	16 11 00.3
	SAO	e	16 11 10.8
	PRS	e	16 11 12.5
	MHC	e	16 11 15
	ORV	eP	16 11 34.8
	WDC	e	16 11 49
	FRI	ePd	16 11 51.4

BRK ML=4.1(4)
USGS 16h10m00.4s 37.0N 116.0W
h=0km
Collapse, NTS

Jun 20	SAO	iPc	19 28 26.2
	PRI	iPc	19 28 27.6
	PRS	ePc	19 28 30.6
	LLA	ePc	19 28 34.3
	GCC	eP	19 28 41.9
	FRI	iPc	19 28 42.0
	MHC	iPc	19 28 45.3
	PCC	e(P)	19 28 50.0
	JAS	iPc	19 28 53.4
		eS	19 29 27.2
	BRK	e(P)	19 28 55.1
	BKS	ePc	19 28 55.4
		eS#	19 29 44.4
		iSg	19 29 51.9
	ZSP	e	19 28 58.7
	MNA	e(P)	19 29 08.0
	ORV	ePc	19 29 18.3
	WDC	e	19 29 35.0

BRK 19h28m06.2s 35.0N 120.8W
h=8km ML=4.3(6)
Off Coast 30 km W of Santa Maria, CA

Jun 20	PRI	ePd	20 08 28.0
		e	20 08 46.8

DATE	STA	PHASE	TIME (UTC)
	MNA	ePd	20 08 28.2
	LLA	eP	20 08 30.3
	PRS	ePd	20 08 30.8
	SAO	eP	20 08 31.0
	JAS	ePd	20 08 33.1
	GCC	eP	20 08 35.0
	MHC	eP	20 08 35.4
	BKS	eP	20 08 38.5
		AMP(µm)	PER(s)
	PZ	0.13	0.7
	BRK	eP	20 08 38.5
	ORV	iPd	20 08 42.2
	WDC	ePd	20 08 47.0
		e	20 08 57.9
	FHC	eP	20 08 54.2

USGS 19h56m46.6s 24.1S 67.0W
h=196km mb=5.5
Salta Province, Argentina

Jun 21	MIN	eP	10 57 17.0
		e	10 57 35.5
	MNA	eP	10 57 18.0
		e	10 57 34.2
		e	10 57 36.2
		ePP	11 01 20.1
	ORV	eP	10 57 19.1
		e	10 57 36.0
	JAS	eP	10 57 24.4
		e	10 57 43.2
		ePP	11 01 26
	MHC	eP	10 57 29.3
	LLA	eP	10 57 33.4
	PRI	e(P)	10 57 33.8
	BKS	e	11 08 26
		e	11 08 53.16
		e	11 33 16

USGS 10h43m42.1s 35.4N 23.2E
h=39km mb=5.8 Ms=5.9
Crete

Jun 21	WDC	eP	17 40 49.3
	ORV	eP	17 40 56.7
	JAS	eP	17 41 07.5
	PRS	eP	17 41 10.0
	LLA	eP	17 41 10.3
	MNA	e	17 41 13.5

USGS 17h30m03.6s 42.6N 142.5E
h=95km mb=5.4
Hokkaido, Japan Region

Jun 22	PRI	iPd	08 11 07.1
	LLA	eP	08 11 13.8
	FRI	iPd	08 11 16.1
	PRS	iPc	08 11 17.3
	SAO	eP	08 11 20.4
	MHC	eP	08 11 27.4
	GCC	eP	08 11 27.6
	JAS	iPd	08 11 30.0
	BRK	e	08 11 36.8
	PCC	e	08 11 37.0
	BKS	eP	08 11 37.2
		eS	08 12 04.7
	ZSP	e	08 11 38
	MNA	e	08 11 49
	ORV	e	08 11 55
	MIN	e	08 12 15.0

BRK 08h11m00.5s 36.1N 120.2W
h=7km ML=3.4(5)
Coalinga area, CA

Jun 22	FRI	ePKP	16 14 35.4
	PRI	ePKP	16 14 35.8
	MNA	ePKP	16 14 36.3

DATE	STA	PHASE	TIME (UTC)
	PRS	ePKP	16 14 36.6
	LLA	ePKP	16 14 36.8
	JAS	ePKP	16 14 38.0
	MHC	ePKP	16 14 38.5
	BRK	ePKP	16 14 39.5
	BKS	ePKP	16 14 40.5
		e	16 15 10
		ePP	16 16 54
		ePKS	16 18 08
		e(PPS)	16 28 40
		eSS	16 33 52
		e	16 35 00
		eSSS	16 39 20
		eLg	16 49 49
		AMP(µm)	PER(s)
	LZ	3.7	20.
	LN	2.3	20.
	LE	2.7	20.
	ORV	ePKP	16 14 41.0
	MIN	ePKP	16 14 41.6
	WDC	ePKP	16 14 42.7

BRK Ms=6.0 Distance=130°
USGS 15h55m28.4s 58.3S 15.8W
h=10km mb=6.2 Ms=6.1
Southwestern Atlantic Ocean

Jun 22	FHC	eP	23 02 17.8
	WDC	ePc	23 02 26.3
	MIN	eP	23 02 32.6
	ORV	ePc	23 02 36.3
	BRK	e(P)	23 02 44
	BKS	e	23 02 50.5
		e(Lg)	23 10 00
		e(Lr)	23 11 16
		AMP(µm)	PER(s)
	PZ	0.035	1.0
	MHC	ePc	13 58 09.7
	PRS	eP	13 58 12.3
	JAS	iPc	13 58 12.6

	LLA	eP	13 58 13.6
	PRI	eP	13 58 16.8
	FRI	ePc	13 58 17.2
	MNA	ePc	13 58 20.7

USGS 13h46m02.0s 23.3N 143.6E
h=33km mb=5.3 Ms=4.8
Volcano Islands Region

Jun 24	MNA	ePc	11 25 44.0
	FRI	ePc	11 25 50.0
	JAS	ePc	11 25 56.3
		eScP	11 31 11.5
	PRI	eP	11 25 56.7
	LLA	eP	11 25 57.2
		eScP	11 31 12.5
	PRS	eP	11 25 59.5
	SAO	e	11 26 01.0
	MHC	ePc	11 26 03.3
	ORV	ePc	11 26 04.3
		eScP	11 31 15.5
	GCC	eP	11 26 04.9
	BRK	eP	11 26 07.2
	BKS	eP	11 26 07.4
		ePP	11 28 02.4
		eS	11 33 21.0
		eScS	11 35 52
		eSS	11 37 49.6
		eLg	11 39 00
		e	11 41 08
		e	11 42 20
		AMP(µm)	PER(s)
	PZ	0.052	1.0
	LZ	38	20.
	LN	21	20.
	LE	45	20.
	PCC	eP	11 26 07.5
	WDC	ePc	11 26 09.2
	FHC	ePc	11 26 20.5

BRK Ms=6.6 Distance=55°
USGS 11h17m11.9s 18.0N 69.3W
h=24km mb=6.0 Ms=6.7
Dominican Republic Region

Jun 24	PRI	eP	11 35 02.3
	LLA	eP	11 35 04.8
	JAS	ePd	11 35 07.7
	GCC	eP	11 35 09.8
	MHC	eP	11 35 10.2
	BKS	eP	11 35 14.3
		AMP(µm)	PER(s)
	PZ	0.013	0.6
	ORV	ePd	11 35 17.5
	WDC	ePd	11 35 22.5
	FHC	e	11 35 30

Bolivia Region

Jun 24	MNA	iPc	18 27 23.0
	FRI	eP	18 27 29.0
	JAS	ePc	18 27 35.4
	ORV	eP	18 27 43.3
	WDC	eP	18 27 48.0

USGS 18h18m51.0s 18.0N 69.2W
h=32km mb=5.1 Ms=4.7
Dominican Republic Region

Jun 24	FHC	eP	21 35 54.2
	WDC	ePc	21 36 03.5
	MIN	ePc	21 36 10.3
	ORV	ePc	21 36 19.3
	BRK	eP	21 36 36.0
	BKS	eP	21 36 36.3
		eS	21 39 24
		e(Lr)	21 39 28.8

DATE	STA	PHASE	TIME (UTC)
		AMP(µm)	PER(s)
	PZ	1.1	2.5
	PCC	eP	21 36 37.5
	JAS	ePc	21 36 43.0
	MHC	eP	21 36 45.0
	GCC	eP	21 36 46.5
	MNA	ePc	21 36 49.5
	SAO	eP	21 36 55.3
	LLA	eP	21 36 58.5
	PRS	eP	21 36 59.5
	FRI	e	21 37 02.5
	PRI	eP	21 37 04.0

BRK mb=5.6 h=33km Distance=15°
USGS 21h33m09.5s 51.2N 130.4W
h=10km mb=5.4 Ms=5.8
Queen Charlotte Islands Region

Jun 25	FHC	iPc	01 25 03.7
		iS	01 25 15.4
	WDC	iPc	01 25 19.8
		eS	01 25 43.3
	MIN	ePd	01 25 30.2
	ORV	iPd	01 25 35.5

BRK 01h24m47.8s 41.1N 125.0W
h=3km ML=3.3(3) Mo=2.0E20(2)
Off Coast NW of Eureka, CA

Jun 25	MNA	eP	01 42 59.0
	WDC	eP	01 43 13
	PRI	eP	01 43 16.3
	ORV	eP	01 43 28.5
	JAS	eP	01 43 57.5

USGS 01h39m20.8s 51.2N 130.0W
h=10km mb=4.1 Ms=4.1
Queen Charlotte Islands Region

Jun 25	BRK	iPc	10 13 27.2
	BKS	iPc	10 13 27.5
		eS	10 13 30.2
	ZSP	iPc	10 13 29.1
	PCC	iPd	10 13 30.3
	MHC	ePc	10 13 35.1
	GCC	ePd	10 13 37.6
	SAO	iPc	10 13 43.6
	JAS	iPc	10 13 47.5
		iS	10 14 04.5
	LLA	eP	10 13 49.0
	PRS	eP	10 13 49.5
	ORV	iPc	10 13 54.2
	FRI	e(P)	10 13 56.5
	PRI	e(P)	10 13 57.0
	MIN	e	10 14 07

BRK 10h13m24.1s 37.7N 122.2W
h=7km ML=3.1(5) Mo=1.7E21(4)
Lake Chabot area, CA

Jun 25	MNA	ePc	18 53 41.0
	FRI	eP	18 53 47.0
	JAS	ePc	18 53 53.3
		i	18 55 18.2
	PRI	e	18 53 53.9
	LLA	eP	18 53 54.7
		e	18 55 19.1
	PRS	eP	18 53 57.7
	MHC	eP	18 54 00.7
	ORV	eP	18 54 01.5
		e	18 55 22.0
	WDC	eP	18 54 06.2
	FHC	eP	18 54 17.7

USGS 18h45m09.3s 18.0N 69.2W
h=32km mb=5.2 Ms=5.0
Dominican Republic Region

DATE	STA	PHASE	TIME (UTC)
Jun 27	WDC	eP	02 16 05.5
	ORV	eP	02 16 12.5
	MNA	eP	02 16 30.0

USGS 02h05m10.2s 41.5N 142.0E
h=60km mb=5.2
Hokkaido, Japan Region

Jun 27	MHC	iPd	23 16 25.6
	GCC	ePc	23 16 31.0
		eS	23 16 36.5
	SAO	iPd	23 16 34.1
	PCC	eP	23 16 35.5
	BKS	eP	23 16 38.8
		eS	23 16 51.0
	BRK	eP	23 16 38.8
		eS	23 16 50.0
	LLA	ePd	23 16 39.7
		e(S)	23 16 52.4
	ZSP	ePc	23 16 39.8
	PRS	ePc	23 16 41.3
		e(S)	23 16 53.8
	PRI	eP	23 16 50.2
	FRI	e(P)	23 16 50.8
	ORV	e	23 17 03.2

BRK 23h16m23.6s 37.3N 121.7W
h=5km ML=2.7(4) Mo=1.6E20(2)
Halls Valley Sequence

Jun 28	PRS	e	02 45 47.7
	WDC	eP	02 45 50.2
	ORV	e(P)	02 45 51.2
	PRI	e	02 45 51.5
	MNA	ePd	02 45 59.7

USGS 02h33m31.8s 18.4S 177.3E
h=10km mb=5.0 Ms=5.4
Fiji Islands

Jun 28	BKS	e(P)	11 33 01.0
		e	11 57 32
		e(Lr)	12 07 12
		AMP(µm)	PER(s)
	LZ	2.7	20.
	LN	0.71	20.
	LE	2.5	20.
	WDC	ePc	11 33 01.4
	BRK	ePc	11 33 01.9
	PRS	ePc	11 33 02.4
	GCC	ePc	11 33 02.5
	MHC	e c	11 33 03.5
	ORV	ePc	11 33 03.8
	LLA	e(P)	11 33 04.0
	FRI	eP	11 33 05.3
	MIN	ePc	11 33 05.7
	MNA	ePc	11 33 15.3

USGS 11h19m46.5s 9.6S 151.8E
h=20km mb=5.5 Ms=5.6
D'Entrecasteaux Islands Region

Jun 28	FHC	eP	20 15 17.7
	WDC	eP	20 15 34.1
	ORV	eP	20 15 42.9
		e	20 16 57.2

Off The Oregon Coast

Jun 29	PCC	e	04 40 32.5
	PRS	eP	04 40 33.3
	GCC	eP	04 40 33.3
	SAO	eP	04 40 33.5
	PRI	eP	04 40 33.7
	BRK	eP	04 40 33.4
	BKS	eP	04 40 33.9
		epP	04 40 34.8
		AMP(µm)	PER(s)

International Seismological Centre

UNIVERSITY OF CALIFORNIA SEISMOGRAPHIC STATIONS

REGISTRATION OF EARTHQUAKES — 1984

DATE	STA	PHASE	TIME (UTC)
		PZ	0.10 1.0
	MHC	eP	04 40 35.9
	FRI	eP	04 40 40.2
	FHC	e	04 40 40.5
	ORV	ePc	04 40 43.5
	WDC	iPc	04 40 44.4
		ipP	04 40 56.6
	MIN	eP	04 40 45.8
	MNA	ePc	04 40 51.7
		ipP	04 41 03.8

USGS 04h28m52.3s 20.9S 173.3W
h=42km mb=5.4
Tonga Islands

Jun 29	PCC	eP	15 39 04.9
	GCC	ePd	15 39 06.9
	BRK	eP	15 39 07.5
	BKS	eP	15 39 07.8
			AMP(μm) PER(s)
		PZ	0.038 0.8
	SAO	eP	15 39 08.2
	PRS	ePd	15 39 08.2
	MHC	ePd	15 39 09.2
	PRI	eP	15 39 10.9
	WDC	ePd	15 39 12.0
	ORV	iPd	15 39 13.4
	MIN	eP	15 39 14.4
	FRI	eP	15 39 15.2
	MNA	iPd	15 39 23.6

USGS 15h27m54.9s 12.9S 169.2E
h=662km mb=5.0
Santa Cruz Islands Region

Jun 29	FHC	iPc	16 20 29.8
		e	16 20 37.1
		eS	16 20 40.3
	WDC	iPd	16 20 44.5
	MIN	eP	16 20 54.2
	ORV	eP	16 20 58.2
		eS	16 21 30.0
	MHC	e(P)	16 21 14.4
	GCC	e(P)	16 21 14.6
	SAO	e	16 21 31

BRK 16h20m15.0s 40.5N 124.9W
h=5kmR ML=3.1(3)
Off Coast 70 km SW of Eureka, CA

Jun 30	MNA	ePc	02 11 49.5
		e	02 13 48.1

USGS 02h08m48.7s 30.6N 113.6W
h=10km mb=4.7
Gulf of California

Jun 30	PCC	eP	12 21 02.9
	BKS	e(P)	12 21 03.1
			AMP(μm) PER(s)
		PZ	0.017 0.7
	PRS	ePc	12 21 03.3
	BRK	eP	12 21 03.4
	SAO	eP	12 21 04.0
	MHC	ePc	12 21 05.4
	FRI	eP	12 21 10.6
	ORV	ePc	12 21 12.0
	WDC	ePc	12 21 12.0
	MNA	ePc	12 21 20.8

USGS 12h10m10.1s 17.8S 178.8W
h=571km mb=4.8
Fiji Islands Region

Jun 30	WDC	eP	20 39 26.0
	ORV	eP	20 39 31.6
	FRI	eP	20 39 45
	MNA	eP	20 39 46.8

DATE	STA	PHASE	TIME (UTC)

USGS 20h27m09.8s 30.3N 132.1E
h=25km mb=5.1 Ms=5.6
Southeast of Shikoku, Japan

Jun 30	WDC	eP	20 39 46.0
		e	20 39 53.8
	ORV	eP	20 39 51.8
	FRI	eP	20 40 05
	MNA	eP	20 40 07.3

USGS 20h27m30.2s 30.4N 132.1E
h=33km mb=5.3 Ms=4.9
Southeast of Shikoku, Japan

Jun 30	MHC	iPd	22 52 29.8
	GCC	eP	22 52 35.5
	SAO	iPc	22 52 38.5
	PCC	iPc	22 52 39.7
	BRK	iPc	22 52 42.8
		eS	22 52 52.5
	BKS	ePc	22 52 42.9
		eS	22 52 54.2
	LLA	iPd	22 52 44.0
	ZSP	ePc	22 52 44.7
	PRS	eP	22 52 45.5
	PRI	eP	22 52 54.1
	FRI	eP	22 52 55.3
	ORV	e	22 53 05.2

BRK 22h52m27.9s 37.3N 121.7W
h=7km ML=2.7(4) Mo=1.4E20(2)
Halls Valley Sequence

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)
Jul 1	MHC	eP	01 12 15.7
		epP	01 12 41.8
	FRI	eP	01 12 21.0
		epP	01 12 48
	ORV	eP	01 12 23.3
		epP	01 12 49.7
	WDC	ePc	01 12 23.8
		epP	01 12 50.1
	MNA	ePc	01 12 31.5
		epP	01 12 57.9
USGS 01h00m41.2s 19.5S 174.3W			
h=98km mb=5.2			
Tonga Islands			
Jul 1	SAO	eP	15 19 42
	BKS	e(P)	15 19 42.4
			AMP(µm) PER(s)
		PZ	0.030 1.0
	MHC	eP	15 19 43.2
	PRI	eP	15 19 44.0
	WDC	ePc	15 19 47.0
	ORV	ePc	15 19 47.8
	FRI	eP	15 19 48.3
	MIN	eP	15 19 49.2
	MNA	ePc	15 19 56.8
USGS 15h07m19.0s 19.2S 169.1E			
h=161km mb=5.0			
Vanuatu Islands			
Jul 1	SAO	eP	21 11 41.7
	BKS	eP	21 11 43.2
			AMP(µm) PER(s)
		PZ	0.047 0.9
	PRI	ePc	21 11 43.4
	MHC	ePc	21 11 43.4
	FRI	ePc	21 11 49.0
	ORV	ePc	21 11 50.6
	WDC	ePc	21 11 50.8
	MIN	eP	21 11 52.9
	MNA	iPc	21 11 59.5
USGS 21h00m40.3s 15.3S 175.1W			
h=244km mb=5.0			
Tonga Islands			
Jul 2	WDC	iPd	03 44 17.0
		iS	03 44 26.8
	FHC	iPc	03 44 19.1
	MIN	iPc	03 44 25.5
		iS	03 44 41.4
	ORV	iPc	03 44 28.2
		eS	03 44 45.6
	MHC	e	03 44 53.3
	GCC	e	03 44 54.4
	SAO	e	03 45 00.4
BRK 03h44m04.2s 40.2N 123.2W			
h=14km ML=3.2(3)			
50 km E of Garberville, CA			
Jul 2	FRI	ePc	04 56 28.9
		epP	04 56 40.8
	PRI	eP	04 56 29.5
		epP	04 56 42.3
	MNA	ePc	04 56 30.3
		ipP	04 56 42.7
		e	04 57 03.0
		ePP	04 58 17
		e	05 04 13
	SAO	ePc	04 56 38.8
	MHC	ePc	04 56 41.3
		epP	04 56 52.2
	BKS	ePc	04 56 49.2
		epP	04 57 00.4
		e	04 57 40
		e	04 57 50.4
		eS	05 01 49
		e	05 02 12
		e	05 02 16
		e	05 04 20
			AMP(µm) PER(s)
		PZ	0.24 2.0
		LZ	25 20.
		LNE	63 20.
		LNW	26 20.
	ORV	iPc	04 56 53.6
		epP	04 57 13.8
	MIN	ePc	04 56 58.2
	WDC	ePc	04 57 02.2
		epP	04 57 12.7
		ePP	04 58 25
	FHC	eP	04 57 12.3
		epP	04 57 23.5
BRK Ms=6.3 Distance=31°			
USGS 04h50m44.1s 16.8N 98.4W			
h=47km mb=5.9 Ms=6.0			
Near Coast of Guerrero, Mexico			
Jul 3	SAO	eP	13 52 57.0
	BKS	ePc	13 52 58.5
			AMP(µm) PER(s)
		PZ	0.27 1.2
	PRI	iPc	13 52 59.4
		ePPP	13 58 04.8
	MHC	ePc	13 52 59.7
	FHC	eP	13 53 01.8
	FRI	iPc	13 53 04.6
	JAS1	iPc	13 53 04.8
		ipP	13 55 00.2
		ePPP	13 58 10.1
	WDC	iP	13 53 05.6
		ipP	13 55 03.5
		ePPP	13 58 11.1
	ORV	iPc	13 53 05.7
		ePPP	13 58 11.1
	MIN	ePc	13 53 07.4
	MNA	iPc	13 53 14.6
		ipP	13 55 10.7
		ePPP	13 58 20.0
USGS 13h42m00.8s 17.7S 178.8W			
h=536km mb=5.7			
Fiji Islands Region			
Jul 3	BKS	eP	14 44 11.0
			AMP(µm) PER(s)
		PZ	0.029 0.9
	SAO	eP	14 44 11.2
	MHC	eP	14 44 12.3
		epP	14 45 02.3
	PRI	ePc	14 44 14.1
		epP	14 45 04.0
	WDC	ePc	14 44 15.1
		epP	14 45 05.3
	ORV	eP	14 44 16.3
		epP	14 45 06.4
	MIN	eP	14 44 17.5
		epP	14 45 07.4
	JAS1	ePc	14 44 17.5
		epP	14 45 07.5
	FRI	eP	14 44 18.5
		epP	14 45 08.4
	MNA	eP	14 44 26.8
		epP	14 45 17.1
USGS 14h32m03.0s 14.2S 167.2E			
h=205km mb=5.3			
Vanuatu Islands			
Jul 3	FHC	iPc	20 47 34.4
		eS	20 47 50.7
	WDC	iP	20 47 50.0
	MIN	eP	20 47 59.9
	ORV	ePc	20 48 02.9
	SAO	e(P)	20 48 16.9
	MHC	e(P)	20 48 16.9
	PRS	e	20 48 28.9
BRK ML=3.7(3)			
Off Coast 125 km SW of Eureka, CA			
Jul 3	FHC	eP	22 21 15.3
	WDC	iPc	22 21 21.7
	MIN	eP	22 21 25.7
	ORV	ePc	22 21 30.8
	MHC	ePc	22 21 42.7
	JAS1	iPc	22 21 44.9
	SAO	iPc	22 21 45.6
	MNA	iPc	22 21 51.5
	FRI	ePc	22 21 52.1
USGS 22h12m26.6s 55.6N 161.7E			
h=33km mb=5.2			
Near East Coast of Kamchatka			
Jul 4	WDC	ePc	06 48 12.0
	BKS	eP	06 48 13.6
			AMP(µm) PER(s)
		PZ	0.036 1.1
	MIN	eP	06 48 14.8
	ORV	ePc	06 48 15.1
	MHC	eP	06 48 15.8
	JAS1	eP	06 48 19.5
	FRI	eP	06 48 22
	MNA	eP	06 48 27.7
USGS 06h34m40.7s 2.6S 140.3E			
h=33km mb=5.4 Ms=5.1			
Near N. Coast of West Irian			
Jul 4	MHC	eP	14 05 28.7
	WDC	ePc	14 05 31.2
	ORV	eP	14 05 32.2
	MIN	eP	14 05 33.5
	FRI	eP	14 05 34.9
	MNA	eP	14 05 43.0
USGS 13h53m12.0s 12.9S 166.6E			
h=126km mb=5.4			
Santa Cruz Islands			
Jul 5	FHC	eP	05 34 37.0
	BKS	eP	05 34 39.5
		e	05 35 28.6
		ePP	05 38 20
		eS	05 45 12
		e	05 46 28
		e	05 46 30
		e	05 47 32
		eSS	05 51 24
		eSSS	05 54 40
		eLg	05 58 02
		eLr	06 01 36
			AMP(µm) PER(s)
		PZ	0.087 1.0
		LZ	47 20.
		LNE	33 20.
		LNW	26 20.
	WDC	ePc	05 34 40.2
		e	05 35 11.0
	MHC	eP	05 34 42.1
	SAO	ePc	05 34 42.2
	MIN	ePc	05 34 42.6
	ORV	ePc	05 34 44.6
		e	05 35 14.0
	PRI	eP	05 34 45.7
	FRI	eP	05 34 47.5
	MNA	ePc	05 34 54.5
		e	05 35 12.8
		e	05 35 26.1
BRK Ms=6.8 Distance=87°			
USGS 05h21m48.9s 6.1S 154.4E			
h=33km mb=6.0 Ms=6.5			
Solomon Islands			
Jul 5	SAO	eP	17 05 53.8
	BKS	eP	17 05 54.8
			AMP(µm) PER(s)
		PZ	0.022 0.9
	MHC	eP	17 05 55.3
	PRI	eP	17 05 55.4
	FRI	eP	17 06 00.0
	JAS1	iPc	17 06 01.0
	ORV	eP	17 06 02.0
	WDC	eP	17 06 02.0
	MNA	eP	17 06 10.5
USGS 16h55m03.2s 18.0S 178.6W			
h=608km mb=5.0			
Fiji Islands Region			
Jul 6	FRI	iPd	12 00 44.7
	PRI	ePc	12 00 49.2
	LLA	eP	12 00 53.9
	PRS	ePc	12 00 56.8
	MNA	ePc	12 00 57.0
	JAS1	ePc	12 01 00.2
		iS	12 01 40.4
	SAO	eP	12 01 00.4
	MHC	eP	12 01 06.4
	GCC	ePc	12 01 07.0
	BKS	e(P)	12 01 15.5
	PCC	e	12 01 16.5
	BRK	e	12 01 17.0
	ZSP	e	12 01 20
	ORV	e	12 01 27.3
BRK ML=4.3(4)			
PAS 12h00m12.7s 35.7N 118.1W			
h=8km ML=3.9			
Inyokern area, CA			
Jul 6	FRI	eP	22 14 45.3
		e	22 15 06.8
	PRI	e(P)	22 14 51.1
	LLA	e(P)	22 14 56.0
	MNA	ePd	22 14 58.3
	PRS	ePd	22 14 58.6
	JAS1	eP	22 15 01.8
		e(S)	22 15 39.4
		iSg	22 15 44.2
	SAO	ePd	22 15 01.8
	GCC	eP	22 15 08.0
	MHC	e	22 15 08.8
	BKS	e(P)	22 15 17.5
		eS	22 16 05.0
	ORV	e	22 15 31.7
BRK ML=4.2(5)			
PAS 22h14m14.0s 35.7N 118.1W			
h=7km ML=3.6			
Inyokern area, CA			
Jul 7	MHC	iPd	00 17 11.6
	GCC	iPd	00 17 17.8
		iS	00 17 23.9
	PCC	iPc	00 17 21.6
	SAO	iPd	00 17 21.6
	BKS	eP	00 17 24.8
		eS	00 17 35.8
	BRK	ePd	00 17 24.8
		eS	00 17 35.5
	LLA	e(P)	00 17 26.2
	PRS	iPc	00 17 28.9
	JAS1	eP	00 17 31.7
		eS	00 17 47.6
	FRI	e(P)	00 17 37.7
	ORV	e(P)	00 17 49.1
BRK 00h17m10.0s 37.3N 121.7W			
h=3km ML=3.0(4) Mo=1.7E20(2)			
Halls Valley Sequence			
Jul 7	MHC	iPd	07 25 09.0
	GCC	iPc	07 25 11.45
	SAO	iPc	07 25 14.2
	PCC	ePc	07 25 17.6
	LLA	eP	07 25 20.1
	BKS	ePc	07 25 21.2
		iS	07 25 34.4
	BRK	ePc	07 25 21.3
	PRS	iPc	07 25 21.55
	JAS1	iPd	07 25 27.8
		iS	07 25 44.2
	PRI	ePd	07 25 29.2
	FRI	eP	07 25 32.0
	ORV	e(P)	07 25 45.1
	MIN	e	07 25 57
	WDC	e	07 25 58.5
	MNA	e	07 25 58.8
BRK 07h25m05.2s 37.2N 121.7W			
h=6km ML=3.1(5) Mo=1.3E21(2)			
Halls Valley Sequence			
Jul 7	MHC	iPc	13 13 39.6
		iS	13 13 41.1
	GCC	ePd	13 13 45.6
		eS	13 13 51.9
	PCC	iPc	13 13 48.0
	SAO	iPd	13 13 50.2
	BRK	eP	13 13 50.4
		e(S)	13 14 00.6
	BKS	eP	13 13 50.6
		eS	13 14 00.8
	LLA	eP	13 13 55.4
	PRS	ePc	13 13 57.1
	JAS1	ePc	13 13 59.2
		eS	13 14 14.7
	PRI	e	13 14 05
	FRI	e(P)	13 14 06.0
	ORV	e	13 14 16.2
BRK 13h13m37.6s 37.4N 121.7W			
h=5km ML=2.4(4) Mo=2.7E19(2)			
Halls Valley Sequence			
Jul 7	MHC	iPc	13 13 55.8
	GCC	ePd	13 14 01.8
		eS	13 14 08.0
	PCC	ePc	13 14 04.2
	BRK	eP	13 14 06.6
	BKS	e(P)	13 14 08.0
		eS	13 14 17.5
	LLA	ePc	13 14 11.6
	PRS	eP	13 14 13.3
	JAS1	i(P)	13 14 15.4
		eS	13 14 30.8
	PRI	e(P)	13 14 21.0
	FRI	eP	13 14 22.1
	ORV	eP	13 14 32.4
BRK 13h13m53.8s 37.4N 121.7W			
h=4km ML=2.8(4) Mo=9.7E19(2)			
Halls Valley Sequence			
Jul 7	FRI	ePKP	16 05 59.5
	PRI	ePKP	16 06 00.4
	MNA	ePKP	16 06 00.7
	JAS1	ePKP	16 06 02.0
	MHC	ePKP	16 06 02.7
	BRK	ePKP	16 06 04
	ORV	ePKP	16 06 05.3
	MIN	ePKP	16 06 06.7
	WDC	ePKP	16 06 06.7
USGS 15h47m18.7s 56.1S 27.4W			
h=98km mb=5.5			
South Sandwich Islands Region			
Jul 7	MHC	iPd	18 02 15.0
		iS	18 02 17.9
	GCC	ePd	18 02 18.4
	SAO	iPd	18 02 20.9
	PCC	ePc	18 02 24.3
	LLA	eP	18 02 26.3
	BRK	ePc	18 02 27.7
		eS	18 02 39.2
	BKS	eP	18 02 28.1
		eS	18 02 40.5
	PRS	eP	18 02 28.4
	JAS1	iPd	18 02 33.7
	PRI	eP	18 02 35.4
	FRI	eP	18 02 38.6
	ORV	e	18 02 51.5
	MNA	e	18 03 06.6
BRK 18h02m11.6s 37.2N 121.6W			
h=5km ML=2.8(4) Mo=1.3E20(2)			
Halls Valley Sequence			
Jul 8	MHC	iPd	06 56 32.5
	SAO	iPc	06 56 40.2
	BKS	iPc	06 56 46.4
		eS	06 56 57.4
	JAS1	ePc	06 56 51.7
		iS	06 57 07.2
	MNA	e	06 57 20.5
	PRI	e(P)	06 57 54.6
BRK 06h56m30.2s 37.2N 121.6W			
h=1km ML=3.1(4) Mo=3.7E20(2)			
Halls Valley Sequence			
Jul 8	MHC	iPc	12 21 27.0
	BKS	eP	12 21 37.1
		eS	12 21 47.1
	SAO	iPd	12 21 37.5
	JAS1	iPc	12 21 46.3
		iS	12 22 02.0
	PRI	e(P)	12 21 51.4
	MNA	e	12 22 19.6
BRK 12h21m44.5s 37.4N 121.7W			
h=6km ML=3.1(4) Mo=5.9E20(2)			
Halls Valley Sequence			
Jul 8	WDC	ePc	14 43 08.8
		ipP	14 43 23.2
		isP	14 43 31.4
		e	14 44 06.3
	MHC	eP	14 43 16.8
		ipP	14 43 30.3
		e(sP)	14 43 46.7
	SAO	e(P)	14 43 17.4
		epP	14 43 30.8
	BKS	e	14 43 17.5
		e(sP)	14 43 42.3
		e	14 43 50.1
		e	14 44 23
		eS	14 53 31.8
		esS	14 54 12.3
		e	14 58 32.4
		eG	14 59 43
			AMP(µm) PER(s)
		LZ	60 20.
		LN	20.

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DATE	STA	PHASE	TIME (UTC)
		LE	1.6 20.
	JAS1	ePc	14 43 20.7
		ipP	14 43 33.9
		esP	14 43 43
	PRI	ePc	14 43 21.5
		ipP	14 43 35.7
		esP	14 43 44
	MNA	eP	14 43 29.0
		ipP	14 43 42.3

USGS 14h30m48.8s 13.3N 145.9E
h=49km ab=5.7 Ms=5.6
Mariana Islands

DATE	STA	PHASE	TIME (UTC)
Jul 8	MHC	iPc	22 06 34.1
	GCC	iPd	22 06 40.2
	SAO	iPc	22 06 42.5
	PCC	iPc	22 06 45.6
		iS	22 06 56.7
	LLA	iPc	22 06 47.7
	BRK	iPd	22 06 47.9
		iS	22 07 00.8
	BKS	eP	22 06 48.0
		eS	22 07 01.5
	PRS	iPd	22 06 50.4
	JAS1	iPd	22 06 52.9
		iS	22 07 09.1
	PRI	e(P)	22 06 58.5
	FRI	eP	22 06 58.7
	ORV	e(P)	22 07 11.5

BRK 22h06m32.0s 37.3N 121.6W
h=1km ML=2.8(4) Mo=1.2E20(2)
Halls Valley Sequence

Jul 9	PRI	e	16 47 42.5
	JAS1	eP	16 47 52.5
	ORV	eP	16 48 07.7
	WDC	eP	16 48 15.5
	BKS	e	16 54 46
		eLr	17 01 13
		AMP(µa)	PER(s)
		LZ 2.5	20.
		LN 2.5	20.
		LE 1.1	20.

Jul 9	MHC	e	18 39 21.0
	WDC	eP	18 39 22.7
	ORV	eP	18 39 24.5
	JAS1	eP	18 39 25.5
	MIN	eP	18 39 26.4
	MNA	eP	18 39 34.7

USGS 18h28m07.7s 12.8S 169.5E
h=669km ab=4.8
Santa Cruz Islands Region

Jul 9	WDC	ePKP	23 36 56.7
		i	23 39 44.1
		ePKKP	23 47 03.0
	ORV	ePKP	23 36 58.6
		i	23 39 46.1
		ePKKP	23 47 01.5
	MIN	ePKP	23 37 00.3
		e	23 39 45.0
		ePKKP	23 47 01.2
	JAS1	ePKP	23 37 02.1
		ePKKP	23 46 51.8
		eSKKP	23 49 51.2
		eSKKP2	23 50 34.3
	FRI	ahce	23 37 02.3
		ePKP	23 37 03.3
		e	23 39 48.3
		i	23 39 51.1
	BKS	e(PKP)	23 37 02.7
		ePP	23 38 42.0

		e	23 39 18.5
		ePPP	23 40 26.2
		i	23 43 12.5
		e	23 44 42
		e	23 46 48.6
		e	23 47 03.5
		e	23 47 38.2
		e	23 47 46.0
		e	23 50 20.5
		eG	23 56 33
	MNA	ePkP	23 37 04.8
		ePKKP	23 46 50.5

USGS 23h19m03.5s 5.8S 111.3E
h=534km ab=5.8
Java Sea

Jul 10	ORV	eP	04 29 30.0
	BKS	e(P)	04 29 42.0
		AMP(µa)	PER(s)
		PZ 0.061	1.0
	JAS1	eP	04 29 54.0
	FRI	e	04 30 08.6

USGS 04h28m03.8s 43.5N 126.7W
h=10km ab=3.9
Off the Oregon Coast

Jul 10	PRI	e	06 54 43.8
	MNA	e	06 54 54.5
	JAS1	eP	06 54 56.2
	ORV	eP	06 55 10.3
	WDC	eP	06 55 19.7

USGS 06h46m42.6s 4.5S 105.7W
h=10km ab=4.6
Northern Easter Is. Cordillera

Jul 10	BKS	eP	18 25 09.6
		AMP(µa)	PER(s)
		PZ 0.051	0.9
		LZ 1.8	20.
		LN 0.0	20.
		LE 1.1	20.
	MHC	eP	18 25 11.8
	WDC	e	18 25 12.1
	ORV	eP	18 25 12.3
		e	18 25 27.4
	PRI	eP	18 25 14.5
	FRI	eP	18 25 18.3
	MNA	ePc	18 25 24.6
		e	18 25 39.7

USGS 18h12m20.3s 6.3S 154.8E
h=48km ab=5.4 Ms=5.5
Solomon Islands

Jul 10	MHC	iPd	23 01 17.7
	GCC	ePc	23 01 23.1
	PCC	iPc	23 01 27.7
	BKS	eP	23 01 30.8
		eS	23 01 42.9
	BRK	iPc	23 01 30.9
	LLA	iPd	23 01 31.8
	ZSP	ePc	23 01 32.2
		eS	23 01 45.8
	PRS	ePc	23 01 33.4
	JAS1	iPd	23 01 37.1
		iS	23 01 53.1
	FRI	ePd	23 01 42.9
		eS	23 02 02.3
	ORV	eP	23 01 55.5

BRK 23h01m15.8s 37.3N 121.7W
h=5km ML=2.9(4) Mo=1.5E20(2)
Halls Valley Sequence

Jul 11	FHC	e	02 53 32.1
	WDC	iPc	02 53 36.5
	MIN	eP	02 53 39.5
	ORV	iPc	02 53 41.0
	BKS	e	02 53 41.7
		e	02 53 56.8
		eS	03 02 46.8
	MHC	eP	02 53 43.8
	JAS1	iPc	02 53 47.1
		i	02 53 55.8
	FRI	eP	02 53 50.5
		i	02 54 07.0
	MNA	eP	02 53 54.8

USGS 02h40m44.1s 11.5N 138.9E
h=45km ab=5.5 Ms=5.2
West Caroline Islands

Jul 11	LLA	eP	03 31 34.4
	PRI	iPd	03 31 34.8
	PRS	eP	03 31 39.9
		iS	03 31 47.8
	FRI	iPd	03 31 43.9
	MHC	eP	03 31 48.8
	GCC	eP	03 31 49.2
	JAS1	iPc	03 31 53.2
	PCC	e	03 31 56.4
	BRK	e	03 31 58.5
	BKS	ePn	03 31 58.7
		ePg	03 32 04.9
		eSn	03 32 22.3
		eSg	03 32 33.6
	ZSP	e	03 32 00.1
	MNA	e	03 32 17.1
	ORV	e	03 32 17.4

BRK 03h31m28.2s 36.4N 120.7W
h=5kmR ML=3.2(4)
Ciervo Hills, 45 km NW of Coalinga, CA

Jul 11	PRI	eP	06 34 36.3
	MHC	eP	06 34 36.5
	BKS	eP	06 34 36.7
		e	06 35 03.3
		AMP(µa)	PER(s)
		PZ 0.091	1.0
	JAS1	eP	06 34 40.7
	FRI	e	06 34 41.2
	ORV	eP	06 34 43.0
	WDC	eP	06 34 43.3
	MIN	eP	06 34 45.3
	MNA	e	06 34 51.0

USGS 06h23m20.4s 21.4S 178.2W
h=472km ab=5.2
Fiji Islands Region

Jul 12	BKS	eP	03 15 10.2
		ipP	03 15 21.9
		AMP(µa)	PER(s)
		PZ 0.097	1.3
	MHC	eP	03 15 12.1
		epP	03 15 23.9
	WDC	eP	03 15 12.6
		epP	03 15 24.8
	PRI	eP	03 15 14.5
	ORV	eP	03 15 15.0
	MIN	eP	03 15 15.5
	JAS1	eP	03 15 16.8
		ipP	03 15 28.8
	FRI	eP	03 15 18.6
		epP	03 15 30.2
	MNA	eP	03 15 26.3

USGS 03h02m32.1s 10.5S 161.4E
h=37km ab=5.5 Ms=5.1
Solomon Islands

Jul 12	MNA	iPc	14 00 36.3
	FRI	ePc	14 00 47.7
	JAS1	iPc	14 00 57.0
	PRI	eP	14 01 02.4
	ORV	eP	14 01 15.8
	BKS	e(Pn)	14 01 19.4
		e(Sn)	14 01 59.9

BRK ML=4.1(4)
USGS 13h59m59.9s 37.2N 116.0W
h=5km ab=3.6
Underground Nuclear Explosion, NTS

Jul 13	MHC	iPd	12 08 24.7
	BKS	iPc	12 08 27.0
		eS	12 08 34.6
	BRK	iPc	12 08 27.2
	PCC	iPc	12 08 27.5
		iS	12 08 34.8
	ISP	iPc	12 08 28.4
		iS	12 08 35.6
	GCC	iPd	12 08 30.1
	JAS1	iPc	12 08 38.8
	LLA	iPc	12 08 40.3
	PRS	iPc	12 08 42.2
	FRI	eP	12 08 48.6
	PRI	eP	12 08 50.6
	ORV	eP	12 08 52.7
	MIN	e	12 09 06.0
	MNA	e	12 09 13.3

BRK 12h08m18.5s 37.6N 121.8W
h=4km ML=3.3(5) Mo=1.4E21(2)
Livermore, CA

Jul 13	WDC	eP	14 54 15.0
	MIN	eP	14 54 19.1
	ORV	eP	14 54 22.4
	JAS1	eP	14 54 33.9
	MNA	ePc	14 54 40.2

USGS 14h44m05.7s 45.9N 143.4E
h=305km ab=4.2
Hokkaido, Japan Region

Jul 14	FHC	eP	01 22 02.7
	WDC	iPc	01 22 03.7
	MIN	iPc	01 22 05.7
	ORV	iPc	01 22 09.1
	BKS	iPd	01 22 17.5
		AMP(µa)	PER(s)
		PZ 0.29	0.9
	MNA	iPc	01 22 18.0
	JAS1	iPc	01 22 18.2
	MHC	ePc	01 22 20.2
	FRI	iPc	01 22 22.9

USGS 01h09m10.5s 49.9N 79.0E
h=0km ab=6.2 Ms=4.6
Eastern Kazakh, SSR

Jul 14	MHC	ePc	19 01 54.0
		epP	19 02 10.6
	BRK	e(P)	19 01 54.5
	FRI	eP	19 01 59.0
		epP	19 02 14
	JAS1	ePc	19 01 59.8
		epP	19 02 15.7
	WDC	eP	19 02 02.9
	MNA	ePc	19 02 07.8
		epP	19 02 23.8
	BKS	i	19 02 28

USGS 18h49m23.0s 30.0S 177.6W
h=56km ab=5.1
Kermadec Islands

Jul 14	FRI	eP	21 09 21.3
	MNA	iPd	21 09 24.4
	JAS1	iPd	21 09 30.5
	MHC	eP	21 09 35.0
	BRK	eP	21 09 41.4
	ORV	ePd	21 09 47.6
	FHC	eP	21 10 07.4
	BKS	e	21 15 16
		e	21 17 00
		e	21 19 14

USGS 21h03m50.3s 17.5N 99.6W
h=65km ab=5.2
Guerrero, Mexico

Jul 15	FHC	eP	06 12 57
	WDC	eP	06 13 04.8
	ORV	eP	06 13 14.0
	MHC	eP	06 13 25.0
	JAS1	ePc	06 13 28.0
	MNA	ePc	06 13 35.9
	FRI	eP	06 13 36

USGS 06h04m48.5s 52.5N 171.8E
h=33km ab=5.1 Ms=4.3
Near Islands, Aleutian Islands

Jul 15	MNA	ePc	11 40 56.6
	JAS1	e	11 41 04.7
	ORV	ePc	11 41 16.7
	WDC	e	11 41 24.7
	BKS	e	11 57 06

USGS 11h32m16.2s 1.3N 85.2W
h=10km ab=5.0 Ms=5.4
Off Coast of Ecuador

Jul 16	FHC	e	00 16 51
	WDC	eP	00 16 55.7
	MIN	e	00 17 02.5
	ORV	eP	00 17 06.2
	JAS1	eP	00 17 21.4
	MNA	eP	00 17 32.0

USGS 00h10m20.8s 52.4N 168.2W
h=33km ab=5.1 Ms=4.0
Fox Islands, Aleutian Islands

Jul 16	BKS	iPc	05 31 16.5
		AMP(µa)	PER(s)
		PZ 0.047	0.8
	MHC	ePd	05 31 16.8
	JAS1	ePd	05 31 22.2
	ORV	eP	05 31 23.3
	WDC	ePd	05 31 23.7
	MIN	eP	05 31 25.5
	MNA	eP	05 31 31.2

USGS 05h20m13.5s 20.7S 178.7W
h=612km ab=4.7
Fiji Islands Region

Jul 16	FRI	iPc	10 14 38.6
		iS	10 14 49.7
	MNA	iPc	10 14 41.3
		e(S)	10 14 55.6
	JAS1	iPc	10 14 44.0
		iS	10 14 59.3
	LLA	ePc	10 14 55.8
	MHC	eP	10 15 00.1
	PRS	ePc	10 15 02.2
	GCC	ePc	10 15 04.1
	BRK	e(P)	10 15 06.1
	BKS	iPn	10 15 06.5
		iPg	10 15 08.1
		iSn	10 15 39.1
		iSg	10 15 41.7

		iSg	10 15 46.8
	ZSP	eP	10 15 06.8
		e	10 15 41.4
	PCC	iPc	10 15 07.3
	ORV	e	10 15 08.8
	MIN	e	10 15 21.6
	WDC	e	10 15 26

BRK 10h14m22.4s 37.6N 119.0W
h=7km ML=3.7(5)
Mammoth Lakes area, CA

Jul 16	WDC	eP	15 29 43.0
	MIN	eP	15 29 47.0
	ORV	eP	15 29 50.8
	JAS1	eP	15 30 03.1
	MNA	eP	15 30 07.0

USGS 15h20m04.7s 49.2N 155.0E
h=52km ab=5.1
Kuril Islands

Jul 16	JAS1	eP	17 12 21.7
	WDC	eP	17 12 24.5
	ORV	eP	17 12 25.6
	MIN	e	17 12 26.8
	MNA	e	17 12 28.9

USGS 17h00m32.9s 16.9S 176.9W
h=33km ab=5.0 Ms=5.1
Fiji Islands Region

Jul 16	JAS1	eP	17 23 09.4
	ORV	eP	17 23 10.7
	WDC	eP	17 23 10.7
	MNA	eP	17 23 19.4
	BKS	e	17 38 00
		e	17 42 30
		AMP(µa)	PER(s)
		LZ 1.6	20.

USGS 17h11m21.5s 17.4S 176.9W
h=33km ab=4.8
Fiji Islands Region

Jul 16	BKS	i c	18 29 14.9
	ORV	eP	18 29 15.2
	JAS1	eP	18 29 15.5
	WDC	eP	18 29 16.0
		e	18 33 09.6

USGS 18h16m30.5s 18.5S 168.2E
h=24km ab=5.2
Vanuatu Islands

Jul 16	MHC	iPd	18 50 32.3
	GCC	iPc	18 50 37.7
	PCC	iPc	18 50 42.3
		iS	18 50 53.5
	BRK	iPc	18 50 45.3
		iS	18 50 56.8
	BKS	iPc	18 50 45.7
		i	18 50 49.3
		eS	18 50 57.3
	LLA	eP	18 50 46.0
	ISP	iPc	18 50 46.9
	PRS	eP	18 50 47.7
	JAS1	iPd	18 50 51.8
	FRI	eP	18 50 57.2
	ORV	e	18 51 09.6

BRK 18h50m30.2s 37.3N 121.7W
h=6km ML=2.9(4) Mo=1.2E20(2)
Halls Valley Sequence

Jul 17	MHC	e	01 37 25.7
	FRI	eP	01 37 30
	JAS1	eP	01 37 31
	ORV	eP	01 37 33.1

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)
	WDC	eP	01 37 33.9
	MNA	eP	01 37 41.5

USGS 01h25m49.7s 19.5S 173.8W
h=59km mb=5.2
Tonga Islands

Jul 17	MNA	e	14 32 56.6
		ePKKP	14 42 59.7
	FRI	ePKP	14 32 56.6
	PRI	ePKP	14 32 56.7
	JAS1	iPKPc	14 32 58.6
		eSKP	14 36 20.6
		ePKKP	14 42 56.0
	MHC	ePKP	14 32 59.4
		eSKP	14 36 21.2
	BRK	iPKPc	14 33 00.3
	ORV	ePKP	14 33 01.5
		e	14 34 56
	MIN	ePKP	14 33 02.7
		e	14 36 24.7
	WDC	ePKP	14 33 03.4
		e	14 36 25.6

USGS 14h14m17.3s 56.4S 27.4W
h=129km mb=5.9
South Sandwich Islands Region

Jul 18	FHC	iPc	19 48 11.0
	WDC	iPd	19 48 17.4
	MIN	iPd	19 48 26.9
	ORV	iPc	19 48 34.6
	ZSP	e	19 48 54.6
	BRK	e	19 48 55.1
	PCC	ePd	19 48 57.6
	JAS1	iPc	19 49 01.0
	MHC	ePd	19 49 02.8
	GCC	e	19 49 04.7
	MNA	e	19 49 44

BRK 19h47m58.2s 41.4N 123.5W
h=13km ML=4.0(5) Mo=3.1E22(2)
80 km NE of Eureka, CA

Jul 19	JAS1	eP	04 43 47.6
	ORV	eP	04 43 48.3
	WDC	eP	04 43 48.7
	MNA	eP	04 43 57.5

USGS 04h32m48.7s 17.8S 178.6W
h=589km mb=4.7
Fiji Islands Region

Jul 19	ORV	eP	07 55 41.3
	JAS1	eP	07 56 05.3

USGS 07h54m12.3s 43.6N 127.0W
h=10km mb=3.8
Off Coast of Oregon

Jul 19	BKS	ePc	16 59 31.2	
		e	16 59 49.9	
			AMP(μm)	PER(s)
		PZ	0.056	0.8
	MHC	e	16 59 32.9	
	WDC	ePc	16 59 33.7	
	ORV	eP	16 59 35.5	
	JAS1	ePc	16 59 37.7	
		i	17 00 00.5	
	FRI	eP	16 59 39.0	
		i	17 00 00.3	
	MIN	e	16 59 39.2	
	MNA	eP	16 59 47.0	
		e	17 00 06.3	

USGS 16h46m58.8s 10.3S 161.4E
h=83km mb=5.4
Solomon Island

DATE	STA	PHASE	TIME (UTC)
Jul 19	WDC	eP	23 37 43.1
	MIN	eP	23 37 46.0
	ORV	eP	23 37 49.7
	JAS1	eP	23 37 56.9
		e	23 41 20.0
	MHC	e	23 37 58.5
	FRI	eP	23 38 01.2

USGS 23h25m12.8s 28.1N 129.5E
h=47km mb=6.1 Ms=5.6
Ryukyu Islands

Jul 20	BKS	iP	14 06 46.1	
			AMP(μm)	PER(s)
		PZ	0.10	1.0
	MHC	eP	14 06 46.4	
	JAS1	iPd	14 06 52.2	
	FRI	eP	14 06 52.8	
	ORV	iPd	14 06 53.5	
	WDC	iPd	14 06 53.6	
	MIN	eP	14 06 55.9	

USGS 13h55m40.1s 20.9S 178.4W
h=574km mb=5.2
Fiji Islands Region

Jul 21	MHC	e(P)	00 26 41.6	
	FRI	e(P)	00 26 46.9	
	JAS1	e(P)	00 26 48.0	
	ORV	e(P)	00 26 49.7	
	WDC	e(P)	00 26 50.3	
	MIN	e	00 26 52	
	MNA	e(P)	00 26 58.5	
	BKS	e	00 36 14	
		e	00 45 06	
			AMP(μm)	PER(s)
		LZ	1.8	20.
		LN	0.89	20.
		LE	0.71	20.

USGS 00h15m22.1s 16.1S 172.5W
h=24km mb=5.1 Ms=5.0
Samoa Islands Region

Jul 21	BRK	eP	02 29 12.0
	ORV	eP	02 29 13.5
	JAS1	eP	02 29 18.2
	FRI	eP	02 29 20.5
	MNA	eP	02 29 26.8

USGS 02h16m19.2s 5.2S 151.4E
h=99km mb=5.2
New Britain Region

Jul 21	FRI	e(P)	02 57 33.7
	JAS1	ePc	02 57 34.3
	ORV	eP	02 57 36.0
	WDC	ePc	02 57 37.0
	MIN	eP	02 57 38.3
	MNA	eP	02 57 44.7

USGS 02h46m07.1s 16.5S 172.5W
h=33km mb=5.0
Samoa Islands Region

Jul 21	WDC	iPc	03 12 52.0
	MIN	ePc	03 12 53.7
	ORV	ePc	03 12 57.0
	JAS1	eP	03 13 04.1
	FRI	e	03 13 10.0
	BKS	e	03 15 50

USGS 02h59m57.1s 51.4N 53.2E
h=0km mb=5.4
European U.S.S.R.

Jul 21	WDC	ePc	03 17 51.8
	MIN	ePc	03 17 53.3
	ORV	ePc	03 17 56.6
	JAS1	eP	03 18 04.5

USGS 03h04m57.0s 51.4N 53.3E
h=0km mb=5.3
European U.S.S.R.

