Bulletin of the Seismographic Stations

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BERKELEY—MOUNT HAMILTON—PALO ALTO SAN FRANCISCO—FERNDALE—FRESNO MINERAL—ARCATA—RENO

Earthquakes and the Registration of Earthquakes

From January 1, 1950, to March 31, 1950

BY

DON TOCHER
CAROLYN H. PENDERY
and
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EARTHQUAKE INTENSITY SCALE

Intensities are given by Roman numerals in the list of California, Nevada, and Oregon earthquakes on the following page, when sufficient information on the effects of the shock is available. Criteria of the Modified Mercalli Scale which are used to rate the intensity are:

Intensity

II	Felt by a few people only. Duration or direction not appreciable.
III	Duration or direction appreciable.
IV	Rattling of doors and windows; swinging of suspended objects.
V	Disturbance of movable objects; plaster cracked.
VI	Overthrow of movable objects; cracking of chimneys and other brickwork.
VII	Fall of some chimneys; some damage to buildings.

EARTHQUAKE MAGNITUDE SCALE

Richter magnitudes given in the list of epicenters on the next page are found from the Wood Anderson amplitudes, using the nomogram given by Nordquist, "Bulletin of the Seismological Society of America", 32:164.

Latitude and Longitude are given for most epicenters in the following list. Only those earthquakes are given for which epicenters were located. The letter represents the excellence with which the epicenter has been located, a indicating excellent, b good, c fair, d poor.

EARTHQUAKES IN NORTHERN CALIFORNIA, NEVADA, AND OREGON

Times are given in Greenwich Civil Time. Subtract 8 hours to get local (Pacific Standard) Time.

Date	G.C.T.	Richter Magnitude	Latitude North	Longitude West	Quality	Remarks
Jan. 1	23-39-09	3.1	40.5°	121.5°	d	IV at Mineral, California.
	70 shocks recorded at Mineral from same source between 2254, Jan. 1 and 1600, Jan. 2; 154 from 1600, Jan. 2 to 1600, Jan. 3; 37 from 1600, Jan. 3 to 1600, Jan. 4; 21 from 1600, Jan. 4 to 1600, Jan. 5; 15 from 1600, Jan. 5 to 1600, Jan. 6; 35 from 1600, Jan. 6 to 1600, Jan. 7.					
Jan. 3	21-41-41	2.2			d	Near Reno, Nevada.
Jan. 6	23-49-03	1.8	37° 12'	122° 11'	a	Blast?
Jan. 9	04-43-23	2.5			d	Modoc County, California.
Jan. 9	15-45-32	2.8	37° 14'	121° 36'	a	
Jan. 11	13-51-36	2.9	39.1°	117.4°	d	
Jan. 12	23-50-41	2.6	38° 01'	122° 35'	c	
Jan. 13	12-18-31	4.3	40.3°	124.4°	d	V at Ferndale, IV
	at Scotia and Cape Mendocino Light Station. Aftershock at 1233.					
Jan. 14	03-03-55	3.4	36° 40'	121° 11'	c	
Jan. 14	19-52-30	4.6	40° 13'	124° 25'	c	Felt over a small area
	along the coast of Humboldt County, California. Maximum intensity VI at Punta Gorda Light Station. Small aftershock at 2030.					
Jan. 16	19-21-25	3.8	40° 15'	121° 23'	c	V at Manzanita Lake (Lassen Volcanic National Park).
Jan. 17	22-32-08	1.8	37° 12'	122° 13'	b	Blast?
Jan. 19	10-47-24	1.9	36° 57'	121° 41'	c	
Jan. 21	17-11-41	3.5	38° 36'	119° 09'	b	
Jan. 21	23-02-45	3.5	39.2°	117.7°	d	
Jan. 27	10-47-20	4.7	42.0°	125.1°	d	
Jan. 29	00-25-07	2.0	37° 44'	120° 17'	c	
Feb. 2	00 11 33	2.0	36° 42'	121° 27'	c	

Date	G.C.T.	Richter Magnitude	Latitude North	Lontitude West	Quality	Remarks
Feb. 3	08-07-21	2.1			d	Douglas County, Nevada.
Feb. 6	23-51-04	2.1	37° 12'	122° 10'	b	
Feb. 7	04-35-01	3.6	40.1°	124.9°	d	
Feb. 9	20-47-03	3.5	40° 48'	122° 03'	c	IV at Shasta Dam. Felt by many at Power Plant.
Feb. 10	23-41-09	4.0	41.2°	124.3°	d	IV at Eureka.
Feb. 12	00-21-23	2.2	37° 26'	121° 37'	b	
Feb. 13	20-10-08	1.8	37° 11'	122° 14'	b	
Feb. 15	12-38-22	2.0	37° 33'	122° 52'	c	
Feb. 19	07-04-46	2.5	38° 45'	123° 03'	c	
Feb. 19	11-17-02	2.1			d	Northern San Benito County.
Feb. 23	22-16-18	2.0	37° 23'	121° 42'	b	
Feb. 23	22-24-03	2.6	37° 23'	121° 42'	b	
Feb. 23	22-30-40	2.2	37° 23'	121° 42'	b	
Feb. 25	14-10-21	2.7	37° 29'	121° 39'	a	
Feb. 26	06-29-41	2.3	36.7°	121.4°	d	
Feb. 26	06-45-40	3.0	39° 51'	120° 39'	c	IV at Sierra City, Sierra County.
Mar. 8	03-23-57	3.3	37° 46'	122° 10'	b	V at Moraga and Oakland. IV at Lafayette, Berkeley, and San Francisco.
Mar. 8	05-50-46	2.8	40.0°	119.0°	d	
Mar. 8	20-16-43	2.9			d	Near Pyramid Lake, Nevada.
Mar. 9	00-06-12	2.3	37° 42'	122° 31'	a	
Mar. 9	23-43-19	3.2	36° 21'	121° 13'	c	V at Robles Del Rio.
Mar. 10	12-26-32	3.4	40.7°	124.8°	d	Felt at Ferndale and Petrolia.
Mar. 11	08-03-12	3.3	38° 40'	119° 52'	b	
Mar. 12	04-22-52	3.3	39° 10'	121° 06'	c	

Date	G.C.T.	Richter Magnitude	Latitude North	Longitude West	Quality	Remarks
Mar. 12	17-05-28	3.3	39° 55'	118° 52'	c	
Mar. 13	17-17-39	3.5	39° 33'	122° 05'	c	Aftershock of Verdi, Nevada shock of Dec. 29, 1948.
Mar. 17	01-15-38	1.6	38° 22'	122° 14'	c	
Mar. 19	08-01-15	2.0	37° 53'	121° 53'	b	Aftershock of magnitude 1.5 at 08-13-05 G.C.T.
Mar. 19	16-46-00	2.7			d	Off Cape Mendocino. Felt in Ferndale.
Mar. 20	15-22-17	5.5	40° 27'	121° 28'	b	Main shock in a swarm of Mt. Lassen quakes. Felt throughout an area of about 4000 square miles in northeastern California. Maximum intensity V at Mineral, Manzanita Lake, Chester, Chico, Gridley, Lake Almanor, Magalia, Mill Creek, and Susanville. The quake was reported as felt slightly at several scattered points separate from the main felt area, including Sacramento, California and Reno and Yerrington, Nevada. No damage reported from any locality.
Mar. 20	17-22-24	2.4	37° 26'	121° 39'	c	
Mar. 20	17-47-32	2.3	37° 26'	121° 39'	c	
Mar. 23	13-25-10	4.4	41° 08'	125° 14'	c	
Mar. 23	19-11-29	2.1	37° 02'	121° 31'	b	
Mar. 25	03-25-32	3.6	36° 38'	121° 11'	b	
Mar. 27	19-09-28	4.2	40° 16'	123° 59'	c	IV at Garberville.

MT. LASSEN SHOCKS - MARCH 1950

The shock at 0722 P.S.T. (1522 G.C.T.) on Mar. 20, 1950 was the largest in a swarm of earthquakes. Twenty-nine small foreshocks were recorded on the seismograph at the Lassen Volcanic National Park Headquarters at Mineral between 0552 P.S.T. and the main shock at 0722 on March 20. The Benioff short-period vertical component seismograph at Mineral showed almost continuous activity for several hours after the main shock. Approximately 7,000 identifiable aftershocks were recorded on the short period torsion seismographs at Mineral through April 9, 1950. Many additional smaller shocks were recorded on the Benioff seismometer in the same period.

Table I shows the daily count of aftershocks recorded on the torsion seismographs, as well as the daily count of quakes with a double trace amplitude of over 10 mm.

TABLE I. SHOCKS RECORDED PER 24 HOURS.

8 A.M. to 8 A.M. P.S.T.	Shocks Recorded on: Wood-Andersons	Benioff	No. on Wood-Andersons with Double Amp. > 10 mm.
March, 1950			
20-21	768		69
21-22	500		44
22-23	855		75
23-24	660		41
24-25	605		53
25-26	600		59
26-27	400		9
27-28	174		7
28-29	111		6
29-30	118		3
30-31	142		6
31 - April 1	330		17
April, 1950			
1-2	420		39
2-3	615		42
3-4	276		10
4-5	61	84	2
5-6	75	101	1
6-7	70	91	4
7-8	87	105	9
8-9	22	57	1

TABLE II. SHOCKS FELT AT MINERAL.

Table II is a summary of the reports of shocks felt at the Park Headquarters at Mineral, about 10 miles from the epicenter. These reports were collected by Paul E. Schulz, Park Naturalist at Lassen Volcanic National Park.

Date March 1950	Time P.S.T.	Remarks
20	0725	Main shock. See local shock list for felt area.
	0855	Felt by few.
	0920	" " "
	1018	" " "
	1138	" " "
	1442	" " several.
	1635	" " few.
21	0401	" " "
	0647	" " "
	0738	" " "
	1227	" " "
	1305	" " "
	2316	" " "
22	1430±	" " "
	2045±	" " "
	2137	" " "
	2203	" " "
23	0200±	" " "
	0300±	" " "
	0910	" " "
	1345	" " "
	1630	" " "
	1633	" " several.
	1641	" " "
	2100	" " "
24	1407	
	1414	
	1648	
25	"AM"	One felt.
	2025	Felt by many.
	2027	
26	0200±	With a noticeable 5-second preliminary vibration causing sustained rattling.
	1030±	
27	"About 3 A.M."	
April 1	1500±	
	2040	
	2041	
	2050	
	2058	
	2100	
	2116	
	2130	
	2140	
	2308	
2	0230	
	0232	
	0455	Felt by many.
	0630	
	1157	
	1458	Felt by several.
	1545	
	1600±	
	2012	Felt by many.
	2335	" " several.

TABLE III. INSTRUMENTAL MAGNITUDES OF MT. LASSEN EARTHQUAKES.

Table III lists all aftershocks through March 24 with an instrumental magnitude of 2.3 or over.

Time P.S.T.	Magnitude
March 20	
0646	2.5
0722	5.5
0916	2.5
0918	2.6
1000	2.5
1016	2.7
1019	2.5
1103	3.4
1135	2.8
1227	2.3
1229	2.8
1443	3.6
1601	2.5
1633	3.1
1701	2.8
1827	2.5
2035	2.6
2233	2.9
March 21	
0105	2.5
0239	2.7
0401	3.4
0424	2.7
0642	2.5
0648	2.6
0733	2.7
1228	3.0
1304	2.6
1600	2.8
March 22	
1352	2.4
1812	2.7
1819	2.6
1822	2.9
1902	2.8
1935	3.0
2017	3.8
2137	3.5
2147	2.5
2203	2.8
2356	2.7
March 23	
0001	3.4
0033	2.7
0155	2.7
0245	2.6
0304	2.6
0308	2.7
0912	2.8
1004	2.7
1346	2.5
1631	2.8
1642	3.5
1906	2.9
2051	2.5
2146	2.6
2332	2.7
March 24	
0459	2.7
1408	3.0
1414	2.8
1422	3.5
1428	3.1
1432	2.8
1649	3.0
1813	3.4
1833	2.8

THE REGISTRATION OF EARTHQUAKES

at

BERKELEY, MOUNT HAMILTON, PALO ALTO, SAN FRANCISCO, FERNDALE, FRESNO, MINERAL, ARCATA, AND RENO

All large regional shocks and all distant earthquakes are tabulated on the following pages. Earthquakes in the Northern California, Nevada and Oregon region are included only if of magnitude 5 or greater, or if of special interest. Times of distant shocks are not normally included for Palo Alto, San Francisco, or Ferndale except in cases of defective records at Mount Hamilton, Berkeley, or Arcata, respectively.

All determinations are reduced to Greenwich Civil Time (G.C.T.). G.C.T. is 8 hours greater than Pacific Standard Time (120th Meridian). Communications regarding readings or seismograms should be addressed to:

Seismographic Station
University of California
Berkeley 4, California.

Station	North Latitude	West Longitude	Altitude Meters	Feet	Station Symbol	Present Auspices and Date Established
Berkeley	37° 52.3'	122° 15.6'	81	266	B, BG*	University of California - 1887
Mt. Hamilton	37° 20.4'	121° 38.6'	1281.7	4205	MH	Lick Observatory - 1887
Palo Alto	37° 25.1'	122° 10.8'	83	272	PA	Stanford University - 1927
San Francisco	37° 46.4'	122° 27.2'	100	328	SF	University of San Francisco - 1931
Ferndale	40° 34'	124° 16'	17	55	Fe	City of Ferndale - 1933
Fresno	36° 46.1'	119° 47.8'	88.4	290	F	Fresno State College - 1935
Mineral	40° 21'	121° 35'	1495	4906	M	National Park Service, Lassen Volcanic National Park - 1938
Arcata	40° 52.6'	124° 04.5'	60	195	A	Humboldt State College - 1948
Reno	39° 32.3'	119° 48.8'	1386	4546	R	University of Nevada - 1948

*B deonotes readings of short period instruments, BG of long period instruments (12 sec. Galitzin-Wilip).

STATION EQUIPMENT

Berkeley:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.
3 - Long-period Galitzin-Wilip.
1 - Horizontal-component Slichter.
2 - Horizontal-component 100 kg. Bosch-Omori.
1 - Vertical-component 80 kg. Wiechert.

Mt. Hamilton:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.

Palo Alto:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.

San Francisco:
2 - Horizontal-component Wood-Anderson torsion.

Ferndale:
2 - Horizontal-component 25 kg. Bosch-Omori.

Fresno:
3 Components short-period Sprengnether.

Mineral:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.

Arcata:
3 Components short-period Sprengnether.

Reno:
3 Components short-period Sprengnether.

For all stations, the three components are indicated by N, E, Z. When no letter appears, the phase is read from the vertical component only.

"c" or "d" following a recorded phase indicates compression or dilitation of the ground as indicated by the vertical component instrument.

"i" (impetus) preceding a phase designates sudden beginning of the motion; "e" (emersio) designates gradual beginning.

Maximum amplitude of earth displacement in microns and period in seconds of the indicated phases are given for the Berkeley station in the columns headed A and T. Combined horizontal amplitude of N and E components are designated by H.

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Jan. 1	B	iP	02 56 12.7	c	USCGS: 26°N, 110°W.
	BG	iSN	03 00 05		0 = 02-51-21
		iZ	01 21		
	B	eL	02 00		
	MH	eP	02 56 03	d	
		e	03 01 48		
	R	eP	02 56 15	d	
		e	01 12		
	M	eP	02 56 33	d	
		i	40	c	
		e	58 29		
		e	03 02 03		
Jan. 1	M	eP	05 37 21		
Jan. 1	MH	iP	09 45 51.9	c	
	M	iP	46 01.6	d	
Jan. 1	M	eP	10 12 05		
Jan. 1	M	eP	10 14 39		
Jan. 1	M	eP	11 45 01		USCGS: Tonga Islands Region.
Jan. 2	MH	iP	00 51 22.6	c	USCGS: 19°N, 67½°W. 0 = 00-42-26
		i	29.0	d	JSA: 18.5°N, 68.0°W. 0 = 00-42-28
	BG	eN	01 09 05		
Jan. 2	MH	eP	01 27 59	c	USCGS: 7°N, 34°W. 0 = 01-15-29
		i	28 18.3	d	
	R	eP	01 27 51		
	M	iP	01 27 58.1		
Jan. 2	B	iP	15 27 07.5	d	USCGS: 11½°S, 165°E. 0 = 15-14-54
	BG	eSE	37 22		JSA: 11.0°S, 164.0°E. 0 = 15-14-38
		eSSN	43 06		
		eN	49 12		
		eZ	51 32		
		eE	56 34		
			A T		
		PZ	2½ 4		
		MaxH	7½ 15		
	MH	iP	15 27 09.1	d	
		i	44.4	c	
		iPP	30 21.6	c	
	R	eP	15 27 20	d	
		ePP	30 39		
		eS	37 23		
	M	iP	15 27 13.4	d	
		iPcP	22.2	d	
		ePP	30 28.5		
Jan. 2	MH	iP	19 46 59.9	c	
Jan. 2	MH	iP	19 55 23.1	c	USCGS: Near Utah-Idaho Border.
		i	57 30.2		0 = 19-53-05
	M	eP	54 58		Press: IV at Corrine, Utah.
		i	55 14		
		iNEZ	56 59		
	R	e	55 09		
		e	56 21		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Jan. 2	MH	iP	22 44 48.4	d	
Jan. 3	B	iP	03 05 33.2	d	USCGS: 18°N, 121°E. O = 02-51-50
	BG	e	08 26		JSA: 18.0°N, 121.0°E. O = 02-51-55
	B	iPP	09 31.2	d	
	BG	iSKSE	16 02		
		iPS	18 23		
		iPPSN	19 29		
		iE	21 34		PKKP?
		eSSE	24 03		
		eN	31.8		
		eLE	37.3		
			A T		
		MaxH	15 19		
	MH	iP	03 05 29.7		
		e	08 43		
		ePP	09 33		
		ePPP	11 26		
	R	eP	05 36		
		e	08 55		
		ePP	09 43		
		e	16 25		
	M	eP	05 29	d	
		e	08 51		
Jan. 3	B	iP	05 58 38.9	c	USCGS: Queen Charlotte Islands Region.
		ipP	43.4	d	O = 05-46-10
	MH	iP	58 40.0	d	
		ipP	45.0	c	
		i	53.4	c	
		i	59 07.4	d	
	R	iP	58 50.6	d	
		i	59 13.9	d	
	M	e	58 44.3		
Jan. 3	BG	e	11 49.8		
Jan. 4	M	iP	09 56 12.6	c	USCGS: Kurile Islands Region.
Jan. 4	M	eP	15 23 32	d	O = 09-45-40
Jan. 5	M	eP	03 35 03		
Jan. 5	BG	e	04 47 35		
	MH	eP	37 47	c	
			58	d	
	M	eP	38 19		
Jan. 5	M	eP	16 07 26	d	USCGS: Aleutian Islands Region,
Jan. 6	M	iP	02 40 35.4		O = 16-00-47
Jan. 6	MH	eP	18 50 39	c	
			51 07	c	
Jan. 7	F	eE	09 39 54		Pasadena: 32.1°N, 116.6°W. O=09-37-35
Jan. 7	MH	iP	22 48 47.9	d	USCGS: 32°S, 65°W. O = 22-36-00
		e	49 28		
	F	eP	48 41	d	
	R	eP	48 53	d	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Jan. 8	MH	iP	20 54 36.9	c	USCGS: Tonga Islands Region.
		i	48.9	d	0 = 20-42-51
		i	55 01.0	c	
	F	eP	54 42	c	
		e	57	d	
	R	iP	52.9	c	
	M	eP	48	c	
Jan. 9	M	eP	01 32 49		USCGS: Aleutian Islands Region.
		i	52.2		0 = 01-25-30
Jan. 9	MH	iP	13 26 10.4		Pasadena: 34°05'N, 116°58'W.
		i	22.1		0 = 13-24-57. Mag. 3.9.
		iS	27 37.1		
	F	iSNEZ	26 50		
	R	eSN	28 03		
Jan. 10	BG	eSNE	03 17 17		USCGS: 11°N, 103°W. 0 = 03-05-42
		e	19 54		JSA: 10.2°N, 103.9°W. 0 = 03-05-40
		eLNE	20 55		
			A T		
		SH	9 12		
		MaxH	40 18		
	MH	eP	03 12 00	d	
		i	05.1	c	
	R	eP	19		
		e	36		
		e	22.8		
Jan. 11	M	iP	19 09 57.0	c	USCGS: 42°N, 135°E. 0 = 18-58-26
Jan. 11	MH	iP	21 42 41.6	c	Pasadena: 33°57'N, 118°12'W. Mag. 4.1
		iS	43 28.7		0 = 13-41-35. Near Southgate.
		i	48.1		IV in Pasadena.
	F	iP	42 22.4	c	
		iS	57.0		
Jan. 12	B	eP	12 17 05	d	USCGS: 17°S, 178½°W. 0 = 12-06-06
		i	05.4	c	h = 500 km.
		ipP	19 01.4	c	JSA: 17.4°S, 178.8°W. 0 = 12-06-13
		eS	26 09		h = 500 ± km.
	BG	ePNEZ	17 06	d	
		ipPNEZ	19 03	d	
		iSNEZ	26 12		
		iScSNE	26 31		
			A T		
		PZ	5 6		
		pPZ	3½ 3½		
		pPH	3 5		
		SV	8 9		
		SH	20 7		
		ScSH	15 7		
	MH	iPNEZ	17 06	c	
		e	19 01.8	c	
		ipPNEZ	04	d	
		iPP	20 06.4	c	
		i	56.9	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		i	21 57.6	d	
		e	25 17		
		eSNEZ	26 10		
		i	28 17.4		
		iP'P'	44 06.9	d	
		eSKPP'	47 04		
	F	iP	17 10.6		
		ipPNEZ	19 07.4	c	
		eE	20 15		
		eSNEZ	26 19		
		eP'P'	44 09		
	A	iP	17 09.6	c	
		ipP	19 06.1	c	
		eSNEZ	26 16		
	R	iPNEZ	17 19.3		
		ipPEZ	19 18.4		
		iSNEZ	26 36		
		eP'P'	44 05		
	M	eP	17 15	c	
		iP	15.4	d	
		iPcP	23.4	c	
		i	54.9	d	
		ipP	18 16.4	d	
		isP	19 11.2	c	
		i	22 29.9	d	
		eSNE	26 27		
		i	27 23.8		SP?
		i	28 16.8		
		e	31 58		
		i	36 11.4		
Jan. 12	B	iP	17 20 55.4	c	
	MH	iP	59.2	c	
		i	21 11.1	d	
		ipP	21.8	d	
	R	iP	17 20 59.1	d	
		ipP	21 37.1	d	
	M	iP	20 48.3	c	
Jan. 13	M	eP	00 46 55		USCGS: 37½°N, 141°E. 0 = 00-35-29
		i	47 09.2	c	
Jan. 13	MH	iP	05 08 42.9		Pasadena: 34°01'N, 116°29'W. Mag. 4.1
	F	iP	30.8	d	0 = 05-07-19
		iSE	09 18		
	M	eP	11.5		
		i	10 50.3		
Jan. 13	MH	eP	08 05 17	c	
Jan. 13	MH	iP	10 22 10.7	d	USCGS: Northern Chile. 0 = 10-10-21
	R	eP	13	d	
Jan. 13	M	iP	12 14 31.1	c	
		i	47.9	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Jan. 14	B	iP	12 19 16.9	d	40.3°N, 124.4°W. 0 = 12-18-31
		eSEZ	50		Magnitude 4.3. Felt at Ferndale,
	MH	iP	26.7	c	Scotia, and Cape Mendocino light
		i	55.5		station.
		iS	20 08.5		
	PA	eP	19 23		
		i	20 02.7		
	Fe	iPE	18 38		
	A	iPEZ	42.7	d	
		iSNEZ	50.7		
	R	eP	19 29		
	M	iPNEZ	05.3	d	
		iSNE	31.3		
Jan. 14	BG	eEZ	00 32.8		USCGS: 4½°S, 152½°E. 0 = 23-52-29
		eEZ	36		
	MH	iZ	00 06 23.6	d	
	F	e	05 50.5		
Jan. 14	MH	iP	13 36 17.6	c	
		ipP	31.5	c	
	R	eP	20.0		
Jan. 14	B	iPNEZ	19 53 16.0	c	40°13'N, 124°25'W. 0 = 19-52-30
		iEZ	33		Magnitude 4.6. Felt over a small
		iSE	46.7		area along the coast of Humboldt
	MH	iP	25.3	d	county, California. Maximum intensity
		eS	54 08		VI at Punta Gorda Light Station.
	Fe	iPNE	52 37		
		iSNE	43		
	F	eP	53 48		
	R	eP	26		
	M	iP	04.9	c	
		iSN	29.0		
Jan. 15	MH	eP	15 16 33	d	
	R	iP	42.7		
	M	iP	54.3	d	
		e	17 09	d	
Jan. 15	M	eP	21 15 14		
Jan. 16	MH	iP	00 05 23.3	d	USCGS: 17°S, 154°E. 0 = 23-52-20
	F	iP	05 30.5	d	
	R	ePNEZ	05 32		
		eN	48		
	M	eP	25	c	
Jan. 16	R	e	21 45 14		
	M	iPEZ	44 25.2	c	
Jan. 18	MH	iP	01 58 06.1	c	USCGS: 40°N, 111°W. 0 = 01-55-57
		iS	02 00 35.1		
	F	eP	01 57 53		
		eS	02 00 02		
	R	eP	01 57 37		
		eE	59 27		
		iSN	31.7		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Jan. 18	B	iP	18 59 07.9	d	
Jan. 18	MH	iP	21 27 20.0	c	
Jan. 19	MH	eP	09 35 02		Pasadena: 33°45'N, 118°26'W.
Jan. 19	M	eP	11 48 45	c	O = 01-33-48. Felt.
		i	49 01.5	d	
Jan. 19	MH	eP	13 45 41		
Jan. 20	MH	iP	18 43 44.0	c	USCGS: Southwestern Alaska.
	F	eP	44 00	c	O = 18-36-56
	R	iP	43 34	d	
	M	iP	21.5	d	
		i	44 06.4	d	PP?
Jan. 21	B	iP	14 22 30.0	c	USCGS: 36°S, 73°W, O = 14-09-54
		ipP	49.0	d	h = 100 km
	BG	iPS	33 39		JSA: 35.6°S, 71.8°W. O = 14-09-54
		eL	50.2		h = 100 km ±.
	MH	iP	22 25.3	d	
		iPcP	31.1	d	
		ipP	44.5	c	
	F	eP	22 18	d	
		ipPNZ	38.1	d	
	R	iP	29.7	d	
		ipP	48.6	d	
		e	58		
	M	iP	36.6	c	
		ipP	54.1	c	
		i	23 03.5	d	
Jan. 22	MH	iP	03 27 26.3	c	USCGS: Near West Coast of Columbia.
		i	35.4	c	O = 03-18-17
	M	eP	37.5		
Jan. 22	MH	eP	08 02 41.0	d	USCGS: 22½°S, 175°W. O = 07-50-41
Jan. 22	MH	eP	10 11 55.5	c	
Jan. 23	MH	eP	10 13 51.5	d	USCGS: 10°N, 125°E. O = 09-59-50
		ePP	17 56.5		
		e	18 24.0	d	
Jan. 24	B	iP	16 59 32.7	d	USCGS: 14½°S, 167°E. O = 16-47-18
		ipP	17 00 13.4		h = 150
		e	01 49		JSA: 15.3°S, 167.3°E. O = 16-47-26
	BG	iSE	09 38		h = 200 ± .
		eZ	10 37		
		eSSN	15 17		
			A T		
		PZ	5½ 8		
		SH	13 10		
	MH	eP	16 59 34	c	
		ipP	17 00 16.1	d	
		iPP	02 51.7	c	
		i	17 47.7	c	PKKP?
	PA	iP	16 59 32.8	c	
	F	eP	37.5		
		eE	17 00 03		
		epP	19		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		ePP	02 59		
		iP'P'	25 49.5		
	R	iP	16 59 45.6	c	
		i	17 00 09.2		
		ipP	24.7		
		eSE	09 59		
		eE	10 08		
	M	iP	16 59 39.5	c	
		i	52.2	d	
		ipP	17 00 31.5	d	
		isP	41.0		
Jan. 24	B	eE	21 58 19		Pasadena: 34°40'N, 118°50'W.
		eSE	56		0 = 21-56-59 Mag. = 4.0
	MH	iP	57 58.6	d	
		i	58 00.1		
		eS	42		
	F	iP	57 37.7	d	
		iS	58 04.6		
	R	iP	26.9		
Jan. 25	BG	eNEZ	02 53.7		USCGS: 27°S, 177°W. 0 = 02-09-38
Jan. 25	BG	eNE	08 48.7		USCGS: Kermadec Islands Region.
Jan. 25	F	iP	10 34 40.5		Pasadena: 34°44'N, 118°50'W.
		iSN	35 09		0 = 10-34-01. Mag. = 3.1
Jan. 26	B	iP	04 03 16.0	d	USCGS: Fiji Islands Region.
		ipP	05 13.5	c	0 = 03-52-14. h = 500
	MH	iP	03 15.7	c	
		iPcP	36.9	c	
		ipP	05 13.0	d	
	F	iP	03 21.2	d	
		ipP	05 17.9	d	
	R	iP	03 29.8	d	
		ipP	27.4	d	
	M	iP	03 25.4	d	
		e	04 04	c	
		epP	05 23	d	
Jan. 26	B	iP	11 18 47.2	d	USCGS: South of Fiji Islands Region.
		e	20 31		0 = 11-06-22
	BG	e(S)	29.3		
	MH	iP	18 47.8		
		i	55.7		
	F	iP	51.9	d	
	R	iP	19 01.0	d	
		e	21 14.0		
	M	iP	18 56.4	d	
			19 09.6	d	
			23.3	d	
Jan. 27	MH	iP	08 37 26.1		USCGS: Tonga Islands Region, 0=08-25-50
Jan. 27	B	iP	10 48 30.5	c	42.0°N, 125.1°W. 0 = 10-47-20
	MH	eP	40.2	d	Mag. 4.7
		i	43.9	d	
		i	49 43.9		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	F	eP	49 00		
	A	iPNEZ	47 43.4		
	R	iP	48 36.6	c	
	M	eP	48 10.9	c	
		iS	47.0		
Jan. 27	B	eP	19 29 39	d	USCGS: 17°S, 173°N. O = 19-18-09
		i	54.4		JSA: 16.9°S, 173.8°W. O = 19-18-11
		e	30 35		
	BG	eS	39.0		
		eIqNE	48.1		
		eNEZ	54.2		
	MH	eP	29 38	d	
		i	57.1	d	
		iPcP	30 04.2	d	
	F	eP	29 42	d	
	R	eP	29 52	d	
		eE	30 25		
	M	iP	29 49.0	c	
		i	30 45.0	d	
Jan. 27	R	eP	21 25 49		
		e	27 15		
		e	30 25		
Jan. 28	B	iP	19 39 40.7	d	USCGS: South of Fiji Islands.
	MH	iP	41.3	c	h = 600. O = 19-28-06
	M		41 36.5		
Jan. 30	B	eP	01 10 13	d	USCGS: 54°S, 71°W. O = 00-56-32
	BG	ePP	14 34		JSA: 53.4°S, 71.9°W. O = 00-56-32
		eSKSNE	21.1		
		eSS	29.6		
		iN	33 22		ScSScS?
		eLNE	39.6		
	MH	eP	01 10 21		
		ePP	14 26		
	F	ePP	18	d	
	R	eP	10 27		
		ePP	14 41		
		e	15 37		
		e	20 42		
		eSKSE	21 11		
		eN	24 49		
		e	49.1		
	M	eP	11 36		
		ePP	15 28		
Jan. 30	MH	iP	02 55 58.6	c	USCGS: 51½°N, 150°W. O = 02-49-49
		i	56 09.3	c	
	M	iP	02 55 35.6		
		i	40.4		
		i	49.0		
Jan. 30	M	eP	05 43 56		USCGS: Tonga Islands Region.
		e	44 56		O = 05-31-53
Jan. 31	BG	iN	07 49 45		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	MH	ePP	23 52 44		
		e	57 26		
	F	ePP	52 58	d	
	R	e(P')	51 28		
	M	e(P')	24		
		e(PP)	52 26	d	
Feb. 3	B	ePP	03 10 23		USCGS: 22°N, 122½°E. 0 = 02-51-46
		e	17 43		
	MH	e(PP)	10 21	d	
		e	11 12	d	
		e	13 20		
	R	e	10 39		
		eNEZ	53		
	M	e(P')	09 25		
		e	10 36	d	
Feb. 3	MH	iP	06 07 25.9	d	USCGS: 23°S, 179°E. h = 500
		epP	09 29		0 = 05-55-55
	M	eP	07 35	c	
		i	35.8	d	
Feb. 3	B	iP	16 51 56		USCGS: Foreshock. 54°N, 162°W.
	BG	e	55 06		0 = 16-45-29
		eSNE	57 08		
		e	17 00.4		
	MH	iP	16 52 09.0	c	
		i	24.2	c	
		i	27.4	d	
		iPP	53 11	d	
	F	eP	52 22		
		i	32		
	R	eP	02		
		e(PP)	53 00		
	M	iP	50 52.9	d	
		i	54 35	c	
Feb. 3	F	eP	18 39 04		USCGS: 43°N, 142½°E. h = 100
		epP	19		0 = 18-27-53
	R	iP	38 55	d	
		ipP	39 09		
Feb. 4	BG	e	02 16 40		USCGS: 54°N, 162°W. 0 = 02-07-53
		eSNE	19 01		
		eLNZ	21.4		
	F	eP	14 46		
		ePcP	17 07		
	R	eP	14 24		
	M	eP	04		
		i	20		
Feb. 5	BG	iPPEZ	01 42 36		USCGS: 50°S, 164°E. 0 = 01-23-30
		ePS	51 45		
		iPPS	53 18		
		eSSNE	57.7		
		eP'P'	02 02 10		
		eG	08.7		
		eLZ	12.6		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Feb. 5	B	e	12 30 21		USCGS: Near Southern Coast of Mexico.
	BG	eLNE	35.4		0 = 12-17-58
		eNEZ	38.4		
	MH	iP	24 35.4	c	
		i	46	c	
		i	25 00	d	
	R	eP	24 38		
Feb. 5	MH	iP	12 53 13.5	d	Pasadena: Southwest Pacific.
Feb. 6	BG	eN	12 09 42		
		eNE	15.6		
Feb. 7	BG	eNE	00 31 48		Pasadena: South America.
Feb. 7	B	eP	00 38 43		USCGS: 11½°S, 166½°E. 0 = 00-25-57
	BG	eSN	50 12		
		eSS	55.3		
		eLN	01 01.7		
		eNEZ	05.4		
	MH	eP	00 38 33	d	
		iPcP	52	c	
		e	40 04		
		ePP	41 49	d	
		e	42 00		
	M	eP	38 38		
Feb. 7	B	eP	10 46 22		USCGS: 46°N, 152°E. 0 = 10-37-22
		ePcP	47 45		
		e	54		
		e	49 26		
		eS	55 54		
		eScS	57 28		
		eL	11 03.2		
	MH	iP	10 46 24.1	c	
		iPcP	47 49		
	M	iP	46 37.0	d	
		e	47 38		
		i	47 49		
Feb. 7	MH	iP	21 26 26.7	d	BCIS: 8°S, 73.6°W. 0 = 21-16-10
		e	40	c	h = 160
		i	27 12	c	
	R	iP	26 19.3	c	
	M	eP	36	d	
Feb. 7	M	iP	23 08 29.1	c	USCGS: Off Southern Coast of Kyushu, Japan. 0 = 22-55-48
Feb. 8	B	iP	15 15 22.9	c	USCGS: 10°S, 160°E. 0 = 15-02-39
		ipP	34	c	
	MH	iP	24.3	c	
		ipP	36	c	
		e	45		
	PA	iP	22.2		
		ipP	33	c	
	R	eP	35.0	d	
		epP	46	c	
		e	49.5		
	M	eP	28	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Feb. 8	B	eP	18 30 34		USCGS: 48°N, 27½°W. 0 = 18-19-51
	BG	eSE	39 39		
		eN	52.3		
		iNE	57.4		
	MH	iP	30 39.5	c	
		i	42	d	
		i	47	c	
		e	32 54		
	PA	eP	30 41	d	
	R	eP	24	d	
	M	eP	24	d	
		i	28	d	
		i	29	c	
Feb. 9	B	iP	13 18 35.0	c	USCGS: Off Southern Coast of Honshu,
		i	19 22	c	Japan. 0 = 13-06-45
	BG	eLN	38.3		
		eNE	40.6		
		eN	43.1		
	M	eP	18 28	d	
Feb. 9	M	eP	16 18 36		
Feb. 9	MH	eP	20 30 39	c	USCGS: Near Bolivia-Argentina Border.
		ipP	31 14	d	h = 100. 0 = 20-18-38
	R	eP	30 41		
		epP	31 16		
	M	eP	30 51		
		epP	31 23		
Feb. 10	F	iP	03 34 02.1	c	USCGS: Northern Utah. 0 = 03-31-58
		e	55		
Feb. 10	MH	iP	17 42 37.2	c	
		i	46	d	
	R	eP	47.5	d	
Feb. 10	MH	eP	18 57 25.5	d	USCGS: Philippine Islands Region.
					0 = 18-44-00
Feb. 11	BG	eLE	02 48 01		BCIS: 43°S, 42½°E. 0 = 01-22-09
	R	eP	01 42 22	d	
		ePP	47 14		
Feb. 11	B	iP	11 41 01	c	USCGS: 15½°S, 175°W. h = 250
		i	06	d	0 = 11-29-54
		ipP	11		
		i	42 13		
	BG	eSN	50 06		
		iNEZ	10		
		i(ScS)E	50		
		eG	12 00.1		
	MH	iP	11 41 01.0	c	
		i	06.5	d	
		epP	42 01	c	
		i(sP)	36	c	
		ePP	43 42		
	F	ePN	41 06		
		epPN	42 06		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	R	iP	41 14.4	d	
		epP	42 12		
	M	eP	41 10	c	
		i	11.1	d	
		i	42 18		
Feb. 12	B	iPEZ	22 27 06.6	d	USCGS: 19°S, 178°E. 0 = 22-14-55
		i	32.7		
		e	28 15		
	BG	eE	29		
		eNZ	29 27		PP?
		e	36 45		
		iSE	37 10		
		iN	15		
		i(ScS)E	38 06		
		i	39 26		
		eE	46		
		ePKKP	48.2		
		eSSSNE	48.4		
		eLNE	51.6		
	MH	eP	27 06.1	d	
		i	14.6	c	
		eNE	18.0		
		iPcP	25.6	c	
		i	30.8	c	
		i	35.6	c	
		e(PP)	29 50.00		
	F	eP	27 11	d	
		eNZ	29 10		
	R	iP	27 19.3	d	
		eZ	37 34		
		eSE	47		
	M	eP	27 14	d	
		i	36		
Feb. 13	M	eP	06 07 00	d	USCGS: Near Coast of Northern Chile. h = 100. 0 = 05-55-00
Feb. 13	MH	iP	10 06 50.6	d	
Feb. 13	MH	eP	11 13 13	c	USCGS: Aleutian Islands Region.
	M	eP	06		0 = 11-05-20
Feb. 13	BG	eEZ	12 10.6		USCGS: Solomon Islands. 0 = 11-27-01
Feb. 14	M	eP	11 52 03		USCGS: Aleutian Islands. 0 = 11-43-55
Feb. 15	M	eP	00 25 08	c	
Feb. 15	M	eP	08 10 02		
Feb. 15	M	eP	14 55 36	d	USCGS: New Hebrides Islands Region. 0 = 14-43-07
Feb. 16	B	eP	13 02 20	c	USCGS: Pacific Ocean, Easter Island
	BG	eNE	25.0		Region. 0 = 12-50-53
		eEZ	27.8		
	F	eP	02 04		
		e	04 54		
	R	eP	02 28	d	
	M	eP	30		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Feb. 16	B	eP	14 32 51	c	USCGS: Pacific Ocean, Easter Island
	BG	eNZ	55.1		Region. O = 14-21-23
		eNE	58.7		
	F	eP	32 38		
	R	ePNEZ	55	c	
		eE	34 12		
	M	eP	33 00		
Feb. 17	B	iP	03 54 28.9	d	USCGS: 13½°N, 91°W. h = 100
		iPcP	56 48.3		O = 03-47-21
	BG	eSE	04 00 33		
		eE	03.1		
		eLN	05.0		
		eEZ	08.2		
	MH	iP	03 54 21.8	c	
		ipP	34.8		
	PA	iP	25.5	d	
		ipP	46.8		
		iPcP	56 47.3		
	F	ePNZ	54 08	c	
		epP	31	c	
		eNE	56 01		
		e	58 18		
		eSE	59 44		
	R	eP	54 24	c	
		epP	44		
		eN	58 05		
		eE	04 02 02		
		e	14.6		
	M	eP	03 54 35	c	
		i	37	c	
		e	56 36		
		i	53		
Feb. 18	B	iP	05 15 49.2		USCGS: 33°S, 112°W. O = 05-04-25
		i	16 24.4		
		e	55		
	BG	eLNZ	38.8		
	MH	eP	15 44	d	
		i	50	c	
		e	16 00	c	PcP?
	F	iP	15 40.5	c	
	R	eP	58	d	
	M	eP	16 02	d	
Feb. 18	M	eP	06 28 16	c	USCGS: 31½°N, 42½°W. O = 06-17-50
		i	25	d	
Feb. 18	MH	eP	07 42 57	c	USCGS: 31½°N, 42½°W. O = 07-32-23
	M	eP	48		
Feb. 18	M	eP	14 45 58	d	USCGS: 54°N, 164°W. O = 14-39-30
		e	46 07	c	
Feb. 19	F	eP	07 20 30	c	South Pacific?
	M	eP	32	d	
		i	47	d	
	R	eP	36		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Feb. 20	M	iP	03 24 35.7	c	USCGS: Kamchatka Region.
		i	40.2		0 = 03-15-08
Feb. 20	R	eP	14 59 44		
Feb. 21	MH	eP	20 45 08	d	USCGS: Aleutian Islands Region.
	M	iP	44 42.6	c	0 = 20-37-30
		i	58.4	d	
Feb. 21	MH	iP	22 45 47.7	c	USCGS: 55°N, 160½°E. h = 100
		e	56.5	c	0 = 22-36-31
		i	46 07	d	
		ipP	10.2	d	
		i	37		
	M	iP	45 32.5	c	
		epP	52	d	
Feb. 22	MH	iP	03 42 19.3	c	USCGS: Southwestern Bolivia,
		i	43 10	c	h = 200. 0 = 03-30-39
	M	iP	42 28.2	c	
Feb. 22	M	eP	07 01 14		USCGS: Aleutian Islands Region.
		e	20		0 = 06-54-30
Feb. 22	M	eP	14 23 46	d	USCGS: 45°N, 151°E. 0 = 14-13-26
		e	58	d	
		iPcP	24 40.7	d	
Feb. 23	MH	eP	04 59 02	d	USCGS: 55½°N, 150°E. 0 = 04-48-17
	F	eP	13	d	
	R	iP	02.2	d	
		e	05 01 25		
	M	eP	04 58 37	c	
		i	50.5	d	
		i	59 32	c	
Feb. 23	M	iP	05 27 38.4	c	P'P' of Previous quake?
Feb. 23	B	iP	08 41 00.0	c	USCGS: 50°N, 148°E. h = 500
		iPcP	35.4	c	0 = 08-31-23
		ipP	42 47.5	c	
	BG	iPP	43 26		
		ipPP	44 43		
		iN	46 27		
		iSEZ	48 51		
		isSN	51 57		
		iSSN	53 06		
		iN	55 07		
	MH	iP	41 04.7	c	
		i	05.9	d	
		ipP	42 53.0	c	
	F	iP	41 14.1	c	
		ipP	43 03.1	c	
	R	iP	41 03.2	c	
		iPcP	42.4	c	
		ipP	42 51.5	c	
		iN	43 05.2		
		e	48 22		
		eSNE	50		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	M	iP	40 52.0	c	
		i	53.2	d	
		i	41 00.5	d	
		i	12.0	c	
		i	16.6	c	
		ipP	42 38.6	d	
		e	48 39		
Feb. 23	M	eP	11 19 24		
Feb. 23	M	eP	13 29 44		
Feb. 23	M	eP	13 49 49		
Feb. 23	B	iP	17 09 42.1	d	USCGS: Kurile Islands Region.
	MH	eP	42	d	O = 16-59-01
	R	iP	46.6	c	
	M	eP	21.6	c	
		e	38		
		e	10 16		
Feb. 23	B	iP	21 57 33.4	d	BCIS: 20°S, 177½°W.
		i	42.8	d	USCGS: O = 21-45-43
		i	58 18.4	d	Wellington: h = 100
		iPP	22 00 27.8	d	
	BG	i(pP)	21 57 51.4	d	
		e	22 07 34		
	MH	iP	21 57 34.5	d	
		i	45.5	d	
		i	47.6	d	
	F	eP	38.7	d	
		e	22 07 14		
	R	iPEZ	21 57 48.0	c	
		e	22 06 27		
		eSNE	07 32		
	M	iP	21 57 43.9	d	
		i	50.2	d	
Feb. 24	M	iP	00 36 37.7	c	
Feb. 24	MH	e(P)	06 10 45		USCGS: 6°N, 77½°W. O = 06-01-42
	R	ePEZ	46		
		eNEZ	54		
	M	eP	56	c	
		e	11 03	d	
Feb. 24	M	eP	13 00 28		USCGS: North Atlantic Ocean, off
		ePcP	44		West Coast of Spain.
		e	04 19		O = 12-48-27
Feb. 24	MH	iP	16 18 13.4	d	Pasadena: h = 500 ± Near Apia.
Feb. 24	M	eP	21 31 42	c	
		e	46	d	
		i	54	c	
		i	32 21	d	
Feb. 24	M	iP	22 58 41.0	c	
Feb. 25	MH	eP	06 00 10	c	USCGS: 45½°N, 99°E. O = 05-47-09
		iPcP	17.0	d	
	F	eP	17	d	
	R	eP	05		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	M	eP	05 59 57	c	
		iPcP	06 00 03	c	
		i	01 02.3	c	
		ePP	03 03.0		
Feb. 25	MH	eP	10 04 20.5	d	USCGS: 28°N, 131°E. Riu-Kiu Islands
	F	eP	29.5		Region. 0 = 09-51-34
	R	iP	22.4	d	
		iPcP	36.4		
	M	eP	11.0		
		i	14.7	c	
		i	44.7	d	
Feb. 25	MH	iP	10 08 57.6	d	USCGS: Riu-Kiu Islands Region.
	F	eP	09 05		0 = 09-56-27
	R	iP	08 58.7		
	M	iP	49.3	d	
Feb. 25	M	eP	10 51 54		
Feb. 25	R	eP	13 39 10		
	M	eP	44		
Feb. 25	MH	iP	14 14 43.0	d	USCGS: Fiji Islands Region.
	M	iP	56.7	d	0 = 14-02-57
Feb. 25	MH	iP	21 27 12.1	c	USCGS: 17°S, 168½°E. h = 200
		epP	28 05.5	c	0 = 21-14-52
		e	09	c	
	M	iP	27 18.5		
		epP	28 12.5		
Feb. 26	B	iPNEZ	00 07 28.7	d	Pasadena: 34°37'N, 119°05'W.
		i	36.5		0 = 00-06-22. Minor damage
		eE	40		at Ventura and Santa Paula.
		e(P)	51.4		
		iSE	08 22.5		
		iNE	53		
	MH	iP	07 18.7	c	
		iSE	08 08.6		
	F	iP	07 03.4	c	
		iSN	34.1		
	R	eP	44.5		
	M	iP	59.4		
Feb. 26	M	eP	09 17 36		
Feb. 27	M	eP	03 48 56	d	
Feb. 27	M	eP	04 09 43		
		e	11 18		
Feb. 28	B	iPNEZ	10 31 15.0	c	USCGS: 46°N, 143½°E. h = 350
		ePPN	33 32		0 = 10-20-58
	BG	iSNEZ	39 43		BCIS: 46.2°N, 143.5°E. h = 340
		e(sSS)NE	47.4		0 = 10-20-58
		eGNE	49.1		CMO: h = 320
	MH	iPNEZ	31 19.9	c	Pas. Mag: 7-3/4
		ipP	32 37.6	d	
		iPP	33 54.9	c	
		i	34 15.9		
		iPPP	35 37.9	d	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		i	36 52.4		
		eSN	39 48		
		ePSNZ	40 47		
		eP'P'	59 22		
		i	38.3	c	
		iSKPP'	11 02 53.1		
		e(P'P'P')	08 09		
	Fe	iPNE	10 31 03		
		iSNE	39 13		
		eGN	48.1		
	F	iPNEZ	31 29.1	c	
		eSN	40 10		
		eP'P'	59 28		
	R	iP	31 18.6	c	
		i	31.9		
		iPPEZ	33 44		
		iSN	39 48		
		eGNE	48.5		
		eP'P'	59 42		
		iSKPP'	11 01 11.6		
	M	iPNEZ	10 31 07.3		
		iPP	33 35.6	c	
		eSN	39 27		
		eGE	48.6		
		eP'P'	59 28.2		
		i	47.2		
		e	11 01 13.0		
		eSKPP'	02 49.5		
Feb. 28	MH	iP	17 11 12.0	c	USCGS: 53°N, 159°E. O = 17-01-35
		i	14.8	d	
	M	iP	10 52.5	c	
		ipP	11 01.5	d	
		isP	25.7		
Feb. 28	MH	iP	19 11 57.9	d	Wellington: 38.75°S, 176.8°E. O = 18-58.75
		i	12 12.8		
	M	eP	12.5		
Mar. 1	B	iP'	08 43 47.0	d	BCIS: 45°S, 95°E. O = 08:23.7
		e	44 16		
	BG	eLNEZ	09 34.6		
	MH	iP'	08 43 47.3	c	
		i	51.7	c	
		i	54.3	c	
	F	eP'	36		
	R	eP'	47		
		e	53		
		eN	44 19		
	M	eP'	43 50		
		i	58	c	
		e	44 01	d	
Mar. 1	M	eP	12 32 12		
Mar. 2	M	eP	03 09 29	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Mar. 2	MH	eP	06 31 02	c	USCGS: Tonga Islands Region.
		i	16		0 = 06-19-23
	F	eP	08	c	
	R	ePEZ	18	d	
		eN	51		
	M	eP	14	d	
		i	29	c	
		i	56	d	
Mar. 2	B	iP'	18 58 38.5	c	USCGS: 59½°S, 34°W. 0 = 18-39-47
		i	47.6		
	BG	ePP	19 00 08		
		ePSNE	10.2		
		eSSNE	17.4		
		eN	26.3		
		eGN	37.1		
		eNE	40.4		
	MH	iP'	18 58 37.2	c	
		i	47.4	d	
		ePP	19 00 06		
	R	eP'	18 58 40	c	
		ePP	19 00 10		
	M	eP'	18 58 41	c	
		e	51		
Mar. 3	MH	iP	00 01 57.5	d	
	M	eP	02 08.5		
Mar. 3	MH	iP	04 24 15.5		USCGS: Tonga Islands Region.
	M	iP	25.9	c	0 = 04-12-32
Mar. 3	M	eP	07 51 17.1	d	USCGS: Kamchatka Region.
		i	19.3	c	0 = 07-42-13
		i	30.0	d	
Mar. 3	M	eP	10 19 51.5		
Mar. 3	B	eP	10 55 58.0		USCGS: 23°S, 175½°W. 0 = 10-43-52
	BG	eLN	11 20.1		
		eN	24.7		
		eEZ	28.4		
	MH	iP	10 55 56.9	c	
		i	56 01.7	d	
	M	iP	07.5	d	
		i	12.7	c	
		i	21.7	c	
	F	eP	02.5	c	
		e	59 11		
	R	eP	56 10		
		eE	29		
Mar. 3	M	eP	13 09 13	c	
Mar. 3	MH	iP'	16 00 02.5	c	USCGS: Sandwich Islands Region.
		e	09	d	0 = 15-41-09
	M	eP'	06.8	d	
		e	12	d	
Mar. 4	MH	eP	06 59 01.5		USCGS: 9°S, 158°E. 0 = 06-46-09