Jul 21	WDC	iPc	03 22 52.2
	MIN	ePc	03 22 53.6
	ORV	eP	03 22 57.0
	JAS1	eP	03 23 05.0
	FRI	e	03 23 10

USGS 03h09m57.0s 51.4N 53.3E
h=0km mb=5.3
European U.S.S.R.

Jul 23	WDC	ePc	00 09 59.7
		epP	00 10 14.7
	MIN	e(P)	00 10 04.2
	ORV	eP	00 10 08.1
		epP	00 10 23.2
	MHC	e	00 10 13
	JAS1	eP	00 10 20.8
		epP	00 10 36.2
	FRI	eP	00 10 27.5

USGS 00h00m35.3s 50.8N 157.0E
h=55km mb=5.1
Kuril Islands

Jul 23	BRK	eP	04 44 09.7
	MHC	eP	04 44 09.9
	FRI	eP	04 44 14.0
	JAS1	ePc	04 44 14.9
	ORV	eP	04 44 17.2
	WDC	ePc	04 44 18.2
	MIN	eP	04 44 19.4

USGS 04h31m40.0s 29.6S 177.8W
h=59km mb=5.5
Kermadec Islands

Jul 23	BKS	eP	05 10 33.0	
			AMP(μm)	PER(s)
		PZ	0.090	1.3
	MHC	ePd	05 10 33.0	
	FRI	ePd	05 10 36.8	
	JAS1	eP	05 10 37.8	
	FHC	eP	05 10 38.1	
	ORV	ePd	05 10 39.8	
	WDC	ePd	05 10 40.6	
	MIN	ePd	05 10 41.8	

USGS 04h58m26.0s 30.4S 179.6W
h=341km mb=5.1
Kermadec Islands Region

Jul 23	FHC	eP	06 18 50.0	
	BKS	eP	06 18 54.1	
		e	06 36 00	
			AMP(μm)	PER(s)
		PZ	0.15	1.0
		LZ	2.3	20.
		LN	0.18	20.
		LE	2.0	20.
	WDC	iPc	06 18 54.6	
	MHC	ePc	06 18 55.9	
	ORV	iPc	06 18 57.0	
	MIN	eP	06 18 57.2	
	JAS1	ePc	06 19 00.4	
	FRI	ePc	06 19 02.4	

USGS 06h06m05.6s 6.6S 155.0E
h=55km mb=5.9
Solomon Islands

Jul 24	FRI	eP	05 01 42.2
	MNA	ePc	05 01 42.4
	JAS1	ePc	05 01 46.9
	MHC	ePc	05 01 49.0
	BKS	eP	05 01 52.6
		e	05 11 55
			AMP(μm) PER(s)
		LZ	1.3 20.
		LN	0.71 20.
		LE	0.89 20.
	ORV	ePc	05 01 56.5
	WDC	ePc	05 02 01.6
	FHC	ePc	05 02 08.5

USGS 04h49m45.5s 25.7S 70.5W
h=34km mb=5.6 Ms=5.3
Near Coast of Northern Chile

Jul 24	MNA	iPd	12 00 04.9	
	JAS1	iPd	12 00 11.4	
	MHC	iPd	12 00 15.0	
	BKS	iP	12 00 19.5	
			AMP(μm)	PER(s)
		PZ	0.083	1.0
	ORV	iPd	12 00 23.0	
	WDC	iPd	12 00 28.7	
	FHC	ePd	12 00 37.8	

USGS 11h49m58.4s 8.4S 74.7W
h=133km mb=5.3
Peru-Brazil Border Region

Jul 25	MNA	iPc	15 30 32.4
	JAS1	iPc	15 30 32.5
		i	15 31 00
	FRI	iPc	15 30 44.3
	LLA	eP	15 30 58.2
	PRS	ePc	15 31 04.1
	MHC	ePc	15 31 06.0
		i	15 31 16.3
	GCC	ePc	15 31 08.7
	ORV	iPc	15 31 11.2
	BKS	eP	15 31 12.4
		e	15 31 22.0
		eS	15 31 24.9
	BRK	eP	15 31 12.5
	ZSP	eP	15 31 12.8
		i	15 31 23.9
	MIN	iPc	15 31 18.7
	WDC	iPc	15 31 28.2
		i	15 31 46.9
	FHC	e(P)	15 31 43.2

BRK ML=5.3(8)
USGS 15h30m00.0s 37.3N 116.4W
h=0km mb=5.3
Underground Nuclear Explosion, NTS (Kappeli)

Jul 25	MHC	eP	23 33 22.3
	FHC	eP	23 33 26.5
	JAS1	ePc	23 33 27.4
	ORV	eP	23 33 29.0
	WDC	ePc	23 33 29.2
	MNA	eP	23 33 36.2

USGS 23h21m54.0s 24.0S 179.8W
h=507km mb=5.1
South of Fiji Islands

Jul 26	BRK	eP	01 34 15.0
	MHC	eP	01 34 16.0
	FRI	eP	01 34 21.5
	JAS1	ePc	01 34 21.7
	ORV	eP	01 34 22.7
	WDC	ePc	01 34 22.7
	MIN	e(P)	01 34 24.7
	MNA	eP	01 34 31.9

USGS 01h23m20.3s 15.7S 177.4W
h=412km mb=4.6

DATE	STA	PHASE	TIME (UTC)
Fiji Islands Region			
Jul 26	FHC	eP	05 03 35.6
	WDC	eP	05 03 41.0
	MIN	eP	05 03 44.6
	ORV	eP	05 03 47.6
	BRK	eP	05 03 50.6
	JAS1	eP	05 03 57.5
	FRI	eP	05 04 03.2
	MNA	eP	05 04 04.5

USGS 04h52m18.9s 36.2N 140.0E
h=67km mb=5.0
Honshu, Japan

Jul 26	BKS	eP	18 48 38.5	
		eLr	19 16 15	
			AMP(μm)	PER(s)
		LZ	0.71	20.
		LN	0.25	20.
		LE	0.46	20.
	WDC	ePc	18 48 39.2	
		epP	18 48 54.6	
	ORV	ePc	18 48 42.1	
		epP	18 48 57.1	
	JAS1	iPc	18 48 45.3	
		epP	18 49 00.6	
	FRI	ePc	18 48 47.3	
		epP	18 49 02.5	
	MNA	iPc	18 48 54.4	
		ipP	18 49 09.6	

USGS 18h35m50.4s 6.3S 154.8E
h=52km mb=5.5
Solomon Islands

Jul 27	FHC	eP	13 00 06.4
	WDC	iPd	13 00 13.1
	MIN	iPd	13 00 17.8
	ORV	iPd	13 00 21.8
	BRK	e(P)	13 00 27.4
	MHC	eP	13 00 33.2
	JAS1	iPd	13 00 35.6
	FRI	ePd	13 00 42.6
	MNA	iPd	13 00 42.7
	PRI	eP	13 00 43.7
	BKS	e	13 08 00
		e	13 14 10
		eLr	13 16 10
			AMP(μm)	PER(s)
		LZ	2.5	20.
		LN	1.1	20.
		LE	1.8	20.

USGS 12h51m10.5s 53.0N 161.3E
h=33km mb=5.7 Ms=5.3
Off East Coast of Kamchatka

Jul 27	FHC	eP	16 05 05.2
	WDC	iPd	16 05 13.5
		ePcP	16 07 24.8
	MIN	ePd	16 05 19.0
		ePcP	16 07 26.7
	ORV	iPd	16 05 22.8
		ePcP	16 07 27.9
	BKS	iPd	16 05 27.5
		i	16 05 32
		i	16 05 42
		ePcP	16 07 14
		iS	16 11 36
		eScS	16 15 09
		e	16 17 47
		e	16 19 26
		e	16 23 34
			AMP(μm) PER(s)
		PZ	0.19 1.0

DATE	STA	PHASE	TIME (UTC)
		LZ	1.4 20.
		LN	2.7 20.
		LE	2.1 20.
	MHC	ePd	16 05 33.2
		ePcP	16 07 32.5
	JAS1	iPd	16 05 37.1
		ePcP	16 07 33.9
	PRI	eP	16 05 44.8
	FRI	ePd	16 05 44.8
		ePcP	16 07 37.3
	MNA	iPd	16 05 46.4
		ePcP	16 07 38.7

BRK Ms=5.2 Distance=40°
USGS 15h57m51.3s 50.3N 176.9W
h=33km mb=5.8 Ms=5.0
Andreanof Islands, Aleutian Islands

Jul 27	ZSP	ePd	17 29 20.6
		eS	17 29 34.4
	BKS	iPd	17 29 21.5
		iS	17 29 37.8
	BRK	iPc	17 29 21.9
		eS	17 29 35.5
	ORV	ePc	17 29 24.6
	PCC	eP	17 29 28.2
	MHC	eP	17 29 31.5
	GCC	ePc	17 29 32.8
	MIN	eP	17 29 33.5
	JAS1	ePc	17 29 37.0
	WDC	e	17 29 37.0
	PRS	e	17 29 44.2
	LLA	e	17 29 44.3
	FRI	e	17 29 50.7

BRK ML=3.0(4)
The Geysers, 25 km S of Clear Lake, CA

Jul 28	FHC	iPc	06 30 18.5
		eS	06 30 27.7
	WDC	iPd	06 30 34.0
	MIN	eP	06 30 43.8
	ORV	ePc	06 30 47.6
		e(S)	06 31 19.4
	JAS1	eP	06 31 11.7
	SAO	eP	06 31 13.2

BRK 06h30m06.4s 40.6N 124.7W
h=11km ML=3.3(2) Mo=3.6E20(2)
Off Coast 60 km SW of Eureka, CA

Jul 28	SAO	eP	19 48 32.2
	PRI	eP	19 48 33.8
	BKS	iPd	19 48 34.1
		ipP	19 49 08
			AMP(μm) PER(s)
		PZ	0.065 1.0
	MHC	ePd	19 48 34.3
		epP	19 49 06.0
	FHC	eP	19 48 38.3
	FRI	ePd	19 48 39.7
		epP	19 49 11
	JAS1	ePd	19 48 40.2
		ipP	19 49 11.1
		esP	19 49 25.4
	ORV	ePd	19 48 41.9
		epP	19 49 13.5
	WDC	ePd	19 48 42.3
		epP	19 49 14.1
	MIN	eP	19 48 44.8
	MNA	ePd	19 48 50.6
		epP	19 49 22.1
		esP	19 49 35.1

USGS 19h37m15.7s 17.1S 173.0W
h=132km mb=5.4

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DATE	STA	PHASE	TIME (UTC)
Tonga Islands			
Jul 29	MHC	iPd	20 59 05.0
	GCC	ePd	20 59 10.3
		iS	20 59 16.2
	BRK	iPc	20 59 17.9
	BKS	eP	20 59 18.3
		eS	20 59 30.8
	LLA	ePc	20 59 18.7
	ZSP	iP	20 59 19.0
		iS	20 59 31.8
	PRS	ePd	20 59 20.5
	JAS1	ePc	20 59 24.2
		eS	20 59 40
	PRI	eP	20 59 27
	FRI	eP	20 59 29.9
	ORV	ePd	20 59 41.1
BRK 20h59m02.9s 37.3N 121.7W			
h=6km ML=3.2(4) Mo=3.1E20(2)			
Halls Valley Sequence			
Jul 29	MHC	iPd	21 05 20.2
	GCC	iPd	21 05 25.6
		iS	21 05 31.5
	BRK	iPc	21 05 33.0
	BKS	eP	21 05 33.2
		eS	21 05 41.0
	LLA	ePc	21 05 34.0
	ZSP	ePd	21 05 34.2
		iS	21 05 47.1
	PRS	ePd	21 05 35.8
	JAS1	iPc	21 05 39.4
		iS	21 05 55.5
	PRI	eP	21 05 42.3
	FRI	iPc	21 05 45.2
	ORV	ePc	21 05 55.7
	WDC	e	21 06 10.1
BRK 21h05m18.2s 37.3N 121.7W			
h=7km ML=3.5(4) Mo=8.7E20(2)			
Halls Valley Sequence			
Jul 30	MHC	iPd	04 31 03.5
	GCC	iPd	04 31 09.3
		iS	04 31 15.3
	SAO	iPd	04 31 12.8
	BKS	eP	04 31 16.4
		eS	04 31 29
	BRK	iPc	04 31 16.4
		e	04 31 27.4
	ZSP	eP	04 31 17.8
		e(S)	04 31 30.5
	LLA	eP	04 31 18.0
	PRS	eP	04 31 19.0
	JAS1	ePc	04 31 23.0
		iS	04 31 38.3
	FRI	ePc	04 31 29.1
	PRI	e	04 31 32.2
	ORV	eP	04 31 41.4
BRK 04h31m01.7s 37.3N 121.7W			
h=7km ML=2.9(4) Mo=1.4E20(2)			
Halls Valley Sequence			
Jul 30	MNA	eP	04 36 25.5
	JAS1	eP	04 36 33.9
	ORV	eP	04 36 45.9
USGS 04h27m25.1s 2.3N 79.0W			
h=19km mb=4.9 Ms=3.9			
Near West Coast of Colombia			
Jul 30	WDC	eP	20 03 26.9
	JAS1	eP	20 03 28.2
	ORV	e	20 03 28.8

DATE	STA	PHASE	TIME (UTC)
Jul 30	FRI	eP	21 39 49.8
	MNA	ePd	21 39 50.1
	PRI	eP	21 39 53.0
	JAS1	eP	21 39 59.5
	MHC	ePd	21 40 04.2
	ORV	eP	21 40 13.7
	BKS	e	21 40 25.1
		e(PcP)	21 42 45.9
		eS	21 45 59
		eScS	21 50 25
		eLq	21 53 37.3
		e	21 54 52.1
			AMP(µa) PER(s)
		LZ	2.7 20.
		LN	4.7 20.
		LE	2.5 20.
	FHC	e(P)	21 40 32.5
BRK Ms=5.3 Distance=37°			
USGS 21h32m58.0s 13.3N 90.2W			
h=65km mb=5.0			
Near Coast of Guatemala			
Jul 30	FRI	e(P)	21 42 06.7
	JAS1	ePc	21 42 07.0
	ORV	eP	21 42 07.2
	WDC	eP	21 42 07.3
Jul 30	ZSP	eP	22 21 25.7
		eS	22 21 40.6
	BKS	iPd	22 21 26.5
		iS	22 21 42.0
	BRK	eP	22 21 26.5
		eS	22 21 41.5
	ORV	eP	22 21 29.5
	PCC	eP	22 21 31.0
	MHC	ePc	22 21 37.2
	GCC	e(P)	22 21 38.0
	WDC	e	22 21 40.5
	JAS1	ePc	22 21 42.0
		e(S)	22 22 07.2
	SAO	eP	22 21 44.8
	LLA	ePc	22 21 49.1
	PRS	eP	22 21 50.7
	FRI	e	22 21 52.5
	FHC	e	22 21 54.3
BRK 22h21m07.5s 38.8N 122.8W			
h=3km ML=3.0(5)			
The Geysers, 20 km S of Clear Lake, CA			
Jul 31	MNA	ePc	12 20 36.3
	MIN	eP	12 20 38.8
	WDC	eP	12 20 40.9
	ORV	ePc	12 20 42.8
	JAS1	ePc	12 20 47.7
	FRI	eP	12 20 49.9
	MHC	eP	12 20 56.0
	PRI	eP	12 20 58.7
	BKS	ePPP	12 24 26
		eS	12 29 04
		eSS	12 33 00
		e(Lq)	12 40 36
			AMP(µa) PER(s)
		LZ	1.6 20.
		LN	1.6 20.
		LE	0.89 20.
USGS 12h10m53.7s 53.8N 35.2W			
h=10km mb=5.2 Ms=4.7			
North Atlantic Ocean			
Jul 31	MHC	iPd	19 43 49.8
	GCC	eP	19 43 55.1
	SAO	iPd	19 43 58.5

DATE	STA	PHASE	TIME (UTC)
	PCC	iPc	19 43 59.8
	BKS	iPc	19 44 03.0
		iS	19 44 15.5
	BRK	iPc	19 44 03.0
		i	19 44 15.8
	LLA	iPd	19 44 04.1
	ZSP	iPc	19 44 04.3
		e	19 44 17.0
	PRS	ePd	19 44 05.7
	JAS1	iPd	19 44 09.6
		iS	19 44 24.7
	PRI	eP	19 44 12.5
	FRI	iPd	19 44 15.4
		iS	19 44 35.8
	ORV	e(P)	19 44 26.1
BRK 19h43m47.9s 37.3N 121.7W			
h=5kmR ML=3.2(4) Mo=5.8E20(2)			
Halls Valley Sequence			
Jul 31	MHC	iPc	20 59 18.5
	GCC	iPd	20 59 24.2
		i(S)	20 59 31.1
	PCC	iPc	20 59 26.0
	BRK	iPc	20 59 28.4
	BKS	iPc	20 59 28.5
		iS	20 59 38.2
	SAO	iPd	20 59 29.2
	ZSP	iPc	20 59 29.8
		iS	20 59 40.2
	LLA	iPc	20 59 34.1
	PRS	eP	20 59 35.5
	JAS1	ePc	20 59 37.6
		iS	20 59 53.2
	PRI	ePc	20 59 42.8
	FRI	iPc	20 59 44.8
	ORV	e(P)	20 59 51.4
	WDC	e	21 00 07.1
BRK 20h59m16.1s 37.4N 121.8W			
h=6km ML=3.5(5) Mo=5.5E20(2)			
Halls Valley Sequence			
Jul 31	MHC	ePc	22 08 06.7
	PRI	ePc	22 08 08.6
	WDC	ePc	22 08 09.3
		epP	22 09 03.0
	ORV	ePc	22 08 10.4
		epP	22 09 04.4
	JAS1	eP	22 08 11.9
	FRI	eP	22 08 12.8
		epP	22 09 06.3
	MNA	ePc	22 08 21.5
		epP	22 09 15.2
USGS 21h56m03.1s 12.6S 167.1E			
h=223km mb=4.8			
Santa Cruz Islands			
Aug 1	MHC	iPd	02 38 27.9
	GCC	iPd	02 38 33.0
	SAO	iPd	02 38 36.4
	PCC	ePc	02 38 38.2
		eS	02 38 48.0
	BKS	iPd	02 38 40.7
		iS	02 38 52.2
	BRK	eP	02 38 41.0
		eS	02 38 51.6
	LLA	ePd	02 38 42.3
	ZSP	ePc	02 38 42.8
		e	02 38 54.1
	PRS	ePc	02 38 43.6
	JAS1	iPd	02 38 47.2
		iS	02 39 03.2
BRK 02h38m25.9s 37.3N 121.7W			
h=5km ML=2.6(4) Mo=4.9E19(2)			

DATE	STA	PHASE	TIME (UTC)
Halls Valley Sequence			
Aug 1	FHC	eP	17 37 43.9
	WDC	ePc	17 37 52.4
	ORV	ePc	17 38 01.8
	MHC	eP	17 38 13.0
	JAS1	ePc	17 38 17.0
	SAO	e(P)	17 38 18
	FRI	eP	17 38 24.8
	PRI	eP	17 38 24.8
	MNA	eP	17 38 26.0
USGS 17h30m54.7s 51.9N 172.5W			
h=33km mb=4.7			
Andreanoff Is., Aleutian Is.			
Aug 2	PRI	iPc	03 55 46.8
		iS	03 55 54.8
	LLA	iPd	03 55 48.1
	FRI	ePd	03 55 51.7
	PRS	iPd	03 55 54.0
	SAO	iPc	03 55 55.5
	GCC	e(P)	03 56 03
	MHC	e(P)	03 56 03.0
	JAS1	iPd	03 56 03.9
		eS	03 56 23.0
	PCC	ePd	03 56 14.0
	MNA	eP	03 56 25.5
BRK 03h55m38.8s 36.5N 120.3W			
h=5kmR ML=2.6(2)			
Coalinga Area, CA			
Aug 2	SAO	eP	05 11 55.2
	BRK	ePd	05 11 56.3
	PRI	ePd	05 11 56.6
	MHC	ePd	05 11 57.0
	FHC	e	05 12 01
	FRI	eP	05 12 01.4
	JAS1	iPd	05 12 02.2
		epP	05 14 05
	ORV	ePd	05 12 03.6
		epP	05 14 07
	WDC	ePd	05 12 03.9
		epP	05 14 07
	MIN	eP	05 12 05.7
	MNA	ePd	05 12 10.8
		epP	05 14 14
USGS 05h00m36.1s 23.5S 179.9W			
h=572km mb=5.3			
South of Fiji Islands			
Aug 2	MNA	iP	15 00 38.2
	FRI	iP	15 00 49.1
	JAS1	iP	15 00 57.5
	SAO	iP	15 01 08.2
	PRS	eP	15 01 08.2
	MHC	eP	15 01 10.9
	ORV	eP	15 01 17.1
	BKS	iPc	15 01 18.1
		iS	15 02 57.6
BRK ML=4.5(5)			
USGS 15h00m00.0s 37.0N 116.0W			
h=0km mb=4.8			
Underground Nuclear Explosion, NTS (Correo)			
Aug 3	MNA	eP	01 18 50.9
	WDC	eP	01 18 52.7
USGS 01h09m09.6s 57.6N 32.9W			
h=10km mb=4.9 Ms=4.9			
North Atlantic Ocean			
Aug 3	MNA	eP	01 30 40.6
	WDC	eP	01 30 42.6

DATE	STA	PHASE	TIME (UTC)
	ORV	e(P)	01 30 45
	JAS1	ePd	01 30 51.3
	BKS	ePc	01 30 53.0
		e	01 49 59
		eLr	01 54 59
		eLq	01 56 00
	FRI	eP	01 30 54.0
	MHC	e(P)	01 30 59
USGS 01h20m59.1s 57.7N 32.9W			
h=10km mb=5.2 Ms=4.9			
North Atlantic Ocean			
Aug 3	WDC	eP	09 55 07.2
		e	09 55 23
	MIN	eP	09 55 10.3
	BKS	eP	09 55 11.0
			AMP(µa) PER(s)
		PZ	0.031 0.8
	ORV	iPd	09 55 11.7
		e	09 55 28
	MHC	eP	09 55 14.2
	JAS1	iP	09 55 18.0
	FRI	eP	09 55 21.7
		e	09 55 38
	MNA	eP	09 55 26.5
USGS 09h42m47.0s 13.4N 146.0E			
h=47km mb=5.2			
Marianas Islands			
Aug 3	BKS	e(P)	14 32 25
	SAO	eP	14 32 26.5
	PRI	ePd	14 32 28.0
	MHC	ePd	14 32 28.4
	FHC	eP	14 32 32.0
	FRI	eP	14 32 32.9
	JAS1	ePd	14 32 33.5
	ORV	ePd	14 32 34.7
	WDC	ePd	14 32 35.0
	MIN	eP	14 32 36.7
	MNA	ePd	14 32 42.0
USGS 14h21m07.1s 22.9S 179.0E			
h=585km mb=5.1			
South of Fiji Islands			
Aug 3	FHC	iPd	17 43 00.9
		iS	17 43 07.7
	WDC	ePc	17 43 13.4
		eS	17 43 29.4
	MIN	eP	17 43 23.5
	ORV	e(P)	17 43 27.0
BRK 17h42m52.6s 40.4N 124.0W			
h=5kmR ML=3.1(2)			
50 km S of Eureka, CA			
Aug 4	FHC	iPc	01 39 08.8
		iS	01 39 22.4
	WDC	iPc	01 39 23.5
	MIN	iPc	01 39 33.4
	ORV	eP	01 39 37.6
BRK 01h38m49.0s 40.6N 125.4W			
h=5kmR ML=3.5(4)			
100 km W of Eureka, CA			
Aug 4	FHC	iPc	03 01 13.8
		iS	03 01 27.4
	WDC	iPc	03 01 28.4
		iS	03 01 53.3
	MIN	iPc	03 01 38.4
		eS	03 02 13.2
	ORV	eP	03 01 41.7
	BKS	eP	03 01 47.0
	MHC	ePc	03 01 57.2
	GCC	eP	03 01 57.5

DATE	STA	PHASE	TIME (UTC)
	SAO	e(P)	03 02 02.8
	JAS1	ePc	03 02 03.6
BRK 03h00m53.9s 40.4N 125.3W			
h=5kmR ML=4.0(6) Mo=1.7E21(2)			
Off the Coast, 120 km SW of Eureka, CA			
Aug 4	WDC	eP	09 20 52.6
		i	09 21 00
	MIN	e	09 20 57
		e	09 21 03
	ORV	eP	09 21 01.8
	JAS1	eP	09 21 14.7
		i	09 21 23
	BKS	e	09 21 18
		e	09 28 54
		e	09 39 16
	MNA	e	09 21 22
USGS 09h12m07.2s 55.4N 164.1E			
h=33km mb=5.2 Ms=4.9			
Komandorsky Islands Region			
Aug 4	MHC	eP	15 12 23.6
	FRI	eP	15 12 27.2
	JAS1	eP	15 12 28.3
	ORV	eP	15 12 31.2
	WDC	eP	15 12 31.2
	MIN	eP	15 12 33.5
USGS 14h59m34.1s 32.8S 179.3W			
h=33km mb=5.6			
South of Kermadec Islands			
Aug 4	FHC	iPc	21 46 07.0
	WDC	iPd	21 46 20.3
	MIN	iPc	21 46 30.0
	ORV	iPd	21 46 31.2
	BKS	iP	21 46 39.7
		e	21 47 32
	PCC	ePd	21 46 42.6
	GCC	ePd	21 46 50.2
	MHC	iPd	21 46 50.2
	JAS1	iPd	21 46 55.3
		iS	21 47 54.8
	SAO	eP	21 46 56.5
	LLA	ePd	21 47 02.2
	PRS	ePc	21 47 02.2
	FRI	iPd	21 47 10.2
	PRI	iPd	21 47 10.2
	MNA	eP	21 47 13.4
BRK 21h45m53.2s 40.3N 124.6W			
h=5kmR ML=4.7(8) Mo=2.0E23(4)			
Off the Coast, 80 km SW of Eureka, CA			
Aug 6	GCC	iPc	00 06 44.3
	SAO	iPd	00 06 45.9
	MHC	iPd	00 06 47.1
	PRS	iPd	00 06 53.1
	PCC	iPc	00 06 53.2
	LLA	iPc	00 06 53.6
	BKS	eP	00 06 57.6
		eS	00 07 10.5
	PRI	ePc	00 07 01.5
		iS	00 07 17.1
	JAS1	iPd	00 07 03.6
		iS	00 07 20.3
	FRI	ePc	00 07 04.2
	ORV	ePd	00 07 21.2
BRK 00h06m39.8s 37.0N 121.7W			
h=8km ML=3.8(4) Mo=4.0E21(4)			
30 km NW of Hollister, CA			
Aug 6	FRI	ePc	08 55 25.3

International Seismological Centre

UNIVERSITY OF CALIFORNIA SEISMOGRAPHIC STATIONS
REGISTRATION OF EARTHQUAKES 1984

DATE	STA	PHASE	TIME (UTC)
		iP*	08 15 45.9
		iSg	08 16 35.3
	PRI	ePc	08 15 35.6
	LLA	e(P)	08 15 41
	PRS	eP	08 15 42.3
	MNA	eP	08 15 46.7
	SAO	eP	08 15 47.2
		i	08 15 57.0
	JAS1	ePd	08 15 51.3
		i	08 17 11.0
	MHC	eP	08 15 53.6
	GCC	e(P)	08 15 54.1
	PCC	e(P)	08 16 01.9
	BKS	eP	08 16 03.0
		e	08 16 51.7
		e	08 17 11.3
	ORV	eP	08 16 16.2

BRK ML=4.4(4)
PAS 08h14m36.5s 34.0N 116.7W
h=14km ML=4.3
Southern California

Aug 6	WDC	ePd	08 42 21.9	
	MIN	eP	08 42 24.8	
	ORV	ePd	08 42 27.6	
	JAS1	e(P)	08 42 37	
	FRI	ePd	08 42 41.7	
	MHC	e	08 42 43	
	MNA	ePd	08 42 43.1	
	PRI	e	08 42 46.3	

USGS 08h30m06.4s 32.7N 130.1E
h=20km mb=5.3 Ms=5.1
Kyushu, Japan

Aug 6	WDC	ePdif	12 15 51.0	
		ePKP	12 19 55	
		e	12 20 25	
		ePKKP	12 31 18	
		ePcPPKP	12 35 06	
		ePKPPKP	12 41 39	
	BKS	ePdif	12 15 54.0	
		ePc	12 16 02	
		e	12 16 52	
		epP	12 17 10	
		ePKP	12 20 00	
		e	12 20 28	
		ePP	12 20 28	
		e	12 20 45	
		ePKS	12 21 40	
		eSKS	12 26 13	
		eSKKS	12 27 09	
		eS	12 27 40	
		ePS	12 29 30	
		esPS	12 31 48	
		e	12 33 48	
		eSS	12 35 02	
		eSSS	12 39 56	
		eSSSS	12 42 06	
		eLq	12 46 28	
			AMP(μm)	PER(s)
		LZ	18	20.
		LN	5.9	20.
		LE	23	20.
	ORV	ePdifc	12 15 56.0	
		ePKP	12 19 58	
		ePKKP	12 31 12	
	MHC	ePdif	12 15 59.0	
		ePKP	12 19 59	
		ePKKP	12 31 13	
	JAS1	ePdif	12 16 02.0	
		ePKP	12 20 00	
		i	12 20 24	
		ePKKP	12 31 07	

DATE	STA	PHASE	TIME (UTC)
		ePKPPKP	12 41 38
	FRI	ePdif	12 16 06.0
		ePKP	12 20 00
		ePKKP	12 31 05
	MNA	ePdif	12 16 13.0
		ePKP	12 20 03
		e	12 20 52
		ePKKP	12 31 02
		ePcPPKP	12 34 55
	FHC	ePKP	12 19 53.0
		ePKKP	12 31 25
	MIN	ePKPc	12 19 56.8
		ePKKP	12 31 15
	SAO	iPKP	12 20 00.0
	PRI	ePKPc	12 20 01.8
		e	12 20 48
		ePKKP	12 31 08

BRK Ms=6.8 Distance=108°
USGS 12h01m52.4s 0.1S 122.5E
h=242km mb=6.2
Minahassa Peninsula

Aug 6	FHC	ePd	19 18 41.0	
	WDC	iPd	19 18 45.7	
		ePP	19 21 55	
		eSKKP	19 45 25.6	
	MIN	iPd	19 18 49.1	
	ORV	iPd	19 18 51.8	
	BKS	eP	19 18 54.5	
		ePP	19 22 16	
		eS	19 29 04	
		eSS	19 34 20	
		eSSS	19 38 08	
		eLq	19 40 56	
		eLr	19 43 52	
			AMP(μm)	PER(s)
		PZ	1.9	2.0
		LZ	42	20.
		LN	28	20.
		LE	49	20.
	MHC	ePd	19 18 58.4	
	JAS1	iPd	19 19 00.9	
		i	19 19 16	
		ePP	19 22 11	
		eSKKP	19 45 28.9	
		e	19 45 45.1	
	FRI	iPd	19 19 05.8	
		eSKKP	19 45 31.1	
	PRI	ePd	19 19 05.9	
	MNA	iPd	19 19 07.2	
		i	19 19 12	
		i	19 19 23	
		ePP	19 22 19	
		eSKKP	19 45 26.7	

USGS 19h06m38.3s 32.4N 131.9E
h=46km mb=6.3 Ms=6.7
Kyushu, Japan

Aug 7	WDC	eP	03 25 47.2	
	ORV	eP	03 25 47.9	
	JAS1	eP	03 25 48.3	
Aug 7	PRI	iPc	08 17 37.4	
		iS	08 17 40.1	
	LLA	iPd	08 17 43.8	
	PRS	iPc	08 17 44.2	
	SAO	iPc	08 17 49.0	
	FRI	eP	08 17 55.4	
		iS	08 18 10.8	
	GCC	eP	08 17 57.4	
	MHC	e(P)	08 17 58.7	
	JAS1	iPc	08 18 04.6	
		iS	08 18 26.7	

DATE	STA	PHASE	TIME (UTC)
		i	08 18 30.0
	PCC	e(P)	08 18 05.5

BRK 08h17m34.8s 36.2N 120.8W
h=10km ML=2.5(2)
40 km E of King City, CA

Aug 8	PRI	eP	14 01 40.2	
	FRI	eP	14 01 41.5	
	MNA	eP	14 01 48.5	
	JAS1	eP	14 01 52.9	
	MHC	eP	14 01 54.8	
	ORV	ePd	14 02 11.9	
	MIN	eP	14 02 17.5	
	WDC	eP	14 02 19.6	

USGS 13h56m48.4s 18.6N 106.4W
h=10km mb=5.0
Off Coast of Jalisco, Mexico

Aug 9	PRI	ePc	04 33 51.9	
	FRI	ePc	04 33 53.7	
	MNA	eP	04 33 58.5	
	JAS1	eP	04 34 03.8	
	MHC	eP	04 34 06.6	
	ORV	ePc	04 34 22.4	
	MIN	e(P)	04 34 27	
	WDC	e(P)	04 34 33	

USGS 04h29m02.1s 19.3N 105.0W
h=33km mb=3.9
Near Coast of Jalisco, Mexico

Aug 9	MHC	iPd	13 18 51.2	
		i	13 18 52.2	
	SAO	iPd	13 19 00.4	
	BKS	iP	13 19 03.2	
		eS	13 19 14	
	ZSP	iPc	13 19 04.6	
		eS	13 19 16	
	JAS1	iPc	13 19 10.4	
		eS	13 19 23.9	
		i	13 19 25.9	
	PRI	e(P)	13 19 14	
		e	13 19 39.5	
	MNA	e(P)	13 19 40	

BRK 13h18m49.3s 37.3N 121.7W
h=9kmR ML=3.0(4) Mo=3.8E19(2)
Halls Valley Sequence

Aug 10	WDC	eP	03 03 54.9	
	MIN	e	03 03 59	
	ORV	eP	03 04 03.7	
	JAS1	eP	03 04 17.7	

USGS 02h55m02.4s 55.4N 160.9E
h=92km mb=4.7
Kamchatka

Aug 10	FHC	e(P)	19 38 16	
	WDC	eP	19 38 20.8	
	ORV	ePd	19 38 26.6	
	MHC	eP	19 38 33.0	
	JAS1	e	19 38 35	
	FRI	eP	19 38 40.0	
	MNA	eP	19 38 41.1	

USGS 19h26m01.3s 30.0N 131.2E
h=33km mb=5.2 Ms=5.2
Kyushu, Japan

Aug 11	FHC	eP	01 33 37.4	
	WDC	ePc	01 33 41.8	
	BKS	ePc	01 33 42.4	
		ePP	01 37 15	
		eS	01 44 25	
		ePS	01 45 35	
		eSS	01 50 32	

DATE	STA	PHASE	TIME (UTC)
		eLq	01 57 20
		eLr	02 01 12
			AMP(μm) PER(s)
		PZ	0.062 1.1
		LZ	10 20.
		LN	2.7 20.
		LE	9.3 20.
	ORV	eP	01 33 44.3
	MHC	eP	01 33 46.0
	PRI	eP	01 33 47.5
	JAS1	ePc	01 33 47.6
	FRI	eP	01 33 50.0
	MNA	ePc	01 33 56.8

BRK Ms=6.2 Distance=89°
USGS 01h20m45.7s 5.0S 152.1E
h=40km mb=5.6 Ms=5.9
New Britain Region

Aug 11	SAO	eP	10 47 30.3	
	MHC	e	10 47 31	
	BKS	ePc	10 47 31.6	
			AMP(μm)	PER(s)
		PZ	0.028	0.8
	FHC	eP	10 47 32.2	
	JAS1	eP	10 47 37.5	
	FRI	eP	10 47 37.5	
	WDC	eP	10 47 37.8	
	ORV	eP	10 47 38.1	
	MIN	e	10 47 40	
	MNA	eP	10 47 47.4	

USGS 10h36m34.2s 15.2S 179.1W
h=443km mb=4.6
Fiji Islands Region

Aug 11	WDC	ePKP	12 15 29.5	
	MIN	ePKP	12 15 30.9	
	ORV	e	12 15 32	
	BKS	ePKP	12 15 34.6	
	PRI	e	12 15 38	
	FRI	ePKP	12 15 38.0	
	MNA	e	12 15 39	

USGS 11h56m49.4s 6.0N 95.2E
h=131km mb=5.4
Northern Sumatera

Aug 11	WDC	iPc	19 11 40.6	
	ORV	eP	19 11 46.5	
	MNA	eP	19 11 53.4	
	JAS1	iP	19 11 56.3	
	FRI	eP	19 12 01.2	
	PRI	eP	19 12 07.2	

USGS 18h59m57.8s 65.0N 55.2E
h=0km mb=5.3
Ural Mountains Region

Aug 12	WDC	eP	00 13 25.1	
	ORV	eP	00 13 30.6	
	JAS1	eP	00 13 38.4	
	BKS	e	00 13 42	
	FRI	eP	00 13 43.0	
	MNA	eP	00 13 46.5	

USGS 00h01m27.8s 23.4N 143.7E
h=33km mb=5.1
Volcano Islands Region

Aug 12	WDC	eP	00 27 29.0	
	MIN	e	00 27 37	
	ORV	eP	00 27 44.4	
	BKS	eP	00 28 00.5	
			AMP(μm)	PER(s)
		PZ	0.22	1.7
	JAS1	eP	00 28 09.8	
	MHC	eP	00 28 10.6	

DATE	STA	PHASE	TIME (UTC)
	MNA	eP	00 28 15.1
	FRI	eP	00 28 23.4
	PRI	eP	00 28 29.4

USGS 00h24m47.6s 50.3N 130.0W
h=10km mb=5.2 Ms=4.9
Vancouver Island Region

Aug 12	WDC	e	03 34 14	
	MIN	e	03 34 17	
	ORV	e	03 34 19	
	JAS1	eP	03 34 26.6	
		i	03 34 39	
	FRI	e	03 34 32	
	MNA	e	03 34 35	

USGS 03h22m16.4s 23.3N 143.6E
h=33km mb=5.0
Volcano Islands Region

Aug 12	WDC	eP	07 04 52.8	
	ORV	eP	07 04 58.0	
	JAS1	eP	07 05 08.3	
	FRI	eP	07 05 10.0	
	MNA	eP	07 05 11.8	
Aug 12	BKS	eP	09 42 10.7	
		e	09 48 45	
		eS	09 51 38	
		eLq	10 00 40	
		eLr	10 04 32	
			AMP(μm)	PER(s)
		PZ	0.025	0.8
		LZ	0.71	20.
		LN	0.61	20.
	FRI	e	09 42 13	
	JAS1	e	09 42 14	
	WDC	e	09 42 17	
	MIN	e	09 42 18	
	ORV	e	09 42 19	
	MNA	e	09 42 22	

BRK Ms=4.9 Distance=74°
USGS 09h30m37.1s 17.8S 173.2W
h=33km mb=5.2 Ms=5.0
Tonga Islands

Aug 12	FRI	eP	12 03 26.6	
	PRI	eP	12 03 28.2	
	MNA	eP	12 03 28.8	
		epP	12 03 54	
	JAS1	eP	12 03 32.0	
		epP	12 03 59	
	MHC	eP	12 03 35.0	
	BKS	iPc	12 03 39.5	
		i	12 04 05	
			AMP(μm)	PER(s)
		PZ	0.15	1.4
	ORV	eP	12 03 42.0	
		epP	12 04 09	
	MIN	eP	12 03 44.2	
		epP	12 04 11	
	WDC	eP	12 03 47.0	
		epP	12 04 14	
	FHC	eP	12 03 55.2	
		epP	12 04 21	

USGS 11h51m41.8s 24.2S 69.2W
h=101km mb=5.6
Northern Chile Region

Aug 13	MHC	iPd	09 51 38.1	
	GCC	iPd	09 51 43.6	
	SAO	iPd	09 51 47.0	
	PCC	iPc	09 51 47.5	
	BKS	iPd	09 51 50.1	
		iS	09 52 02.1	

DATE	STA	PHASE	TIME (UTC)
	BRK	iPd	09 51 50.3
	ZSP	iPd	09 51 51.4
		iS	09 52 04.8
	LLA	iPd	09 51 52.0
	PRS	iPd	09 51 53.5
	JAS1	iPc	09 51 57.0
		iS	09 52 11.8
	PRI	iPd	09 52 00.0
	FRI	ePd	09 52 02.5
	ORV	eP	09 52 12.3
	WDC	eP	09 52 27.4

BRK 09h51m36.1s 37.3N 121.7W
h=9km ML=3.7(4) Mo=6.0E21(4)
Halls Valley Sequence

Aug 14	FHC	e	01 07 46	
	WDC	eP	01 07 49.6	
		e	01 15 11	
	MIN	eP	01 07 53.8	
	BKS	iP	01 08 13.8	
		ePP	01 09 16	
		eS	01 13 08	
		eL	01 14 36	
			AMP(μm)	PER(s)
		PZ	0.061	1.0
		LZ	3.9	20.
		LN	5.2	20.
		LE	7.3	20.
	JAS1	e	01 08 19	
		e	01 15 14	
	MNA	e	01 08 20	
	MHC	e	01 08 23	
	FRI	e	01 08 27	
	PRI	e	01 08 37	
	ORV	e	02 07 58	

USGS 01h02m08.4s 61.9N 149.1W
h=20km mb=5.7 Ms=5.2
Southern Alaska

Aug 14	MHC	iPd	05 55 37.4	
	GCC	iPd	05 55 44.9	
	PCC	iPc	05 55 46.3	
	BKS	iPc	05 55 47.4	
		eS	05 55 57.7	
	SAO	iPc	05 55 48.4	
	ZSP	iPd	05 55 48.7	
	JAS1	i(P)	05 55 52.1	
	LLA	iPc	05 55 53.0	
	PRS	eP	05 55 55.3	

BRK 05h55m34.9s 37.4N 121.6W
h=6km ML=2.8(4) Mo=2.0E20(2)
25 km NW of San Jose, CA

Aug 14	FHC	eP	18 42 27.0	
		e	18 42 30.4	
	WDC	eP	18 42 31.7	
		i	18 42 35.2	
		e	18 42 43	
	ORV	eP	18 42 37.7	
		e	18 42 41.1	
	PRS	eP	18 42 48.1	
	LLA	eP	18 42 48.8	
	FRI	eP	18 42 51.5	
		i	18 42 55.0	
	PRI	eP	18 42 51.8	
		e	18 42 55.4	
		e	18 43 03	
	MNA	eP	18 42 52.5	
		e	18 43 00.4	
		e	18 43 08	

USGS 18h30m13.1s 31.6N 130.[illegible]
h=19km mb=5.2 Ms=5.3
Kyushu, Japan

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DATE	STA	PHASE	TIME (UTC)
Aug 14	FHC	iPc	21 05 51.9
		eS	21 05 59.5
	WDC	iPd	21 05 56.2
		iS	21 06 06.6
	ORV	e(P)	21 06 09
BRK 21h05m41.9s 40.9N 123.3W			
h=5kmR ML=3.2(2) Mo=2.0E20(2)			
NW of Weaverville, CA			
Aug 15	MHC	iPc	00 26 42.0
	GCC	iPd	00 26 48.1
	PCC	iPc	00 26 51.3
	SAO	iPd	00 26 52.2
	BKS	iPc	00 26 54.0
		eS	00 27 04.5
	BRK	ePc	00 26 54.0
	LLA	iPd	00 26 57.4
	PRS	iPd	00 26 59.2
	JAS1	iPc	00 27 01.8
		iS	00 27 17.1
	FRI	iPc	00 27 08.2
BRK 00h26m40.5s 37.3N 121.7W			
h=6km ML=3.0(4) Mo=1.2E20(2)			
Halls Valley Sequence			
Aug 15	BKS	eP	06 33 21.7
			AMP(μa) PER(s)
		PZ	0.048 1.0
	MHC	eP	06 33 22.5
	FHC	eP	06 33 27.3
	FRI	ePc	06 33 28.6
	JAS1	ePd	06 33 28.9
	ORV	eP	06 33 30.1
	WDC	iPd	06 33 30.5
	MIN	eP	06 33 32.5
	MNA	eP	06 33 39.3
USGS 06h22m04.1s 14.8S 173.5W			
h=33km mb=5.2			
Samoa Islands Region			
Aug 16	PRI	iPc	01 31 01.6
	LLA	iPc	01 31 08.2
	FRI	iPd	01 31 09.9
	PRS	iPc	01 31 11.3
	SAO	iPd	01 31 14.5
	MHC	eP	01 31 21.4
	GCC	ePd	01 31 22.4
	JAS1	iPd	01 31 23.6
		iS	01 31 46.9
	PCC	ePc	01 31 29.7
	BKS	eP	01 31 31.5
BRK 01h30m54.6s 36.2N 120.2W			
h=7kmR ML=3.2(4)			
Coalinga Area, CA			
Aug 16	PRI	e	03 17 08
	MNA	eP	03 17 08.1
	FRI	eP	03 17 11.7
	JAS1	eP	03 17 19.6
	ORV	eP	03 17 31.4
	MIN	eP	03 17 33.5
	WDC	eP	03 17 37.3
USGS 03h09m49.3s 18.0N 81.7W			
h=10km mb=5.0 Ms=4.9			
Caribbean Sea			
Aug 16	PRI	iPc	11 24 52.2
	LLA	ePc	11 24 58.7
	FRI	iPd	11 25 00.6
	PRS	ePc	11 25 01.9
	SAO	iPd	11 25 05.1
	GCC	eP	11 25 12.1
	MHC	eP	11 25 12.1
	JAS1	iPd	11 25 14.2
		iS	11 25 37.8
	PCC	eP	11 25 20.5
	BKS	eP	11 25 21.4
BRK 11h24m44.6s 36.1N 120.2W			
h=7kmR ML=3.1(4)			
Coalinga Area, CA			
Aug 16	FHC	iPc	12 55 46.5
		iS	12 55 54.9
	WDC	iPc	12 55 52.0
		iS	12 56 03.4
	MIN	ePc	12 56 02.6
	ORV	ePd	12 56 11.0
BRK 12h55m37.2s 41.0N 123.4W			
h=10kmR ML=3.1(3) Mo=3.9E20(1)			
60 km E of Eureka, CA			
Aug 16	MHC	iPd	20 45 36.6
	GCC	iPd	20 45 41.9
	SAO	iP	20 45 45.2
	PCC	iPc	20 45 46.4
	BKS	ePd	20 45 49.4
		iS	20 46 01.2
	BRK	iPc	20 45 49.5
	LLA	iPc	20 45 50.4
	ZSP	iPd	20 45 50.7
		eS	20 46 04.0
	PRS	iPd	20 45 52.2
	JAS1	iPc	20 45 55.9
		iS	20 46 11.8
	PRI	ePc	20 45 58.5
	FRI	eP	20 46 01.3
	ORV	iP	20 46 12.5
	MNA	e(P)	20 46 23
	MIN	e(P)	20 46 25
	WDC	e(P)	20 46 26
BRK 20h45m34.6s 37.3N 121.7W			
h=6km ML=3.6(6) Mo=3.8E21(4)			
Halls Valley Sequence			
Aug 17	BRK	eP	07 36 33.6
		e	07 36 48
	MHC	eP	07 36 34.6
	FRI	eP	07 36 39.9
		e	07 36 44
	JAS1	ePd	07 36 40.6
		e	07 36 55
	ORV	eP	07 36 42.3
		e	07 36 57
	WDC	eP	07 36 42.9
		e	07 36 57
	MNA	ePd	07 36 50.9
		e	07 36 55
	MIN	e	07 36 58
USGS 07h25m12.4s 16.3S 172.8W			
h=33km mb=4.8 Ms=4.8			
Samoa Islands Region			
Aug 17	MNA	ePd	08 25 45.4
	JAS1	ePd	08 25 55.0
	BRK	e(P)	08 26 06
	ORV	ePd	08 26 08.9
		e	09 25 43
USGS 08h18m53.0s 13.5N 88.2W			
h=153km mb=4.9			
El Salvador			
Aug 17	SAO	e(P)	10 54 02
	PRI	iPd	10 54 02.7
	MHC	eP	10 54 03.3
	BKS	ePd	10 54 03.9
		e	11 17 22
			AMP(μa) PER(s)
		PZ	0.49 1.7
	FHC	eP	10 54 08.1
	FRI	eP	10 54 08.2
	JAS1	iPd	10 54 09.1
	ORV	iPd	10 54 11.0
	WDC	iP	10 54 11.4
	MIN	eP	10 54 13.2
	MNA	iPd	10 54 18.7
USGS 10h42m20.1s 21.4S 175.3W			
h=114km mb=5.5			
Tonga Islands			
Aug 18	FRI	ePd	04 22 41.6
	MNA	ePd	04 22 42.8
	PRI	ePd	04 22 43.6
	JAS1	ePd	04 22 47.9
	MHC	ePd	04 22 50.0
	BRK	ePd	04 22 53.3
	ORV	ePd	04 22 56.8
	WDC	ePd	04 23 01.5
USGS 04h10m43.1s 27.9S 66.7S			
h=173km mb=5.2			
Catamarca Province, Argentina			
Aug 18	MHC	iPd	12 17 35.5
	GCC	iPc	12 17 40.7
	SAO	iPd	12 17 43.5
	PCC	iPc	12 17 45.5
	BRK	iPc	12 17 48.7
	BKS	iPc	12 17 49.0
		iS	12 18 00.4
	LLA	iPd	12 17 49.1
	PRS	ePd	12 17 50.6
	JAS1	iPc	12 17 54.6
	PRI	ePc	12 17 57.8
	FRI	iPc	12 18 00.1
	ORV	eP	12 18 12.0
BRK 12h17m33.3s 37.2N 121.6W			
h=6km ML=2.9(4) Mo=4.0E20(2)			
Halls Valley Sequence			
Aug 18	FRI	ePKPc	13 48 45.7
	JAS1	iPKPc	13 48 48.1
	MHC	ePKPc	13 48 48.9
	BKS	iPKPd	13 48 50.3
	ORV	ePKPc	13 48 51.0
	MIN	ePKPc	13 48 52.0
	WDC	ePKPc	13 48 53.0
USGS 13h30m05.7s 56.0S 27.2W			
h=116km mb=5.1			
South Sandwich Islands			
Aug 19	MNA	iPc	02 22 37.1
	JAS1	iPc	02 23 06.4
	FRI	iPd	02 23 07.2
	ORV	iPd	02 23 21.1
	LLA	iPc	02 23 25.4
	PRI	iPc	02 23 28.3
	MIN	iPc	02 23 28.8
	WDC	iPc	02 23 40.1
BRK 02h22m34.9s 38.5N 118.3W			
h=5kmR ML=4.1(6)			
30 km W of Hawthorne, Nevada			
Aug 19	MNA	ePKPc	06 55 51.4
		e	06 55 54
	FRI	ePKPc	06 55 53.1
	JAS1	iPKPc	06 55 54.0
		e	06 56 01
	WDC	iPKPc	06 55 54.2
USGS 06h34m45.3s 41.0S 43.2E			
h=10km mb=5.5 Ms=5.2			
Prince Edward Islands Region			
Aug 19	WDC	ePc	07 06 34.3
	MIN	ePc	07 06 37.4
	ORV	ePc	07 06 38.8
	BKS	ePc	07 06 41.2
			AMP(μa) PER(s)
		PZ	0.025 0.9
	JAS1	eP	07 06 44.8
	FRI	ePc	07 06 48.7
	MNA	ePc	07 06 53.2
USGS 06h54m00.2s 12.1N 143.8E			
h=33km mb=5.3 Ms=4.2			
South of Mariana Islands			
Aug 20	MNA	iPd	16 26 44.5
		iS	16 26 56.6
	FRI	iPc	16 26 44.6
		iS	16 26 58.3
	JAS1	iPc	16 26 53.1
	LLA	eP	16 27 02.0
	PRI	eP	16 27 03.2
eP	SAO	iPc	16 27 07.0
	MHC	iP	16 27 07.8
	PRS	eP	16 27 08.4
BRK 16h26m25.5s 37.5N 118.6W			
h=11km ML=3.5(4)			
20 km NW of Bishop, CA			
Aug 20	MNA	eP	23 39 16.1
	MHC	e	23 39 34
	ORV	eP	23 39 35.5
		e	23 39 54
USGS 23h29m30.1s 10.4N 62.4W			
h=18km mb=5.1 Ms=4.3			
Near Coast of Venezuela			
Aug 21	SAO	eP	12 28 48.5
	BKS	iP	12 28 49.8
			AMP(μa) PER(s)
		PZ	0.051 1.0
	PRI	eP	12 28 50.2
	MHC	eP	12 28 50.2
	FRI	eP	12 28 55.1
	JAS1	iPc	12 28 55.7
	WDC	iPc	12 28 56.6
	ORV	ePc	12 28 56.7
	MIN	eP	12 28 58.5
	MNA	iPc	12 29 05.5
USGS 12h17m57.7s 18.0S 178.5W			
h=607km mb=4.9			
Fiji Islands Region			
Aug 21	MHC	iPd	20 01 38.3
		i(S)	20 01 40.4
	GCC	iPd	20 01 42.9
		iS	20 01 48.5
	SAO	iPd	20 01 45.2
	PCC	iPc	20 01 47.9
	LLA	iPc	20 01 50.3
		eS	20 02 03
	BKS	iP	20 01 50.8
		eS	20 02 03.2
	BRK	iPc	20 01 50.9
		iS	20 02 03.2
	ZSP	iPc	20 01 51.8
		iPc	20 02 06.0
	PRS	iPc	20 01 52.5
		eS	20 02 15
	JAS1	iPd	20 01 56.6
		iS	20 02 11.8
	PRI	e(P)	20 02 01
		e(S)	20 02 22
	FRI	ePc	20 02 01.6
		eS	20 02 21.7
	ORV	e(P)	20 02 14
BRK 20h01m35.6s 37.2N 121.6W			
h=10kmR ML=2.9(4) Mo=9.3E19(2)			
Halls Valley Sequence			
Aug 22	FHC	e(P)	09 20 21
	WDC	iPc	09 20 26.6
	BKS	ePd	09 20 27.3
		e	09 20 48
			AMP(μa) PER(s)
		PZ	0.046 1.3
	MHC	e(P)	09 20 29
	MIN	ePc	09 20 29.4
	ORV	ePc	09 20 29.5
	PRI	e(P)	09 20 32
	JAS1	iPc	09 20 32.9
	FRI	ePc	09 20 35.3
	MNA	ePc	09 20 41.9
USGS 09h07m30.4s 5.7S 148.4E			
h=163km mb=5.7			
New Britain Region			
Aug 22	MNA	ePc	09 48 10.9
	MIN	ePc	09 48 13.3
	ORV	e(P)	09 48 16
	WDC	e(P)c	09 48 16.2
	JAS1	e(P)	09 48 26
		eSg	09 50 42
	FHC	ePc	09 48 32.3
	FRI	ePc	09 48 39.6
	MHC	e(P)	09 48 43
		e	09 51 22
	BKS	e(P)c	09 48 46.4
		eS	09 50 00
		e	09 49 08
		e	09 49 17
		e	09 49 31
		e	09 49 36
		eLg	09 50 37
		e	09 51 15
	SAO	e(P)	09 48 52
	PRI	e(P)	09 49 01
USGS 09h46m30.2s 44.5N 114.0W			
h=10km mb=5.0 Ms=5.1			
Western Idaho			
Aug 22	WDC	eP	23 38 24.2
	MIN	eP	23 38 28.6
	ORV	eP	23 38 32.0
	JAS1	eP	23 38 43.8
	FRI	eP	23 38 51.1
	MNA	eP	23 38 51.9
USGS 23h28m48.0s 49.0N 153.5E			
h=134km mb=5.3			
Kuril Islands			
Aug 23	MNA	eP	00 00 22.5
		e	00 02 34
	PRI	e	00 00 28
	FRI	e	00 00 36
		e	00 02 34
	MHC	e	00 00 37
	JAS1	e	00 00 44
		e	00 02 36
	BKS	eP	00 00 44.0
		ePP	00 02 41
		eS	00 07 15
		eLg	00 10 38
		eL	00 15 48
			AMP(μa) PER(s)
		PZ	0.038 1.1
		LZ	1.9 20.
		LN	1.3 20.
		LE	2.9 20.
	ORV	eP	00 00 47.7
		i	00 00 58
BRK Ms=5.1 Distance=45°			
USGS 23h53m00.1s 11.5N 86.5W			
h=63km mb=5.1			
Near Coast of Nicaragua			
Aug 23	SAO	eP	07 27 05.7
	MHC	eP	07 27 07.3
	FRI	eP	07 27 12.3
	JAS1	eP	07 27 13.0
	ORV	eP	07 27 14.3
	WDC	eP	07 27 14.4
	MIN	eP	07 27 16.5
	MNA	eP	07 27 22.6
USGS 07h15m55.5s 19.8S 178.1W			
h=440km mb=4.9			
Fiji Islands Region			
Aug 23	PRI	ePc	09 35 17.6
	LLA	iPc	09 35 24.6
	FRI	iPc	09 35 26.1
	PRS	ePc	09 35 27.5
	SAO	eP	09 35 30.7
	JAS1	iPd	09 35 40.1
	BKS	ePc	09 35 56.2
		eSn	09 36 22.2
		eS	09 36 28.1
		e	09 36 43.1
BRK 09h35m10.3s 36.1N 120.2W			
h=8km ML=2.9(4)			
Coalinga Area, CA			
Aug 23	MNA	iPc	19 56 40.2
		i	19 58 51
		e	20 03 03
	FRI	eP	19 56 41.0
		i	19 58 51
	PRI	e(P)	19 56 45
	JAS1	e(P)	19 56 50
		e	19 58 53
		e	20 03 06
	MHC	ePc	19 56 54.3
	BKS	ePc	19 57 00.8
		ePcP	19 58 58
		ePPP	19 59 05
		eS	20 03 10
		eSS	20 03 46
		e	20 04 53
		eLg	20 06 30
		eScS	20 06 55
		eLr	20 07 37
		e	20 57 13
		e	20 58 11
			AMP(μa) PER(s)
		PZ	0.077 1.3
		LZ	8.6 20.
		LN	13 20.
		LE	12 20.
	ORV	eP	19 57 03.0
	WDC	e(P)	19 57 08
		e	19 59 03
	FHC	eP	19 57 21.0
BRK Ms=5.7 Distance=40°			
USGS 19h49m17.4s 11.6N 86.5W			
h=57km mb=5.3 Ms=5.9			
Near Coast of Nicaragua			
Aug 23	SAO	iP	23 22 43.1

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DATE	STA	PHASE	TIME (UTC)
	PRI	iPd	23 27 45.1
	BKS	ePd	23 27 45.6
		AMP(µm)	PER(s)
		PZ 0.095	0.9
	MHC	iPd	23 27 45.8
	FRI	iPd	23 27 49.9
	FHC	ePd	23 27 50.5
	JAS1	iPd	23 27 50.6
	ORV	iPd	23 27 52.5
	WDC	iPd	23 27 53.0
	MIN	iPd	23 27 54.7
	MNA	iPd	23 27 58.9
USGS 23h15m59.1s 27.2S 179.7W			
h=428km mb=5.1			
Kermadec Islands Region			
Aug 24	MHC	iPd	01 05 56.3
	GCC	iPd	01 06 01.7
	SAO	iPd	01 06 04.8
	PCC	iPc	01 06 06.3
	BKS	iPd	01 06 09.3
		iS	01 06 21.4
	BRK	iPc	01 06 09.3
	LLA	iPd	01 06 10.1
	PRS	iPd	01 06 11.8
	JAS1	iPc	01 06 15.6
		iS	01 06 32
	PRI	iPd	01 06 18.5
		eS	01 06 38
	FRI	iPc	01 06 20.9
	ORV	eP	01 06 31.0
	MNA	ePd	01 06 43.2
		eS	01 07 18
	MIN	ePc	01 06 46.2
	WDC	e(P)	01 06 48
BRK 01h05m54.3s 37.3N 121.7W			
h=6kmR ML=3.6(5) Mo=3.4E22(4)			
Halls Valley Sequence			
Aug 24	JAS1	e(PKP)c	17 12 17.2
		e	17 12 42
	FRI	e(PKP)c	17 12 17.2
	ORV	ePKPc	17 12 17.6
		e	17 12 43
		e	17 14 43
	MNA	e(PKP)c	17 12 18.5
		e	17 12 41
USGS 16h53m07.1s 58.9S 16.5W			
h=10km mb=5.8 Ms=5.5			
Southwestern Atlantic Ocean			
Aug 25	WDC	iPc	10 02 06.2
	ORV	iPc	10 02 06.9
	JAS1	ePc	10 02 08.4
USGS 09h49m15.0s 20.4S 168.0E			
h=33km mb=4.9			
Loyalty Islands			
Aug 25	JAS1	iPc	11 04 00.7
	MNA	ePc	11 04 03.1
	WDC	iPc	11 04 18.0
USGS 10h53m18.7s 26.2S 112.7W			
h=10km mb=4.8 Ms=4.2			
Easter Island Region			
Aug 25	FHC	iPd	13 01 00.2
		eS	13 01 09.5
	WDC	iPc	13 01 02.3
		eS	13 01 13.5
	MIN	iPc	13 01 12.2
		eS	13 01 31.0
	ORV	eP	13 01 21.0
	JAS1	eP	13 01 49.6

DATE	STA	PHASE	TIME (UTC)
BRK 13h00m48.8s 41.1N 123.3W			
h=21km ML=3.8(3) Mo=1.0E22(3)			
NE of Eureka, CA			
Aug 25	WDC	ePc	19 11 55.4
	MIN	eP	19 11 58.4
	BKS	eP	19 12 12.6
		AMP(µm)	PER(s)
		PZ 0.069	1.2
	JAS1	ePc	19 12 13.2
	FRI	eP	19 12 16.1
USGS 18h59m58.6s 61.9N 72.1E			
h=0km mb=5.4			
Western Siberia			
Aug 26	FRI	iPd	00 33 45.9
	MNA	iPd	00 33 47.4
	PRI	ePd	00 33 48.1
	SAO	ePd	00 33 52.5
	JAS1	iPd	00 33 53.4
	MHC	iPd	00 33 56.5
	BKS	eP	00 34 00.4
		AMP(µm)	PER(s)
		PZ 0.28	1.2
	ORV	iPd	00 34 03.6
		e	00 34 57
	WDC	iPd	00 34 08.7
USGS 00h22m51.5s 16.2S 69.5W			
h=225km mb=5.2			
Peru-Bolivia Border Region			
Aug 26	FRI	iPd	05 08 18.9
		e	05 11 19
	MNA	iPd	05 08 20.8
		e	05 11 20
	PRI	ePd	05 08 21.2
		e	05 11 21
	SAO	eP	05 08 27.7
	JAS1	iPd	05 08 28.7
		e	05 11 23
	MHC	iPd	05 08 33.1
		e	05 11 24
	BKS	eP	05 08 39.5
		e	05 11 26
		AMP(µm)	PER(s)
		PZ 0.035	1.0
	ORV	iPd	05 08 44.0
	MIN	iPd	05 08 48.2
		e	05 11 28
	WDC	iPd	05 08 52.2
		e	05 11 30
	FHC	iPd	05 09 03.7
USGS 05h02m11.4s 15.9N 95.3W			
h=43km mb=5.4 Ms=4.2			
Near Coast of Oaxaca, Mexico			
Aug 26	SAO	eP	05 12 10.2
		ePP	05 14 18
	PRI	iPd	05 12 11.4
	BKS	ePd	05 12 11.4
		e	05 14 17
		ePP	05 15 08
		eS	05 21 48
		e	05 25 20
		eSSS	05 30 10
		eLg	05 33 38
		eSKPPKP	06 12 00
		AMP(µm)	PER(s)
		PZ 0.14	1.0
	MHC	iPd	05 12 11.8
		ePP	05 14 21
	FHC	iPd	05 12 15.5
	FRI	iPd	05 12 16.2

DATE	STA	PHASE	TIME (UTC)
		ePP	05 14 26
	JAS1	iPd	05 12 16.7
		ePP	05 14 28
	ORV	iPd	05 12 18.0
		ePP	05 14 32
	WDC	iPd	05 12 18.4
		ePP	05 14 32
	MIN	iPd	05 12 19.7
	MNA	iPd	05 12 25.4
		e	05 14 42
BRK mb=5.7 h=450km Distance=79°			
USGS 05h00m45.6s 23.6S 179.1E			
h=560km mb=5.9			
South of Fiji Islands			
Aug 26	WDC	iPc	11 07 54.5
	MIN	ePc	11 08 01.1
	ORV	ePc	11 09 10.5
	JAS1	iPc	11 09 32.1
	MNA	ePc	11 09 42.7
	FRI	iPc	11 09 53.8
	PRI	e(P)	11 10 00
USGS 11h05m09.2s 50.7N 129.7W			
h=10km mb=4.5 Ms=3.9			
Vancouver Island Region			
Aug 27	MNA	e	02 34 13
	JAS1	iPKPc	02 34 14.8
		e	03 33 18
USGS 02h14m06.4s 41.3S 43.1E			
h=10km mb=5.7 Ms=4.7			
Prince Edward Islands Region			
Aug 27	WDC	iPKPd	07 45 50.7
	MIN	iPKPd	07 45 52.0
	ORV	iPKPd	07 45 53.1
	MHC	iPKPd	07 45 56.1
	SAO	iPKPd	07 45 56.9
	JAS1	iPKPd	07 45 57.0
	FRI	iPKPd	07 45 59.0
	MNA	iPKPd	07 45 59.8
USGS 07h26m56.6s 1.9N 99.2E			
h=41km mb=5.4 Ms=5.2			
Northern Sumatera			
Aug 28	PRI	eP	10 12 25.5
	FRI	eP	10 12 28.4
	MNA	eP	10 12 37.3
	MHC	eP	10 12 37.3
	JAS1	eP	10 12 37.7
	BKS	e	10 19 30
		e	10 23 06
		e	10 24 08
		eLr	10 25 00
	ORV	eP	10 12 52.4
	WDC	eP	10 13 05.0
USGS 10h04m25.4s 4.5S 105.7W			
h=10km mb=5.3 Ms=5.3			
Northern Easter Is. Cordillera			
Aug 28	WDC	eP	10 25 45.8
	ORV	eP	10 25 52.8
	MIN	e	10 26 00
	JAS1	eP	10 26 03.5
USGS 10h14m54.0s 41.4N 141.5E			
h=118km mb=4.5			
Hokkaido, Japan Region			
Aug 28	FHC	iPc	19 17 00.1
		e	19 17 05
		epP	19 17 13
		esP	19 17 19
	WDC	iPc	19 17 04.6

DATE	STA	PHASE	TIME (UTC)
		e	19 17 09
		epP	19 17 17
		e	19 17 22
	MIN	iPc	19 17 07.6
		epP	19 17 20
		esP	19 17 26
	ORV	iPc	19 17 09.9
		e	19 17 26
		epP	20 17 23
		esP	20 17 28
	BKS	ePc	19 17 12.7
		epP	19 17 26
		AMP(µm)	PER(s)
		PZ 0.17	1.0
	MHC	iPc	19 17 16.2
		epP	19 17 29
	SAO	eP	19 17 18.0
	JAS1	ePc	19 17 18.2
		epP	19 17 31
		esP	19 17 37
	FRI	iPc	19 17 22.6
		epP	19 17 35
		esP	19 17 42
	PRI	ePc	19 17 22.7
		epP	19 17 36
		esP	19 17 43
	MNA	iPc	19 17 24.2
		e	19 17 29
		epP	19 17 37
		e	19 17 43
USGS 19h04m30.5s 27.4N 128.5E			
h=58km mb=5.9			
Ryukyu Islands			
Aug 29	MNA	iPc	00 24 17.3
		i	00 24 27
	JAS1	ePc	00 24 24.5
		e	00 24 34
	ORV	ePc	00 24 40.2
		e	00 24 50
USGS 00h18m28.9s 16.7N 98.2W			
h=33km mb=5.1 Ms=4.1			
Near Coast of Guerrero, Mexico			
Aug 29	WDC	eP	07 31 10.8
		e	07 31 17
	MIN	ePc	07 31 17.5
		e	07 31 24
	ORV	e(P)	07 31 26
		e	08 31 24
	JAS1	e(P)	07 31 51
		e	07 31 57
USGS 07h28m13.8s 51.5N 130.5W			
h=10km mb=4.4			
Queen Charlotte Islands Region			
Aug 29	PRI	eP	16 29 07.8
	MHC	eP	16 29 07.8
	BKS	e	16 29 08
	FRI	eP	16 29 13.0
	WDC	eP	16 29 14.1
	ORV	eP	16 29 14.5
	MNA	eP	16 29 23.1
USGS 16h18m13.9s 18.2S 178.4W			
h=592km mb=4.8			
Fiji Islands Region			
Aug 30	FHC	eP	12 32 13.7
	WDC	eP	12 32 21.5
		i	12 32 26
		i	12 32 49
	MIN	eP	12 32 26.5
	ORV	eP	12 32 38.5

DATE	STA	PHASE	TIME (UTC)
	BKS	eP	12 32 53.8
		e	12 33 06
		eLr	12 36 20
		eLq	12 36 28
		AMP(µm)	PER(s)
		PZ 0.14	1.2
		LZ 26	20.
		LN 32	20.
		LE 38	20.
	JAS1	eP	12 32 59.0
	MHC	eP	12 33 00.8
	MNA	eP	12 33 03.5
	SAO	e	12 33 06
	FRI	eP	12 33 10.8
	PRI	eP	12 33 17.0
BRK Ms=5.8 Distance=19°			
USGS 12h28m39.7s 54.1N 133.6W			
h=25km mb=5.5 Ms=5.5			
Queen Charlotte Islands Region			
Aug 30	MNA	iPc	14 45 35.9
	FRI	iP	14 45 47.9
	JAS1	iP	14 45 56.2
	PRI	eP	14 46 01.5
	LLA	eP	14 46 03.3
	PRS	eP	14 46 07.5
	SAO	iPc	14 46 07.5
	MHC	eP	14 46 08.5
	ORV	eP	14 46 13.5
	BKS	e(P)	14 46 18
	MIN	eP	14 46 22.8
BRK ML=4.5(6)			
USGS 14h45m00.1s 37.1N 116.0W			
h=0km mb=4.5			
Underground Nuclear Explosion, NTS (Dolcetto)			
Aug 30	SAO	ePc	16 19 03.5
		e	16 19 18
	PRI	iPc	16 19 04.7
		e	16 19 20
	MHC	iPc	16 19 05.6
		e	16 19 20
	BKS	eP	16 19 05.7
		e	16 19 20
		e	16 30 00
		e	16 43 00
		eLr	16 46 25
		AMP(µm)	PER(s)
		PZ 0.18	1.1
		LZ 4.1	20.
		LN 3.6	20.
		LE 3.2	20.
	FRI	iPc	16 19 09.1
		e	16 19 24
	JAS1	iPc	16 19 10.2
		i	16 19 25
	FHC	iPc	16 19 11.2
	ORV	iPc	16 19 12.4
		e	16 19 27
	WDC	iPc	16 19 13.4
		e	16 19 28
	MIN	e(P)	16 19 15
	MNA	iPc	16 19 18.1
		e	16 19 23
BRK Ms=5.9 Distance=87°			
USGS 16h06m13.9s 33.3S 179.4W			
h=33km mb=5.9 Ms=5.7			
South of Kermadec Islands			
Aug 30	PRI	iP	20 20 44.5
	LLA	eP	20 20 49.8
	FRI	eP	20 20 53.4

DATE	STA	PHASE	TIME (UTC)
	PRS	iP	20 20 53.7
	SAO	iPc	20 20 57.0
	GCC	eP	20 21 03.6
	MHC	eP	20 21 03.8
	JAS1	iPd	20 21 06.3
		iS	20 21 27.8
	MNA	eP	20 21 29.0
	ORV	e(P)	20 21 37
BRK 20h20m38.6s 36.3N 120.3W			
h=8kmR Mag=2.6			
Coalinga Area, CA			
Aug 30	PRI	iPd	20 41 28.4
	LLA	eP	20 41 35.5
	PRS	iPc	20 41 38.5
	FRI	iPd	20 41 39.0
	SAO	iP	20 41 42.2
	MHC	eP	20 41 50.4
	GCC	eP	20 41 50.5
	JAS1	iPd	20 41 51.9
		iS	20 42 14.3
	MNA	iP	20 42 12.1
	ORV	e(P)	20 42 20
BRK 20h41m22.7s 36.1N 120.3W			
h=12km ML=3.0(2)			
Coalinga Area, CA			
Aug 31	PRI	eP	00 30 03
	MHC	eP	00 30 04
		e	00 30 16
	FRI	eP	00 30 09
	JAS1	eP	00 30 09.7
	ORV	eP	00 30 11.6
	WDC	eP	00 30 12.4
	MNA	ePd	00 30 19.5
		e	00 30 31
USGS 00h18m18.4s 20.6S 174.2W			
h=33km mb=5.1 Ms=4.8			
Tonga Islands Region			
Aug 31	MHC	iPd	02 48 36.8
	GCC	eP	02 48 42.2
	SAO	iPd	02 48 45.3
	PCC	iP	02 48 46.9
	BKS	eP	02 48 49.8
		eS	02 49 02.0
	BRK	iPc	02 48 50.2
	LLA	iP	02 48 50.9
	ZSP	iPc	02 48 51.2
		iS	02 49 05.6
	PRS	iPc	02 48 52.6
	JAS1	iP	02 48 56.5
		eS	02 49 11.9
	PRI	eP	02 49 01.0
	FRI	eP	02 49 02.4
BRK 02h48m34.8s 37.3N 121.7W			
h=4km ML=2.6(4) Mo=5.6E19(2)			
Halls Valley Sequence			
Aug 31	MNA	iP	04 50 12.5
		e	04 50 17
	FRI	eP	04 50 13.0
	JAS1	eP	04 50 22.2
		e	04 50 26
	MHC	eP	04 50 26.5
	ORV	eP	04 50 35.2
		e	04 50 40
	BKS	e	04 50 38
		e	04 57 24
		eL	05 02 32
		AMP(µm)	PER(s)
		LZ 5.4	20.
		LN 4.8	20.

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)
		LE	6.6 20.
	WDC	eP	04 50 42.5
		e	04 50 47
	FHC	eP	04 50 54.0

USGS 04h42m59.7s 12.9N 87.1W
h=42km mb=5.6 Ms=5.1
Near Coast of Nicaragua

Aug 31	FHC	e(P)	13 21 07
	WDC	iPc	13 21 09.7
	MIN	iPc	13 21 13.1
	ORV	iPc	13 21 19.3
	MNA	iPc	13 21 36.3

USGS 13h15m37.3s 65.7N 134.9W
h=33km mb=4.9 Ms=4.0
Northern Yukon Territory, Canada

Aug 31	BKS	ePd	15 54 36.5
		eS	16 04 58
		eLr	16 19 28
		ePP	16 57 49
		ePPS	17 06 00
		eSS	17 09 48

	AMP(μa)	PER(s)
PZ	0.27	1.5
LZ	26	20.
LN	13	20.
LE	21	20.

	MHC	ePd	15 54 36.9
	FHC	ePd	15 54 37.7
	PRI	ePd	15 54 37.7
	WDC	ePd	15 54 41.4
	ORV	ePd	15 54 42.2
	JAS1	ePd	15 54 42.3
	FRI	ePd	15 54 42.5

BRK Ms=6.5 Distance=81°
USGS 15h42m11.7s 18.0S 172.1E
h=29km mb=6.1 Ms=6.2
Vanuatu Islands

Aug 31	FRI	eP	16 15 34.0
	MNA	eP	16 15 35.1
	PRI	eP	16 15 35.2
	MHC	eP	16 15 44.5
	ORV	ePc	16 15 52.6
	WDC	ePc	16 15 58.2
		e	16 16 05

	AMP(μa)	PER(s)
PZ	0.036	0.9

USGS 16h05m00.9s 11.3S 74.4W
h=33km mb=5.1 Ms=4.8
Peru

Aug 31	FRI	eP	19 52 14.8
		e	19 52 41
	PRI	ePd	19 52 17.5
	JAS1	ePd	19 52 24.5
		e	19 52 50
	MHC	ePd	19 52 29.0
		e	19 52 55
	BKS	ePd	19 52 36.0
		epP	19 52 58
		esP	19 53 12
		eS	19 57 55
		eSS	19 58 36

	AMP(μa)	PER(s)
PZ	2.1	4.4
LZ	7.7	20.
LN	14	20.
LE	6.3	20.

	ORV	ePd	19 52 39.0
		e	19 53 04
	MIN	ePd	19 52 43.0

DATE	STA	PHASE	TIME (UTC)
		e	19 53 13
	WDC	ePd	19 52 46.7
		e	19 53 15
		e	19 55 17
		e	19 55 46
	FHC	eP	19 52 58.6
		e	19 53 29

BRK Ms=5.6 Distance=33°
USGS 19h46m03.9s 16.1N 93.3W
h=119km mb=5.3
Chiapas, Mexico

Sep 1	MHC	iPd	04 48 09.2	
	GCC	iPc	04 48 14.6	
	PCC	iPc	04 48 19.1	
		eS	04 48 30	
	BKS	iPc	04 48 22.1	
		eS	04 48 33.0	
	BRK	iPc	04 48 22.2	
		eS	04 48 33.6	
	LLA	iPd	04 48 23.2	
		e(S)	04 48 37	
	PRS	iPc	04 48 24.8	
	JAS1	eP	04 48 28.5	
		eS	04 48 44.5	
	PRI	e(P)	04 48 32	
	FRI	iP	04 48 34.1	
		eS	04 48 53.8	
	ORV	eP	04 48 45.2	

BRK 04h48m07.2s 37.3N 121.7W
h=6km ML=2.8(4) Mo=7.4E19(2)
Halls Valley Sequence

Sep 1	WDC	iPd	17 16 13.5	
	ORV	ePd	17 16 21.1	
	BKS	e(P)	17 16 24	
		iS	17 25 00	
		eSS	17 29 13	
		e	17 32 33	
	PCC	e(P)	17 16 27	
	JAS1	iPd	17 16 32.6	

USGS 17h05m54.3s 44.5N 149.6E
h=26km mb=5.7 Ms=5.7
Kuril Islands

Sep 1	WDC	iPd	17 54 49.0
	JAS1	e(P)	17 55 08

USGS 17h44m28.2s 44.4N 149.7E
h=12km mb=5.4
Kuril Islands

Sep 1	PCC	iPd	21 27 13.3	
	SAO	eP	21 27 14.3	
	BKS	eP	21 27 15.3	
	MHC	iPd	21 27 15.9	
	PRI	eP	21 27 16	
	FHC	e(P)	21 27 19	
	FRI	iPd	21 27 21.1	
	JAS1	iPd	21 27 21.5	
		e	21 29 03	
	ORV	eP	21 27 22.5	
		e	21 29 05	
	WDC	eP	21 27 22.5	
		e	21 29 05	
	MIN	eP	21 27 24.7	

USGS 21h16m12.8s 18.2S 178.2W
h=478km mb=5.4
Fiji Islands

Sep 1	JAS1	e(P)	23 47 42	
	ORV	eP	23 47 51.0	
	WDC	e(P)	23 47 55	

USGS 23h39m05.6s 18.3N 69.4W
h=70km mb=5.2
Dominican Republic Region

Sep 2	WDC	eP	18 39 58.6	
	ORV	eP	18 40 04.5	
	PCC	eP	18 40 07.0	
	BKS	eP	18 40 07.3	

	AMP(μa)	PER(s)
PZ	0.055	0.9

	MHC	eP	18 40 10.5	
	JAS1	eP	18 40 12.4	
	FRI	eP	18 40 17.2	

USGS 18h27m22.9s 26.5N 129.9E
h=33km mb=5.5 Ms=5.2
Ryukyu Islands

Sep 3	FHC	eP	06 52 17.9	
	WDC	eP	06 52 33.3	
	MIN	eP	06 52 44.3	
	ORV	eP	06 52 50.0	
		i	06 53 30.7	
	JAS1	e	06 53 16	

Sep 3	PRI	e	12 00 59.0	
	MHC	eP	12 01 00.0	
	BKS	eP	12 01 00.4	
		e	12 01 15.5	

	AMP(μa)	PER(s)
PZ	0.036	0.9

	FRI	eP	12 01 03.7	
	JAS1	eP	12 01 04.4	
	ORV	eP	12 01 07.0	
	WDC	eP	12 01 07.7	
	MIN	eP	12 01 09.1	

USGS 11h48m25.3s 29.8S 177.8W
h=33km mb=5.4
Kermadec Islands

Sep 3	MHC	iPc	12 44 19.0	
	GCC	eP	12 44 25.1	
	SAO	iPc	12 44 27.5	
	PCC	eP	12 44 29.1	
		iS	12 44 41.5	
	BRK	eP	12 44 32.4	
	LLA	iPc	12 44 32.5	
	BKS	ePc	12 44 32.6	
		eS	12 44 45.6	
	PRS	eP	12 44 35.0	
	JAS1	iPd	12 44 37.7	
		iS	12 44 53.8	
	FRI	eP	12 44 43.4	

BRK 12h44m17.1s 37.3N 121.6W
h=7km ML=2.6(4) Mo=4.6E19(2)
Halls Valley Sequence

Sep 3	PRI	eP	17 26 34.2	
	JAS1	eP	17 26 40.0	
	MHC	eP	17 26 43.1	
	BKS	e(P)	17 26 47.2	

	AMP(μa)	PER(s)
PZ	0.013	0.6

	ORV	eP	17 26 51.7	
	WDC	eP	17 26 56.3	

USGS 17h15m41.9s 14.9S 72.3W
h=105km mb=5.1
Peru

Sep 4	MHC	iPd	17 02 04.9	
	GCC	iPd	17 02 10.2	
	SAO	iPd	17 02 13.4	
	PCC	iPc	17 02 14.7	
	BKS	iPc	17 02 17.8	
		eS	17 02 29.0	
	BRK	iPc	17 02 17.8	
	LLA	ePc	17 02 18.5	
	ZSP	ePc	17 02 19.2	
		eS	17 02 30.5	
	PRS	ePd	17 02 20.4	
	JAS1	iPc	17 02 24.1	
		iS	17 02 39.9	
	PRI	eP	17 02 26.2	
	FRI	iPc	17 02 29.8	
	ORV	eP	17 02 40.8	

BRK 17h02m02.8s 37.3N 121.7W
h=7km ML=3.4(4) Mo=1.6E21(4)
Halls Valley Sequence

Sep 5	PRI	iPd	05 56 12.5	
	LLA	iPd	05 56 16.9	
	FRI	iPc	05 56 20.4	
	PRS	eP	05 56 21.3	
	SAO	iPd	05 56 24.1	
	GCC	eP	05 56 31.7	
	JAS1	iPc	05 56 33.4	
		iS	05 56 54.6	

BRK 05h56m06.0s 36.3N 120.3W
h=5km Mag=2.8
20 km N of Coalinga, CA

Sep 5	PCC	eP	08 29 15.8	
	SAO	eP	08 29 16.5	
	MHC	eP	08 29 18	
	BKS	eP	08 29 18.0	

	AMP(μa)	PER(s)
PZ	0.016	0.8

	FHC	eP	08 29 22	
	FRI	eP	08 29 23.1	
	JAS1	iPd	08 29 23.7	
		e	08 31 34	
	ORV	iPd	08 29 25.0	
	WDC	iPd	08 29 25.3	
		e	08 31 36	
	MIN	eP	08 29 26.8	

USGS 08h18m13.0s 21.1S 179.0W
h=622km mb=5.3
Fiji Islands Region

Sep 5	WDC	ePKP	09 50 29.7	
		ePP	09 51 29.3	
		epSKP	09 53 44.5	
	ORV	ePKP	09 50 31.5	
		ePP	09 51 35.4	
		epSKP	09 53 46.4	
	JAS1	ePKP	09 50 34.2	
		ePP	09 51 43.6	
		epSKP	09 53 49.2	
	FRI	ePKP	09 50 35.7	
		epSKP	09 53 50.5	
	PRI	ePKP	09 50 36	
		epSKP	09 53 50	
	BKS	ePP	09 51 32	
		e	10 00 52	
		e	10 01 22	
	MIN	ePP	09 51 34.3	
		epSKP	09 53 46	
	MHC	epSKP	09 53 18	

USGS 09h32m12.3s 8.1S 121.8E
h=201km mb=5.6
Flores Island Region

Sep 5	JAS1	e(P)	12 39 14	
		e(S)	12 41 32	
		e	12 42 52	
	WDC	e(P)	12 40 42	
		e	12 43 37	
	PRI	e	12 41 21	
	BRK	e	12 41 42.3	

USGS 12h37m05.0s 31.1N 113.7W
h=10km mb=4.8
Gulf of California

Sep 5	PRI	eP	22 38 12.8	
	FRI	eP	22 38 16.8	
	MHC	eP	22 38 21.4	
	JAS1	eP	22 38 23.9	
		ePP	22 40 40.5	
	MNA	eP	22 38 27.0	
		ePP	22 40 43.3	
	ORV	e(P)	22 38 35	
	WDC	eP	22 38 41.9	

USGS 22h27m54.3s 25.5S 116.1W
h=10km mb=5.6 Ms=5.4
Easter Island Cordillera

Sep 6	MHC	iPd	14 05 27.8	
	GCC	iPd	14 05 33.4	
	SAO	iPd	14 05 36.8	
	PCC	eP	14 05 37.0	
		iS	14 05 47.1	
	BRK	eP	14 05 40.2	
		iS	14 05 52.3	
	BKS	ePc	14 05 40.4	
		eS	14 05 51.6	
	ZSP	eP	14 05 41.9	
	LLA	eP	14 05 42.1	
		iS	14 05 55.8	
	PRS	eP	14 05 43.7	
	JAS1	iPc	14 05 47.0	
	FRI	iPc	14 05 53.0	

BRK 14h05m25.9s 37.3N 121.7W
h=8km ML=2.7(4) Mo=4.4E19(2)
Halls Valley Sequence

Sep 6	MNA	iPd	19 19 25.7	
	PRI	iPd	19 19 27.2	
	JAS1	eP	19 19 33	
	MHC	e(P)	19 19 37	
	ORV	iPd	19 19 44.9	
		e	19 20 06	
	WDC	eP	19 19 51.0	
		e	19 20 13	

USGS 19h10m00.3s 3.6S 79.6W
h=83km mb=5.4
Near Coast of Ecuador

Sep 6	MHC	iPd	19 52 12.4	
		eS	19 52 15.7	
	GCC	iPc	19 52 15.7	
	SAO	iPd	19 52 16.9	
	PCC	iPc	19 52 22.1	
	LLA	iPc	19 52 22.2	
	PRS	eP	19 52 24.5	
	BKS	iPc	19 52 25.8	
		eS	19 52 39.2	
	BRK	iPd	19 52 26.0	
	ZSP	eP	19 52 27	
		eS	19 52 42	
	JAS1	iPc	19 52 30.2	
		eS	19 52 46	
	PRI	eP	19 52 31.9	
	FRI	ePc	19 52 34.4	
		e(S)	19 52 54	

BRK 19h52m08.4s 37.2N 121.6W
h=4km ML=2.7(4) Mo=1.5E20(2)
Halls Valley Sequence

Sep 6	FRI	e(P)	20 36 27	
	MNA	e(P)	20 36 35	
	JAS1	e(P)	20 36 40	
	MIN	e(P)	20 37 13	
	BKS	e	20 37 16.5	

	AMP(μa)	PER(s)
LZ	12	20.

	WDC	e(P)	20 37 22	
	FHC	e(P)	20 37 34	

USGS 20h34m25.4s 30.6N 114.0W
h=10km mb=5.0 Ms=5.2
Gulf of California

Sep 6	BKS	e(P)	22 07 51.3	

	AMP(μa)	PER(s)
PZ	0.022	1.0

	SAO	e(P)	22 07 52	
	MHC	eP	22 07 53.4	
	FHC	e(P)	22 07 54	
	PRI	ePd	22 07 54.3	
	ORV	iPd	22 07 58.9	
	WDC	iPd	22 07 59.1	
		e	22 08 03.5	
	JAS1	iPd	22 07 59.1	
		e	22 08 04.0	
	FRI	iPd	22 07 59.2	
	MIN	e(P)	22 08 02	
		e	22 08 15.0	
	MNA	iPd	22 08 08.8	

USGS 21h55m41.0s 16.9S 174.5E
h=33km mb=5.5 Ms=5.5
Fiji Islands Region

Sep 7	PRI	iPc	02 52 29.6	
	FRI	eP	02 52 35.1	
	LLA	iPd	02 52 35.5	
	PRS	iPc	02 52 38.6	
	SAO	iPc	02 52 42.7	
	GCC	e(P)	02 52 49	
	MHC	eP	02 52 49.0	
	JAS1	iPc	02 52 50.1	
		iS	02 53 14.0	
	PCC	eP	02 52 56.5	
	BRK	e(P)	02 52 58	
	MNA	eP	02 53 04.6	
	MIN	e(P)	02 53 35	
	WDC	e(P)	02 53 47	

BRK 02h52m19.5s 36.1N 120.0W
h=5km ML=3.5(6)
Coalinga Area, CA

Sep 7	PRI	ePnc	11 04 15.4	
		iPn	11 04 23.2	
		iSn	11 04 59.3	
	FRI	e(P)	11 04 21.4	
	PRS	ePc	11 04 21.5	
	LLA	ePd	11 04 23.3	
	SAO	eP	11 04 27.1	
		eSn	11 05 21.8	
	GCC	eP	11 04 33.0	
	JAS1	eP	11 04 37.2	
	MNA	eP	11 04 39.3	
	PCC	eP	11 04 40.5	
	BKS	eP	11 04 44.5	
	ORV	e(P)	11 05 02	

BRK ML=4.3(2)
PAS 11h03m13.3s 32.9N 117.8W
h=6km ML=4.3
Southern California

Sep 7	FRI	eP	14 52 27.9	
	MNA	iPd	14 52 33.0	
		ePg	14 52 36.4	
		eSg	14 52 43.4	
	PRI	iPd	14 52 43.7	
		eS	14 53	

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REGISTRATION OF EARTHQUAKES 1984

DATE	STA	PHASE	TIME (UTC)
	LLA	e(P)	14 52 40
	PRS	e(P)	14 52 44
	JAS1	eP	14 52 46.8
		iS	14 53 27.0
	SAO	eP	14 52 48.7
	MHC	e(P)	14 52 50
	ORV	e(P)	14 53 08
BRK ML=3.9(6)			
PAS 14h51m51.2s 36.0N 117.3W			
h=0km ML=3.7			
Southern California			
Sep 7	FRI	e(P)	17 58 40
		e(S)	17 59 47
	PRI	e(P)	17 58 43
	JAS1	eP	17 58 55
		eS	18 00 22.9
	MNA	e(P)	17 58 59
	MHC	e(P)	17 59 01
	BKS	e(P)	17 59 09.0
BRK ML=3.9(2)			
PAS 17h57m30.2s 33.5N 116.4W			
h=15km ML=4.1			
Southern California			
Sep 8	MNA	iPc	01 02 07.9
	ORV	e	01 02 26.2
		e	01 02 40.7
	MIN	eP	01 02 26.5
		e	01 02 38.0
	JAS1	eP	01 02 30.9
		i	01 02 43.0
	WDC	eP	01 02 32.9
	FRI	eP	01 02 34.1
	MHC	e	01 02 54.7
	PRI	e	01 02 59.9
USGS 00h59m31.1s 44.2N 106.0W			
h=20km mb=5.1			
Wyoming			
Sep 8	MNA	ePn	06 18 22.8
		i	06 18 37.0
	MIN	ePn	06 18 23.2
	WDC	e(P)	06 18 28.2
	ORV	ePn	06 18 30.9
		i	06 18 47.6
	JAS1	iPc	06 18 42.9
	FHC	e	06 18 48.0
	FRI	e	06 18 50.0
	MHC	e	06 18 56.9
	BKS	eP	06 18 57.2
		e	06 19 36.0
		e(S)	06 21 02.8
		e	06 21 22.8
		e	06 21 34.2
		e	06 21 57.6
BRK ML=5.4(2)			
USGS 06h16m40.1s 44.4N 114.2W			
h=10km mb=5.0 Ms=4.4			
Western Idaho			
Sep 9	MNA	eP	13 17 49.6
	MIN	eP	13 17 56.7
	ORV	e	13 17 58.8
	JAS1	iPc	13 18 01.1
	FRI	e	13 18 01.3
	PRI	e	13 18 13.5
USGS 13h06m31.4s 36.9N 24.6W			
h=10km mb=5.3 Ms=4.7			
Azores Islands Region			
Sep 10	FHC	iPc	01 54 04.5
		iS	01 54 10.6
	WDC	iPd	01 54 20.6
	MIN	iPd	01 54 30.4
	ORV	iP	01 54 35.6
BRK 01h53m53.4s 40.7N 124.7W			
h=5kmR ML=3.2(4)			
Off Coast, 40 km SW of Eureka, CA			
Sep 10	FHC	iPc	03 14 46.0
	WDC	iPc	03 15 01.3
		iS	03 15 41.0
	MIN	iPc	03 15 11.4
		eS	03 15 58.4
	ORV	iPc	03 15 13.5
	ZSP	iPd	03 15 14.8
	BKS	iP	03 15 14.8
		iS	03 16 07.8
		i	03 17 52.1
		i	03 19 32.3
		i	03 21 07.8
		i	03 22 17.8
		i	03 23 01.7
	BRK	iPd	03 15 15.15
	PCC	iPd	03 15 17.1
	GCC	ePd	03 15 24.3
	MHC	iPd	03 15 25.35
	SAO	iPd	03 15 31.6
	JAS1	iPd	03 15 33.6
	PRS	ePd	03 15 36.1
	LLA	ePd	03 15 37.2
	PRI	iPd	03 15 44.35
	FRI	ePd	03 15 46.4
	MNA	iPc	03 15 54.7
BRK 03h14m07.3s 40.4N 127.2W			
h=5kmR ML=6.6(6)			
Off Coast, 260 km W of Eureka, CA			
Sep 10	FHC	eP	06 44 04.7
		e(S)	06 44 31.5
	WDC	eP	06 44 21.1
		e	06 44 53.3
	MIN	eP	06 44 30.8
		eS	06 45 14.2
	ORV	eP	06 44 33.7
	ZSP	iPc	06 44 34.4
	BKS	iPc	06 44 35.6
		iS	06 45 27
	PCC	eP	06 44 36.6
	GCC	eP	06 44 43.9
	MHC	eP	06 44 44.8
		eS	06 45 42.7
	SAO	eP	06 44 50.4
	JAS1	eP	06 44 53.7
	PRS	eP	06 44 55.0
	LLA	eP	06 44 56.7
	FRI	eP	06 45 06.0
BRK 06h43m31.8s 40.3N 126.7W			
h=5kmR ML=4.1(8)			
Off Coast, 230 km W of Eureka, CA			
Sep 10	FHC	eP	06 59 21.9
	WDC	eP	06 59 38.0
		eS	07 00 16.9
	MIN	eP	06 59 47.3
		eS	07 00 31.4
	ORV	eP	06 59 50.5
	BKS	iPc	06 59 52.0
		iS	07 00 47.2
	BRK	eP	06 59 52.1
	PCC	eP	06 59 53.2
	GCC	eP	07 00 00.6
	MHC	eP	07 00 01.5
	SAO	eP	07 00 08.2
	JAS1	eP	07 00 11.8
	PRS	eP	07 00 12.8
	LLA	eP	07 00 13.4
	FRI	eP	07 00 22.6
BRK 06h58m41.6s 40.5N 127.3W			
h=5kmR ML=4.0(8)			
Off Coast, 270 km W of Eureka, CA			
Sep 10	FHC	iPc	07 20 13.35
	WDC	iPc	07 20 29.6
		e	07 21 05.5
	MIN	iPd	07 20 39.6
	ORV	eP	07 20 43.0
	BRK	iPc	07 20 43.4
	ZSP	iP	07 20 43.5
	BKS	iPc	07 20 43.6
		i	07 22 55.0
	PCC	iPc	07 20 45.25
		e(S)	07 21 38
	GCC	eP	07 20 52.8
		e(S)	07 21 53
	MHC	eP	07 20 53.3
		e(S)	07 21 54
	SAO	iPd	07 20 59.6
		e(S)	07 22 03
	JAS1	eP	07 21 03
	PRS	eP	07 21 04.1
	LLA	eP	07 21 05.2
	PRI	e(P)	07 21 14
	FRI	eP	07 21 14.7
BRK ML=3.7(4)			
Off Coast W of Eureka, CA			
Sep 10	FHC	iPc	07 48 09.4
		i	07 48 17.7
		e	07 48 21.1
		i	07 48 30.9
		e	07 48 39.4
		i	07 48 55.5
	WDC	ePc	07 48 24.9
		i	07 48 32.2
		i	07 48 58.2
	MIN	eP	07 48 35.2
	ORV	eP	07 48 38.7
	BKS	iPc	07 48 39.2
		iS	07 49 33.0
	ZSP	iP	07 48 39.2
	BRK	iPc	07 48 39.3
	PCC	iPc	07 48 41.2
	GCC	iP	07 48 48.6
		i(S)	07 49 48.9
	MHC	eP	07 48 49.2
		e(S)	07 49 48.4
	SAO	iPd	07 48 55.5
	JAS1	iPd	07 48 58.6
	PRS	iP	07 49 00.9
		e(S)	07 50 08.5
	LLA	ePc	07 49 01.1
		e(S)	07 50 08.5
	PRI	eP	07 49 09
	FRI	iP	07 49 10.8
		e	07 50 27
	MNA	eP	07 49 18
BRK 07h47m28.1s 40.4N 127.5W			
h=5kmR ML=4.5(8)			
Off Coast, 300 km W of Eureka, CA			
Sep 10	FHC	ePd	23 53 08.2
	WDC	eP	23 53 24.2
		e(S)	23 54 04.2
	MIN	ePc	23 53 34.3
	ORV	ePc	23 53 36.2
	BKS	iP	23 53 37.3
		iS	23 54 30.2
	BRK	iPd	23 53 38.3
	PCC	iPd	23 53 40.0
	GCC	eP	23 53 47.6
		i(S)	23 54 45.5
	MHC	iPc	23 53 48.7
		i(S)	23 54 46.7
	SAO	iP	23 53 54.6
	JAS1	eP	23 53 57.8
	PRS	eP	23 53 59.9
	LLA	iPc	23 54 00.5
		e	23 55 10
	PRI	eP	23 54 08.0
	FRI	iPc	23 54 09.8
	MNA	e(P)	23 54 19.5
BRK 23h52m29.0s 40.4N 127.2W			
h=5kmR ML=4.7(8)			
Off Coast W of Eureka, CA			
Sep 11	FHC	iPd	01 32 28.5
		e(S)	01 32 53.5
	WDC	eP	01 32 44.2
		i	01 33 17.8
	MIN	iPc	01 32 54.2
		e(S)	01 33 38.8
	ORV	eP	01 32 57.2
		i	01 33 44.8
	BKS	iPc	01 32 58.7
		iS	01 33 48.5
	BRK	eP	01 32 58.9
	PCC	ePd	01 33 00.4
		e(S)	01 33 52
	GCC	ePd	01 33 07.8
		e(S)	01 34 05.5
	MHC	iPd	01 33 08.6
		e(S)	01 34 05.5
	PRS	eP	01 33 09.9
		e(S)	01 34 25.8
	LLA	eP	01 33 10.4
	SAO	e	01 33 14.7
	JAS1	eP	01 33 17.7
	PRI	eP	01 33 28.4
	FRI	eP	01 33 30.0
BRK 01h31m54.0s 40.4N 126.8W			
h=5kmR ML=4.2(8)			
Off Coast, 230 km W of Eureka, CA			
Sep 11	BKS	ePc	07 28 56.0
		AMP(µm)	PER(s)
		PZ 0.052	1.0
	MHC	eP	07 28 56.2
	PRI	eP	07 28 58.4
	WDC	iPc	07 29 00.0
		epP	07 29 32.6
	ORV	eP	07 29 01.0
	MIN	eP	07 29 01.5
	JAS1	iPc	07 29 02.0
		epP	07 29 35.2
		iPP	07 32 23.5
	FRI	eP	07 29 02.6
		epP	07 29 36.1
		ePP	07 32 24.5
	MNA	eP	07 29 11.0
		epP	07 29 44.2
		ePP	07 32 36.8
USGS 07h16m35.1s 15.5S 167.7E			
h=126km mb=5.6			
Vanuatu Islands			
Sep 11	FHC	eP	11 23 46.5
		e	11 24 08.0
		e(S)	11 24 13.0
	WDC	eP	11 24 02.4
	MIN	eP	11 24 12.5
	ORV	eP	11 24 15.4
	PCC	eP	11 24 16.1
	BKS	iPc	11 24 17.0
		i	11 24 34.1
		i(S)	11 25 09.0
		i	11 26 54.1
	GCC	eP	11 24 26.0
	MHC	eP	11 24 26.8
	SAO	iPd	11 24 32.9
	JAS1	eP	11 24 35.7
	PRS	eP	11 24 37.5
	LLA	eP	11 24 38.6
	PRI	eP	11 24 46.5
	FRI	eP	11 24 46.8
	MNA	e	11 24 59.5
BRK 11h23m07.1s 40.5N 127.2W			
h=5kmR ML=4.6(8)			
Off Coast W of Eureka, CA			
Sep 11	FHC	eP	18 44 32.0
		i	18 45 02.4
	WDC	ePc	18 44 49.0
		i	18 44 56.4
	MIN	eP	18 44 59.3
	ORV	eP	18 45 01.1
	BRK	eP	18 45 03.3
	BKS	iPc	18 45 03.5
		i(S)	18 45 52.0
		i	18 46 25.2
		i	18 47 32.1
	PCC	eP	18 45 05.1
	MHC	eP	18 45 13.3
	SAO	iPc	18 45 19.7
	JAS1	iP	18 45 23.2
	PRS	eP	18 45 23.9
	LLA	eP	18 45 25.1
	PRI	eP	18 45 33.0
	FRI	eP	18 45 34.4
	MNA	e	18 45 43.5
BRK 18h43m58.6s 40.4N 126.8W			
h=5kmR ML=4.3(8)			
Off Coast W of Eureka, CA			
Sep 12	MNA	eP	19 28 46.5
		epP	19 29 20.6
	PRI	eP	19 28 46.8
		epP	19 29 21.7
	JAS1	eP	19 28 52.7
		epP	19 29 26.8
	ORV	eP	19 29 03.2
		epP	19 29 37.6
	WDC	eP	19 29 08.5
USGS 19h17m52.0s 15.8S 71.9W			
h=140km mb=5.1			
Southern Peru			
Sep 12	PRI	eP	22 00 27.3
		i	22 00 31.5
	FRI	eP	22 00 32.5
		i	22 00 39.6
	MHC	e	22 00 42.2
	JAS1	eP	22 00 45.5
	MNA	eP	22 00 48.5
		i	22 00 53.5
	BKS	iPc	22 00 49.5
		i	22 00 53.0
		i d	22 00 54.2
		i	22 01 03.6
		i	22 04 06.5
		i	22 05 09.8
		i	22 09 19.0
		AMP(µm)	PER(s)
		PZ 0.052	1.0
	ORV	eP	11 24 15.4
	PCC	eP	11 24 16.1
	BKS	iPc	11 24 17.0
		i	11 24 34.1
		i(S)	11 25 09.0
		i	11 26 54.1
	GCC	eP	11 24 26.0
	MHC	eP	11 24 26.8
	SAO	iPd	11 24 32.9
	JAS1	eP	11 24 35.7
	PRS	eP	11 24 37.5
	LLA	eP	11 24 38.6
	PRI	eP	11 24 46.5
	FRI	eP	11 24 46.8
	MNA	e	11 24 59.5
BRK 11h23m07.1s 40.5N 127.2W			
h=5kmR ML=4.6(8)			
Off Coast W of Eureka, CA			
Sep 11	FHC	eP	18 44 32.0
		i	18 45 02.4
	WDC	ePc	18 44 49.0
		i	18 44 56.4
	MIN	eP	18 44 59.3
	ORV	eP	18 45 01.1
	BRK	eP	18 45 03.3
	BKS	iPc	18 45 03.5
		i(S)	18 45 52.0
		i	18 46 25.2
		i	18 47 32.1
	PCC	eP	18 45 05.1
	MHC	eP	18 45 13.3
	SAO	iPc	18 45 19.7
	JAS1	iP	18 45 23.2
	PRS	eP	18 45 23.9
	LLA	eP	18 45 25.1
	PRI	eP	18 45 33.0
	FRI	eP	18 45 34.4
	MNA	e	18 45 43.5
BRK 18h43m58.6s 40.4N 126.8W			
h=5kmR ML=4.3(8)			
Off Coast W of Eureka, CA			
Sep 12	MNA	eP	19 28 46.5
		epP	19 29 20.6
	PRI	eP	19 28 46.8
		epP	19 29 21.7
	JAS1	eP	19 28 52.7
		epP	19 29 26.8
	ORV	eP	19 29 03.2
		epP	19 29 37.6
	WDC	eP	19 29 08.5
USGS 19h17m52.0s 15.8S 71.9W			
h=140km mb=5.1			
Southern Peru			
Sep 12	PRI	eP	22 00 27.3
		i	22 00 31.5
	FRI	eP	22 00 32.5
		i	22 00 39.6
	MHC	e	22 00 42.2
	JAS1	eP	22 00 45.5
	MNA	eP	22 00 48.5
		i	22 00 53.5
	BKS	iPc	22 00 49.5
		i	22 00 53.0
		i d	22 00 54.2
		i	22 01 03.6
		i	22 04 06.5
		i	22 05 09.8
		i	22 09 19.0
		AMP(µm)	PER(s)
		PZ 0.052	1.0
	ORV	eP	22 00 51.7
	PCC	eP	22 01 05.4
	WDC	eP	22 01 16.3
USGS 21h56m27.8s 19.9N 115.9W			
h=10km mb=5.0 Ms=4.6			
East Central Pacific Ocean			
Sep 13	MNA	eP	07 44 20.2
	FRI	eP	07 44 20.5
	PRI	e	07 44 21.0
	MHC	e	07 44 34.0
	JAS1	eP	07 44 39.2
	BKS	iPc	07 44 40.0
		iPP	07 46 56
		iS	07 50 59.1
		iScS	07 54 32.0
		iLg	08 01 00
		iLr	08 04 00
		AMP(µm)	PER(s)
		LZ 3.6	20.
		LN 5.4	20.
		LE 14	20.
	ORV	eP	07 44 42.8
BRK Ms=5.9 Distance=45°			
USGS 07h36m57.1s 11.4N 86.7W			
h=54km mb=5.0			
Near Coast of Nicaragua			
Sep 13	MNA	iPc	14 00 36.9
	FRI	iPc	14 00 48.1
	JAS1	iPc	14 00 56.7
	PRI	eP	14 01 00.8
	LLA	eP	14 01 03.1
	PRS	eP	14 01 07.4
	SAO	iPc	14 01 08.1
	MHC	eP	14 01 10.0
	BKS	e(P)c	14 01 14.2
		iS	14 02 25.2
	ORV	iPc	14 01 15.6
	PCC	eP	14 01 18.3
	GCC	e	14 01 19.0
	MIN	eP	14 01 23.1
	WDC	eP	14 01 32.5
BRK ML=4.9(8)			
USGS 14h00m00.0s 37.1N 116.1W			
h=0km mb=5.0			
Underground Nuclear Explosion, NTS (Breton)			
Sep 14	FHC	eP	00 00 23.5
	WDC	ePd	00 00 28.8
		e	00 09 09
	MIN	eP	00 00 32.5
	ORV	ePd	00 00 35.3
	PCC	eP	00 00 39
	BKS	i(P)d	00 00 40.6
		i	00 00 52.8
		i	00 01 22.5
		ePP	00 03 44.1
		ePPP	00 05 24.0
		eS	00 10 26.0
		eScS	00 11 12
		ePPS	00 12 00
		eLq	00 19 59.1
		eLr	00 24 00
		AMP(µm)	PER(s)
		PZ 0.063	1.2
		LZ 2.5	20.
		LN 13	20.
		LE 6.3	20.
	MHC	eP	00 00 42.7
	JAS1	ePd	00 00 44.4
	SAO	eP	00 00 46.1