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Mar. 4	B	eP	15 33 52.6	c	USCGS: Pacific Ocean, Easter Island
	MH	eP	46.0	c	Region. 0 = 15-22-20
		i	55.8	d	
		e	34 31	c	
	R	ePN	33 56		
Mar. 4	B	iP'	16 07 31.3	d	USCGS: 59½°S, 34°W. 0 = 15-48-40
		i	43.2	c	(Aftershock of Mar. 2 at 1839)
	MH	iP'	30.9	c	
		i	33.1	c	
		i	44.2	c	
		iPP	08 28.5	d	
	F	eP'	07 28	d	
		e	09 04		
	R	eP'	07 32		
		e	09 06		
Mar. 5	M	e(P)	02 21 58		
Mar. 5	M	e(P)	06 59 03		
		e	13	c	
		e	19	d	
Mar. 5	MH	eP	09 33 34.0		USCGS: 18°S, 174°W. 0 = 09-21-45
		i	47.3	d	
	F	eP	30	d	
	R	eP	40	c	
	M	eP	34.5	c	
		i	55.6	d	
Mar. 5	MH	iP	14 28 30.2	d	USCGS: 14½°S, 165°E. 0 = 14-15-48
		i	32.4	c	
	F	e	36	c	
	R	e	39	d	
	M	eP	34.8	c	
		i	37.7	c	
		e	51.1	c	
Mar. 5	MH	eP	15 34 00	d	
		e	06	c	
		e	26	c	
Mar. 5	MH	iP	18 13 02.5	d	USCGS: Northern Chile. h = 100
		i	04.6	c	0 = 18-01-10
		i	06.6	d	
		epP	37.1	d	
		i	51.7	d	
	R	iP	05.6	d	
		i	55.0		
Mar. 7	BG	eSKSE	02 32 06		USCGS: 10°N, 124°E. 0 = 02-07-46
		eN	33 43		
		ePSEZ	35 03		
		iPPSE	36 02		
		iSSNE	40 42		
		e	41 58		
		eL	49.9		
	MH	eP	21 52		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		eP'	25 20		
	R	eP	21 58		
		e(P')	25 16		
		e	35 00		
		eL	58.4		
	M	eP	21 46.5	d	
		eP'	25 45		
Mar. 8	MH	eP	03 18 08.7	c	
Mar. 8	MH	eP	03 40 34		
		i	37.8		
		e	55.5		
	F	eP	48	c	
	M	eP	41.5		
		e	47.5	d	
Mar. 8	MH	eP	05 03 22.2	d	
		e	26.2	c	
	M	eP	34.0		
Mar. 8	MH	iP	06 42 16.1	d	USCGS: Near East Coast of Honshu,
		i	19.2	d	Japan. 0 = 06-30-30
	M	iP	06.7	c	
		i	10.2	c	
Mar. 9	MH	iP	05 13 16.4	d	
		i	18.6	c	
	M	eP	25.9	c	
Mar. 9	M	iP	07 03 36.0	d	USCGS: Fiji Islands Region.
Mar. 9	MH	iP	07 47 49.1		
Mar. 9	B	iP	10 13 35.6	c	USCGS: 16°N, 60°W. 0 = 10-03-39
		e(PcP)	14 23	c	
	BG	eE	37.0		
	MH	iP	13 33.5	c	
		i	37.9	d	
		i	56.2	d	
	F	eP	21.0	c	
	R	eP	24.5	c	
	M	iP	34.0	c	
		i	40.0	d	
		i	46.8	d	
		iPcP	14 27.6	c	
		i	15 09.0	c	
		e	17 51.5		
Mar. 9	MH	iP	17 44 02.7		USCGS: 61°N, 151°W. h = 150
	R	iP	43 52.7	d	0 = 17-38-02
	M	iP	39.6	d	
		i	44.4	d	
		i	49.1	c	
		i	56.7		
		iPP	44 15.3	c	
		i	20.1	c	
		e	45 11.3	c	
Mar. 10	MH	eP	03 46 48.3	d	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Mar. 10	M	eP	06 58 22.8		
Mar. 10	M	eP	13 45 09.5		
Mar. 10	B	iP	20 27 11.3	d	USCGS: Fiji Islands Region.
		i	43.9		0 = 20-15-23
		i	28 31.8		
	MH	iP	27 10.9	d	
		i	19.8	c	
		e	52.6	d	
		e	28 50.5	d	
	F	eP	27 16.5	d	
	R	eP	25.0	d	
	M	iP	21.0	d	
		i	27.0	d	
		i	33.2	c	
		e	29 04.9	c	
Mar. 11	BG	e	00 54 37		USCGS: 20°N, 99°W. 0 = 00-42-51
		e	57 50		
		e	58.5		
	MH	iP	48 27.3	d	
		iPP	55.1		
		e	56.8		
	F	eP	48 13	d	
		e	55.6		
	R	eP	48 18		
		eE	57.1		
		eNZ	57.3		
Mar. 11	M	iP	04 58 09.5	d	
		i	12.0	c	
		i	14.8	c	
		i	19.2	d	
Mar. 11	MH	iP	05 15 27.8	c	
		i	29.2	c	
		i	38.0	c	
Mar. 12	M	eP	02 50 33.8	c	USCGS: Tonga Islands Region.
		e	51 04	c	0 = 02-38-50
Mar. 12	BG	eLNEZ	07 59.0		
	M	eP	42 43	c	
		e	43 02	c	
Mar. 12	M	eP	19 03 58.1		USCGS: 5°N, 79°W. 0 = 18-54-35
Mar. 14	B	iPEZ	03 20 23.9	d	USCGS: 8°S, 74°W. h = 150
		i	44.2		0 = 03-10-02
		ipP	57.3		
	BG	esSNE	29 56		
	MH	iP	03 20 19.9	d	
		i	31.1	c	
		iPcP	46.2	c	
		ipP	53.3	d	
		isP	21 08.8		
		iPP	23 05.1		
	F	iPEZ	20 08.0	d	
		e(S)	28 24		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	A	iPEZ	20 43.3	d	
		e	53.5		
		eN	21 30		
		iE	36		
	R	iP	20 21.7	d	
		i	40.2		
		ipP	21 00		
		eSN	28 35		
		eNE	48		
	M	iP	20 29.9	d	
		i	35.4	d	
		ipP	52.4	d	
		i	22 10.0	d	
		e	22 57	c	
		iPP	23 11.8	d	
		eP'P'	49 09		
		e	53		
Mar. 16	M	eP	00 09 38		
Mar. 16	B	iPEZ	19 35 48.9	d	USCGS: 17°S, 178½°W. h = 600
		iPcP	57.6	c	0 = 19-24-56
		i	37 29.7	c	
		ipP	48.7	d	
		isP	38 42.6	c	
		eSEZ	44 52		
	MH	iP	35 49.7	d	
		iPcP	59.9		
		e	36 50.8	c	
		eS	44 56		
	PA	iP	35 49.3	d	
		ipP	37 50.5		
	F	iP	35 54.7	d	
		ipPNZ	37 55.6	d	
		eSN	45 04		
	R	ePNEZ	36 04	d	
		epP	38 04	d	
		eSE	45 16		
	M	iP	35 58.7		
		iPcP	36 12.1		
		epP	38 00.0		
		e	05.3		
Mar. 17	MH	eP	03 06 13.5		USCGS: Gulf of California.
	M	eP	40.4	d	0 = 03-02-20
		e	44.4		
Mar. 17	MH	eP	05 47 35	c	USCGS: 14°S, 173°W. 0 = 05-36-18
Mar. 18	B	iP'	04 58 38	c	BCIS: 57°S, 24°W. 0 = 04:39.6
		i	47.4		
		i	55.5		
	BG	eNZ	05 43		
		iP'	04 58 38.6	c	
	M	iP'	41.3	d	
		i	52.0	d	
		i	59 03.3	d	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Mar. 18	R	eP	18 30 36		USCGS: 18½°S, 67½°W. h = 200 O = 18-18-04
Mar. 20	B	iPNE	15 22 59.6		40°27'N, 121°28'W. O = 15-22-17
		i	23 00.0		
		iN	14.3		Felt widely around Mt. Lassen and
		iSE	29.6		in the Sacramento valley.
	MH	eP	06.1	d	Magnitude 5½.
		iNEZ	08.9	d	
		iSN	41.3		
		iE	46.5		
	PA	iPNZ	06.9	d	
		iSNE	43.9		
	SF	iPN	01.4		
		iSNE	34.5		
	Fe	iPN	22 54		
		iSN	23 28		
	F	iP	18.4	c	
		i	23.9		
		iE	24 19.3		
	A	iPEZ	22 52.4	c	
	R	iP!NEZ	44.6	c	
	M	iP!NEZ	19.9	c	From NE.
Mar. 21	MH	iP	06 15 18.8	d	
Mar. 21	MH	eP	21 04 43.0	d	USCGS: Fiji Islands Region.
		i	50.3	c	O = 20-52-53
		i	05 09.5		
Mar. 22	MH	iP	15 56 25.9	d	
		ipP	54.8		
Mar. 23	B	iPEZ	04 17 32.3	d	Mt. Lassen aftershock.
		iSNEZ	18 06.0		
	MH	iP	17 40.4	d	
		iS	18 17.6		
	F	iP	17 57.9		
		iSE	18 45.5		
	A	iP	17 28.9	c	
		iSN	48.7		
		iN	56.2		
	R	eP	17.2	d	
		iSN	38.5		
Mar. 23	B	iP	08 01 47.9	c	Mt. Lassen aftershock.
		eSE	02 20.9		
	MH	iP	01 55.5	d	
		iS	02 35.1		
	F	eP	10		
		eSE	03 04		
	R	iPEZ	01 33.9	d	
Mar. 23	MH	eP	08 20 22	d	USCGS: Fiji Islands Region.
		e	33		O = 08-08-33
	R	eP	36		
Mar. 23	M	iP	19 05 46.6	c	
		i	51.9	d	
		i	54.8	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Mar. 26	R	eP	04 24 23		Mt. Lassen aftershock.
		eSE	43		
Mar. 26	B	iPNZ	04 26 15.5	c	Mt. Lassen aftershock.
		iSNE	47.8		
	MH	iP	22.3	c	
		iSEZ	27 01.6		
	F	iPEZ	26 40.2	c	
	A	iP	11.8	c	
		iSN	35.5		
	R	iPNZ	25 59.8	d	
		iSE	17.7		
Mar. 26	MH	iP	07 52 16.2	c	
Mar. 27	MH	eP	06 28 48.7		USCGS: Western Argentina.
		i	51.3	c	0 = 06-16-05
		i	29 11.5	c	
	R	eP	28 40		
Mar. 27	B	iPNEZ	13 12 33.5	c	USCGS: 53½°N, 173°E. 0 = 13-04-04
		e	47.6		
		i	58.6		
		i	13 47.4		
	BG	e(PcP)	14 12		
		iSNE	19 22.9		
		iN	20 48		
		eScSNE	22 10		
		eLNEZ	23.0		
		eN	24.5		
	MH	iP	12 39.0	c	
		i	50.4		
		i	57.9		
		i	15 53.3	d	
	M	iP	12 24.1	c	
		i	27.6		
		i	13 40.2	c	
	F	iP	12 50.7	c	
		eSN	19 54		
	R	iP	12 37.2	c	
		eN	19 30		
		eSE	38		
		eL	28.8		
Mar. 27	B	iP'	21 37 40.2	d	USCGS: 5½°S, 103°E. Slightly deeper
		e	58	c	than normal. 0 = 21-18-32
		i	39 29.2		
		eLE	22 20		
	MH	iP'	21 37 39.9	c	
		i	42.2	c	
		e	39 44		
		e	40 32		
		e	48		
	F	eP'	37 42	d	
		e	39 28		
		iSKP	41 03		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	R	eP'EZ	37 42	d	
		eE	38 25		
	M	iP'	37 37.1	c	
		i	38.8	c	
		i	44.5	c	
Mar. 28	MH	eP	12 44 24.2	c	USCGS: Off East Coast of Honshu,
		epP	41.4	c	Japan. h = 100 0 = 12-32-48
	M	eP	14.8	c	
		e	26.8	d	
Mar. 28	MH	eP	20 17 35.4	d	USCGS: 14°S, 166°E. h = 200
		ipP	18 26.3	c	0 = 20-05-16
		e	20 02	c	
	R	eP	17 45	c	
		epP	18 37	c	
	M	eP	17 41	d	
		epP	18 32	c	
Mar. 29	B	eP	13 04 49.2	d	USCGS: 27°S, 177°W. 0 = 12-52-53
		e	05 13	d	
	BG	eLN	29.9		
		eNEZ	33		
	MH	eP	05 16	d	
		i	20.7	d	
		i(PcP)	37.5	c	
	F	eP	20		
		e(pP)	35		
		e	51		
	R	iPNEZ	31.4	c	
		iE	43.8		
	M	eP	25.6	d	
		i(pP)	42.0	c	
		i	06 25.9	c	
Mar. 29	B	iP	17 54 52.0	c	USCGS: 3°S, 137½°E. 0 = 17-41-07
		i	55 16.3	c	
		e	56 20		
		iPP	58 40.0		
	BG	eNE	18 00.3		
		eSKSE	05 26		
		iSSE	13.4		
		eLE	25.8		
		e	28.0		
	MH	iP	17 54 55.1	d	
		i	59.9	c	
		i	55 19.5	c	
		ePP	58 50		
	F	iP	55 03		
		e	59 30		
	R	ePN	55 00		
		eEZ	01	c	
		eN	16		
		e	59 34		
		eSKSNEZ	18 05 38		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	M	iP	17 54 54.1	d	
		i	57.9		
		ePP	58 44		
		e	18 11 46		
Mar. 30	M	eP	02 02 01	d	
Mar. 30	MH	eP	16 58 42	c	USCGS: 40½°N, 30°W. O = 16-47-40
	M	eP	30	c	
		e	40		
Mar. 30	R	eP	21 55 20		
		e	56 40		
	M	iP	55 26.8	c	
Mar. 30	B	eP	22 14 09	d	USCGS: 22°S, 170°E. O = 22-01-19
		epP	17	d	
	MH	eP	08	d	
		i	18.7	c	
		i	24.3	d	
	R	eP	19		
	M	eP	11	d	
		i	32.1	c	
Mar. 31	MH	iP	12 58 13.5	c	USCGS: Off coast of Central Peru.
		i	29.0	d	O = 12-47-40
Mar. 31	MH	eP	15 47 19		USCGS: 34°N, 143°E. O = 15-35-39
	M	eP	10		
		e	26		
Mar. 31	MH	eP	22 49 16		
		e	29	c	
		e	34	c	

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BERKELEY—MOUNT HAMILTON—PALO ALTO
SAN FRANCISCO—FERNDALE—FRESNO
MINERAL—ARCATA—RENO

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From April 1, 1950, to June 30, 1950

BY
DON TOCHER
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and
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EARTHQUAKE INTENSITY SCALE

Intensities are given by Roman numerals in the list of California, Nevada, and Oregon earthquakes on the following page, when sufficient information on the effects of the shock is available. Criteria of the Modified Mercalli Scale which are used to rate the intensity are:

Intensity

II	Felt by a few people only. Duration or direction not appreciable.
III	Duration or direction appreciable.
IV	Rattling of doors and windows; swinging of suspended objects.
V	Disturbance of movable objects; plaster cracked.
VI	Overthrow of movable objects; cracking of chimneys and other brickwork.
VII	Fall of some chimneys; some damage to buildings.

EARTHQUAKE MAGNITUDE SCALE

Richter magnitudes given in the list of epicenters on the next page are found from the Wood Anderson amplitudes, using the nomogram given by Nordquist, "Bulletin of the Seismological Society of America", 32:164.

Latitude and Longitude are given for most epicenters in the following list. Only those earthquakes are given for which epicenters were located. The letter represents the excellence with which the epicenter has been located, a indicating excellent, b good, c fair, d poor.

EARTHQUAKES IN NORTHERN CALIFORNIA, NEVADA, AND OREGON

Times are given in Greenwich Civil Time. Subtract 8 hours to get local (Pacific Standard) time, or 7 hours to get Pacific Daylight Time (P.D.T. in effect in California after 0200, April 20, 1950).

Date 1950	G.C.T.	Richter Magnitude	Latitude North	Longitude West	Quality	Remarks
Apr. 3	22-07-52	2.7	36° 47'	122° 07'	b	
Apr. 9	12-01-36	3.5	40° 27'	124° 41'	c	
Apr. 10	20-43-54	3.2	37.6°	121.3°	d	
Apr. 10	22-55-54	3.0	37° 58'	118° 44'	c	
Apr. 13	17-46-41	3.5	40° 25'	121° 23'	b	27 aftershocks recorded on Mineral seismographs in following 14 hours.
Apr. 14	01-31-48	2.8	37° 27'	121° 40'	b	
Apr. 16	18-47-32	3.4	37° 56'	122° 16'	a	IV at Berkeley.
Apr. 24	09-06-14	1.7	37° 51'	121° 55'	b	
Apr. 24	09-09-27	1.7	37° 51'	121° 55'	b	
Apr. 26	03-18-11	2.6	36° 58'	121° 40'	c	
May 1	20-01-33	1.7	37° 12'	122° 12'	b	Blast?
May 2	04-43-05	3.8	40.6°	127.6°	d	
May 5	11-01-49	3.5	39° 06'	119° 41'	c	
May 6	02-14-35	1.8	37° 43'	121° 55'	b	
May 8	12-28-18	3.4	38.7°	119.9°	d	Felt slightly at Bijou (Lake Tahoe).
May 11	08-48-21	2.8	37° 00'	121° 41'	b	
May 13	08-46-10	4.5	40.5°	127.5°	d	
May 16	23-20-35	3.6	40° 14'	124° 06'	c	
May 20	09-15-27	1.5	37° 58'	121° 59'	c	
May 24	01-46-57	2.9	36° 26'	120° 46'	c	
May 27	23-54-11	2.4	37.9°	120.3°	d	
May 29	10-21-10	3.9	41.4°	122.3°	d	

Date 1950	G.C.T.	Richter Magnitude	Latitude North	Longitude West	Quality	Remarks
June 2	10-35-51	4.2	41.3°	123.4°	d	
June 2	17-25-10	3.6	36° 56'	121° 39'	c	
June 3	05-39-16	4.0	40.8°	124.4°	d	Press: "Sharp" at Eureka.
June 3	06-34-03	2.7	38° 01'	122° 18'	a	
June 6	16-34-06	3.1	39° 33'	120° 05'	c	
June 6	17-46-55	3.0	40.8°	123.7°	d	
June 8	01-19-56	2.3	37° 48'	121° 56'	b	
June 9	13-07-44	4.8	41° 17'	125° 44'	c	
June 10	03-28-55	2.2	36° 56'	121° 39'	b	
June 13	08-11-37	3.5	38° 42'	120° 05'	b	II near Jackson, Amador County, California. Aftershocks at 0832 and 1339.
June 17	11-50-50					Off coast of northern Calif. Epicenter and origin time by U.S.C.G.S.
June 17	12-04-16					Off coast of northern Calif. Epicenter and origin time by U.S.C.G.S.
June 17	23-37-25	2.8	37° 53'	121° 56'	a	Aftershock at 2346.
June 19	18-30-15	4.2	44°	127°		Epicenter and origin time by U.S.C.G.S.
June 22	12-44-46	3.6	39.7°	120.4°	d	Foreshock.
June 22	17-13-18	4.1	39.7°	120.4°	d	
June 23	08-45-32	2.2	37° 13'	121° 27'	c	
June 23	15-38-49	1.9	38° 50'	122° 04'	b	Press: Felt in East Oakland.

THE REGISTRATION OF EARTHQUAKES

at

BERKELEY, MOUNT HAMILTON, PALO ALTO, SAN FRANCISCO, FERNDALE, FRESNO, MINERAL, ARCATA, AND RENO

All large regional shocks and all distant earthquakes are tabulated on the following pages. Earthquakes in the Northern California, Nevada and Oregon region are included only if of magnitude 5 or greater, or if of special interest. Times of distant shocks are not normally included for Palo Alto, San Francisco, or Ferndale except in cases of defective records at Mount Hamilton, Berkeley, or Arcata, respectively.

All determinations are reduced to Greenwich Civil Time (G.C.T.). G.C.T. is 8 hours greater than Pacific Standard Time (120th Meridian), or 7 hours greater than Pacific Daylight Time (105th Meridian). P.D.T. was in use in California after 0200, April 30, 1950. Communications regarding readings or seismograms should be addressed to:

Seismographic Station
University of California
Berkeley 4, California.

Station	North Latitude	West Longitude	Altitude Meters	Feet	Station Symbol	Present Auspices and Date Established
Berkeley	37° 52.3'	122° 15.6'	81	266	B, BG*	University of California - 1887
Mt. Hamilton	37° 20.4'	121° 38.6'	1281.7	4205	MH	Lick Observatory - 1887
Palo Alto	37° 25.1'	122° 10.8'	83	272	PA	Stanford University - 1927
San Francisco	37° 46.4'	122° 27.2'	100	328	SF	University of San Francisco - 1931
Ferndale	40° 34'	124° 16'	17	55	Fe	City of Ferndale - 1933
Fresno	36° 46.1'	119° 47.8'	88.4	290	F	Fresno State College - 1935
Mineral	40° 21'	121° 35'	1495	4906	M	National Park Service, Lassen Volcanic National Park - 1938
Arcata	40° 52.6'	124° 04.5'	60	195	A	Humboldt State College - 1948
Reno	39° 32.3'	119° 48.8'	1386	4546	R	University of Nevada - 1948

*B denotes readings of short period instruments, BG of long period instruments (12 sec. Galitzin-Wilip).

STATION EQUIPMENT

Berkeley:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.
3 - Long-period Galitzin-Wilip.
1 - Horizontal-component Slichter.
2 - Horizontal-component 100 kg. Bosch-Omori.
1 - Vertical-component 80 kg. Wiechert.