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DATE	STA	PHASE	TIME (UTC)
	FRI	eP	00 00 50.5
	PRI	eP	00 00 50.7
	MNA	eP	00 00 52.1

BRK Ms=6.3 Distance=77°
USGS 23h48m49.9s 35.8N 137.5E
h=10km mb=6.0 Ms=6.1
Honshu, Japan

DATE	STA	PHASE	TIME (UTC)
Sep 14	FHC	ePd	09 10 04.7
		e(S)	09 10 31.6
	WDC	iPd	09 10 21.3
		e(S)	09 11 00.8
	MIN	iPd	09 10 31.0
		e(S)	09 11 16.0
	ORV	eP	09 10 33.8
	BKS	iPc	09 10 35.5
		i(S)	09 11 26.0
	PCC	iPd	09 10 36.6
	GCC	iP	09 10 43.9
	MHC	iPd	09 10 44.8
		e(S)	09 11 44.5
	SAO	iPc	09 10 50.9
	JAS1	iPd	09 10 54.2
	PRS	ePc	09 10 55.6
	LLA	eP	09 10 56.8
	PRI	eP	09 11 04.3
	FRI	eP	09 11 06.0

BRK 09h09m28.7s 40.4N 127.0W
h=5kmR ML=4.1(8)
Off Coast, 250 km W of Eureka, CA

DATE	STA	PHASE	TIME (UTC)		
Sep 14	FHC	ePc	22 26 06.4		
	WDC	iPc	22 26 11.7		
	ORV	iPc	22 26 18.2		
	BKS	eP	22 26 20.8		
		eSS	22 36 06.8		
		eL	22 46 10		
			AMP(μm)	PER(s)	
		PZ	0.094	1.2	
		LZ	0.71	20.	
		LN	1.8	20.	
		LE	0.89	20.	
	MHC	iPc	22 26 25.4		
	JAS1	iPc	22 26 27.9		
	PRI	ePc	22 26 33.0		
	FRI	iPc	22 26 33.1		
	MNA	iPc	22 26 34.5		

BRK Ms=5.4 Distance=70°
USGS 22h14m31.5s 35.8N 137.4E
h=10km mb=5.6 Ms=5.2
Honshu, Japan

DATE	STA	PHASE	TIME (UTC)
Sep 14	WDC	iPc	22 50 51.5
	ORV	e	22 51 00
	JAS1	iPc	22 51 08.9
	FRI	e	22 51 13
	MNA	e	22 51 17.1

USGS 22h39m09.9s 35.8N 137.4E
h=10km mb=5.0
Honshu, Japan

DATE	STA	PHASE	TIME (UTC)		
Sep 15	PCC	eP	11 10 44.8		
	SAO	eP	11 10 45.5		
	PRI	eP	11 10 46.5		
	BKS	eP	11 10 46.8		
			AMP(μm)	PER(s)	
		PZ	0.025	0.8	
	MHC	eP	11 10 47.0		
	FRI	eP	11 10 51.9		
	JAS1	iPd	11 10 52.7		
	ORV	iPd	11 10 53.9		
	WDC	iPd	11 10 54.3		
	MIN	eP	11 10 55.9		
	MNA	eP	11 11 01.7		

USGS 10h59m43.1s 20.9S 178.4W
h=599km mb=5.3
Fiji Islands Region

DATE	STA	PHASE	TIME (UTC)		
Sep 15	PRI	ePc	19 55 55.8		
	FRI	eP	19 56 03.8		
	MHC	e(P)	19 56 13		
	JAS1	eP	19 56 16		
	MNA	eP	19 56 20.2		
	BKS	ePc	19 56 22.5		
		e	19 59 06.4		
		eS	20 00 22.0		
		eL	20 00 49.6		
			AMP(μm)	PER(s)	
		PZ	0.044	0.9	
		LZ	2.1	20.	
		LN	2.0	20.	
		LE	0.54	20.	
	ORV	eP	19 56 37.2		
	MIN	eP	19 56 46		
	WDC	eP	19 56 49		
	FHC	e(P)	19 56 57		

BRK Ms=4.5 Distance=22°
USGS 19h52m02.3s 20.1N 115.9W
h=10km mb=5.0 Ms=4.1
East Central Pacific Ocean

DATE	STA	PHASE	TIME (UTC)		
Sep 16	PRI	eP	07 20 31		
	BKS	eP	07 20 31.7		
		eS	07 31 20.8		
		eL	07 43 43.2		
		eLr	07 48 20.8		
			AMP(μm)	PER(s)	
		PZ	0.051	0.9	
		LZ	3.8	20.	
		LN	2.3	20.	
		LE	2.5	20.	
	FRI	eP	07 20 35		
	JAS1	eP	07 20 36.0		
	WDC	eP	07 20 38		
	MNA	e(P)	07 20 44		

BRK Ms=5.7 Distance=89°
USGS 07h07m43.1s 32.1S 178.2W
h=10km mb=5.3 Ms=5.3
South of Kermadec Islands

DATE	STA	PHASE	TIME (UTC)		
Sep 16	FHC	ePKP	10 41 16.6		
	WDC	iPKPd	10 41 17.9		
		e	10 42 37		
	MIN	ePKP	10 41 19.1		
	PCC	ePKPd	10 41 19.7		
	ORV	iPKPd	10 41 19.9		
		e	10 42 41		
	BKS	ePKP	10 41 20.6		
			AMP(μm)	PER(s)	
		PKPZ	0.038	0.8	
	MHC	ePKP	10 41 21.7		
		e	10 42 49		
	JAS1	iPKPd	10 41 22.6		
		e	10 42 53		
	PRI	iPKPd	10 41 24.1		
	FRI	iPKP	10 41 24.2		
		e	10 43 00		
	MNA	iPKPd	10 41 26.4		

USGS 10h23m42.4s 7.0S 117.5E
h=647km mb=5.5
Bali Sea

DATE	STA	PHASE	TIME (UTC)		
Sep 16	FHC	eP	21 37 05.3		
		e(S)	21 37 35.0		
	WDC	eP	21 37 21.8		
		e	21 38 03.7		
	MIN	e(P)	21 37 32.1		
		e(S)	21 38 21.0		
	BKS	eP	21 37 35.5		
		e	21 37 49.8		
	ORV	e(P)	21 37 36		
	PCC	eP	21 37 37.4		
	MHC	eP	21 37 45.9		
		e(S)	21 38 47.8		
	GCC	eP	21 37 45.9		
		e(S)	21 38 47.9		
	SAO	eP	21 37 51.7		
		e(S)	21 38 54.3		
	PRS	eP	21 37 56.5		
	LLA	e(P)	21 37 58		
	PRI	eP	21 38 05.0		
	FRI	e(P)	21 38 07		

BRK 21h36m25.6s 40.4N 127.3W
h=5kmR ML=4.0(4)
Off Coast, 280 km W of Eureka, CA

DATE	STA	PHASE	TIME (UTC)		
Sep 16	PCC	e(P)	22 38 46		
	BKS	eP	22 38 46		
		eS	22 48 56.4		
		e	22 50 04.6		
			AMP(μm)	PER(s)	
		PZ	0.065	1.0	
		LZ	1.4	20.	
		LN	0.89	20.	
		LE	0.89	20.	
	PRI	e(P)	22 38 47		
	MHC	eP	22 38 47.6		
	FRI	eP	22 38 52.0		
	ORV	eP	22 38 55.2		
	WDC	eP	22 38 55.7		
	MIN	e(P)	22 38 57		
	MNA	eP	22 39 02.2		

BRK Ms=5.3 Distance=82°
USGS 22h26m39.4s 24.8S 175.8W
h=33km mb=5.5 Ms=5.2
South of Tonga Islands

DATE	STA	PHASE	TIME (UTC)		
Sep 17	SAO	e(P)	09 21 33.9		
	PCC	ePd	09 21 34.2		
		e	09 21 38.3		
	PRI	eP	09 21 35.0		
		e	09 21 39.1		
	BKS	eP	09 21 36.0		
		eS	09 32 12.4		
		e	09 32 28		
		ePS	09 33 26.0		
		eG	09 44 44.8		
			AMP(μm)	PER(s)	
		PZ	0.23	1.2	
		LZ	2.1	20.	
		LN	2.1	20.	
		LE	0.36	20.	
	MHC	ePd	09 21 36.2		
		e	09 21 40.2		
	FRI	iPd	09 21 39.8		
		e	09 21 43.9		
	FHC	eP	09 21 41.9		
	JAS1	eP	09 21 42		
	ORV	eP	09 21 43.1		
		e	09 21 47.2		
	WDC	iPd	09 21 44.2		
		e	09 21 48.2		
	MIN	ePd	09 21 45.5		
	MNA	iPd	09 21 48.9		
		e	09 21 52.3		

BRK Ms=5.6 Distance=89°
USGS 09h08m48.8s 32.2S 178.3W
h=10km mb=5.8 Ms=6.4
South of Kermadec Islands

DATE	STA	PHASE	TIME (UTC)		
Sep 17	MNA	iPd	19 11 44.3		
		i	19 11 47.2		
		iS	19 12 11.0		
	JAS1	eP	19 12 10.4		
		i	19 13 11.6		
	FRI	eP	19 12 19.2		
		iS	19 13 09.1		
	MIN	eP	19 12 22.8		

BRK ML=4.0(2)
UNR 19h11m07.8s 39.1N 115.6W
h=5km ML=3.7
Nevada

DATE	STA	PHASE	TIME (UTC)		
Sep 17	WDC	eP	21 12 12.8		
	MIN	eP	21 12 16.6		
	ORV	eP	21 12 20.0		
	BKS	ePd	21 12 28.9		
			AMP(μm)	PER(s)	
		PZ	0.031	0.8	
	JAS1	eP	21 12 29.6		
	MNA	eP	21 12 30.0		
	MHC	eP	21 12 32.0		
	FRI	iPc	21 12 36.0		
	PRI	e	21 12 39.4		

USGS 20h59m57.5s 55.9N 87.4E
h=0km mb=4.9
Central U.S.S.R.

DATE	STA	PHASE	TIME (UTC)		
Sep 18	FRI	eP	04 22 52.6		
	ORV	eP	04 22 53.4		
	JAS1	eP	04 22 53.4		
	WDC	eP	04 22 55.0		
	MIN	eP	04 22 56.8		
	MNA	eP	04 23 02.3		

USGS 04h11m38.0s 21.7S 179.5W
h=606km mb=4.6
Fiji Islands Region

DATE	STA	PHASE	TIME (UTC)		
Sep 18	FHC	ePd	17 14 04.7		
	WDC	iPd	17 14 10.2		
		ePP	17 16 50		
		ePKPPKP	17 41 51		
		e	17 45 26		
	MIN	iPd	17 14 14.0		
	ORV	iPd	17 14 16.6		
		e	17 45 24		
	PCC	ePd	17 14 19.2		
	BKS	iPd	17 14 19.3		
		eS	17 23 56.8		
		eScS	17 24 40		
		eSS	17 28 24.0		
		eG	17 32 08.0		
		eL	17 33 37.2		
		eR	17 36 30		
			AMP(μm)	PER(s)	
		PZ	1.7	1.3	
		LZ	62	20.	
		LNE	29	20.	
		LNN	56	20.	
	MHC	ePd	17 14 23.3		
	SAO	eP	17 14 25.3		
	JAS1	iPd	17 14 26.3		
		ePP	17 17 10		
		ePKPPKP	17 41 44		
		e	17 45 20		
	PRI	ePd	17 14 31.2		
	FRI	iPd	17 14 31.5		
		e	17 45 17		
	MNA	iPd	17 14 33.6		

BRK Ms=6.9 Distance=74°
USGS 17h02m44.3s 34.0N 141.5E
h=48km mb=6.6 Ms=6.9

DATE	STA	PHASE	TIME (UTC)		
Off East Coast of Honshu, Japan					
Sep 19	ORV	ePKP	00 41 28.8		
		e	00 44 55.5		
	JAS1	e(PKP)	00 41 34.9		
	MNA	ePKP	00 41 36.4		
		e	00 44 23.0		
	FRI	ePKP	00 41 37.8		

USGS 00h21m49.7s 7.0S 72.8E
h=10km mb=5.0 Ms=6.0
Chagos Archipelego Region

DATE	STA	PHASE	TIME (UTC)		
Sep 19	WDC	eP	01 32 22.8		
	ORV	eP	01 32 28.6		
	BKS	eP	01 32 32.6		
		epP	01 32 50.7		
		eS	01 42 06.8		
		eScS	01 42 40.0		
		e	01 48 32		
		eL	01 51 38.8		
			AMP(μm)	PER(s)	
		PZ	0.038	0.8	
		LZ	2.9	20.	
		LN	0.0	20.	
		LE	2.7	20.	
	JAS1	ePc	01 32 39.0		
	PRI	e(P)	01 32 44		
	FRI	eP	01 32 44.3		
	MNA	ePc	01 32 46.2		

BRK Ms=5.5 Distance=74°
USGS 01h20m55.8s 33.9N 141.3E
h=43km mb=5.7 Ms=5.7
Off East Coast of Honshu, Japan

DATE	STA	PHASE	TIME (UTC)		
Sep 19	PCC	eP	04 02 53.2		
	PRI	eP	04 02 54.0		
	BRK	eP	04 02 54.5		
		eS	04 13 38.8		
		eL	04 25 56		
			AMP(μm)	PER(s)	
		PZ	0.057	1.0	
		LZ	5.7	20.	
		LN	3.0	20.	
		LE	4.6	20.	
	MHC	eP	04 02 55.0		
	FRI	eP	04 02 58.2		
	JAS1	ePc	04 02 59.8		
	ORV	eP	04 03 02.0		
	WDC	ePc	04 03 03.0		
	MIN	eP	04 03 04.3		
	MNA	eP	04 03 07.7		

BRK Ms=5.5 Distance=88°
USGS 03h50m11.2s 32.2S 178.1W
h=33km mb=5.3 Ms=5.7
South of Kermadec Islands

DATE	STA	PHASE	TIME (UTC)		
Sep 19	PRI	eP	04 45 37.5		
	BKS	eP	04 45 38.6		
			AMP(μm)	PER(s)	
		PZ	0.028	0.8	
		LZ	6.4	20.	
		LN	3.8	20.	
		LE	4.6	20.	
	MHC	eP	04 45 38.6		
	FRI	eP	04 45 42.0		
	JAS1	iPc	04 45 43.3		
	ORV	ePc	04 45 45.5		
	WDC	iPc	04 45 46.6		
	MIN	eP	04 45 48.0		
	MNA	ePc	04 45 51.3		

USGS 04h32m55.0s 32.3S 178.0W
h=33km mb=5.2 Ms=5.8
South of Kermadec Islands

DATE	STA	PHASE	TIME (UTC)		
Sep 19	PRI	eP	06 53 44.0		
	FRI	eP	06 53 51.8		
	MNA	eP	06 53 53.3		
	JAS1	e	06 54 14.0		
	ORV	e	06 54 22.8		
	MIN	e	06 54 32		

USGS 06h49m47.6s 20.2N 115.4W
h=10km mb=4.1
East Central Pacific Ocean

DATE	STA	PHASE	TIME (UTC)		
Sep 19	PRI	ePd	09 29 45.7		
	FRI	eP	09 29 52.4		
	MNA	eP	09 30 02.4		
	ORV	e	09 30 23.8		
	MIN	e	09 30 33		
	WDC	e	09 30 36		

Gulf of California Region

DATE	STA	PHASE	TIME (UTC)		
Sep 19	SAO	eP	20 36 09.8		
	PRI	ePc	20 36 10.9		
	MHC	eP	20 36 12.0		
	BKS	eP	20 36 12.2		
			AMP(μm)	PER(s)	
		PZ	0.019	1.4	
		LZ	0.11	20.	
		LN	0.11	20.	
		LE	0.089	20.	
	FRI	ePc	20 36 15.5		
	JAS1	ePc	20 36 16.8		
	ORV	ePc	20 36 18.9		

USGS 20h23m29.3s 31.8S 177.9W
h=33km mb=5.2 Ms=4.5
Kermadec Islands Region

DATE	STA	PHASE	TIME (UTC)		
Sep 19	PRI	e(P)	20 59 28		
	FRI	eP	20 59 35		
	JAS1	e(P)	20 59 48		
	MNA	e(P)	20 59 51		
	BKS	eP	20 59 54.2		
		eS	21 03 36.5		
			AMP(μm)	PER(s)	
		PZ	0.018	0.9	
		LZ	1.6	20.	
		LN	1.1	20.	
		LE	0.71	20.	
	ORV	eP	21 00 07.0		
	MIN	e(P)	21 00 19		
		e	21 00 25		

BRK Ms=4.3 Distance=21°
USGS 20h55m22.1s 19.1N 115.9W
h=10km mb=4.2
East Central Pacific Ocean

DATE	STA	PHASE	TIME (UTC)		
Sep 20	FHC	ePd	04 22 39		
	WDC	iPd	04 22 45.1		
		i	04 24 05.8		
		i	04 24 23.3		
	MIN	iPd	04 22 49.7		
	ORV	iPd	04 22 55.5		
	BKS	ePd	04 23 08.0		
		e	04 23 11.3		
		eS	04 27 51.2		
		eLr	04 30 21.6		
			AMP(μm)	PER(s)	
		PZ	0.14	1.2	
		LZ	4.3	20.	
		LN	2.5	20.	
		LE	4.6	20.	
	PCC	ePd	04 23 09.5		
	JAS1	iPd	04 23 11.7		
		e	04 24 31.8		
		e	04 24 43.8		

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DATE	STA	PHASE	TIME (UTC)
	MHC	ePd	04 23 13.7
	MNA	iPd	04 23 17.2
	SAO	eP	04 23 18
	FRI	ePd	04 23 22.2
	PRI	eP	04 23 27.4

BRK Ms=5.1 Distance=28°
USGS 04h17m24.4s 60.3N 146.0W
h=18km mb=5.5 Ms=5.2
Southern Alaska

Sep 20	FHC	e(P)	04 33 19
	MIN	iPd	04 33 28.9
		e	04 33 33.3
	ORV	ePd	04 33 35.5
	BRK	eP	04 33 46.5
	JAS1	iPd	04 33 52.2
		e	04 33 57
	MHC	eP	04 33 53.0
	MNA	ePd	04 33 56.1
	FRI	eP	04 34 01.4
	PRI	ePd	04 34 06.4

USGS 04h28m04.0s 60.3N 146.1W
h=26km mb=5.1 Ms=4.7
Southern Alaska

Sep 20	PRI	eP	10 04 34.3
	MNA	iPd	10 04 34.4
	JAS1	iPd	10 04 40.2
	MHC	eP	10 04 43.2
	PCC	eP	10 04 46.2
	ORV	iPd	10 04 51.2
	WDC	iPd	10 04 56.7

USGS 09h53m45.2s 15.1S 73.5W
h=100km mb=5.2
Southern Peru

Sep 20	PCC	eP	12 55 54.1	
	SAO	eP	12 55 54.7	
	BKS	ePc	12 55 56.3	
			AMP(μm)	PER(s)
		PZ	0.043	0.8
	MHC	iPc	12 55 56.5	
	FRI	iP	12 56 01.2	
	JAS1	iPc	12 56 01.6	
		e	12 57 56	
	ORV	iPc	12 56 03.1	
		e	12 57 57	
	WDC	iPc	12 56 03.6	
		e	12 57 58	
	MIN	eP	12 56 05.1	
	MNA	eP	12 56 10.1	
		e	12 58 05	

USGS 12h44m25.1s 24.5S 179.8W
h=491km mb=5.3
South of Fiji Islands

Sep 20	FHC	eP	17 07 46.4
	WDC	eP	17 07 51.8
	MIN	eP	17 07 56.5
	ORV	eP	17 07 58.0
	BKS	eP	17 08 00
		eS	17 17 40.0
		eScS	17 18 12
		e	17 28 52.8
		eLr	17 30 12
			AMP(μm)	PER(s)
		PZ	0.058	0.6
		LZ	3.6	20.
		LN	0.0	20.
		LE	2.9	20.
	MHC	eP	17 08 05.3	
	JAS1	eP	17 08 08.0	
	PRI	eP	17 08 12.6	
	FRI	eP	17 08 13.0	
	MNA	eP	17 08 15.1	

BRK Ms=5.6 Distance=75°
USGS 17h56m24.3s 34.0N 141.6E
h=30km mb=5.5 Ms=5.8
Off East Coast of Honshu, Japan

Sep 20	FHC	iPc	18 31 05.5
	WDC	iPc	18 31 20.2
	MIN	iPc	18 31 30.3
		eS	18 32 06.3
	ORV	iPc	18 31 32.7
	BKS	ePn	18 31 37.0
		iPgc	18 31 38.8
		eS	18 32 17.3
	PCC	eP	18 31 40.9
	MHC	e	18 31 47.9
	GCC	e	18 31 48.1
	SAO	e	18 31 53.5
	JAS1	iPc	18 31 55.0
	PRS	e	18 31 59.2
	LLA	e	18 32 00.4
	FRI	e	18 32 08.4
	PRI	e	18 32 09.2
	MNA	e	18 32 15.2

BRK 18h30m42.5s 40.4N 125.6W
h=5kmR ML=4.8(8) Mo=5.6E22(2)
Off Coast, 130 km WSW of Eureka, CA

Sep 20	FHC	ePc	19 05 16.1
		e	19 05 40.8
		iS	19 05 44.7
	WDC	iPd	19 05 32.0
		i	19 06 03.0
	MIN	ePd	19 05 41.9
		eS	19 06 29.0
	ORV	iPd	19 05 44.9
	BKS	iPd	19 05 46.4
		iS	19 06 39.1
	PCC	iPd	19 05 47.5
	GCC	eP	19 05 54.7
	MHC	eP	19 05 55.5
	SAO	e	19 06 01.5
	JAS1	iPc	19 06 04.8
	PRS	eP	19 06 06.4
	LLA	eP	19 06 07.6
	PRI	e	19 06 14.8
	FRI	eP	19 06 17.0
	MNA	e	19 06 25.0

BRK 19h04m37.5s 40.4N 127.2W
h=5kmR ML=4.8(8) Mo=5.7E21(2)
Off Coast, 270 km W of Eureka, CA

Sep 20	FHC	eP	19 31 22.0
	WDC	iP	19 31 27.6
	MIN	eP	19 31 30.9
	PCC	eP	19 31 31.5
	BKS	iPd	19 31 32.2
		eS	19 41 54.8
		eScS	19 42 38.8
		eLr	19 55 10
			AMP(μm)	PER(s)
		PZ	0.20	1.0
		LZ	1.6	20.
		LN	0.0	20.
		LE	1.6	20.
	ORV	eP	19 31 32.5	
	MHC	eP	19 31 35.4	
	JAS1	iP	19 31 39.2	
	PRI	eP	19 31 41.0	
	FRI	eP	19 31 43.4	
	MNA	eP	19 31 47.8	

BRK Ms=5.4 Distance=85°
USGS 19h19m23.0s 16.8N 147.2E
h=45km mb=5.7 Ms=5.5
Mariana Islands Region

Sep 20	FHC	e	22 05 17.5
	WDC	eP	22 05 22.9
	MIN	eP	22 05 26.7
	ORV	eP	22 05 29.5
	BRK	eP	22 05 31.8
	BKS	eP	22 05 31.9
		eS	22 15 08.8
		e	22 16 38.8
		eSS	22 20 04.0
		e	22 21 43.2
		eLr	22 27 39.2
			AMP(μm)	PER(s)
		PZ	0.094	0.7
		LZ	3.9	20.
		LN	0.0	20.
		LE	5.4	20.
	MHC	eP	22 05 36.1	
	JAS1	e	22 05 39.0	
	PRI	eP	22 05 44.0	
	FRI	eP	22 05 44.2	
		e	22 06 19.7	
	MNA	eP	22 05 46.4	
		e	22 06 20.8	

BRK Ms=5.9 Distance=76°
USGS 21h53m55.2s 34.0N 141.6E
h=33km mb=5.7 Ms=5.8
Off East Coast of Honshu, Japan

Sep 20	WDC	eP	23 26 02.3
	ORV	eP	23 26 08.7
	BKS	eP	23 26 11.5
		e	23 26 18.8
			AMP(μm)	PER(s)
		PZ	0.033	0.6
	JAS1	eP	23 26 18.3	

USGS 23h14m35.4s 34.0N 141.6E
h=40km mb=5.3 Ms=5.1
Off East Coast of Honshu, Japan

Sep 21	BKS	eP	00 55 32.1
			AMP(μm)	PER(s)
		PZ	0.038	0.75
	MHC	eP	00 55 33.2	
	WDC	eP	00 55 34.3	
	ORV	eP	00 55 36.5	
	JAS1	eP	00 55 36.7	
	FRI	eP	00 55 40.3	
	MNA	eP	00 55 48.0	

USGS 00h42m57.5s 10.2S 161.2E
h=69km mb=4.9
Solomon Islands

Sep 21	FHC	iPd	03 07 24.8
	WDC	iPc	03 07 43.0
		e	03 08 03.0
	MIN	iPc	03 07 53.4
	ORV	ePd	03 07 58.3
	PCC	eP	03 08 16.0
	BKS	eP	03 08 38.0

BRK 03h07m21.1s 40.7N 124.2W
h=11km ML=3.2(4) Mo=2.1E21(2)
Near Coast SW of Eureka, CA

Sep 21	FHC	e	09 41 14.7
	MIN	eP	09 41 24.0
	ORV	eP	09 41 26.5
	BKS	ePd	09 41 29.1
		e	09 42 18.0
		ePPP	09 46 16
		eS	09 51 12.8
		eSKS	09 51 42
		eLr	10 03 36
			AMP(μm)	PER(s)
		PZ	0.17	1.0
		LZ	2.5	20.
		LN	0.0	20.
		LE	3.2	20.
	MHC	eP	09 41 33.2	
	SAO	e	09 41 35.1	
	JAS1	eP	09 41 36.1	
	PRI	eP	09 41 41.2	
	FRI	eP	09 41 41.3	
	MNA	eP	09 41 43.5	

BRK Ms=5.6 Distance=76°
USGS 09h29m53.4s 34.0N 141.5E
h=40km mb=5.9 Ms=5.7
Off East Coast of Honshu, Japan

Sep 22	PRI	eP	01 03 00.8
	MHC	eP	01 03 01.6
	FRI	ePd	01 03 06.2
	JAS1	ePd	01 03 07.4
	ORV	eP	01 03 09.2
	WDC	ePd	01 03 10.0
	MIN	eP	01 03 11.6
	MNA	ePd	01 03 16.3

USGS 00h50m54.2s 24.5S 175.6W
h=33km mb=4.9
Tonga Islands Region

Sep 22	PRI	e	05 44 16
	JAS1	eP	05 44 22
	FRI	e	05 44 22
	ORV	e	05 44 24
	WDC	e	05 44 24.7
	MIN	eP	05 44 27.4
	MNA	eP	05 44 31.2
	BKS	eLr	06 09 50
			AMP(μm)	PER(s)
		LZ	1.4	20.
		LN	1.1	20.
		LE	0.71	20.

USGS 05h32m15.6s 24.0S 176.0W
h=68km mb=5.2
Tonga Islands Region

Sep 22	PCC	eP	10 27 58
	PRI	e(P)	10 27 58.5
	BRK	eP	10 27 59.3
	MHC	eP	10 27 59.5
	BKS	eP	10 28 00
		eLr	10 55 10
			AMP(μm)	PER(s)
		PZ	0.019	0.8
		LZ	2.1	20.
		LN	1.8	20.
		LE	1.4	20.
	FRI	ePd	10 28 03.2	
	JAS1	ePd	10 28 04.4	
	ORV	ePd	10 28 06.6	
	WDC	ePd	10 28 07.7	
	MIN	eP	10 28 09.8	
	MNA	eP	10 28 12.4	

BRK Ms=5.6 Distance=87°
USGS 10h15m15.6s 32.2S 178.3W
h=33km mb=5.5 Ms=5.2
South of Kermadec Islands

Sep 22	PRI	e	11 56 00
	MHC	eP	11 56 00.8
	BKS	e(P)	11 56 03.9
		eS	12 06 42
		eSKS	12 06 52
		ePS	12 07 56
		ePPS	12 08 15
		eLg	12 19 20
		eLr	12 22 40
			AMP(μm)	PER(s)
		PZ	0.041	1.1
		LZ	2.7	20.
		LN	1.8	20.
		LE	1.4	20.
	FRI	eP	11 56 04.4	
	JAS1	eP	11 56 05.7	
	ORV	eP	11 56 07.9	
	WDC	eP	11 56 08.7	
	MIN	eP	11 56 09.9	
	MNA	eP	11 56 13.3	

BRK Ms=5.6 Distance=87°
USGS 11h43m16.1s 32.3S 178.3W
h=33km mb=5.5 Ms=5.5
South of Kermadec Islands

Sep 22	FHC	iPc	15 10 46.1
		iS	15 10 58.4
	WDC	ePc	15 11 00.6
		e	15 11 21.4
	MIN	ePd	15 11 10.4
	ORV	eP	15 11 13.5
		e	15 11 45
	BKS	iPc	15 11 19.7
	PCC	eP	15 11 22.7
	GCC	eP	15 11 29.9
	MHC	eP	15 11 30.0
	SAO	eP	15 11 36.2
	JAS1	eP	15 11 36.5
	PRS	e	15 11 43.1
	LLA	e	15 11 43.3
	FRI	e	15 11 49.8

BRK 15h10m20.8s 40.4N 125.1W
h=5kmR ML=3.3(4)
Off Coast SW of Eureka, CA

Sep 22	FHC	ePc	18 22 46.2
	WDC	iPc	18 22 51.2
		i	18 22 59.0
	PCC	ePc	18 22 54.3
	MIN	ePc	18 22 54.3
	BKS	ePc	18 22 54.7
		ePcP	18 23 03
		epP	18 23 21
		iS	18 33 12
		i(PS)	18 33 41
		i(sS)	18 33 48
		eSS	18 38 30
		eLg	18 44 30
		eLr	18 48 00
			AMP(μm)	PER(s)
		PZ	0.57	1.6
	ORV	iPc	18 22 55.7	
		i	18 23 03.5	
		e	18 23 21	
	MHC	ePc	18 22 58.2	
		e	18 23 05.9	
	SAO	ePc	18 23 00.4	
	JAS1	iPc	18 23 02.0	
		i	18 23 09.8	
	PRI	eP	18 23 04.0	
	FRI	ePc	18 23 05.7	
		e	18 23 13.5	
		e	18 23 31.4	
	MNA	iPc	18 23 10.5	
		e	18 23 18.2	

BRK mb=6.6 h=80km Distance=84°
USGS 18h10m35.5s 13.8N 145.4E

		h=98km mb=5.9	
	Mariana Islands		
Sep 22	PRI	iPd	18 50 48.4
	LLA	eP	18 50 54.6
	PRS	eP	18 50 57.8
	FRI	iPd	18 50 58.1
	SAO	iPd	18 51 01.4
	MHC	eP	18 51 09.2
	GCC	eP	18 51 09.4
	JAS1	iPd	18 51 11.1
	BKS	iPd	18 51 24.5
	MNA	e	18 51 28.0

BRK 18h50m42.8s 36.2N 120.3W
h=5kmR ML=2.8(3)
Coalinga Area, CA

Sep 22	ZSP	eP	18 52 21.0
	BKS	iPd	18 52 22.2
		iS	18 52 38.4
	ORV	iPc	18 52 25.8
	PCC	eP	18 52 26.8
	MHC	eP	18 52 32.4
	GCC	eP	18 52 34.2
	MIN	eP	18 52 34.3
	WDC	iPd	18 52 35.2
	JAS1	iPc	18 52 38.5
	SAO	iPc	18 52 40.9
	LLA	e	18 52 43.7
	PRS	e	18 52 45.9
	FHC	e	18 52 47.8
	FRI	e	18 52 51.2
	PRI	e	18 52 53.3
	MNA	e	18 53 02.5

BRK 18h52m03.0s 38.8N 122.8W
h=1kmR ML=4.0(4)
The Geysers, 25 km S of Clear Lake, CA

Sep 22	PCC	e	21 56 55.0
	BKS	iPc	21 56 56.8
		e	22 04 20
		eS	22 07 20
		eSS	22 13 10
		eLg	22 19 30
		e6	22 20 00
		eLr	22 23 20
			AMP(μm)	PER(s)
		PZ	0.53	1.6
		LZ	21	20.
		LN	15	20.
		LE	12	20.
	PRI	eP	21 57 00.5	
	MHC	eP	21 57 01.5	
	JAS1	iPc	21 57 03.1	
	FRI	eP	21 57 03.4	
	ORV	eP	21 57 05.1	
	WDC	eP	21 57 05.8	
	MIN	e	21 57 10.7	
	MNA	eP	21 57 10.9	

BRK Ms=6.5 Distance=87°
USGS 21h44m17.2s 32.0S 178.4W
h=44km mb=5.5 Ms=6.3
South of Kermadec Islands

Sep 23	FHC	eP	17 12 49.8
	WDC	eP	17 12 58.0
	MIN	eP	17 13 02.3
	ORV	eP	17 13 08.6
	BKS	ePc	17 13 [illegible]
		e	17 [illegible]
		e	17 [illegible]
		iS	17 [illegible]

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)
		eLq	17 20 40
		e	17 21 28
		e	17 21 40
		eLr	17 21 55
			AMP(μa) PER(s)
		PZ	0.12 0.9
		LZ	12 20.
		LN	4.8 20.
		LE	9.3 20.
	MHC	e	17 13 22.7
	JAS1	eP	17 13 23.8
	PRI	e	17 13 31.5
	MNA	eP	17 13 32.1
	FRI	eP	17 13 32.3

BRK Ms=5.6 Distance=34°
USGS 17h06m36.3s 53.6N 165.4W
h=33km
Fox Islands, Aleutian Islands

Sep 24	FRI	e	15 05 04.5	
	JAS1	eP	15 05 05.0	
	ORV	e	15 05 08.6	
	WDC	e	15 05 09.8	
	MNA	e	15 05 14.0	
	BKS	eL	15 33 24	
			AMP(μa)	PER(s)
		LZ	2.1	20.
		LN	1.6	20.
		LE	1.4	20.

USGS 15h52m18.5s 32.2S 178.0W
h=39km mb=5.2 Ms=5.2
South of Kermadec Islands

Sep 24	PRI	eP	15 23 04.8	
	BKS	iP	15 23 04.8	
			AMP(μa)	PER(s)
		PZ	0.061	1.0
	MHC	eP	15 23 06.6	
	FRI	eP	15 23 08.6	
	ORV	eP	15 23 12.0	
	WDC	eP	15 23 13.9	
	MNA	eP	15 23 28.4	

USGS 15h10m22.5s 32.1S 178.0W
h=33km mb=5.0
South of Kermadec Islands

Sep 25	BKS	e(P)	02 09 48.3	
		eLr	02 34 30	
		eLq	02 34 40	
			AMP(μa)	PER(s)
		LZ	1.1	20.
		LN	0.43	20.
		LE	0.71	20.
	MHC	eP	02 09 49.8	
	WDC	eP	02 09 51.7	
	PRI	eP	02 09 52.0	
	ORV	eP	02 09 53.5	
	JAS1	eP	02 09 54.5	
	MIN	eP	02 09 54.6	
	FRI	eP	02 09 56.5	
	MNA	eP	02 10 04.8	

BRK Ms=5.1 Distance=82°
USGS 02h57m29.1s 10.6S 166.6E
h=33km mb=5.1 Ms=5.0
Santa Cruz Islands

Sep 25	SAO	iPc	02 30 05.2	
	GCC	iPd	02 30 05.7	
		iS	02 30 12.0	
	PRS	eP	02 30 07.2	
		iS	02 30 14.0	
	LLA	iPc	02 30 12.2	
	MHC	eP	02 30 12.4	
		eS	02 30 25.3	
	PCC	eP	02 30 15.5	
	PRI	eP	02 30 18.2	
	BKS	iPc	02 30 21.4	
		iS	02 30 40.1	
	JAS1	eP	02 30 34.3	
		i	02 30 49.9	

BRK 02h29m57.4s 36.6N 121.9W
h=5kmR ML=2.5(4)
Near Monterey, CA

Sep 25	PRI	e	03 18 27.0	
	MHC	eP	03 18 27.1	
	BKS	ePc	03 18 27.9	
			AMP(μa)	PER(s)
		PZ	0.043	1.0
	FRI	eP	03 18 32.0	
	JAS1	iPc	03 18 32.5	
	ORV	eP	03 18 34.1	
	WDC	P c	03 18 34.3	
	MIN	eP	03 18 35.9	
	MNA	eP	03 18 42.2	

USGS 03h07m12.5s 22.3S 179.6W
h=580km mb=5.2
South of Fiji Islands

Sep 25	BKS	eP	04 41 25.3	
		e	04 41 31.0	
		ePPS	04 52 00	
		eLr	05 05 20	
			AMP(μa)	PER(s)
		PZ	0.052	1.0
		LZ	2.9	20.
		LN	1.3	20.
		LE	2.7	20.
	MHC	eP	04 41 26.9	
	WDC	eP	04 41 28.6	
	PRI	eP	04 41 28.8	
	ORV	e	04 41 28.8	
	JAS1	eP	04 41 31.9	
	FRI	eP	04 41 33.1	
	MNA	eP	04 41 41.5	

BRK Ms=5.6 Distance=79°
USGS 04h29m09.0s 10.7S 166.5E
h=63km mb=5.4
Santa Cruz Islands

Sep 25	WDC	iPc	12 52 59.0	
	MIN	eP	12 53 02.2	
	ORV	iPc	12 53 04.5	
	BKS	iPc	12 53 05.1	
			AMP(μa)	PER(s)
		PZ	0.050	0.7
	MHC	eP	12 53 09.0	
	JAS1	iPc	12 53 12.1	
	FRI	eP	12 53 16.8	
	MNA	eP	12 53 19.8	

USGS 12h41m10.2s 24.1N 141.7E
h=148km mb=5.0
Volcano Isalnds Region

Sep 25	FHC	ePc	19 13 05.6	
		e	19 13 21.3	
	WDC	ePc	19 13 13.0	
		e	19 13 28.5	
		e	19 13 33.7	
	MIN	ePc	19 13 21.6	
	ORV	eP	19 13 23.8	
		e	19 13 38	
	BKS	e(P)	19 13 30.0	
		e	19 13 33	
		e	19 13 46	
			AMP(μa)	PER(s)
		PZ	0.019	0.7
	MHC	eP	19 13 35.8	
	JAS1	ePc	19 13 38.7	
		e	19 13 54.0	
	MNA	ePc	19 13 47.1	
	PRI	eP	19 13 48.1	

USGS 19h06m50.3s 53.7N 166.4W
h=65km mb=4.7
Fox Islands, Aleutian Islands

Sep 26	MNA	ePd	01 27 34.4	
	ORV	e	01 27 58	

USGS 01h22m37.6s 18.2N 108.0W
h=10km mb=4.2
Revilla Gigedo Islands Region

Sep 26	FHC	ePc	10 13 36.5	
		eS	10 14 00.9	
	WDC	iPc	10 13 52.9	
		e	10 14 24.5	
		iS	10 14 29.8	
	MIN	ePc	10 14 02.6	
		e	10 14 43.8	
	ORV	ePd	10 14 05.6	
	BKS	iPc	10 14 07.2	
		e	10 14 15.3	
		i(S)	10 14 58.0	
	PCC	eP	10 14 08.7	
	MHC	ePd	10 14 16.8	
	SAO	iPd	10 14 23.2	
	JAS1	eP	10 14 26.0	
	GCC	eP	10 14 28.2	
	PRS	eP	10 14 28.2	
	LLA	ePc	10 14 29.0	
	PRI	e(P)	10 14 36.7	
	FRI	e(P)	10 14 39.0	

BRK 10h13m01.8s 40.4N 126.8W
h=5kmR ML=4.0(8)
Off Coast, 230 km W of Eureka, CA

Sep 26	PCC	ePc	11 45 12.8	
	SAO	eP	11 45 13.2	
	BKS	iPc	11 45 14.2	
			AMP(μa)	PER(s)
		PZ	0.053	0.8
	PRI	ePc	11 45 14.6	
	MHC	ePc	11 45 15.1	
	FHC	eP	11 45 19.1	
	FRI	eP	11 45 19.5	
	JAS1	iPc	11 45 20.1	
	ORV	iPc	11 45 21.7	
	WDC	iPc	11 45 21.9	
	MIN	ePc	11 45 23.4	
	MNA	iPc	11 45 28.7	

USGS 11h33m46.9s 24.0S 179.9W
h=515km mb=5.1
South of Fiji Islands

Sep 26	MNA	eP	13 46 29.2	
	PRI	e	13 46 33.9	
	ORV	eP	13 46 52.1	

USGS 13h41m14.6s 18.5N 103.2W
h=35km mb=4.5
Near Coast of Michoacan, Mexico

Sep 26	MHC	iPc	20 46 08.1	
	GCC	iPd	20 46 14.0	
	PCC	iPc	20 46 16.7	
	SAO	iPd	20 46 18.5	
	BRK	iPc	20 46 19.45	
	BKS	iPc	20 46 19.5	
		eS	20 46 29.0	
	ZSP	iPd	20 46 20.7	
	LLA	eP	20 46 23.5	
	PRS	iPd	20 46 25.3	
	JAS1	iPc	20 46 27.7	
	PRI	iPc	20 46 31.7	
	FRI	ePc	20 46 33.8	
	ORV	iPc	20 46 42.0	
	MIN	eP	20 46 55	
	MNA	iPnc	20 46 55.5	
		ePg	20 47 01	
	WDC	eP	20 46 56.5	
	FHC	eP	20 47 06.4	

BRK 20h46m06.3s 37.3N 121.7W
h=6km ML=4.4(4) Mo=1.1E23(2)
Halls Valley Sequence

Sep 26	FHC	eP	22 35 07.4	
	WDC	ePc	22 35 12.8	
	ORV	iPc	22 35 18.2	
	BKS	eP	22 35 18.6	
		e	22 35 21.8	
		e	22 35 28.0	
		eLr	22 59 05	
			AMP(μa)	PER(s)
		PZ	0.23	1.0
	MHC	ePc	22 35 22.0	
	JAS1	iPc	22 35 25.5	
	PRI	eP	22 35 28.3	
	FRI	ePc	22 35 30.0	
	MNA	iPc	22 35 34.0	

USGS 22h23m16.1s 20.8N 145.8E
h=37km mb=5.2 Ms=4.3
Mariana Islands

Sep 28	PCC	ePd	00 15 47.2	
	SAO	ePd	00 15 47.5	
	PRI	ePd	00 15 48.4	
	MHC	iPd	00 15 49.5	
	BKS	iPd	00 15 49.6	
		ePP	00 18 54	
		iS	00 26 00	
		e	00 27 13	
		e	00 30 00	
		e	00 30 32	
		i	00 30 56	
		eSS	00 31 12	
		eSSS	00 34 36	
		eLq	00 36 00	
		i	00 37 04	
		eLr	00 39 40	
		eR2	02 18 40	
			AMP(μa)	PER(s)
		PZ	5.4	2.0
		LZ	37	20.
		LN	21	20.
		LE	25	20.
	FRI	eP	00 15 53.7	
	JAS1	iPd	00 15 54.9	
		e	00 42 33.0	
	FHC	ePd	00 15 55.2	
	ORV	iPd	00 15 57.8	
	WDC	iPd	00 15 57.8	
		e	00 42 33.5	
	MIN	ePd	00 15 59.0	
	MNA	ePd	00 16 04.3	

BRK Ms=6.7 Distance=79°
USGS 00h03m34.5s 25.8S 175.9W
h=21km mb=6.4 Ms=6.8
Tonga Islands Region

Sep 28	PCC	ePd	03 15 11.0	
	SAO	eP	03 15 11.6	
	BKS	iPd	03 15 12.8	
		e	03 16 35.0	
		iP	03 16 39.1	
		iPP	03 18 06.7	
		iS	03 24 44	
		esS	03 27 00	
		iSS	03 29 52	
			AMP(μa)	PER(s)
		PZ	0.44	1.1
	PRI	ePd	03 15 12.8	
	MHC	ePd	03 15 13.3	
	FHC	eP	03 15 17.5	
	FRI	iPd	03 15 18.1	
	JAS1	iPd	03 15 18.7	
	ORV	iPd	03 15 20.2	
	WDC	iPd	03 15 20.6	
	MIN	ePd	03 15 22.2	

BRK mb=6.2 h=380km Distance=79°
USGS 03h03m46.8s 21.5S 177.8W
h=364km mb=5.8
Fiji Islands Region

Sep 28	PRI	eP	07 24 12.6	
	JAS1	iPc	07 24 17.7	
	MHC	eP	07 24 19.6	
	BKS	eP	07 24 22.7	
			AMP(μa)	PER(s)
		PZ	0.010	0.6
	ORV	iP	07 24 26.1	
	MIN	eP	07 24 27.9	
	WDC	iPc	07 24 31.4	

USGS 07h11m58.6s 30.9S 65.4W
h=186km mb=5.2
Cordoba Province, Argentina

Sep 28	WDC	eP	08 29 06.6	
	MIN	eP	08 29 09.1	
	ORV	eP	08 29 13.3	
	JAS1	eP	08 29 27.5	

USGS 08h20m35.1s 53.9N 168.4E
h=33km mb=5.1 Ms=4.5
Komandorsky Islands Region

Sep 28	PRI	eP	10 51 25.8	
	FRI	e	10 51 29.7	
	MHC	e	10 51 34.8	
	JAS1	eP	10 51 36.2	
	BKS	eP	10 51 38	
		iS	11 00 52	
		eSS	11 05 12	
		eSSS	11 08 40	
		eLq	11 10 04	
		e	11 11 16	
		eLr	11 13 00	
			AMP(μa)	PER(s)
		PZ	0.13	1.3
		LZ	17	20.
		LN	18	20.
		LE	3.6	20.
	ORV	eP	10 51 48.0	
	MIN	e	10 51 49.5	
	WDC	eP	10 51 52.8	

BRK Ms=6.3 Distance=73°
USGS 10h40m24.2s 31.6S 110.8W
h=10km mb=5.9 Ms=5.9
Easter Island Region

Sep 28	PRI	eP	12 11 40.8	
		i	12 11 45.0	
	FRI	e	12 11 46.5	
	MHC	e	12 11 53.0	
	BKS	iP	12 11 57	
		i	12 12 06.8	
		e	12 12 11.7	
		e	12 12 31.2	
		e	12 14 20	
		e(S)	12 15 32	
		eL	12 16 16	
		i	12 16 58	
			AMP(μa)	PER(s)
		PZ	0.087	1.0
		LZ	2.1	20.
		LN	0.71	20.
		LE	1.1	20.
	JAS1	eP	12 11 57.0	
	ORV	e	12 12 19.8	
	MIN	e	12 12 26.4	
	WDC	e	12 12 30.0	
		i	12 12 39.3	

USGS 12h07m41.8s 20.1N 115.9W
h=10km mb=5.2 Ms=5.1
East Central Pacific Ocean

Sep 28	PRI	iPc	15 11 14.8	
	LLA	iPc	15 11 21.8	
	PRS	iPc	15 11 23.8	
	FRI	iPd	15 11 24.1	
	SAO	iP	15 11 28.2	
	MHC	e	15 11 36.5	
	GCC	e	15 11 36.5	
	JAS1	iPc	15 11 37.5	

BRK 15h11m06.5s 36.0N 120.2W
h=13km ML=2.8(2)
Coalinga Area, CA

Sep 28	PRI	eP	15 45 59.8	
	FRI	eP	15 46 06.4	
	MHC	ePd	15 46 13.4	
	JAS1	eP	15 46 17.6	
	PCC	e(P)	15 46 19.5	
	BKS	iPc	15 46 20.2	
		i d	15 46 27.2	
		i d	15 46 33.0	
		eS	15 50 00	
		eLr	15 50 42	
			AMP(μa)	PER(s)
		PZ	0.013	1.0
		LZ	0.71	20.
		LN	0.79	20.
		LE	0.0	20.
	ORV	eP	15 46 37.5	
	MIN	eP	15 46 45.9	
	WDC	eP	15 46 48.9	
	FHC	eP	15 46 56.2	

BRK Ms=4.1 Distance=22°
USGS 15h42m01.1s 20.1N 115.9W
h=10km mb=5.0 Ms=4.0
East Central Pacific Ocean

Sep 30	JAS1	eP	05 03 16.8	
	WDC	eP	05 03 18.0	
	MNA	eP	05 03 26.8	

USGS 04h52m14.3s 17.8S 178.6W
h=546km mb=5.0
Fiji Islands Region

Sep 30	BKS	eP	21 01 51	
		e	21 11 21	
		ePS	21 14 19	
		e(SSP)	21 14 45	
		e	21 15 58	
		eSS	21 18 48	
		ePSPS	21 19 09	
		eLq	21 27 [illegible]	
		eLr	21 31 [illegible]	
			AMP(μa)	PER(s)
		LZ	1.5	20.
		LN	0.79	20.

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)
		LE	2.3 20.
	WDC	eP	21 01 53.9
	JAS1	eP	21 01 56.6
	ORV	eP	21 01 56.7
	FRI	eP	21 02 01.6
	MNA	eP	21 02 08.2
BRK Ms=5.6 Distance=94°			
USGS 20h48m45.9s 6.1S 148.5E			
h=75km mb=5.8			
New Britain Region			
Sep 30	MNA	eP	21 41 22.7
	PRI	eP	21 41 23.7
	MHC	eP	21 41 32.9
	JAS1	eP	21 41 33.5
	BKS	eP	21 41 37.4
	ORV	iPd	21 41 41.7
		e	21 42 17.5
	MIN	eP	21 41 42.9
	WDC	eP	21 41 46.3
	FHC	eP	21 41 55.5
USGS 21h31m15.4s 8.7S 74.3W			
h=155km mb=5.2			
Peru-Brazil Border Region			
Oct 1	PRI	e	00 27 13.3
		i	00 27 17.7
	LLA	e	00 27 15.9
	PRS	e	00 27 16.7
	FRI	e	00 27 19.0
	MHC	e	00 27 27.3
	JAS1	eP	00 27 31.2
	MNA	eP	00 27 33.3
		i	00 27 38.4
	BKS	e	00 27 39.5
		eS	00 31 16
		eLr	00 31 58
			AMP(µm) PER(s)
		PZ	0.061 1.0
		LZ	0.54 20.
		LN	0.71 20.
		LE	0.18 20.
	ORV	eP	00 27 50.6
	MIN	e(P)	00 27 59.3
		e	00 28 07.2
	WDC	eP	00 28 01.7
		i	00 28 11.7
BRK Ms=4.1 Distance=21°			
USGS 00h23m12.5s 19.9N 115.9W			
h=10km mb=5.0			
East Central Pacific Ocean			
Oct 2	FHC	e	01 49 51.5
	BRK	eP	01 49 51.8
	BKS	eP	01 49 52
		i	01 50 05
		e	01 50 19
		e	01 50 37
		eS	02 00 48
		ePS	02 01 35
		e	02 04 04
		e	02 05 40
		eSS	02 06 16
		e	02 06 84
		eSSS	02 09 54
		e6	02 13 03
		eLq	02 13 08
		eLr	02 16 20
			AMP(µm) PER(s)
		PZ	0.078 1.1
		LZ	3.6 20.
		LN	1.6 20.
		LE	3.8 20.

DATE	STA	PHASE	TIME (UTC)
	PCC	e	01 49 52.5
	MHC	e	01 49 53.0
	PRS	eP	01 49 53.1
	SAO	eP	01 49 53.2
	GCC	e	01 49 53.3
	PRI	e	01 49 54.4
	LLA	e	01 49 55.0
	WDC	eP	01 49 55.9
	JAS1	eP	01 49 56.0
		e	01 53 24.5
	ORV	iP	01 49 56.4
	FRI	eP	01 49 58.9
	MIN	eP	01 49 59.3
BRK Ms=5.9 Distance=86°			
USGS 01h37m08.1s 18.6S 168.0E			
h=6km mb=5.7 Ms=5.9			
Vanuatu Islands			
Oct 2	WDC	eP	04 55 12.9
	ORV	eP	04 55 17.7
	JAS1	eP	04 55 24.8
USGS 04h42m29.7s 26.1N 128.5E			
h=31km mb=5.6 Ms=5.6			
Ryukyu Islands			
Oct 2	BRK	eP	13 35 25.4
	PRS	eP	13 35 25.5
	BKS	eP	13 35 25.6
		eLr	14 02 33
			AMP(µm) PER(s)
		PZ	0.054 1.1
		LZ	0.79 20.
		LN	0.64 20.
		LE	0.54 20.
	WDC	eP	13 35 27.2
	MHC	eP	13 35 27.7
	FRI	eP	13 35 28.0
	ORV	eP	13 35 28.2
	JAS1	eP	13 35 28.5
	MIN	eP	13 35 32.5
USGS 13h22m40.9s 18.5S 168.0E			
h=15km mb=5.5 Ms=4.8			
Vanuatu Islands			
Oct 2	MNA	iPc	18 14 37.3
		iS	18 15 10.1
	FRI	ePc	18 14 48.5
		i	18 15 07.4
	JAS1	ePc	18 14 57.3
		i	18 15 07.0
		iS	18 15 52.8
	PRI	ePc	18 15 01.2
	LLA	eP	18 15 02.6
	PRS	eP	18 15 08.1
	SAO	eP	18 15 08.3
	MHC	eP	18 15 10.8
	GCC	e(P)	18 15 12.3
	ORV	iP	18 15 16.5
	MIN	e(P)	18 15 24.0
	PCC	e	18 15 27
	WDC	e	18 15 33.0
BRK ML=4.3(4)			
USGS 18h13m59.3s 37.1N 116.0W			
h=2km mb=4.2			
Underground Nuclear Explosion, NTS			
Oct 2	GCC	eP	19 54 28.3
	FHC	ePc	19 54 28.4
	BKS	eP	19 54 28.6
			AMP(µm) PER(s)
		PZ	0.043 1.0
	BRK	ePc	19 54 29.0
	PRS	ePc	19 54 29.3

DATE	STA	PHASE	TIME (UTC)
	MHC	ePc	19 54 30.5
	LLA	eP	19 54 30.5
	PRI	eP	19 54 31.6
	WDC	ePc	19 54 34.3
	ORV	iPc	19 54 35.2
	JAS1	iPc	19 54 35.6
	MIN	e(P)	19 54 36
	FRI	ePc	19 54 36.1
	MNA	ePc	19 54 44.5
USGS 19h41m49.1s 18.5S 168.1E			
h=25km mb=5.5 Ms=4.8			
Vanuatu Islands			
Oct 3	WDC	eP	00 23 56.4
	MIN	eP	00 24 00
	ORV	eP	00 24 03.0
	LLA	eP	00 24 05.2
	JAS1	eP	00 24 13.1
	PRS	eP	00 24 14.3
	FRI	eP	00 24 17.8
	MNA	eP	00 24 19.5
USGS 00h12m18.1s 35.8N 137.6E			
h=15km mb=5.1			
Honshu, Japan			
Oct 3	PRI	eP	12 17 59.7
	FRI	eP	12 18 06.0
	PRS	e	12 18 08
	MHC	e	12 18 18.0
	MNA	eP	12 18 20.6
	ORV	eP	12 18 37.8
	MIN	eP	12 18 46.3
	WDC	eP	12 18 49.9
USGS 12h13m56.7s 19.5N 115.9W			
h=10km mb=4.2			
East Central Pacific Ocean			
Oct 4	MNA	eP	00 05 20.0
	PRI	eP	00 05 21
		epP	00 05 33.3
	LLA	eP	00 05 23
		epP	00 05 36.0
	PRS	eP	00 05 24.0
		epP	00 05 37.4
	JAS1	eP	00 05 26.3
		epP	00 05 40.0
	MHC	eP	00 05 29.8
		epP	00 05 43.1
	GCC	eP	00 05 30
		epP	00 05 42.5
	ORV	ePc	00 05 37.8
		ipP	00 05 51.3
	WDC	eP	00 05 43.5
		ipP	00 05 57.0
	FHC	epP	00 06 06.5
USGS 23h55m19.7s 6.2S 75.8W			
h=45km mb=5.3 Ms=4.3			
Northern Peru			
Oct 4	FHC	eP	03 08 41
	WDC	ePc	03 08 45.8
	MIN	eP	03 08 49.5
	ORV	iPc	03 08 52.0
		e	03 09 07.5
	PCC	ePc	03 08 53.7
	BKS	ePc	03 08 53.8
			AMP(µm) PER(s)
		PZ	0.075 0.8
	BRK	ePc	03 08 53.8
	GCC	eP	03 08 56.8
	MHC	ePc	03 08 57.8
	SAO	eP	03 09 00
	JAS1	ePc	03 09 00.8

DATE	STA	PHASE	TIME (UTC)
	PRS	ePc	03 09 01.5
		e	03 09 17
	LLA	eP	03 09 02.3
	PRI	ePc	03 09 05.3
	FRI	iPc	03 09 05.7
		e	03 09 21.3
	MNA	iPc	03 09 08.4
		e	03 09 23.5
USGS 02h57m06.2s 29.6N 141.2E			
h=76km mb=5.1			
South of Honshu, Japan			
Oct 4	ZSP	eP	07 53 31.4
	BRK	eP	07 53 32.0
	BKS	eP	07 53 32.1
		iS	07 53 47.7
	ORV	eP	07 53 34
	PCC	eP	07 53 36.8
	WDC	e(P)	07 53 43
	MIN	eP	07 53 43.0
	MHC	e(P)	07 53 44.5
	JAS1	eP	07 53 46.7
	SAO	eP	07 53 49.5
BRK 07h53m12.5s 38.8N 122.8W			
h=5kmR ML=2.8(2)			
20 km S of Clear Lake, CA			
Oct 5	PRI	e	06 27 30.9
	FRI	e	06 27 39.4
	JAS1	eP	06 27 48.2
	BKS	e	06 27 56.4
			AMP(µm) PER(s)
		PZ	0.031 1.1
	ORV	eP	06 28 07.0
	MIN	e	06 28 22.7
USGS 06h23m31.8s 20.0N 115.8W			
h=10km mb=4.5 Ms=3.4			
East Central Pacific Ocean			
Oct 5	PRI	eP	09 52 38.9
	PRS	eP	09 52 43.0
	LLA	eP	09 52 45.6
	FRI	eP	09 52 46.5
	SAO	e	09 52 49.3
	GCC	e	09 52 51.0
	MHC	eP	09 52 56.2
	JAS1	eP	09 53 00.3
		i	09 53 06.6
	BRK	eP	09 53 04.2
		i	09 53 10.4
	BKS	eP	09 53 04.3
		eS	09 56 40
		eLq	09 57 40
			AMP(µm) PER(s)
		LE	2.5 20.
		LZ	0.055 0.9
		PZ	3.8 20.
		LN	3.6 20.
	ORV	eP	09 53 10.2
		i	09 53 26.8
	MIN	eP	09 53 28.3
	FHC	e	09 53 39.5
BRK Ms=4.8 Distance=22°			
USGS 09h48m44.3s 20.1N 116.0W			
h=10km mb=5.5 Ms=4.6			
East Central Pacific Ocean			
Oct 5	FRI	eP	10 40 43.6
	JAS1	e	10 40 50.5
	LLA	e	10 40 50.6
	PRS	eP	10 40 52.9
	MHC	eP	10 40 56.4
	ORV	eP	10 40 57.2

DATE	STA	PHASE	TIME (UTC)
	GCC	eP	10 40 57.5
	MIN	eP	10 40 58.2
	FHC	e	10 41 13.5
USGS 10h30m50.2s 11.7N 60.2W			
h=50km mb=5.6			
Windward Islands			
Oct 5	LLA	iPc	16 16 34.5
	SAO	iPc	16 16 35.3
	PRS	iPd	16 16 35.6
	PRI	iPd	16 16 41.8
	GCC	iPc	16 16 44.4
	MHC	iPc	16 16 46.5
		iS	16 16 57.5
	FRI	iPc	16 16 52.3
	PCC	ePc	16 16 52.4
	JAS1	iPd	16 16 55.5
		i	16 17 12.8
	BKS	eP	16 16 56.0
		e	16 17 04.3
	BRK	iPd	16 16 56.0
	ZSP	ePc	16 16 57.2
	ORV	ePc	16 17 16.8
	MIN	ePc	16 17 29.3
	FHC	e	16 17 42
BRK 16h16m30.0s 36.6N 121.2W			
h=9km ML=4.0(4) Mo=1.8E22(4)			
Bear Valley, 40 km N of King City, CA			
Oct 5	ORV	ePd	17 18 00.8
	MHC	eP	17 18 05.4
	PRS	eP	17 18 08.4
	JAS1	eP	17 18 08.5
	LLA	eP	17 18 09.5
	PRI	eP	17 18 12.1
	FRI	ePd	17 18 13.2
USGS 17h05m51.4s 23.1N 142.3E			
h=33km mb=5.3 Ms=5.0			
Volcano Islands Region			
Oct 6	GCC	eP	03 03 42.5
	PRS	eP	03 03 43.1
	BRK	e	03 03 44.5
	MHC	eP	03 03 44.9
	SAO	e	03 03 45.0
	PRI	eP	03 03 45.7
	BKS	e	03 03 47.3
	FRI	eP	03 03 51.1
	JAS1	eP	03 03 51.7
	ORV	eP	03 03 52.8
	MIN	eP	03 03 55.0
USGS 02h52m20.8s 14.9S 175.3W			
h=33km mb=5.5 Ms=5.7			
Samoa Islands Region			
Oct 8	FRI	e	05 35 24.9
	JAS1	e	05 35 26.1
	PRI	e	05 35 27.0
USGS 05h15m27.4s 47.9S 32.0E			
h=18km mb=5.4 Ms=5.3			
South of Africa			
Oct 8	SAO	iPd	06 39 23.1
	LLA	iPc	06 39 28.9
	GCC	iPc	06 39 29.8
	PRS	ePc	06 39 30.4
	MHC	ePc	06 39 30.8
		iS	06 39 38.9
	PCC	ePc	06 39 38.1
	PRI	ePc	06 39 38.1
	BKS	eP	06 39 41.5
		e(S)	06 40 01.3

DATE	STA	PHASE	TIME (UTC)
	BRK	eP	06 39 41.6
	JAS1	ePc	06 39 43.0
	FRI	eP	06 39 44.0
		i	06 40 01.0
	ORV	e	06 40 03.0
BRK 06h39m20.4s 36.9N 121.4W			
h=8km ML=3.1(4) Mo=5.2E20(2)			
Near Hollister, CA			
Oct 9	SAO	iPd	01 32 15.4
	GCC	eP	01 32 21.0
	PRS	iPd	01 32 23.0
	LLA	iPc	01 32 23.9
		iS	01 32 31.4
	MHC	iPd	01 32 24.3
		iS	01 32 32.1
	PCC	iPc	01 32 31.0
	PRI	iPc	01 32 32.4
	BKS	eP	01 32 35.8
		eS	01 32 52.9
	BRK	iPc	01 32 36.0
	ZSP	eP	01 32 37.6
		iS	01 32 55.6
	JAS1	eP	01 32 38.3
	FRI	e	01 32 38.9
BRK 01h32m13.3s 36.8N 121.5W			
h=2km ML=2.9(4)			
15 km WSW of Hollister, CA			
Oct 9	FHC	e	10 04 33.3
	MIN	eP	10 04 41.2
	ORV	eP	10 04 44.0
	BRK	eP	10 04 46.2
	PCC	eP	10 04 46.4
	BKS	eP	10 04 46.8
			AMP(µm) PER(s)
		PZ	0.078 1.0
	GCC	e	10 04 48.2
	MHC	eP	10 04 50.1
	JAS1	eP	10 04 52.5
	PRS	eP	10 04 53.6
	LLA	eP	10 04 54.1
	FRI	eP	10 04 57.6
	PRI	eP	10 04 59.3
USGS 09h53m27.3s 30.0N 138.7E			
h=422km mb=4.9			
South of Honshu, Japan			
Oct 9	MIN	eP	10 36 53.8
	ORV	eP	10 36 56.4
	BRK	eP	10 36 58.5
	BKS	eP	10 36 58.8
			AMP(µm) PER(s)
		PZ	0.057 1.0
	MHC	eP	10 37 02.4
	JAS1	eP	10 37 04.5
	PRS	eP	10 37 06.0
	LLA	eP	10 37 06.8
	FRI	eP	10 37 09.8
	PRI	e	10 37 10.5
USGS 10h25m39.5s 30.0N 138.7E			
h=419km mb=4.7			
South of Honshu, Japan			
Oct 9	FRI	ePc	23 06 05.6
	PRI	e	23 06 08.5
	LLA	e	23 06 09.5
	PRS	e	23 06 12
	SAO	e	23 06 [illegible]
	GCC	e	23 06 [illegible].5
	JAS1	ePc	23 06 [illegible].0
	MHC	e	23 06 [illegible].4
	PCC	e	23 06 [illegible].6

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DATE	STA	PHASE	TIME (UTC)
	BKS	eP	23 06 30.5
		e	23 07 12.0
		e	23 08 14.8
		eLr	23 09 48
			AMP(μa) PER(s)
		PZ	0.11 1.6
		LZ	5.0 20.
		LN	27 20.
		LE	39 20.
	BRK	ePc	23 06 30.3
	ORV	eP	23 06 41.8
	MIN	ePc	23 06 51.0
	FHC	e	23 07 07
USGS 23h02m28.8s 24.9N 109.0W			
h=10km mb=5.2 Ms=5.1			
Gulf of California			
Oct 10	PRI	eP	02 23 19.4
	LLA	eP	02 23 22.5
	PRS	e	02 23 23
	FRI	eP	02 23 25.6
	SAO	e	02 23 33
	MHC	e	02 23 35
	JAS1	eP	02 23 40.2
	ORV	ePc	02 23 59.7
	MIN	ePc	02 24 08.3
USGS 02h19m21.2s 19.8N 116.0W			
h=10km mb=5.0 Ms=4.0			
East Central Pacific Ocean			
Oct 10	PRI	eP	05 51 52.7
	FRI	eP	05 51 55.3
	PRS	eP	05 51 55.4
	LLA	eP	05 51 56.5
	MHC	eP	05 52 04.0
	JAS1	ePc	05 52 05.0
	ORV	ePc	05 52 19.8
	MIN	e	05 52 26
	BKS	e	05 58 59
		e	06 03 15
		eLr	06 03 42
			AMP(μa) PER(s)
		LZ	6.3 20.
		LN	5.9 20.
		LE	4.1 20.
USGS 05h43m50.9s 4.6S 105.5W			
h=10km mb=5.1 Ms=5.2			
Northern Easter Is Cordillera			
Oct 10	GCC	iP	19 16 53.6
	PCC	iP	19 16 53.8
	PRS	iPc	19 16 53.9
	SAO	iPc	19 16 54.6
	BKS	iPc	19 16 55.3
			AMP(μa) PER(s)
		PZ	0.42 0.9
	BRK	iPc	19 16 55.4
	PRI	iPc	19 16 56.0
	LLA	iPc	19 16 56.1
	MHC	iPc	19 16 56.3
	FHC	e(P)	19 16 59.5
	FRI	iPc	19 17 01.1
	JAS1	iPc	19 17 01.6
	ORV	iPc	19 17 02.9
	MIN	ePc	19 17 04.7
USGS 19h05m58.1s 20.1S 179.3W			
h=676km mb=5.6			
Fiji Islands Region			
Oct 10	PRI	eP	21 24 08
	FRI	eP	21 24 11
		iS	21 25 20.9
	PRS	eP	21 24 14
	LLA	eP	21 24 15
	SAO	eP	21 24 19
	JAS1	eP	21 24 25
		iS	21 25 55.7
	MHC	e(P)	21 24 27
	GCC	e(P)	21 24 27
	BKS	e(P)	21 24 36
	ORV	e(P)	21 24 54
BRK ML=4.6(4)			
PAS 21h22m58.0s 33.1N 116.5W			
h=12km ML=4.5			
Southern California			
Oct 11	PRI	ePd	08 34 15.1
	MHC	eP	08 34 17
	FRI	eP	08 34 19.5
	JAS1	eP	08 34 21
	ORV	ePd	08 34 23.1
USGS 08h21m33.0s 34.0S 179.7E			
h=135km mb=5.5			
South of Kermadec Islands			
Oct 12	PCC	eP	18 33 49.4
	GCC	ePc	18 33 49.5
	PRS	ePc	18 33 50.2
		e	18 34 03.6
		e	18 34 10.5
	SAO	eP	18 33 50.6
	BRK	eP	18 33 51.0
	BKS	eP	18 33 51.2
		e	18 34 04.0
		e	18 34 11.1
		e	18 34 17.0
		eSKS	18 43 59.0
		e	18 44 19.5
		esS	18 44 37.0
		e	18 48 25.8
		eLq	18 53 54
		eLr	18 57 26
			AMP(μa) PER(s)
		PZ	0.24 1.9
		LZ	25 20.
		LN	14 20.
		LE	14 20.
	MHC	ePc	18 33 52.2
		e	18 34 05.5
		e	18 34 12
	PRI	ePc	18 33 52.7
		e	18 34 06.5
		e	18 34 12.7
	FRI	ePc	18 33 57.8
		e	18 34 11.5
	JAS1	ePc	18 33 57.9
		i	18 34 11.1
		i	18 34 17.9
		e	18 34 34.8
	ORV	ePc	18 33 58.1
		i	18 34 11.6
		e	18 34 18.0
	MIN	eP	18 33 59.8
		e	18 34 13.6
		e	18 34 19.7
BRK Ms=6.5 Distance=85°			
USGS 18h21m47.3s 16.7S 177.1E			
h=13km mb=5.6 Ms=6.1			
Fiji Islands			
Oct 12	PCC	eP	19 12 03.1
	GCC	eP	19 12 04
	PRS	eP	19 12 04.3
	SAO	eP	19 12 04.5
	BRK	eP	19 12 04.9
	BKS	eP	19 12 05.1
		e	19 12 23.7
		eS	19 22 09.5
			AMP(μa) PER(s)
		PZ	0.29 1.8
		LZ	6.8 20.
		LN	4.3 20.
		LE	5.7 20.
	MHC	eP	19 12 06.1
	LLA	eP	19 12 06.5
	PRI	eP	19 12 06.7
	JAS1	ePd	19 12 11.7
		e	19 12 56
		e	19 13 36
	FRI	ePd	19 12 11.8
		e	19 12 56
	ORV	eP	19 12 12.0
	MIN	eP	19 12 13.8
BRK Ms=6.1 Distance=85°			
USGS 19h00m01.1s 16.7S 177.2E			
h=12km mb=5.4 Ms=5.8			
Fiji Islands			
Oct 13	PRS	eP	02 15 24.2
	PCC	ePd	02 15 24.3
	SAO	e	02 15 25
	PRI	eP	02 15 26.5
	MHC	eP	02 15 26.8
	FRI	ePd	02 15 32.2
	JAS1	ePd	02 15 32.8
	ORV	eP	02 15 34.1
	WDC	iPd	02 15 34.2
	MIN	e(P)	02 15 36.7
	MNA	ePd	02 15 43.0
	BKS	e	02 16 55
		eS	02 25 11.9
		e	02 26 30.5
		e	02 26 57
		eLq	02 34 47.8
		eLr	02 37 36
			AMP(μa) PER(s)
		LZ	12 20.
		LN	9.6 20.
		LE	8.9 20.
USGS 02h03m47.5s 18.2S 175.6W			
h=37km mb=5.4 Ms=6.0			
Tonga Islands Region			
Oct 13	PCC	eP	05 44 36.3
	GCC	eP	05 44 36.5
	PRS	eP	05 44 37.4
	SAO	eP	05 44 37.6
	BRK	eP	05 44 37.9
	MHC	eP	05 44 39.2
	PRI	ePc	05 44 39.8
	BKS	eP	05 44 40.8
		e	05 44 46.1
		e	05 44 50.4
		e	05 45 04.8
		eS	05 54 41.5
		eScS	05 55 22.4
		e	05 59 06.0
		eLq	06 04 18
		eLr	06 07 48
			AMP(μa) PER(s)
		PZ	0.37 1.7
		LZ	8.1 20.
		LN	6.4 20.
		LE	6.4 20.
	FHC	eP	05 44 40.8
	LLA	e	05 44 42
	WDC	ePc	05 44 44.8
	JAS1	ePc	05 44 44.9
	FRI	eP	05 44 45.0
	ORV	ePc	05 44 45.2
	MIN	eP	05 44 46.8
	MNA	eP	05 44 55.2
BRK Ms=6.1 Distance=82°			
USGS 05h32m38.8s 15.8S 177.2E			
h=10km mb=5.8 Ms=6.0			
Fiji Islands			
Oct 13	FRI	ePc	17 24 34.4
		epP	17 24 43.4
	MNA	ePc	17 24 35.7
		epP	17 24 44.8
	PRI	ePc	17 24 36.5
	LLA	ePc	17 24 39.8
	PRS	ePc	17 24 41.3
	SAO	e(P)	17 24 43.2
	JAS1	iPc	17 24 43.9
		epP	17 24 52.8
		ePcP	17 27 30.0
		e	17 27 43.8
	MHC	eP	17 24 48.1
		ePc	17 24 48.7
	GCC	eP	17 24 48.1
	BKS	eP	17 24 54.0
		e	17 25 03.6
		ePP	17 26 04.1
		eS	17 30 26.0
		e	17 31 14.0
		e	17 32 36.8
		eLq	17 34 03
		eLr	17 36 40
			AMP(μa) PER(s)
		PZ	0.45 1.8
		LZ	8.9 20.
		LN	37 20.
		LE	41 20.
	BRK	ePc	17 24 54.1
	ORV	ePc	17 24 59.0
		epP	17 25 07.9
	MIN	ePc	17 25 03.2
	WDC	ePc	17 25 07.0
	FHC	ePc	17 25 18.7
BRK Ms=6.4 Distance=36°			
USGS 17h18m13.8s 15.0N 94.3W			
h=31km mb=6.1 Ms=5.7			
Near Coast of Oaxaca, Mexico			
Oct 13	FRI	eP	20 03 38.5
	PRS	epP	20 04 24.7
	JAS1	eP	20 03 39.3
	MHC	epP	20 04 27.7
	ORV	eP	20 03 40.8
	BKS	epP	20 04 28.1
	WDC	eP	20 03 41.0
	BKS	e	20 03 42.6
	PRI	epP	20 04 28.1
	MIN	eP	20 03 43.4
	FRI	epP	20 04 33.7
	MNA	eP	20 03 49.4
	JAS1	epP	20 04 34.5
	MIN	epP	20 04 35.6
	ORV	epP	20 04 35.9
	WDC	epP	20 04 37.2
	MNA	epP	20 04 44.9
USGS 19h52m19.1s 17.9S 174.9W			
h=234km mb=5.4			
Tonga Islands			
Oct 14	WDC	eP	03 28 31.0
	MIN	eP	03 28 34.9
	ORV	eP	03 28 38.9
	BRK	e	03 28 43.0
	BKS	eP	03 28 43.3
		e	03 29 09.7
			AMP(μa) PER(s)
		PZ	0.10 1.1
	GCC	e	03 28 47.6
	MHC	e	03 28 48.0
	JAS1	eP	03 28 51.0
	PRS	e	03 28 53.0
	LLA	e	03 28 53.3
	FRI	eP	03 28 57.3
	PRI	e	03 28 57.7
USGS 03h18m31.5s 46.2N 152.7E			
h=33km mb=5.9 Ms=5.2			
Kuril Islands			
Oct 15	GCC	eP	10 32 16.3
	PCC	eP	10 32 16.5
	PRS	eP	10 32 16.5
	SAO	eP	10 32 17.3
	BKS	eP	10 32 18.4
		ePcP	10 32 30
		ipP	10 32 50
		e	10 32 58.1
		ePP	10 35 10
		e	10 35 41
		eS	10 41 35.2
		iScS	10 42 08
		i	10 42 38
		eScS	10 42 39.1
		esPS	10 43 09
		e	10 44 09
		e	10 46 08
		iSS	10 46 28
		i	10 47 00
		e	10 49 07
		iSSS	10 49 56
		eLr	10 52 56
		ePKPPKP	11 00 07.2
			AMP(μa) PER(s)
		PZ	2.0 0.9
		LZ	55 20.
		LN	39 20.
		LE	29 20.
	BRK	ePd	10 32 18.4
	MHC	eP	10 32 19.2
		ePKPPKP	11 00 08
	PRI	iPd	10 32 20.5
	LLA	eP	10 32 20.8
	FHC	eP	10 32 23.5
	FRI	eP	10 32 24.6
	JAS1	iPd	10 32 25.2
		ipP	10 32 59.6
		iPP	10 35 07.8
		ipPP	10 35 36.8
		ePKPPKP	11 00 01
	ORV	eP	10 32 26.7
	WDC	iPd	10 32 27.2
		ipP	10 33 00.4
		iPP	10 35 12.8
		e	10 41 52.6
		ePKPPKP	11 00 02
	MIN	eP	10 32 29.0
BRK Ms=6.8 Distance=72°			
USGS 10h21m07.5s 15.9S 173.6W			
h=128km mb=6.5			
Tonga Islands			
Oct 17	MNA	ePd	00 31 39.5
	FRI	e(P)	00 31 39.9
	PRS	ePd	00 31 43.5
	JAS1	eP	00 31 45.5
	MHC	eP	00 31 48.5
	ORV	iPd	00 31 55.7
	MIN	e	00 31 57.8
	WDC	ePd	00 32 01.0
	FHC	eP	00 32 09.1
USGS 00h20m44.3s 16.0S 69.5W			
h=219km mb=5.1			
Peru-Bolivia Border Region			
Oct 17	FHC	eP	00 45 59.3
	WDC	eP	00 46 14.3
	MIN	ePd	00 46 25.8
	ORV	ePd	00 46 32.2
		e	00 46 38.4
	JAS1	iPd	00 47 03.0
	MNA	eP	00 47 09.8
USGS 00h44m49.6s 44.0N 128.4W			
h=10km mb=4.7 Ms=4.6			
Off the Coast of Oregon			
Oct 17	MIN	e	09 20 25.8
		eP	09 20 40.8
		e	09 20 41.1
	WDC	eP	09 20 36.2
		e	09 21 21.5
		e	09 21 36.1
	ORV	ePc	09 20 44.2
		e	09 20 49.3
		e	09 21 29.9
		e	09 21 44.5
	JAS1	ePc	09 20 56.8
		e	09 21 02.0
		e	09 21 42.6
		e	09 21 57.5
	FRI	eP	09 21 03.4
	MNA	eP	09 21 03.8
		e	09 21 09.0
		e	09 21 49.5
USGS 09h11m12.4s 50.2N 153.8E			
h=201km mb=4.9			
Kuril Islands			
Oct 17	FRI	e	10 53 41.4
	MNA	ePc	10 53 42.2
	JAS1	eP	10 53 50.6
	ORV	eP	10 54 05.0
	MIN	eP	10 54 08.8
	WDC	e	10 54 12.6
USGS 10h46m49.3s 13.4N 90.5W			
h=33km mb=4.8 Ms=3.3			
Near Coast of Guatemala			
Oct 18	WDC	eP	05 25 39.5
		e	05 26 08.0
	MIN	eP	05 25 44.0
		e	05 26 12.8
	ORV	ePd	05 25 49.6
		e	05 26 18.2
		e	05 26 53.0
	JAS1	ePd	05 26 06.7
		e	05 26 35.5
		e	05 26 53.0
	MNA	eP	05 26 10.5
		e	05 26 39
	LLA	eP	05 26 14.6
		eP	05 26 45
	FRI	eP	05 26 16.5
	PRI	eP	05 26 20.7
		e	05 26 50
USGS 05h19m56.6s 63.2N 151.1W			
h=135km mb=4.7			
Central Alaska			
Oct 18	MNA	ePc	15 32 [illegible]
	MIN	ePd	15 [illegible]
	FRI	ePd	15 [illegible]

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DATE	STA	PHASE	TIME (UTC)
	JAS1	ePd	15 33 17.4
		eS	15 36 42
	ORV	ePd	15 33 18.2
	WDC	ePd	15 33 24.0
	PRI	e	15 33 32
	MHC	e	15 33 32.5
	LLA	e	15 33 34.0
	PRS	e	15 33 36.0
	BRK	eP	15 33 40.2
	BKS	eP	15 33 40.5
		e	15 33 43.3
		e	15 33 51.2
		eS	15 35 32.4
		e	15 36 14.2
	SAO	ePd	15 33 44.4
	GCC	e	15 33 45.9
	PCC	ePd	15 33 46.5
	FHC	e	15 33 47.6
BRK ML=5.7(2)			
USGS 15h30m23.0s 42.4N 105.7W			
h=33km mb=5.4 Ms=5.1			
Wyoming			
Oct 18	WDC	eP	21 53 45.0
		e	21 55 40.3
	MIN	e	21 53 48.5
	ORV	iPc	21 53 50.9
		e	21 55 46.5
	JAS1	eP	21 53 59.4
	FRI	e	21 54 04.1
	MNA	eP	21 54 06.2
USGS 23h42m38.3s 28.1N 139.4E			
h=512km mb=4.9			
Bonin Islands Region			
Oct 19	BKS	e(P)	01 39 29.2
		e	01 39 40.1
		eS	01 49 10.5
		eG	01 57 20
		eLr	01 59 48
			AMP(μm) PER(s)
		PZ	0.026 1.0
		LZ	1.3 20.
		LN	1.1 20.
		LE	1.1 20.
	MHC	e	01 39 29.8
	FRI	eP	01 39 34.9
	JAS1	eP	01 39 35.5
	ORV	eP	01 39 37.7
	WDC	eP	01 39 38.1
	MIN	eP	01 39 40.1
	MNA	eP	01 39 46.5
USGS 01h28m20.7s 14.8S 171.2W			
h=33km mb=5.1 Ms=5.1			
Samoa Islands			
Oct 19	WDC	eP	13 10 17.3
	ORV	eP	13 10 23.4
	JAS1	e	13 10 32.4
	FRI	eP	13 10 37.3
	MNA	eP	13 10 38.6
USGS 13h58m02.9s 32.7N 130.1E			
h=26km mb=5.1			
Kyushu, Japan			
Oct 19	PRS	eP	14 49 02.6
	LLA	eP	14 49 04.3
	BKS	ePc	14 49 04.4
		e	14 49 09.1
		e	14 49 34
		epP	14 49 36.7
		e	14 50 13.5
		eS	14 58 21
		esS	14 58 90.5
		eSS	15 02 59
		eG	15 05 28
		e	15 09 23
		eLr	15 10 36
			AMP(μm) PER(s)
		PZ	0.041 0.8
		LZ	2.0 20.
		LN	1.6 20.
		LE	1.3 20.
	BRK	e	14 49 04.5
	PRI	eP	14 49 04.8
	MHC	eP	14 49 05.8
	FRI	eP	14 49 10.5
	JAS1	iPd	14 49 11.3
		ipP	14 49 43.5
	ORV	eP	14 49 12.7
		i	14 49 45.3
	WDC	eP	14 49 13.0
		ipP	14 49 45.6
	MIN	eP	14 49 15.2
	MNA	eP	14 49 21.6
		ipP	14 49 54.0
BRK mb=5.3 h=115km Distance=73°			
USGS 14h37m50.8s 15.9S 174.0W			
h=121km mb=5.8			
Tonga Islands			
Oct 19	PRS	eP	20 12 31.3
	GCC	eP	20 12 32
	SAO	eP	20 12 33
	PRI	eP	20 12 33.2
	LLA	eP	20 12 34
	BKS	eP	20 12 34.0
		e	20 31 10
		eLr	20 39 00
			AMP(μm) PER(s)
		PZ	0.063 1.2
	MHC	eP	20 12 34.2
	FRI	ePc	20 12 37.9
		e	20 12 42.0
	JAS1	eP	20 12 38.9
	ORV	eP	20 12 41.0
	WDC	eP	20 12 42
	MIN	eP	20 12 43.3
	MNA	eP	20 12 47.1
USGS 19h59m56.0s 30.5S 178.4W			
h=33km mb=5.6 Ms=5.0			
Kermadec Islands			
Oct 19	PRI	e	23 05 48
	MNA	iPc	23 05 49.1
	JAS1	eP	23 05 56
	ORV	eP	23 06 12.3
	MIN	e	23 06 16
	BKS	eLr	23 16 18
USGS 23h00m00.2s 16.7N 98.3W			
h=35km mb=5.1 Ms=4.9			
Near Coast of Guerrero, Mexico			
Oct 20	WDC	e	03 31 02
	MIN	e	03 31 06
	ORV	iPc	03 31 11.0
	JAS1	eP	03 31 23.0
	MNA	eP	03 31 30.7
	BKS	e	03 31 51
		eS	03 39 22
		eG	03 46 03
		eLr	03 48 22
USGS 03h21m19.8s 48.3N 154.9E			
h=33km mb=5.5 Ms=5.5			
Kuril Islands			
Oct 20	PRI	iPd	15 05 11.5
	LLA	iPd	15 05 14.5
	PRS	iPc	15 05 15.1
	SAO	iPc	15 05 19.6
	GCC	eP	15 05 27.7
	FRI	iPc	15 05 28.0
	MHC	ePc	15 05 29.6
	JAS1	iPc	15 05 35.1
	PCC	e(P)	15 05 35.5
	BKS	iP	15 05 39.6
		iS	15 06 04.9
	BRK	eP	15 05 39.7
	ZSP	iPc	15 05 41.2
	ORV	eP	15 06 01
	MNA	eP	15 06 02
BRK 15h05m07.0s 36.3N 120.9W			
h=7km ML=3.0(2)			
Peachtree Valley, 25 km ENE of King City, CA			
Oct 20	FRI	ePd	18 10 57.8
	PRI	iPd	18 10 59.8
	MNA	iPd	18 10 59.9
		e	18 12 10
		e	18 14 02.5
	LLA	iPd	18 11 02.2
	PRS	ePd	18 11 02.7
	SAO	eP	18 11 04.3
	JAS1	iPd	18 11 04.7
		e	18 11 56
	GCC	eP	18 11 07.0
	MHC	ePd	18 11 07.2
	PCC	eP	18 11 09.6
	BRK	eP	18 11 10.5
	BKS	iPd	18 11 10.7
		epP	18 12 24
		esP	18 12 24
		esPP	18 15 24
		eS	18 21 03
		eSKS	18 21 19
		e	18 21 19
		eSP	18 21 54
		epS	18 22 01
		esS	18 22 26
		esPS	18 23 10
		eSS	18 26 34
			AMP(μm) PER(s)
		PZ	0.62 2.0
	ORV	iPd	18 11 13.9
		e	18 12 06
	MIN	iPd	18 11 1609
	WDC	iPd	18 11 18.6
	FHC	ePd	18 11 25.9
BRK mb=6.4 h=207km Distance=82°			
USGS 17h59m17.0s 24.1S 66.8W			
h=192km mb=6.0			
Salta Province, Argentina			
Oct 20	PCC	eP	21 33 13.5
	PRI	e(P)	21 33 14
	GCC	eP	21 33 14.3
	PRS	eP	21 33 14.6
	SAO	eP	21 33 15.5
	BRK	eP	21 33 16
	BKS	iPd	21 33 16.7
			AMP(μm) PER(s)
		PZ	0.090 0.3
	MHC	eP	21 33 16.9
	JAS1	eP	21 33 21.7
	FRI	eP	21 33 22
	ORV	ePd	21 33 23.3
	WDC	ePd	21 33 23.5
	MIN	eP	21 33 25
	MNA	eP	21 33 31
USGS 21h22m11.0s 20.7S 178.4W			
h=575km			
Fiji Islands Region			
Oct 20	MHC	iPc	22 01 55.8
	GCC	iPd	22 02 02.5
	SAO	iPc	22 02 05.7
	PCC	iPc	22 02 05.9
	BKS	iPd	22 02 08.5
		eS	22 02 19.3
	BRK	iPd	22 02 08.5
		iS	22 02 21.1
	ZSP	eP	22 02 09.8
		iS	22 02 22.3
	LLA	iPc	22 02 10.7
	PRS	iPd	22 02 13.6
	JAS1	iPd	22 02 14.8
		iS	22 02 29.9
	FRI	ePc	22 02 21.3
		eS	22 02 39.6
	ORV	e(P)	22 02 32.5
BRK 22h01m54.4s 37.3N 121.7W			
h=7km ML=2.7(4) Mo=3.4E18(2)			
Halls Valley Sequence			
Oct 20	PRI	eP	22 23 01.2
		e	22 23 05.4
	PRS	eP	22 23 05
	LLA	ePc	22 23 05.0
		e	22 23 08.1
	FRI	iPd	22 23 08.8
		i	22 23 12.1
	MHC	ePd	22 23 15.8
	JAS1	ePc	22 23 19.0
	MNA	ePc	22 23 22.1
	BKS	e(P)d	22 23 27.3
		eS	22 26 56
		e	22 27 02
			AMP(μm) PER(s)
		PZ	0.053 0.9
	ORV	ePd	22 23 42.0
	MIN	eP	22 23 52.2
	WDC	ePc	22 23 55.1
		e	22 23 59.1
BRK mb=4.7 h=33km Distance=17°			
USGS 22h19m03.8s 20.1N 116.0W			
h=10km mb=4.9 Ms=4.3			
East Central Pacific Ocean			
Oct 21	FRI	ePKP	09 31 53.1
	MNA	ePKP	09 31 54.5
	GCC	e(PKP)	09 31 55
	JAS1	iPKPc	09 31 55.4
		e	09 32 07.8
	BRK	ePKP	09 31 58
	BKS	ePKP	09 31 58.5
	ORV	ePKP	09 31 58.7
	MIN	ePKP	09 31 59.7
	WDC	iPKPd	09 32 00.7
		e	09 32 12.5
USGS 09h12m59.8s 56.9S 25.0W			
h=33km mb=5.1 Ms=4.9			
South Sandwich Islands Region			
Oct 21	MNA	iPc	14 51 51.1
	JAS1	iPc	14 51 56.7
		iS	14 52 11.9
	FRI	ePd	14 52 06.0
	ORV	iPd	14 52 06.2
	MHC	eP	14 52 14.2
	BRK	e(P)	14 52 16.1
	LLA	e(P)	14 52 16.2
	MIN	e(P)	14 52 17
	SAO	iP	14 52 17.7
	ZSP	e(P)	14 52 18.5
	BKS	iPd	14 52 18.9
	PRS	e(P)	14 52 19
	PCC	e(P)	14 52 21
	GCC	e(P)	14 52 21
	WDC	eP	14 52 23.0
	PRI	e(P)	14 52 24
		e(S)	14 53 02
BRK 14h51m33.8s 38.8N 119.3W			
h=16km ML=3.9(6)			
Western Nevada			
Oct 21	MIN	e	19 07 31.1
	ORV	eP	19 07 35.3
	JAS1	eP	19 07 49.2
		e	19 07 56.0
	LLA	e	19 08 06.7
USGS 19h58m07.0s 84.4N 107.2E			
h=10km mb=4.9			
North of Svernaya Zemlya			
Oct 22	SAO	iPc	04 06 36.3
	PRI	iPd	04 06 43.8
	MHC	iPd	04 06 47.7
		iS	04 06 58.3
	BKS	iPd	04 06 56.8
		e(S#)	04 07 22.0
	JAS1	ePd	04 06 56.9
		iS	04 07 15.9
	ZSP	iPd	04 06 58.2
BRK 04h06m31.4s 36.6N 121.2W			
h=10km ML=3.6(4) Mo=2.6E21(2)			
35 km SSE of Hollister, CA			
Oct 22	PRI	eP	08 03 33.9
	JAS1	eP	08 03 53.4
	MNA	iPc	08 03 56.6
	BKS	eP	08 03 57.8
		epP	08 04 10
		eS	08 07 37
		ePcP	08 08 17
			AMP(μm) PER(s)
		PZ	0.013 1.0
	WDC	eP	08 04 25.4
BRK mb=4.2 h=100km Distance=21°			
USGS 07h59m37.7s 20.0N 115.9W			
h=10km mb=4.9 Ms=4.1			
East Central Pacific Ocean			
Oct 22	MIN	iP	11 28 13.3
		iS	11 28 35.8
	MNA	iPd	11 28 13.7
		iS	11 28 38.9
	JAS1	ePd	11 28 17.2
		iS	11 28 48.1
	WDC	eP	11 28 25.5
	BKS	eP	11 28 36.3
		iS	11 29 11.9
	MHC	eP	11 28 39.1
	FHC	e	11 28 50.9
	PRI	e	11 28 53.5
BRK 11h27m42.3s 39.9N 119.4W			
h=10kmR ML=3.9(6)			
Western Nevada			
Oct 22	PRS	eP	15 39 33.2
	GCC	eP	15 39 34.2
	BRK	e	15 39 34.9
	PRI	eP	15 39 35.2
	BKS	iPc	15 39 36.3
		eS	15 50 07
		e	15 50 20
		e	15 50 50.21
		eG	16 02 32
		eLr	16 06 16
			AMP(μm) PER(s)
		PZ	0.036 0.9
		LZ	2.8 20.
		LN	2.3 20.
		LE	1.9 20.
	MHC	eP	15 39 36.3
	FRI	eP	15 39 39.2
	JAS1	iPc	15 39 41.1
	ORV	ePc	15 39 43.4
	WDC	ePc	15 39 44.4
	MIN	e	15 39 45.3
	MNA	ePc	15 39 49.1
BRK Ms=5.7 Distance=87°			
USGS 15h26m54.9s 31.6S 177.7W			
h=33km mb=5.3 Ms=5.4			
Kermadec Islands Region			
Oct 22	PRS	eP	17 02 09.9
	MHC	eP	17 02 11.5
	LLA	eP	17 02 11.6
	PRI	eP	17 02 11.7
	FRI	eP	17 02 16.6
	JAS1	eP	17 02 17.2
	WDC	eP	17 02 18.2
	ORV	eP	17 02 18.3
	MNA	eP	17 02 26.8
USGS 17h51m18.5s 17.8S 178.6W			
h=48km mb=4.8			
Fiji Islands Region			
Oct 22	WDC	eP	21 09 58.4
	ORV	eP	21 10 02.0
	MIN	eP	21 10 03.6
	MHC	eP	21 10 03.9
	BKS	ePc	21 10 05.3
			AMP(μm) PER(s)
		PZ	0.027 0.9
	JAS1	eP	21 10 08.0
	LLA	eP	21 10 08.4
	PRI	eP	21 10 09.5
	FRI	eP	21 10 11.5
	MNA	eP	21 10 18.3
USGS 21h57m44.9s 15.0N 147.0E			
h=41km mb=5.1			
Mariana Islands			
Oct 23	FHC	eP	08 13 22.8
	WDC	iPc	08 13 29.5
	MIN	eP	08 13 34.2
	ORV	iPc	08 13 38.6
	BRK	eP	08 13 44.4
	BKS	ePc	08 13 45.2
		eLr	08 19 37
			AMP(μm) PER(s)
		PZ	0.027 0.9
	PCC	eP	08 13 46.0
	GCC	eP	08 13 50.4
	MHC	eP	08 13 50.6
	JAS1	iPc	08 13 52.8
	SAO	eP	08 13 54.0
	PRS	eP	08 13 57.0
	LLA	eP	08 13 57.[illegible]
	MNA	iPc	08 13 59.5
	FRI	eP	08 14 00.3
	PRI	eP	08 14 01.[illegible]
USGS 08h04m48.2s 55.7N 162.7E			
h=33km mb=5.3 Ms=4.[illegible]			
Komandorsky Islands Region			

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)
Oct 23	ZSP	eP	10 08 56.8
		eS	10 09 13.5
	BRK	ePc	10 08 57.0
	BKS	ePc	10 08 57.4
		eS	10 09 16.3
	PCC	ePd	10 09 00.3
	ORV	ePc	10 09 03.5
	GCC	eP	10 09 07.7
	MHC	ePd	10 09 08.0
	WDC	ePd	10 09 08.2
	MIN	eP	10 09 10.5
	FHC	e(P)	10 09 10.5
	SAO	ePd	10 09 14.0
	JAS1	ePc	10 09 15.3
		eS	10 09 45.3
	PRS	ePc	10 09 19.8
	LLA	ePd	10 09 19.8
	FRI	ePc	10 09 28.1
	PRI	e	10 09 28.5

BRK 10h08m34.7s 38.7N 123.5W
h=5kmR ML=3.1(8)
Along the Coast, 55 km SW of Ukiah, CA

Oct 23	MNA	eP	11 19 13.5	
	ORV	eP	11 19 33.2	
	WDC	eP	11 19 41.9	
	BKS	eS	11 24 53	
		eG	11 27 02	
		eLr	11 28 45	
			AMP(µm)	PER(s)
		LZ	1.1	20.
		LN	1.9	20.
		LE	1.4	20.

USGS 11h12m35.8s 8.3N 103.3W
h=10km mb=4.8 Ms=4.6
Off Coast of Mexico

Oct 23	MHC	iPd	16 23 31.1	
	SAO	iPd	16 23 31.2	
	GCC	ePc	16 23 32.8	
	LLA	iPc	16 23 36.7	
	PRS	ePd	16 23 38.9	
	BRK	eP	16 23 43.5	
	BKS	eP	16 23 43.8	
		eS	16 23 58.7	
	ZSP	ePc	16 23 44.9	
	PRI	ePc	16 23 46.6	
	JAS1	ePd	16 23 46.7	
		iS	16 24 03.0	
	FRI	ePc	16 23 50.0	
		eS	16 24 08.7	
	ORV	e	16 24 07.3	

BRK 16h23m24.9s 37.1N 121.5W
h=3km ML=2.5(4)
SE of Coyote lake, 25 km NNW of Hollister, CA

Oct 23	FHC	ePc	22 41 09.8	
	WDC	ePc	22 41 14.3	
	MIN	eP	22 41 17.5	
	BRK	eP	22 41 18.4	
	ORV	ePc	22 41 18.9	
	BKS	eP	22 41 19.2	
		e	22 41 22.5	
		e	22 42 06.1	
			AMP(µm)	PER(s)
		PZ	0.48	0.9
	GCC	eP	22 41 20.2	
	MHC	ePc	22 41 21.6	
	SAO	eP	22 41 23.3	
	PRS	eP	22 41 23.8	
	LLA	eP	22 41 25.1	

	JAS1	ePc	22 41 25.2	
	PRI	eP	22 41 27.2	
	FRI	eP	22 41 29.0	
	MNA	eP	22 41 33.4	

USGS 22h28m59.8s 13.7N 144.9E
h=123km mb=5.4
Mariana Islands

Oct 24	PRI	eP	00 11 19.7	
	FRI	e	00 11 26.1	
	MHC	e	00 11 33.6	
	JAS1	e	00 11 36	
	MNA	eP	00 11 39.5	
	ORV	e	00 11 57.0	
	WDC	eP	00 12 08.7	

Oct 24	GCC	eP	02 40 29.6	
	PRS	eP	02 40 29.7	
	SAO	eP	02 40 30.5	
	BRK	eP	02 40 31.7	
	PRI	eP	02 40 31.8	
	BKS	eP	02 40 32.2	
			AMP(µm)	PER(s)
		PZ	0.045	0.8
	FRI	ePc	02 40 36.5	
	JAS1	iPc	02 40 37.3	
	ORV	ePc	02 40 39.0	
	WDC	ePc	02 40 39.4	
	MIN	eP	02 40 40.9	
	MNA	ePc	02 40 46.0	

USGS 02h28m59.3s 24.6S 179.8W
h=478km mb=5.1
South of Fiji Islands

Oct 25	JAS1	eP	00 40 58	
	MNA	e	00 41 07.1	

USGS 00h28m09.9s 5.7S 154.5E
h=105km mb=5.2
Solomon Islands

Oct 25	FHC	eP	06 40 49	
	WDC	iPc	06 40 49.3	
		ePKPPKP	07 09 24	
	MIN	iPc	06 40 51.2	
	ORV	iPc	06 40 55.4	
		ePKPPKP	07 09 18	
	MNA	iPc	06 41 03.0	
		ePKPPKP	07 09 18	
	JAS1	iPc	06 41 06.6	
		ePKPPKP	07 09 16	
	BRK	eP	06 41 07.3	
	BKS	ePc	06 41 07.5	
			AMP(µm)	PER(s)
		PZ	0.026	0.7
	MHC	ePc	06 41 10.7	
	GCC	eP	06 41 12.2	
	SAO	eP	06 41 13.8	
	LLA	iPc	06 41 15.2	
	PRS	eP	06 41 16.6	
	PRI	eP	06 41 18.6	

USGS 06h29m57.7s 73.4N 55.0E
h=0km mb=5.9 Ms=4.7
Novaya Zemlya

Oct 25	PRI	e(P)	08 18 59	
	MNA	eP	08 19 03.3	
	JAS1	e(P)	08 19 14	
	MHC	e(P)	08 19 16	
	BRK	e(P)	08 19 26	
	BKS	eP	08 19 31	
		e	08 19 43.2	
		eS	08 22 07	
		e	08 22 08.0	

		eG	08 22 24	
		eLr	08 23 41	
			AMP(µm)	PER(s)
		PZ	0.12	1.4
		LZ	4.8	16.
		LN	20	20.
		LE	9.6	20.
	ORV	eP	08 19 36	
	MIN	eP	08 19 45.6	
	WDC	e(P)	08 19 50	

BRK mb=4.9 h=33km Distance=15°
USGS 08h15m45.6s 26.2N 110.3W
h=10km mb=5.1 Ms=5.0
Gulf of California

Oct 25	MNA	eP	08 21 26	
	PRI	e(P)	08 21 26	
	JAS1	e(P)	08 21 39	
	PRS	e(P)	08 21 44	
	BRK	e(P)	08 21 54	
	BKS	ePc	08 21 54.5	
			AMP(µm)	PER(s)
		PZ	0.046	1.3
	ORV	eP	08 22 05	
	MIN	eP	08 22 13	
	WDC	e	08 22 17	

USGS 08h18m12.6s 26.2N 110.3W
h=10km mb=5.2
Gulf of California

Oct 25	PRI	ePd	10 36 27.1	
		i	10 36 29.6	
	PRS	eP	10 36 32.2	
	LLA	ePd	10 36 34.7	
	SAO	iPd	10 36 37.5	
	GCC	eP	10 36 43.4	
	MHC	eP	10 36 46.9	
		i	10 37 05.2	
		iSg	10 37 43.0	
	JAS1	ePd	10 36 52.0	
		i	10 36 55.0	
	BKS	iPd	10 36 55.6	
		iS	10 37 31.5	
	BRK	e(P)	10 36 55.7	
	ZSP	eP	10 36 57.0	
	MNA	eP	10 37 05.2	
	ORV	iPc	10 37 16.9	
	MIN	e	10 37 31.8	
	WDC	e(P)c	10 37 33.3	

BRK ML=4.5(4)
USGS 10h36m02.2s 34.8N 120.1W
h=6km mb=4.5
Southern California

Oct 26	MHC	iPc	00 19 11.3	
	GCC	iPd	00 19 17.2	
		iS	00 19 23.6	
	SAO	iPd	00 19 21.7	
	BRK	eP	00 19 22.4	
	BKS	eP	00 19 22.5	
		eS	00 19 32.9	
	LLA	eP	00 19 26.6	
	PRS	eP	00 19 28.6	
	JAS1	iPc	00 19 30.8	
	PRI	eP	00 19 35.3	
	FRI	eP	00 19 37.4	
	ORV	e	00 19 46.2	

BRK 00h19m09.4s 37.3N 121.7W
h=6km ML=2.6(4) Mo=1.6E20(2)
Halls Valley Sequence

Oct 26	MNA	eP	03 08 33.0	
	JAS1	e	03 08 43.0	

	ORV	e	03 08 55.5	
	MIN	e	03 08 59.0	

USGS 02h01m39.3s 13.2N 90.5W
h=33km mb=4.9 Ms=3.8
Near Coast of Guatemala

Oct 26	MIN	iP	05 50 27.3	
		iPc	05 50 27.5	
		iS	05 50 30.0	
	ORV	eP	05 50 38.6	
	WDC	iP	05 50 40.1	
		iS	05 50 53.2	

BRK 05h50m24.1s 40.4N 121.4W
h=7km ML=2.9(2) Mo=2.5E20(2)
70 km SSE of Burney, CA

Oct 26	MNA	ePKP	08 04 04.2	
	MIN	ePKP	08 04 07.3	
	WDC	ePKP	08 04 08.1	
	ORV	ePKP	08 04 08.5	
	FRI	ePKP	08 04 09.6	
	JAS1	iPKPd	08 04 09.8	
	FHC	ePKP	08 04 12.0	
	MHC	e	08 04 13.1	
	LLA	ePKP	08 04 13.6	
	PRI	ePKP	08 04 14.3	
	PRS	e	08 04 14.6	
	BKS	e(PKP)	08 04 15.1	
		e	08 04 29.3	
			AMP(µm)	PER(s)
		PZ	0.022	0.7

USGS 07h44m28.2s 16.5S 28.7E
h=11km mb=5.4
Zambia

Oct 26	GCC	eP	16 07 01.7	
	PRS	ePc	16 07 03.6	
	SAO	e(P)	16 07 04	
	MHC	eP	16 07 04.2	
	LLA	eP	16 07 05.7	
	WDC	ePc	16 07 05.9	
	PRI	ePc	16 07 06.2	
	ORV	ePc	16 07 07.7	
	JAS1	iPc	16 07 09.4	
	FRI	ePc	16 07 10.5	
	MNA	eP	16 07 19.0	

USGS 16h54m56.6s 10.7S 165.9E
h=169km mb=5.0
Santa Cruz Islands

Oct 26	LLA	eP	16 36 31.6	
	PRI	e	16 36 31.8	
	FRI	eP	16 36 35.0	
	PRS	e	16 36 35.3	
	MHC	e	16 36 42.3	
	JAS1	e	16 36 46	
	MNA	ePd	16 36 48.8	
	ORV	ePd	16 37 08.3	
	WDC	e	16 37 22.1	

USGS 16h32m25.8s 19.5N 116.1W
h=10km mb=4.1 Ms=4.1
East Central Pacific Ocean

Oct 26	PRI	iPd	17 21 23.4	
		i	17 21 30.6	
	PRS	iPd	17 21 29.2	
	FRI	ePd	17 21 30.2	
	LLA	eP	17 21 30.5	
	SAO	iP	17 21 35.2	
	GCC	ePd	17 21 41.0	
	MHC	ePc	17 21 42.7	
	JAS1	ePd	17 21 45.0	
		i	17 21 54.2	

		i	17 22 34.0	
		i	17 22 49.8	
	MNA	ePc	17 21 52.7	
		i	17 22 04.6	
		i	17 23 04.5	
	BKS	eP	17 21 53.0	
		e	17 22 26	
		e	17 24 07	
	BRK	ePc	17 21 53.0	
	ZSP	ePd	17 21 53.7	
	ORV	ePd	17 22 11.3	
	WDC	e	17 22 27	

BRK ML=4.1(6)
PAS 17h20m43.5s 34.0N 119.0W
h=13km ML=4.3
Southern California

Oct 26	WDC	e	20 36 11	
		e	20 39 49	
	MNA	ePdiff	20 36 22.2	
		e	20 39 49	
	FRI	e	20 36 23.5	
	ORV	eP	20 39 14.0	
	JAS1	ePdiffd	20 39 17.6	
		e	20 39 58	

USGS 20h22m21.8s 39.2N 71.3E
h=33km mb=6.0 Ms=6.1
Tajik, S.S.R.

Oct 27	FHC	iPc	02 03 02.6	
	WDC	iPc	02 03 03.7	
		e	02 06 25.8	
		ePKKP	02 20 47	
	MIN	iPc	02 03 05.8	
	ORV	iPc	02 03 09.2	
		ePKKP	02 20 44	
	BRK	ePc	02 03 17.0	
	BKS	eP	02 03 17.3	
			AMP(µm)	PER(s)
		PZ	0.18	0.8
	MNA	iPc	02 03 18.0	
	JAS1	iPc	02 03 18.4	
		e	02 06 46	
		ePKKP	02 20 42	
	MHC	ePc	02 03 20.1	
	SAO	e c	02 03 20.7	
	GCC	ePc	02 03 21.1	
	FRI	ePc	02 03 22.8	
		ePKKP	02 20 39	
	LLA	ePc	02 03 24.2	
	PRS	ePc	02 03 24.8	
	PRI	ePc	02 03 26.9	
		e	02 04 03	

USGS 02h50m10.6s 49.9N 78.8E
h=0km mb=6.2 Ms=4.4
Eastern Kazakh, S.S.R.