Mt. Hamilton:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.

Palo Alto:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.

San Francisco:
2 - Horizontal-component Wood-Anderson torsion.

Ferndale:
2 - Horizontal-component 25 kg. Bosch-Omori.

Fresno:
3 - Components short-period Sprengnether.

Mineral:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.

Arcata:
3 Components short-period Sprengnether.

Reno:
3 Components short-period Sprengnether.

For all stations, the three components are indicated by N, E, Z. When no letter appears, the phase is read from the vertical component only.

"c" or "d" following a recorded phase indicates compression or dilitation of the ground as indicated by the vertical component instrument.

"i" (impetus) preceding a phase designates sudden beginning of the motion; "e" (emersio) designates gradual beginning.

Maximum amplitude of earth displacement in microns and period in seconds of the indicated phases are given for the Berkeley station in the columns headed A and T. Combined horizontal amplitude of N and E components are designated by H.

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	M	i	02.6	c	
		i	26.8		
	R	iPNZ	12.9	c	
		i	29.9		
		eE	54		
		iN	33 09.9		
		iE	35 26.7		
		iN	27.3		
Apr. 4	MH	iP	03 55 23.0	d	USCGS: 30°N, 130½°E. O = 03-42-46.
		e	30.8		
		i	56 13.6	d	
	M	eP	55 13.8	c	
		e	49.3	d	
	R	iP	23.5		
		e	38		
		e	04 00 41		
Apr. 4	M	e	06 06 06		
Apr. 4	B	eP	18 56 42.5	c	USCGS: 52°N, 101°E. O = 18-44-10.
		e	50.1	c	Pas. Mag. 6½.
	BG	iSNEZ	19 07 08		
		eE	10 44		
		eNE	12.3		
		eE	15 48		
		eN	22.9		
		eE	24.8		
		eNE	27.0		
		e	27.9		
	MH	eP	18 56 46.9	c	
		i	57 12.3	c	
		i	58 18.8	c	
	F	eP	56 48.0	c	
		e	59 46	c	
		e	19 00 48	c	
		eN	03 53		
	M	eP	18 56 25.6	d	
		iPcP	39.0	c	
	R	ePEZ	33		
		e	38	d	
		eE	47		
		eN	52		
		ePP	59 26		
		e	38	c	
		eSE	19 06 56		
		e	07 53		
		eLE	24.9		
		e	28.9		
		eN	33.2		
Apr. 4	R	e	20 00 18		
Apr. 4	MH	eP	20 49 50.6	c	
		e	50 08.6	c	
Apr. 5	B	iP	01 24 56.4	d	USCGS: 52°N, 177°W, O = 01-17-15.
		i	25 02.0	d	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	BG	eSNE	31 16		
		iN	34 25.0		
		eNE	34.3		
		iSSN	34 40		
		eLNEZ	36.5		
	MH	eP	25 01.5	c	
		i	07.7	d	
		i	34.5	d	
		i	41.9	d	
		ePcP	27 04.5		
		e	30 52.5		
	F	iP	25 16.5	d	
		eE	34		
		eN	27 18		
		eE	36		
		e	31 37	c	
		eN	32 24		
		eN	33 59		
	M	eP	24 46.6	c	
		i	49.6	d	
		i	57.4	c	
	R	eP	25 00.5	d	
		i	03.8		
		iE	54.7		
		i(PcP)	26 51.9	d	
		eEZ	30 53		
		eSN	31 16		
		eEZ	20		
		e	42.6		
Apr. 5	MH	eP	05 57 34.2		
		e	54.1		
	M	e	58 07.5	c	
	R	e	57 44.0		
Apr. 5	MH	eP	09 45 16.2	c	
Apr. 5	MH	eP	10 25 32.4	d	USCGS: Kermadec Islands Region
		e	56.9	d	0 = 10-12-56.
Apr. 5	MH	iP	13 16 18.3	d	
Apr. 5	BG	eN	18 47.4		USCGS: 54°N, 36°W. 0 = 18-13-53.
	MH	eP	23 47.7		
		e	24 11.7		
Apr. 6	M	e	03 07 42.4	d	USCGS: Alaska Peninsula. 0 = 03-01-55.
Apr. 7	MH	iP	05 03 33.0	d	
Apr. 10	BG	eLN	06 53.4		
Apr. 10	B	iPEZ	16 57 57.6	d	USCGS: 5°N, 76½°W. 0 = 16-48-38.
		e	59 00.5	d	
	PA	iP	57 55.8	d	
		e	58 08.5	d	
		e	38.5	c	
		e	59 03.0	c	
	F	iP	57 39.4	d	
		e	58 09	d	
	M	iP	06.5	d	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		i	08.6	c	
		i	22.3	d	
		i	47.4	c	
		iPP	17 00 07.1	c	
	R	iP	16 57 41.6	d	
		i	58 01.3	d	
		iNZ	24	d	
		eN	59 21		
		ePP	38	d	
Apr. 12	MH	eP	04 41 20.8	d	
		i	30.1	c	
	M	eP	36.0		
Apr. 12	MH	eP	08 24 16.7	d	
		e	24.0		
Apr. 12	MH	iP	16 09 18.7	d	
Apr. 13	MH	iP	06 58 08.7	c	USCGS: 13½°N, 145½°E. O = 06-45-36.
		i	12.9	c	
	R	e	15.5	d	
Apr. 14	MH	iP	06 56 52.4	c	
Apr. 14	B	iP	07 39 58	c	
		eEZ	40 01		
Apr. 14	MH	e(P)	11 06 26.3		USCGS: 48°N, 122½°W. O = 11-03-48.
	M	eP	11 05 45.6	d	
		i	06 03.2		
	R	ePNEZ	02	d	
		e	33	d	
		e	40	d	
		e	07 44		
		e	08 42		
Apr. 14	M	iP	13 31 44.0	d	South of Fiji Islands Region. h = 600. O = 13-20-03.
Apr. 14	B	iP	20 11 44	c	USCGS: 36°S, 103°W. O = 19-59-58.
		i	55	d	
	BG	eSSN	26 32		
		eE	32.4		
		eNZ	35.9		
	MH	iP	11 41.5	c	
		i	50.1	d	
		i	12 01.2	d	
		i	14.0	d	
		e	13 01.0		
	F	eP	11 35	c	
	M	eP	56.1	c	
		i	59.8	c	
		i	12 29.8	c	
	R	eP	11 51.5	c	
		eN	12 00		
		e	02	c	
		eNZ	22	c	
		eE	56		
		eN	13 22		
		eE	56		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		eE	19 02		
		eSE	22 00		
Apr. 15	M	iP	01 26 26.6	c	
		i	28.8		
Apr. 15	MH	eP	07 09 51.8	d	USCGS: Tonga Islands Region. h = 200.
		e	10 00.4	d	0 = 06-58-20.
		e	10 41.0		
	M	eP	02.1	c	
Apr. 15	MH	eP	08 27 25.2	c	
		i	39.8		
	M	eP	32.0	d	
		e	36.6	c	
		e	44.4	d	
Apr. 15	B	eP	14 58 24		USCGS: 14°N, 91°W, h = 100.
	BG	eSNE	15 04 13		0 = 14-51-25
		eNE	09.0		
		e	11.7		
		eNEZ	13.3		
	MH	eP	14 58 21.5	c	
		i	22.6	d	
		i	30.1	d	
		i	37.1	d	
		i	59 05.4		
	F	iP	58 07.1	c	
		i	16.9	c	
		i	51.0		
		i(PP)	59 35.0	c	
		i	49.0		
	M	iP	58 36.5	d	
		i	57.3	d	
		eS	15 04 45		
Apr. 16	B	eP	16 30 36	c	USCGS: 36½°N, 140½°E. 0 = 16-19-00.
		i	37	d	
		i	40	d	
		i	32 00	c	
	MH	iP	30 44.4	c	
		i	31 00.1	c	
	M	eP	30 30.6	c	
	R	eP	41	d	
		eN	31 00		
Apr. 16	M	eP	21 29 05.8	d	
Apr. 16	B	iP	21 50 58	c	USCGS: 49°N, 129°W. 0 = 21-48-02.
		iEZ	51 03	d	
		i	30		
	BG	iEZ	53 23		
		eN	38		
		eEZ	54 38		
		iNZ	56 04		
	MH	eP	51 07.5	c	
		i	25.3	d	
		i	46.7	d	
	F	iP	23.3	d	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		iN	28.9		
		i	37.7	c	
		eN	55.5		
		i	52 22.4	c	
		eN	32.5		
		e	53 05		
		eSE	20		
	M	iP	50 31.5	c	
		i	50.2	c	
		e	54 27.5	c	
	R	eP	50 51	c	
		e	51 01	d	
		eN	07		
		e	16	c	
		eE	22		
		eE	30		
		e	52 35		
		e	54 51		
		eN	55 24		
		eN	57 10		
Apr. 17	M	eP	03 52 56.1		
Apr. 17	M	iP	12 18 20.3		
Apr. 17	M	iP	13 58 51.5		
Apr. 18	M	eP	13 48 58.1	c	
Apr. 18	B	eP	14 40 03	d	USCGS: 4½°S, 106°W. 0 = 14-31-46.
		e	24	c	
		e	34	c	
	BG	eSNE	46 49		
		eN	50 18		
		eE	51.3		
		eNZ	52.3		
		eN	55.3		
	MH	eP	39 56.9	c	
		i	40 00.0	c	
		i	16.2	d	
		i	35.9	c	
		e	55 40		
	F	eP	39 48.0	d	
		eN	40 59		
		e	57 32		
		e	51		
	M	eP	40 18.4	c	
		e	55 27		
	R	ePNZ	40 11	d	
		eNE	17		
		eNEZ	30	d	
		eE	42		
		eSN	46 56		
		e	47 02		
		eEZ	54.8		
Apr. 19	B	iP	16 19 19.3	d	USCGS: 17½°S, 169°W, h = 600.
		i	28.0	d	0 = 16-08-24.

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		e	20 32.0		
		epP	21 19.5		
	BG	eNE	55.9		
	MH	iP	19 19.8	d	
		i	23.0	c	
		i	30.9	d	
		epP	21 15.0		
	F	iP	19 24.4	d	
	M	eP	28.6	d	
		e	41.6	d	
	R	ePNZ	33	d	
		e	48	d	
		eN	20 28		
		eE	21 26		
		epP	32		
		eE	42		
Apr. 20	MH	eP	01 04 00	d	
		i	13.0	c	
Apr. 20	BG	eP	10 01 16.4	d	USCGS: 45°N, 150°E. 0 = 09-50-44.
		eNE	24		PAS: Mag. 6½.
	B	i	28.5	c	
		eEZ	38		
		e	04 12	d	
	BG	eSNEZ	09 44		
		eE	10 10		
		eN	17.1		
		eN	19.5		
		e	20.0		
		e	20.9		
	MH	iP	10 20.6		
		i	25.1		
		e	32.9		
		i	44.6		
		iPcP	02 27.1		
	F	eP	01 31	c	
		eEZ	42	c	
		e	54	c	
	M	eP	08.1	d	
		i	10.4	d	
		i	21.0	c	
		i	02 23.3	d	
	R	eP	01 20.5	d	
		e	42	d	
		eE	54		
		eE	02 33		
		eSN	09 49		
Apr. 20	B	eP	17 32 24.7		USCGS: 34°N, 3°E. 0 = 17-19-14.
	MH	iP	25.4		
		i	30.3		
		e	36 04		
	F	eP	32 22	c	
	M	eP	13.5	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		i	21.5		
	R	eP	13	c	
		eN	27		
		eN	32		
		e	34		
Apr. 22	M	eP	08 08 49.5	c	
Apr. 22	M	eP	10 28 03.1	c	
		e	18.1		
Apr. 22	MH	eP	12 41 39.0	c	USCGS: Samoa Islands Region.
		e	42.4	d	O = 12-30-05.
Apr. 23	MH	iP	10 27 53.3	c	USCGS: Fiji Islands Region. h = 600.
		i	56.1	d	O = 10-17-00.
		i	28 02.1	c	
Apr. 25	MH	eP	16 02 47.9	c	
		i	57.4		
Apr. 25	BG	eSNZ	22 41 14.5		USCGS: 43½°N, 127½°W. O = 22-38-07.
		e	41.9		
		eN	43.0		
		e	44.1		
	MH	eP	39 57.3	c	
		i	40 03.9	d	
	F	eP	17	c	
	M	iP	39 29.4	d	
		i	41.2		
		e(S)	40 52.5		
	A	ePE	39 14		
		e	38		
		e	40 09		
		eN	18		
		eE	22		
		eN	45		
		eNZ	41.1		
		e	44.2		
	R	eP	39 52		
		eN	40 07		
		e	13		
		eNZ	34		
		eE	44		
		eN	42 12		
Apr. 26	B	iP	07 16 54.5	c	USCGS: 34°N, 135°E. Slightly deeper
		ipP	17 07.0	d	than normal. O = 07-04-48.
		e	18.5	d	PAS: Mag. 6-3/4.
		e	18 08		CMO: 33.8°N, 135.8°E.
	BG	ePPE	20 00		
		iSNEZ	26 46		
		e(ScS)N	27 13		
		eE	31		
	MH	iP	16 59.1	c	
		ipP	17 12.3	c	
		i	19.7	d	
		i	37.1	d	
		i	18 05.7	d	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	F	iP	17 07.2	c	
		ipP	20.0	c	
		i	45.4	d	
		e	19 28	d	
		e	24 22	c	
		eE	34		
		eSNE	26 54		
	M	eP	16 45.6	c	
		i	50.0	c	
		ipP	17 02.6	c	
		i	21.8	d	
		ePP	19 55.4	d	
		eS	26 48		
	R	iPEZ	16 59.6	c	
		ipP	17 12.1	c	
		eNE	26		
		e	37	d	
		e	52	d	
		e	18 16	d	
		eN	25 59		
		e	26 02		
		eN	17		
		eSNE	40		
		iN	56		
		eEZ	27 05		
Apr. 26	B	iP	12 25 42.1	c	USCGS: 53°N, 170°W, h = 60.
	BG	eN	29 09		0 = 12-18-28.
		e	29		
		eNZ	32 30		
		eN	34.7		
		eEZ	36.0		
	MH	iP	25 24.6	d	
		ipP	40.2	c	
		iPcP	27 52.4	d	
	F	eP	25 47	c	
		epP	26 00	d	
		e	42		
		eS	31 42		
	M	eP	25 18.9	c	
		ipP	36.4	d	
		eS	31 28.2	c	
	R	eP	25 32.5	c	
		epP	49.5	c	
		iE	52.0		
		eSN	31 20.5		
		eEZ	34		
Apr. 27	M	eP	14 28 59.4	c	USCGS: Kurile Islands Region. 0=14-18-30.
Apr. 28	MH	iP	17 25 10.6	c	
Apr. 29	MH	eP	20 34 30.2	d	USCGS: New Hebrides Islands Region.
		e	42.9	d	h = 100. 0 = 20-21-58.
	F	eP	42	c	
		e	52	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		e	35 56	d	
	M	eP	34 34.1	d	
		epP	53.0	d	
	R	eP	50	d	
		e	35 03	d	
Apr. 30	B	eP	10 39 35.8	c	USCGS: 24½°S, 112°W. O = 10-29-03.
		e	44 45		
	BG	eSNE	48 08		
		iE	55 34		
		eE	56 23		
		eNZ	58.0		
		iN	11 00.0		
		eE	01.7		
		eN	02.2		
	MH	eP	10 39 28.6	d	
		i	34.3	c	
		i	52.1	c	
		e	41 36.0		
		eL	11 06.2		
	F	eP	10 39 23.0	c	
		eNE	34		
		e	40 37	d	
		eN	43 04		
		e	59.6		
	M	eP	39 49.2	d	
	R	ePNZ	47	c	
		eN	40 04		
		eN	54		
		eS	48 33		
		eNEZ	11 01.1		
Apr. 30	MH	iP	16 02 57.4	c	
		e	05 22.6	c	
		e	32.1	d	
		i	45.6	c	
Apr. 30	MH	iP	18 32 18.5	c	USCGS: 10½°S, 75½°W. O = 18-21-36.
		i	25.8	c	
		iPcP	52.7	c	
		i	33 30.1	c	
	F	eP	32 06.5	c	
		eE	22		
		eN	58		
	M	eP	31.5		
	R	ePNZ	24	c	
		eN	37		
		eN	33 02		
		e	24		
		eN	33		
		ePPE	35 04		
Apr. 30	B	eP	23 58 04.1	c	USCGS: 4½°N, 82½°W. O = 23-49-22.
		e	16.1		
		e	59 03.2	d	
	BG	eSNE	24 05 07		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		eSSNE	08.7		
		eLNEZ	14.3		
	MH	eP	23 57 57.8	d	
		i	58 00.3	d	
		i	11.1	d	
		i	32.2	d	
	F	ePEZ	57 47	d	
		eEZ	58 23		
		ePP	59 38	d	
	M	eP	58 09.0	d	
	A	eP	24.5	c	
	R	eP	01	d	
		eE	14		
		eE	59 24		
May 1	MH	eP	00 53 15.1	c	USCGS: Off Coast of Central Peru. 0 = 00-42-05.
May 1	MH	iP	09 57 26.5		USCGS: 62°N, 152°W. 0 = 09-51-06.
	M	eP	02.9		
May 1	MH	iP'	13 39 59.6		USCGS: Near southeast coast of Sumatra.
		iPP	40 18.7		0 = 13-20-41.
	M	eP'	39 56.1		
May 1	MH	iP	20 17 07.6	c	PAS: Near APIA.
		i	12.5	c	
May 2	MH	iP	04 47 18.1	c	USCGS: 18°N, 102°W. 0 = 04-41-43.
		i	32.4	d	Tacu Baya: 18°20'N, 101°50'W.
	F	iP	03.8	c	
	M	iP	36.6	d	
		i	41.4		
May 2	MH	iP	14 45 42.7	d	USCGS: Kurile Islands Region.
		e	53.4	c	0 = 14-35-08.
	M	iP	31.5	d	
		i	39.4	d	
May 3	MH	eP	02 04 08.8	d	
	M	eP	18.1		
May 3	MH	e	11 21 15.7	d	
		e	22.3	d	
	F	eP	20.0	c	
	R	e	38	d	
May 4	R	e	02 29 39	c	
May 5	B	eP	01 13 18.5		USCGS: Pacific Ocean, 1500 miles north
	BG	eE	17 31		of Easter Island. 0 = 01-05-00.
		iSN	20 10		BCIS: 5°S, 105°W.
		eSSN	23 42		
		eLNZ	26.5		
		eE	27.1		
		eE	30.4		
		e	35.8		
	MH	eP	13 12.1	d	
		i	15.0	d	
		i	20.6	d	
	M	eP	34.7	c	
		e	14 05.8	d	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	R	ePNZ	13 27	d	
		eNE	34		
		eN	14 50		
May 6	M	eP	11 28 31.3	d	
May 7	M	eP	04 42 57.5		
	BG	eN	56 34		
		eN	59 36		
		eNE	05 04.3		
		eN	05.3		
May 7	BG	eLE	07 30.5		USCGS: MacQuarie Island Region.
		eN	31.4		O = 06-36-05
		eN	33.2		BCIS: 57°S, 148°E.
		eZ	34.9		
		eZ	37.7		
	M	eP'	06 55 03.5		
May 7	M	iP	11 58 20.6		
May 8	MH	iP	14 09 05.9	c	USCGS: Aleutian Islands Region.
					O = 14-01-37
		i	31.8	d	
	M	eP	08 51.0	c	
		i	56.9	d	
		e	09 03.9	d	
	R	iP	05.1	d	
		eNE	20		
May 9	MH	iP'	06 29 44.4	c	USCGS: Gulf of Aden. O = 06-10-30.
		i	50.5	d	BCIS: 12½N, 48½E.
	M	eP'	37.5	c	
		ePP	31 29.2		
May 9	M	eP	11 31 02.7		USCGS: 41°N, 58°E. O = 11-17-10.
May 10	BG	eLEZ	11 06.7		USCGS: 6°S, 150°E. O = 10-19-49.
	MH	eP	10 33 06.7	d	
		e	16.2	d	
	M	eP	03.6		
May 10	B	iP'	23 59 25.5	d	USCGS: 15°S, 43°E. O = 23-39-25.
		i	27.7	c	
		i	32.8	d	
		i	41.0	d	
	BG	iPP	24 03 26.0		
		eSKKS	09 25		
		eE	15 08		
		eNE	16.4		
		e	17.6		
		eN	24.9		
	MH	eP'	23 59 18.0		
		i	28.4	c	
		i	41.7	c	
	F	eP'	23	d	
		ePP	24 03 18	c	
	M	eP'	23 59 13.4		
		i	20.3		
		ePP	24 03 05		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	R	eP'	23 59 14	d	
		eNEZ	20	d	
		e	26		
		eN	36		
		eNE	24 00 05		
		eN	30		
		e(PKS)E	03 47		
May 11	B	iP	00 40 34.4	d	
		i	57.9	c	
		i(PP)	44 07.0		
	BG	eNE	49 40		
		e	53 48		
		eE	55 12		
		eE	58 10		
		eN	01 00 04		
		e	01 48		
		e	05 02		
		eE	08.0		
		e	12.6		
		eE	13.6		
May 11	MH	eP	13 32 42.3	d	USCGS: Aleutian Islands Region.
		e	59.4	d	O = 13-25-17.
	M	eP	27.2	d	
May 12	MH	eP	21 34 51.0		USCGS: 5°S, 145°E. O = 21-21-25.
May 12	MH	iP	23 39 37.0	d	
		i	51.8	c	
May 13	MH	iP	05 18 02.8	d	USCGS: 18½°S, 178°W. h = 400.
		e	22.6	d	O = 05-06-46.
	M	eP	12.9		
May 13	B	iP	08 47 22.4	d	40.5°N, 127.5°W. Off Cape Mendocino.
	MH	iPNEZ	32.7	d	O = 08-46-10.
		i	59.2	c	Magnitude 4.5.
		iSNE	48 32.2		
	PA	eiP	47 26.6	d	
		i	34.1	d	
		eSN	48 21.5		
		iEZ	22.8		
	M	iP	47 18.4	d	
		i	23.0	c	
		iS	48 05.5		
		iNE	06.7		
	R	eE	47 45		
		e	48 05		
May 15	B	eP	03 36 38.2		USCGS: Gulf of California.
	BG	eLNE	41.3		O = 03-32-41. BCIS: 25°N, 110°W.
		eNE	42.9		
		e	44.0		
	MH	eP	36 32.1		
		e	59.8		
	F	eP	13.0	d	
		e	38.5	d	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	M	eP	58.1	c	
			37 31.4	c	
	R	ePNZ	36 42	c	
		eN	37 08		
		e	18		
May 15	MH	eP	06 53 48.7	c	
May 15	MH	iP	15 43 21.0	d	
		i	45 32.3	c	
May 16	M	eP	06 53 19.3	d	
May 16	M	iP	15 43 28.3	c	USCGS: 25°S, 178°E, h = 600.
		epP	45 36.1	d	O = 15-31-46.
	R	eP	43 31.7	d	
		eE	51.5		
		eE	44 13		
		epP	45 40		
		eE	54		
May 16	M	eP	17 34 54.7	c	USCGS: 6°S, 151°E. O = 17-21-45.
	R	eP	35 01	d	BCIS: 6°S, 152½°E. O = 17-21-50.
		eE	25		
		ePP	38 38	d	
		eE	39 02		
		ePPP	40 16	d	
May 17	B	iPNEZ	11 57 52.3	c	USCGS: 39°N, 130½°E, h = 600.
		epP	59 52.2	c	O = 11-46-46. PAS: Mag. 6-3/4 - 7.
		i	56.2	d	CMO: 39.9°N, 130.9°E. h = 550.
		i(pPP)	12 02 37.7	d	
		eSEZ	07 00		
		i	02.5		
	BC	esSN	10.6		
	MH	iP	11 57 56.3	c	
		i	58 39.1		
		i	59 07.1		
		ipP	56.1		
		i	12 00 00.3		
		isP	01 05.9		
		i	48.3		
		i	02 38.7		
		e	06 28.2		
		eSNE	07 09.5		
		e	10.3		
	F	iP	11 58 04.0	c	
		iE	17.5		
		epP	12 00 08.5	d	
		e	02 42.5	d	
		eSNE	07 24		
		e	27		
	M	iP	11 57 35.5	c	
		i	58 50.3	d	
		ipP	59 29.1	d	
		iPP	12 00 56.1	c	
		i(PPP)	02 48.3		
		eSP	07 09		
		eSKPP'	26 57.3		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	A	iP	11 57 36.6	c	
		ipP	59 39.5	d	
		iSN	12 06 32.3		
	R	iP	11 57 55.1	c	
		iE	58 08.6		
		ipP	59 59.1	d	
		i(SP)NEZ	08 07	c	
May 17	M	eP	13 33 55.7	d	USCGS: 42°N, 142°E. 0 = 13-22-50.
		e	34 14.6	d	
May 17	B	iP	18 25 58.3	c	USCGS: 20°S, 169°E. 0 = 18-13-13.
		i	26 13.2	d	PAS: Mag. 7
		i	27 13.1		CMO: 20°S, 170°E.
		iPP	28 35.1		
	BG	e	29 21		
		eN	29		
		eSN	36 10		
		eEZ	14		
		iNEZ	37 53		
		iLN	49 25		
		eEZ	53.0		
		e	56.0		
			A T		
		SH	50 18		
		MaxH	110 20		
	MH	iP	18 25 59.6		
		e	27 14.3		
		e	55.8		
	F	iP	26 04.5	c	
		i	19.5	d	
		i	27 19.0	c	
		e	52.0		
		e	53.8		
	M	eP	26 06.2	c	
		i	20.5	c	
		e	29 32	d	
	A	iP	26 01.2	c	
		e	29 43		
	R	eP	26 11.0	c	
		eNZ	24	c	
		e(SP)NE	37 00		
		e	04		
		eL	54.3		
May 18	M	eP	17 05 19.3	c	USCGS: Aleutian Islands.
		i	28.4	d	
May 19	B	eP	02 50 58	c	USCGS: 20½°S, 169°E. 0 = 02-38-10.
		i	51 54		PAS: Mag. 6.8.
	BG	ePP	54 33		
		eSKSNE	03 01 30		
		eE	02 42		
		eL	13 20		
		eN	14.7		
		eN	18.8		
		eN	46.4		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	MH	iP	02 50 59.4		
		i	51 06.9		
		i	33.8		
		e	53.0		
		e	52 43.5		
	F	iP	51 03.8	c	
		i	59.3		
	M	eP	06.1	c	
		i	18.3		
		i	58.8	d	
	R	eP	13	d	
		eE	27		
		e	55.0		
		eSKS	03 02 01		
		e	20.3		
		eE	20.9		
May 19	M	e	04 42 57.5		
May 19	BG	eP	07 18 20	d	USCGS: 20½°S, 169°E. 0 = 07-05-31.
		eSKSE	28 52		PAS: Mag. 6½.
		iPSNE	30 09		
		eN	31 54		
		eLN	43.8		
		eNE	45.7		
	MH	eP	18 20.9	d	
	F	eP	24.0	c	
		e	36.1	c	
	M	eP	45.8	c	
		e	59.6	d	
	R	eP	30.5	c	
		eE	29 28		
May 19	MH	iP	09 55 07.2	d	USCGS: 19°N, 147°E, h = 200.
		ipP	57.7	c	0 = 09-43-17.
	M	iP	07.3	c	
		i	48.7		
		i	52.9		
May 20	BG	eNE	01 18.6		
		e	21.9		
May 20	M	eP	03 13 57.4	c	
		i	14 06.1	d	
May 20	B	iP	09 48 08.0	c	USCGS: 29°N, 43½°N. 0 = 09-37-27.
		i	13.5	d	
		e	32.3	c	
		e	47.0	d	
	BG	eLN	10 10.9		
		eN	12.2		
	MH	eP	09 48 05.1	c	
		e	11.2	c	
		iPcP	21.4	c	
	R	eP	47 51.5		
		e	57		
		eN	48 15		
		eN	49 53		

Date 1950.	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	M	eP	47 57.0	d	
		i	58.5	c	
		i	48 04.2	d	
May 20	MH	iP	11 08 59.9	c	
May 21	B	eP	18 48 49.8	d	USCGS: 14°S, 72°W. O = 18-37-41.
	MH	eP	52.8	d	PAS: Mag. 6.
		i	49 05.7	d	Heavy damage at Cuzco, Peru.
	M	eP	01.4	d	
	R	eP	48 53	c	
May 21	BG	eLNEZ	22 25		USCGS: 20°S, 169°E. O = 21-42-46.
	MH	iP	21 55 29.1		
May 21	B	iP	23 27 24.6	c	USCGS: 19½°S, 168°E. O = 23-14-39.
		i	28 23.8	d	
	BG	ePSE	39 09		
		eLNEZ	56.3		
	MH	iP	27 25.7	c	
		i	31.5		
		i	50.1	c	
	F	eP	30	c	
	M	eP	32.2	d	
	R	eP	36.5	c	
		e	50.5		
		e	28 09		
		iE	25.7		
May 22	MH	iP	07 23 53.2	c	USCGS: Fiji Islands Region.
	M	eP	24 02.5	d	O = 07-12-04.
May 22	MH	iP	19 53 28.6	c	USCGS: Off Coast of British Columbia.
		e	37.4		O = 19-49-43.
	F	eP	44	c	
	M	iP	52 49.5	d	
		i	55.5	c	
	R	eP	53 08	c	
		e	18		
		e	32		
May 23	M	iP	08 05 28.6	d	
		i	31.9	d	
May 23	MH	iP	08 35 41.3		
		i	55.5		
	M	iP	46.2	c	
		i	36 15.2	d	
May 23	M	eP	13 05 04.1	c	
May 24	B	iP	04 08 40.8	c	USCGS: 20°S, 169°E. O = 03-55-55.
		i	51.9	d	
		e	09 09	d	
	BG	eNE	20 41		
		eLEZ	37.6		
			A T		
		MaxH	7 22		
	MH	iP	04 08 42.1	c	
		i	43.6	c	
		i	47.7	d	
		i	57.8	c	
		i	11 21.8	c	P of second quake?
		i	29.9	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	F	iP	08 46.3	c	
		e	09 21	c	
		e	10 37	d	
	R	eP	08 52	d	
		e	09 00		
		eE	14		
May 24	MH	eP	13 04 40.0	c	USCGS: 16½°N, 58½°W. O = 12-54-40.
		i	55.4	d	
		i	05 08.8	d	
May 25	MH	eP	00 54 51.8	c	USCGS: Southern Alaska. O = 00-48-49.
		e	55 12.8	c	
May 25	MH	iP	03 24 14.5	d	
		i	22.5	c	
		i	29.1	c	
May 25	B	iP	08 41 03.6	d	USCGS: 65½°N, 151½°W. O = 08-34-32.
		iNEZ	10.5	d	Felt at College, Alaska.
		i	17.0	d	PAS: Mag. 6.
	BG	eSNE	46 20		
		eLNE	49.7		
		eEZ	52.5		
		eN	54.6		
	MH	iP	41 09.4	d	
		i	12.0	c	
		i	16.5	d	
		i	38.6	c	
		iPP	42 22.1	c	
		e	43 39	d	
	F	eP	41 19	d	
		e	42 34	c	
		eS	46 56		
	M	iP	40 44.5	d	
		i	47.3	d	
		i(PP)	41 19.9	c	
		i	29.8	d	
		i	42 04.3	c	
		e	53.0		
	R	ePNEZ	40 57	d	
		eSEZ	46 36		
		eNE	51.7		
		e	52.1		
		e	53.7		
May 25	MH	e(P)	17 05 14.2	c	PAS: Mexico.
May 25	B	iPEZ	18 47 35.6	c	USCGS: 13°N, 142½°E, h = 100.
		i	46.3	d	O = 18-35-00.
		i	48 31.6	d	PAS: Mag. 7¼.
		i	34.0	c	BCIS: 12.6°N, 143.7°E, O = 18-34-58.
		iPP	50 52.6	c	
	BG	eE	54 40		
		iSNE	57 47.5		
		eNE	19 10.5		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	MH	iP	18 47 39.1	c	
		i	44.2	d	
		i	48 37.6	d	
		i	49 11.2	c	
		iPP	50 55.8		
		eSNE	57 53.0		
	F	eP	47 46.5	c	
		e	48 10	d	
		eN	34		
		iE	51.3		
		eS	57 56		
		eNE	58 02		
	M	iP	47 35.0	c	
		ePP	50 52.1	c	
	A	iP	47 26.9	c	
		i	40.8	c	
		e	48 05		
		eN	49 28		
		iPP	50 39.0		
		eN	53		
		eS	57 39		
		iN	41.1		
	R	iPNZ	47 43.9	c	
		iPP	51 07.4		
		eE	57 36		
		eSNE	59		
		i	58 00.6		
May 25	MH	eP	20 21 11.4	c	
May 25	MH	e	22 23 55.8	c	
May 26	B	iP	01 29 50.7	c	USCGS: 20°S, 169°E, h = 100.
		i	51.7	d	0 = 01-17-14.
		i	52.7	d	
		i	30 03.7		Note: Pasadena interprets this as two
	BG	ePPNE	33 40		shocks, the first shock of magnitude
		eSNE	40 37		about 7, followed 18^s later by a
		ePSNE	41 53		shock of magnitude $7\frac{1}{4}$-$7\frac{1}{2}$.
		e(SS)NE	47.8		
		eLN	53.5		
		eNE	56.9		
			A T		
		MaxH	330 20		
	MH	eP	01 29 51.5	c	
		i	53.7	d	
		i	56.4	d	
		e	31 12		
		e	32 08		
		iPP	33 32.0		
		eSNE	40 46		
		e	41 49		
		eLE	57.0		
		eNZ	58.0		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	Fe	ePN	30 13		
		eE	17		
		eE	48		
		eSKSE	41 00		
		eLN	57.3		
	F	eP	29 56	c	
		e	30 09	c	
		eNE	14		
		eSE	40 38		
		ePS	41 55		
		eN	42 24		
		eL	57.8		
		eN	58.4		
		eE	59.7		
	M	eP	29 58.4	c	
		i	30 00.2	d	
		i	10.9	c	
		eS	41 00		
		eE	43 08		
		eLNE	57.9		
		e	58.3		
	R	ePNZ	30 03	c	
		e	16		
		eN	23		
		eE	32		
		eN	31 06		
		ePP	33 14		
		eSE	40 46		
		eN	52		
		e	55		
		e	42 32		
		eLEZ	57.7		
		eN	58.8		
May 26	MH	iP	01 39 13.7	c	Superimposed on preceding.
May 26	MH	iP	01 40 57.4	c	Superimposed on preceding.
		i	41 02.8	d	
		i	12.2	c	
May 26	MH	e	01 56 15		Superimposed on preceding.
	F	e	08	d	
	R	e	08		
May 26	MH	iP	02 08 21.5	c	USCGS: New Hebrides Islands Region.
		i	44.8		0 = 01-55-36 (Aftershock)
	F	eP	26.0		
	M	iP	27.9	d	
		i	09 18.0	d	
	R	ePEZ	08 33	c	
May 26	MH	eP	02 17 11.3	d	USCGS: 19°S, 169°E. 0 = 02-04-24.
	M	eP	17.8		(New Hebrides aftershock).
May 26	MH	eP	05 02 49.8	d	USCGS: New Hebrides Islands Region.
		e	58.1	c	0 = 04-50-00. (Aftershock).
	M	e	59.6		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
May 26	MH	iP	05 38 30.4	c	Aftershock?
	M	eP	36.8		
May 26	MH	e	06 45 47.9		
May 26	MH	e	07 54 48.5		
May 26	B	eP	10 05 55	c	USCGS: New Hebrides Islands Region.
	MH	iP	56.5	d	0 = 09-53-08. (Aftershock)
	F	eP	06 01	c	
		e	10		
	M	eP	03.1	d	
		e	12.4		
May 26	B	iPEZ	14 45 20.0	d	USCGS: 18½°N, 147°E, h = 100.
	MH	iP	23.2	d	0 = 14-33-20.
		e	47 03.0		
	F	eP	45 31	d	
		e	46 12	d	
	M	iP	45 18.5	d	
		i	24.3	c	
	R	iP	27.8	d	
		ePP	48 30		
		eSE	54 54		
		e	55 00		
		eN	30		
May 26	B	eP	17 52 01.1	d	USCGS: 20°S, 169°E. 0 = 17-39-14.
		e	13.4	d	(Aftershock).
		i	31.7	c	
		e	39.6	d	
	BG	eLNEZ	18 21.1		
	MH	iP	17 52 01.1		
		i	28.6		
		i	42.5		
	F	eP	17 52 07	d	
	M	eP	08.3	d	
	R	eP	14	d	
		eEZ	29		
May 26	MH	eP	22 04 05.0	d	PAS: Mexico.
		i	16.9	c	
	R	eP	07.3	d	
		eE	23		
		e	25		
		e	39		
May 27	MH	iP	01 31 46.4	c	
		i	54.4	c	
		i	32 01.1	c	
May 27	M	eP	07 46 18.4	d	
May 27	MH	eP	10 59 00.8	c	USCGS: 20°S, 169°E. 0 = 10-46-29.
	M	eP	24.8	d	(Aftershock).
May 27	F	eP	11 57 43.5	c	USCGS: 19°S, 168°E. 0 = 11-44-52.
	M	eP	45.5	c	(Aftershock).
	R	eP	47.5	d	
		eN	58 28		
May 27	B	ePEZ	12 52 07	c	USCGS: 20°S, 168°E, h = 200.
		i	10.5	d	0 = 12-39-43.