Oct 27	WDC	eP	03 21 55.6	
	ORV	iP	03 22 13.1	
	JAS1	iPc	03 22 37.9	
	BKS	e	03 22 45	
	MNA	e(P)	03 22 50.8	
	FRI	eP	03 22 52.0	

USGS 03h20m35.5s 44.0N 127.8W
h=10km mb=4.1 Ms=4.2
Off the Coast of Oregon

Oct 27	FHC	eP	04 49 32.0	
	WDC	eP	04 49 47.5	
	MIN	eP	04 49 56.8	
	ORV	eP	04 50 03.5	
		e	04 50 11.7	
	JAS1	ePd	04 50 29.0	

		i	04 50 35.9	
	MNA	eP	04 50 42.3	
	FRI	eP	04 50 42.5	

USGS 04h48m25.2s 43.9N 128.0W
h=10km mb=4.7 Ms=4.3
Off the Coast of Oregon

Oct 27	WDC	e	11 23 06.5	
	ORV	eP	11 23 08.2	
	JAS1	eP	11 23 17.8	
	FRI	e	11 23 23.2	
	MNA	e	11 23 36.0	

USGS 11h11m50.8s 37.8N 141.7E
h=60km mb=5.4
Near East Coast of Honshu, Japan

Oct 27	MHC	iPc	19 46 39.8	
	GCC	iPd	19 46 46.4	
	SAO	iPc	19 46 49.3	
	BKS	eP	19 46 52.9	
		iSg	19 47 06.7	
	BRK	iPd	19 46 53.2	
	ZSP	eP	19 46 54.3	
	LLA	iPc	19 46 54.5	
	PRS	eP	19 46 56.7	
	JAS1	iPd	19 46 59.2	
		iS	19 47 14.2	
	PRI	e	19 47 04.4	
	FRI	eP	19 47 05.0	
	ORV	e	19 47 16.9	

BRK 19h46m38.4s 37.3N 121.6W
h=5km ML=2.9(4) Mo=8.4E19(2)
Halls Valley Sequence

Oct 29	WDC	e	03 05 49.6	
	MIN	e	03 05 59.2	
	ORV	eP	03 06 05.0	
	BKS	eP	03 06 17.5	
			AMP(µm)	PER(s)
		PZ	0.025	0.8
	MHC	e	03 06 27.6	
	JAS1	eP	03 06 31.2	
	FRI	e	03 06 45.5	

USGS 03h04m38.6s 43.6N 127.0W
h=10km mb=4.3 Ms=3.5
Off the Coast of Oregon

Oct 29	WDC	eP	23 12 23.8	
	FRI	e	23 12 25.0	
	ORV	eP	23 12 31.9	
	MIN	e	23 12 32.9	
	JAS1	eP	23 12 46.5	
	PRI	e	23 12 55.2	
	MNA	e	23 12 56.1	

USGS 23h04m43.6s 51.1N 179.5E
h=39km mb=5.2 Ms=5.2
Rat Islands, Aleutian Islands

Oct 29	FHC	ePdiff	23 31 42.1	
	WDC	ePdiff	23 31 46.1	
		i	23 36 00.0	
	MIN	ePdiff	23 31 49.1	
	ORV	ePdiff	23 31 50.7	
		e	23 36 07.0	
	MHC	ePdiff	23 31 54.1	
	JAS1	ePdiff	23 31 57.1	
		e	23 35 15.5	
		i	23 36	
		e	23 42 26.8	
	PRI	ePdiff	23 32 00.5	
	FRI	ePdiff	23 32	
		e	23 36	
	MNA	ePdiff	23 32	

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DATE	STA	PHASE	TIME (UTC)
USGS 23h18m05.1s 5.7N 125.5E			
h=153km mb=5.9			
Mindanao, Phillipine Islands			
Oct 30	WDC	e	00 11 13.4
	MIN	eP	00 11 15.5
	ORV	eP	00 11 19.2
	JAS1	eP	00 11 27.0
		i	00 11 33.2
	MNA	eP	00 11 27.8
	FRI	eP	00 11 31.6
		e	00 11 37.7
USGS 00h50m46.5s 18.9S 67.4E			
h=10km mb=5.4			
Mid-Indian Rise			
Oct 30	PCC	eP	01 17 05.0
		iPcP	01 17 07.2
	GCC	eP	01 17 05.0
		iPcP	01 17 07.0
	PRS	eP	01 17 05.0
		iPcP	01 17 07.0
	SAO	eP	01 17 05.8
	BKS	eP	01 17 07.0
		iPcP	01 17 09.1
		epP	01 17 42.5
		eS	01 26 25
		eScS	01 27 04.0
		e(SS)	01 31 06
		esSS	01 32 08
		e(SSS)	01 34 24
		e(PKKP)	01 35 00
		e(Lg)	01 38 00
		e(Lr)	01 38 58
		AMP(μa)	PER(s)
		PZ 0.13	1.0
	BRK	eP	01 17 07.0
		iPcP	01 17 09.1
	LLA	eP	01 17 07.5
		i	01 17 09.6
	MHC	eP	01 17 07.6
		iPcP	01 17 09.8
		ipP	01 17 42.4
	PRI	eP	01 17 07.7
		iPcP	01 17 09.4
		ipP	01 17 42.9
	FHC	eP	01 17 12.1
		iPcP	01 17 14.1
	FRI	iP	01 17 13.0
		iPcP	01 17 15.0
	JAS1	iPd	01 17 13.6
		iPcP	01 17 15.8
		i	01 17 24.4
		ipP	01 17 49.1
	WDC	iPd	01 17 15.5
		ipP	01 17 51.5
	ORV	iPd	01 17 15.8
		iPcP	01 17 17.1
	MIN	eP	01 17 17.4
		iPcP	01 17 19.7
	MNA	iPd	01 17 24.0
		iPcP	01 17 26.3
		ipP	01 17 59.2
BRK mb=5.7 h=140km Distance=77°			
USGS 01h05m49.9s 17.1S 174.1W			
h=141km mb=6.0			
Tonga Islands			
Oct 30	MNA	eP	03 26 18.0
	LLA	eP	03 26 18.2
	PRS	eP	03 26 18.5
	JAS1	eP	03 26 22.6
	MHC	e	03 26 23.1
	ORV	eP	03 26 30.5
		e	03 26 53.5
	WDC	iPd	03 26 35.2
USGS 03h13m54.8s 33.6S 70.5W			
h=93km mb=5.4			
Chile-Argentina Border Region			
Oct 30	FRI	eP	08 58 50.4
	JAS1	eP	08 58 51.4
	ORV	eP	08 58 52.4
	WDC	eP	08 58 53.0
	MIN	eP	08 58 55.0
	MNA	eP	08 59 01.6
USGS 08h47m30.1s 15.7S 174.3W			
h=122km mb=4.6			
Tonga Islands			
Oct 30	PRS	eP	20 46 18.2
	SAO	eP	20 46 19
	GCC	eP	20 46 19.0
	PCC	eP	20 46 19.2
	PRI	ePc	20 46 20.2
	BRK	eP	20 46 21.0
	MHC	ePc	20 46 21.2
	BKS	eP	20 46 21.6
		eLr	21 14 30
		AMP(μa)	PER(s)
		PZ 0.12	1.3
		LZ 4.8	20.
		LN 3.6	20.
		LE 1.6	20.
	FRI	iPc	20 46 24.7
	JAS1	iPc	20 46 26.0
	ORV	ePc	20 46 28.2
	FHC	e	20 46 29
	WDC	iPc	20 46 29.3
	MIN	eP	20 46 30.5
	MNA	iPc	20 46 34.1
BRK Ms=5.8 Distance=89°			
USGS 20h33m41.0s 31.5S 177.7W			
h=25km mb=5.4 Ms=5.5			
Kermadec Islands Region			
Oct 30	ZSP	eP	20 50 19.7
		eS	20 50 31.5
	BRK	ePd	20 50 20.4
		eS	20 50 30.7
	BKS	eP	20 50 20.6
		eS	20 50 31.4
	PCC	eP	20 50 25.6
	ORV	eP	20 50 30.6
		i	20 50 37.3
	MHC	ePd	20 50 31.9
	GCC	e(P)	20 50 33.0
	SAO	eP	20 50 38.5
	JAS1	eP	20 50 39.2
		e(S)	20 51 04.0
BRK 20h50m06.6s 38.5N 122.7W			
h=4km ML=2.7(4)			
Near Santa Rosa, CA			
Oct 30	ZSP	ePd	23 44 13.7
		eS	23 44 25.6
	BRK	ePd	23 44 14.5
		eS	23 44 24.6
	BKS	ePd	23 44 14.7
		eS	23 44 25.2
	PCC	iPc	23 44 19.7
	ORV	ePc	23 44 24.5
		i	23 44 31.4
	MHC	ePc	23 44 25.9
	GCC	e(P)	23 44 26.8
	JAS1	eP	23 44 31.8
	SAO	eP	23 44 32.6
	PRS	eP	23 44 40.7
	WDC	e	23 44 44.6
	FRI	eP	23 44 47.2
	PRI	e	23 44 48.3
	MNA	e	23 45 06.3
BRK 23h44m00.7s 38.5N 122.7W			
h=5km ML=2.9(4)			
Near Santa Rosa, CA			
Oct 31	WDC	ePc	01 24 30.6
	MIN	e(P)c	01 24 34.4
	ORV	iPc	01 24 40.2
	BRK	eP	01 24 45.5
	BKS	eP	01 24 45.9
		AMP(μa)	PER(s)
		PZ 0.029	0.75
	MHC	ePc	01 24 51.4
	SAO	eP	01 24 55
	JAS1	ePc	01 24 55.0
	PRS	ePc	01 24 58.3
	FRI	ePc	01 25 03.0
	PRI	eP	01 25 03.4
	MNA	ePc	01 25 03.5
USGS 01h17m37.5s 52.8N 174.5W			
h=109km mb=4.5			
Andreanof Islands, Aleutian Is			
Oct 31	MHC	iPd	03 05 13.6
	GCC	iPd	03 05 19.5
		iS	03 05 35.4
	SAO	iPd	03 05 23.2
	PCC	iPc	03 05 23.35
	BKS	eP	03 05 26.3
		eS	03 05 37.6
	BRK	iPc	03 05 26.4
		eS	03 05 36.7
	ZSP	iPc	03 05 27.8
		iS	03 05 40.6
	PRS	iPc	03 05 30.4
	JAS1	iPc	03 05 33.3
		iS	03 05 49.0
	PRI	e(P)	03 05 37.2
	FRI	eP	03 05 39.2
		iS	03 06 00.0
	ORV	iPc	03 05 51.4
	MIN	e	03 06 02.8
	MNA	e	03 06 07
BRK 03h05m12.0s 37.3N 121.7W			
h=5km ML=3.2(4) Mo=1.9E20(2)			
Halls Valley Sequence			
Oct 31	WDC	eP	04 47 43.4
	MIN	eP	04 47 48.0
	ORV	eP	04 47 51.2
	MHC	eP	04 48 03
	JAS1	e(P)	04 48 05.2
	PRS	e	04 48 09
	FRI	eP	04 48 14
	MNA	eP	04 48 15
	PRI	e	04 48 17
USGS 04h40m05.0s 51.2N 179.6E			
h=57km mb=5.1			
Rat Islands, Aleutian Islands			
Oct 31	MHC	iPc	14 12 28.7
	GCC	iPd	14 12 35.2
	SAO	iPc	14 12 38.3
	PCC	iPc	14 12 38.9
	BKS	iPc	14 12 41.3
		eS	14 12 52.6
	BRK	iPc	14 12 41.4
	ZSP	iP	14 12 42.5
		eS	14 12 57.2
	LLA	iPc	14 12 43.4
	PRS	ePc	14 12 44.9
	JAS1	iPd	14 12 47.8
		eS	14 13 03.3
	PRI	eP	14 12 51.5
		e	14 13 17.5
	FRI	iPc	14 12 53.7
	ORV	iP	14 13 03.4
	MNA	eP	14 13 15.3
	MIN	eP	14 13 16.8
	WDC	e(P)	14 13 18.0
BRK 14h12m27.1s 37.3N 121.6W			
h=8km ML=3.6(6) Mo=3.1E20(2)			
Halls Valley Sequence			
Nov 1	MNA	iPc	05 00 43.9
	FRI	eP	05 00 50.4
	JAS1	iP	05 00 54.1
	PRI	e(P)	05 00 56.7
	LLA	ePc	05 00 56.9
	ORV	eP	05 00 57.5
	MIN	ePc	05 00 57.9
	SAO	e(P)	05 01 00
	PRS	ePc	05 01 00.0
	WDC	ePc	05 01 00.4
	MHC	eP	05 01 01.7
	GCC	ePc	05 01 02.7
	BRK	eP	05 01 03.5
	BKS	eP	05 01 03.7
		ePP	05 04 14
		eS	05 11 08.8
		eSS	05 16 06
		eLg	05 22 28
		eLr	05 26 40
		AMP(μa)	PER(s)
		PZ 0.66	1.4
		LZ 110	20.
		LNE 140	20.
		LNW 93	20.
	PCC	e(P)	05 01 04
	FHC	eP	05 01 09
BRK Ms=7.4 Distance=83°			
USGS 04h48m50.2s 8.2N 38.8W			
h=10km mb=6.5 Ms=7.1			
Central Mid-Atlantic Ridge			
Nov 1	PCC	ePd	09 39 03.4
	GCC	eP	09 39 03.4
	PRS	iP	09 39 03.5
	SAO	eP	09 39 04.2
	BRK	iPd	09 39 05.5
	BKS	eP	09 39 05.6
		AMP(μa)	PER(s)
		PZ 0.098	0.9
	PRI	ePd	09 39 05.7
	LLA	eP	09 39 05.8
	MHC	iP	09 39 06.1
	FHC	eP	09 39 10.4
	FRI	iP	09 39 11.0
	JAS1	iPd	09 39 11.3
		epP	09 40 05
	ORV	iPd	09 39 13.3
	WDC	iPd	09 39 13.7
		epP	09 40 06
	MIN	ePd	09 39 15.4
		epP	09 40 08
	MNA	iPd	09 39 21.1
		epP	09 40 13
USGS 09h27m39.3s 19.8S 175.8W			
h=223km mb=5.7			
Tonga Islands			
Nov 1	PCC	iPd	10 14 41.4
		iS	10 14 43.8
	BRK	ePd	10 14 45.6
		iS	10 14 51.0
	BKS	ePd	10 14 45.7
		iS	10 14 51.1
	MHC	iPc	10 14 47.3
		i(S)	10 14 54.2
	GCC	eP	10 14 47.8
	SAO	eP	10 14 55.2
	PRS	e	10 15 02.5
	LLA	e	10 15 02.9
	JAS1	e(P)	10 15 03.0
BRK 10h14m38.1s 37.5N 122.2W			
h=10km ML=2.4(4)			
Menlo Park, 35 km SSE of San Francisco, CA			
Nov 1	FHC	eP	18 52 22.6
	WDC	eP	18 52 28.8
	MIN	eP	18 52 33.4
	ORV	eP	18 52 37.4
	BKS	eP	18 52 45.2
		eS	19 00 06
		eSS	19 03 48
		eLg	19 05 40
		eLr	19 07 30
		AMP(μa)	PER(s)
		PZ 0.14	0.8
		LZ 9.9	20.
		LN 9.6	20.
		LE 12	20.
	PCC	eP	18 52 45.7
	GCC	eP	18 52 49.9
	MHC	eP	18 52 50.1
	JAS1	eP	18 52 51.2
	BRK	e	18 52 53.8
	SAO	eP	18 52 55.0
	PRS	eP	18 52 55.6
	LLA	eP	18 52 56.5
	MNA	eP	18 52 58.7
	FRI	eP	18 52 59.3
	PRI	eP	18 53 01.8
BRK Ms=6.1 Distance=54°			
USGS 18h43m44.1s 55.2N 163.7E			
h=49km mb=5.8 Ms=6.3			
Off East Coast of Kamchatka			
Nov 1	WDC	eP	20 51 37.2
	ORV	eP	20 51 46.0
	JAS1	eP	20 51 54.5
	MNA	eP	20 52 07.0
USGS 20h42m49.6s 55.3N 163.5			
h=33km mb=4.7			
Off East Coast of Kamchatka			
Nov 1	SAO	iPd	23 46 18.5
	LLA	iPd	23 46 22.9
		iS	23 46 29.0
	MHC	iPd	23 46 23.9
	GCC	iPc	23 46 24.4
	PRS	iPd	23 46 25.8
	PRI	eP	23 46 32.5
	PCC	iPc	23 46 33.2
	JAS1	eP	23 46 36.0
	BRK	eP	23 46 36.6
	BKS	eP	23 46 36.7
		eS	23 46 57.0
	ZSP	eP	23 46 37.3
	FRI	iPc	23 46 37.5
		iS	23 46 54.3
BRK 23h46m14.3s 36.9N 121.3W			
h=5km ML=2.9(4)			
10 km NE of Hollister, CA			
Nov 2	FRI	eP	03 54 53.4
		ePP	03 57 22.8
	MNA	iPc	03 54 54.1
		ePP	03 57 22.6
	PRI	eP	03 54 55.9
	LLA	eP	03 54 59.1
	JAS1	iPc	03 55 02.6
		ePP	03 57 25.1
	SAO	eP	03 55 04.0
	PRS	e	03 55 05.0
	MHC	eP	03 55 07.4
	GCC	eP	03 55 07.6
	PCC	eP	03 55 11.5
	BRK	e	03 55 12.5
	BKS	eP	03 55 13.2
		e(Lq)	04 06 45
		e	04 14 08
		AMP(μa)	PER(s)
		PZ 0.11	1.0
	ORV	eP	03 55 16.5
		ePP	03 57 30.4
	MIN	e	03 55 17.6
	WDC	eP	03 55 24.4
	FHC	e	03 55 35.7
USGS 03h48m00.5s 13.3N 90.0W			
h=72km mb=5.3			
El Salvador			
Nov 2	MHC	iPd	10 24 48.9
	GCC	iPd	10 24 54.5
	SAO	iPd	10 24 57.7
	PCC	eP	10 24 58.7
	BRK	iPc	10 25 01.9
	BKS	eP	10 25 02.2
		eS	10 25 13.1
	LLA	iPc	10 25 03.0
	ZSP	iPc	10 25 03.3
		iS	10 25 17.4
	PRS	iPd	10 25 04.8
	JAS1	iPc	10 25 08.4
		iS	10 25 24.4
	PRI	e	10 25 11.4
	FRI	eP	10 25 13.7
	ORV	e	10 25 24.0
BRK 10h24m47.0s 37.3N 121.7W			
h=5kmR ML=2.9(4) Mo=1.2E20(2)			
Halls Valley Sequence			
Nov 2	PRS	ePc	20 55 11.7
	PRI	eP	20 55 12.3
	SAO	iPc	20 55 14.0
	LLA	ePc	20 55 14.4
	GCC	ePc	20 55 14.9
	PCC	ePc	20 55 17.2
	MHC	ePc	20 55 17.9
	FRI	iPc	20 55 18.5
	BRK	eP	20 55 19.8
	BKS	iPc	20 55 20.8
		AMP(μa)	PER(s)
		PZ 0.10	1.0
	JAS1	iPc	20 55 23.4
	MNA	iPc	20 55 31.0
	ORV	ePc	20 55 31.4
	WDC	iPc	20 55 36.0
USGS 20h44m58.5s 21.9S 139.0W			
h=0km mb=5.7			
Tuamotu Archipelago			
Nov 3	PRI	e	03 05 37
	PRS	e	03 05 38
	LLA	e	03 05 39

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DATE	STA	PHASE	TIME (UTC)
	FRI	e	03 05 43
	JAS1	eP	03 05 52
	MNA	eP	03 05 57.7
	ORV	e	03 06 17
	WDC	ePd	03 06 30.5
USGS 03h01m39.1s 20.2N 116.0W			
h=10km mb=4.7 Ms=4.0			
East Central Pacific Ocean			
Nov 3	FHC	iPc	08 52 05.4
		iS	08 52 18.7
	WDC	iPc	08 52 20.1
		eS	08 52 43.4
	MIN	iPc	08 52 30.0
	ORV	ePc	08 52 33.3
	BRK	ePc	08 52 38.7
	BKS	iPc	08 52 39.1
		e	08 53 17.1
	PCC	ePc	08 52 42.0
	GCC	ePd	08 52 48.6
	MHC	eP	08 52 48.9
	SAO	eP	08 52 54.3
		e	08 52 56.3
	JAS1	iPd	08 52 55.6
	FRI	eP	08 53 09.2
BRK 08h51m46.8s 40.4N 125.2W			
h=5km ML=3.5(6)			
Off Coast, 100 km W of Eureka, CA			
Nov 3	MHC	iPd	09 11 13.2
	GCC	iPd	09 11 18.7
		iS	09 11 24.6
	SAO	iPd	09 11 21.9
	PCC	iPc	09 11 23.0
		i	09 11 34.0
	BKS	iPc	09 11 26.0
		iS	09 11 37.3
	BRK	iPc	09 11 26.1
	LLA	ePc	09 11 27.1
	PRS	iPd	09 11 29.0
	JAS1	iPc	09 11 32.6
		iS	09 11 48.3
	PRI	eP	09 11 35.4
	FRI	ePc	09 11 37.8
	ORV	e	09 11 48.2
BRK 09h11m11.3s 37.3N 121.7W			
h=6km ML=3.3(6) Mo=1.4E21(4)			
Halls Valley Sequence			
Nov 3	MNA	iPd	09 32 11.8
		i	09 32 17.2
		iS	09 34 32.5
	JAS1	e(P)	09 32 34.5
		i	09 32 40.8
	ORV	eP	09 32 36.6
	FRI	eP	09 32 37.6
		e	09 32 43.3
	WDC	e	09 32 50
	MHC	e	09 32 55
	LLA	e	09 33 00
	PRI	e	09 33 01.4
	BKS	e	09 33 09.3
USGS 09h30m08.5s 42.5N 108.9W			
h=5km mb=5.0 Ms=4.1			
Wyoming			
Nov 3	MHC	iPd	09 34 52.0
	GCC	iPc	09 34 57.8
		iS	09 35 03.4
	SAO	iPd	09 35 00.7
	PCC	iPc	09 35 01.9
	BKS	iPc	09 35 04.9
		iS	09 35 16.3
	BRK	iPc	09 35 09.9
	LLA	ePc	09 35 05.9
	ZSP	iPc	09 35 06.2
	PRS	ePd	09 35 07.7
	JAS1	i(P)	09 35 11.3
		eS	09 35 26.2
	PRI	ePd	09 35 16.0
	FRI	ePc	09 35 17.0
	ORV	e d	09 35 28.2
BRK 09h34m50.0s 37.3N 121.7W			
h=5km ML=3.1(4) Mo=5.5E20(4)			
Halls Valley Sequence			
Nov 4	LLA	iPc	11 20 23.8
	PRS	iPd	11 20 25.3
		iS	11 20 29.3
	SAO	iPc	11 20 25.5
	PRI	ePc	11 20 30.8
	GCC	ePc	11 20 34.6
	MHC	iPc	11 20 36.8
	FRI	iPc	11 20 42.0
	PCC	ePd	11 20 43.1
	BRK	e(P)	11 20 45.7
	JAS1	iPd	11 20 46.3
		iS	11 21 06.5
	BKS	iPc	11 20 46.4
		iS	11 21 07.0
	ZSP	e	11 20 47.8
	ORV	e	11 21 07
	MNA	e	11 21 13.0
	MIN	e	11 21 22
BRK 11h20m20.7s 36.6N 121.2W			
h=5km ML=3.1(4)			
Bear Valley, 40 km N of King City, CA			
Nov 4	MNA	iPd	13 23 11.0
	FRI	eP	13 23 13.2
	PRI	eP	13 23 16.7
	LLA	eP	13 23 19.5
	JAS1	iPd	13 23 20.5
	PRS	eP	13 23 21.3
	SAO	e	13 23 22.8
	MHC	eP	13 23 26.4
	GCC	eP	13 23 27.1
	BKS	ePd	13 23 30.3
		i	13 23 35.0
		e	13 24 33.3
		e	13 24 39.3
			AMP(μa) PER(s)
		PZ	0.15 0.8
	PCC	eP	13 23 30.4
	BRK	e	13 23 30.8
	ORV	iPd	13 23 31.4
		i	13 24 28.1
	MIN	eP	13 23 33.4
	WDC	eP	13 23 36.9
	FHC	eP	13 23 47.9
USGS 13h14m19.8s 6.8N 73.0W			
h=164km mb=5.1			
Northern Columbia			
Nov 4	PRI	ePd	19 53 27.1
	LLA	ePd	19 53 30.5
	PRS	eP	19 53 31.2
	FRI	ePd	19 53 33.8
	MHC	e	19 53 41.3
	JAS1	iPd	19 53 45.0
	MNA	eP	19 53 48.2
	BKS	ePd	19 53 49.0
			AMP(μa) PER(s)
		PZ	0.026 1.0
	ORV	ePd	19 54 05.1
	MIN	ePd	19 54 15.4
	WDC	ePd	19 54 17.3
USGS 19h49m31.5s 20.2N 115.7W			
h=10km mb=4.5 Ms=3.9			
East Central Pacific Ocean			
Nov 5	MNA	ePc	06 04 34.4
	JAS1	ePc	06 04 42.0
	WDC	e	06 05 06.2
USGS 05h57m55.5s 14.2N 91.2W			
h=91km mb=4.7			
Guatemala			
Nov 5	PRI	e	21 15 00.3
	FRI	e	21 15 06.7
	JAS1	e	21 15 20.0
	MNA	e	21 15 21.0
	ORV	e	21 15 38.1
	MIN	e	21 15 47.0
	WDC	e	21 15 50.4
USGS 21h11m03.3s 20.1N 115.8W			
h=10km mb=4.2			
East Central Pacific Ocean			
Nov 6	MHC	iPd	00 00 15.7
	GCC	iPd	00 00 21.3
	SAO	iP	00 00 24.8
	PCC	iPc	00 00 25.3
	BKS	iPc	00 00 28.4
		i	00 00 29.2
		iS	00 00 39.5
		i	00 00 40.8
		i	00 00 42.0
	BRK	iP	00 00 28.4
		iS	00 00 39.0
	ZSP	eP	00 00 29.9
	LLA	iPc	00 00 30.4
	PRS	iPc	00 00 32.0
	JAS1	iPc	00 00 35.1
	FRI	eP	00 00 40.9
BRK 00h00m13.9s 37.3N 121.7W			
h=6km ML=2.8(3) Mo=9.6E19(1)			
Halls Valley Sequence			
Nov 6	FHC	e	08 18 44.0
	WDC	ePKP	08 18 48.3
		i	08 19 18.2
	MIN	ePKP	08 18 49.0
	ORV	ePKP	08 18 49.9
		i	08 19 23.2
	BRK	e	08 18 51
	JAS1	ePKP	08 18 52.6
		i	08 19 32.0
		i	08 23 14.0
	MNA	ePKP	08 18 53.5
		i	08 19 32.5
	MHC	ePKP	08 18 53.5
	FRI	ePKP	08 18 53.8
		i	08 19 36.5
	PRS	e	08 18 54.6
	PRI	ePKP	08 18 55.1
	BKS	e	08 19 29.6
		e	08 19 34.9
USGS 07h58m51.3s 18.9S 67.4E			
h=10km mb=6.2 Ms=5.8			
Mid-Indian Rise			
Nov 6	PRI	e	09 55 39.9
	MHC	eP	09 55 40.4
	FRI	eP	09 55 45.5
	JAS1	eP	09 55 45.8
		e	09 56 39.6
	BKS	e	09 55 46.9
	ORV	eP	09 55 47.0
		e	09 56 32.7
	WDC	eP	09 55 49.6
		e	09 56 43.3
	MNA	eP	09 55 56.2
		e	09 56 49.8
USGS 09h44m21.1s 18.7S 175.4W			
h=230km mb=5.6			
Tonga Islands			
Nov 7	WDC	e	02 32 08.6
	MIN	ePKP	02 32 10.7
	ORV	iPKPd	02 32 13.7
	MNA	e	02 32 22
	JAS1	iPKPd	02 32 22.6
	FRI	ePKPd	02 32 26.8
USGS 02h11m41.9s 18.9S 67.4E			
h=10km mb=5.1			
Mid-Indian Rise			
Nov 8	FRI	e(P)	03 14 10
	MNA	eP	03 14 10.5
	JAS1	eP	03 14 21.6
	MHC	e(P)	03 14 25.3
	BKS	ePc	03 14 30.9
			AMP(μa) PER(s)
		PZ	0.013 0.85
	ORV	eP	03 14 33.8
	MIN	e(P)	03 14 37.5
	WDC	e	03 14 41.8
USGS 03h07m23.2s 13.6N 90.6W			
h=67km mb=4.9			
Near Coast of Guatemala			
Nov 8	WDC	iPd	05 43 11.1
		e	05 43 20.0
	MIN	ePd	05 43 13.8
	ORV	iPd	05 43 14.2
		e	05 43 23.1
	BKS	ePc	05 43 14.3
		eScS	05 54 25
		eLq	06 07 05
		eLr	06 10 46
			AMP(μa) PER(s)
		PZ	0.056 1.0
		LZ	1.3 20.
		LN	0.36 20.
		LE	1.0 20.
	PRS	e	05 43 16
	JAS1	ePd	05 43 17.7
	FRI	eP	05 43 20.4
		e	05 43 29.5
	MNA	eP	05 43 26.5
		epP	05 43 36.1
BRK Ms=5.3 Distance=89°			
USGS 05h30m16.5s 2.1S 150.6E			
h=29km mb=5.5 Ms=5.3			
New Ireland Region			
Nov 8	MNA	eP	06 45 11.0
		epP	06 45 23.8
	LLA	eP	06 45 11.3
	JAS1	eP	06 45 15
		epP	06 45 29
	ORV	iPd	06 45 24.5
		epP	06 45 37.0
	MIN	eP	06 45 26
	WDC	e	06 45 29
		epP	06 45 42
	BKS	e	06 47 04
USGS 06h32m56.1s 30.7S 71.5W			
h=45km mb=5.4 Ms=5.0			
Near Coast of Central Chile			
Nov 8	WDC	e	12 02 30.9
		i	12 02 35.0
	MIN	e	12 02 42.8
	ORV	eP	12 02 50.2
		e	12 02 51.8
	BKS	eP	12 03 01.3
		e	12 04 38
			AMP(μa) PER(s)
		PZ	0.023 0.6
		LZ	1.6 20.
		LN	1.2 20.
		LE	1.6 20.
	MHC	e(P)	12 03 11.5
	JAS1	iPd	12 03 15.3
	FRI	iPd	12 03 29.5
USGS 12h01m25.3s 43.4N 126.8W			
h=10km mb=4.2 Ms=3.9			
Off Coast of Oregon			
Nov 8	WDC	eP	13 08 49.9
		e	13 09 04.7
		eScP	13 15 03
	MIN	eP	13 08 55.9
	ORV	eP	13 08 59.1
		eScP	13 15 08
	BRK	eP	13 09 05
	PCC	e	13 09 06
	BKS	ePc	13 09 06.6
		e	13 09 08.9
		e	13 09 13
		eLq	13 14 32
		e	13 14 50
		e	13 17 22
		e	13 17 36
		eLr	13 18 28
			AMP(μa) PER(s)
		PZ	0.039 0.8
		LZ	9.2 20.
		LN	5.1 20.
		LE	9.3 20.
	MHC	e(P)	13 09 11.4
	JAS1	ePd	13 09 14.4
		e	13 09 25.0
		eScP	13 15 14.8
	PRS	eP	13 09 18
	LLA	eP	13 09 19
	FRI	eP	13 09 23.2
		e	13 09 36.5
		eScP	13 15 18.7
	MNA	eP	13 09 23.9
		e	13 09 36.2
		eScP	13 15 19.0
USGS 03h02m00.1s 52.2N 171.0W			
h=33km mb=5.4 Ms=5.3			
Fox Islands, Aleutian Islands			
Nov 8	FRI	eP	14 30 01.7
	PRI	eP	14 30 02.8
	MNA	iPd	14 30 04.3
	LLA	iPd	14 30 05.0
	PRS	iPd	14 30 05.5
	SAO	eP	14 30 06.7
	JAS1	iPd	14 30 08.2
	GCC	ePd	14 30 09.6
	MHC	ePd	14 30 09.8
	PCC	iPd	14 30 12.0
	BKS	ePd	14 30 13.1
			AMP(μa) PER(s)
		PZ	0.048 1.0
	ORV	iPd	14 30 16.8
	WDC	iPd	14 30 21.8
	FHC	eP	14 30 28.0
USGS 14h17m46.9s 31.4S 68.7W			
h=109km mb=5.5			
San Juan Province, Argentina			
Nov 10	PCC	eP	00 42 00.5
	GCC	eP	00 42 00.6
	PRS	eP	00 42 01
	BKS	eP	00 42 03.0
			AMP(μa) PER(s)
		PZ	0.011 0.7
	PRI	ePd	00 42 03.2
	MHC	eP	00 42 03.3
	FRI	eP	00 42 08.7
	JAS1	ePd	00 42 09.0
	ORV	ePd	00 42 10.1
	WDC	ePd	00 42 10.1
	MNA	ePd	00 42 19.2
USGS 00h31m02.0s 17.0S 177.7W			
h=427km mb=4.8			
Fiji Islands Region			
Nov 10	GCC	eP	04 37 08.7
	PCC	ePd	04 37 08.8
	PRS	ePd	04 37 08.8
	SAO	eP	04 37 09.5
	MHC	ePd	04 37 10.3
	BRK	ePd	04 37 10.4
	BKS	eP	04 37 10.8
			AMP(μa) PER(s)
		PZ	0.041 0.8
	LLA	eP	04 37 11
	PRI	ePd	04 37 11.0
	FRI	ePd	04 37 16.0
	JAS1	iPd	04 37 17.7
	ORV	iPd	04 37 18.1
	WDC	iPd	04 37 18.3
	MIN	eP	04 37 20.1
	MNA	eP	04 37 26.0
USGS 04h26m08.9s 20.4S 178.1W			
h=584km mb=5.1			
Fiji Islands Region			
Nov 10	WDC	iPKPd	08 15 58.3
	MIN	ePKP	08 16 00.3
	ORV	ePKPd	08 16 03.3
	JAS1	iPKPd	08 16 12.2
	MNA	ePKPd	08 16 12.7
	FRI	iPKPd	08 16 16.7
USGS 07h55m31.5s 18.9S 67.4E			
h=10km mb=5.3 Ms=5.3			
Mid-Indian Rise			
Nov 10	MHC	iPd	09 54 12.0
	GCC	ePc	09 54 17.0
		iS	09 54 22.5
	SAO	iPc	09 54 19.8
	PCC	iPc	09 54 21.9
		i	09 54 33.5
	LLA	ePc	09 54 25.0
	BRK	iPc	09 54 25.2
	BKS	iPc	09 54 25.4
		iS	09 54 37.1
	ZSP	iPc	09 54 26.5
	PRS	ePd	09 54 26.9
	JAS1	ePd	09 54 31.3
		iS	09 54 46.8
	PRI	eP	09 54 33.6
	FRI	eP	09 54 36.1
	ORV	e	09 54 47.5
BRK 09h54m09.7s 37.2N 121.6W			
h=5km ML=3.0(4) Mo=2.7E20(2)			
Halls Valley Sequence			

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DATE	STA	PHASE	TIME (UTC)
Nov 10	MNA	iPc	16 40 38.3
	FRI	iPc	16 40 49.0
	JAS1	ePc	16 40 57.8
		i	16 41 07.9
		i	16 41 10.4
		i	16 41 57.5
	PRI	ePc	16 41 01.8
	LLA	e(P)	16 41 02.5
	PRS	eP	16 41 08.1
	SAO	iPc	16 41 08.8
	MHC	e(P)	16 41 11.2
	GCC	e	16 41 14.3
	ORV	ePc	16 41 17.3
	PCC	e	16 41 19.5
	MIN	eP	16 41 25.0
	BRK	e	16 41 25.7
	WDC	eP	16 41 34.0

BRK ML=4.5(6)
USGS 16h40m00.0s 37.0N 116.0W
h=0km mb=4.5
Underground Nuclear Explosion, NTS (Villita)

Nov 11	PRI	e	04 46 12.0
	PRS	e	04 46 13.8
	MHC	e	04 46 14.2
	WDC	eP	04 46 17.0
		epP	04 46 44.1
		ePP	04 50 00.6
	ORV	eP	04 46 18.0
		epP	04 46 45.0
		ePP	04 50 03.0
	JAS1	eP	04 46 19.4
		i	04 46 28.8
		ePP	04 50 03.0
	FRI	eP	04 46 20.5
		epP	04 46 48.1
	MNA	eP	04 46 29.0
		epP	04 46 56.3
		ePP	04 50 20.2

USGS 04h33m57.2s 12.7S 166.7E
h=111km mb=5.6
Santa Cruz Islands

Nov 12	GCC	eP	11 03 16.7
	PRS	eP	11 03 17.0
	SAO	eP	11 03 17.5
	PRI	eP	11 03 18.8
	BRK	eP	11 03 18.8
	BKS	eP	11 03 19.1
			AMP(μm) PER(s)
		PZ	0.069 0.9
	MHC	eP	11 03 19.3
	FRI	eP	11 03 23.6
	JAS1	eP	11 03 24.3
		e	11 03 46.7
	ORV	eP	11 03 26.1
	WDC	eP	11 03 26.4
	MIN	e	11 03 28.8
	MNA	eP	11 03 32.8

USGS 10h51m46.5s 25.1S 179.7E
h=516km mb=5.2
South of Fiji Islands

Nov 12	FRI	eP	13 19 46.0
	JAS1	eP	13 19 47.1
	ORV	eP	13 19 49.1
	WDC	eP	13 19 49.8
	MNA	eP	13 19 57.2

USGS 13h08m06.8s 20.0S 173.8W
h=92km mb=5.1
Tonga Islands

DATE	STA	PHASE	TIME (UTC)
Nov 13	PRI	iPd	00 04 19.6
	LLA	ePc	00 04 23.9
	PRS	eP	00 04 28.3
	FRI	iPd	00 04 29.6
		iS	00 04 41.6
	SAO	iPd	00 04 31.6
	MHC	eP	00 04 38.4
	GCC	eP	00 04 39.1
	JAS1	ePc	00 04 41.7
		i	00 05 02.5
	MNA	e	00 05 03.1
	ORV	e	00 05 11.3

BRK 00h04m14.6s 36.3N 120.4W
h=9km ML=2.8(4)
Coalinga Sequence

Nov 15	FHC	iPd	02 06 43.2
		iS	02 06 51.5
	ARC	iP	02 06 44.5
		iS	02 06 53.0
	WDC	iPc	02 06 56.0
		e	02 07 38.5
	MIN	iPc	02 07 05.8
	ORV	iPd	02 07 08.7
	ZSP	eP	02 07 16.8
	BRK	eP	02 07 17.0
	BKS	ePc	02 07 17.4
	PCC	iPc	02 07 20.2
	MHC	eP	02 07 27.4
	GCC	ePc	02 07 27.7
	JAS1	iPc	02 07 32.2
	SAO	iPc	02 07 33.7
	PRS	e	02 07 39.5
	LLA	e	02 07 39.5

BRK 02h06m32.4s 40.3N 124.3W
h=5kmR ML=3.6(6) Mo=1.2E21(2)
Near Petrolia, 60 km SSW of Eureka, CA

Nov 15	PCC	eP	02 58 51
	GCC	eP	02 58 51.5
		e	02 59 23
	PRS	iPc	02 58 52.2
		e	02 59 28
	SAO	e(P)	02 58 53
		e(pP)	02 59 27.3
	BKS	ePc	02 58 53.2
		e	02 59 07.3
		epP	02 59 25.0
		e	03 00 00.8
		e	03 00 15.0
		eSKS	03 09 28
		eS	03 10 41.6
		eSS	03 16 02
		eSSS	03 19 24
		eLq	03 22 00
		eLr	03 26 00
		eR2	04 57 00
			AMP(μm) PER(s)
		PZ	0.22 1.0
		LZ	17 20.
		LN	5.4 20.
		LE	13 20.
	MHC	ePc	02 58 53.8
		e	02 59 31
	BRK	eP	02 58 53.9
	LLA	eP	02 58 54.2
		e	02 59 27
	PRI	ePc	02 58 54.4
	FHC	eP	02 58 55.5
		epP	02 59 26.3
	WDC	iPc	02 58 58.5
		ipP	02 59 27.0

DATE	STA	PHASE	TIME (UTC)
		e	03 02 26
		e	03 10 35
		ePKPPKP	03 24 46
	JAS1	iPc	02 58 58.7
		e	02 59 17.7
		epP	02 59 26.9
		i	03 02 25.9
		e	03 10 36
	ORV	iPc	02 58 59.0
	MIN	ePc	02 59 00.4
		e	03 10 48
		ePKPPKP	03 24 49
	MNA	iPc	02 59 07.4
		epP	02 59 36.3

BRK Ms=6.5 Distance=90°
USGS 02h46m19.8s 20.0S 171.0E
h=105km mb=6.3
Loyalty Islands Region

Nov 15	PCC	ePd	06 03 49.2
	GCC	eP	06 03 49.2
	PRS	eP	06 03 49.5
	SAO	eP	06 03 50.1
	BRK	eP	06 03 50.9
	PRI	iPd	06 03 51.5
	LLA	eP	06 03 51.5
	MHC	eP	06 03 51.8
	BKS	ePd	06 03 52.1
		e	06 04 25.8
		epP	06 05 08.4
		esP	06 05 44.8
		eS	06 13 14
		esS	06 15 24
		eLq	06 24 36
			AMP(μm) PER(s)
		PZ	0.88 1.2
	FHC	eP	06 03 55.6
	JAS1	iPd	06 03 57.3
		e	06 13 34
	ORV	iPd	06 03 58.8
	WDC	eP	06 03 59.2
		e	06 13 28
	MIN	ePd	06 04 01.3
	MNA	iPd	06 04 07.0
		e	06 13 48

BRK mb=6.5 h=329km Distance=77°
USGS 05h52m30.5s 20.4S 177.4E
h=348km mb=5.7
Fiji-Tonga Islands Region

Nov 15	MHC	iPd	09 16 33.6
		eS	09 16 35.2
	GCC	iPd	09 16 39.2
	SAO	iPd	09 16 42.6
	PCC	eP	09 16 42.9
		eS	09 16 52
	BRK	iPc	09 16 45.8
		eS	09 16 58.2
	BKS	ePc	09 16 46.0
	LLA	eP	09 16 47.8
		eS	09 17 01.7
	PRS	eP	09 16 49.5
	JAS1	iPd	09 16 52.9
		eS	09 17 08.4
	PRI	e	09 16 55
	ORV	e	09 17 08

BRK 09h16m31.7s 37.3N 121.7W
h=8km ML=2.6(4) Mo=4.9E19(2)
Halls Valley Sequence

Nov 15	PRS	eP	17 36 03.0
	BKS	eP	17 36 07.8
			AMP(μm) PER(s)
		PZ	0.026 1.0
	JAS1	eP	17 36 10.3
	WDC	eP	17 36 10.5
	ORV	eP	17 36 10.8
	MNA	eP	17 36 20.5

USGS 17h24m06.3s 16.2S 178.1E
h=18km mb=4.9
Fiji Islands

Nov 16	PRS	e	04 05 19.2
	SAO	e	04 05 19.8
	BRK	e	04 05 20.6
	PRI	eP	04 05 20.9
	BKS	eP	04 05 21.2
			AMP(μm) PER(s)
		PZ	0.036 0.9
	MHC	eP	04 05 21.5
	JAS1	iPc	04 05 26.6
	ORV	eP	04 05 27.9
	WDC	iPc	04 05 28.4
	MIN	eP	04 05 29.5
	MNA	iPc	04 05 35.6

USGS 03h54m12.6s 21.6S 179.3W
h=609km mb=5.2
Fiji Islands Region

Nov 16	PRS	e	04 43 58.6
	PRI	eP	04 44 00.2
	BRK	e	04 44 00.8
	MHC	eP	04 44 01.0
	JAS1	iPd	04 44 05.8
	WDC	eP	04 44 08.8
	MIN	eP	04 44 09.8
	MNA	eP	04 44 13.8

USGS 04h31m49.7s 30.6S 179.4W
h=304km mb=4.9
Kermadec Islands

Nov 16	PRI	e	07 05 38.9
	MNA	eP	07 05 39.7
	LLA	eP	07 05 41.8
		e	07 05 57.4
	PRS	eP	07 05 42.6
		e	07 05 58.0
	JAS1	eP	07 05 45.3
	MHC	eP	07 05 48.0
	ORV	ePc	07 05 56.6
		i	07 06 12.2
	WDC	eP	07 06 02.4
		i	07 06 17.8
	MIN	e	07 06 14.5

USGS 06h55m02.0s 13.9S 76.0W
h=67km mb=5.5
Near Coast of Peru

Nov 17	PRI	ePd	00 39 38.5
	MNA	iPd	00 39 38.7
	LLA	ePd	00 39 40.9
		epP	00 40 12.4
	PRS	ePd	00 39 41.4
	SAO	eP	00 39 42.6
	JAS1	iPd	00 39 43.7
	GCC	ePd	00 39 45.7
	MHC	ePd	00 39 46.0
	PCC	eP	00 39 48.2
	BKS	iP	00 39 49.5
		iPP	00 42 54.2
		i(S)	00 47 19.3
			AMP(μm) PER(s)
		PZ	0.053 0.8
	BRK	eP	00 39 49.5
	ORV	iPd	00 39 53.2
		epP	00 40 24.9

DATE	STA	PHASE	TIME (UTC)
	MIN	eP	00 39 55
	WDC	iPd	00 39 58.1
		epP	00 40 29.4
	FHC	ePd	00 40 05.2

BRK mb=5.4 h=33km Distance=80°
USGS 00h27m54.3s 23.3S 68.0W
h=114km mb=5.5
Chile-Argentina Border Region

Nov 17	PRI	ePd	04 41 58.2
	PRS	e	04 42 02.7
	LLA	ePd	04 42 03.0
	MHC	ePd	04 42 13.4
	JAS1	ePd	04 42 17.3
	MNA	iPd	04 42 20.5
	ORV	ePd	04 42 37.6
	MIN	eP	04 42 46.3
	WDC	e(P)	04 42 49

USGS 04h38m02.4s 20.1N 115.8W
h=10km mb=4.3
East Central Pacific Ocean

Nov 17	BKS	ePdifd	07 05 13.5
		ePKiKP	07 08 32
		ePKhKP	07 08 41.5
		i	07 09 18.1
		ePP	07 10 22.0
		i	07 10 51.5
		i	07 11 07.0
		e	07 11 15.0
		ePKS	07 12 00
		e	07 12 18.5
		ePPP	07 13 20
		eSKS	07 15 42
		eSKKS	07 17 32
		e	07 19 32
		ePS	07 20 38
		e(SKSP)	07 22 00
		eSS	07 27 20
		e	07 29 30
		e(SSS)	07 31 30
		e(Lq)	07 49 00
			AMP(μm) PER(s)
		PZ	0.030 1.0
		LZ	62 20.
		LNE	55 20.
		LNW	57 20.
	FHC	ePKP	07 08 28.4
	WDC	ePKP	07 08 29.3
		e	07 08 49.0
		ePP	07 10 21.5
		e	07 21 38
		e	07 22 22.9
	MIN	ePKP	07 08 30.7
		ePP	07 10 27
	ORV	ePKPd	07 08 31.7
		e	07 21 38
		e	07 22 21.1
	BRK	ePKP	07 08 33.4
	PCC	ePKP	07 08 33.5
	GCC	ePKP	07 08 34.7
		ePP	07 10 38
	MHC	ePKP	07 08 35.0
		e	07 08 45
		ePP	07 10 37
	JAS1	ePKPd	07 08 35.4
		e	07 08 45.0
		e	07 08 51.5
		ePP	07 10 38.5
		e	07 21 36
		e	07 22 20.6
	PRS	ePKP	07 08 36.8
		ePP	07 10 34

DATE	STA	PHASE	TIME (UTC)
	SAO	ePKP	07 08 37
	LLA	ePKPd	07 08 37.0
	MNA	iPKPd	07 08 38.4
		i	07 08 48.0
		ePP	07 10 36.5
	PRI	ePKPd	07 08 38.5

BRK Ms=7.4 Distance=131°
USGS 06h49m30.0s 0.2N 98.0E
h=33km mb=6.3 Ms=7.2
Northern Sumatera

Nov 17	WDC	eP	09 09 22.0
	MIN	eP	09 09 26.4
	ORV	eP	09 09 32.5
	BKS	e(P)	09 09 40.3
		ePP	09 10 46.5
	MHC	e(P)	09 09 50
	JAS1	eP	09 09 50.2
	MNA	eP	09 09 53.5
	PRI	e	09 10 09.5

USGS 09h03m19.3s 63.3N 152.7W
h=3km mb=5.0
Central Alaska

Nov 17	FHC	ePc	10 30 39.8
	WDC	iPc	10 30 45.5
		epP	10 30 57.5
	MIN	ePc	10 30 50.1
	ORV	ePc	10 30 53.6
	BKS	e(P)	10 30 58.6
		i	10 31 13.7
		e(PP)	10 33 11.2
			AMP(μm) PER(s)
		PZ	0.036 0.9
	BRK	eP	10 30 59.0
	PCC	e(P)	10 31 00.8
	GCC	e(P)	10 31 03.7
	MHC	ePc	10 31 04.0
	JAS1	ePc	10 31 05.8
		ipP	10 31 18.2
	PRS	ePc	10 31 08.2
	LLA	ePc	10 31 09.0
	MNA	iPc	10 31 13.2
		ipP	10 31 25.5
	PRI	e(P)	10 31 13.2

USGS 10h20m59.7s 47.5N 154.5E
h=43km mb=5.7 Ms=5.7
Kuril Islands

Nov 17	FHC	e	11 22 04.2
	WDC	eP	11 22 05.3
	MIN	eP	11 22 09.9
	ORV	ePd	11 22 13.2
	BRK	e	11 22 22
	GCC	e	11 22 25
	MHC	e	11 22 25.0
	JAS1	ePd	11 22 25.5
	LLA	e	11 22 30.7
	PRS	e	11 22 31.0
	MNA	iPd	11 22 33.0
	PRI	e	11 22 37

USGS 11h12m20.7s 47.5N 154.5E
h=56km mb=5.4
Kuril Islands

Nov 17	PRS	eP	11 57 41.4
	PRI	eP	11 57 43.1
	MHC	e	11 57 44
	JAS1	ePd	11 57 [illegible].7
	ORV	ePd	11 57 [illegible].6
	WDC	eP	11 57 [illegible].7
	MIN	eP	11 57 [illegible].8
	MNA	eP	11 57 [illegible].5