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	BG	e(pP)	53 05	d	
		e	54 08	c	
		e	59 14		
		eN	25		
		eN	13 01 11		
		eN	02 40		
		iNE	03.9		
		eNEZ	20.3		
		eNEZ	22.7		
			A T		
		MaxH	20 18		
	MH	iP	12 52 10.6	c	
		i	33.3	c	
		i	53 19.3	c	
		i	26.5	d	
	F	eP	52 15.5	d	
		e	53 18	c	
	M	eP	52 15.9	c	
		i	18.0	d	
		i(pP)	53 10.5	d	
	R	eP	52 19	c	
		eEZ	22		
		eN	28		
		eE	35		
		eE	53 42		
May 27	B	eP	14 38 03.8	d	USCGS: 17°S, 179°W, h = 600.
		iNEZ	05.5	c	O = 14-27-10. PAS: Mag. 6-3/4.
		e	39 07.5	c	
		eNZ	20.5	d	
	BG	iSNE	47 06.5		
	MH	iP	38 05.6	c	
		iPcP	11.6	d	
		isP	41 04.0	c	
		iPP	11.5	d	
	F	iP	38 09.8	c	
		e	40 48.9	c	
		eS	47 11		
		eE	17		
	M	iP	38 13.8	c	
		e(S)	47 25		
	R	iP	38 18.2	c	
		eE	57		
		epP	40 24		
		eE	34		
		eS	47 29		
		iNEZ	34		
May 28	B	iP	01 49 31.6	d	USCGS: 20°S, 169°E. O = 01-36-44.
		i	36.3	d	PAS: Mag. 6½.
	BG	iSN	59 51		(Aftershock).
		e(PPS)NEZ	02 01.3		
		iN	13.0		
		eE	14.2		
		eE	16.5		
		e	16.9		
		eN	17.4		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	MH	iP	01 49 32.9	d	
		i(PcP)	41.3	d	
		i	50 06.1	c	
		i	25.2	d	
		i	34.4	d	
		i	51 47.6	c	
	F	eP	49 38	d	
		eN	50 28		
		eN	51 34		
		eL	02 20.6		
	M	eP	01 49 39.1	d	
		i	50 12.9	d	
		e	51 04	d	
	R	iPE	49 43.2		
		i	44.1	d	
May 28	MH	iP	05 15 51.2	c	USCGS: ½°S, 81°W. O = 05-06-26.
	M	eP	16 02.1	d	
	R	eP	15 51	d	
May 28	B	iP	16 23 47.1	c	USCGS: South of Honshu, Japan. O = 16-11-40.
	MH	iP	50.5	c	CMO: 31.8°N, 139.0°E, h = 220.
		i	57.1	d	
	R	eP	51.4	c	
May 29	M	iP	09 53 23.5	c	USCGS: New Hebrides Islands Region. O = 09-40-22.
May 29	MH	iP	11 54 09.5	d	
		i	12.2	d	
		i	22.3	c	
May 30	B	iP	01 23 06.0	c	USCGS: 19½°N, 156°W. Felt on Island of Hawaii. O = 01-16-16. PAS: Mag. 6¼.
		iEZ	06.5	d	
		i	32.2		
		ePP	24 11.9	d	
		e	27 33	c	
		i	28 16.2	c	
	BG	eSN	36	c	
		iSSN	30 50.9		
		e	33.4		
		eNE	33.8		
	B	eT	58 13		
	MH	iP	23 08.6	c	
		i	17.6	c	
		i	22.5	d	
		i	36.6	c	
		i	45.1	d	
		i	24 46.1		
		e	29 56		
	Fe	eNE	33.5		
	F	ePNE	23 18		
	M	eP	18.7	c	
		ePP	24 39.0	d	
	R	iP	23 27.5	c	
		iE	45.3		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
May 30	MH	iP	04 19 24.5	d	
		i	29.9	c	
		i	39.2	c	
May 30	B	iP	15 15 07.4	c	USCGS: 20°S, 178½°W, h = 600.
		i	20.4	d	0 = 15-04-03. PAS: Mag. 6¼-6½.
		e	16 07	d	
		iSNEZ	24 18		
		iN	26 27		
		eEZ	28.4		
	MH	iP	15 08.1	c	
		i	16.6	c	
		i	32.6	c	
		ipP	17 15.5	d	
		iPP	18 24.4	c	
		eNEZ	24 42		
	F	ePN	15 14		
		eSE	24 28		
	M	eP	15 16.1	c	
		i	17.5	d	
		i	32.6	c	
		ipP	17 27.3	c	
		eS	24 39		
May 31	B	iP	09 32 07.8	d	USCGS: 8°S, 74°W, h = 150.
		epP	46	d	0 = 09-21-45.
	MH	iP	03.0	d	
		epP	40	c	
		e	34 07		
	M	eP	32 12.6	d	
		i	32.0	d	
	R	eP	04	d	
		eN	50		
May 31	MH	eP	13 25 46.3	d	USCGS: 31°N, 130°E. 0 = 13-13-09.
		e	58.3	c	
	M	e	48.2	c	
	R	ePEZ	46		
		eNEZ	58		
		eE	26 25		
		ePPE	28 28		
June 3	MH	e	02 01 47	c	
June 3	MH	eP	02 49 13.7	d	
June 3	BG	eN	03 08.7		
	MH	iP	07 07.5		
		i	12.3		
		i	26.0		
	M	eP	06 39.4	c	
		i	41.7	c	
		e	07 19.4	d	
June 3	MH	iP	13 18 02.5	d	
June 3	MH	eP	16 03 47.2	d	
June 4	MH	iP	01 06 00.8	d	USCGS: New Hebrides Islands Region. 0 = 00-53-19.

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
June 4	MH	eP	03 11 35.1	d	
June 4	MH	eP	06 50 09.7	d	Wellington: 39¼°S, 179½°W.
		e	24.9		0 = 06:37.2; Mag. 5-3/4.
June 4	BG	eLEZ	08 19		USCGS: 7°N, 126°E. 0 = 07-58-02.
		eEZ	27		
June 4	MH	iP	10 44 16.4	c	
		e	23.4	d	
June 4	B	eP	15 30 55.7	c	USCGS: 21°S, 170½°E, h = 100.
		eipP	31 22.7	c	0 = 15-18-20.
		isP	35.2	d	
	BG	eSKSNE	41 11		
		eSNE	29		
		isSNE	42 12		
		eLN	54.4		
		eNE	55.9		
	MH	eP	30 56.8	c	
		e	31 06.8	c	
		epP	24.9		
		esP	39.4		
	F	ePE	05		
	M	eP	04.6	d	
		epP	30.7	d	
	R	eP	08.5	c	
		epP	36.5		
		eN	40		
		eE	54		
		e	35 19		
		eSKSE	41 30		
June 4	MH	iP	18 47 42.9	c	
		i	51.2	c	
		e	48 02.0	d	
June 5	MH	iP	04 14 40.5	c	
		i	44.6	c	
		i	58.8	c	
		i	15 03.5	c	
June 5	B	iP	11 25 47.1	c	USCGS: 87°N, Approx. 45°E. 0 = 11-16-12,
		e	55.2	c	
		e	26 08	d	
	BG	e	27 02	c	
		eNZ	29 35	d	
		eSE	33 25		
		e	32		
		eN	37		
		e	46.0		
		eNE	47.3		
	MH	iP	11 25 50.5		
		iPcP	26 49.0		
	M	iP	25 27.6	d	
		i	37.4	d	
		i	26 35.7	d	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	R	eP	25 35	c	
		eE	26 09		
		e	14		
		e	27 14		
June 5	MH	iP	13 15 13.3	d	USCGS: Island of Hawaii. 0 = 13-08-21.
		i	19.6	d	Aftershock of May 30, 0116.
June 5	MH	iP	22 41 05.7	c	USCGS: 22°N, 144½°E, h = 300.
		epP	42 13.2	d	0 = 22-29-23.
	R	eP	41 09	d	
June 6	MH	iP	01 08 58.2	c	
		i	09 06.5	c	
		i	15.0	c	
June 6	MH	iP	19 29 45.3	c	
		i	50.5	d	
		e	30 10.3	d	
June 7	B	iP	17 02 28.9	d	USCGS: 4°S, 76½°W, h = 100.
		i	48.1	d	0 = 16-52-34. PAS: Mag. 7-7¼.
	BG	ipP	58.0	d	
	B	iE	03 28.0		
		i	42.5	c	
		i	47.0	d	
	BG	iSNEZ	10 30		
	MH	eP	02 23.8	d	
		ipP	59.0	d	
	F	ePNE	13.5		
		eN	27		
		eE	36		
		eE	55		
		ePPN	04 42		
		eSNE	10 02		
	M	iP	02 35.0	d	
		i	46.6	c	
		ipP	03 03.7	c	
		isP	21.8	d	
	A	iP	02 43.8	d	
		epP	03 13	c	
	R	iP	02 26.0	d	
		ePP	04 03		
		eE	06 58		
		eS	10 22		
		eNE	27		
June 8	MH	iP	01 18 05.9	c	
		i	14.1	c	
		i	22.5	c	
June 8	B	iP'	16 26 37.4	c	USCGS: 45½°S, 15°W, Depth possibly
		iPP	28 21.5	d	greater than normal. 0 = 16-07-33.
		i(pPP)	39.5	c	PAS: Mag. 7-7¼.
	BG	eE	29 06		
		eE	30 04		
		e(PKS)N	10		
		eE	31 00		
		ePSN	38 51		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	B	e(PPS)	39 28		
	BG	eN	42 14		
		e(SSS)N	50.7		
		eN	17 05.7		
		eE	16.4		
	MH	eP'	16 26 36.2	c	
		ePP	28 24.8	d	
		i(P'P')	46 13.1	c	
		i	19.1	c	
		i	23.4	d	
	F	eP'NE	26 42		
		eN	28 13		
		ePPE	21		
	M	eP'	26 38.4	c	
		e	52.2	c	
		ePP	28 39.3		
	R	eP'	26 37	c	
		ePP	28 36		
		eE	36 36		
		e	38 34		
		eN	39 32		
June 8	B	iP	19 41 22.1	c	
June 9	MH	iP	01 09 08.8	c	
		i	14.9	c	
		i	19.2	d	
		i	25.5	d	
June 9	MH	eP	08 32 29.8	c	USCGS: 14½°N, 146½°E. 0 = 08-19-55.
	M	eP	34.2		
June 9	MH	iP	09 28 20.2	d	USCGS: Off coast of Guatemala. h = 100. 0 = 09-21-22.
June 9	M	eP	11 54 37.6	d	
June 9	B	eP	13 08 48.9	d	41°17'N, 125°44'W. 0 = 13-07-44.
		i	49.1	c	Mag. 4.8.
		eSNE	09 35.0		
		iEZ	37.3		
	MH	iP	08 58.9	d	
		i	09 09.5	d	
		iS	51.6		
	PA	iP	08 55.3	d	
		eSN	09 46.5		
		iEZ	47.0		
	Fe	iPNE	08 09		
		iN	18		
		iSNE	26		
	F	ePNE	09 21		
		eNE	27		
		eSN	10 35		
	M	iP	08 34.5	c	
		iEZ	40.3		
		i	09 10.9		
		iSN	14.0		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	A	iPEZ	08 07	c	
		iN	19.5		
		iSEZ	23.7		
June 9	MH	iP	19 01 05.9	c	
		i	10.9	c	
		i	18.0	c	
June 9	MH	eP	20 36 18.5	c	
		i	24.5	c	
		i	27.0	d	
June 9	MH	iP	23 33 18.1		
		i	30.8		
June 10	MH	eP	04 35 02.3		USCGS: 18°S, 156°E. 0 = 04-22-06.
June 10	MH	e	08 55 28.5		
June 10	MH	e	10 51 34.5		
June 10	MH	eP	20 39 26.6	c	
		i	32.7	c	
		i	35.1	d	
		i	46.7	c	
June 11	B	iP	13 46 36.6	d	USCGS: 22°S, 69½°W, h = 100.
		epP	47 07.1	d	0 = 13-34-45.
	MH	iP	46 33.4	d	
		iPcP	51.2		
		ipP	47 03.8		
	F	ePNE	46 24		
		eE	48 28		
		eN	51 58		
	M	eP	46 42.7	d	
		e	48 43.9	c	
	A	ePNEZ	46 53	d	
		epPEZ	47 23	d	
June 11	B	eP	17 31 41.5	c	USCGS: 32°N, 138½°E. 0 = 17-19-44.
		iEZ	49.4	c	
	MH	iP	45.4	c	
		i	52.9	c	
		i	56.9	c	
	M	iP	36.8	d	
		i	46.2		
June 11	B	eP	20 28 11.2	c	USCGS: 28½°S, 73°W. 0 = 20-15-55.
		i	15.5	c	
	BG	eSE	38 20		
		eN	56.2		
	MH	eP	28 07.3	d	
		i	11.3	d	
		iPcP	18.3	d	
June 11	BG	eSSNE	22 48 07		USCGS: South Pacific Ocean, Approx.
		eLNE	23 01.1		1200 miles SW of New Zealand.
					0 = 22-11-12.
June 12	MH	iP	02 30 50.7	d	
June 12	MH	eP	05 45 35.8	c	
	M	e	49.2		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
June 12	MH	e	13 28 53.8		
June 12	B	iP	14 22 54.0	c	USCGS: 10°S, 153½°E. 0 = 14-09-44.
		i	23 01.7	d	
		e	08.1	d	
	MH	eP	22 54.7	d	
		e	23 06.8	d	
	M	eP	22 57.4	d	
		e	23 11.5	d	
		ePP	26 25.6	d	
June 12	B	iP	15 09 50.0	d	
	MH	eP	47.9	c	
		i	56.4	c	
		e	10 42.2	c	
June 12	MH	iP	20 39 23.3	c	
June 12	MH	iP	21 56 04.2	d	
June 12	B	eLNE	23 46.7		Tacubaya: 14°26'N, 94°29'W.
			A T		
		MaxH	3 20		
June 13	MH	iP	07 20 56.7	d	USCGS: Northern Argentina. 0 = 07-08-40.
	M	eP	21 05.4	c	
June 13	MH	iP	20 37 14.3	c	
June 14	B	iP	03 55 57.5	d	USCGS: 18½°S, 174½°W. 0 = 03-44-10.
	BG	eS	04 05 31		
		e	06 22		
		eLN	15.2		
		eNE	17.9		
	MH	iP	03 55 57.9	d	
	M	eP	56 01.5	d	
		i	56 44.7	d	
	R	eP	07	d	
June 14	MH	eP	04 54 37.6	d	USCGS: 17°S, 168°E. 0 = 04-41-59.
	M	eP	42.7	c	
	R	eP	47	c	
June 14	MH	iP	05 54 39.8	c	USCGS: 19°N, 155½°W. 0 = 05-47-47.
	M	eP	49.9	c	
	R	eP	58		
June 14	MH	eP	06 54 39.6		USCGS: 20°S, 168°E. 0 = 06-41-50.
	M	eP	46.7		
	R	eP	55 01	d	
June 14	M	eP	07 39 05.4	d	USCGS: 37°N, 144½°E. 0 = 07-27-52.
June 14	B	eiP	08 10 14.9	c	USCGS: 14°S, 70°W, h = 300.
	MH	iP	11.4	c	0 = 07-59-22.
		i	53.3	d	
	F	ePNE	01		
	M	eP	19.9	c	
		i	11 12.7	c	
		i(pP)	17.8	c	
		i	12 55.1	d	
		iPP	13 10.4	d	
	R	iPNEZ	10 12.5	c	
		eS	19 04		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
June 14	MH	iP	08 23 36.7	c	USCGS: 17°S, 165°E. 0 = 08-10-46.
	M	eP	41.4	c	
June 14	MH	eP	08 37 53.2		USCGS: 11°S, 166°E, h = 200.
	M	eP	08.5	d	0 = 08-24-54.
June 14	M	e	09 03 55.2		
June 14	M	iP	09 12 40.8	c	
June 14	M	e	09 19 33.7		
June 14	M	iP	10 42 48.1	c	
June 14	MH	iP	12 03 02.8	c	USCGS: Aleutian Islands Region.
		i	27.5	d	0 = 11-55-00.
	M	iP	02 47.7	c	
		i	03 03.2	c	
		e	04 27.3	d	
	R	eP	03 01	c	
June 14	M	eP	12 50 41.6	d	
June 15	M	eP	01 00 21.8	d	
June 15	MH	eP	07 32 47.7	c	USCGS: 12½°N, 44½°W. 0 = 07-21-18.
	M	eP	44.1	c	
		e	33 09.6	c	
June 15	MH	iP	20 49 11.4	c	
June 15	MH	iP	23 49 21.8	d	
June 15	MH	eP	23 58 26.9	d	USCGS: South of Fiji Islands. h = 600.
		i	32.6	c	0 = 23-47-00.
	M	iP	37.1	d	
		i	49.5	c	
		epP	24 00 42.2	d	
	R	ePNEZ	23 58 40	d	
		epP	24 00 48		
		e(S)NEZ	08.1		
June 16	MH	iP	05 12 29.7	c	
June 16	MH	eP	05 49 38.2	d	USCGS: Off coast of Northern Chile.
		i	50 04.9	c	0 = 05-38-00.
	M	eP	49 53.2	d	
June 16	MH	eP	07 46 53.3	d	
		e	47 04.3	d	
	M	eP	00.1	c	
		e	10.7		
June 16	MH	iP	13 46 01.2	c	
	M	eP	08.3		
June 17	M	eP	05 37 37.2	d	
June 17	M	iP	09 49 19.4	c	USCGS: Hokkaido, Japan. 0 = 09-38-27.
		i	34.1	d	
June 17	BG	e(S)NEZ	11 53 04	c	USCGS: Off coast of Northern California.
		eN	54		0 = 11-50-50.
		eE	55 14		
	MH	e(P)	51 48.5		
		i	58.9	c	
		i	52 19.2	d	
	PA	e	51 52.3		
	F	eP	52 24	c	
		e	33		
		e	53 10		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
June 17	M	eP	12 52 05.3	d	
		e	44.0	d	
June 17	MH	eP	14 09 35.7	c	
		e	43.0	c	
June 17	B	eP	22 28 04.3	d	USCGS: 25°S, 67°W, h = 200.
		e	12.5	d	O = 22-16-06.
		i	29 12.4	d	
	MH	iP	28 01.8	d	
	F	eP	27 52	d	
		e(pP)	28 38	c	
		eN	30 28		
		eN	31 18		
	A	e	33 53	c	
	R	iPNEZ	28 04	d	
June 17	B	eP	22 49 01.1	c	USCGS: 36°N, 140½°E. O = 22-37-24.
		e	23.9	d	
	BG	e(S)E	58 26		
		eN	23 08.0		
		eE	10.8		
	MH	eP	22 49 07.5		
		e	37.0	c	
	F	ePNZ	18	d	
		e	50 33		
	R	eP	49 05	d	
June 18	MH	iP	02 22 15.3		USCGS: Northern Argentina. h = 200.
	R	ePNEZ	17.5	d	O = 02-10-20.
June 18	M	eP	12 56 02.1	d	
		i	13.3		
		e	58 35.2	d	
June 19	MH	iP	03 09 58.9	c	
June 19	BG	iP'	12 56 05.5	d	USCGS: 8°S, 112°E. O = 12-36-58.
		e	20.0		PAS: Mag. 6½.
		e	41.5		
		ePP	57 37		
		eE	58 37		
		eN	13 02 06		
		eE	26		
		ePSNEZ	07 14		
		eSSNE	14.5		
		eLN	29.0		
		eEZ	33.9		
	MH	eP'	12 56 03.0	c	
		e	09.5	d	
		i	43.1	d	
		i(PP)	57 09.7	c	
		e	13 05 14.8	d	
		e	09 01.5		
	F	eP'	12 56 05.5		
		e(PP)N	58 22		
		e	13 09 28		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	A	eP'	12 55 50	c	
		e	56 43		
		ePP	57 20	c	
		e	13 02 18		
June 19	B	eP	18 31 55.1	c	USCGS: 44°N, 127°W. 0 = 18-30-15.
	BG	eS	33 25		
		eNE	29		
		eEZ	33.9		
		eN	34.6		
	MH	iP	32 06.0	d	
		i	18.8		
		i	38.0		
	Fe	eE	31 36		
	F	eP	32 27.0	d	
		eE	54		
		e	33 00		
	M	eP	31 37.5	c	
		i	49.8		
		iS	32 47.9		
		e	33 54		
	A	ePNZ	31 11.6	d	
		eSNZ	32 02		
June 20	M	eP	05 06 17.0	d	
June 20	MH	eP	14 22 15.8	c	USCGS: 74½°N, 8°E. 0 = 14-11-45.
		e	24.7	d	
	M	eP	21 58.4	c	
June 20	PA	i(P)	21 46 56.4	d	
		i	47 03.7		
	M	eP	46 47.1	d	
		i	51.8	d	
		i	47 36.1	c	
June 21	B	eP	07 08 25.3	c	USCGS: 21°S, 169°E. 0 = 06-55-39.
		eE	09 01.8		PAS: Mag. 6-3/4-7.
	BG	eSKSE	18 45		
		e(S)	19 06		
		eScS	24		
		ePSNE	20 19		
		eGN	32.0		
	MH	iP	08 27.1	c	
		i	42.1	d	
		eL	37.0		
	Fe	eLNE	36.6		
	F	ePEZ	08 32	c	
		e	10 30	c	
		ePP	12 00	c	
		e	19 32	c	
		e	36.3		
	M	eP	08 33.9	c	
		i	51.6	d	
		i	09 20.1	d	
		ePP	12 02.6	c	
		e	13 19.7		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
June 21	BG	eSSE	10 27 08		USCGS: 3½°S, 147°E. 0 = 09-56-00.
		eLEZ	38.5		
	MH	iP	10 09 25.2	d	
	F	eP	32		
		ePP	13 26		
	M	eP	09 24.0	d	
June 22	BG	eLN	08 42.6		USCGS: Off coast of Colima, Mexico. 0 = 08-27-30.
June 22	B	iP	20 52 33.8	c	USCGS: 1°S, 78°W, h = 100. 0 = 20-43-00.
	MH	iP	29.2	d	
		i	33.9	c	
		i	39.3	c	
	M	eP	30.4	d	
		i(pP)	51.1	d	
June 22	MH	iP	23 04 53.6	d	USCGS: Southeastern Peru. 0 = 22-53-37.
June 23	MH	iP	03 55 09.4	d	USCGS: 13°N, 93°W. Possibly deeper
		i	24.8	c	than normal. 0 = 03-48-12.
		i	58 49.3	c	
	F	eP	54 56	c	
		e	56 23	d	
		eS	04 00 30		
	M	eP	03 55 25.3	d	
		i	57 17.2	c	
June 23	MH	iP	07 54 44.9	c	
		i	55.4	c	
	M	eP	59.2	c	
June 24	MH	iP	11 51 02.9	c	USCGS: Fiji Islands Region.
		e	38.2	d	0 = 11-39-05.
	M	iP	12.3		
June 24	BG	iP	22 38 15.0	c	USCGS: 19½°S, 168½°E. 0 = 22-25-31.
		eE	39 54		PAS: Mag. 7.
		i	41 12		
		eN	48 24		
		eE	34		
		iSN	50		
		iNZ	50 10		
		eN	23 02.0		
		eLNE	06.1		
			A T		
		PZ	15 8		
		PH	4½ 10		
	MH	iP	22 38 17.4	c	
		i	58.4	c	
		i	39 11.7	c	
		e	40 12.0		
		eSE	49 32		
		e	50 09		
		eLNEZ	23 06.7		
	F	eP	22 38 22	c	
		eN	39 06		
		iN	40 16		
		eE	43 24		
		e	50 22		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	M	iP	38 24.2	c	
		i	39 40.8	c	
		e	49 09.8		
		e	50 28.3		
		eL	23 07.8		
June 25	MH	iP	03 43 21.3	c	
June 25	BG	eSKSE	11 30 26		USCGS: 5°N, 127°E. 0 = 11-05-51.
		eSSE	39 01		PAS: Mag. 6½.
		eLN	49.3		
		eEZ	52.5		
	MH	eP	19 53.8	c	
		eP'	23 17.0		
		ePP	24 36		
		eSKS	30 30		
	F	eSKS	42		
	M	eP	19 49.6	c	
		ePKKP	36 11.4	c	
June 25	MH	iP	15 56 33.2	c	USCGS: Solomon Islands Region.
	M	iP	36.2	c	0 = 15-43-55.
June 25	B	iP	21 10 17.7	c	USCGS: Loyalty Islands Region.
		e	45	c	0 = 20-57-30.
		e	11 08	c	
		eL	34.8		
	MH	eP	10 18.4	c	
	F	eP	23	c	
	M	eP	25.6	d	
June 25	M	eP	23 41 02.3	c	USCGS: Gulf of Alaska. 0 = 23-35-35.
June 26	MH	e(P')	02 31 40.3	c	
	M	e(P')	33.7	c	
June 26	MH	eP	21 21 00.0	c	USCGS: New Caledonia Region. 0 = 21-07-58.
June 27	M	eP	04 43 00.2	c	USCGS: Off Eastern coast of Honshu,
		e	42.9	d	Japan. h = 100. 0 = 04-31-38.
June 27	M	eP	09 39 14.9	d	
June 27	MH	iP	10 22 29.2	d	USCGS: Aleutian Islands Region. h = 100.
		epP	50.2	c	0 = 10-15-03.
		e	23 34	c	
		e	24 10		
	M	eP	22 14.9	d	
		e	24 12	d	
June 27	B	eP	15 53 00	c	USCGS: 45½°N, 140°E. 0 = 15-41-54.
		i	16	c	PAS: Mag. 6½ - 6-3/4.
		i	56.4	c	
	BG	eSE	16 02 10		
		e	10.4		
	MH	eP	15 53 05.8	d	
		i	54.8	d	
		ePP	55 48	d	
	F	eP	53 15	d	
		iNZ	28.3	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	M	eP	52 53.2	c	
		i	53 03.7	d	
		e(P'P')	16 20 50	c	
	A	eP	15 52 45		
		eNE	53 02		
	R	eP	52 10	c	
		eSE	16 02 32		
June 27	M	eP	19 36 17.6	d	
June 28	BG	eEZ	04 37 24		
	M	e	33 28		
		e	48	c	
	R	e	42	d	
		eN	34 08		
		eE	35 06		
		eN	32		
June 28	B	iP'	16 42 40.5	c	
	MH	eP'	41.9	c	
	M	iP'	38.2	d	
June 28	MH	eP	23 41 11.0		USCGS: Kurile Islands Region.
		i	48.8	d	O = 23-31-26. BCIS: 47°N, 153°E.
		e	42 12.4	d	
		i	39.2	d	
	M	eP	41 28.6	d	
June 29	B	e(pP)	00 27 51	c	USCGS: Northern Chile. h = 100.
	MH	iP	32.1	d	O = 00-15-24.
		ipP	47.6	c	
		isP	54.4	d	
		i	28 10.1	c	
	F	iP	27 37.7	c	
		eNEZ	44	c	
		e	28 02	c	
	M	eP	27 41.3	c	
		ipP	57.4	c	
		isP	28 03.9	c	
June 29	BG	eLE	03 26.1		
June 29	MH	iP	16 36 07.0	c	
June 30	BG	eLE	01 00.7		USCGS: Solomon Islands Region. O = 00-18-04.
June 30	B	iP	11 04 24.0	d	USCGS: 6°S, 75°W, h = 200. O = 10-54-20.
	MH	iP	18.9	d	
		ipP	48.3	c	
		i	56.8	c	
	M	iP	24.2	d	
	R	eP	36	d	
June 30	MH	iP	21 25 03.2	c	

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BERKELEY—MOUNT HAMILTON—PALO ALTO SAN FRANCISCO—FERNDALE—FRESNO MINERAL—ARCATA—RENO

Earthquakes and the Registration of Earthquakes

From July 1, 1950, to September 30, 1950

BY

CHARLES HERRICK

UNIVERSITY OF CALIFORNIA PRESS
BERKELEY AND LOS ANGELES
1952

SEISMOGRAPHIC STATIONS OF THE UNIVERSITY OF CALIFORNIA

Perry Byerly, Director

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and

REGISTRATION OF EARTHQUAKES AT: BERKELEY, MOUNT HAMILTON, PALO ALTO, SAN FRANCISCO, FERNDALE, FRESNO, MINERAL, ARCATA, AND RENO FROM JULY 1, 1950 TO SEPTEMBER 30, 1950

VOLUME 20 NUMBER 3

By Charles Herrick

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EARTHQUAKE INTENSITY SCALE

Intensities are given by Roman numerals in the list of California, Nevada, and Oregon earthquakes on the following page, when sufficient information on the effects of the shock is available. Criteria of the Modified Mercalli Scale which are used to rate the intensity are:

Intensity	
II	Felt by a few people only. Duration or direction not appreciable.
III	Duration or direction appreciable.
IV	Rattling of doors and windows; swinging of suspended objects.
V	Disturbance of movable objects; plaster cracked.
VI	Overthrow of movable objects; cracking of chimneys and other brickwork.
VII	Fall of some chimneys; some damage to buildings.

EARTHQUAKE MAGNITUDE SCALE

Richter magnitudes given in the list of epicenters on the next page are found from the Wood Anderson amplitudes, using the nomogram given by Nordquist, "Bulletin of the Seismological Society of America", 32:164.

Latitude and Longitude are given for most epicenters in the following list. Only those earthquakes are given for which epicenters were located. The letter represents the excellence with which the epicenter has been located, a indicating excellent, b good, c fair, d poor.

EARTHQUAKES IN NORTHERN CALIFORNIA, NEVADA, AND OREGON

Times are given in Greenwich Civil Time. Subtract 8 hours to get local (Pacific Standard) time, or 7 hours to get Pacific Daylight Time (P.D.T. in effect in California until 0200, Sept. 24, 1950).

Date 1950	G.C.T.	Richter Magnitude	Latitude North	Longitude West	Quality	Remarks
July 5	05-44-22	2.2	37° 37'	122° 18'	b	
July 7	19-06-59	0.7	37° 24'	122° 03'	b	
July 9	01-29-09	2.9	37° 53'	122° 10'	c	II at Oakland
July 17	12-14-44	2.1	38° 00'	122° 20'	c	
July 20	20-56-39	3.2	36.9°	121.5°	d	
July 21	17-37-15	2.9	38° 09'	122° 00'	c	
July 22	11-46-10	2.4	37° 50'	121° 33'	c	
July 23	09-45-09	2.4	37° 48'	122° 02'	c	IV at SE Oakland
July 24	08-23-35	2.1	36° 58'	121° 40'	c	
July 30	20-41-33	3.6	38.3°	118.4°	d	
Aug. 1	20-24-51	3.4	36° 56'	121° 40'	b	IV 7 mi. S. of Hollister
Aug. 1	21-08-43	2.0	36° 12'	122° 14'	b	
Aug. 2	13-26-30	3.1	36.7°	121.4°	d	IV 7 mi. S. of Hollister
Aug. 4	04-40-39	2.0	37° 20'	122° 14'	b	
Aug. 5	22-23-17	2.3	37° 15'	121° 44'	b	
Aug. 8	05-10-18	2.3	36° 55'	121° 37'	b	
Aug. 11	03-43-44	1.9	37° 36'	121° 57'	b	
Aug. 14	17-25-03	1.8	37° 12'	122° 14'	b	
Aug. 15	18-34-06	2.9	37° 36'	122° 18'	b	
Aug. 15	23-52-58	2.9	37° 59'	122° 22'	b	
Aug. 17	18-33-34	1.8	38° 02'	122° 25'	b	Aftershock?
Aug. 17	22-53-06	2.0	37° 12'	122° 13'	b	
Aug. 21	06-35-10	2.1	37° 12'	121° 33'	b	
Aug. 24	06-52-02	2.8	37° 49'	121° 39'	b	

Date 1950	G.C.T.	Richter Magnitude	Latitude North	Longitude West	Quality	Remarks
Sept. 2	09-02-58	2.1	37° 44'	122° 33'	b	III at San Francisco; Ingleside, Taraval and Richmond districts.
Sept. 4	18-58-19	3.0	37° 04'	121° 30'	c	
Sept. 8	03-49-26	2.4	36° 47'	121° 35'	b	
Sept. 8	19-15-32	3.7	41.5°	117.3°	d	
Sept. 9	16-06-39	2.3	36° 47'	121° 32'	c	Foreshock
Sept. 10	13-42-26	2.5	36° 47'	121° 32'	c	Foreshock at 13:37:42
Sept. 10	19-35-47	2.9	36° 50'	121° 35'	b	Foreshock at 19:26 and 19:28. Aftershocks at 19:36 and 19:49.
Sept. 12	04-04-32	2.9	37° 18'	121° 43'	b	
Sept. 13	10-56-38	2.6	37° 18'	121° 43'	b	Aftershock.
Sept. 16	00-40-06	-	36.9°	121.6°	d	
Sept. 19	05-45-01	2.6	36.6°	121.7°	d	
Sept. 19	18-16-21	1.8	37° 12'	122° 12'	b	
Sept. 21	20-22-57	1.5	37° 23'	122° 15'	c	IV at Mountain View
Sept. 21	22-02-13	3.7	39.4°	118.0°	d	
Sept. 24	07-27-18	3.8	40° 15'	124° 24'	c	
Sept. 24	21-51-44	2.9	36.2°	120.5°	d	
Sept. 25	13-05-28	1.8	37° 13'	121° 58'	b	Foreshock.
Sept. 25	13-13-31	1.9	37° 13'	121° 58'	b	Aftershock at 18:37.
Sept. 25	20-00-33	2.1	37° 12'	122° 12'	b	
Sept. 29	04-42-51	2.5	36° 58'	121° 43'	c	
Sept. 30	21-26-33	4.1	36° 54'	121° 23'	b	

THE REGISTRATION OF EARTHQUAKES

at

BERKELEY, MOUNT HAMILTON, PALO ALTO, SAN FRANCISCO, FERNDALE, FRESNO, MINERAL, ARCATA, AND RENO

All large regional shocks and all distant earthquakes are tabulated on the following pages. Earthquakes in the Northern California, Nevada and Oregon region are included only if of magnitude 5 or greater, or if of special interest. Times of distant shocks are not normally included for Palo Alto, San Francisco, or Ferndale except in cases of defective records at Mount Hamilton, Berkeley, or Arcata, respectively.

All determinations are reduced to Greenwich Civil Time (G.C.T.). G.C.T. is 8 hours greater than Pacific Standard Time (120th Meridian). Communications regarding readings or seismograms should be addressed to:

Seismographic Station
University of California
Berkeley 4, California.

Station	North Latitude	West Longitude	Altitude Meters	Feet	Station Symbol	Present Auspices and Date Established
Berkeley	37° 52.3'	122° 15.6'	81	266	B, BG*	University of California - 1887
Mt. Hamilton	37° 20.4'	121° 38.6'	1281.7	4205	MH	Lick Observatory - 1887
Palo Alto	37° 25.1'	122° 10.8'	83	272	PA	Stanford University - 1927
San Francisco	37° 46.4'	122° 27.2'	100	328	SF	University of San Francisco - 1931
Ferndale	40° 34'	124° 16'	17	55	Fe	City of Ferndale - 1933
Fresno	36° 46.1'	119° 47.8'	88.4	290	F	Fresno State College - 1935
Mineral	40° 21'	121° 35'	1495	4906	M	National Park Service, Lassen Volcanic National Park - 1938
Arcata	40° 52.6'	124° 04.5'	60	195	A	Humboldt State College - 1948
Reno	39° 32.3'	119° 48.8'	1386	4546	R	University of Nevada - 1948

*B denotes readings of short period instruments, BG of long period instruments (12 sec. Galitzin-Wilip).

STATION EQUIPMENT

Berkeley:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.
3 - Long-period Galitzin-Wilip.
1 - Horizontal-component Slichter.
2 - Horizontal-component 100 kg. Bosch-Omori.
1 - Vertical-component 80 kg. Wiechert.

Mt. Hamilton:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.

Palo Alto:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.

San Francisco:
2 - Horizontal-component Wood-Anderson torsion.

Ferndale:
2 - Horizontal-component 25 kg. Bosch-Omori.

Fresno:
3 - Components short-period Sprengnether.

Mineral:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.

Arcata:
3 Components short-period Sprengnether.

Reno:
3 Components short-period Sprengnether.

For all stations, the three components are indicated by N, E, Z. When no letter appears, the phase is read from the vertical component only.

"c" or "d" following a recorded phase indicates compression or dilatation of the ground as indicated by the vertical component instrument.

"i" (impetus) preceding a phase designates sudden beginning of the motion; "e" (emersio) designates gradual beginning.

Maximum amplitude of earth displacement in microns and period in seconds of the indicated phases are given for the Berkeley station in the columns headed A and T. Combined horizontal amplitude of N and E components are designated by H.

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
July 1	MH	iP	01 07 27.1	c	
		i	37.7	d	
	M	eP	33.8		
		e	44.1		
July 2	B	eP	22 59 08	c	USCGS: 4°N, 73½°W. 0 = 22-49-24.
		eScSN	23 10 11		
	BG	eSS	12 43		
		eN	15.6		
		eNE	18.2		
	MH	eP	58 58.3	c	
		i	59 29.4	c	
		i	41.8	c	
		iPcP	59.5	d	
	F	eP	58 46.0		
July 3	BG	iP	10 16 36.5	d	USCGS: 8°N, 141½°E. 0 = 10-03-36.
	B	i	39.0	d	
		i	42.8	d	
		e	53.0	c	
		i	17 39.5	d	
		i	52.7	c	
		i	18 13.0	d	
		ePP	20 13.0	d	
	BG	e	23 07.5	c	
		eS	27 26.5		
		ePPSEZ	28 57.5		
		e	36 03.5		
		eGN	40 12.5		
		eN	41 01.5		
		eSKPP'	46 09.5		
	MH	eP	16 41.5	c	
		i	47.4	d	
		i	57.4	d	
		i	17 19.3	d	
		i	42.4	c	
	PA	eP	16 45	c	
	F	eP	49.5		
		eNEZ	17 00		
		e	18 44.5	c	
		e	19 43		
		ePP	20 30		
July 3	B	eP	12 41 23.0	c	USCGS: Tonga Islands Region.
	BG	eN	13 07 22		h ≅ 200 km. 0 = 12-29-33.
		e	09 57		
		eN	10 13		
		eE	19 01		
		eE	26 26		
	MH	iP	41 23.7	c	
		i	26.7	d	
		i	33.8	d	
		i	55.6	c	
		i	42 36.2		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	F	ePNEZ	41 28		
		e	38.5		
		e	43 20		
		e	44 31		
July 5	B	eP	03 47 46	d	USCGS: 19°S, 168°E. 0 = 03-34-59.
	BG	eLE	04 15 40		
		eLrNEZ	16 40		
	MH	iP	03 46 46.8	d	
		i	50.9	c	
		i	55.7	c	
		iPP	50 30.6	d	
	F	eP	47 51.5		
		ePP	50 36.5		
July 5	B	eP	18 36 34.5	d	USCGS: 62°N, 155°W. 0 = 18-30-08.
		i	37.3	c	
July 7	MH	iP	00 36 14.9		
		i	19.9		
		i	24.7		
July 7	BG	ePN	05 16 55.5		
		e	17 48.5		
		e	18 57.5		
July 7	BG	eE	05 24 35.5		
		e	57.5		
		eE	25 12.5		
		eN	26 20.5		
July 7	B	iP	16 59 26.1	c	USCGS: 11°S, 163.5°E. 0 = 16-46-55.
		i	29.0	c	
		i	44.9	c	
	BG	iPP	02 47.0		
		e	06 35.5		
	B	i	46.3		
		i	49.2		
	BG	eN	08 32		
		eSE	10 00		
		eZ	32		
		eSSNZ	15.9		
		eLN	21.9		
		eE	22.3		
		e	25.4		
		eSKPP'	29.3		
		eE	31.6		
	MH	iP	59 33.1	c	
		i	34.4		
	F	eP	35	c	
		eE	39.5		
		ePP	17 03 05		
		e	06 53.5		
		e	29.7		
July 7	MH	eP	17 06 48.3	d	USCGS: 11°S, 163°E. 0 = 16-54-10
		i	51.5	d	
		e	07 21.7	d	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
July 8	MH	eP	03 44 35.2	d	USCGS: Kermadec Islands Region,
July 8	MH	iP	10 16 05.3	c	0 = 03-31-50
		i	10.7	d	
		eNE	12.0		
		i	13.4	c	
July 8	MH	eP	20 00 21.3	c	
July 8	MH	iP	20 14 39.6	d	
		i	43.8	c	
July 9	B	iP	00 15 44.6	c	USCGS: 10°S, 161°E. 0 = 00-03-02
		i	47.1	c	
		e	55.0	c	
	BG	eSNE	26 12.5		
		eN	39.6		
		eEZ	44.6		
	MH	eP	15 47.2	d	
		i	49.6	c	
		i	16 34.2	d	
	F	eP	15 53.5	c	
July 9	BG	iP	01 50 52.0	d	USCGS: 33°S, 112°W. 0 = 01:39:29
	B	i	51 02.2	d	
		i	28	d	
	BG	eN	52 55		
		i	54 02		PP?
	B	ePPPE	55 58		
	BG	eSNEZ	02 00 11		
		eSSN	04 57		
		eGE	09 57		
		eLN	13 13		
	MH	eP	01 50 49.0	c	
		i	59.2		
		ePP	53 15.3	d	
		e	55 25.8		
	F	eP	50 43.0	d	
		eE	52.5		
		eN	51 23.5		
		eNZ	56 56.5		
		e	02 02 12.8		
	A	ePN	01 51 10.5	c	
		eN	55.0		
		eS	02 00 47.5		
July 9	B	iP	02 44 55.2	d	USCGS: 8°N, 73°W. 0 = 02:35:31
		i	59.1	c	
		eN	45 00		
		e	17		
	MH	eP	44 50.1	c	
		i	55.3	c	
		i	45 05.1	d	
		i	27.5		
		iPP	47 01.7	c	
	F	eP	44 36.5	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		e	42.1	d	
		eN	45 07.5		
		eE	25.5		
	A	ePNZ	12.0	c	
July 9	F	e	03 45 25	c	USCGS: Azores Islands Region.
		ePPP?	49 31.5		O = 03:38:35
July 9	B	iPNEZ	04 49 54.6	d	USCGS: 8.5°S, 71°W.
		iE	57.3		h ≅ 600 km. O = 04:39:37
		iNEZ	58.7		
		iNE	50 01.2		
		iE	06.1		
		i	11.2		
		i	28.9		
		eN	51 25		
		iPP	52 04.6		
		eNE	21		
		ipPP	53 11.9		
		i	56 12		
		eSNEZ	57 58		
	MH	iP	49 50.8	d	
		iE	50 07.8		
		iE	22.2		
		i	51 13.9		
		iPP	52 01.2		
		eSE	57 52.5		
		e	58 17.5		
	F	iP	49 39.0	d	
		iE	45.4		
		iE	49.6		
		i	52.5	d	
		eS	57 27		
		e	42.7		
	A	ePNZ	50 10		
July 9	B	iPNEZ	04 59 55.5	d	USCGS: Aftershock
		iEZ	56.5		
		iEZ	05 00 01.7		
		i	07.2		
		i	16.5	d	
	BG	i	01 35	d	
		i	46		
	B	i	02 04.3	c	pP?
	BG	i	33		
		iE	40		
		iEZ	59		
		iSE	07 56		
		iE	13 00		
	MH	iP	04 59 51.8	d	
		i	53.0	c	
		i	05 02 01.2	d	
		i	03 03.9	d	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	F	eP	04 59 40.0	d	
		eNE	05 01 02.5		
		eE	02 46.5		
		eSE	07 29.5		
		e	36.5		
	A	ePN	00 12.5		
		e	03 20.5		
		eS	08 30		
July 9	B	e	05 18 10	c	
		i	24.4	d	
		eEZ	20 43		
	MH	iP	14 09.9	d	
		i	17.8	c	
		e	17 35.5		
		e	18 22.0		
		e	20 49.5		
	F	e	54.0		
		e	22 25.5		
		e	30 43.5		
July 9	MH	eP	08 05 29.3	d	
	F	eP	50.5	c	
July 9	B	iP	09 54 51.5	d	USCGS: Aftershock. July 9: 04:39:57.
		i	54.2	d	
		iNEZ	55.7	d	
		i	55 01.7		
		ipP	56 57.3	c	
		i	57 36.9	d	
		eSE	10 02 45		
	BG	eNEZ	52		
		eN	07 33		
	MH	iP	09 54 48.0	d	
		i	49.6	d	
		i	55 00.0	c	
		e	56 06.6	c	
		epP	53.3	d	
		i	57 02.5		
		eS	10 02 56.5		
	F	eP	09 54 37.5	d	
		e	49.5	c	
		epP	56 41.5	d	
		eS	10 02 19.5		
	A	ePNZ	09 55 08.9		
		eN	57 16		
		eNZ	10 03 25.5		
July 9	B	iP	12 43 39.0	d	USCGS: 8°N, 73°W. 0 = 12-34-15.
		i	42.7		
	MH	iP	34.2		
		i	39.0		
	F	e	24	c	
July 9	B	ePP	16 28 20		USCGS: 36.5°N, 70.5°E. h ≅ 300 km.
		e	29 12		0 = 16-10-26

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	BG	eSKKS	34 53		
		eSE	35 38		
		esS	37 18		
		e	38 31		sSP?
	MH	eP'	27 46.1	d	
		ePP	28 26.4		
	F	ePP	21		
		e	42	c	
		esPP	29 50	c	
July 9	B	eP	19 28 59.5	c	USCGS: 36.5°S, 103°W. O = 19-17-12.
		e	29 05.7	d	
	BG	eN	39 40.5		
		eE	42 34.5		
		eN	43 49.5		
		eE	49 32.5		
		eE	51 40.5		
		eN	53 20.5		
	MH	iP	28 57.7	d	
		i	29 05.7	c	
		i	29.5	c	
	F	eP	28 50.0	d	
July 10	MH	eP	02 32 52.0	c	
		i	55.6		
		i	33 01.5		
July 10	B	eP'	05 53 56.5	c	BCIS: 18°S, 64°E. O = 05-33.5.
		e	54 02.5	c	
	BG	e	55 51.5	d	
		ePPP	06 00 48.5		
		eN	05 44.5		PcSP'?
		e	09 41.5		
	MH	iP'	05 54 01.2	c	
		i	11.4	c	
	F	eP'	53 59	c	
July 10	B	iP	14 02 29.3	c	USCGS: 21°S, 178.5°W. h ≅ 600 km.
		e	36.5		O = 13:51:20.
		e	54.0	c	
	MH	eP	31.8	c	
		e	37.8		
		epP	04 35.8	d	
	F	eP	02 34	c	
		epP	04 38.5	d	
July 11	MH	iP	10 38 15.2	c	
July 12	BG	eE	01 54		USCGS: 2°N, 101°W. O = 01:36:42.
		eNZ	56.1		
		eNZ	59.4		
	MH	eP	44 13.6	d	
July 12	BG	iPEZ	11 15 59.0	d	USCGS: 53°N, 166°W. O = 11:09:15.
		iE	16 21.5		
		iPPP	17 59.0	c	
		e	20 53.0		
		iSE	21 28.5		
		iZ	35.5		
		iLN	25 04.5		
		iLq	29 02.5		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	MH	iP	16 07.1	d	
		i	13.1	d	
	Fe	eLN	26 14		
		eE	59 04		
	F	iPNZ	16 20.0	d	
		i	26.1	d	
		eSE	22 04		
		eN	26 34		
July 12	B	iP	11 59 42.2	c	USCGS: Tonga Islands. h = 100 km.
		iE	44		0 = 11:48:12.
		i	49.5		
	BG	iNE	12 01 15		
		eE	03 32		
		iNZ	04 23		
	MH	iP	11 59 44.1	c	
		i	59.2	d	
		epP	12 00 43.6	c	
	F	eP	11 59 48	c	
		epP	12 00 06.4	c	
July 12	B	e	15 55 46.0	c	BCIS: 57°N, 156°E. h = 100 km.
	BG	e	16 16 03		
		e	20 36		ScP? 0 = 15:46.9.
	MH	iP	15 55 52.2	c	
		ipP	56 22.4	c	
	F	eP	02	d	
July 12	MH	iP	18 09 13.9	c	Tacubaya: 16°51'N, 93°47'W.
		i	36.5		0 = 18:03:17
July 12	MH	iP	22 13 07.7		
		i	15.7		
July 13	BG	iPEZ	04 15 10.5	c	USCGS: 27.5°N, 139.5°E. h = 500 km.
	B	i	11.4	c	0 = 04:03:50.
		epP	17 00.0	c	
		eEZ	03.1		
		iNZ	05.9	c	
		isP	18 04.4		
		iEZ	18		
	BG	eNZ	24 26		
	MH	iP	15 15.1		
		ipP	17 08.4		
	F	eP	15 23.4	c	
		epP	17 12.4	c	
		i	17.4	d	
		eNE	24 52		
July 13	MH	iP	19 03 12.5	c	
		i	19.2	d	
July 13	MH	iP	20 05 30.6	c	
		i	38.9	c	
July 14	MH	iP	03 02 49.7	d	
		i	58.0	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
July 14	B	iP	12 14 00.4	c	USCGS: 52°N, 171°W. 0 = 12:06:45.
		e	09	c	
		e	22	c	
		e	31.5	c	
		e	42.5	c	
		ePP	15 24.5	c	
	BG	eSN	20 00.5		
		eLN	22 44.5		
		eScS	23 54.5		
		e	25 20		
	MH	eP	14 04.3	d	
July 14	MH	iP	19 57 24.5	c	
		i	31.9	c	
		i	38.3	c	
July 15	MH	eP	10 40 26.6	c	USCGS: Tonga Islands.
		e	40.2	d	
July 15	MH	eP	13 40 59.1	c	USCGS: Tonga Islands.
July 16	MH	eP	12 07 59.2	d	
July 17	B	eP	20 30 30.2	c	USCGS: 20.5°S, 171°E. 0 = 20:17:50.
		e	39.2		
		e	31 02.3		
	BG	eN	40 56		
		eSNE	41 40		
		eSSN	47.3		
		eSSSEZ	21 03.8		
	MH	iP	20 30 31.3	c	
		i	32 40.3	c	
July 17	MH	iP	21 21 10.5	d	
		i	28.8	d	
July 17	MH	eP	21 33 25.7	c	
		i	43.2	c	
July 18	MH	iP	22 11 23.1	c	
		i	28.9	d	
		i	37.9	c	
July 19	MH	eP	03 08 38.5	c	
July 19	MH	iP	04 21 59.0	d	
July 19	B	iP	10 59 56.9	d	USCGS: Aleutian Islands Region.
		e	11 00 02	c	0 = 10-51-54.
		e	01 58.7	d	
	BG	eSE	06 21.9		
		eNE	09 44		ScS?
		eEZ	12.4		
	MH	e	10 59 02.0	d	?
		i	23.3		
		e	11 00 50.6	d	
July 20	B	i	03 32 45.1	c	USCGS: Northern Chile. h = 100 km.
	MH	eP	15 49.6		0 = 03:03:45.
		epP	16 18.0		
July 20	BG	eP	09 43 02		USCGS: 17°S, 174°E. 0 = 09-30-48.
	B	eP	05.7	c	
		iNEZ	10.4	c	
	BG	ePPEZ	46 13		
		ePPP	48 09		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		eSEZ	53 16		
		iPPSNE	54 09		
		e	56 43		
		eSSN	58 44		
		eE	55		
		eLrE	10 04.8		
		eNZ	05 17		
		eNZ	07 47		
	MH	eP	09 43 07.8	c	
		i	26.8	d	
	Fe	ePE	28		
		eLE	10 06 20		
		eN	08 08		
	F	eP	09 43 11.5	c	
		eNE	15.0		
		e	35.0		
		e	44 39.5		
		eN	45 55.0		
		eE	49 39.0		
		eN	10 07 27.5		
		e	09 39.5		
July 20	MH	eP	13 26 48.0		USCGS: Loyalty Islands.
		e	56.7		
July 20	MH	eP	22 12 27.8	c	
		i	33.9	c	
		i	38.1	d	
July 21	B	eP	06 18 23.5	c	
		i	19 45.2	c	
	MH	eP	18 27.7	c	
July 21	B	eP	07 31 35.0	d	USCGS: Kermadec Islands Region.
	BG	eN	41 46		
		eNEZ	58 11		
		eN	08 04 27		
	MH	eP	07 31 38.1	c	
		i	57.6	d	
	F	eP	37	c	
		eN	59.5		
		e	32 02		
July 21	B	iP	08 26 18.3	d	USCGS: Aftershock of July 9, 04h.
		e	36.5		h = 600 km. O = 18:16:14
	MH	iP	18.0	d	
		i	22.7	c	
		i	30.8	c	
		i	27 26.0	d	
	F	eP	03.5	c	
		eNZ	59		
July 21	BG	eP	20 44 32.0		USCGS: 15.5°S, 168.5°E. O = 20-32-01.
	B	i	34.8	d	
	BG	eNEZ	48		
		iPPNEZ	47 58.0		
		iSNEZ	55 06.0		
		eE	58 50		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		eLqE	21 07 08		
		eZ	12 44		
		iEN	13 08		
		eLqNEZ	19.2		
	MH	eP	20 44 38.3	c	
		i	42.8	d	
		i	51.7	c	
		ePP	47 47.0		
	F	eP	44 40	d	
		iE	42.8		
		i	53.3		
		eN	45 30.5		
		ePPN	47 23.5		
		eN	51 49.5		
July 21	MH	iP	21 04 16.9	c	
		i	18.0	d	
July 21	MH	eP	21 38 03.2	d	USCGS: New Hebrides.
July 22	MH	eP	01 09 01.2	c	
July 22	MH	iP	12 45 57.8		
July 22	BG	ePNEZ	23 20 30		USCGS: New Hebrides Islands Region.
	B	iP	31.2		
		i	34.6		
	BG	eSKSE	30 47		
		eS	31 55		
		eE	32 01		
		eE	34 28		
		eN	37 45		
		eLNEZ	46 03		
	MH	eP	20 30.3	d	
		i	48.3	d	
		ePP	23 46.0		
	F	eP	20 35.5	c	
		eN	53.5		
		eN	21 42.0		
		ePP	23 21.5		
		eZ	25 32.0		
		e	26 46.5		
July 23	B	iP	16 02 54.8	c	USCGS: 16°S, 165°E.
		i	03 11.6	c	
		i	47.8	d	
	BG	eE	12 51		
		eEZ	28 27		
		eN	29 06		
	MH	eP	02 54.4	d	
		i	59.6	c	
		i	03 20.9	c	
	F	eP	00.0	d	
		eNE	24		
		eE	04 41.0		
July 23	MH	eP	23 41 45.1	c	USCGS: 21°N, 64°W.
July 24	MH	iP	22 33 40.6	c	
		i	47.1	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
July 25	MH	iP	12 45 39.7	c	
		i	45.2	d	
		i	47.9	c	
July 25	MH	iP	18 25 42.5	d	USCGS: 31°N, 42°W.
July 25	B	iP	23 07 22.6	c	
		i	26.0	c	
		i	31.6	c	
	MH	eP	30.3	c	
		i	43.1	d	
July 26	MH	e	08 40 38.0		USCGS: Off East Coast of Dominican
July 26	MH	iP	22 18 42.5	c	Republic
		i	46.3	d	
		i	50.5	c	
July 27	MH	iPNZ	10 28 18.2	c	
		iNZ	26.5	c	
July 27	B	eP	11 31 32.5		Pasadena: Near 33° 07'N, 115° 34'W.
		eE	43.0		Imperial Valley. Foreshock
		e	47.3		0 = 11:29:26.
		eS	33 21.5		
	BG	iEZ	24.5		
		iEZ	43.5		
		iEZ	59.5		
	MH	eP	31 04.3	d	
		i	14.2		
		i	27.9		
		i	32 04.3		
		eSN	51.5		
	F	iP	30 56.4	c	
		iEZ	31 00.5		
		i	13.8		
		i	51.9		
		iSE	32 05.8		
		iEZ	12.3		
		iN	24.7		
		eE	46.5		
		eNE	34 55		
	R	eP	31 38	c	
		eEZ	32 22.5		
		eE	33 38.5		
July 27	B	eP	17 41 21.0	c	USCGS: 17°S, 179°W. h = 600 km.
		eEZ	22.5		0 = 17:30:29.
	MH	iP	23.3	c	
		i	26.5	d	
	F	iP	27.2	c	
		epPEZ	43 29.5	c	
	R	iP	41 36.5		
		epPN	43 45.5		
		eSE	50 50.5		
		e	52.5		
July 27	MH	eP	22 52 35.5		Pasadena: Near 33°07'N, 115° 34'W.
		iS	54 15.4		0 = 22:50:49.