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)
USGS 11h45m09.2s 32.7S 179.8W			
h=157km mb=5.3			
South of Kermadec Islands			
Nov 17	PCC	iP	13 56 53.3
		epP	13 58 32
	GCC	eP	13 56 53.3
		epP	13 58 32
	PRS	ePd	13 56 53.6
		epP	13 58 32.3
	BKS	iP	13 56 54
		ipP	13 58 34
		isP	13 59 21
		iPP	13 59 54
		iS	14 06 07
		isS	14 09 08
		eSS	14 11 04
		eSSS	14 14 00
		eG	14 17 00
		AMP(μm)	PER(s)
		PZ 0.85	1.1
	SAO	eP	13 56 54.3
		epP	13 58 33
	BRK	iP	13 56 55.0
		epP	13 58 34.1
	PRI	iPd	13 56 55.8
		epP	13 58 34.7
	MHC	ePd	13 56 55.9
		epP	13 58 35
	LLA	ePd	13 56 55.9
		epP	13 58 34.4
	FHC	eP	13 56 59.5
		epP	13 58 38.5
	JAS1	iPd	13 57 01.6
		ipP	13 58 42.6
	ORV	ePd	13 57 02.8
		epP	13 58 42.6
	WDC	ePd	13 57 02.8
		ipP	13 58 42.5
	MIN	eP	13 57 04.9
		i	13 58 44.4
	MNA	iPd	13 57 11.2
		epP	13 58 51.5
BRK mb=6.3 h=440km Distance=77°			
USGS 13h45m49.1s 18.8S 178.0W			
h=451km mb=6.1			
Fiji Islands Region			
Nov 17	FHC	eP	18 38 16.5
	WDC	iPd	18 38 21.6
		e	18 40 03.5
	MIN	iPd	18 38 25.2
	ORV	iPd	18 38 27.5
		e	18 40 11.1
	BKS	iPd	18 38 29.0
		i(PcP)	18 39 14.2
		i(PP)	18 41 24.3
		AMP(μm)	PER(s)
		PZ 0.15	0.75
	BRK	eP	18 38 29.2
	PCC	eP	18 38 29.3
	GCC	eP	18 38 31.9
	MHC	eP	18 38 33.0
	SAO	eP	18 38 34.5
	JAS1	iPd	18 38 35.8
		e	18 40 20.0
	PRS	eP	18 38 36.4
	LLA	eP	18 38 37.3
	PRI	eP	18 38 40.0
	MNA	iPd	18 38 43.2
USGS 18h27m11.9s 28.3N 139.9E			
h=450km mb=5.4			
Bonin Islands Region			
Nov 17	WDC	eP	19 11 59.7
		e	19 12 08.3
	MIN	eP	19 12 02.6
	ORV	eP	19 12 04.1
		e	19 12 12.9
	JAS1	eP	19 12 10.2
		e	19 12 18.5
	MNA	eP	19 12 18.0
		e	19 12 27.0
USGS 18h59m14.6s 12.3N 140.8E			
h=33km mb=5.6 Ms=5.5			
West Caroline Islands			
Nov 17	WDC	eP	19 32 43.6
	ORV	eP	19 32 48.2
	JAS1	eP	19 32 54.3
	MNA	eP	19 33 02.9
USGS 19h19m58.9s 12.3N 140.8E			
h=33km mb=5.4			
West Caroline Islands			
Nov 17	LLA	e	21 02 03.0
	MHC	e	21 02 12.7
	PRI	eP	21 02 13.3
	JAS1	eP	21 02 17.3
	MNA	eP	21 02 21.0
	ORV	eP	21 02 37.2
	MIN	e	21 02 45.7
	WDC	eP	21 02 51.0
USGS 20h58m02.3s 20.1N 115.9W			
h=10km			
East Central Pacific Ocean			
Nov 17	PRI	e	22 55 21.5
	MHC	e	22 55 21.8
	BKS	eP	22 55 22
		ePP	22 58 34
		ePPP	23 01 10
		iS	23 05 00
		iScS	23 05 36
		ePPS	23 06 00
		eSS	23 09 28
		eLr	23 14 44
		iLg	23 17 44
		AMP(μm)	PER(s)
		PZ 0.035	1.0
		LZ 23	20.
		LN 19	20.
		LE 19	20.
	JAS1	eP	22 55 24.8
	ORV	eP	22 55 26.8
	WDC	e	22 55 29.6
	MIN	eP	22 55 31.0
	MNA	eP	22 55 35.4
BRK Ms=6.6 Distance=77°			
USGS 22h43m39.7s 18.4S 175.7W			
h=33km mb=5.4 Ms=6.1			
Tonga Islands			
Nov 18	PRS	eP	01 00 30.7
	BKS	iPc	01 00 32.6
		AMP(μm)	PER(s)
		PZ 0.022	0.7
	PRI	eP	01 00 32.7
	MHC	eP	01 00 32.7
	JAS1	eP	01 00 39.8
		e	01 01 30.5
	ORV	eP	01 00 40.3
		e	01 01 34.0
	WDC	eP	01 00 40.5
		e	01 01 32.5
	MIN	eP	01 00 42.4
		e	01 01 36.6
	MNA	eP	01 00 47.5
		e	01 01 40.9
USGS 00h49m11.4s 18.8S 175.5W			
h=230km mb=5.5			
Tonga Islands			
Nov 18	GCC	eP	04 47 03.8
	PRS	eP	04 47 04.2
	SAO	eP	04 47 04.5
	BRK	eP	04 47 05.4
	LLA	e	04 47 05.5
	PRI	eP	04 47 05.9
	BKS	iP	04 47 06
		AMP(μm)	PER(s)
		PZ 0.028	0.7
	MHC	eP	04 47 06.0
	JAS1	iPc	04 47 11.7
	WDC	iPc	04 47 11.7
	ORV	ePc	04 47 12.8
	MIN	eP	04 47 14.5
	MNA	eP	04 47 20.1
USGS 04h35m57.0s 21.7S 179.4W			
h=612km mb=5.0			
Fiji Islands Region			
Nov 19	WDC	eP	04 18 24.9
	MIN	eP	04 18 30.3
	ORV	eP	04 18 34.0
	BRK	e	04 18 38.9
	MHC	eP	04 18 44.6
	JAS1	eP	04 18 48.2
	PRS	eP	04 18 51.0
	LLA	eP	04 18 52.0
	PRI	e	04 18 55.9
	MNA	eP	04 18 57.0
USGS 04h10m42.4s 51.2N 179.1E			
h=39km mb=5.6 Ms=5.5			
Rat Islands, Aleutian Islands			
Nov 19	WDC	eP	12 13 48.2
	MIN	e	12 13 53.0
	ORV	eP	12 13 57.3
	BRK	e	12 14 02.5
	BKS	iPc	12 14 03.0
		AMP(μm)	PER(s)
		PZ 0.019	0.8
		LZ 5.0	20.
		LN 4.3	20.
		LE 2.5	20.
	JAS1	eP	12 14 11.6
	PRS	e	12 14 14.8
	LLA	e	12 14 16.0
	MNA	eP	12 14 20.5
	PRI	e	12 14 20.9
USGS 12h06m37.3s 51.8N 175.3W			
h=58km mb=5.6			
Andreanof Islands, Aleutian Islands			
Nov 19	WDC	eP	23 20 17.0
	MIN	e	23 20 21.6
	ORV	eP	23 20 23.3
	BKS	e(P)c	23 20 25.5
		AMP(μm)	PER(s)
		PZ 0.041	0.8
	JAS1	eP	23 20 33.5
USGS 23h08m35.7s 30.5N 140.0E			
h=69km mb=5.1			
South of Honshu, Japan			
Nov 20	FHC	eP	04 29 12.0
	WDC	eP	04 29 29.0
	MIN	e	04 29 37.8
	ORV	eP	04 29 43.9
	JAS1	e	04 30 11.7
Nov 20	FHC	e	08 28 50.5
	WDC	ePdif	08 28 54.3
		epP	08 29 43.8
		iSP	08 42 07.0
		iPKKP1	08 44 49.2
	MIN	e	08 28 58.0
		ePKKP1	08 44 47.2
	ORV	ePdiff	08 28 58.3
		iPKKP1	08 44 46.5
	BRK	e	08 29 00.3
		ePKKP1	08 44 47.2
	BKS	ePdif	08 29 02
		ipP	08 29 49
		e	08 31 51
		e	08 32 17
		e	08 32 41
		ePP	08 33 10
		e	08 34 09
		e	08 34 19
		eSKS	08 39 11
		eS	08 40 04.7
		eSP	08 42 10
		epS	08 42 14
		esS	08 42 32.5
		iPKKP1	08 44 47
		i	08 44 53.5
		iPKKP2	08 45 11.5
		eSS	08 47 00
		esSS	08 49 00
		eLg	08 57 25
		eLr	09 03 00
	MHC	ePdif	08 29 02.2
		epP	08 29 52.0
		ePKKP1	08 44 45.6
	PCC	e	08 29 03.2
	JAS1	ePdif	08 29 05.1
		ipP	08 29 55.0
		iP400P	08 32 24.6
		iPP	08 34 10.4
		iSP	08 42 46.0
		iPKKP1	08 44 43.0
		iPKKP2	08 45 07.0
	PRS	e	08 29 05.6
		ePKKP1	08 44 43.7
	LLA	e	08 29 06.7
		ePKKP1	08 44 43.2
	GCC	e	08 29 07.4
	PRI	e	08 29 08.1
		ePKKP1	08 44 42.1
	MNA	ePdif	08 29 12.2
	SAO	ePKKP1	08 44 43.7
BRK mb=6.4 h=204km Distance=103°			
USGS 08h15m16.2s 5.2N 125.1E			
h=202km mb=6.4			
Mindanao, Philippine Islands			
Nov 20	WDC	eP	19 38 52.8
	ORV	eP	19 39 01.8
	JAS1	eP	19 39 15.8
	MNA	ePc	19 39 22.3
USGS 19h29m57.3s 55.6N 161.5E			
h=33km mb=4.8			
Near East Coast of Kamchatka			
Nov 21	MHC	eP	14 45 36.2
	PRI	eP	14 45 38.1
	WDC	eP	14 45 40.7
	ORV	eP	14 45 41.7
	JAS1	eP	14 45 42.4
	FRI	eP	14 45 44.0
	MNA	eP	14 45 50.6
		AMP(μm)	PER(s)
		LZ 13	20.
		LN 6.1	20.
		LE 9.6	20.
USGS 14h33m20.1s 12.5S 171.2E			
h=23km mb=5.8 Ms=6.2			
Vanuatu Islands Region			
Nov 21	PRI	e	18 30 13.5
	WDC	eP	18 30 14.4
	MHC	e	18 30 14.5
	FRI	e	18 30 15.5
	JAS1	eP	18 30 15.7
	ORV	eP	18 30 16.6
	MIN	e	18 30 18.0
	MNA	eP	18 30 27.2
		AMP(μm)	PER(s)
		LZ 7.1	20.
		LN 6.4	20.
		LE 7.1	20.
USGS 18h17m51.3s 14.5S 171.1E			
h=24km mb=5.6 Ms=6.2			
Vanuatu Islands Region			
Nov 22	WDC	eP	14 02 30.9
	MIN	eP	14 02 34.0
	ORV	eP	14 02 42.7
	JAS1	eP	14 02 52.8
	GCC	eP	14 02 54.8
	MNA	e	14 02 55.1
	MHC	e	14 02 56.1
	FRI	eP	14 03 00.5
	PRS	e	14 03 04.1
	PRI	e	14 03 05.3
USGS 13h52m58.8s 68.5N 140.9E			
h=33km mb=5.4 Ms=4.9			
Eastern Siberia			
Nov 22	BRK	e	14 50 25.0
	WDC	eP	14 50 26.0
	GCC	eP	14 50 26.3
	BKS	eP	14 50 26.5
		e	14 50 31.0
		AMP(μm)	PER(s)
		PZ 0.11	1.0
		LZ 2.7	20.
		LN 1.8	20.
		LE 3.2	20.
	PRS	eP	14 50 28.3
	ORV	eP	14 50 29.0
	MIN	eP	14 50 29.2
	LLA	eP	14 50 29.8
	JAS1	eP	14 50 30.6
	PRI	e	14 50 31.4
	FRI	eP	14 50 33.8
		e	14 50 50.3
	MNA	eP	14 50 41.2
		e	14 50 56.2
USGS 14h37m38.2s 6.3S 154.8E			
h=63km mb=5.7			
Solomon Islands			
Nov 22	GCC	eP	17 18 19.8
	PCC	eP	17 18 20.1
	PRS	eP	17 18 20.5
	SAO	eP	17 18 21.0
	BKS	iPd	17 18 21.5
		i	17 18 48
		i	17 19 09.4
		i	17 20 37.2
		e	17 20 50
		e	17 21 11
		ePP	17 21 24
		ePPP	17 23 28
		eS	17 27 20
		e	17 28 06
		eSS	17 32 00
		eLr	17 35 42
		e	17 48 57
		AMP(μm)	PER(s)
		PZ 0.78	1.0
		LZ 2.5	20.
		LN 1.8	20.
		LE 1.8	20.
	BRK	eP	17 18 22.2
	PRI	eP	17 18 22.6
	MHC	eP	17 18 22.7
	LLA	eP	17 18 22.7
	FHC	eP	17 18 26.4
	FRI	eP	17 18 27.7
	JAS1	eP	17 18 28.1
		i	17 20 50.3
		i	17 21 35.0
	ORV	eP	17 18 29.4
		i	17 21 36.7
	WDC	eP	17 18 29.7
		i	17 21 36.4
	MIN	eP	17 18 30.7
	MNA	eP	17 18 37.6
		i	17 21 46.8
BRK Ms=5.5 Distance=77°			
USGS 17h07m36.1s 17.8S 178.1W			
h=646km mb=5.9			
Fiji Islands Region			
Nov 22	WDC	eP	20 10 18.8
	MIN	e	20 10 22.4
	BKS	iPc	20 10 23.4
		i	20 10 51.2
		i	20 11 50.0
		i	20 12 18.5
		AMP(μm)	PER(s)
		PZ 0.052	1.0
	BRK	eP	20 10 23.9
	ORV	eP	20 10 24.2
	MHC	eP	20 10 27.6
	PRS	e	20 10 30.5
	JAS1	eP	20 10 31.4
	LLA	e	20 10 31.8
	PRI	eP	20 10 34.3
	FRI	eP	20 10 35.5
		e	20 10 55.5
	MNA	eP	20 10 39.7
USGS 19h58m23.5s 20.1N 145.6E			
h=75km mb=5.2			
Mariana Islands			
Nov 22	GCC	eP	22 05 01.8
	PRS	eP	22 05 02.1
	SAO	eP	22 05 02.7
	LLA	e	22 05 04.2
	PRI	eP	22 05 04.3
	MHC	eP	22 05 04.3
	FRI	eP	22 05 09.5
	JAS1	eP	22 05 09.8
	WDC	eP	22 05 10.5
	ORV	eP	22 05 10.8
	MNA	eP	22 05 19.4
USGS 21h54m17.0s 17.7S 178.2W			
h=644km mb=4.9			
Fiji Islands Region			
Nov 22	LLA	iPc	23 09 24
	SAO	iPc	23 09 24
	PRS	iPd	23 09 26

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DATE	STA	PHASE	TIME (UTC)
		iS	23 59 17.4
	PRI	iPd	23 59 19.8
	GCC	eP	23 59 22.5
	MHC	eP	23 59 24.6
	FRI	iPc	23 59 30.3
	PCC	iPc	23 59 31.7
	JAS1	eP	23 59 33.8
	BRK	e	23 59 34.0
	BKS	iPc	23 59 34.4
		iS	23 59 53.3
	ZSP	e	23 59 37.3
	ORV	e	23 59 54.8
BRK 23h59m08.0s 36.6N 121.2W			
h=7km ML=3.2(4)			
Bear Valley, 40 km N of King City, CA			
Nov 23	PRS	eP	03 09 21.1
	MHC	eP	03 09 23.7
	FRI	eP	03 09 28.0
	JAS1	eP	03 09 28.8
	ORV	eP	03 09 31.0
	WDC	eP	03 09 31.5
	MIN	eP	03 09 32.8
	MNA	eP	03 09 37.8
USGS 02h57m16.4s 26.4S 177.8W			
h=156km mb=4.9			
South of Fiji Islands			
Nov 23	FHC	eP	03 46 41.8
	WDC	eP	03 46 51.7
	MIN	eP	03 47 02.4
	ORV	eP	03 47 09.1
	BKS	iPd	03 47 20.7
		i	03 47 23.5
			AMP(μa) PER(s)
		PZ	0.017 0.8
	MHC	eP	03 47 31.7
	JAS1	eP	03 47 35.0
	FRI	eP	03 47 49.1
USGS 03h45m45.8s 43.5N 126.7W			
h=10km mb=4.4			
Off Coast of Oregon			
Nov 23	PRS	e	04 58 19.9
	BKS	eP	04 58 20
		e	04 58 28.2
		e	04 58 46.5
		e	04 58 57
		e	04 59 19
		e	04 59 24.0
		e	04 59 42.5
		e	05 00 56
		ePP	05 01 19
		e	05 01 43.5
		e	05 03 28.5
		eS	05 08 28.5
		ePPS	05 09 28
		eSS	05 14 00
		eSSS	05 16 58
		eLg	05 18 52
		e	05 20 00
		e	05 22 30
		eLr	05 22 49
			AMP(μa) PER(s)
		LZ	39 20.
		LN	24 20.
		LE	26 20.
	MHC	eP	04 58 21.1
		e	05 08 26.1
	PRI	eP	04 58 22.4
	LLA	e	04 58 22.4
	BRK	e	04 58 22.7

DATE	STA	PHASE	TIME (UTC)
	SAO	e	04 58 23.9
	WDC	eP	04 58 24.8
	ORV	eP	04 58 25.7
	JAS1	eP	04 58 26.2
		e	05 08 28.0
	MIN	eP	04 58 26.6
	FRI	eP	04 58 27.0
		e	05 08 29.3
	MNA	eP	04 58 36.3
		e	05 08 33.4
BRK Ms=6.7 Distance=80°			
USGS 04h46m06.3s 14.3S 171.3E			
h=33km mb=6.0 Ms=6.7			
Vanuatu Islands Region			
Nov 23	WDC	iPKPd	05 05 00.0
	MIN	ePKP	05 05 01.5
	ORV	ePKPd	05 05 01.8
	BRK	ePKP	05 05 02.7
	GCC	ePKP	05 05 04
	MHC	ePKP	05 05 04.5
	JAS1	iPKPd	05 05 05.3
	PRS	ePKP	05 05 05.8
	LLA	ePKP	05 05 06.0
	FRI	ePKP	05 05 07.0
	PRI	ePKP	05 05 07.3
	MNA	ePKP	05 05 08.3
	FHC	ePKP	05 05 58.8
	BKS	e	05 42 00
USGS 04h45m53.2s 8.0S 102.3E			
h=33km mb=6.0 Ms=6.7			
Southwest of Sumatera			
Nov 23	PRI	eP	07 24 48.2
	WDC	e	07 24 49.6
	JAS1	eP	07 24 49.7
	ORV	e	07 24 50.7
	MIN	eP	07 24 52.0
	FRI	e	07 24 52.0
	MNA	eP	07 25 01.3
USGS 07h12m31.8s 14.2S 171.3E			
h=33km mb=5.5 Ms=5.8			
Vanuatu Islands Region			
Nov 23	SAO	iPd	10 00 17.4
	LLA	iPd	10 00 21.8
		iS	10 00 28.5
	MHC	iPd	10 00 22.7
		iS	10 00 30.1
	GCC	eP	10 00 23.3
	PRS	iPd	10 00 24.6
	PRI	eP	10 00 31.5
	PCC	eP	10 00 32.0
	JAS1	eP	10 00 35.5
	BRK	eP	10 00 35.5
	BKS	iPc	10 00 35.6
		iS	10 00 52.5
	FRI	iPc	10 00 36.3
		iS	10 00 53.2
BRK 10h00m12.9s 36.9N 121.3W			
h=2km ML=2.5(4)			
10 km NE of Hollister, CA			
Nov 23	FRI	iPc	18 08 43.3
	MNA	iPd	18 08 44.3
	JAS1	iP	18 08 52.2
	LLA	iPc	18 09 01.1
	PRI	iPc	18 09 02.1
	SAO	eP	18 09 05.7
	MHC	iPc	18 09 06.6
	PRS	iPc	18 09 07.1
	GCC	ePc	18 09 10.0
	BKS	iPc	18 09 12.7

DATE	STA	PHASE	TIME (UTC)
		eS	18 09 49
	BRK	iPc	18 09 12.8
	PCC	iPc	18 09 13.8
	ORV	iPc	18 09 14.9
	MIN	iPc	18 09 24.6
	WDC	iPc	18 09 32.7
	FHC	e(P)	18 09 48.6
BRK 18h08m25.5s 37.5N 118.6W			
h=12km ML=6.1(8) Mo=2.6E25(2)			
25 km NW of Bishop, CA			
Nov 23	FRI	iPc	18 21 25.9
	MNA	iPc	18 21 28.2
	JAS1	iPc	18 21 35.1
	LLA	iPd	18 21 44.0
	SAO	eP	18 21 48.5
	MHC	iPd	18 21 49.9
	PRS	eP	18 21 51.6
	GCC	e	18 21 52.9
	BKS	eP	18 21 55.8
		eS	18 22 36
	PCC	eP	18 21 57.0
BRK 18h21m08.6s 37.4N 118.6W			
h=10kmR ML=3.6(4)			
NW of Bishop, CA			
Nov 23	FRI	i(P)	18 23 09.7
	MNA	i(P)	18 23 11.0
	LLA	e(P) d)	18 23 28.9
		iS	18 23 54.3
	MHC	iPd	18 23 33.5
		iS	18 24 09.6
	PRS	eP	18 23 33.5
	GCC	e	18 23 35.8
	BRK	e	18 23 39.7
	BKS	eP	18 23 39.8
	PCC	iP	18 23 40.6
	ORV	i	18 23 51.8
	MIN	e	18 23 58.7
BRK 18h22m52.3s 37.5N 118.6W			
h=10kmR ML=3.5(4)			
NW of Bishop, CA			
Nov 23	FRI	eP	18 50 13.6
	MNA	iPd	18 50 15.4
	PRI	eP	18 50 15.8
	LLA	iPd	18 50 18.8
	PRS	iPd	18 50 19.8
	SAO	eP	18 50 21
	JAS1	iPd	18 50 21.8
		e	18 51 05.6
	GCC	iPd	18 50 25.2
	MHC	iPd	18 50 25.5
	PCC	iPd	18 50 28.8
	BKS	iPd	18 50 29.6
			AMP(μa) PER(s)
		PZ	0.19 1.0
	BRK	iPd	18 50 29.8
	ORV	iPd	18 50 33.5
		e	18 51 18.8
	MIN	iPd	18 50 35.8
	WDC	iPd	18 50 39.2
	FHC	ePd	18 50 48.4
USGS 18h40m14.4s 8.2S 76.1W			
h=122km mb=5.9			
Peru			
Nov 23	FRI	iPc	19 12 52.9
	MNA	iPd	19 12 55.0
	JAS1	iPc	19 13 02.1
	LLA	iPc	19 13 10.2
	PRI	iPc	19 13 11.0
	SAO	iPc	19 13 14.8

DATE	STA	PHASE	TIME (UTC)
	MHC	iPc	19 13 15.9
	PRS	iPc	19 13 16.4
	GCC	iPc	19 13 19.4
	BKS	iPc	19 13 22.1
		eS	19 13 58.7
	BRK	iPc	19 13 22.3
	PCC	iPc	19 13 23.3
	ORV	ePd	19 13 24.5
	MIN	iPd	19 13 34.4
	WDC	ePc	19 13 42.6
BRK 19h12m35.2s 37.4N 118.6W			
h=10km ML=5.5(8) Mo=5.1E23(4)			
25 km NW of Bishop, CA			
Nov 23	FRI	iPc	19 21 46.5
	MNA	iPd	19 21 48.9
	JAS1	iPc	19 21 55.7
	LLA	eP	19 22 04.3
	PRI	iPd	19 22 05.3
	SAO	eP	19 22 09.0
	MHC	iP	19 22 09.9
		eS	19 22 45.4
	PRS	eP	19 22 10.2
	BRK	e	19 22 14
	GCC	eP	19 22 14.1
	BKS	ePd	19 22 16.7
	PCC	iPd	19 22 17.6
	ORV	e	19 22 23.6
		eS	19 23 04.2
	MIN	e	19 22 34
BRK 19h21m29.4s 37.4N 118.7W			
h=8km ML=3.6(5)			
25 km NW of Bishop, CA			
Nov 23	FRI	iPc	20 08 18.8
		iS	20 08 31.5
	MNA	iPd	20 08 20.1
	JAS1	iPc	20 08 27.7
	LLA	eP	20 08 36.2
	PRI	eP	20 08 37.5
	SAO	iP	20 08 41.2
	MHC	iPd	20 08 42.0
		e(S)	20 09 18.6
	PRS	iPd	20 08 42.8
	GCC	eP	20 08 45.8
	PCC	eP	20 08 49
	BKS	ePg	20 08 49.1
	ORV	eP	20 08 50.5
BRK 20h08m01.0s 37.5N 118.6W			
h=9km ML=3.5(5)			
25 km NW of Bishop, CA			
Nov 23	FRI	iPd	20 20 56.0
		iS	20 21 08.4
	MNA	iPd	20 20 58.3
		iS	20 21 13.4
	JAS1	iPc	20 21 05.2
	LLA	ePc	20 21 13.8
	PRI	ePc	20 21 14.4
	SAO	iPd	20 21 18.5
	MHC	ePd	20 21 19.4
	PRS	ePc	20 21 20.2
	BKS	ePn	20 21 20.7
		ePg	20 21 26.0
	GCC	e(P)	20 21 22.7
	BRK	ePd	20 21 25.4
	PCC	ePd	20 21 26.5
	ORV	eP	20 21 29.9
	MIN	e	20 21 43
BRK 20h20m38.6s 37.4N 118.6W			
h=8kmR ML=3.5(5)			
25 km NW of Bishop, CA			

DATE	STA	PHASE	TIME (UTC)
Nov 23	WDC	iPc	20 49 10.2
	FHC	iPc	20 49 13.1
		iS	20 49 22.9
	ARC	iP	20 49 13.6
		iS	20 49 23.9
	MIN	iP	20 49 20.3
		iPc	20 49 20.6
		i	20 49 30.6
	ORV	ePc	20 49 27.1
	BKS	ePn	20 49 46.7
		ePg	20 49 53.1
	ZSP	eP	20 49 50.5
	BRK	eP	20 49 51.2
	PCC	e(P)	20 49 52
	JAS1	i(P)c	20 49 55.1
	MHC	e(P)d	20 49 57.6
	GCC	e	20 50 02.4
	LLA	e	20 50 11
BRK 20h48m59.8s 40.5N 123.2W			
h=5kmR ML=3.9(8) Mo=4.1E22(4)			
100 km SE of Eureka, CA			
Nov 23	FRI	iPc	21 35 12.8
	MNA	iPd	21 35 14.8
	JAS1	iP	21 35 22.2
	LLA	eP	21 35 30.8
	PRI	eP	21 35 31.4
	SAO	iPc	21 35 35.7
	MHC	eP	21 35 36.3
	PRS	eP	21 35 36.5
	GCC	e	21 35 40.2
	BRK	e	21 35 42.3
	BKS	ePg	21 35 43.2
	PCC	e	21 35 43.8
	ORV	e	21 35 48.3
BRK 21h34m55.4s 37.4N 118.6W			
h=10kmR ML=3.6(5)			
NW of Bishop, CA			
Nov 23	FRI	iPc	22 10 34.9
	MNA	iPd	22 10 35.8
	JAS1	iP	22 10 43.8
	LLA	eP	22 10 52.2
	PRI	eP	22 10 53.5
	SAO	iPd	22 10 57.6
	MHC	eP	22 10 58.4
	GCC	e	22 11 02.0
	BKS	ePg	22 11 04.3
	ORV	e	22 11 04.5
	BRK	e	22 11 05.2
	PCC	e	22 11 05.9
BRK 22h10m16.9s 37.5N 118.6W			
h=7km ML=3.5(5)			
NW of Bishop, CA			
Nov 23	FRI	iPc	23 43 28.6
	MNA	iPd	23 43 30.5
	JAS1	iPc	23 43 37.6
	LLA	eP	23 43 46.1
	PRI	eP	23 43 47.1
	SAO	iPc	23 43 51.2
	PRS	eP	23 43 51.3
	MHC	eP	23 43 51.8
	BRK	e	23 43 55.5
	GCC	e	23 43 55.6
	BKS	eP	23 43 58.0
	PCC	eP	23 43 59.1
	ZSP	eP	23 43 59.4
	ORV	e	23 44 00.2
	MIN	e	23 44 10.1
BRK 23h43m10.9s 37.4N 118.6W			
h=5km ML=3.8(5)			
NW of Bishop, CA			

DATE	STA	PHASE	TIME (UTC)
Nov 24	FRI	iPc	00 30 24.3
	MNA	iPd	00 30 26.7
	JAS1	iPc	00 30 33.6
	LLA	eP	00 30 41.8
	PRI	eP	00 30 43.0
	SAO	iPc	00 30 46.9
	MHC	eP	00 30 48.0
	PRS	eP	00 30 48.1
	GCC	e	00 30 50.7
	BRK	e	00 30 54.8
	BKS	eP	00 30 55.0
	PCC	eP	00 30 55.0
	ORV	e	00 30 56.5
BRK 00h30m07.0s 37.4N 118.6W			
h=10kmR ML=3.6(5)			
NW of Bishop, CA			
Nov 24	LLA	eP	00 31 56.8
	MHC	eP	00 32 02.5
	PRS	eP	00 32 05.0
BRK 00h31m21.5s 37.4N 118.6W			
h=10kmR ML=3.7(3)			
NW of Bishop, CA			
Nov 24	FRI	iPc	02 08 32.4
	MNA	iPd	02 08 34.8
	JAS1	iPc	02 08 41.7
	LLA	eP	02 08 50.4
	PRI	eP	02 08 51.0
	SAO	iPc	02 08 55.0
	MHC	eP	02 08 56.1
	PRS	eP	02 08 56.3
	GCC	e	02 08 59.9
	BKS	eP	02 09 02.4
	BRK	e	02 09 02.8
	PCC	eP	02 09 03.6
	ORV	e	02 09 05.3
BRK 02h08m15.0s 37.4N 118.6W			
h=4km ML=3.5(5)			
NW of Bishop, CA			
Nov 24	FRI	iPc	02 10 56.3
	MNA	iPd	02 10 58.6
	JAS1	iPc	02 11 05.6
	LLA	iPd	02 11 13.6
	PRI	iPd	02 11 15.7
	SAO	i	02 11 18.4
	PRS	e	02 11 20.2
	MHC	iPd	02 11 20.7
	GCC	e	02 11 23.7
	BKS	eP	02 11 26.5
	BRK	e	02 11 26.5
	PCC	eP	02 11 27.1
	ORV	e	02 11 28.9
BRK 02h10m39.3s 37.5N 118.6W			
h=10kmR ML=3.7(5)			
NW of Bishop, CA			
Nov 24	FRI	iPc	02 12 19.7
	MNA	iPd	02 12 21.9
	JAS1	iPc	02 12 29.2
	LLA	iPd	02 12 37.9
	PRI	iPd	02 12 38.5
	SAO	iPd	02 12 42.6
	PRS	eP	02 12 43.9
	MHC	iPd	02 12 44.8
	PCC	eP	02 12 51.6
BRK 02h12m02.2s 37.4N 118.6W			
h=5kmR ML=3.5(3)			
NW of Bishop, CA			
Nov 24	FRI	iPc	09 21 33.1

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DATE	STA	PHASE	TIME (UTC)
	MNA	iPc	09 21 36.8
	JAS1	iPc	09 21 44.8
	LLA	ePc	09 21 53.4
	PRI	ePc	09 21 54.4
	SAO	iPd	09 21 58.1
	MHC	ePc	09 21 58.9
	PRS	ePc	09 21 59.8
	GCC	ePc	09 22 02.6
	BRK	ePc	09 22 04.8
	BKS	iPd	09 22 05.2
		eS	09 22 46
	PCC	ePc	09 22 05.9
	ZSP	eP	09 22 06.5
		eS#	09 22 50.5
	ORV	ePc	09 22 07.0
	MIN	ePc	09 22 16.7
	WDC	eP	09 22 24.8
BRK 09h21m17.8s 37.5N 118.6W			
h=8km ML=4.2(5) Mo=6.3E21(2)			
25 km NW of Bishop, CA			
Nov 24	FRI	iPc	10 13 30.7
		iS	10 13 43.2
	MNA	iPd	10 13 32.6
		eS	10 13 49.3
	JAS1	iPc	10 13 39.8
		iS	10 13 58.8
	LLA	ePc	10 13 48.3
	PRI	ePc	10 13 49.3
	SAO	iPd	10 13 53.4
	MHC	ePc	10 13 54.2
	PRS	eP	10 13 54.5
	GCC	ePc	10 13 57.6
	BRK	eP	10 14 00.3
	BKS	eP	10 14 01.3
	PCC	ePc	10 14 01.6
	ZSP	eP	10 14 02.0
	ORV	e(P)	10 14 02.9
		e	10 14 05.8
	MIN	e	10 14 14.9
	WDC	e(P)	10 14 20.9
BRK 10h13m13.0s 37.4N 118.6W			
h=5km ML=3.6(5)			
NW of Bishop, CA			
Nov 24	FRI	iPc	12 15 50.2
	MNA	iPd	12 15 51.8
		iS	12 16 06.3
	JAS1	iPc	12 15 59.3
		iS	12 16 18.2
	LLA	ePc	12 16 07.8
	PRI	ePd	12 16 09.1
	SAO	iPc	12 16 12.2
	MHC	ePd	12 16 13.8
	PRS	ePc	12 16 14.0
	GCC	eP	12 16 17.2
	BKS	eP	12 16 20.0
	ORV	eP	12 16 20.6
	BRK	ePd	12 16 20.6
	PCC	eP	12 16 20.8
	ZSP	eP	12 16 21.2
BRK 12h15m32.4s 37.4N 118.6W			
h=5km ML=3.6(5)			
NW of Bishop, CA			
Nov 24	PRI	eP	12 52 42.0
	PRS	eP	12 52 42.4
	BRK	eP	12 52 44.1
	MHC	ePc	12 52 44.9
	FRI	ePc	12 52 49.2
	JAS1	ePc	12 52 49.8
	ORV	ePc	12 52 51.4
	WDC	eP	12 52 51.6
	MNA	ePc	12 52 58.5
USGS 12h41m20.5s 23.6S 180.0E			
h=639km mb=4.7			
South of Fiji Islands			
Nov 24	FRI	iPc	20 25 50.4
	MNA	iPd	20 25 53.0
	JAS1	iPc	20 25 59.5
	LLA	iPc	20 26 07.7
	PRI	eP	20 26 08.2
	SAO	iPc	20 26 12.7
	MHC	eP	20 26 13.5
	PRS	iPd	20 26 14.8
	GCC	eP	20 26 17.2
	BKS	iPc	20 26 20.1
	PCC	eP	20 26 20.6
	ZSP	e	20 26 21.1
	BRK	eP	20 26 21.5
	ORV	eP	20 26 22.9
	MIN	e	20 26 40.7
BRK 20h25m33.0s 37.4N 118.6W			
h=10km ML=4.0(5) Mo=1.1E22(1)			
NW of Bishop, CA			
Nov 24	FRI	iPd	21 10 52.0
	MNA	iPd	21 10 53.0
	JAS1	iPc	21 11 01.0
	LLA	eP	21 11 10.1
	PRI	eP	21 11 10.7
	SAO	eP	21 11 14.7
	MHC	eP	21 11 15.7
	BKS	eP	21 11 23.8
	ORV	eP	21 11 24.4
BRK 21h10m34.3s 37.5N 118.6W			
h=10kmR ML=3.5(4)			
NW of Bishop, CA			
Nov 25	FRI	iPc	10 37 27.6
	MNA	iPd	10 37 29.7
	JAS1	iPc	10 37 36.7
	LLA	eP	10 37 45.5
	PRI	eP	10 37 45.9
	SAO	iP	10 37 50.1
	MHC	eP	10 37 51.0
	PRS	eP	10 37 52.0
	ORV	e	10 37 59.9
	BKS	eP	10 38 03.5
BRK 10h37m09.9s 37.4N 118.6W			
h=7km ML=3.2(2)			
NW of Bishop, CA			
Nov 25	FRI	iPc	16 15 37.7
		iSc	16 15 50.1
	MNA	iPd	16 15 39.8
	JAS1	iPc	16 15 46.6
		iS	16 16 04.4
	LLA	iPc	16 15 55.2
	PRI	iPc	16 15 56.3
	SAO	ePc	16 15 59.9
	MHC	ePc	16 16 00.9
	PRS	iPc	16 16 01.5
	GCC	ePc	16 16 04.7
	BRK	ePc	16 16 07.3
	BKS	eP	16 16 07.5
		eS	16 16 50
	PCC	ePc	16 16 07.9
	ORV	eP	16 16 08.8
	MIN	e	16 16 23.2
	WDC	e	16 16 28.0
BRK 16h15m20.2s 37.4N 118.6W			
h=6km ML=4.1(5) Mo=6.7E21(2)			
25 km NW of Bishop, CA			
Nov 25	FRI	iPc	16 22 48.4
	MNA	iPd	16 22 51.7
	JAS1	iPc	16 22 57.3
	LLA	eP	16 23 06.0
	PRI	eP	16 23 07.1
	SAO	iPc	16 23 11.0
	MHC	eP	16 23 11.9
	PRS	eP	16 23 12.3
	GCC	eP	16 23 15.7
	BKS	ePc	16 23 18.3
	BRK	eP	16 23 18.5
	PCC	eP	16 23 19.4
	ZSP	e	16 23 19.7
	ORV	e	16 23 21.0
BRK 16h22m31.9s 37.5N 118.7W			
h=9kmR ML=3.7(5)			
35 km WNW of Bishop, CA			
Nov 25	FRI	iPc	22 55 16.2
	MNA	iPd	22 55 17.8
		iS	22 55 31.5
	JAS1	iPc	22 55 25.1
		iS	22 55 44.2
	LLA	ePc	22 55 33.5
	PRI	iPc	22 55 34.7
	SAO	iPc	22 55 38.8
	MHC	ePc	22 55 39.4
	PRS	ePc	22 55 40.0
	GCC	ePc	22 55 41.4
	BKS	eP	22 55 45.8
	BRK	eP	22 55 46.1
	PCC	eP	22 55 46.8
	ZSP	eP	22 55 47.0
	ORV	eP	22 55 48.0
	MIN	eP	22 55 57.2
	WDC	e(P)c	22 56 06.7
BRK 22h54m58.1s 37.4N 118.6W			
h=10kmR ML=3.8(6)			
NW of Bishop, CA			
Nov 25	FRI	iPc	23 10 27.2
	MNA	ePd	23 10 28.8
	JAS1	iPc	23 10 36.2
	LLA	iPc	23 10 44.8
	PRI	iPc	23 10 45.7
	SAO	iPc	23 10 49.7
	MHC	ePc	23 10 50.4
	PRS	iPc	23 10 51.0
	BKS	iPc	23 10 52.7
	GCC	iPc	23 10 53.9
	BRK	ePc	23 10 56.8
	ZSP	ePc	23 10 57.2
		iS#	23 11 39.1
	PCC	ePc	23 10 57.7
	ORV	ePc	23 10 58.9
	MIN	ePc	23 11 08.7
	WDC	ePc	23 11 17.2
	FHC	e	23 11 42.0
BRK 23h10m09.4s 37.4N 118.6W			
h=5km ML=4.8(6) Mo=3.6E22(2)			
25 km NW of Bishop, CA			
Nov 26	PRI	eP	01 16 30.2
	LLA	eP	01 16 33.5
	PRS	eP	01 16 33.8
	FRI	eP	01 16 37.3
	MHC	eP	01 16 43.9
	JAS1	eP	01 16 47.9
	MNA	eP	01 16 51.5
	ORV	eP	01 17 08.4
	MIN	e	01 17 15.9
	WDC	eP	01 17 19.8
USGS 01h12m33.1s 20.2N 115.9W			
h=10km mb=5.2 Ms=4.6			
East Central Pacific Ocean			
Nov 26	BKS	eP	07 38 30.5
		AMP(µm)	PER(s)
		PZ 0.063	0.8
	BRK	e	07 38 30.5
	GCC	eP	07 38 30.5
	WDC	eP	07 38 31.4
	MHC	eP	07 38 32.1
	PRS	eP	07 38 33.0
	ORV	eP	07 38 33.4
	MIN	eP	07 38 34.0
	LLA	eP	07 38 34.2
	PRI	eP	07 38 35.1
	JAS1	eP	07 38 36.1
	FRI	eP	07 38 38.9
	MNA	eP	07 38 45.7
USGS 07h25m43.4s 6.3S 154.8E			
h=68km mb=5.6			
Solomon Islands			
Nov 26	FRI	iPc	16 21 58.7
	MNA	iPd	16 22 01.0
	JAS1	iPc	16 22 07.7
	LLA	iPc	16 22 16.3
	PRI	ePc	16 22 17.3
	SAO	iPc	16 22 21.3
	MHC	ePc	16 22 22.0
	PRS	iPc	16 22 22.6
	GCC	ePc	16 22 25.7
	BRK	ePc	16 22 28.7
	BKS	ePc	16 22 28.9
	PCC	ePc	16 22 29.0
	ZSP	eP	16 22 29.1
	ORV	e(P)	16 22 31.8
	MIN	iPd	16 22 42.6
BRK 16h21m41.5s 37.4N 118.7W			
h=9kmR Mag=3.9			
NW of Bishop, CA			
Nov 26	FRI	i(P)	16 21 04.7
	LLA	iPc	16 22 22.3
	PRI	iP	16 22 23.3
	MHC	iPc	16 22 28.1
	SAO	iP	16 22 28.3
	PRS	iPc	16 22 28.6
	GCC	iPc	16 22 31.8
	BKS	iP	16 22 34.3
		eS	16 23 13.5
	BRK	iPd	16 22 34.7
	ZSP	iPd	16 22 35.0
	PCC	iPc	16 22 35.7
	ORV	iP	16 22 37.0
	MIN	eP	16 22 46.3
	WDC	e	16 22 54.7
	FHC	e	16 23 18.0
BRK 16h21m47.2s 37.4N 118.7W			
h=9kmR ML=5.6(8) Mo=2.4E23(2)			
NW of Bishop, CA			
Nov 26	FRI	iPc	16 28 47.2
		iS	16 29 59.7
	MNA	iPd	16 28 49.0
		iS	16 29 03.6
	JAS1	iPc	16 28 56.4
	LLA	ePc	16 29 04.9
	PRI	iPc	16 29 06.5
	SAO	iPd	16 29 10.0
	PRS	ePc	16 29 11.1
	MHC	iPd	16 29 11.3
	GCC	eP	16 29 14.3
	BKS	ePc	16 29 17.2
	BRK	eP	16 29 17.2
	PCC	ePc	16 29 18.1
	ZSP	e(P)c	16 29 18.6
	ORV	e(P)	16 29 19.5
BRK 16h28m30.1s 37.5N 118.6W			
h=10kmR ML=3.7(5)			
NW of Bishop, CA			
Nov 26	FRI	iPc	16 31 38.6
	MNA	iPd	16 31 41.2
	JAS1	iPc	16 31 47.7
	LLA	iP	16 31 56.1
	PRI	iPc	16 31 57.3
	SAO	i(P)	16 32 00.7
	PRS	iPc	16 32 02.4
	MHC	eP	16 32 02.5
	GCC	iPc	16 32 05.7
	BKS	ePd	16 32 08.5
	BRK	iPc	16 32 08.9
	PCC	ePc	16 32 09.1
	ZSP	ePc	16 32 09.3
	ORV	iPd	16 32 11.7
	MIN	eP	16 32 20.1
	WDC	ePc	16 32 29.6
BRK 16h31m21.4s 37.4N 118.6W			
h=10kmR ML=4.5(5) Mo=2.1E22(2)			
25 km NW of Bishop, CA			
Nov 26	FRI	iPc	18 25 34.2
	MNA	iPd	18 25 35.7
	JAS1	iPc	18 25 43.3
	LLA	eP	18 25 51.7
	PRI	eP	18 25 52.7
	SAO	iPc	18 25 56.8
	MHC	eP	18 25 57.9
	PRS	eP	18 25 58.0
	GCC	eP	18 26 01.4
	BKS	eP	18 26 04.3
	BRK	e	18 26 04.4
	PCC	e	18 26 04.9
	ORV	eP	18 26 08.6
BRK 18h25m16.4s 37.4N 118.6W			
h=6kmR ML=3.5(5)			
NW of Bishop, CA			
Nov 27	FRI	iPc	01 42 09.9
	MNA	iPd	01 42 12.4
	JAS1	iPc	01 42 18.8
	LLA	iPc	01 42 27.7
	PRI	eP	01 42 28.9
	SAO	iPc	01 42 32.5
	MHC	eP	01 42 33.1
	PRS	iPc	01 42 34.0
	GCC	eP	01 42 37.1
	BKS	ePc	01 42 39.5
		eS	01 43 21
	BRK	eP	01 42 39.5
	PCC	eP	01 42 40.8
	ZSP	iPc	01 42 40.8
	ORV	eP	01 42 41.9
	MIN	e	01 42 50.3
	WDC	e	01 43 00.3
BRK 01h41m52.7s 37.4N 118.7W			
h=5km ML=4.4(5) Mo=3.1E22(2)			
NW of Bishop, CA			
Nov 27	FRI	iPc	07 19 34.3
		iS	07 19 47.3
	MNA	iPd	07 19 35.2
		iS	07 19 49.3
	JAS1	iPc	07 19 43.1
		iS	07 20 02.4
	LLA	ePc	07 19 51.8
	PRI	iPc	07 19 53.3
	SAO	iP	07 19 56.9
	MHC	ePd	07 19 57.8
	PRS	eP	07 19 58.1
	GCC	eP	07 20 01.3
	BRK	ePd	07 20 04.6
	PCC	ePd	07 20 04.8
	BKS	eP	07 20 04.9
	ZSP	iP	07 20 05.2
	ORV	ePd	07 20 06.0
	WDC	eP	07 20 24.5
BRK 07h19m16.1s 37.5N 118.6W			
h=3km ML=3.5(5)			
NW of Bishop, CA			
Nov 27	WDC	iPd	08 30 02.3
		iS	08 30 16.6
	FHC	iPc	08 30 04.5
		i	08 30 06.0
	ARC	eP	08 30 07.5
	ORV	iPd	08 30 08.3
	MIN	iPc	08 30 08.7
	BKS	eP	08 30 24.9
	BRK	e	08 30 25.7
	ZSP	e	08 30 27.1
	PCC	e	08 30 30.8
	JAS1	iP	08 30 32.8
	MHC	e	08 30 33.0
	GCC	e	08 30 41.2
	FRI	e	08 30 46.6
BRK 08h29m43.7s 39.8N 123.3W			
h=5kmR ML=3.1(7)			
45 km N of Willits, CA			
Nov 27	PRS	eP	13 53 25.0
	PCC	eP	13 53 25.7
	MHC	eP	13 53 27.9
	FRI	eP	13 53 31.7
		e	13 54 17.6
	JAS1	ePc	13 53 32.7
		e	13 53 48.7
	ORV	ePc	13 53 35.0
		e	13 53 51.1
	WDC	ePc	13 53 35.8
		e	13 53 51.8
	MNA	ePc	13 53 41.2
		e	13 53 56.8
USGS 13h41m03.9s 28.7S 177.6W			
h=77km mb=5.1			
Kermadec Islands			
Nov 27	FRI	iPc	17 31 40.3
	MNA	iPd	17 31 42.6
		iS	17 31 56.8
	JAS1	iPc	17 31 50.2
		iS	17 32 09.2
	LLA	ePc	17 31 58.5
	PRI	ePd	17 31 59.7
	SAO	eP	17 32 03.1
	MHC	ePd	17 32 04.2
	PRS	ePd	17 32 05.0
	GCC	ePd	17 32 08.1
	BKS	eP	17 32 11
	PCC	ePc	17 32 11.4
	BRK	e	17 32 12.4
	ZSP	e	17 32 12.4
	ORV	eP	17 32 12.7
	MIN	e	17 32 28
	WDC	e	17 32 43.4
BRK 17h31m23.1s 37.4N 118.6W			
h=13km ML=3.6(5)			
NW of Bishop, CA			

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DATE	STA	PHASE	TIME (UTC)
Nov 27	MNA	iPd	18 48 51.1
	FRI	eP	18 48 57.3
	JAS1	iPd	18 49 04.1
	LLA	ePd	18 49 04.7
	MHC	ePd	18 49 09.3
	ORV	iP	18 49 09.7
	MIN	iPd	18 49 10.1
	PCC	eP	18 49 13.1
	WDC	iPd	18 49 13.6
	FHC	eP	18 49 24.0
USGS 18h39m13.5s 16.1N 59.6W			
h=19km mb=5.2 Ms=4.6			
Leeward Islands			
Nov 28	FRI	iPc	06 44 53.5
	MNA	iPd	06 44 55.8
		iS	06 45 09.8
	JAS1	iPc	06 45 03.2
		iS	06 45 23.6
	LLA	ePc	06 45 11.1
	PRI	ePc	06 45 12.2
	SAO	iPc	06 45 16.3
	MHC	ePd	06 45 17.7
	PRS	iPd	06 45 17.8
	GCC	ePc	06 45 20.8
	BRK	eP	06 45 23.5
	BKS	ePc	06 45 24.0
	PCC	eP	06 45 24.4
	ZSP	eP	06 45 25.2
	ORV	eP	06 45 26.7
	WDC	e	06 45 45
	MIN	e	06 45 46
BRK 06h44m36.1s 37.4N 118.6W			
h=10km ML=3.8(4)			
NW of Bishop, CA			
Nov 28	MHC	iPd	11 54 39.7
	GCC	iPd	11 54 45.6
		iS	11 54 51.5
	SAO	iPd	11 54 49.2
	PCC	iPd	11 54 49.5
	BKS	iPc	11 54 52.5
		eS	11 55 03.5
	BRK	iPc	11 54 52.5
	ZSP	iPc	11 54 53.9
		iS	11 55 06.7
	LLA	ePc	11 54 54.5
	PRS	iPc	11 54 56.5
	JAS1	iPc	11 54 59.3
		iS	11 55 14.3
	PRI	e(P)	11 55 03.0
	FRI	iPc	11 55 05.5
	ORV	iPc	11 55 17.5
BRK 11h54m38.1s 37.3N 121.7W			
h=6km ML=3.2(4) Mo=1.9E20(2)			
Halls Valley Sequence			
Nov 28	FRI	iPc	16 23 43.7
	MNA	iPd	16 23 46.0
	JAS1	iPc	16 23 53.4
	LLA	iPc	16 24 01.3
	PRI	iPc	16 24 02.3
	SAO	iPc	16 24 06.4
	MHC	eP	16 24 07.5
	PRS	iPc	16 24 07.5
	GCC	ePc	16 24 11.2
	BKS	ePc	16 24 13.8
	BRK	eP	16 24 13.9
	ZSP	eP	16 24 14.3
	PCC	iPd	16 24 14.8
	ORV	iPc	16 24 17.1
	MIN	ePc	16 24 24.9
	WDC	eP	16 24 35.4

DATE	STA	PHASE	TIME (UTC)
BRK 16h23m26.0s 37.4N 118.6W			
h=6kmR ML=4.7(5) Mo=4.4E22(2)			
20 km WNW of Bishop, CA			
Nov 28	FRI	iPc	16 57 56.3
	MNA	ePd	16 57 56.8
	JAS1	iPc	16 58 05.1
	LLA	iPc	16 58 13.8
	PRI	iPc	16 58 14.9
	SAO	iPc	16 58 18.6
	MHC	iPc	16 58 19.2
	PRS	iPc	16 58 20.3
	GCC	eP	16 58 23.3
	BRK	iPc	16 58 25.7
	BKS	iPd	16 58 25.7
	PCC	iPd	16 58 26.8
	ORV	iPc	16 58 27.6
	MIN	eP	16 58 40
	WDC	iPc	16 58 45.8
BRK 16h57m37.9s 37.5N 118.6W			
h=5km ML=4.6(5) Mo=4.9E22(2)			
25 km NW of Bishop, CA			
Nov 29	FRI	iPd	10 42 45.7
		iS	10 42 55.8
	MNA	iPd	10 42 48.0
	JAS1	iPc	10 42 54.9
		iS	10 43 23.8
	LLA	eP	10 43 02.4
	PRI	eP	10 43 04.2
	SAO	iPd	10 43 08.2
	MHC	iPd	10 43 08.4
	PRS	eP	10 43 09.2
	GCC	eP	10 43 11.7
	BKS	eP	10 43 15.2
	BRK	e	10 43 15.4
	PCC	iP	10 43 15.9
	ZSP	e	10 43 16.3
	ORV	eP	10 43 17.5
	MIN	e	10 43 35
	WDC	e	10 43 36.1
BRK 10h42m28.3s 37.4N 118.6W			
h=10km ML=3.6(4)			
NW of Bishop, CA			
Nov 29	FRI	iPd	10 45 58.1
	MNA	iPd	10 46 00.4
	JAS1	iPc	10 46 07.3
	LLA	eP	10 46 15.8
	PRI	eP	10 46 16.4
	SAO	iPd	10 46 20.4
	MHC	eP	10 46 20.8
	PRS	e	10 46 22.1
	GCC	e	10 46 24.9
	BRK	e	10 46 27.4
	BKS	eP	10 46 27.6
	PCC	eP	10 46 28.1
	ZSP	eP	10 46 29.1
	ORV	eP	10 46 29.5
BRK 10h45m40.7s 37.4N 118.6W			
h=10km ML=3.5(3)			
NW of Bishop, CA			
Nov 29	PRS	e	12 53 14.5
	FRI	e	12 53 15.3
	ORV	eP	12 53 15.6
	JAS1	eP	12 53 18.7
	FRI	eP	12 53 19.9
	MNA	e	12 53 26.3
USGS 12h40m14.9s 5.4S 152.4E			
h=32km mb=5.5 Ms=5.1			
New Britain Region			

DATE	STA	PHASE	TIME (UTC)
Nov 29	MIN	e	13 53 35.0
	JAS1	eP	13 53 36.5
	FRI	eP	13 53 37.2
	MNA	eP	13 53 45.8
Nov 29	FRI	eP	19 23 56.3
	PRI	eP	19 23 57.3
	LLA	eP	19 23 59.4
	PRS	eP	19 23 59.5
	MNA	eP	19 23 59.6
	JAS1	iPd	19 24 02.9
	GCC	eP	19 24 03.7
	MHC	eP	19 24 04.4
	BRK	e	19 24 07.5
	BKS	eP	19 24 07.8
		AMP(μm)	PER(s)
	PZ	0.087	1.0
	ORV	iPd	19 24 11.7
	WDC	iPd	19 24 16.2
USGS 19h12m30.8s 35.4S 71.1W			
h=99km mb=5.4			
Central Chile			
Nov 30	FHC	eP	01 54 17.9
		eS	01 54 46.5
	WDC	ePd	01 54 34.0
	MIN	eP	01 54 44.1
	ORV	eP	01 54 46.3
	BRK	ePd	01 54 47.5
	ZSP	ePd	01 54 47.5
	BKS	iPd	01 54 48.2
	PCC	ePd	01 54 49.5
	GCC	eP	01 54 56.7
	MHC	ePd	01 54 57.5
		eS	01 55 56.5
	SAO	iPc	01 55 03.8
	JAS1	iPc	01 55 06.8
	PRS	eP	01 55 08.2
	LLA	ePd	01 55 09.4
	PRI	eP	01 55 17.1
	FRI	ePd	01 55 18.7
BRK 01h53m39.9s 40.3N 127.2W			
h=5kmR ML=4.2(3)			
Off Coast 260 km W of Eureka, CA			
Nov 30	ORV	ePKP	07 14 33.4
		e	07 14 39.4
	JAS1	ePKP	07 14 39.9
		e	07 14 45.7
	MNA	iPKPc	07 14 40.8
		e	07 14 46.4
	FRI	ePKP	07 14 42.5
USGS 06h54m53.9s 6.8S 72.0E			
h=10km mb=4.8			
Chagos Archipelago Region			
Nov 30	WDC	ePd	10 32 24.4
	MIN	ePd	10 32 27.4
	ORV	iPd	10 32 29.5
	JAS1	ePd	10 32 35.5
	FRI	eP	10 32 41.6
	MNA	e	10 32 43.3
USGS 10h19m23.2s 24.4N 122.6E			
h=68km mb=5.2			
Taiwan Region			
Nov 30	FRI	ePd	14 20 53.6
	PRI	ePd	14 20 55.3
	MNA	ePd	14 20 56.5
	LLA	ePd	14 20 58.7
	JAS1	ePd	14 21 03.7
	BKS	ePd	14 21 16.1
		e	14 21 30