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	F	eP	52 19	d	
		eNEZ	23.5		
		eE	53 27.5		
		eE	35.5		
		eN	55 28		
		eE	56 17		
	R	eN	53 06.0		
		e	08.5		
		e	54 06		
		eE	46.5		
		eE	55 01		
		eN	04.5		
July 28	B	iP	03 27 30.0	c	Pasadena: Near 33° 07'N, 115° 34' W.
		eE	57.5		0 = 03:25:30.
		eE	29 24		
		eN	27		
		eE	30 33		
		eN	45		
	MH	iP	27 08.8		
		i	17.7		
		i	29 05.8		
	F	eP	27 00.0	d	
		iNE	06.5		
		i	55.9		
		iE	28 15.6		
		i	16.1		
		iN	17.3		
		iN	28.2		
	R	e	27 40.0	d	
		i	55.0		
		eNE	28 00.5		
		eE	29 02.0		
		eE	25.5		
		e	27.5		
		eE	45.0		
		e	46.4		
July 28	B	iPEZ	05 07 42.1	d	USCGS: 13°S, 167°E. 0 = 04:55:13.
		i	45.2	d	
		eSNE	18 06		
		eE	19 25		
		eN	23 35		
		eE	24 01		
		eN	32.3		
	MH	iP	07 43.0	d	
		i	46.7	d	
		e	08 34.1	c	
	F	eP	07 49.5	d	
		e	09 05.5		
	R	eP	07 53	c	
		eE	09 42.5		
		eSNE	18 29		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
July 28	B	iP	05 35 53	c	USCGS: 13°S, 167°E. O = 05:23:21.
		i	36 00	d	Aftershock.
	MH	eP	35 51.7	c	
		i	59.7		
	R	eP	36 02.5	c	
		ePPNE	40 23		
July 28	MH	iP	12 31 22.5	c	
		i	30.7		
July 28	B	e	17 29 14.3		Pasadena: Near 33°07' N, 115°34' W.
		eS	30 37		O = 17:26:48.
		e	52.3		
		e	31.7		
	MH	iP	28 25.4	c	
		i	35.5		
		iS	30 11.2		
		i	28.9		
	F	eP	28 18	c	
		eNE	24.2		
		eE	29 25		
		eN	30.4		
		eNE	33 00		
July 28	B	eP	17 52 45		Pasadena: Near 33°07' N, 115°34' W.
		i	53 08.0		O = 17:50:48.
		iS	54 16.3		
		i	31.9		
		e	55.4		
	MH	iP	52 24.7	d	
		i	34.8	d	
		i	46.5	c	
		iS	54 12.5		
		iE	25.7		
		i	28.8		
	F	eP	52 04	c	
		e	13.5		
		e	20.5		
		iN	24.8		
		eE	53 15		
		iNE	30.0		
	R	e	52 40	d	
		i	50.5		
		iNE	51		
		i	53 04.5		
		iNZ	08.5		
		iE	58.8		
		iE	54 13.5		
July 28	MH	eP	17 59 46.5		Pasadena: Aftershock. O = 17:58:12.
		i	18 00 08.4		
		iS	01 41.3		
July 29	MH	eP	00 18 54.4	d	Pasadena: Aftershock. O = 00:17:10?
		iS	20 22.0		
	F	iP	18 42.2	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		iEZ	19 42.4		
		iE	20 03.8		
		i	07.8		
	R	eP	19 26.5		
		e	20 11.5		
		e	21 01.5		
		eNE	08.5		
July 29	MH	iP	00 40 20.5	d	
		i	26.2	c	
July 29	MH	iP	01 09 08.2	d	
		i	11.4	c	
		i	24.0	d	
July 29	B	iP	14 38 17.5	c	Pasadena: 33°07' N, 115°44' W.
		iEZ	29.0		0 = 14:36:32.
		i	45.2		
		iS	39 57.5		
		i	40 35.5		
	MH	iP	38 07.5	c	
		iNEZ	19.8	c	
		iS	39 52.8		
	Fe	eNE	42 06		
		eE	43 18		
	F	eP	37 47.5	d	
		i	38 03.9		
		i	05.9		
		i	27.8		
		iS	39 00.3		
	R	iP	38 29.5	d	
		iNZ	51.3		
		iN	39 09.8		
		iE	45.6		
		i	40 30.2		
		iE	48.5		
July 29	B	eP	17 00 01.5	c	USCGS: 2½°N, 127½°E. h = 70 km.
		iEZ	03.0	c	0 = 16:45:56.
		i	01 01.5	d	
	BG	ePP	04 06.5	d	
	B	i	18.7		
	BG	iEZ	23.5	c	
	B		50.4		
	BG	eSKSNEZ	10 36		
		e	13 25		
	MH	iP	00 05.9	c	
		i	10.8	c	
		iPP	04 19.3	c	
		i	46.2	c	
	F	eP	00 12.5	c	
		e	43		
		e	03 41		
		ePPN	04 36.5		
		e	07 32		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	R	eP	00 10.0	c	
		ePP	04 13.5		
		eE	14.5		
		e	05 23.5		
		e	07 32		
		eSKSE	10 23.5		
		eN	44.5		
		e	12 07		
July 29	B	iP	18 45 03.7	c	Pasadena: Near 33°07'N, 115°44'W.
	BG	iSNE	46 39		0 = 18:42:48.
		eLNE	47.0		
	MH	iP	44 22.1	c	
		i	52.3	c	
		eSNE	45 33.5		
		i	35.5		
		e	46 05.5		
	F	eP	44 08	c	
		eN	15.5		
		eNE	25.5		
		e	45 23.0		
		eE	24.4		
		eN	51 33		
	R	eP	44 50		
		eE	45 08.5		
		eNZ	09.5		
		eEZ	46 45.0		
		eE	47 08.0		
July 30	B	iP	00 01 51.7	c	USCGS: 6°S, 155°E. 0 = 23:48:58.
		e	04 17.6		
	BG	ePP	05 16.5	c	
		eE	20.5		
		eSE	11 48.5		
		eLEZ	28.5		
	MH	iP	01 54.5	c	
		i	02 14.9	d	
		i	03 44.9		
		eLE	32 13		
	Fe	eLE	30 12		
	F	iP	02 00.7	c	
		e	04 41.5		
		ePP	05 28		
		ePS	13 53		
		eL	30.6		
	R	iP	02 03.6	d	
		iN	21.4		
		ePP	05 37		
		eN	44		
		eE	06 05		
		eSN	12 49		
		ePPS	14 29		
		eL	30.5		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
July 30	MH	iP	14 48 55.8	d	
Aug. 1	MH	iP	02 15 54.1	c	USCGS: Near Coast of Hokkaido Japan.
		i(pP)	16 09.1	d	O = 02-04-43.
Aug. 1	MH	eP	03 00 59.0	c	
Aug. 1	MH	eP	07 50 23.1	d	
Aug. 1	B	iP	08 39 19.6	c	Pasadena: Near 33°07'N, 115°44'W.
		i	39.3	c	O = 08:37:20.
		i	40 18.9	d	
	BG	eNE	47.0		
		eNE	41 15		
	B	i	26.3		
	BG	MEZ	42.0		
	MH	eP	38 56.0		
		i	39 06.2	d	
		i	40 24.4		
	F	eP	38 37.5	d	
		eNZ	41.5		
		eEN	57.5		
		iE	39 50.6		
		iEZ	58.6		
	R	eP	39 14		
		eE	31.5		
		eE	40.5		
		e	40 31.5		
		eN	41 12.5		
		eE	14.0		
		iN	59.2		
Aug. 1	B	iP	09 22 39.9	d	USCGS: 42½°N, 145°E. O = 09:11:39.
		i	49.1	c	
		i	23 19.1	c	
	BG	eSE	31 34		
		eLN	39.6		
		eE	41.1		
		eE	45.5		
	MH	eP	22 44.4	d	
		i	56.1	d	
		iPcP	23 55.6	c	
	F	eP	22 54	d	
		ePcP	23 59.5		
		e	24 51		
	R	eP	22 44	d	
		eE	23 05.3		
		eSNEZ	31 44.5		
Aug. 1	MH	iP	19 37 55.2	c	
		i	38 09.2	d	
Aug. 1	MH	iP	22 27 57.7	d	
		i	28 07.4	c	
		i	13.1	d	
Aug. 2	MH	iP	06 51 32.0	d	
		i	40.9	d	
	F	iP	34.0		
		e	50.0		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Aug. 2	B	iP	11 02 52	c	USCGS: 12°N, 143°E. 0 = 10:50:07.
		ePP	06 17.1	d	
		iSNZ	13 26.1		
		eN	25.7		
		e	44.6		
	MH	iP	02 55.0	c	
		i	03 02.0	d	
		i	19.1	c	
	F	ePEZ	03 02.5	c	
		e	47.5		
		eE	04 38.5		
		eSN	13 48.5		
		e	14 47.5		
		ePPSN	16 13.5		
	M	iP	02 51.4		
Aug. 2	MH	eP'	14 09 00.0	d	B.C.I.S.: 14.5°N, 40°E. 0 = 13:49:58.
		ePP	10 46.2	d	
	F	eP'	00	d	
	M	eP'	08 53		
Aug. 2	MH	iPEZ	17 24 11.6	c	
		i	17.4	d	
		i	20.0	c	
		i	26.7	c	
Aug. 2	MH	iP	17 36 32.8		
		ipP	34.6		
Aug. 3	B	eP	06 20 33.1	c	USCGS: 18°N, 100°W. h = 150 km.
	BG	epP	54		0 = 06:14:54.
	B	iPcP	23 52		
	BG	eSN	25 15		
		e	26 08		
		e	30 21		
	MH	eP	20 27.2	d	
		ipP	53.3	c	
		e	29 26.5		
	F	eP	20 13.5	d	
		e	25 36.5	d	
		eE	28 28		
	M	eP	20 44.8		
		eS	25 14.0		
Aug. 3	MH	eP	09 37 22.6	d	USCGS: Near Border of Northern
		i	30.3	d	Columbia and Venezuela. 0 = 09:28:04.
	M	eP	28.9		
Aug. 3	MH	eP	15 39 36.8	c	USCGS: Marianna Islands Region.
		i	40 07.5		
	F	eP	44	c	
Aug. 3	MH	eP	15 56 08.7	d	B.C.I.S.: 39°N, 142°E. 0 = 15:44.7.
Aug. 3	B	iPNZ	22 27 49.4	c	USCGS: 10°N, 69½°W. 0 = 22:18:18
		i	51.9	d	
		eSNE	35 34.1		
		eN	49.5		
		eE	52.0		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	MH	iP	22 27 45.3	c	
		i	47.7	d	
		iPPP	31 07.2	d	
		iScP	33 22.5		
		eS	35 25.0		
		eLN	50.2		
	Fe	ePN	28 13		
		eSNE	36 00		
	F	iP	27 33.0	d	
		i	49.4		
		i(PcP)N	28 12.9		
		e	15.2		
		ePPP	30 54.5		
		eE	33 13.5		
		eSNE	35 02.0		
	M	iP	27 51.2		
		ePP	30 00.5		
Aug. 4	MH	eP	00 13 57.2		
		i	14 01.7		
Aug. 4	MH	iP	03 15 37.4	c	
		i	45.6	c	
		i	52.2	c	
Aug. 5	B	ePP	09 35 48.5	c	USCGS: 50°S, 164°E. 0 = 09:16:48.
		e	37 11.2		
	BG	e	57	c	
		e	44 31		
		iSE	45 22.2		
		iE	46 23.7		
		eE	10 02.2		
		eE	05.9		
		eE	13.1		
	MH	ePP	09 35 47.1	d	
	F	ePP	49	c	
		e	36 39.5		
		e	39 04.5		
		ePPS	45 55		
		eL	10 12.9		
	M	ePP	09 35 28.4		
		e	46 24.5		
Aug. 5	MH	iP	11 54 42.0	d	
Aug. 6	MH	iP	03 05 52.2	c	
		i	06 07.0	c	
Aug. 6	MH	iP	12 56 46.0	c	Pasadena: Near Apia.
Aug. 6	MH	iP	23 56 23.5	d	
Aug. 7	B	iP	02 58 50.5	d	B.C.I.S.: 7.5°N, 124.3°E.
		iPP	03 03 05.0	c	h = 100 km. 0 = 02:44:45.
	BG	iSKSNE	09 17		
	B	ePS	11 52		
	MH	iP	02 58 52.2	c	
		iPP	03 03 08.4	d	
		ePS	12 04.0		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	F	eP	02 58 58.5	c	
		e	03 02 18.5		
		eNE	28.5		
		e(PP)	03 10.5		
		eSKS	09 27.5		
		ePPSN	13 08.5		
	M	eP	02 58 46.7		
		e	03 02 43.0		
		ePP	03 00.2		
		ePS	11 52.5		
Aug. 7	MH	iP	11 14 05.0	c	
		i	11.5	d	
Aug. 7	MH	iP	16 01 43.9	d	USCGS: 1°N, 126°E. O = 15:47:23.
		ePP	05 53.0	d	
	F	eP	01 51	c	
		e	05 27		
Aug. 7	MH	iP	16 17 28.5	c	
Aug. 8	MH	eP	01 13 55.9	d	
		i	14 06.5	d	
Aug. 8	MH	iP	03 09 21.5	c	USCGS: Fiji Islands Region.
		i	46.0		h = 600 km. O = 02:59:16.
	F	eP	10 24.7	c	
		epP	12 18		
	M	eP	10 29.0		
Aug. 8	B	eP	05 16 22.3	d	USCGS: 55°N, 134½°W. O = 05:12:00.
	BG	eSNE	20 08.5		
		eN	21 28.5		
		eLE	23 23.5		
	MH	eP	16 31.9	d	
		eNE	37.0		
	F	eP	42.5	d	
		eN	18 51		
		eSN	20 41		
Aug. 8	MH	iP	07 55 41.5	d	
		i	47.8	c	
Aug. 8	MH	iP	11 21 38.5	c	
		i	46.9	d	
		i	53.2	c	
Aug. 9	MH	eP	18 57 09.4	d	USCGS: Santa Cruz Islands.
		i	12.8		O = 18:45:06.
Aug. 9	MH	iP	19 07 33.4	c	
		i	39.1	c	
		i	48.1	c	
Aug. 10	MH	eP	20 32 20.9	d	
Aug. 11	MH	iP	18 12 25.5	d	
		i	37.2	d	
Aug. 11	MH	eP	20 32 59.0	d	USCGS: Tonga Islands. O = 20:20:52.
		i	33 17.2	c	
Aug. 12	MH	iP	10 57 08.2		USCGS: Kermadec Islands.
		ePcP	31.4		
	F	iP	10.8	d	
	R	ePEZ	11		
		eN	36.5		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Aug. 13	MH	iP	16 52 03.4	d	USCGS: 19½N, 70½W. 0 = 16:43:20.
		i	19.2		
	F	eP	51 49	c	
	R	eP	13		
		eN	39		
Aug. 13	M	e	18 47 43.6		USCGS: 51½°N, 177°W.
	R	eP	46 56	d	h = 100 km. 0 = 18:39:16.
		eEZ	47 07.5		
Aug. 14	B	iPNEZ	23 03 01.5	c	USCGS: 27°S, 62½°W. h = 600 km.
	BG	ipP	05 12.0	c	0 = 22:51:28.
	B	ePP	06 29.4		
	BG	e	08 23	c	
		eS	12 23		
		iSNE	28		
		MNEZ	12.8		
	Fe	ePN	03 19		
		eSNE	12 50		
	F	iPEZ	02 49.4	c	
		iPcP	03 11.2		
		i	04 01.3		
		ipP	05 09.7		
		i	48.8		
		isP	06 17.6		
		e(pPP)E	08 03.0		
		eN	55.5		
		eSNEZ	12 18.5		
		eN	15 03.0		
	M	iP	03 05.8		
		ipP	05 28.2		
		esP	06 01.3		
		e	09 45.3		
		eS	12 33.5		
		e	13 45.3		
		e	50.9		
Aug. 15	B	eP	14 23 38.6		
	BG	ePNEZ	39.6	c	USCGS: 28½°N, 97°E. 0 = 14:09:30.
		iNE	24 39		
		eP'	27 43		B.C.I.S.: 28.6°N, 96.5°E.
		iSKS	34 24		0 = 14:09:30.
	B	eE	44 38		
		eE	54 35		
		eEZ	15 02.2		
	Fe	ePE	14 23 40		
		eP'E	27 32		
		eE	31 12		
		eN	38 50		
		eE	44 14		
		eNE	15 06.0		
	F	eP	14 23 48.0	c	
		e	24 44.5		
		e	25 52		
		eP'	27 29		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		eE	28 06		
		iPPNZ	14.5		
		eE	29 38.5		
		eSKSE	34 57.5		
		i	38 43.5		
		e	52.5		
		eE	15 03.2		
		e	03.5		
		eE	07.0		
	M	eP	14 23 30.7		
		e	45.6		
		i	24 24.5		
		eP'	27 21.0		
		e	51.0		
		e	29 08.0		
		eL	58 28.0		
Aug. 15	B	ePP	22 01 31		USCGS: 27°N, 92°E. O = 21:42:23.
	MH	eP'	00 52.3		
		ePP	01 36.7	d	
	F	eP'	00 35.5		
		ePP	01 45		
Aug. 16	MH	iP	02 19 06.9	c	
		i	12.5	c	
		i	21.9	c	
Aug. 16	MH	eP'	05 51 38.8	c	USCGS: China-India-Burma Border Region.
	F	eP'	48		O = 05:33:06
Aug. 16	MH	eP'	07 00 33.1	c	USCGS: Aftershock.
	F	eP'	29	c	
		e	03 04.0		
	M	eP'	00 14		
Aug. 16	MH	eP	07 11 51.3	d	
Aug. 16	M	eP	09 26 19.7	c	USCGS: 14°N, 146°E. O = 09:13:50.
Aug. 16	MH	e	16 49 52.9		
		i	59.7		
Aug. 16	F	eP'	18 10 32		USCGS: Aftershock.
Aug. 17	MH	eP	09 14 15.1	d	
Aug. 17	MH	iP	13 23 39.4	c	
		i	47.6	c	
		i	54.2	c	
Aug. 17	MH	iP	14 34 12.4	d	USCGS: 12½°S, 172°W.
		i	47.6	c	h = 150 km. O = 14:23:16.
	F	eP	07	d	
		e	52.0		
Aug. 17	B	eP	16 26 34.8	c	USCGS: 21°S, 180°
		iEZ	36.4	d	h = 600 km. O = 16:15:22.
		epP	28 42.9	c	
		isP	29 49.9	d	
		eSNZ	35 55		
	BG	iNEZ	55.9		
		iNEZ	58.9		
		eSPNEZ	36 44		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	MH	iP	26 36.0	d	
		i	37.3	d	
		i	42.0	c	
		ipP	28 46.6	c	
		isP	29 50.2	c	
		eSNEZ	35 57.8		
	Fe	eSNE	36 04		
	F	iP	26 39.7	d	
		epP	28 40.5		
		esPN	29 57.5		
		eSEZ	36 02.5		
		eSN	08.0		
	M	eP	26 44.6		
		e	27 13.6		
		esP	29 52.9		
		eS	36 17.5		
		e(sSS)	45 08		
		eP'P'	53 11		
		e(SKPP')	55 44		
	R	ePEZ	26 48	d	
		eN	27 07.5		
		epPEZ	28 59.0		
		eNZ	37 09		
		iE	37 14.9		
Aug. 17	MH	eP	16 45 10.6	d	
		i	13.1	c	
Aug. 17	B	eP	16 53 21.9	d	
	MH	eP	06.6	d	
		i	28.7	d	
	F	eP	10.0	d	
		e	57 02		
	R	ePE	53 09.0		
		e	12.5	d	
Aug. 18	BG	eP'NZ	01 26 13	d	USCGS: 28½°N, 97°E.
		eNZ	28 28		O = 01:07:49. Aftershock.
		eNE	32 38		
		eN	33 24		
		eE	02 03.3		
		eLZ	03.8		
		eN	04.5		
		MN	11.1		
	MH	eP'	01 26 20.6	c	
	F	eP'N	28.5		
		eP'	33.5	d	
		eSKSN	32 47.5		
	M	e	01 25 43		
		eP'	26 04.5		
	R	eP	21 59.0	d	
		eN	25 55.5		
		eP'	26 13.5		
		eSKSNE	32 34.5		
		eE	34 05.0		
		e(PS)	35 24.0		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Aug. 18	BG	eE	15 54.9		
		e	55.4		
		eN	56.0		
	F	eN	15 53 08.0		
		eE	54 00.5		
		e	30.8		
		eN	57 02.5		
Aug. 18	BG	eP'	17 17 10.3		USCGS: 28½°N, 97°E. Aftershock.
		eE	41.5		
		eN	42.4		
	MH	eP'	17 06.0		
	F	e	16 11.5		
		e	20 47.5		
		e	23 36.5		
	R	e	16 52.2	d	
		e	17 07.8		
		eN	22 16.5		
		e	23 18		
Aug. 20	MH	iP	00 53 40.4	d	
		i	45.9	d	
	R	eP	50.5	c	
		eN	54 05.0		
Aug. 20	MH	eP	01 47 45.3	c	USCGS: 47¼°N, 113½°W.
		eSNE	51 11.5		0 = 01:44:55.
		i	15.9		
	F	eP	47 45.5		
		e	48 31.5		
		eSE	51 11.0		
		e	13.4		
		eN	53 11.5		
		eN	54 17		
	M	iP	47 11.1		
		i	22.6		
		e	48 43.6		
	R	eP	47 23.5		
		i	47.8		
		i	48 35.3		
		iNZ	49 49.4		
		i	50 02.3		
Aug. 20	MH	iP	02 03 36.3	c	
		i	44.4		
		i	51.4	c	
Aug. 20	B	eP	23 46 57		USCGS: 15°S, 167°E.
	BG	eNEZ	00 13.7		0 = 23:34:19.
	MH	iP	23 46 58.9	c	
		iPcP	47 05.4	c	
		ePP	50 13.5	c	
	F	eP	47 01	c	
		e	48 17		
		e	50 30.5		
	M	eP	47 00.8		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Aug. 21	MH	iP	15 49 41.4	d	USCGS: 20°N, 70°W.
		i	50.8	d	O = 15:40:59.
Aug. 22	MH	iP'	07 01 31.2	c	USCGS: 31°N, 94°E.
		iPP	02 10.1	c	O = 06:43:18.
	F	eP'	01 45.5	c	
	M	eP'	15.2		
		e	29.2		
	R	eN	00 41.5		
		e	43.5		
		eP'EZ	01 38		
Aug. 22	B	iP	07 49 36.7	c	USCGS: 53°N, 160°E.
		e(pP)	54		O = 07:40:09.
	BG	eSE	57 17		JSA: 52.8°N, 159.1°E. h = 75 km.
		eE	08 02.7		O = 07:40:21.
		eE	06.3		
	MH	iP	07 49 41.6	c	
		i	50 02.9	d	
	F	eP	49 52.5	c	
		e(pP)	50 50.0		
	M	eP	49 28.0		
		e	50 44.7		
	R	eP	49 39.0	d	
		epPN	50 01.0		
		ePP	52 05.5		
		eSZ	57.2		
Aug. 22	MH	iP	17 34 56.9	d	
		i	35 04.3	d	
Aug. 23	MH	iP	03 27 51.0	c	USCGS: 29½°N, 95°E.
	M	eP	22.7		O = 03:09:19.
		i	33.9		
		e	29 47.5		
	R	ePNZ	27 24.5	c	
		e	45.5	c	
Aug. 23	MH	eP'	19 05 31.3	d	USCGS: Aftershock of Aug. 15, 14 h
	F	eP'	34	d	O = 18:46:57.
		e	07 51.5		
	M	eE	04 02.0		
		e	15.3		
		e	05 01.5		
	R	e	04 44.5		
Aug. 23	MH	iP	22 03 27.1	c	
		i	40.3	c	
Aug. 24	MH	iP	06 16 44.6	c	
	M	iP	35.6		
		e	17 23.5		
Aug. 24	B	iP	17 46 53.9	d	USCGS: 42½°N, 126°W.
		i	59.5		O = 17:45:34.
		iNEZ	47 58.6		
		eEZ	48 12		
	BG	iEZ	25.0		
	B	eZ	49.5		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	MH	iP	47 05.4	d	
		i	09.2		
		i	26.7		
		iS	48 16.1		
		eE	49 34.5		
		e	50 21.0		
	Fe	ePNE	46 36		
	F	ePNE	47 31.5		
		e	34.5		
		eN	48 42.0		
		eNE	50 22.5		
	M	eP	46 35.6		
		eNZ	47 27.0		
		eEZ	49 11.9		
	R	eP	47 01.5	c	
		eNE	48 22.5		
Aug. 25	MH	eP	02 18 23.6	c	USCGS: 49½°N, 129°W.
	F	eP	38	c	0 = 02:15:10
	R	ePNZ	06.0	d	
		eN	33.0		
Aug. 26	B	iP	04 46 29.6		USCGS: 65°N, 162°W.
	BG	eSNE	51 58		0 = 04:39:27.
		eSSSNE	54 36		
		eLNE	57.0		
	MH	eP	46 34.2	d	
		i	47 16.2		
		ePP	48 16.9		
		eN	05 01 27		
	F	eP	04 46 45.6	d	
		e	47 26.2		
		ePPNZ	48 16		
		eN	51 00		
	M	iP	46 12.0		
		e	47 06.3		
	R	eP	46 25.0	d	
		eN	48 25.0		
Aug. 26	B	iP	07 25 03.3	c	USCGS: 19°S, 170°E.
	BG	eN	26.4		h = 100 ca. 0 = 07:12:29.
		ePPPNE	30.9		
		eSE	35 27		
		eN	36.2		
	MH	iP	25 04.5	c	
	F	eP	09.0	c	
	M	eP	11.0		
	R	eP	14.5	c	
Aug. 26	MH	iP	10 53 14.8	d	USCGS: South of Fiji Islands.
		i	16.7	c	h = 300 km. 0 = 10:41:33
	M	eP	26.2		
Aug. 27	MH	iP	00 44 38.2	d	
	F	eP	51		
	M	eP	17.1		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Aug. 27	R	eP'	11 18 28		USCGS: Aftershock of Aug. 15.
Aug. 28	MH	iP	05 37 23.4	c	
		i	32.1	c	
Aug. 28	MH	iP	13 05 34.0	c	USCGS: Marianas Region.
		i	49.8	c	0 = 20:23:34.
	R	eP	43.8	c	
Aug. 28	MH	iP	23 06 30.5	c	
		i	37.8	c	
Aug. 28	MH	iP	23 20 47.0	d	
Aug. 29	MH	eP	01 31 40.9	c	
Aug. 29	MH	iP	05 33 54.9	c	
Aug. 29	MH	eP	07 35 17.9	d	
Aug. 29	MH	iP	15 13 43.0	d	
Aug. 29	MH	eP	20 36 23.5	d	USCGS: Marianas Islands. 0 = 20:23:34.
Aug. 29	MH	eP	22 46 08.9	d	
		e	48 11.9	d	
Aug. 30	MH	eP	04 54 38.0	c	
	F	eP	47.5	c	
Aug. 30	MH	iP	05 33 16.5	c	
		i	41.7	d	
	F	eP	26.5	c	
Aug. 30	MH	eP	06 56 07.1	c	USCGS: Alaska Peninsula.
	F	eP	19.0	d	0 = 06:49:10.
	M	eP	55 51.2		
	R	eP	56 05.5		
Aug. 30	B	iP	07 05 28.0	d	USCGS: 3½°S, 130°E. 0 = 06:51:03.
		iPP	09 48.5		
	BG	iSKSE	15 53.0		
		iSKKSE	16 37.0		
		iE	19 25.0		
		eE	25 20		
		eLN	32 22		
	MH	iP	05 32.5	d	
		i	48.0	c	
		ePP	09 51.1	c	
	F	eP	05 36.0	d	
		ePP	09 46.5		
		e	10 27.0		
	M	ePP	09 41		
	R	eP	05 29.0	d	
		ePP	09 47.5		
Aug. 30	B	iP	09 26 34.2		USCGS: 19°S, 168°E. 0 = 09:13:49.
		i	27 11.7		
		i	28 06.8		
	BG	eLE	56 00		
	MH	iP	26 35.7	d	
		e	27 22.3		
	F	eP	26 40.5	c	
		ePP	30 04		
	M	eP	26 42.4		
	R	eP	46.5	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Aug. 30	MH	eP	09 37 22.6	d	USCGS: New Hebrides.
		e	54.3	c	0 = 09:24:35.
Aug. 30	MH	eP	23 26 36.5	d	USCGS: New Hebrides.
	F	eP	40.9	c	0 = 23:13:53.
		e	27 36		
	R	eP	26 52.5	d	
		e	27 30		
Aug. 31	B	iP	07 19 42.2	d	USCGS: 6°N, 126°E.
	BG	ePPEZ	23 53.5	c	0 = 07:05:35.
		e	24 39.5		
		eSKSE	30 04.0		
		eN	10.5		
		e(PS)E	33 06.5		
		e(PSPS)	39.0		
		eLEZ	52.6		
		eN	54.1		
	MH	iP	19 42.3	c	
		i	21 02.8	c	
		iPP	24 00.9	d	
		eSKSNE	30 17		
		e	35 33.8		
	F	eP	19 50	c	
		ePP	24 03.5		
		eN	11.5		
		e	29 24		
		eN	27		
	M	eP	19 37.0		
		i	42.5		
		e	22 52.0		
		ePP	23 54.0		
	R	eP	19 45.0		
		eEZ	50.4		
		ePPE	24 00.0		
		eSKSNE	30 20.5		
Aug. 31	B	eP	18 48 58.6	c	USCGS: 42°N, 125°W.
	BG	eSN	50 20.3		0 = 18:47:43.
		eE	29.3		
		e	51 06.3		
	MH	eP	49 09.2	d	
		i	12.5	d	
	F	eP	33.2	d	
	M	eP	48 39.5		
	R	eP	49 03.8		
		eN	44.5		
		eN	51 06.0		
Aug. 31	MH	iP	22 38 15.9	c	
Sept. 1	MH	eP	03 06 19.1	c	B.C.I.S.: 3.3°S, 89°E.
	M	eP	15.7		0 = 02:46:58.
		e	25.6		
		e	08 46.6		
	R	eP	06 26.0		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Sept. 1	MH	eP	07 10 57.9	d	USCGS: Kurile Islands. 0 = 07:00:50.
	M	eP	44.3		
Sept. 1	R	e	07 30 19.5		
		eE	20.5		
	M	eP	29 50.0		
Sept. 1	MH	eP	14 07 31.4	d	
Sept. 1	MH	eP	14 48 01.4	d	
Sept. 2	MH	iP	02 35 57.0	c	
Sept. 2	B	eP	02 54 24.6	c	USCGS: 52½°N, 169°W.
	BG	eS	59 41.5		h = 100 km. 0 = 02:47:23.
	MH	eP	54 27.0	d	
		iNEZ	38.5		
		e	55 17.5		
		eS	03 00 28.4		
		eL	03.2		
	F	ePNZ	02 54 42	c	
	M	eP	05.9		
	R	eP	20.5		
		eS	59 59.0		
Sept. 3	MH	iP	00 45 06.7	c	USCGS: Near Apia. 0 = 00:33:20.
	F	eP	10.5	c	
Sept. 3	B	iP	04 17 54.4	c	USCGS: 11°S, 162½°E.
		e	18 08		0 = 04:05:15.
	MH	iP	17 55.9	c	
		i	18 10.0		
		i	17.6		
		i	28.0		
		i	19 01.3		
	F	eP	18 02 ca	c	
	M	eP	00.0		
	R	ePEZ	05.3	c	
		eE	17.5		
Sept. 3	BG	eLN	19 38.6		Tacubaya: 14°43'N, 93°20'W.
		eE	40.6		0 = 19:20:17.
		eZ	40.8		
Sept. 5	B	iP	19 21 27.1	d	Pasadena: 33°39'N, 116°45'W.
		i	34.3		0 = 19:19:56.
		eS	59		
	MH	iP	17.0		
		i	32.8		
		eN	53.0		
		eN	22 04.6		
		eN	49.0		
		eE	50.5		
		iZ	50.9		
	F	ePE	20 48		
		iNEZ	21 09.9		
		i	52.4		
	M	eP	21 53		
	R	ePNEZ	36	c	
		eNE	22 21.4		
		eE	23 22.0		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Sept. 6	M	iP	19 20 39.8		
Sept. 7	MH	eP	00 32 44.1	d	
		e	33 11.0		
		i	32.4		
Sept. 7	MH	iP	02 07 16.8	d	
Sept. 7	M	i	10 30 32.1		
Sept. 7	B	iP	15 11 41.4	c	USCGS: Kermadec Islands.
	MH	eP	38.3		h = 100 km. O = 14:59:02.
		e(pP)	12 00.0		
	F	eP	11 39	c	
		e(pP)	12 03		
Sept. 8	B	iP	07 09 40.0	d	USCGS: Fiji Islands.
	MH	eP	40.5	d	h = 600 km. O = 06:58:30.
	F	eP	44.0	d	
	M	eP	50.5		
		e	10 00.3		
	R	ePNZ	09 53.1	d	
Sept. 9	B	eP	05 49 57	c	B.C.I.S.: 27.4°S, 71°W.
	MH	eP	53.5	c	O = 05:37:39.
	F	eP	43.0		
Sept. 9	B	eP	10 35 01	c	USCGS: 4°S, 153°E.
	BG	e	36 15		O = 10:21:40.
		eSE	45 06		
		eN	58.3		
		eN	11 01.3		
		eEZ	02.3		
	MH	eP	10 34 33.5	c	
		e	36 14.5		
		e	38 08.0		
	F	e	49 44		
		e	50 09		
		e	53 19.0		
	M	eP	34 38.0		
Sept. 9	MH	eP	12 53 51.5	c	USCGS: 15°S, 171°W.
	M	eP	54 02.1		O = 12:42:34.
Sept. 9	B	eP	14 40 28	c	USCGS: 19°S, 169½°E.
	MH		29.5	d	O = 14:27:47.
	F		35.0	c	
Sept. 9	B	iP	17 23 12.7	d	
		i	24.8	d	
		e	49.8		
Sept. 10	B	eP	03 33 01.8	c	USCGS: 35°N, 140°E.
		e	35 53		O = 03:21:20.
	BG	eSNE	42 35		
		eSSN	47 31		
		eLNE	52.3		
		e	56.0		
	F	eP	33 14.5	c	
		ePPE	36 21		
	M	eP	32 56.4		
		e	34 25.4		
	R	eP	33 07.5	c	
		eN	42 44.5		
		eSE	43 20.5		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Sept. 10	MH	eP	06 37 17.5	c	
	F	eP	22		
	M	eP	10.0		
	R	eP	14.5		
Sept. 10	MH	eP	14 44 44.5	c	
Sept. 10	B	eP	15 28 28.1	d	USCGS: 14°S, 167°E.
		iNEZ	35.1		0 = 15:15:57.
		epPP	31 51.0		J.S.A.: 14.3°S, 166.8°E.
		eSN	38 45		h = 100 km. 0 = 15:16:10.
	BG	eSNE	46		
		eN	40 32		
		eN	44.3		
		eN	51.0		
	MH	eP	28 30.0	d	
		i(PcP)EZ	36.5		
		e(sP)	29 28.0		
		e(PP)	31 27.1		
		e(PPP)	33 31.0		
		eSE	38 48		
	Fe	ePE	27 36		
		eSE	37 45		
	F	eP	28 33.5	c	
		i(sP)	29 24.5		
		i(PP)	31 58.8		
		eSE	38 51.5		
		eZ	39 01.5		
		eN	52.5		
	M	ePNEZ	28 42.1		
		e	30 43.3		
		e(pPP)	32 00.1		
		e(PPP)	33 20.6		
		eSE	38 51.3		
	R	ePEZ	28 43.5	d	
		e(sP)	29 16.0		
		e(SKS)E	39 08.5		
Sept. 10	B	eP	15 54 49		
		e	58 06		
	MH	eP	54 45.0	c	
		e	58 03.0		
		e	16 15 20		
	F	eP	15 54 47		
		e	58 00		
		eN	16 00 00.5		
		eEZ	02.0		
	M	e	15 54 45.1		
Sept. 13	MH	eP	12 09 59.5	c	USCGS: 76°N, 3°E.
		e	10 05.5		0 = 11:59:40.
		eP	09 38.8		B.C.I.S.: 77.5°N, 5°E.
		e	10 02.4		0 = 11:59:35.
		e	11 49.7		
Sept. 13	MH	eP	20 56 02.5		USCGS: New Hebrides
		ePP	21 00 33.0		0 = 20:43:10.
	F	ePP	39		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Sept. 14	MH	eP	03 30 16.0	c	
Sept. 14	B	iP	07 38 59.5	d	USCGS: Aleutian Islands.
	MH	eP	39 05.8		0 = 07:31:20.
		e	24.5		
	M	ePNEZ	38 52.1		
Sept. 14	B	iP	08 03 35.4	d	USCGS: 20°S, 63°W. h = 600 km.
		i	45.1		0 = 07:52:20.
		i	53.9		
		i	04 17.6		
	BG	eSN	12 46		
	MH	iP	03 32.2	d	
	M	eP	40.3		
		e	04 00.7		
		eS	12 42.7		
Sept. 14	BG	eSKKSE	09 30 53		USCGS: Halmahera Islands Region.
		e(pS)N	32 05		h = 200 km. 0 = 09:06:08.
		eSSN	38 41		
		esSSN	40 03		
	MH	ePP	24 17.4		
	M	ePP	23 47.2		
		e(P')	27 10.7		
Sept. 15	B	iP	14 26 33.3	d	USCGS: 23°S, 176°W. h = 100 km.
		i	49.4		0 = 14:14:30.
		i	27 24.8		
	BG	eSNE	36 40		
		eN	44 27		
		eN	49 43		
	MH	eP	26 34.0	c	
		e	27 22.5		
	F	eP	37	c	
		epP	57		
		e(PP)	30 00.5		
	M	eP	26 43.3		
		e(pP)	27 01.9		
Sept. 15	B	iP	19 16 15.0	d	USCGS: 16°S, 174°W. h = 250 km.
		i	17 14.1		0 = 19:05:08.
	MH	eP	16 16.0	c	
		e	17 17.0		
	F	eP	16 20 ca	c	
		e	17 21 ca		
	M	eP	16 26.6		
		e	17 27.8		
Sept. 16	B	eP	01 03 53.5	c	USCGS: 4°S, 104½°W.
	BG	iP	04 02.0		0 = 00:55:36.
	B	i(PcP)	05 33.2		
		ePP	06 00.0		
	BG	eE	29		
		eSE	10 35		
		iSN	39.5		
		eN	12 51		
		e(ScS)N	14.2		
		eL	14.9		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	MH	eP	03 47.0	d	
		eLNZ	16.7		
	F	ePNZ	03 37.5		
		e(PcP)NE	05 57.5		
		e	07 52.5		
		eSN	10 16.5		
		e	12 03.5		
	M	eP	04 09.3		
		eS	10 01.5		
		e	18 59.9		
Sept. 16	B	eP	09 26 19.0	c	
	MH	eP	21.6		
	M	eP	14.6		
Sept. 16	B	i	12 48 42.3		USCGS: Kurile Islands Region.
		e	49 46		0 = 12:30:50.
	F	e	26	c	
		e	13 01 00		
		i	32.7		
	M	eP	12 40 34.5		
Sept. 16	B	iP	13 00 50.0	c	C.M.O.: 32.7°N, 131.5°E.
		ipP	01 20.6		h = 110 km.
	MH	eP	00 53.0	c	B.C.I.S. 31.6°N, 130.3°E.
		epP	01 24.5		h = 150 km.
	M	eP	00 44.6		USCGS: 0 = 12:48:39.
Sept. 16	MH	eP	20 40 48.0	c	USCGS: Kurile Islands Region.
		eS	49 16.0		0 = 12:30:50.
Sept. 16	B	iP	22 06 14.1	c	USCGS: 52½ N, 178°E.
		e	24.9	d	h = 100 km. 0 = 21:58:15.
	BG	epPEZ	36.1	c	
	B	eEZ	38.3	d	
		eE	51.1		
		ePPZ	07 58.4	d	
		iScP	11 41.4		
	BG	eSNE	12 36.1		
	MH	ePEZ	06 20.6	c	
		i	24.7		
		i	43.3		
		iPP	08 03.2		
		eScP	11 44.0		
	F	iP	06 33.0	c	
		epPEZ	56.5		
		ePP	07 45.0		
		eE	08 37.0		
		e	09 14.0		
		eScP	11 49.5		
		eNE	16 19.5		
	M	eP	06 05.7		
		eNE	30.6		
		ePP	07 47.5		
		eScP	11 36.2		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Sept. 17	BG	eN	19 47.3		Pasadena: 32°10'N, 116°25'W.
		eE	47.9		0 = 19:43:30.
	F	ePNZ	45 02.0	c	
Sept. 18	BG	eE	06 53.0		
		eN	53.1		
Sept. 18	B	iP	19 46 34.4	d	USCGS: 9°S, 71½°W. h = 650 km.
		e	42		0 = 19:36:44.
	MH	iPNEZ	30.5	d	B.C.I.S.: 7.8°S, 70.8°W.
		epP	48 35.0		h = 600 km. 0 = 19:36:44.
		eN	41.0		
	F	eP	46 19.5	d	
		eN	47 50.5		
		epPE	48 41.5		
		e(ScS)	54 17.5		
	M	eP	46 38.5		
Sept. 18	MH	eP	21 10 39.5	d	USCGS: Western Alaska. 0 = 21:03:34.
Sept. 19	MH	eP	02 47 21.0	d	USCGS: South of Fiji Islands. 0 = 02:35:00
Sept. 19	B	iP	20 43 28.2	c	USCGS: 2°S, 138½°E.
	BG	ePP	47 35	c	0 = 20:29:48.
		eSNE	54 09		
		ePSNE	55 01		
		eLN	21 10.2		
		e	15.2		
	MH	eP	20 43 32.0	c	
		i	41.5		
		ePP	47 36.5		
		eE	48 00.5		
		eSNE	54 12.5		
		eLN	21 11.1		
	Fe	eSE	20 54 24		
		eLE	21 17.0		
	F	eP	20 43 06.5	c	
		e(PP)E	47 28		
		eSNE	54 20.5		
		eS	26.5		
		e	21 18.5		
	M	eP	20 43 31.5		
		ePP	47 38.5		
		e(S)	53 47.3		
	A	eP	43 24.0	c	
		ePP	47 18.5		
		e(SKKS)	54.6		
		e	56.0		
		e	21 17.4		
Sept. 20	B	e(pP)	00 48 36.2	d	USCGS: 4°S, 154°E. h = 500 km
	MH	eP	46 47.5	d	0 = 00:34:46.
		e(pP)	48 39.0		
	M	e(pP)	48 42.4		
Sept. 20	MH	eP	03 10 40.5	d	B.C.I.S.: 17.5°N, 93.3°W.
	M	eP	55.0		0 = 03:04:13.

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Sept. 20	MH	eP	12 41 09.0	c	
Sept. 20	B	iP	14 09 13.6	c	
	MH	eP	12.0	c	
	M	eP	15.8		
Sept. 21	BG	eP'EZ	23 10 48.6	d	USCGS: 9°S, 67°E.
		e	53.6	d	0 = 22:51:02.
		i	11 53.1		
		ePP	14 30		
	MH	eP'	10 47.0	c	
		ePP	14 32.0		
	F	eP'	10 52.5	c	
		ePP	14 39		
	M	eP'	10 46.2		
		eN	11 49.5		
		ePP	14 17.1		
Sept. 22	B	eP	01 46 33.0	d	USCGS: 47½°N, 153°E.
		epP	47 19.7		h = 150 km. 0 = 01:36:36.
	MH	iP	46 38.6	c	
		e	47 22.7		
	M	eP	46 24.6		
Sept. 22	B	eP	03 52 03.2	d	Pasadena: Indian Ocean.
		e	12.5		
	MH	eP	05.2	c	
	F	eP	08.5		
		epP	49		
		ePP	55 48		
	M	eP	51 57		
Sept. 22	MH	eP	04 15 54.5	d	
	M	eP	16 00.8		
Sept. 22	B	eP	08 02 38.8	d	USCGS: 25°S, 114°W.
		e	03 18.3	d	0 = 07:52:07.
	BG	eSNE	11 18		
		eE	12 00		
		e(ScS)E	12 36		
		eLE	20.9		
		eNZ	22.5		
	B	eP'P'	31 41	c	
	MH	eP	02 34.0	c	
		iEZ	39.2		
		e	10 20.5		
		eP'P'	31 47.5	d	
	F	eP	02 20.5	d	
		eL	22.4		
	M	eP	02 54.7		
		eP'P'	31 33.2		
Sept. 22	M	eP	08 16 02.4		USCGS: Kurile Islands Region.
					0 = 08:05:35.
Sept. 22	MH	eP	15 19 07	d	
		e	29.3		
Sept. 23	B	iP	00 04 34.7	c	USCGS: 18°S, 177°W.
		eNE	39.7		h = 450 km. 0 = 23:53:29.

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	BG	epPEZ	06 06		B.C.I.S.: 17.5°S, 177.5°W.
		eSNE	13 44.2		h = 400 km. 0 = 23:53:30.
		eNE	14 17.7		
		esSNE	16.4		
	MH	iP	04 34.5	d	
		epP	06 07.0		
		ePP	07 36.8		
		e	08 50.5		
		eS	13 44.5		
		e	14 14.0		
		eSPNE	18.0		
		esSNE	16 26.0		
	Fe	eSNE	13 52		
		esSN	16 40		
	F	eP	04 39.6	d	
		epP	06 14.0		
		eSNEZ	13 56.0		
		eE	15 50.0		
	M	eP	04 43.7		
		eNE	51.0		
		epP	06 17.3		
		eSNE	14 04.0		
	A	ePEZ	06 44	d	
		e	08 06		
		e	09 16		
		e(sS)NE	15 54		
Sept. 23	M	eP	06 37 24.6		USCGS: 35°N, 26°E. 0 = 06:23:44.
Sept. 23	MH	eP	09 52 16.9	d	USCGS: Aleutians
	M	eP	05.7		0 = 17:26:15.
Sept. 23	M	eP	20 34 04.4		USCGS: Fiji Islands, 0 = 20:21:55.
Sept. 24	B	eP	22 19 34.7	d	USCGS: 64°N, 156°W.
		e	52.7		0 = 22:13:28.
	MH	eP	40.6	d	
	M	eP	15.2		
		eN	21 58.3		
		e	22 29.5		
Sept. 25	MH	eP	18 21 59.9	c	USCGS: Central Chile. 0 = 18:09:20.
	M	e	18 23 09.5		
Sept. 27	B	eP	03 41 43.9	c	USCGS: 20°N, 109°W.
		ePP	42 11		0 = 03:36:55.
	BG	eSE	45 51		
		eSN	46 01		
		eSSE	48		
		eNZ	47.5		
		eL	48 19		
	MH	eP	41 35.5	d	
		e	42 27.0		
		eS	45 21.5		
	F	ePNZ	41 26		
		eNZ	47 55		
		eN	50 33		
	M	eP	42 00.6		
		e	49 37.4		
		e	58.3		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Sept. 27	B	iP	08 36 18.1	d	USCGS: 18½°S, 175°E.
	BG	eN	59.3		O = 08:23:58.
		eE	09 02.2		
		e	02.8		
		eN	03.5		
	MH	eP	08 36 19.0	d	
		e	33.5		
		e	37 09.0		
	F	eP	36 23.5	d	
	M	eP	36 26.3		
Sept. 28	MH	eP	03 43 03.5	d	USCGS: 23°N, 121°E.
		e(PP)	46 45.0		O = 03:29:36
	M	eP	42 55.5		
		e(PP)	46 36.9		
Sept. 28	M	eP	13 38 17.8		USCGS: 5°S, 151°E, O = 13:25:11.
Sept. 28	B	iP	21 51 22.1	c	USCGS: 54½°N, 134½°W.
	MH	eP	29.4	d	O = 21:47:01
	F	ePZE	39	c	
	M	eP	50 57.1		
	R	ePE	51 18.0		
		eP	18.5	c	
		eN	54 52.0		
Sept. 29	B	ePEZ	06 37 19	d	USCGS: 19°N, 107°W.
	BG	iPNEZ	21		O = 06:32:14.
		eSN	41 43		
	B	eSSE	42 59		
		eLNEZ	45 28		
	MH	ePNEZ	37 12.4	d	
		e	38 31.5		
		eN	39 24.0		
		eSE	41 41.5		
	Fe	ePN	37 56		
		eSN	41 48		
		eE	44 06		
		eLN	46 10		
	F	iP	36 57.8	d	
		eN	37 45		
		i	54		
		i	39 17.0		
		e(S)N	40 35		
		eN	42 05.5		
		e	20		
	M	eP	37 35.0		
		e	38 26.3		
		eN	42 15.0		
		eN	44 44.0		
		e	55.0		
		eN	48 08.0		
	R	iP	37 24.5	d	
		eE	41 59.5		
		eN	42 06.5		
		e	44.0		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Sept. 29	MH	eP	07 59 26.5	c	USCGS: 19°N, 107°W.
		e	47.0		O = 07:54:22.
	F	ePN	04		
		eP	07.5	c	
		iN	18.4		
		eN	08 00 42.5		
	M	eP	07 59 45.9		
	R	eP	35.0		
		eN	08 05.6		
Sept. 30	B	e(P')	07 47 20		USCGS: 28°N, 94°E.
	MH	ePP	48 23.5	c	O = 07:28:54.
		ePKKP	58 48.5		
	F	e	46 58.5		
		e	47 33.5		
	M	eP	42 58.4		
		ePP	45 47.1		
		eP'	46 14.7		
		ePKKP	58 55.8		

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BERKELEY—MOUNT HAMILTON—PALO ALTO SAN FRANCISCO—FERNDALE—FRESNO MINERAL—ARCATA—RENO

Earthquakes and the Registration of Earthquakes

From October 1, 1950, to December 31, 1950

BY
DON TOCHER

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SEISMOGRAPHIC STATIONS OF THE UNIVERSITY OF CALIFORNIA

Perry Byerly, Director

EARTHQUAKES IN NORTHERN CALIFORNIA, NEVADA, AND OREGON

and

REGISTRATION OF EARTHQUAKES AT: BERKELEY, MOUNT HAMILTON, PALO ALTO, SAN FRANCISCO, FERNDALE, FRESNO, MINERAL, ARCATA AND RENO FROM OCTOBER 1, 1950 TO DECEMBER 31, 1950

VOLUME 20 NUMBER 4

By Don Tocher

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EARTHQUAKE INTENSITY SCALE

Intensities are given by Roman numerals in the list of California, Nevada, and Oregon earthquakes on the following page, when sufficient information on the effects of the shock is available. Criteria of the Modified Mercalli Scale which are used to rate the intensity are:

Intensity

II	Felt by a few people only. Duration or direction not appreciable.
III	Duration or direction appreciable.
IV	Rattling of doors and windows; swinging of suspended objects.
V	Disturbance of movable objects; plaster cracked.
VI	Overthrow of movable objects; cracking of chimneys and other brickwork.
VII	Fall of some chimneys; some damage to buildings.

EARTHQUAKE MAGNITUDE SCALE

Richter magnitudes given in the list of epicenters on the next page are found from the Wood Anderson amplitudes, using the nomogram given by Nordquist, "Bulletin of the Seismological Society of America", 32:164.

Latitude and Longitude are given for most epicenters in the following list. Only those earthquakes are given for which epicenters were located. The letter represents the excellence with which the epicenter has been located, a indicating excellent, b good, c fair, d poor.

EARTHQUAKES IN NORTHERN CALIFORNIA, NEVADA, AND OREGON

Times are given in Greenwich Civil Time. Subtract 8 hours to get local (Pacific Standard) time.

Date 1950	G.C.T.	Richter Magnitude	Latitude North	Longitude West	Quality	Remarks
Oct. 2	18-10-33	2.7	36° 55'	121° 25'	b	
Oct. 3	11-38-00	2.7	39° 24'	123° 51'	c	II at Fort Bragg
Oct. 6	15-39-44	4.1	40° 23'	124° 45'	c	
Oct. 7	19-11-47	3.3	39° 32'	123° 04'	c	
Oct. 8	12-24-19	4.6	40° 17'	124° 48'	b	
Oct. 9	12-18-41	2.2	37° 54'	121° 54'	b	
Oct. 9	20-26-22	3.3	36° 47'	121° 15'	c	
Oct. 17	03-54-12	4.5	39° 36'	116° 41'	c	
Oct. 20	08-23-25	2.7	36° 02'	121° 04'	c	
Oct. 23	07-12-04	1.3	37° 42'	122° 28'	b	
Oct. 23	08-12-46	4.5	39.5°	117.5°	d	
Oct. 26	03-18-08	4.2	39° 37'	119° 42'	c	V at Reno, Nevada. Also felt at Verdi.
Oct. 29	08-56-39	2.6	36° 54'	121° 23'	c	
Oct. 30	23-51-05	1.8	37° 13'	122° 12'	b	Blast?
Oct. 31	22-36-19	3.0	36° 57'	121° 28'	b	
Nov. 2	04-19-28	3.0	36° 42'	121° 11'	b	
Nov. 2	05-07-22	3.9	39° 37'	119° 55'	b	IV at Reno, Nevada
Nov. 7	01-34-21	2.6	39.7°	119.7°	d	
Nov. 7	19-21-59	2.5	36° 42'	121° 11'	c	
Nov. 8	01-31-30	2.5	36° 52'	121° 26'	a	
Nov. 10	17-28-15	4.0	39° 38'	119° 41'	c	Press: Felt at Reno, Nevada
Nov. 11	13-11-33	2.5	36° 50'	121° 32'	b	

Date 1950	G.C.T.	Richter Magnitude	Latitude North	Longitude West	Quality	Remarks
Nov. 12	08-26-26	3.7	40.7°	124.9°	d	V at Ferndale.
Nov. 12	16-02-52	1.6	37° 10'	122° 15'	c	
Nov. 14	02-04-40	4.1	40° 29'	121° 30'	a	Foreshock. Felt at Mineral.
Nov. 14	02-35-50	4.6	40° 29'	121° 30'	a	Main shock in a swarm of Mt. Lassen earthquakes. Maximum intensity V at Mineral, Chester, Lake Almanor, and Butte Valley. IV at Canyon Dam and Las Plumas. See special summary of the swarm following this list.
Nov. 14	06-34-32	4.5	40° 29'	121° 30'	b	Aftershock.
Nov. 14	21-55-53	4.0	40° 29'	121° 30'	b	Aftershock. Felt at Caribou Powerhouse (Belden)
Nov. 15	03-22-42	4.1	40° 29'	121° 30'	b	Aftershock.
Nov. 15	09-17-10	2.5	37° 00'	121° 23'	b	
Nov. 16	02-14-56	2.8	36.9°	121.6°	d	
Nov. 16	06-38-11	2.8	36° 40'	121° 36'	c	
Nov. 19	07-55-22	3.4	37° 18'	122° 08'	a	Felt at Saratoga, Cupertino, and Monte Vista.
Nov. 19	09-10-12	2.0	37° 54'	122° 14'	a	
Nov. 19	23-43-31	4.2	39° 43'	125° 31'	c	
Nov. 20	03-11-54	2.2	37° 57'	121° 59'	b	
Nov. 20	09-51-43	3.0	40.1°	121.3°	d	
Nov. 22	09-53-18	3.0	36° 55'	121° 43'	b	
Nov. 23	13-58-24	4.1	36° 49'	121° 31'	c	IV at Hollister and Watsonville.
Nov. 24	06-09-01	2.9	36° 52'	121° 33'	b	
Nov. 30	23-15-45	3.2	40.1°	116.5°	d	
Dec. 1	04-35-47	2.7	37° 03'	121° 34'	a	
Dec. 1	07-42-09	2.5	38° 31'	122° 11'	a	

Date 1950	G.C.T.	Richter Magnitude	Latitude North	Longitude West	Quality	Remarks
Dec. 5	01-11-15	4.2	40.0°	116.7°	d	
Dec. 6	06-40-10	2.8	36° 53'	121° 35'	c	
Dec. 6	11-38-39	3.0	38° 46'	119° 22'	c	
Dec. 7	12-54-14	3.3	39° 40'	119° 44'	c	
Dec. 11	22-29-01	4.1	40° 05'	120° 04'	c	Herlong foreshock. IV at Doyle.
Dec. 13	00-24-33	2.6	36° 58'	121° 32'	c	
Dec. 14	08-59-34	4.5				Herlong foreshock. Felt at Wendel.
Dec. 14	09-19-59	4.0				Herlong foreshock.
Dec. 14	09-29-51	4.0				Herlong foreshock. Felt at Vinton.
Dec. 14	11-02-30	4.0				Herlong foreshock.
Dec. 14	13-10-38	4.0				Herlong foreshock.
Dec. 14	13-24-19	5.6	40° 05'	120° 04'	b	Main shock in a series of earthquakes centered near Herlong. Felt over about 20,000 square miles of northeastern California and western Nevada. Maximum intensity VII at Herlong, VI at Beckwourth, Doyle, Litchfield, Portola, and Wendel, California, and at Flanigan, Nevada. See special summary of the series following this list.
Dec. 14	16-41-11	4.1				Herlong aftershock.
Dec. 15	07-50-41	2.5	37° 06'	121° 28'	c	
Dec. 15	18-01-15	4.4				Herlong aftershock. Felt at Herlong and Wendel.
Dec. 16	03-33-53	2.7	37° 27'	121° 40'	c	
Dec. 16	10-49-01	4.5	43 1/2°	127°		Epicenter and origin time by U.S.C.G.S.
Dec. 17	01-18-44	4.0				Herlong aftershock.
Dec. 25	15-19-22	3.2	37° 09'	121° 38'	b	
Dec. 28	00-15-01	2.9	38° 35'	122° 50'	c	Felt at Windsor.

MT. LASSEN SHOCKS - NOVEMBER 1950

The shock at 0235 G.C.T. on November 14, 1950 was the largest in a swarm of earthquakes. One hundred sixty-five foreshocks were recorded on the Wood-Anderson seismographs between 1630 G.C.T. on November 13 and the main shock, including the shock felt at Mineral at 0204 G.C.T. The Benioff short-period vertical component seismograph at Mineral showed almost continuous activity commencing at about 0140 G.C.T. and lasting for several hours after the main shock. Approximately 1700 identifiable aftershocks were recorded on the short-period torsion (Wood-Anderson) seismographs through November 22, 1950. Many additional smaller shocks were recorded on the Benioff seismometer in the same period.

Table I. Shocks Recorded Per 24 Hours.

Table I gives the daily count of aftershocks recorded on the torsion seismographs at Mineral, as well as the daily count of quakes with a double trace amplitude of over 10 mm.

16 h. to 16 h., G.C.T. Nov., 1950	Shocks recorded on Wood-Andersons	No. on Wood-Andersons with double amp. > 10 mm.
After 0235, Nov. 14	735	100
14 - 15	590	31
15 - 16	175	8
16 - 17	70	7
17 - 18	53	2
18 - 19	32	2
19 - 20	28	2
21 - 22	32	5

TABLE II. INSTRUMENTAL MAGNITUDES OF MT. LASSEN EARTHQUAKES

Time G.C.T.	Magnitude	Time G.C.T.	Magnitude	Time G.C.T.	Magnitude
Nov. 14					
0140	3.4	0415	3.2	0954	2.6
0149	2.6	0444	2.6	1519	2.4
0204	4.1	0535	3.6	1600	3.8
0235	4.6	0634	4.5	2156	4.0
0246	3.8	0736	2.6	Nov. 15	
0250	2.8	0826	3.5	0322	4.1
0301	2.6	0831	2.9	0935	2.9
0307	2.4	0906	2.9	Nov. 16	
0319	3.0	0939	2.8	0854	3.3
0356	2.8	0945	2.6		

HERLONG SHOCKS - NOVEMBER-DECEMBER, 1950

The shock at 13-24-19 G.C.T. on December 14, 1950 was the largest in a swarm of earthquakes centered in the Herlong-Doyle area on the eastern border of Northern California. More than 50 foreshocks of magnitude greater than 2 occurred between 0632 G.C.T. on November 22 and the main shock. More than 200 aftershocks of magnitude greater than 2 had occurred by the end of December.

Following is a list of the instrumental magnitudes of the Herlong shocks:

Time G.C.T.	Magnitude	Time G.C.T.	Magnitude	Time G.C.T.	Magnitude
Nov. 22		Dec. 11		Dec. 14	
0632.7	2.9	0453.5	2.3	0332.4	2.5
0635.4	3.9	2229.0	4.1	0459.6	2.7
0640.8	2.2	Dec. 12		0732.1	2.5
0641.6	2.3	0112.6	2.3	0859.5	4.5
0647.6	3.3	0557.8	3.9	0904.0	2.7
0859.2	2.7	0557.8	3.8	0920.0	4.0
Nov. 23		0829.0	2.3	0923.2	2.3
0921.1	3.0	0852.1	2.7	0927.4	2.4
Nov. 25		1101.9	2.3	0929.8	4.0
0757.7	2.4	1109.8	2.4	0932.3	3.4
Nov. 26		1306.3	2.9	0934.0	2.8
1708.7	3.1	1432.9	2.8	0934	2.9
Nov. 30		1517.2	2.3	0934	2.9
0311.5	2.3	1837.8	2.5	0935.6	2.7
Dec. 2		Dec. 13		0944.0	2.3
1231.8	2.4	0329.5	2.4	0946.8	2.5
Dec. 10				0947.6	2.4
0922.4	2.9				

Time G.C.T.	Magnitude
Dec. 14 (Cont.)	
0953.8	2.6
1008.3	2.3
1023.0	2.3
1059.8	2.4
1102.5	4.0
1106.8	2.3
1233.3	2.5
1243.4	2.9
1310.6	4.0
1324.3	5.6
(Main shock)	
1327.8	3.2
1332.4	3.5
1335.0	3.2
1341.3	3.6
1342.4	3.5
1344.5	3.3
1352.5	3.2
1352.5	2.6
1400.6	3.1
1449.2	2.6
1521.0	3.0
1527.6	2.3
1528.7	2.1
1629.2	3.6

Time G.C.T.	Magnitude
Dec. 14 (Cont.)	
1641.2	4.1
1643.2	3.1
1645.3	2.8
1647.0	2.6
1648.2	2.6
1653.0	2.5
1653.0	2.9
1655.1	2.6
1659.2	2.5
1659	2.4
1659	2.3
1711.1	3.4
1727.1	2.7
1729.5	2.5
1737.5	2.5
1819.2	2.6
1830.5	2.4
1838.2	2.5
1850.2	2.7
1850	2.9
1926.4	2.4
1959.3	2.2
2036.3	2.7
2051.0	2.9
2059.6	2.4

Time G.C.T.	Magnitude
Dec. 14 (Cont.)	
2105.8	3.0
2136.8	3.3
2159.9	2.7
2210.4	3.2
2219.9	2.9
2223.3	2.9
2228.0	2.4
2239.4	2.5
2240.7	2.6
2250.6	3.5
2304.0	2.7
Dec. 15	
0008.1	2.5
0042.3	2.6
0105.4	2.5
0107.0	3.9
0112.1	3.4
0131.0	2.3
0146.2	2.3
0152.8	2.5
0241.8	2.6
0359.1	3.0
0414.8	2.2
0435.7	3.2
0444.3	2.3

Time G.C.T.	Magnitude
Dec. 15 (Cont.)	
0451.8	3.5
0452.8	2.9
0517.3	2.5
0519.3	2.5
0523.4	2.6
0556.1	3.2
0612.5	3.1
0629.7	2.3
0643.3	2.4
0657.3	2.3
0824.6	2.3
0825.5	2.3
0925.6	2.9
0928.6	3.2
0934.4	3.9
0937.4	2.6
0938.2	3.4
0939.2	3.7
0946.3	2.7
0948.1	3.0
0951.0	2.4
0952.3	2.7
1047.2	2.3
1245.2	2.1
1300.6	2.1
1326.0	3.8
1400.7	2.7

Time G.C.T.	Magnitude
Dec. 15 (Cont.)	
1411.2	2.4
1440.9	2.6
1526.3	3.2
1627.6	3.8
1801.2	4.4
1803.9	3.5
1803.9	2.7
1819.3	2.6
1830.8	2.3
1845.4	2.3
1855.0	2.8
1922.1	3.3
1929.8	2.4
1933.0	2.6
1939.6	2.3
2018.2	2.6
2121.9	2.5
2127.7	2.3
2155.6	2.7
2214.9	2.3
2304.8	2.4
Dec. 16	
0033.8	2.4
0129.0	2.7
0143.0	2.5
0229.2	2.3

Time G.C.T.	Magnitude
Dec. 16 (Cont.)	
0230.6	2.4
0245.7	2.7
0442.4	2.3
0551.6	2.3
0648.6	2.7
0703.6	2.4
0817.0	2.4
0904.1	2.4
0944.4	2.3
1031.0	2.3
1036.5	2.4
1102.2	2.7
1321.9	2.5
1334.8	2.7
1709.3	2.5
2207.9	2.4
2215.7	2.2
Dec. 17	
0118.7	4.0
0333.7	2.1
0444.9	2.4
0449.2	2.6
0452.4	2.1
0520.0	2.1
0724.6	2.7
0733.2	2.4

Time G.C.T.	Magnitude
Dec. 17 (Cont.)	
0803.4	2.3
0922.1	3.9
1021.1	2.3
1222.7	2.5
2328.4	2.5
Dec. 18	
0557.9	2.4
0934.1	2.3
1341.6	2.5
1342.8	2.6
1355.7	2.4
1359.7	2.1
1432.1	2.7
Dec. 19	
0010.0	3.5
0207.6	2.5
0259.1	3.4
0303.6	2.1
0405.4	2.1
0536.8	2.1
1236.3	2.3
1306.5	2.8
1535.0	2.1
1831.0	2.3
2136.3	2.9
2138.3	2.5
2315.6	3.3
2344.7	2.9

Time G.C.T.	Magnitude
Dec. 20	
0419.2	2.1
0955.2	2.1
Dec. 21	
0452.0	2.2
0841.0	2.1
1254.4	2.2
2119.7	3.4
2316.2	3.3
2317.6	2.1
Dec. 22	
0257.4	3.4
0727.9	2.1
0729.6	2.1
1023.2	2.1
1337.5	2.7
Dec. 23	
0902.5	2.1
1105.5	2.1
1437.5	2.1
Dec. 24	
0916.8	2.2
0918.2	2.1
1321.8	2.6
Dec. 25	
0837.3	2.1
1135.0	2.4
1532.8	2.4

Time G.C.T.	Magnitude
Dec. 27	
1159.2	2.1
Dec. 28	
0407.6	3.1
0636.1	2.1
0753.5	3.4
0753	3.7
0759.8	2.9
0807.4	2.5
0808.7	2.1
0810.2	3.5
0817.4	3.2
0845.2	2.4
1040.6	2.1
1305.3	2.1
Dec. 29	
1404.1	2.1
2330.4	2.3
Dec. 30	
1147.4	2.5
1528.1	2.4
1930.2	2.7
1935.7	2.7
Dec. 31	
0414.4	2.7
0430.3	2.1
0701.5	2.4
0702.7	3.4
1135.6	3.7

THE REGISTRATION OF EARTHQUAKES

at

BERKELEY, MOUNT HAMILTON, PALO ALTO, SAN FRANCISCO, FERNDALE,

FRESNO, MINERAL, ARCATA, AND RENO

All large regional shocks and all distant earthquakes are tabulated on the following pages. Earthquakes in the Northern California, Nevada and Oregon region are included only if of magnitude 5 or greater, or if of special interest. Times of distant shocks are not normally included for Palo Alto, San Francisco, or Ferndale except in cases of defective records at Mount Hamilton, Berkeley, or Arcata, respectively.

All determinations are reduced to Greenwich Civil Time (G.C.T.). G.C.T. is 8 hours greater than Pacific Standard Time (120th Meridian). Communications regarding readings or seismograms should be addressed to:

Seismographic Station
University of California
Berkeley 4, California.

Station	North Latitude	West Longitude	Altitude Meters	Feet	Station Symbol	Present Auspices and Date Established
Berkeley	37° 52.3'	122° 15.6'	81	266	B, BG*	University of California - 1887
Mt. Hamilton	37° 20.4'	121° 38.6'	1281.7	4205	MH	Lick Observatory - 1887
Palo Alto	37° 25.1'	122° 10.8'	83	272	PA	Stanford University - 1927
San Francisco	37° 46.4'	122° 27.2'	100	328	SF	University of San Francisco - 1931
Ferndale	40° 34'	124° 16'	17	55	Fe	City of Ferndale - 1933
Fresno	36° 46.1'	119° 47.8'	88.4	290	F	Fresno State College - 1935
Mineral	40° 21'	121° 35'	1495	4906	M	National Park Service, Lassen Volcanic National Park-1938
Arcata	40° 52.6'	124° 04.5'	60	195	A	Humboldt State College - 1948
Reno	39° 32.3'	119° 48.8'	1386	4546	R	University of Nevada - 1948

*B denotes readings of short period instruments, BG of long period instruments (12 sec. Galitzin-Wilip).

STATION EQUIPMENT

Berkeley:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.
3 - Long-period Galitzin-Wilip.
2 - Horizontal-component 100 kg. Bosch-Omori.

Mt. Hamilton:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.

Palo Alto:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.

San Francisco:
2 - Horizontal-component Wood-Anderson torsion.

Ferndale:
2 - Horizontal-component 25 kg. Bosch-Omori.

Fresno:
3 - Components short-period Sprengnether.

Mineral:
2 - Horizontal-component Wood-Anderson torsion.
1 - Short-period vertical-component Benioff.

Arcata:
3 Components short-period Sprengnether.

Reno:
3 Components short-period Sprengnether.

For all stations, the three components are indicated by N, E, Z. When no letter appears, the phase is read from the vertical component only.

"c" or "d" following a recorded phase indicates compression or dilitation of the ground as indicated by the vertical component instrument.

"i" (impetus) preceding a phase designates sudden beginning of the motion; "e" (emersio) designates gradual beginning.

Maximum amplitude of earth displacement in microns and period in seconds of the indicated phases are given for the Berkeley station in the columns headed A and T. Combined horizontal amplitude of N and E components are designated by H.

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Oct. 1	M	eP	13 09 44.5		USCGS: Queen Charlotte Islands Region.
		e	46.2		0 = 13-06-14
Oct. 2	B	eP	11 48 15	d	USCGS: 21°N, 109°W. 0 = 11-43-30.
	BG	eN	52 11		
		eLN	53.5		
	MH	eP	48 07.5		
		e	18.9		
	F	eP	47 47	c	
	M	eP	48 33.4		
	R	eP	18.5	d	
		eNE	51 35		
		eE	54.6		
Oct. 3	B	eP	09 11 04		USCGS: Western Alaska, 150 miles
	MH	eP	09.5	c	Northeast of Nome. 0 = 09-04-03.
	M	eP	10 47.3		
		e	11 18.5		
Oct. 3	B	iP	12 07 50.8	d	USCGS: Tonga Islands Region.
	MH	eP	51.4	c	0 = 11-56-10.
	M	eP	08 02.0		
Oct. 3	B	eP	12 46 00.9	c	USCGS: 65½°N, 128°W. 0 = 12-40-08.
		e	45		
	MH	iP	05.6	d	
		e	20.0	c	
	F	e	12		
	M	eP	45 37.7		
		e	46 12.1		
Oct. 4	BG	eLNE	06 25.2		
	R	e(P)	18 37	d	
Oct. 4	MH	eP	13 51 21.5	d	
Oct. 4	MH	eP	17 23 50.5	c	USCGS: New Hebrides Islands Region.
		e	58.0	d	0 = 17-11-17.
Oct. 4	B	eP	18 16 44	d	USCGS: 19°S, 169°E. 0 = 18-03-23.
		e	58.9		
	BG	eNE	42.3		
	MH	eP	16 44.5	c	
	M	eP	50.5		
	R	eP	57.0	d	
Oct. 5	B	iP	00 53 47.3	c	USCGS: 18½°S, 170°E. 0 = 00-41-07.
	BG	eSE	01 04 23		
		eE	05 20		
		eSSE	10.3		
		eRNEZ	20.0		
	PA	eP	00 53 47.3	c	
	F	eP	51		
		eNZ	54 09		
		e	55 27		
		e	56 42		
	M	eP	53 55.0		
	R	eP	54 00.0	c	
		e	56 30		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Oct. 5	B	ePNEZ	16 17 29.8	c	USCGS: 10½°N, 85°W. O = 16-09-34.
		i	32.2	d	h = 100. Mag. 7 3/4.
		i	23 18.0		Damage reported in Puntarenas,
		eS	23 55.9		Costa Rica.
		eGNE	29.1		
		eN	32.5		
		e	32.9		
		eNE	34		
	PA	ePNE	17 29		
		eE	18 12		
		eSNE	23 53		
		eGNE	29.2		
		eN	32.3		
	F	eP	17 10.5	c	
		iE	43.6		
		i	47.8		
		iEZ	18 05		
		ePP	53		
		eN	20 50		
		e	23 24		
		eSNE	34		
		e	28.3		
	M	eP	17 36.2		
		i	38.3		
		e	20 37.1		
		eSNZ	23 20		
		eN	24 15		
		eE	26 59		
	A	eP	17 52	c	
		e	18 12		
		eN	19 57		
		e(S)E	23 27		
		eE	24 36		
		eE	34.7		
	R	ePNEZ	17 24.0	c	
		ipPE	50.3		
		iPPE	18 52.0		
		iPcP	19 28.3		
		eSN	23 39		
		e	24 07		
		eN	26.5		
		eNEZ	29.4		
		eEZ	34.8		
Oct. 5	B	eP	16 55 11.9		USCGS: Aftershock. O = 16-48-25.
		e	56 24		
Oct. 5	B	iP	20 17 16.2	c	USCGS: Aftershock. O = 20-09-22.
		i	19 07.4		
		e	28 53		
	MH	eP	17 10.9	c	
	F	eP	16 56.0	c	
		epP	17 23	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	M	eP	22.9		
		e	19 10.1		
	R	ePNEZ	17 11	c	
Oct. 5	MH	eP	23 17 28.0	d	USCGS: 3½°S, 80½°W. 0 = 23-07-49.
		e	38.0		
	F	eP	14		
		e	25		
Oct. 6	B	eP	08 25 26		USCGS: 20°N, 66°W. 0 = 08-16-02.
	BG	eN	43.1		
Oct. 6	BG	eE	11 58.4		USCGS: 17°N, 68°W. 0 = 11-20-05.
	F	eP	28 58	c	
		e	29 44	d	
Oct. 7	F	eP	20 01 51.5	c	USCGS: 50°N, 129½°W. 0 = 19-58-10.
	M	e(P)	01.0	..	
Oct. 8	B	eP	03 37 35	c	USCGS: 4°S, 128°E. 0 = 03-23-09.
		eP'	40 40		Pas: Mag. 7.6
		ePP	41 59		Destructive on Amboina Island.
		ePPP	44 14		Seismic sea wave reported from
		eSKSE	48 13		Molucca Islands.
		e	44		
		ePSE	51 27		
		e	40		
		eL	04 19.8		
	F	eP	03 37 44	c	
		e	41 23		
		ePP	42 16		
		eEZ	48 35		
		ePSE	51 44		
		eE	04 22.5		
	M	eP	03 37 34.0		
		e	41 05		
	A	e	40 53	c	
		ePP	41 47		
		eN	42 11		
		e(SKS)	47 52		
		e	51 42		
		e	04 12.0		
	R	eP	03 37 38	c	
		eP'	40 49		
		eE	41 37		
		ePP	42 09		
		eE	48.6		
		e	52 02		
		eE	04 13.5		
Oct. 8	M	eP'	05 08 24.0		USCGS: Southern Tibet. 0 = 04-50-20.
	R	eP'	33		
Oct. 8	M	eP	07 40 17.2		USCGS: Mid-Atlantic Ocean foreshock. 0 = 07-29-39.
Oct. 8	M	eP	11 20 12.7		USCGS: Mid-Atlantic Ocean foreshock. 0 = 11-09-38.
Oct. 8	BG	eN	11 44.3		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Oct. 8	B	iP	12 25 07.6	d	40°17'N, 124°48'W. 0 = 12-24-19.
		iSN	44.1		Mag. 4.6
	BG	eNE	26.0		
	MH	iP	25 17.5		
		eSNE	58.8		
	PA	iP	12.0	c	
		eSE	53.5		
	SF	iPNE	07.5		
		eFN	29.5		
		iSE	42.7		
	F	iP	39.2	c	
		eN	26 43.2		
		eE	47 26		
	M	iP	24 58.2		
		eE	25 20.5		
		eSN	28.5		
	R	eP	20.0	c	
		eEZ	46.5		
		iE	52.1		
		i	26 12.2		
		iE	45.0		
	A	iPNEZ	24 33.6	c	
		iN	41.6		
		iSNE	43.7		
		iN	25 02.1		
		iE	07.6		
Oct. 8	BG	eE	15 26.2		BCIS: 4.5°S, 153°E. 0 = 14-49-35.
		eLNZ	30.8		
	F	eP	02 47		
		e	03 22		
	M	eP	02 39.7		
	R	eP	46.5		
		e	03 24		
		e	06 29		
Oct. 8	M	eP	16 48 55.5		USCGS: Mid-Atlantic Ocean foreshock. 0 = 16-37-21.
Oct. 8	M	eP	16 51 11.2		USCGS: 32°N, 41°W. 0 = 16-40-36. Mid-Atlantic Ocean.
Oct. 8	M	eP	16 59 49.6		USCGS: Mid-Atlantic Ocean aftershock. 0 = 16-49-14.
Oct. 9	MH	eP	17 44 09.5	d	USCGS: About 300 miles north of Guam. 0 = 17-31-55.
Oct. 10	MH	eP	16 28 09.6	c	Aftershock of Oct. 5 at 1609.
	R	eP	09.5	d	USCGS: 0 = 16-20-20.
Oct. 10	MH	eP	23 26 15.7	c	USCGS: 17°S, 179°W. h = 600.
		epP	28 13.7		0 = 23-15-21.
Oct. 11	MH	eP	03 02 57.4	d	USCGS: 6°N, 83°W. 0 = 02-54-23.
Oct. 11	B	iP	04 09 14.5	c	USCGS: 9°N, 85°W. 0 = 04-01-00.
	MH	eP	07.6	d	
		i	16.8		
	M	eP	19.1		
		eNE	31		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Oct. 11	B	iP	08 15 25.4	d	h about 60.
		i	29.9		USCGS: 63°N, 160°W. 0 = 08-09-25.
		ipP	40.4		
	MH	eP	31.2	d	
	M	ePNEZ	07.8	d	
Oct. 11	B	iP	08 41 19.8	d	h about 85.
		epP	40.7		USCGS: 63°N, 160°W. 0 = 08-35-19.
	MH	eP	25.3	d	
		epP	47.0	d	
	M	iP	02.2	d	
		epP	23.6	d	
Oct. 12	B	eP	21 02 27	c	
	MH	eP	17.6	d	
	M	eP	45		
	R	eP	32		
		e	42		
		e	59		
Oct. 13	MH	eP	00 08 23.5		
	R	eP	31.2		
Oct. 13	MH	iP	14 45 14.6	c	USCGS: 10°S, 166°E. 0 = 14-32-48.
		i	23.8		
Oct. 14	B	eP	13 35 12.5	d	Aftershock of Oct. 5 at 1609.
	MH	eP	09.4	d	USCGS: 0 = 13-27-07.
		e	14.7		
	F	eP	34 52	c	
	M	eP	35 17.7		
Oct. 14	B	eP	17 49 29.7		
	BG	eLEZ	18 38		
	MH	eP	49 24.0	c	
		e	31.8	d	
	F	ePE	09.0		
		eN	19		
	R	iP	24.2		
Oct. 14	MH	eP	18 05 06.5	d	
Oct. 14	MH	eP	18 36 38.0	c	
		e	58		
Oct. 14	R	e	23 35 06		
Oct. 15	BG	eE	14 58.1		
Oct. 15	B	eP	16 12 38.8	c	USCGS: 10°S, 160°E. 0 = 15-59-53.
		i	48.2	c	Pas. Mag. $6\frac{1}{2}$.
	BG	eSNE	23 14		
		iPSE	24 17		
		eN	36.3		
		eE	39.8		
			A T		
		SH	2 8		
		MaxH	$7\frac{1}{2}$ 18		
	MH	eP	16 12 40.5	c	
		e	49.0		
		e	14 41.5		
		ePP	15 59.0		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	F	eP	12 47.0	c	
		e	56		
		eE	15 45		
		e	18 45		
		e	23 49		
	M	eP	12 44.3		
		e	53.6		
	R	eP	51.1		
		e	13 00.2		
		eSNZ	23 39		
Oct. 15	MH	eP	23 54 35.0	c	USCGS: Kermadec Islands Region. 0 = 23-42-00.
Oct. 16	MH	eP	05 35 04.0	d	USCGS: 5°S, 80°W. h = 100. 0 = 05-25-24.
		epP	19.2	c	
	M	eP	16.9		
Oct. 16	MH	eP	08 08 10		BCIS: 39°N, 34°W. USCGS: 0 = 07-57-10.
Oct. 16	B	e(P)	21 50 47.4		
	BG	eE	55.4		
	MH	eP	50 32.9	c	
	M	eP	51 00.3		
		e	12.0		
	R	ePN	50 58.7		
Oct. 17	B	i	03 55 42.4	d	39°36'N, 116°41'W. 0 = 03-54-12.
		i	48.5		Mag. 4.5.
		eSNE	56 32		
	BG	iLEZ	57.1		
	MH	eP	55 22.3		
		e	28.7	c	
		eSNE	26		
	F	i	20.3	c	
	M	iP	13.9		
		eSN	56 13		
	R	iP	54 53.7		
Oct. 17	MH	eP	15 04 10.7	d	Aftershock of Oct. 5 at 1609.
	F	eP	03 57.0	d	USCGS: 0 = 14-56-16.
	M	eP	04 22.1		
	R	eP	11.1		
Oct. 17	MH	eP	15 14 14.5	d	USCGS: 11°N, 88°W. h = 150. 0 = 15-06-46.
		e	31.2		
		epP	49.0		
Oct. 17	BG	eLNEZ	17 17.0		USCGS: 13°S, 165°E. 0 = 16-35-17.
	MH	eP	16 47 59.0		
		e	48 05		
Oct. 17	B	eP	22 15 29.6	c	USCGS: 9½°N, 85°W. Slightly deeper than normal. 0 = 22-07-23.
	BG	eSE	22 02		
		eN	30.9		
		eE	34.0		
	MH	eP	15 23.7	c	
		e	38.0		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	F	eP	10.0	c	
	M	eP	36.1		
	R	eP	27.6		
Oct. 18	M	eP	06 46 56.6		
Oct. 19	BG	eLN	04 15.9		USCGS: 19°N, 64°W. 0 = 03-48-25.
	MH	eP	03 57 45	c	
	M	eP	44.8		
		e	58 13.1		
Oct. 19	B	iP	10 04 07.2	d	USCGS: 32°S, 178°W. 0 = 09-51-20.
		i	26.9	d	Wellington: 27°S, 176°W. 0 = 09-51.3
		ePP	07 42.9	d	Mag. 6½ (Wellington).
	BG	eN	14 03		
		eE	15 03		
		e	16 00		
		eLN	27.7		
		eE	28.4		
	MH	eP	04 06.3	d	
		e	21.5		
	F	eP	09.5	d	
		e	06 54		
	M	eP	04 17.1		
		e	31.8		
		e	05 06.6		
	R	ePEZ	04 19.2		
Oct. 19	M	eZ	10 21 46.9		PKKP of Preceding?
Oct. 20	BG	eLN	08 12.1		USCGS: Aftershock of Oct. 19 at 0348.
		eE	14.7		0 = 07-44-30.
	MH	eP	07 53 50		
Oct. 21	B	iP	04 24 30.0	c	USCGS: 18½°S, 174°W. h = 100.
		epP	48.7	d	0 = 04-12-59. Mag. 6½ (Pas).
		e	27 11		
	BG	ePP	33		
		iSN	34 05		
		e	45.4		
		eNE	46.2		
		eNE	47.1		
			A T		
		MaxH	17 24		
	MH	iP	04 24 28.0	c	
		ipP	45.8	d	
	F	eP	34.7	c	
		ipP	53.9		
		i	25 45.4		
		eSN	34 12		
		eP'P'	52 04		
	M	eP	24 40.5		
		epP	59.8		
		e	25 10.1		
	R	eP	24 44.5	c	
		epP	25 03.5		
		e	25		
		ePP	27 52		
		eSNE	34 32		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Oct. 21	MH	eP	08 32 31.5	d	USCGS: Foreshock of Oct. 21 at 0942.
		eP	55.3		0 = 08-27-13.
Oct. 21	B	eP	09 02 35	c	USCGS: Foreshock of Oct. 21 at 0942.
	BG	eS	07 15		0 = 08-57-10.
		eN	29		Mag. 5 3/4 (Pas).
		eLNE	10.2		
			A T		
		Max H	4 22		
	MH	eP	09 02 26.5	d	
		e	36.1		
	F	eP	16	d	
	M	eP	50.0		
		e	03 00.3		
	R	ePEZ	02 37.5		
		e	47.0		
		ePP	03 36.5		
Oct. 21	B	iP	09 48 24.9	c	USCGS: 17½°N, 106°W. 0 = 09-42-58.
		e	41	d	Mag. 6 3/4 (Pas).
		e	55		
	BG	eSNE	53 00		
		eLN	55.5		
	MH	iP	48 16.0		
		ePP	49 15.5		
		eSE	52 43.5		
		eLE	55.9		
	F	ePEZ	48 03	c	
		i	47.8		
		eE	50 43		
		eSE	52 05		
		e	53 14		
		e	55.3		
	A	eP	48 56	c	
		e	49 26		
		e(S)E	53 31		
		eN	55 28		
		e	57.9		
		eE	58.7		
	M	eP	48 38.9		
		e	49 20.2		
		e	50 13.1		
		eN	51 15		
		eNZ	57.8		
	R	ePNEZ	48 27.0	d	
		eE	49 23		
		ePP	34		
		e(PcP)	51 24		
		eN	52 43		
Oct. 21	MH	eP	13 42 45.1	c	USCGS: Pacific Ocean, off coast of
	M	eP	59.6		Ecuador. 0 = 13-33-55.
Oct. 21	MH	eP	16 13 18.0	d	h about 250.
		epP	14 11.0	c	USCGS: 11½°S, 167°E. 0 = 16-00-50.