DATE	STA	PHASE	TIME (UTC)
		eS	14 26 32
		eLg	14 29 41
		eLr	14 32 10
		AMP(μm)	PER(s)
	PZ	0.072	0.8
	LN	3.6	20.
	LE	5.0	20.
	ORV	ePd	14 21 19.3
BRK Ms=5.5 Distance=42°			
USGS 14h15m03.0s 16.3N 98.2W			
h=33km mb=5.4 Ms=4.4			
Near Coast of Guerrero, Mexico			
Dec 1	FRI	iPc	04 56 11.0
		iS	04 56 23.3
	MNA	iPc	04 56 13.8
		iS	04 56 28.1
	JAS1	iPc	04 56 19.9
		i(S)	04 56 36.8
	LLA	iPc	04 56 29.2
	PRI	eP	04 56 30.2
	SAO	iPc	04 56 33.8
	MHC	ePc	04 56 34.9
	PRS	ePc	04 56 35.2
	GCC	eP	04 56 38.3
	BRK	eP	04 56 40.5
	BKS	eP	04 56 41.0
	PCC	ePc	04 56 42.1
	ZSP	eP	04 56 42.6
	ORV	ePd	04 56 44.0
	MIN	e	04 56 56.8
	WDC	e	04 57 09.0
BRK 04h55m54.4s 37.5N 118.7W			
h=6kmR ML=3.9(6)			
35 km WNW of Bishop, CA			
Dec 1	FRI	iPc	20 14 45.1
		iS	20 14 57.8
	MNA	iPc	20 14 47.7
		iS	20 15 01.7
	JAS1	iPc	20 14 54.5
	LLA	eP	20 15 02.6
	PRI	eP	20 15 03.5
	SAO	iPc	20 15 07.7
	MHC	iPd	20 15 08.6
	PRS	eP	20 15 09.0
	BRK	e	20 15 13.8
	ORV	e	20 15 14.7
	GCC	eP	20 15 14.9
	BKS	eP	20 15 15.7
		e	20 15 54.5
	PCC	eP	20 15 16.4
BRK 20h14m27.5s 37.4N 118.6W			
h=5km ML=3.8(5)			
NW of Bishop, CA			
Dec 2	FHC	eP	03 31 58.1
	WDC	iPc	03 31 59.2
	MIN	ePc	03 32 01.0
	ORV	iP	03 32 04.5
	BRK	eP	03 32 12.3
	BKS	eP	03 32 12.9
		AMP(μm)	PER(s)
	PZ	0.055	0.9
	MNA	iPc	03 32 13.4
	JAS1	iPc	03 32 13.7
	PCC	e	03 32 13.8
	MHC	eP	03 32 15.6
	SAO	e	03 32 17.8
	FRI	eP	03 32 18.3
	LLA	eP	03 32 19.7
	PRS	eP	03 32 20.3
	PRI	eP	03 32 22.4

DATE	STA	PHASE	TIME (UTC)
USGS 03h09m06.3s 50.0N 79.1E			
h=0km mb=5.8 Ms=4.6			
Eastern Kazakh, S.S.R.			
Dec 2	PRI	e	06 13 36.9
	PRS	eP	06 13 40.9
	LLA	eP	06 13 43.4
	FRI	eP	06 13 44.0
	SAO	eP	06 13 48.4
	GCC	eP	06 13 53.2
	MHC	eP	06 13 54.1
	PCC	e	06 13 57.5
	JAS1	eP	06 13 57.6
		i	06 17 27.6
	MNA	eP	06 14 00.9
	BRK	e	06 14 01.8
	BKS	e(P)	06 14 02.1
		i	06 14 03.9
		e(PP)	06 14 12.8
		eS	06 17 32.0
		eLg	06 17 36.0
		e	06 17 41.2
		eLr	06 18 26.0
		AMP(μm)	PER(s)
	PZ	1.0	1.0
	LZ	100	20.
	LN	75	20.
	LE	67	20.
	ORV	eP	06 14 17.2
	WDC	e	06 14 29.3
	FHC	e	06 14 37.0
BRK Ms=6.2 Distance=20°			
USGS 06h09m44.0s 20.4N 115.8W			
h=10km mb=6.0 Ms=6.2			
East Central Pacific Ocean			
Dec 2	WDC	eP	08 45 05.1
	MIN	eP	08 45 07.8
	ORV	eP	08 45 13.3
	BRK	e	08 45 22.1
	BKS	e	08 45 22.7
	MHC	eP	08 45 27.6
	JAS1	eP	08 45 27.7
	SAO	e	08 45 31.3
	MNA	eP	08 45 31.6
	LLA	eP	08 45 34.3
	PRS	eP	08 45 34.4
	FRI	eP	08 45 35.0
	PRI	e	08 45 38.3
USGS 08h35m46.5s 63.5N 150.5E			
h=33km mb=5.2 Ms=4.6			
Eastern Siberia			
Dec 2	MHC	iPc	11 10 58.1
	GCC	iPd	11 11 04.0
	SAO	iPc	11 11 07.5
	PCC	iPc	11 11 07.8
		iS	11 11 17.4
	BKS	iP	11 11 10.5
	BRK	iPc	11 11 10.6
	ZSP	ePc	11 11 11.9
		i	11 11 26.0
	LLA	iPc	11 11 12.7
	PRS	iPc	11 11 14.3
	JAS1	ePc	11 11 17.3
		iS	11 11 33.0
	PRI	ePc	11 11 20.7
	FRI	ePc	11 11 23.0
	ORV	e	11 11 35.2
	MIN	e	11 11 50.4
	MNA	e	11 11 51.2
BRK 11h10m56.3s 37.3N 121.7W			
h=7kmR ML=3.3(4) Mo=3.1E20(2)			

DATE	STA	PHASE	TIME (UTC)
Halls Valley Sequence			
Dec 3	FHC	ePc	04 18 49.4
	WDC	ePc	04 18 55.4
	MIN	eP	04 18 59.7
	ORV	iPc	04 19 02.9
	BRK	eP	04 19 07.0
	PCC	eP	04 19 07.3
	BKS	eP	04 19 07.9
		epP	04 19 24
		ePP	04 22 00
		eS	04 27 45
		e	04 29 52
		eSS	04 31 52
		e	04 32 44
		eLg	04 35 20
		eLr	04 38 00
		AMP(μm)	PER(s)
	PZ	0.63	1.0
	LZ	6.8	20.
	LN	5.9	20.
	LE	8.0	20.
	GCC	ePc	04 19 11.1
	MHC	eP	04 19 11.6
	SAO	eP	04 19 14.0
	JAS1	iPc	04 19 14.4
		ePKPPKP	04 47 50
	PRS	ePc	04 19 16.6
	LLA	ePc	04 19 17.3
	FRI	ePc	04 19 20.4
	PRI	iPc	04 19 21.6
	MNA	iPc	04 19 21.7
BRK mb=6.5 h=64km Distance=65°			
USGS 04h08m35.1s 44.2N 148.1E			
h=65km mb=6.4			
Kuril Islands			
Dec 4	FHC	iPd	07 55 08.8
	WDC	iPd	07 55 14.0
		ipP	07 55 46.3
	MIN	iPd	07 55 17.6
		epP	07 55 49.0
	ORV	iPd	07 55 19.5
		ipP	07 55 51.5
	PCC	ePd	07 55 20.0
	BRK	ePd	07 55 20.0
	BKS	eP	07 55 20.8
	GCC	ePd	07 55 22.5
	MHC	ePd	07 55 23.8
		epP	07 55 55.8
	SAO	ePd	07 55 24.9
	PRS	ePd	07 55 26.8
		epP	07 55 58.7
	JAS1	iPd	07 55 27.3
		ipP	07 55 59.2
	LLA	ePd	07 55 28.0
		epP	07 55 59.2
	PRI	ePd	07 55 30.4
	MNA	iPd	07 55 35.2
		ipP	07 56 07.2
USGS 07h43m23.1s 22.6N 143.3E			
h=122km mb=5.8			
Volcano Islands Region			
Dec 4	GCC	iPd	22 27 53.7
	PCC	iPd	22 27 53.8
	PRS	iPd	22 27 53.8
	SAO	e(P)	22 27 54
	BRK	eP	22 27 55.3
	PRI	eP	22 27 55.9
	LLA	e(P)	22 27 56.0
	BKS	eP	22 27 56.0
		AMP(μm)	PER(s)

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)	
		PZ	0.055	0.9
	MHC	iPd	22 27	56.2
	FHC	e(P)d	22 28	00.0
	FRI	eP	22 28	00.9
	JAS1	iPd	22 28	01.5
	ORV	iPd	22 28	02.9
	WDC	iPd	22 28	03.1
	MIN	eP	22 28	05.0
	MNA	iPd	22 28	10.55

BRK ab=5.0 h=566km Distance=79°
USGS 22h16m52.5s 21.1S 179.1W
h=634km ab=4.8
Fiji Islands Region

Dec 5	FRI	iP	06 09	52.1
	MNA	iPd	06 09	54.5
	JAS1	iPc	06 10	01.8
		iS	06 10	22.2
	LLA	eP	06 10	09.6
	PRI	eP	06 10	10.5
		iS	06 10	39.7
	SAO	eP	06 10	14.8
	PRS	eP	06 10	15.7
	MHC	eP	06 10	15.9
		e(S)	06 10	50.2
	GCC	e(P)	06 10	19.4
	BRK	e(P)	06 10	21.8
	BKS	eP	06 10	22.3
	ZSP	eP	06 10	22.6
	PCC	iP	06 10	23.3
	ORV	ePc	06 10	24.5
	MIN	e	06 10	38
	WDC	e	06 10	53

BRK 06h09m34.0s 37.4N 118.6W
h=10kmR ML=3.7(6)
20 km NW of Bishop, CA

Dec 5	BKS	iPc	10 30	13.2
	BRK	iPc	10 30	13.4
		iS	10 30	16.5
	ZSP	iP	10 30	15.0
		iS	10 30	19.7
	PCC	iPd	10 30	16.0
	MHC	ePd	10 30	20.4
	GCC	iPd	10 30	23.2
	SAO	iPd	10 30	29.4
	JAS1	ePc	10 30	33.5
		eS	10 30	51.8
	LLA	e(P)	10 30	35
	PRS	eP	10 30	35.9
	ORV	eP	10 30	40.0
		eS	10 31	02.8
	FRI	e	10 30	45

BRK 10h30m09.9s 37.7N 122.1W
h=5kmR ML=2.5(4) Mo=5.3E20(2)
San Leandro, 20 km SE of Berkeley, CA

Dec 5	WDC	ePc	12 15	04.0
	ORV	ePc	12 15	05.2
		e	12 15	11
	JAS1	eP	12 15	05.9
		e	12 15	11.4
	FRI	eP	12 15	06.6
		e	12 15	12.3
	MNA	ePc	12 15	15.4
		e	12 15	22.6

USGS 12h02m29.7s 15.7S 168.2E
h=33km ab=5.0 Ms=5.3
Vanuatu Islands

Dec 6	PRS	eP	17 39	11.4
	PRI	eP	17 39	11.7
	SAO	eP	17 39	13.3
	LLA	eP	17 39	14.1
	GCC	eP	17 39	14.6
	PCC	e	17 39	16.5
	MHC	eP	17 39	17.7
	FRI	iPc	17 39	19.2
	BRK	e	17 39	19.5
	BKS	eP	17 39	20.0
			AMP(μa)	PER(s)
		PZ	0.065	1.0
	JAS1	iPc	17 39	23.0
	MNA	iPc	17 39	30.8
	ORV	eP	17 39	31.0
	WDC	iPc	17 39	35.8

BRK ab=5.8 h=0km Distance=62°
USGS 17h28m58.6s 21.8S 138.9W
h=0km ab=5.6
Tuamotu Archipelago Region

Dec 9	PRI	eP	06 56	36.0
	LLA	e	06 56	39.3
	PRS	e	06 56	40.4
	FRI	eP	06 56	41.6
	JAS1	eP	06 56	52.3
	MNA	eP	06 56	56.0
	BKS	e(P)	06 57	04
		e	06 58	10
		e	07 00	28
		e	07 00	36
		e	07 02	37
		e	07 03	14
	ORV	eP	06 57	14.5
	MIN	eP	06 57	21.9
	WDC	eP	06 57	25.3

USGS 06h52m38.1s 20.1N 115.8W
h=10km ab=4.8 Ms=4.3
East Central Pacific Ocean

Dec 9	MNA	iPc	19 40	31.7
	FRI	iPc	19 40	43.4
	JAS1	iPc	19 40	51.7
	PRI	iPc	19 40	56.8
	LLA	eP	19 40	57.2
	SAO	iPc	19 41	02.6
	PRS	iPc	19 41	03.2
	MHC	iPc	19 41	05.1
	GCC	e	19 41	08.6
	ORV	iPc	19 41	10.5
	BKS	eP	19 41	11.0
		eS	19 41	22.5
		eLr	19 41	26
	BRK	eP	19 41	11.6
	ZSP	eP	19 41	12.2
	PCC	eP	19 41	12.3
	MIN	eP	19 41	17.9
	WDC	iPc	19 41	27.4

BRK ML=5.3(7)
USGS 19h40m00.0s 37.3N 116.5W
h=0km ab=5.5
Underground Nuclear Explosion, NTS (Egaont)

Dec 10	PRI	eP	03 35	54.1
	LLA	e	03 35	58.1
	PRS	e	03 35	59.0
	FRI	eP	03 36	01.0
	JAS1	eP	03 36	13.2
	MNA	eP	03 36	14.8
	ORV	eP	03 36	31.7
	MIN	eP	03 36	41.7
	WDC	eP	03 36	43.7

USGS 03h31m56.6s 20.2N 116.0W
h=10km ab=5.0 Ms=4.4

DATE	STA	PHASE	TIME (UTC)	

East Central Pacific Ocean

Dec 10	FRI	eP	10 32	50.2
	PRI	eP	10 32	51.4
	MNA	e	10 32	52.8
	LLA	e	10 32	54.1
	PRS	e	10 32	54.9
	JAS1	eP	10 32	57.4
	GCC	e	10 33	00.1
	MHC	e	10 33	00.3
	BKS	e	10 33	04
	BRK	e	10 33	04.9
	ORV	eP	10 33	08.6
	WDC	eP	10 33	14.3
	FHC	eP	10 33	22.8

USGS 10h22m04.7s 14.8S 75.2W
h=53km ab=5.5 Ms=5.0
Near Coast of Peru

Dec 11	WDC	eP	10 47	38.3
	ORV	eP	10 47	45.5
	JAS1	eP	10 47	57.3
	FRI	eP	10 48	03.0
	MNA	eP	10 48	04.3

USGS 10h37m14.4s 44.0N 148.3E
h=44km ab=5.3 Ms=4.5
Kuril Islands

Dec 11	WDC	iPd	22 59	44.3
		i	22 59	56.0
	MIN	ePd	22 59	47.9
	ORV	ePd	22 59	50.2
		epP	22 59	56.0
		e	23 00	02.0
	BRK	eP	22 59	51.2
	BKS	eP	22 59	51.5
		e	22 59	56.5
		e(PcP)	23 00	03.2
			AMP(μa)	PER(s)
		PZ	0.065	1.0
	MHC	eP	22 59	55.3
	PRS	ePd	22 59	58.6
	JAS1	iPd	22 59	58.8
		i	23 00	11.5
	LLA	eP	22 59	59.7
	PRI	eP	23 00	02.3
	FRI	ePd	23 00	03.4
		epP	23 00	09.2
		e	23 00	15.2
	MNA	ePd	23 00	06.4

USGS 22h47m56.2s 26.5N 143.7E
h=17km ab=5.3 Ms=4.7
Bonin Islands Region

Dec 11	FRI	ePd	23 33	58.5
	PRI	ePd	23 34	00.0
		ipP	23 34	30.8
		isP	23 34	43.2
	MNA	ePd	23 34	00.5
		ipP	23 34	30.8
		isP	23 34	43.2
	LLA	ePd	23 34	02.4
	PRS	ePd	23 34	03.0
		epP	23 34	33.7
	SAO	e(P)d	23 34	04.2
		epP	23 34	35.0
	JAS1	iPd	23 34	05.2
		epP	23 34	35.5
		isP	23 34	49.1
		e	23 44	24.6
	GCC	ePd	23 34	07.5
		epP	23 34	38.3
	MHC	iPd	23 34	07.8
		ipP	23 34	38.6
		isP	23 34	51.4
	BKS	eP	23 34	11.0
		e	23 34	36.5
		epP	23 34	41.5
		esP	23 34	52
		ePP	23 37	08
		epPP	23 37	36
		ePPP	23 38	59
		epPPP	23 39	24
		esPPP	23 39	40
		e	23 41	32
		eS	23 43	54
		e	23 44	24
		eSKKS	23 46	54
		eSS	23 49	12
		e	23 50	30
		eLg	23 55	10
		eLr	23 59	44
			AMP(μa)	PER(s)
		PZ	3.7	2.5
		LZ	9.6	36.
		LN	6.7	36.
		LE	9.6	36.
	PCC	ePd	23 34	11.3
		epP	23 34	40.9
	BRK	ePd	23 34	11.3
	ZSP	eP	23 34	11.6
	ORV	iPd	23 34	14.4
	MIN	ePd	23 34	16.8
		epP	23 34	47.8
	WDC	iPd	23 34	19.7
		ipP	23 34	50.3
		isP	23 35	03.3
	FHC	iPd	23 34	27.4
		epP	23 34	58.5
		esP	23 35	11.2

BRK ab=6.7 h=120km Distance=78°
USGS 23h22m19.3s 22.4S 68.6W
h=92km ab=5.7
Northern Chile

Dec 12	PRS	eP	06 24	45.8
	MHC	eP	06 24	48.3
	JAS1	ePc	06 24	53.5
	ORV	ePc	06 24	54.9
	WDC	eP	06 24	55.2
	MIN	eP	06 24	57.3
	MNA	ePc	06 25	02.9

USGS 06h13m49.9s 19.9S 178.6W
h=627km ab=4.1
Fiji Islands Region

Dec 12	MNA	iPd	18 16	14.2
	JAS1	e	18 16	21.6
	ORV	e	18 16	37.1
	MIN	e	18 17	13.5

Dec 14	MNA	eP	00 25	20.5
	ORV	eP	00 25	44.4

USGS 00h18m29.6s 13.2N 89.7W
h=100km ab=4.4
El Salvador

Dec 14	MHC	e	06 23	39.8
	JAS1	e	06 23	40.9
	ORV	e	06 23	42.7
	WDC	e	06 23	43.8
	MNA	eP	06 23	50.1

USGS 06h11m27.4s 24.9S 175.9W
h=33km ab=4.8
South of Tonga Islands

DATE	STA	PHASE	TIME (UTC)	
Dec 14	FHC	iP	09 24	07.6
		iS	09 24	15.6
	WDC	eP	09 24	21.8
	MIN	eP	09 24	32.3
	ORV	eP	09 24	34.2

BRK 09h23m57.0s 40.4N 124.4W
h=5kmR ML=3.1(4)
30 km SSW of Ferndale, CA

Dec 14	WDC	eP	12 43	28.6
	MIN	eP	12 43	35.2
	ORV	eP	12 43	44.8
	JAS1	iPc	12 44	16.0
	FRI	eP	12 44	28.0
	MNA	e	12 44	34.0
	PRI	e	12 44	34.5

USGS 12h40m42.8s 50.8N 129.8W
h=10km ab=4.5 Ms=3.9
Vancouver Island Region

Dec 14	JAS1	iPKP	14 52	15.4
	MNA	ePKP	14 52	15.5
	FRI	ePKP	14 52	18.1

USGS 14h32m31.7s 5.0S 68.5E
h=10km ab=5.2 Ms=4.4
Chagos Archipelago Region

Dec 15	MNA	iPc	14 45	33.2
	FRI	iPc	14 45	45.5
	JAS1	iPc	14 45	53.8
	PRI	iPc	14 45	58.7
	LLA	eP	14 45	59.4
	SAO	eP	14 46	04.7
	PRS	eP	14 46	05.0
	MHC	iPc	14 46	07.1
	GCC	eP	14 46	11.4
	ORV	iPc	14 46	12.2
	BKS	ePn	14 46	13.3
		ePg	14 46	23.8
		e(Sn)	14 47	01.1
	BRK	eP	14 46	13.5
	PCC	eP	14 46	14.4
	ZSP	eP	14 46	14.6
	MIN	i	14 46	21.1
	WDC	eP	14 46	28.7

BRK ML=5.3(7)
USGS 14h45m00.0s 37.3N 116.3W
h=0km ab=5.4
Underground Nuclear Explosion, NTS (Tierra)

Dec 16	FHC	eP	04 07	54.8
	WDC	iPc	04 07	55.7
	MIN	iPc	04 07	57.7
	ORV	iPc	04 08	01.7
	BKS	eP	04 08	09.3
		e	04 08	17.0
			AMP(μa)	PER(s)
		PZ	0.14	0.7
	BRK	eP	04 08	09.4
	MNA	eP	04 08	10.1
	JAS1	iPc	04 08	10.4
	PCC	eP	04 08	10.6
	MHC	eP	04 08	12.3
	GCC	e	04 08	13.0
	FRI	eP	04 08	14.5
	SAO	eP	04 08	14.7
	LLA	eP	04 08	16.2
	PRS	eP	04 08	17.0
	PRI	eP	04 08	19.0

USGS 03h55m02.7s 50.0N 78.9E
h=0km ab=6.1 Ms=4.6
Eastern Kazakh S.S.R.

Dec 16	ORV	e	22 45	33.3
	FRI	e	22 45	33.3
	JAS1	eP	22 45	33.8
	MNA	eP	22 45	44.4

USGS 22h33m46.1s 15.4S 179.1W
h=33km ab=4.7
Fiji Islands Region

Dec 17	FRI	iPc	21 17	41.4
		iS	21 17	54.4
	MNA	iPd	21 17	43.4
		iS	21 17	57.6
	JAS1	iPc	21 17	50.9
		iS	21 18	10.6
	LLA	eP	21 17	58.6
	PRI	iPd	21 18	00.1
	SAO	iPc	21 18	04.15
	PRS	eP	21 18	05.0
	MHC	iPd	21 18	05.4
	GCC	e	21 18	08.6
	BKS	ePn	21 18	11.7
		eSn	21 18	47.1
	PCC	eP	21 18	11.7
	BRK	e(P)	21 18	12.2
	ZSP	eP	21 18	13.1
	ORV	i	21 18	17.0
	MIN	e	21 18	31.4

BRK 21h17m23.8s 37.4N 118.6W
h=7kmR ML=3.8(5)
25 km WNW of Bishop, CA

Dec 17	FHC	eP	23 40	35.0
		e	23 40	52.3
	WDC	eP	23 40	40.8
		e	23 40	58.4
	ORV	eP	23 40	48.7
		e	23 41	06.0
	JAS1	eP	23 41	00
		e	23 41	17.5
	MIN	e	23 41	02.8
	FRI	eP	23 41	06.5
		e	23 41	24.0
	MNA	eP	23 41	07.5
		e	23 41	24.8
	BKS	e	23 41	11.4
		eS	23 49	36.5
		e	23 52	05.8
		eLr	23 59	58
			AMP(μa)	PER(s)
		LZ	3.6	20.
		LN	2.1	20.
		LE	3.6	20.
	MHC	e	23 41	15.0

BRK Ms=5.6 Distance=64°
USGS 23h30m21.2s 44.4N 149.2E
h=29km ab=5.7 Ms=6.0
Kuril Islands

Dec 18	FHC	e(P)	00 07	10.7
		e	00 07	27.8
	WDC	eP	00 07	17.0
		e	00 07	25.0
		e	00 07	33.8
	MIN	eP	00 07	21.3
		e	00 07	38.2
	ORV	eP	00 07	24.2
		i	00 07	41.6
	JAS1	eP	00 07	24.2
		i	00 07	53.1
	BKS	e(P)	00 07	31.0
			AMP(μa)	PER(s)
		LZ	2.9	20.

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)
		LN	0.0 20.
		LE	4.6 20.
	MHC	e	00 07 32.3
	BRK	e	00 07 36
	PRS	e	00 07 39.3
	LLA	e	00 07 41
	MNA	eP	00 07 43.5
		e	00 07 51.3
	FRI	e(P)	00 07 44
		e	00 08 00.7

USGS 23h56m57.5s 44.2N 149.2E
h=33km mb=5.9 Ms=6.0
Kuril Islands Region

Dec 18	FRI	e(PKP)	03 19 04.9
	JAS1	ePKP	03 19 05.2
	WDC	ePKP	03 19 05.2
	ORV	ePKP	03 19 05.6
	MIN	ePKP	03 19 09
	MNA	ePKP	03 19 11.6

USGS 03h59m28.9s 48.2S 106.5E
h=10km mb=4.7 Ms=5.2
Southeast India Rise

Dec 18	WDC	e	03 52 37
	ORV	eP	03 52 37.0
	JAS1	eP	03 52 48.4
	MNA	eP	03 52 55.5

USGS 03h42m09.6s 44.3N 149.2E
h=33km mb=5.4 Ms=4.4
Kuril Islands

Dec 18	WDC	e	19 46 44.0
	ORV	eP	19 46 50.2
	JAS1	eP	19 47 01.0
	PRS	e	19 47 02.7
	LLA	e	19 47 02.9
	FRI	e	19 47 03
	MNA	e	19 47 07

USGS 19h35m27.0s 37.2N 141.5E
h=44km mb=5.5 Ms=5.0
Near East Coast of Honshu, Japan

Dec 19	ZSP	eP	02 40 20.0
		i(S)	02 40 34.6
	BKS	eP	02 40 21.0
		eS	02 40 35.5
	BRK	ePc	02 40 21.4
		eS	02 40 34.9
	ORV	ePc	02 40 24.5
		i	02 40 40.6
	PCC	eP	02 40 27.3
	MHC	ePc	02 40 31.9
	GCC	e	02 40 32.3
	MIN	eP	02 40 33.6
	WDC	eP	02 40 34.4
	JAS1	ePd	02 40 36.2
	SAO	ePc	02 40 38.4
	FRI	e	02 40 51.4

BRK 02h40m04.1s 38.8N 122.6W
h=5km ML=3.0(2)
SE of Clear Lake, CA

Dec 19	JAS1	eP	08 04 00.1
	ORV	eP	08 04 01.1
	WDC	e(P)	08 04 02.0
	MNA	eP	08 04 09.4

USGS 08h51m35.3s 17.0S 172.5E
h=34km mb=5.4 Ms=5.1
Vanuatu Islands Region

Dec 19	FRI	ePc	08 56 12.1
	MNA	iPc	08 56 13.5
		e	08 56 22.2
	PRI	ePc	08 56 14.3
	LLA	eP	08 56 17.6
	PRS	e	08 56 19.1
	JAS1	iPc	08 56 21.7
	MHC	e(P)	08 56 25.9
	ORV	iPc	08 56 36.7
	WDC	e(P)c	08 56 44.5
	FHC	e(P)	08 56 56.1

USGS 08h49m59.3s 15.9N 94.0W
h=65km mb=5.6
Near Coast of Oaxaca, Mexico

Dec 20	FRI	iPc	08 03 23.9
	MNA	iPc	08 03 26.0
		iS	08 03 39.7
	JAS1	iPc	08 03 33.3
		iS	08 03 53.2
	LLA	eP	08 03 41.0
	PRI	iPc	08 03 42.7
		iS	08 04 11.4
	SAO	iPd	08 03 46.6
	PRS	iPd	08 03 47.9
	MHC	e(P)d	08 03 48.0
		iS	08 04 23.7
	GCC	eP	08 03 51
	BKS	e(P)	08 03 53.7
		e(S)	08 04 33.6
	PCC	eP	08 03 55.2
	ORV	e(P)	08 04 00.6
		eS	08 04 40.7
	MIN	e(P)	08 04 05

BRK 08h03m06.2s 37.4N 118.6W
h=6kmR ML=3.5(5)
25 km WNW of Bishop, CA

Dec 20	MNA	eP	16 33 39.3
		iPcP	16 35 48.3
	FRI	ePc	16 33 40.5
		ePcP	16 35 47.8
	PRI	ePc	16 33 44.1
		ePcP	16 35 49.9
	JAS1	eP	16 33 45.5
		iPcP	16 35 51.6
	LLA	eP	16 33 45.8
		ePcP	16 35 51.1
	PRS	eP	16 33 47.7
	SAO	e	16 33 50.0
	GCC	e	16 33 53.4
	MHC	eP	16 33 53.6
	BKS	eP	16 33 59
		epP	16 34 07.5
		esP	16 34 12
		e	16 34 23.2
		e	16 34 43.2
		e	16 35 02
		e	16 35 15
		ePcP	16 35 53
		epPcP	16 36 03.5
		esPcP	16 36 06
		eS	16 40 25
		eScS	16 43 52
		e	16 46 00
		eLr	16 49 02

	AMP(μm)	PER(s)
PZ	0.16	0.9
LZ	6.4	20.
LN	3.9	20.
LE	10	20.

	BRK	eP	16 34 00.0
	ORV	eP	16 34 02.3
		iPcP	16 35 58.2
	MIN	eP	16 34 04.8
		iPcP	16 35 57.7
	WDC	eP	16 34 08.5
		iPcP	16 35 59.7
	FHC	eP	16 34 21.8

BRK Ms=5.7 Distance=42°
USGS 16h26m14.3s 11.4N 86.2W
h=63km mb=5.4
Near Coast of Nicaragua

Dec 21	WDC	ePKP	03 43 57.5
	MIN	e	03 43 58.5
	ORV	ePKP	03 44 00.3
	JAS1	ePKP	03 44 04.9
		e	03 47 50.0
	MNA	ePKP	03 44 05.4
		e	03 47 48.9
	FRI	e	03 44 08.1

USGS 03h24m05.4s 11.4S 66.3E
h=10km mb=5.5 Ms=5.2
Mid Indian Rise

Dec 21	LLA	iPc	12 39 08.1
	PRS	iPd	12 39 09.9
	SAO	iPc	12 39 11.9
	PRI	iPd	12 39 15.0
		iS	12 39 24.7
	MHC	eP	12 39 22.2
		iS	12 39 36.3
	GCC	iPd	12 39 22.2
	FRI	eP	12 39 26.1
	PCC	eP	12 39 28.0
	JAS1	iPd	12 39 31.1
		iS	12 39 50.7
	BKS	eP	12 39 31.3
		eS	12 39 52.9
	BRK	eP	12 39 31.5
	ZSP	e	12 39 32.9
	ORV	e	12 39 53.7

BRK 12h39m04.8s 36.5N 121.1W
h=5kmR ML=3.0(4)
Bear Valley, 35 km N of King City

Dec 21	BKS	e(P)	19 00 56
		e	19 01 13.7
		e	19 01 36.0
		ePP	19 04 38.0
		e	19 10 24
		ePS	19 13 09.2
		eSS	19 18 20.0
		e	19 22 10.1
		eLq	19 26 06.5
		eLr	19 30 06
		e	19 37 00
		e	19 46 00
		e	19 49 59
		e	19 52 00
		e	19 55 00
		e	20 00 00

	AMP(μm)	PER(s)
LZ	11	20.
LN	1.1	20.
LE	9.5	20.

	FRI	e	19 01 07.0
	JAS1	e	19 01 13.8
	MNA	e	19 01 29.0

BRK Ms=6.2 Distance=94°
USGS 18h47m51.0s 6.1S 149.9E
h=44km mb=5.6 Ms=6.1
New Britain Region

Dec 22	WDC	eP	00 11 04.0
	MIN	eP	00 11 07.7
	ORV	eP	00 11 11.7
	BKS	e(P)c	00 11 18.2
		e	00 11 20.0
		e	00 11 29.0
		e	00 11 34.3
		e	00 11 50.0

	AMP(μm)	PER(s)
PZ	0.030	1.0

	GCC	e	00 11 21.8
	MHC	eP	00 11 21.9
	JAS1	eP	00 11 23.4
	LLA	eP	00 11 27.9
	MNA	eP	00 11 29.5
	PRS	eP	00 11 29.5
	FRI	eP	00 11 30.0

USGS 00h00m37.6s 50.0N 142.6E
h=33km mb=5.3 Ms=4.8
Sakhalin Island

Dec 22	FHC	iPd	02 09 30.9
		iS	02 09 36.3
	ARC	eP	02 09 31.2
		iS	02 09 38.2
	WDC	iPc	02 09 45.8
	MIN	ePd	02 09 55.9
	ORV	ePd	02 09 59.6
	PCC	e(P)	02 10 14.6
	MHC	e	02 10 21
	JAS1	e	02 10 23.5
	SAO	e	02 10 30

BRK 02h09m23.5s 40.5N 124.2W
h=5km ML=3.5(2) Mo=7.5E20(2)
Near Ferndale, CA

Dec 23	MNA	eP	01 48 30.8
		iPg	01 48 36.4
		iSg	01 49 14.3
	FRI	eP	01 48 55.0
		ePg	01 49 07.3
		e(Sg)	01 50 04.0
	JAS1	e	01 48 58.1
		ePg	01 49 12.4
		iSg	01 50 10.7
	ORV	e	01 49 10.4
	MIN	e	01 49 11.3
	PRI	e	01 49 12.7
		e(Pg)	01 49 28.0
	MHC	e	01 49 16.0
		ePg	01 49 32.6
	LLA	e(Pg)	01 49 26.0
	SAO	e	01 49 32.7
	WDC	e	01 49 35.0
	BKS	e(Pg)d	01 49 46.3
		e	01 49 53.1
		e(S#)	01 50 53.5
		e	01 51 11.7

BRK ML=4.2(2)
USGS 01h47m44.6s 38.9N 114.6W
h=5km
Eastern Nevada

Dec 23	LLA	iPc	04 45 25.5
	SAO	iPc	04 45 25.7
	PRS	iPd	04 45 26.5
		iS	04 45 31.4
	PRI	iPd	04 45 33.0
	GCC	ePc	04 45 34.6
	MHC	eP	04 45 36.8
		iS	04 45 48.9
	FRI	ePc	04 45 43.2
	BRK	e(P)	04 45 46.2
	BKS	e	04 45 46.5
		iP	04 45 50.0
		iS	04 46 10.6
	JAS1	ePc	04 45 46.6
		iS	04 46 04.6
	ZSP	e	04 45 47.8
		e	04 45 51.5
	ORV	e	04 46 08.5
	MNA	e	04 46 15.2

BRK 04h45m20.9s 36.6N 121.2W
h=8km ML=3.0(4)
Bear Valley, 35 km SE of Hollister, CA

Dec 23	FHC	eP	16 15 10.9
	WDC	eP	16 15 16.4
	MIN	eP	16 15 20.1
	ORV	iPd	16 15 22.8
	BRK	eP	16 15 25.3
	BKS	eP	16 15 25.6
		i	16 15 32.5

	AMP(μm)	PER(s)
PZ	0.59	0.8

	MHC	eP	16 15 29.6
	JAS1	eP	16 15 32.5
		e	16 15 50.8
	PRS	eP	16 15 33.6
	LLA	eP	16 15 35
	PRI	eP	16 15 37.4
	FRI	eP	16 15 38.0
		e	16 15 56
	MNA	eP	16 15 39.9

USGS 16h03m50.1s 34.0N 141.5E
h=41km mb=5.5 Ms=5.1
Off East Coast of Honshu, Japan

Dec 24	BKS	e(P)	05 45 36.8
		e	05 56 31.7
		ePS	05 57 49
		eSS	06 03 09
		e(Lq)	06 10 22
		eLr	06 14 47
		e	06 22 02
		e	06 44 00

	AMP(μm)	PER(s)
LZ	4.2	20.
LN	0.82	20.
LE	4.1	20.

	WDC	e	05 45 39.3
		e	05 46 04.5
	ORV	e	05 45 42
	JAS1	e	05 45 45.8
		e	05 46 10.5
	PRS	e	05 45 46
	FRI	e	05 45 46.7
	MNA	e	05 45 54

BRK Ms=5.9 Distance=94°
USGS 05h32m35.1s 6.0S 149.6E
h=71km mb=5.6
New Britain Region

Dec 24	WDC	eP	06 40 47.1
	MIN	e(P)	06 40 56.6
	ORV	eP	06 41 04.9
	JAS1	eP	06 41 28.7
	GCC	e	06 41 31
	FRI	eP	06 41 43.6

USGS 06h39m30.4s 43.7N 127.6W
h=10km mb=4.2
Off the Coast of Oregon

Dec 24	FRI	eP	13 46 30.0
	MNA	eP	13 46 30.6
		epP	13 48 19
		e	13 49 08
	PRI	eP	13 46 32.4
		epP	13 48 24
	LLA	eP	13 46 35.0
	PRS	eP	13 46 35.9
		epP	13 48 27
	SAO	eP	13 46 37.3
	JAS1	eP	13 46 37.4
		epP	13 48 29
	MHC	ePd	13 46 41.0
		epP	13 48 34
	GCC	eP	13 46 41.0
	BRK	eP	13 46 44.9
	BKS	iPc	13 46 46.4
		i	13 46 52.5
		e	13 47 08.3
		e	13 47 38.1

	AMP(μm)	PER(s)
PZ	0.55	0.8

	ORV	ePd	13 46 47.7
		epP	13 48 38.5
	MIN	eP	13 46 49.9
	WDC	ePd	13 46 53.1
		epP	13 48 44
	FHC	eP	13 47 02.0
		epP	13 48 55

USGS 13h36m44.8s 9.5S 71.3W
h=545km mb=5.2
Peru-Brazil Border Region

Dec 24	FHC	e	16 11 57.4
	WDC	ePc	16 12 03.8
	ORV	iPc	16 12 12.6
	GCC	e	16 12 23.7
	MHC	eP	16 12 24.0
	JAS1	eP	16 12 26.3
	PRS	eP	16 12 30.0
	MNA	ePc	16 12 33.0
	FRI	eP	16 12 33.3

USGS 16h02m57.2s 53.9N 159.8E
h=33km mb=4.8
Near East Coast of Kamchatka

Dec 24	FRI	iPc	19 22 46.4
		iS	19 22 58.1
	MNA	iPc	19 22 48.2
		i(S)	19 23 02.30
	JAS1	iPc	19 22 52.5
		iS	19 23 07.8
	LLA	iPc	19 23 03.9
		i	19 23 30.2
	PRI	iPc	19 23 05.7
	SAO	iP	19 23 07.9
	MHC	ePc	19 23 08.3
	PRS	eP	19 23 10.2
	GCC	ePc	19 23 12.3
	BKS	iPc	19 23 14.3
		i	19 23 30.2
		i	19 23 44
		iS	19 23 50.6
	BRK	ePc	19 23 14.5
	ZSP	eP	19 23 14.9
	ORV	eP	19 23 16.1
	WDC	e	19 23 36.6

BRK 19h22m29.5s 37.7N 119.0W
h=5km ML=3.8(6)
Mammoth Lakes Area, CA

Dec 25	MNA	e	12 00 44.2
	JAS1	ePKP	12 00 45.0
	FRI	e	12 00 45.7
	ORV	e	12 00 48.5
	WDC	e	12 00 49.1

USGS 12h41m49.3s 59.2S 27.1W
h=33km mb=5.5

International Seismological Centre

DATE	STA	PHASE	TIME (UTC)
South Sandwich Islands Region			
Dec 26	PRI	ePKP	09 56 52.4
	FRI	ePKP	09 56 52.4
	MNA	ePKP	09 56 53.8
	PRS	ePKP	09 56 53.9
	JAS1	ePKP	09 56 55.2
	SAO	e	09 56 55.2
	MHC	ePKP	09 56 56.0
	GCC	e	09 56 56.2
	BRK	e	09 56 56.5
	BKS	iPKPc	09 56 57.8
		i	09 57 13.3
	MIN	e	09 56 59.3
	ORV	ePKP	09 56 59.7
	WDC	ePKP	09 56 59.9
USGS 09h37m59.2s 58.7S 25.5W			
h=33km mb=5.5 Ms=4.8			
South Sandwich Islands Region			
Dec 27	PRI	e	08 16 52.5
	MNA	e	08 16 54.4
	JAS1	e	08 17 01.5
	ORV	eP	08 17 13.3
		e	08 17 55.7
	WDC	e	08 17 19.8
USGS 08h07m44.0s 1.4S 77.8S			
h=186km mb=4.7			
Ecuador			
Dec 28	FHC	ePc	04 03 03.1
	WDC	iPc	04 03 04.2
		e	04 06 32.3
		e	04 06 46.7
	MIN	iPc	04 03 06.2
		e	04 06 37.8
	ORV	iPc	04 03 09.5
	ZSP	ePc	04 03 17.3
	BRK	ePc	04 03 17.5
	BKS	iPc	04 03 18.3
		i	04 03 41.5
			AMP(μm) PER(s)
		PZ	0.081 0.8
	MNA	iPc	04 03 18.3
		e	04 06 59.2
	JAS1	iPc	04 03 18.5
	PCC	ePc	04 03 18.8
	MHC	ePc	04 03 20.5
	GCC	ePc	04 03 21.4
	SAO	ePc	04 03 23.0
	FRI	iPc	04 03 23.3
	LLA	eP	04 03 24.6
	PRS	ePc	04 03 25.3
	PRI	ePc	04 03 27.3
USGS 04h50m10.7s 49.9N 78.9E			
h=0km mb=6.0 Ms=4.1			
Eastern Kazakh, S.S.R.			
Dec 28	MHC	iPc	07 19 44.1
	GCC	iPd	07 19 50.2
	PCC	iPc	07 19 53.1
	SAO	iPd	07 19 54.4
	BKS	iPc	07 19 55.7
		iS	07 20 05.6
	BRK	iPc	07 19 55.9
	ZSP	iPd	07 19 57.2
		iS	07 20 08.0
	LLA	ePc	07 19 59.4
	PRS	ePd	07 20 01.0
	JAS1	iPc	07 20 03.9
	PRI	ePc	07 20 07.4
		iS	07 20 37.0
	FRI	iPc	07 20 09.6
	ORV	iPd	07 20 18.0
	MIN	ePc	07 20 30.4
	MNA	e(P)	07 20 31.2
	WDC	ePd	07 20 32.7
	FHC	e	07 20 41.3
BRK 07h19m42.4s 37.3N 121.7W			
h=6kmR ML=3.8(4) Mo=1.6E22(2)			
Halls Valley Sequence			
Dec 28	MHC	iPc	07 35 32.4
		iS	07 35 34.0
	GCC	ePd	07 35 38.5
	PCC	ePc	07 35 41.4
	SAO	iPd	07 35 42.8
	BRK	eP	07 35 44.2
	BKS	iPd	07 35 44.3
		iS	07 35 54.0
	ZSP	e(P)	07 35 46.4
		eS	07 35 57.6
	LLA	eP	07 35 47.9
	PRS	ePd	07 35 50.0
	JAS1	ePc	07 35 52.1
		iS	07 36 07.8
	FRI	eP	07 35 58.4
	ORV	e	07 36 07.8
BRK 07h35m30.7s 37.3N 121.7W			
h=5km ML=2.5(4) Mo=2.3E19(2)			
Halls Valley Sequence			
Dec 28	FHC	eP	10 46 32
	WDC	ePd	10 46 39.0
	MIN	ePd	10 46 44.0
	ORV	ePd	10 46 48.0
	BKS	eP	10 46 54.1
		iPcP	10 48 19.3
		ePP	10 49 22
		eS	10 54 20
		eScS	10 58 36
		eSS	10 59 20
		eLg	11 01 32
		eLr	11 04 40
			AMP(μm) PER(s)
		PZ	0.038 0.8
		LZ	78 20.
		LNE	49 20.
		LNW	63 20.
	BRK	e(P)	10 46 54.8
	PCC	eP	10 46 56.2
	GCC	ePd	10 47 00.8
	MHC	eP	10 47 01.1
	JAS1	iPd	10 47 02.8
	SAO	e	10 47 06.8
	PRS	ePd	10 47 07.5
	LLA	eP	10 47 08
	MNA	ePd	10 47 09.5
	FRI	ePd	10 47 10.2
	PRI	ePd	10 47 12.2
BRK Ms=6.7 Distance=51°			
USGS 10h37m53.7s 56.2N 163.5E			
h=33km mb=6.2 Ms=7.0			
Near East Coast of Kamchatka			
Dec 28	ZSP	iPd	11 10 04.3
		iS	11 10 14.2
	BRK	eP	11 10 04.9
		e(S)	11 10 15.8
	BKS	iPc	11 10 05.2
		iS	11 10 16.0
		i	11 10 25.3
	PCC	eP	11 10 09.5
	ORV	e(P)	11 10 15.5
		e	11 10 22.5
	MHC	e(P)	11 10 15.8
	JAS1	eP	11 10 22.7
	SAO	eP	11 10 22.8
BRK 11h09m51.3s 38.5N 122.7W			
h=5kmR ML=2.6(4)			
Near Santa Rosa, CA			
Dec 28	PRI	e	11 29 54.6
	FRI	eP	11 30 09.4
	JAS1	eP	11 30 10.5
	ORV	eP	11 30 12.5
	WDC	eP	11 30 13.7
USGS 11h16m57.9s 36.5S 177.9E			
h=33km mb=4.9			
Off E Coast of N Is, New Zealand			
Dec 28	PRS	eP	13 18 47.1
	MHC	eP	13 18 49.5
	FRI	eP	13 18 52.9
	JAS1	eP	13 18 54.2
	ORV	eP	13 18 56.2
	WDC	eP	13 18 57.5
USGS 13h05m36.5s 36.7S 177.8E			
h=33km mb=5.2			
Off E Coast of N Is, New Zealand			
Dec 28	FRI	ePc	14 11 27.0
	JAS1	ePc	14 11 28.2
	ORV	eP	14 11 30.5
	WDC	ePc	14 11 32.2
	MIN	e(P)	14 11 32.6
	MNA	eP	14 11 35.8
USGS 14h58m14.7s 36.6S 177.8E			
h=33km mb=5.5			
Off Coast of N Is, New Zealand			
Dec 28	BKS	ePd	16 11 14.0
		i	16 11 17.7
		e	16 20 48
		e	16 25 05
			AMP(μm) PER(s)
		PZ	0.047 0.9
	PRI	eP	16 11 14.2
	MHC	iPd	16 11 14.4
	JAS1	iPd	16 11 19.5
	WDC	iPd	16 11 21.2
	MNA	iPd	16 11 28.1
USGS 16h59m48.5s 23.5S 179.2E			
h=553km mb=5.3			
South of Fiji Islands			
Dec 28	PRS	e(P)	18 33 24
	PRI	eP	18 33 25.8
	PCC	e	18 33 26.4
	MHC	eP	18 33 26.7
	BKS	e(P)	18 33 27.9
		ePPS	18 44 42
		eLr	18 58 30
			AMP(μm) PER(s)
		LZ	1.8 20.
		LN	1.3 20.
		LE	0.89 20.
	FRI	eP	18 33 30.0
	JAS1	iPc	18 33 31.2
	ORV	e(P)	18 33 33
	WDC	iPc	18 33 34.4
	MNA	eP	18 33 38.8
USGS 18h20m16.1s 36.6S 177.8E			
h=27km mb=5.5 Ms=5.3			
Off E Coast of N Is, New Zealand			
Dec 29	FHC	eP	01 19 56.5
	WDC	iPc	01 20 00.2
	MIN	ePc	01 20 03.1
	ORV	iPc	01 20 05.5
	BRK	eP	01 20 08.0
	BKS	ePc	01 20 08.4
		eLg	01 46 38
		eLr	01 50 26
			AMP(μm) PER(s)
		PZ	0.083 1.0
		LZ	0.54 20.
		LN	0.0 20.
		LE	0.36 20.
	PCC	eP	01 20 08.8
	GCC	eP	01 20 10.9
	MHC	eP	01 20 11.7
	SAO	e(P)	01 20 13
	JAS1	iPc	01 20 13.2
	PRS	eP	01 20 14.9
	LLA	e(P)	01 20 15.6
	FRI	iPc	01 20 17.7
	PRI	ePc	01 20 17.8
	MNA	iPc	01 20 19.0
BRK Ms=4.8 Distance=96°			
USGS 01h07m01.3s 24.8N 122.0E			
h=86km mb=5.4			
Taiwan Region			
Dec 29	PRI	iPc	06 49 39.5
		e(S)	06 49 45.1
	LLA	iPc	06 49 46.4
	PRS	eP	06 49 49.3
	SAO	iPc	06 49 53.3
	FRI	eP	06 49 53.5
		e(S)	06 50 08
	MHC	e(P)	06 50 01.3
	GCC	e	06 50 01.4
	JAS1	iPc	06 50 04.45
		iS	06 50 27.6
BRK 06h49m36.4s 36.3N 120.5W			
h=5kmR Mag=2.6			
Near Coalinga, CA			
Dec 29	ZSP	iP	16 21 31.8
		iS	16 21 47.3
	BRK	eP	16 21 32.8
		e(S)	16 21 48.2
	BKS	iPc	16 21 32.9
		eS	16 21 48
	ORV	e	16 21 38
	PCC	eP	16 21 39.2
	JAS1	iP	16 21 48.2
	SAO	e	16 21 51
BRK 16h21m13.1s 38.8N 122.8W			
h=3km ML=3.0(2)			
The Geysers, 25 km S of Clear Lake, CA			
Dec 29	FHC	iPc	21 42 33.6
		iS	21 42 40.1
	ARC	iP	21 42 33.6
		iS	21 42 40.0
	WDC	iPc	21 42 41.8
		e(S)	21 42 54
	MIN	e	21 42 50
		i	21 42 55.8
	ORV	iPd	21 43 00.2
		e(S)	21 43 26.3
BRK 21h42m25.9s 41.0N 123.6W			
h=5kmR ML=3.1(4) Mo=8.0E20(2)			
60 km ENE of Eureka, CA			
Dec 30	PRI	e	21 13 03
	BKS	e(P)	21 13 06
		eLr	21 44 44
			AMP(μm) PER(s)
		LZ	1.3 20.
		LN	0.89 20.
		LE	0.64 20.
	JAS1	i(P)c	21 13 08.8
		i	21 13 35.3
		e	21 16 29.8
	MNA	e	21 13 15
USGS 21h59m56.1s 36.7S 177.5E			
h=36km mb=5.1 Ms=5.5			
Off E Coast of N Is, New Zealand			
Dec 30	PRS	e(P)	21 50 01.6
		e	21 50 18.8
	GCC	e(P)	21 50 01.8
		e	21 50 19.2
	PCC	e(P)	21 50 03
		i	21 50 19.5
	PRI	e(P)	21 50 03.5
		i	21 50 11.9
		i	21 50 20.2
	MHC	e	21 50 04.5
		e	21 50 21.3
	BKS	eP	21 50 06.4
		i	21 50 09.7
		e	21 51 26
		ePP	21 54 22
		e	22 00 47
		e	22 01 20
		ePS	22 02 24
		e	22 03 16
		eSS	22 07 50
		e	22 10 04
		eLg	22 15 10
		eLr	22 18 56
			AMP(μm) PER(s)
		PZ	0.37 1.7
		LZ	34 20.
		LN	21 20.
		LE	17 20.
	FRI	e(P)	21 50 07.9
		i	21 50 24.4
	JAS1	eP	21 50 09.0
		e	21 50 14.0
		i	21 50 25.5
	ORV	e(P)	21 50 11
		i	21 50 27.6
	MIN	e(P)	21 50 15
		i	21 50 30.2
	MNA	e(P)	21 50 16
		i	21 50 25.5
	WDC	i	21 50 18.2
		i	21 50 28.9
	FHC	e	21 50 27
BRK Ms=6.8 Distance=93°			
USGS 21h36m56.4s 36.7S 177.5E			
h=39km mb=6.2 Ms=6.8			
Off E Coast of N Is, New Zealand			
Dec 31	BKS	ePd	10 19 58.7
		e	10 21 46
		ePP	10 23 14
		eS	10 29 40
		ePPS	10 30 28
		eSS	10 34 35
		eLg	10 39 18
		eLr	10 42 30
			AMP(μm) PER(s)
		LZ	2.1 20.
		LN	1.6 20.
		LE	1.4 20.
	FRI	e(P)	10 20 03.7
	JAS1	iPc	10 20 04.5
	ORV	eP	10 20 06.5
	WDC	ePc	10 20 07.0
	MIN	e(P)	10 20 09.0
	MNA	iP	10 20 14.7
BRK Ms=5.4 Distance=74°			
USGS 10h08m19.5s 19.6S 173.8W			
h=33km mb=5.4 Ms=5.5			
Tonga Islands			
Dec 31	FRI	eP	13 12 10.3
	MNA	iPd	13 12 12.0
	PRI	iPd	13 12 12.0
	LLA	eP	13 12 14.5
	PRS	ePd	13 12 15.0
	JAS1	iPd	13 12 17.1
	GCC	eP	13 12 19.4
	MHC	iPd	13 12 19.6
	PCC	eP	13 12 21
	BKS	ePd	13 12 22.9
			AMP(μm) PER(s)
		PZ	0.12 1.2
	BRK	eP	13 12 23.0
	ORV	iPd	13 12 26.4
	MIN	eP	13 12 28.3
	WDC	iPd	13 12 31.3
	FHC	eP	13 12 38.3
USGS 13h00m32.1s 23.0S 66.9W			
h=174km mb=5.6			
Jujuy Province, Argentina			

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APPENDIX B - MODIFIED MERCALLI INTENSITY SCALE (1956 VERSION)*

I. Not felt. Marginal and long-period effects of large earthquakes.

II. Felt by persons at rest, on upper floors, or favorably placed.

III. Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.

IV. Hanging objects swing. Vibration like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing cars rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV, wooden walls and frame creak.

V. Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.

VI. Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knicknacks, books, etc. off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D† cracked. Small bells ring (church, school). Trees, bushes shaken visibly, or heard to rustle.

VII. Difficult to stand. Noticed by drivers. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices also unbraced parapets and architectural ornaments. Some cracks in masonry C. Waves on ponds, water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.

VIII. Steering of cars affected. Damage to masonry C; partial collapse. Some damage to masonry B; none to masonry A. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.

IX. General panic. Masonry D destroyed; masonry C heavily damaged, sometimes with complete collapse; masonry B seriously damaged. General damage to foundations. Frame structures, if not bolted, shifted off foundations. Frames racked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluviated areas sand and mud ejected, earthquake fountains, sand craters.

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* 1956 version prepared by Charles F. Richter, in Elementary Seismology, 1958, pp. 137-138. W. H. Freeman and Company.

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X. Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.

XI. Rails bent greatly. Underground pipelines completely out of service.

XII. Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into the air.

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† Masonry A, B, C, D. To avoid ambiguity of language, the quality of masonry, brick or otherwise, is specified by the following lettering.

Masonry A. Good workmanship, mortar, and design; reinforced, especially laterally, and bound together by using steel, concrete, etc.; designed to resist lateral forces.

Masonry B. Good workmanship and mortar; reinforced, but not designed in detail to resist lateral forces.

Masonry C. Ordinary workmanship and mortar; no extreme weaknesses like failing to tie in at corners, but neither reinforced nor designed against horizontal forces.

Masonry D. Weak materials, such as adobe; poor mortar; low standards of workmanship; weak horizontally.