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	F	eP	13 25.5	c	
		epP	14 15.5		
	M	eP	13 24.0		
		epP	14 19.9		
	R	eP	13 30.0		
		epP	14 20.5		
Oct. 22	MH	eP	14 39 18.3	d	
Oct. 22	MH	eP	15 20 57.0		USCGS: 48½°N, 153°E. h = 100.
		epP	21 14.7		0 = 15-10-47.
	M	eP	20 37.8		
		e	21 12.3		
Oct. 22	B	eP	19 07 30.8	d	BCIS: 10°S, 162°E. 0 = 18-54.6
	MH	eP	22.0	d	
Oct. 23	B	eP	08 13 49.6	d	39.5°N, 117.5°W. 0 = 08-12-46.
		i	14 03.0		Mag. 4.5
		iSNEZ	52.1		
	BG	eNE	15.7		
	MH	eP	13 47.5	c	
		i	57.9		
		e	14 40.6		
		iS	45.4		
	F	eP	13 41.9	d	
	M	iP	42.2		
	R	eP	19.7		
		eSEZ	44		
Oct. 23	MH	eP	15 02 26.5		USCGS: Foreshock. 0 = 14-55-36.
Oct. 23	MH	eP	15 10 26.5		USCGS: Foreshock. 0 = 15-03-40.
Oct. 23	B	eP	16 20 19	c	USCGS: 14½°N, 92°W. h = 100.
		e	22 42		0 = 16-13-24. Mag. 7.2
		iPcP	53.4	c	
		eSNE	26 08		
		e	39.7		P of Aftershock?
		eGNE	29.2		
		eR	34.6		
			A T		
		PZ	20 7		
		PH	17 7		
	MH	eP	16 20 12.4	d	
		ePcP	22 51.5		
		e	32.3		
		e	34.5		
	F	eP	19 57.0	c	
		e	20 06.5	d	
		e	24.0		
		e	21 40.8		
		eE	23 40.5		
		eN	25 01.5		
		e	28 14.0		
		e	30 43		
		eNZ	31.5		
	M	eP	20 27.2		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		e	21 37.3		
		eSN	26 20		
		e	26		
		eN	29 54		
		e	32.6		
		e	52 26		
	A	ePEZ	20 50.0	c	
		e	58.5		
		e	21 04.5		
		eE	23 14		
		eSNE	26 56		
		eN	31.2		
		eE	32.8		
	R	ePNZ	20 15		
		e	30		
		eN	42		
		eE	25 48		
		eSN	26 01		
		e	25		
		eGN	30.0		
		eE	31.4		
		eEZ	32.6		
		eLNEZ	33.7		
Oct. 23	B	iP	17 12 25.2	c	USCGS: Aftershock. 0 = 17-05-31.
		e	13 18		
		iPcP	14 51.5	d	
	MH	eP	12 18.8	c	
	F	eP	05.0	c	
		e(PP)	13 25.0		
		e	16 04		
	M	eP	12 32.9		
		e	55.1		
	A	eP	57.0	c	
	R	ePEZ	21.4		
Oct. 23	B	iP	17 54 52.7	c	USCGS: Aftershock. 0 = 17-47-57.
		ePcP	57 19	c	Mag. $6\frac{1}{2}$ (Pas).
	MH	eP	54 46.5	c	
		e(PcP)	57 21.0	c	
	F	eP	54 32.3	c	
		eN	57 46		
		e	18 00 05		
	A	ePEZ	17 55 24.5	c	
		e(PP)E	56 33		
		eS	18 01 20		
		eNE	23		
		eE	08.8		
	M	eP	17 55 00.7		
		e	35.2		
		e	56 34.9		
		eE	18 07 48.9		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	R	eP	17 54 48.4		
		e	58.2		
		eSNE	18 00 25.4		
Oct. 23	B	iP	18 06 32.9	c	USCGS: Aftershock. O = 17-59-42.
		ePcP	09 04		
	MH	eP	06 30.3	c	
		e	51.0	c	
	F	eP	05 25.6		
		e(PP)	06 17		
		e	08.1		
	A	eP	07 08.0	c	
		e	31.0		
	R	ePNEZ	06 32.8		
Oct. 23	MH	eP	19 57 44.5	d	USCGS: Aftershock. O = 19-50-56.
Oct. 23	BG	iSNE	21 44 16		USCGS: Aftershock. O = 21-32-06.
		eNE	50.9		
		e	53.7		
	MH	eP	38 53.4	c	
		e	39 22.5		
	R	eP	38 54.8		
Oct. 23	B	eP	23 45 45	c	USCGS: Aftershock. O = 23-38-50.
		ePcP	48 12	d	Mag. 6.1.
	BG	eSNE	51 28		
		eN	54 08		
		eNE	56.2		
		eN	57.8		
			A T		
		PZ	1¼ 5		
		SH	3 10		
		Max H	26 24		
	MH	eP	23 45 38.7	c	
		e	24 02.5		
	F	eP	23 45 24.5	c	
		e	49.5		
		e	46 37.0		
		eE	48 16		
		e	24 01.9		
	A	eP	23 46 04	c	
		e	47 55		
		e	24 04.9		
	R	eP	23 45 40.6		
Oct. 23	MH	eP	23 55 57.3	c	USCGS: Aftershock. O = 23-49-10.
		e	56 18		
	R	eP	56 05.7		
Oct. 24	MH	eP	00 30 17	d	USCGS: Aftershock. O = 00-23-28.
Oct. 24	B	eP	00 59 02	d	USCGS: Aftershock. O = 00-52-07.
	BG	e	01 00 35		Mag. 6.2.
		eSNE	04 15		
		eNE	11.0		
			A T		
		PZ	1½ 4		
		SH	6½ 10		
		MaxH	29 20		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	MH	eP	00 58 54.5	c	
		ePcP	01 24.0		
		e	14.6		
	F	eP	58 41.5		
		e	59 56.0		
		eN	01 01 42		
		e	02 57		
		e	08.1		
		eN	11.8		
	M	eP	00 59 08.1		
		e	01 13 59		
	A	eP	00 59 35	d	
		e	01 17.7		
	R	eP	00 58 58.6		
Oct. 24	B	eP	01 58 12.6	d	BCIS: 32°S, 178.5°W.
		e	34		USCGS: O = 01-45-25.
	BG	eSE	02 09 11		
	MH	eP	01 58 12.8	c	
		e	51.5	d	
	F	eP	15.5	c	
		e	36.5		
	M	eP	21.7		
	R	eP	24.8		
Oct. 24	B	iP	05 57 16.3	d	USCGS: Aftershock of Oct. 23 at 1613.
	BG	eSN	06 02 55		O = 05-50-24.
		eLNE	09.3		Mag. 6.
		e	11.2		
		e	13.8		
			A T		
		Max H	8 22		
	MH	eP	05 57 11.7	c	
	M	eP	26.8		
		e(PP)	58 28.2		
	R	eP	57 14.8		
Oct. 24	MH	eP	06 23 40.0	c	USCGS: Aftershock of Oct. 23 at 1613.
	M	eP	51.0		O = 06-16-47.
Oct. 24	BG	eLNE	09 47.7		USCGS: Aftershock of Oct. 23 at 1613.
	MH	eP	34 45.0	d	O = 09-28-57.
Oct. 24	MH	eP	16 02 02.1	c	USCGS: Aftershock of Oct. 23 at 1613.
	R	eP	03.7		O = 15-55-12.
Oct. 24	MH	eP	22 29 43.3	d	USCGS: 43½°N, 148°E. O = 22-18-42.
Oct. 25	BG	eLNE	05 24.3		USCGS: Aftershock of Oct. 23 at 1613.
	MH	eP	11 55.2	c	
Oct. 25	B	iP	07 16 11.4	c	
		epP	42		USCGS: 26°N, 125½°E. h = 100.
					O = 07-03-17.
	BG	eSE	26 34		Felt at Ishigaki Shima.
		iN	59		CMO: 25°N, 128°E.
	MH	eP	16 17.0	d	BCIS: 24°N, 124°E. h = 100.
		epP	45.0	d	O = 07-03-26.
	F	eP	24.0	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		epP	54.5		
		ePP	20 03		
	M	eP	16 09.3	c	
		epP	39.9		
	R	eP	18.3		
		epP	48.2		
Oct. 25	B	iP	08 57 02		USCGS: 6½°S, 155°E. O = 08-44-07.
	BG	eLNE	09 25.3		
		e	26.6		
	MH	eP	08 57 03.5	c	
	F	eP	10	d	
		e	59 46		
		e	09 01 02		
	M	eP	08 57 05.8		
	R	eP	13.0		
		e	31.8		
		e	43.1		
Oct. 25	BG	eE	14 50.5		
Oct. 26	B	eP	04 02 42	d	USCGS: Foreshock of Oct. 26 at 1538.
	BG	e	11 41		O = 03-49-55.
		eE	13 02		Mag. 6¼ (Pas).
		eN	22		
		eLN	21.7		
		eE	27.5		
			A T		
		Max H	35 21		
	MH	eP	04 02 40.5	c	
	F	ePE	41.5		
		e	46.6	c	
	M	eP	51.6		
	R	eP	55.3		
		e	03 13.1		
Oct. 26	MH	eP	07 23 26.3	c	USCGS: 11°S, 171°E. O = 07-10-42.
		e	47.0		
		e	24 09.2		
Oct. 26	MH	eP	11 58 17.0	c	USCGS: 38°N, 143°E. O = 11-46-16. Felt in Northeastern Honshu.
Oct. 26	B	eP	15 51 31.5	c	USCGS: 32°S, 178°W. O = 15-38-43.
	BG	eSN	16 02 19		Mag. 6½ - 6 3/4 (Pas).
		eN	12.3		
	MH	eP	15 51 28.5	c	
	R	eP	46.1		
		e	56		
		e	52 12		
Oct. 27	MH	eP	21 41 23.0	c	USCGS: 15°S, 167°E. O = 21-28-41.
		e	32	c	
Oct. 27	MH	iP	22 37 01.4	d	USCGS: 23°S, 177°W. O = 22-24-53.
	F	iP	05.4	c	
	R	eP	15.8		
Oct. 28	B	e	09 18 37.5	d	USCGS: 32°S, 177½°W. O = 09-05-38.
	MH	eP	22.0	d	Mag. 6½ (Wellington).
		e	29.3	c	
	R	e	25	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Oct. 28	MH	eP	22 22 35.6	d	USCGS: 15°N, 91½°W. h = 100.
		e	23 16	c	O = 22-15-48.
		ePcP	25 05		Mag. 6½ (Tucson).
	F	eP	22 21.0	d	
		e	56.5		
		e	24 00		
	M	eP	22 48.4		
		e	23 29		
		e	24 30		
	R	eP	22 38.3		
		e	59.5		
Oct. 30	MH	iP	02 37 24.5	c	USCGS: 14°S, 173°W. h = 100.
					O = 02-26-15.
		i	35.8		Felt at Apia.
		i	47.9		
	F	eP	29.7	c	
		e	40.0		
	R	eP	39.0	d	
		e	55.0		
Oct. 30	MH	eP	14 03 02.1	c	USCGS: 11°S, 163°E. O = 13-50-22.
		e	15.5	c	
		e	38.0	c	
Oct. 31	MH	eP	04 56 52.5	c	USCGS: 52°N, 174°W. O = 04-49-15.
Oct. 31	MH	eP	11 49 53.4	d	
	M	eP	31.3		
		e	51 08.7		
Oct. 31	M	eP	11 59 13.0		
		e	12 00 01.0		
Oct. 31	M	eP	19 28 44.0		USCGS: 1°N, 26°W. O = 19-15-22.
Oct. 31	B	eP	19 39 35		USCGS: Foreshock. O = 19-35-14.
	BG	eE	43 15		
		eE	44.4		
	F	eP	39 06.7	c	
		eSEZ	41 08		
	M	eP	39 52.3		
	R	eP	38.5		
		eE	40 06		
Oct. 31	B	iP	20 26 51.1	c	USCGS: 23½°N, 108°W. O = 20-22-30.
		e	29 03		Mag. 6.1.
	BG	iSNE	30 28		
		eLNE	31.3		
		e	32.2		
			A T		
		SH	20 12		
		Max H	70 15		
	MH	eP	20 26 42.7	c	
		i	49.6	c	
		eE	32 23		
		eNZ	33.4		
	F	eP	26 24.5	d	
		e	27 55		
		eN	28 52		
		eEZ	33.5		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	M	eP	27 08.3		
		e	54.4		
		eNZ	34.9		
		eE	35.7		
	R	eP	26 52		
		eSN	30 46		
		eLNEZ	33.4		
Nov. 1	R	eP	01 30 01.0	d	USCGS: Foreshock of Nov. 5 at 1635. O = 01-22-57.
Nov. 1	B	iP	12 53 29.0	c	USCGS: 10°N, 85°W. h = 100. O = 12-45-32
	BG	eN	13 08 42		
		eE	09 24		
	MH	iP	12 53 23.6	d	
		i	32.3	c	
	F	eP	10.5	d	
		e	41.5		
		e	59 43		
	M	eP	53 35.2		
		e	55 00.9		
	R	eP	53 24.2	d	
		eN	54		
		e	54 24		
Nov. 2	MH	iP	07 42 04.8	d	USCGS: Fiji Islands Region. h = 600.
	M	eP	13.7		O = 07-30-56.
Nov. 2	B	iP	15 42 15.8	c	USCGS: 6°S, 129½°E. O = 15-27-49.
	BG	iPP	46 42	c	Mag. 7.5 (Pas).
		iE	47 37		Felt on Timor and at Darwin,
	B	iSKSNE	52 38.5		Australia.
		eNE	54 19		
			A T		
		PZ	5½ 7		
		PPZ	6¼ 7		
	MH	eP	15 42 19.8	d	
		i	56.7	c	
		iP''	46 18.8	d	
		i	47 09.2	c	
		i	32.7	d	
		i	52 34.1		
		eSKSN	39		
		eE	44		
		ePS	55 57		
		iPKKP	57 29.2	d	
		i	59.7	c	
		e	16 02 44		
		eL	21.2		
		eE	22.0		
	F	eP	15 42 31	d	
		e	43 09		
		e(P'')NEZ	46 32		
		ePP	47 06		
		eNE	48 30		
		eSKSE	52 48		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		e(PS)N	55 50		
		e(PPS)	56 22		
		e	58 51		
		e	16 01 27		
		e	19.5		
	M	eP	15 42 27.5		
		e	43 52.6		
		iP"	46 21.9		
		i	47 14.1		
	R	eP	42 25	d	
		e	43 39		
		e	47 05		
		eSKSE	52 49		
		eSKKS	53 48		
		e	56.2		
Nov. 2	F	eP"	18 33 11.5	d	USCGS: Aftershock. 0 = 18-14-03.
	R	eP"	32 38.0		
		e	33 26.0		
Nov. 4	B	eP	07 35 03.5	c	USCGS: 15°S, 167°E. h = 200. 0 = 07-22-50.
		i	17.6		
		ipP	39.1		
		ePP	38 19.5		
	MH	eP	35 03.3	c	
		i	30.5	c	
		e	38 53	d	
	F	eP	35 12.0	d	
		epP	51		
		ePP	38 30		
	M	eP	35 12.0		
		e	45.8		
		e	38 50.8		
	R	eP	35 17.5	d	
		eN	49.5		
		epPNZ	56.5		
Nov. 4	B	iP	09 08 38.2	c	USCGS: About 300 miles south of Fiji Islands. 0 = 08-56-10.
	MH	iP	39.3		
	M	eP	48.6		
	R	eP	52.0	c	
Nov. 4	MH	eP	11 26 05.0	c	
	M	eP	44.8		
		e	27 54.1		
		e	29 44.4		
	R	ePNZ	26 18.0		
		e	27 09		
		e	29 04		
Nov. 4	BG	eNE	13 26.4		Pas: Gulf of California. Mag. 4.7.
	MH	eP	22 59.4	d	
		e	25 33.9		
	R	e(P)	23 49.0		
		eE	24 12		
		eN	25 57		
		eEZ	26 08		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Nov. 5	B	iP	16 42 20.2		Mag. 6¼.
	BG	iPP	43 45		USCGS: 14½°N, 92°W. O = 16-35-20.
	B	ePcP	44 43		
	BG	iSE	48 03		
		eLNE	53.0		
			A T		
		PZ	3 6		
		PPZ	3 9		
		PPH	3 9		
		SH	3¼ 9		
		Max H	55 21		
	MH	iP	16 42 13.2	c	
		i	21.9	c	
		ePP	43 38.4	d	
	F	eP	41 58.5	c	
		e	42 06.0		
		e	46 57		
		e	52.4		
	M	eP	42 28.2		
		e	56.0		
		ePP	43 56.4		
		ePcP	44 43.7		
	R	ePNZ	42 15.3		
		e	22.1		
		eNE	54 27		
		eN	55.1		
Nov. 5	B	iP	17 49 36.4	c	Mag. 6.9.
		e	50 04		USCGS: 33°N, 134½°E. O = 17-37-25.
	BG	iSN	59 35		Felt in Japan.
		eSSN	18 04 30		CMO: 33.5°N, 134.9°E.
		eE	10.1		
		e	14.0		
			A T		
		SH	14 11		
		Max H	28 19		
	MH	iP	17 49 41.6	d	
		i	50 07.7	c	
	F	eP	49 45.0	c	
		e	50 15	c	
		eN	51 41		
		ePPE	53 02		
		e	06		
		e	18 01.0		
	M	eP	17 49 26.5		
		e	50 07.7		
		e	56.8		
	R	eP	49 37.8		
		e	46		
		e	50 07		
		eSNE	59 41		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Nov. 6	B	iP	20 57 18.2		Pas: 32°43'N, 117°50'W. O = 20-55-46.
	MH	iP	09.2	c	Mag. 4.4 (Pas).
		i	20.5	d	Felt at San Diego.
		i	52.0		
		i	59.8		
		e(S)N	58 16		
	F	iP	56 53.0	c	
		iEZ	57 10.1		
		e	33.5		
		iN	58 05.5		
		e	59 55		
	R	eP	57 48.0		
		eN	58 35		
		eE	59 12		
		eNE	28		
Nov. 6	B	eP	22 34 57	d	USCGS: 7½°S, 155½°E. O = 22-22-05.
		e	35 14	d	Mag. 6½ - 6 3/4 (Pas).
		e	36 56	c	
	BG	ePP	38 31		
		eE	44 43		
		eSKSN	45 13		
		e(S)N	46 05		
		eScSN	20		
		eGN	57.2		
		eL	15 04.3		
			A T		
		PZ	1¼ 4		
		PPZ	1½ 6		
		Max H	10 20		
	MH	eP	22 35 01.5	c	
		i	23.0	c	
		ePP	38 34.5		
	F	eP	35 07.5	c	
		e	28.5		
		eE	37 44		
		e	39 36		
	M	eP	35 04.2		
		ePP	38 33.8		
	R	eP	35 07.5	c	
		e	36 10.5		
		e	37 42		
		ePP	38 31		
		e	39 15		
Nov. 7	MH	iP	01 36 36.8		USCGS: 150 miles southwest of Puerto Rico. O = 01-27-25.
Nov. 7	R	eP	06 37 43.5	d	BCIS: 7°S, 156½°E. O = 06-24-40.
Nov. 8.	B	iP	02 11 48.0	c	USCGS: 18°S, 168°E. O = 01-59-06.
		e	12 11		
	MH	eP	11 50.7	d	
		i	12 04.0	c	
	M	e(P)	11 09.7		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Nov. 8	B	iP	02 30 56.4	c	Mag. 7¼.
	BG	eSKSN	41 25		USCGS: 9½°S, 159½°E. O = 02-18-09.
		iSN	43		
		eN	44 06		
		eSSN	48.0		
		eG	53.9		
			A T		
		PZ	10 7		
		PH	2¼ 5		
		SH	70 13		
		GH	100 25		
		Max H	145 20		
	MH	eP	02 30 58.7	c	
		i	31 02.8	d	
		e	33 58.6	c	
		eSNEZ	41 42.0		
		eNE	58 41		
		e	59 00		
	F	eP	31 05.0	d	
		e	58.5		
		eSKSN	41 44		
		eEZ	51		
		eN	42 02		
		e	43 08		
		e	44 56		
		e	57.0		
		e	59.6		
	M	eP	31 02.0	c	
		e	32 05.3		
		eSKSN	41 42		
	R	eP	31 07.5	c	
		e	34 04		
		eSKS	41 45		
		eN	47		
		eE	52		
		eN	59.0		
Nov. 8	B	eP	02 48 46		USCGS: Aftershock. O = 02-35-59.
	MH	iP	49.4		
		i	56.6		
	M	eP	51.4		
Nov. 8	MH	eP	06 53 55.2	c	USCGS: Aftershock. O = 06-41-06.
	M	eP	58.5		
	R	ePN	57.0		
		i	59.9	d	
		eE	54 28		
Nov. 8	M	eP	12 02 14.6		USCGS: Aftershock. O = 11-49-22.
Nov. 9	MH	iP	09 26 19.8	d	
Nov. 9	MH	iP	12 20 34.2	c	USCGS: Aftershock. O = 12-07-46.
Nov. 9	MH	iP	19 43 09.9	c	
Nov. 10	B	iP	02 19 04.3	c	Magnitude: 6 - 6¼.
	BG	iSN	23 10		USCGS: 19½°N, 110°W.
		eLN	25.4		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
			A T		
		SH	35 10		
		Max H	65 20		
	MH	iP	02 18 57.2	c	
		i	19 02.0	d	
		eSNE	22 59		
		e	27.3		
	F	eP	18 42.5	c	
		e	50		
		eE	19 32		
		eSEZ	22 32		
		e	24.0		
		eN	24.9		
	M	ePNZ	19 22		
	R	eP	08.5	d	
		e	28.3		
		e	55.5		
		e	23 54		
		eN	25.8		
		eEZ	26.4		
Nov. 10	B	iP	05 13 05.7	c	USCGS: 16°S, 176°W. h = 350.
		eS	22 11		O = 05-02-05.
	MH	iP	13 06.4	d	
		i	15.5	c	
		i	14 44.8	d	
	F	eP	13 10.5	d	
		e	14 31		
	M	iP	13 15.5		
	R	eP	19.5	d	
Nov. 10	MH	iP	21 37 49.9	c	
Nov. 11	B	eP	03 51 25		USCGS: 6°S, 148°E. O = 03-38-07.
	BG	eE	04 04 10		
		eLE	21.2		
	MH	eP	03 51 27.1	d	
	M	eP	28.2		
Nov. 11	B	eP	08 20 00		Foreshock?
	BG	eSE	24 05		
	MH	eP	19 54.0	c	
	M	eP	20 21.7		
Nov. 11	B	iP	09 33 14.9	d	USCGS: 19½°N, 110°W. O = 09-28-23.
		e	52		Mag. 5½ (Pas).
	BG	iSNE	37 18		
		eLN	39.7		
			A T		
		SH	30 10		
	MH	eP	09 33 07.0	d	
		i	16.0	d	
		i	37.0	c	
		eS	37 14		
	F	eP	32 53.0	d	
		eSE	36 41		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	M	eP	33 34.1		
		e	41 29		
	R	eP	33 20.0	d	
		eSN	37 38		
		eE	40.1		
Nov. 11	MH	eP	09 51 49.7	c	
Nov. 11	B	eP	10 39 38		
	MH	eP	35.9	d	
		e	40 04.0	d	
Nov. 11	B	eP	13 59 11.6	d	Mag. 5½ ±.
		i	19.7	c	USCGS: 10°N, 85°W. 0 = 13-51-04.
		ePP	14 01 09		
	BG	eSNE	05 56		
		eLNE	14.6		
			A T		
		Max H	6½ 20		
	MH	iP	13 59 06.1	c	
		i	14.6	d	
		i	45.0		
	F	eP	58 51.5	c	
		e	59 00.0		
		eE	42		
		e	14 01 38		
		eS	05 08		
	M	eP	13 59 17.2		
		ePP	14 01 12.4		
	R	eP	13 59 05	d	
		eNZ	14		
		e	14 01 14		
Nov. 11	MH	eP	14 29 14.3	c	USCGS: 43°N, 161°E. 0 = 14-19-45.
		e	27.5	d	
	M	eP	28 59.3		
	R	eP	29 12.5	c	
Nov. 11	MH	eP	14 38 11.0	c	
	R	ePEZ	12		
Nov. 11	MH	eP	22 31 10.2	d	
	R	e(P)N	09.0		
		e	16.5		
Nov. 12	MH	eP	13 17 53.7	c	
		i	18 01.0	c	
Nov. 12	MH	eP	20 10 15.0	d	
Nov. 12	BG	eL	22 35.2		
Nov. 12	MH	eP	23 33 55.9	c	
		e	35 33		
	F	ePEZ	33 43.5		
		eNEZ	34 41		
Nov. 13	MH	eP	00 03 35.0	d	
Nov. 13	MH	eP	08 08 33.5	d	
Nov. 14	B	iP	02 36 33.5	d	40°29'N, 121°30'W. 0 = 02-35-50.
		eSNE	37 04.5		Mag. 4.6. Main shock in a swarm of
	MH	eP	36 39.4	c	Mt. Lassen earthquakes. See special
		i(S)NE	37 20		summary of the swarm on page 132.

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	PA	iP	36 39.0	d	
	M	iPNE	35 53.4		
	F	eP	36 52.0	c	
	R	ePNZ	17.2		
Nov. 14	B	iP	04 36 28.6		USCGS: 11°S, 161°E. 0 = 04-23-46.
	BG	e	38 31		The amplitude listed for Max H may
		eSN	47 02		be associated with the following
		eSSN	52.6		shock. The shocks are both of mag-
			A T		nitude 6¼ ±.
		PZ	1¼ 7		
		Max H	6 20		
	MH	iP	04 36 32.5	c	
		e	41.6		
	F	eP	35.0	c	
		e	47.0	c	
	R	eP	23.5		
		e	40		
Nov. 14	B	eP	04 44 42.3		USCGS: 11°S, 161°E. 0 = 04-32-00.
	BG	eSN	55.1		
			A T		
		PZ	1½ 7		
	MH	eP	04 44 45.4	c	
		i	54.2	d	
	F	eP	50.5	c	
	R	eP	54.5	c	
		eNZ	45 18		
Nov. 14	B	iP	06 35 15.4	c	Aftershock of Nov. 14 at 0235.
		eSNE	47		Mag. 4.5. 0 = 06-34-32.
	PA	iP	21.9	c	
	F	eP	36.0	d	
	R	eP	34 59.4		
Nov. 14	MH	eP	08 45 19.3	d	USCGS: Aftershock of Nov. 14 at 0423.
		i	24.7		0 = 08-32-34.
	F	eP	23.0	c	
Nov. 15	MH	iP	17 32 45.5		
Nov. 16	B	iP	01 09 24.6	c	USCGS: Mariana Islands Region.
	MH	iP	28.3	c	h = 100. 0 = 00-57-15.
		i	45.0		
	F	eP	34.5	c	
		epP	10 01		
	M	iP	09 23.5		
		i	10 11.1		
		e	11 40.0		
	R	eP	09 32.0	c	
Nov. 16	R	eP	05 37 50.5	d	USCGS: 42°N, 145½°E. 0 = 05-26-46.
Nov. 17	B	iP	19 34 13.7	d	USCGS: 17°N, 100½°W. 0 = 19-28-18.
		e	49		Mag. 6 3/4 (Pas).
	BG	iSE	39 04		
		e	07		
		eE	42.2		
		e	43.6		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	M	iP	23 53.9		
		e	24 57.6		
		ePP	25 21.2		
	R	eP	24 07.0	d	
		i	20.0	c	
		e	29.9		
		eSE	30 11		
		eE	32 33		
		eN	34 14		
Nov. 22	MH	iP	11 13 29.6	c	
		i	38.5	c	
Nov. 22	MH	eP	13 18 43.6		USCGS: About 200 miles off coast of
	R	eP	44.5		Ecuador. 0 = 13-09-53.
Nov. 23	MH	iP	06 34 39.3		
Nov. 23	MH	eP	15 23 48.3	d	
	R	e	24 02		
Nov. 23	MH	iP	16 41 25.5		
Nov. 23	MH	iP	21 20 12.5	d	
		i	19.3	d	
Nov. 23	MH	iP	21 56 06.8		
		i	13.6		
Nov. 24	MH	eP	03 17 43.6		Tacubaya: 19°01'N, 105°05'W.
	R	eP	52.5		0 = 03-12-36.
Nov. 24	MH	iP	06 18 29.1		
		i	35.9		
Nov. 24	B	eP	13 15 17.2	c	Mag. 6¼.
		e	16 12		USCGS: 15°S, 173°W. 0 = 13-03-43.
		ePP	17 53		
	BG	eSNE	24 23		
		eSSE	29 42		
		eNE	33.1		
			A T		
		SH	3 12		
		Max H	11 19		
	MH	eP	13 15 06.6		
		i	27.1		
	F	eP	11.0	c	
		e	41.5		
	M	eP	13.0		
		ePP	17 48.5		
	R	eP	15 19.0	c	
		e	47.0	d	
		eN	16 02		
		eN	19 43		
		eE	20 10		
Nov. 24	B	eP	20 30 04	c	Mag. 6¼.
		e	29		USCGS: 15°S, 173°W. 0 = 20-18-48.
	BG	e	38 26		
		eSNE	39 24		
		eE	43 50		
		eLNE	48.3		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
			A T		
		SH	2 10		
		Max H	22 19		
	MH	eP	20 30 12.3	d	
		e	31 02.6	d	
	F	eP	30 15.0	d	
		eNE	31		
	M	eP	12.9		
		e	20.2		
		e	31 04.3		
	R	ePNZ	30 25	d	
		e	47		
		eNE	31 18		
		e	34 20		
		eN	35 39		
Nov. 24	MH	iP	23 33 39.4	d	Pas: South America. h = 50.
		ipP	53.9	d	
Nov. 25	B	eP	05 32 46		USCGS: Samoa Islands Region.
		e	33 16		0 = 05-21-30.
	BG	eSN	41 59		
		eN	51.1		
	MH	eP	32 37.9	d	
	F	eP	41.5	c	
	M	eP	40.7		
		e	33 01.0		
	R	eP	32 54	d	
		eN	33 06		
Nov. 25	MH	eP	12 11 24.2	d	Pas: South America.
		i	36.5	d	
Nov. 25	MH	iP	22 34 17.7	c	
Nov. 26	MH	eP	02 49 48.1		
Nov. 26	MH	iP	06 21 32.6	d	USCGS: Kermadec Islands Region.
		e	48.8	c	0 = 06-09-00.
	F	ePNZ	35.4	c	
		e	52.0		
	M	eP	41.0		
Nov. 26	MH	iP	06 44 56.8	c	
Nov. 26	BG	eE	23 02.2		
	F	e(S)N	00 47.0		
		eE	02 03		
Nov. 27	BG	eLE	02 31 29		USCGS: Samoa Islands Region.
	MH	eP	12 52.1	d	0 = 02-01-23.
	F	eP	13 06.0		
		e	19		
Nov. 27	MH	eP	03 39 51.6	c	Samoa?
	R	eP	40 29.0	d	
Nov. 27	MH	eP	17 21 25.2	c	USCGS: Samoa Islands Region.
		e	48.7	c	0 = 17-10-03.
	F	eP	30.0	c	
	R	eP	40.5	c	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Nov. 27	MH	iP	18 16 08.1	c	USCGS: Near Adak, Aleutian Islands.
		i	18.7	d	O = 18-08-19.
	F	eP	20.0	d	
	M	eP	15 48.2		
		e	16 02.5		
	R	eP	07.0	d	
Nov. 28	MH	eP	02 27 52.4		Pas. Near La Paz
	M	eP	28 01.0		
		e	32 53.3		
	R	eP	27 55.0	c	
Nov. 28	M	eP	12 30 11.0		USCGS: Tonga Islands Region.
					O = 12-18-30.
Nov. 29	B	iP	01 50 04.6	c	USCGS: 22°N, 143°E. O = 01-37-52.
	BG	eLEZ	02 15.6		
	MH	eP	01 50 07.8	d	
		i	17.2		
		i	25.3	c	
		i	35.3	d	
	F	eP	17.0	d	
	M	eP	02.2		
		eNZ	33.7		
		e	52 56		
	R	eP	50 11.0	d	
Dec. 1	B	eP	15 02 06		USCGS: 14°N, 47°W. h = 100.
		e	04 30		O = 14-51-00. Pas: 14°N, 47¼°W.
	BG	iSNE	11 22		h = 60. O = 14-50-58. Mag. 7 (Pas).
			A T		
		SH	45 12		
		Max H	180 22		
	MH	iP	15 02 03.7	d	
		i	11.5		
		e	04 34.3		
		eSE	11 17		
		eLN	22 57		
		eE	25.5		
		e	29.0		
		eP'P'	30 14.7		
	F	eP	01 54.5	c	
		e	59.0		
		eE	02 20.0		
		e	35.5		
		e	04 20		
		eN	05 48		
		eN	07 53		
		eSE	10 58		
		e	24.3		
	M	eP	02 00.5		
		e	07.5		
		e	51.1		
		e	03 10		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		ePP	04 49		
		eN	08 03		
		eSNE	11 13		
		e	28.0		
		eP'P'	30 19.0		
	R	eP	01 54.5	c	
		eE	02 11		
		eE	03 05		
		ePPE	04 36		
		eS	11 10		
		e	24.0		
		eP'P'	30 18.5		
Dec. 1	MH	iP	17 38 24.6	c	USCGS: 52°N, 172°W. 0 = 17-31-13.
		i!	25.8	d	
		i	29.9	d	
		i	39.3	c	
		ePcP	40 22.8		
	M	eP	38 22.4	c	
		iEZ	23.8	c	
		e	51.1		
		e	40 56		
	R	eP	38 26.0	c	
		e	37.0	c	
		e	52.0		
Dec. 1	MH	eP	19 08 02.7	d	Mexico.
	M	eP	17.2		
		e	53.4		
	R	eP	04.5	d	
Dec. 2	MH	eP	08 42 25.1	d	USCGS: Northern Argentina. h = 100.
		ipP	43.1	d	0 = 08-30-40.
	M	eP	34.6		
		e	44 18.4		
		e	50 17.3		
Dec. 2	B	iP	15 29 08.2	d	USCGS: 8°S, 71½°W. h = 650.
		epP	31 18.0		0 = 15-19-20.
		iPP	50.0	d	Mag. 6 3/4 (Pas).
		isP	32 24.8	c	
	BG	iSN	37 09.0		
		eSSE	41.9		
	B	eSKPP'	59 58		
			A T		
		PZ	9 5		
		PH	4½ 3½		
		PPZ	4 5		
		PPH	3 5		
		SH	8 11		
	MH	iP	15 29 04.0	d	
		ipP	31 10.9	d	
		i	26.1	c	
		iPP	45.2	d	
		isP	32 15.4	c	
		eSNE	37 03.9		
		eSKPP'	59 54.8	d	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	F	eP	28 52.5	c	
		i	29 05.5		
		e	37.5		
		e	30 44.5		
		eE	31 06.5		
		ePP	29		
		eN	38		
		eSEZ	36 40		
		e	51		
		e	39 38		
		esS	40 33		
		eSKPP'	16 00 10	d	
		e	01 00		
	M	iP	15 29 13.1	d	
		i	22.4		
		iPcP	39.4		
		eE	56		
		e	30 12.2		
		ipP	31 21.0	d	
		e	43		
		ePP	59		
		esP	32 28		
		e(ScP)	49		
		eSNE	37 21		
		e	37.2		
Dec. 2	B	iP	16 29 47.6	c	USCGS: 17°S, 168°E. O = 16-17-10.
		i	54.5	c	
	MH	iP	48.3	c	
		i	52.3	c	
	F	ePEZ	53.7	c	
		eN	30 35		
	M	eP	29 54.6		
		e	30 38.8		
		e	31 13.2		
Dec. 2	MH	iP	18 50 22.3	d	USCGS: 6°S, 71⅓°W. h = 600.
	M	eP	31.9		O = 18-40-40.
		e	50.5		
		e	51 11.5		
Dec. 2	B	eiP	20 04 30.9	c	Mag. 7 3/4.
	BG	e	13 40	d	USCGS: 18°S, 167°E. O = 19-51-45.
		eSKSNE	14 55		Pas: 18¼°S, 167⅓°E. h = 60.
		eSN	15 28		O = 19-51-49.
		eGN	27.6		BCIS: 17.9°S, 167.0°E. O = 19-51-45.
		eEZ	31.4		Note: The phase listed as PP may be
			A T		P of an aftershock.
		PZ	55 8		
		PH	65 13		
		SKSZ	16 9		
		SKSH	80 10		
		GH	450 30		
		Max H	600 28		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	MH	iP	20 04 33.1	c	
		iNE	05 00.5		
		eSKSE	14 58.0		
		eN	59.5		
		e	15 03.0		
		iP'P'	30 38.3	c	
		eLE	35.7		
	F	iP	04 37.2	c	
		iNZ	50.4		
		iEZ	05 03		
		eSKSN	15 03		
		eP'P'	30 25		
		e	31 04		
		eLE	32.3		
		eNE	37		
	M	eP	04 38.4		
		i	05 02.2		
		eN	06 21.7		
		eSKSN	14 58		
		eSNEZ	15 10		
		eP'P'	30 36.6		
	R	eSKSE	15 03.5		
		e	16.0		
		eE	16 28		
		eN	41		
		eN	28.5		
		eP'P'	30 35		
		e	32.6		
		eE	33.3		
		eN	34.6		
Dec. 2	B	iP	20 08 10.2	c	Pas: Aftershock. Mag. 7¼.
			A T		These phases are superimposed on PP
		PZ	15 6½		of the main shock.
		PH	7 9		
	MH	iP	20 08 11.9	c	
	F	eP	17.0		
	M	iPNZ	18.5		
	R	iP	22.5		
Dec. 2	MH	iP	20 17 04.9	d	Aftershock.
Dec. 2	MH	iP	20 29 57.7	c	Aftershock.
	M	eP	30 03.2		
Dec. 2	MH	iP	21 08 10.8	c	Aftershock.
Dec. 2	MH	iP	21 27 56.2		USCGS: Aftershock. 0 = 21-15-15.
	F	eP	58.0	c	
	M	eP	28 01.2		
	R	eP	27 53		
Dec. 2	MH	iP	21 29 06.3		Aftershock.
	F		11		
	M	eP	12.4		
	R	eP	17		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		e	46 29		
		e(sPS)	53 23		
		eP'P'	17 06 38		
		eR	08.5		
		e(SKPP')E	09.8		
	M	eP	16 40 52.4		
		epP	41 15.8		
		e	38.1		
		eE	42 02.3		
		e	19.4		
		ePPEZ	44 22.5		
		eE	52 03		
		e	44		
Dec. 5	MH	iP	20 24 59.4	c	USCGS: Aftershock of Dec. 2 at 1951.
		ipP	25 12.4	d	O = 20-12-10.
	F	eP	00.0	c	
		e	21		
		e	27 15		
	M	eP	25 05.0		
Dec. 4	MH	iP	21 46 41.5	c	USCGS: Near Peru-Chile Border.
		i(sP)	47 25.4	d	O = 21-35-06.
	M	eP	46 41.3		Pas: h = 100?
		e	50 09.3		
Dec. 5	MH	iP	01 47 02.8	c	USCGS: Aftershock of Dec. 2 at 1951.
		ipP	11.1	d	O = 01-34-20.
	M	eP	09.0		
Dec. 5	MH	eP	08 55 49.8	d	USCGS: Aftershock of Dec. 2 at 1951.
	M	eP	55.0		O = 08-43-05.
Dec. 5	MH	eP	12 08 35.2	d	USCGS: Aftershock of Dec. 2 at 1951.
					O = 11-55-46.
Dec. 5	MH	iP	12 18 53.1	c	USCGS: Aftershock of Dec. 2 at 1951.
		ipP	19 03.2	d	O = 12-06-04.
	F	eP	18 58.5	c	
		epP	19 08.5	d	
	M	eP	18 59.3		
		epP	19 09.2		
	R	eP	04.0	d	
		epP	14.5	d	
		e	29.5	d	
Dec. 5	B	iP	17 05 00.6	c	USCGS: Aftershock of Dec. 2 at 1951.
		ipP	14.2	d	O = 16-52-16.
	MH	iP	01.6	c	
		epP	14.6	c	
		e	29.1	d	
	F	eP	07.0	c	
		epPN	23.5		
	M	eP	08.4		
	R	eP	13.0	c	
		eN	31.0		
Dec. 5	R	eP	21 54 16.0		USCGS: Ryukyu Islands Region.
					O = 21-41-30.

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Dec. 5	B	eP	22 06 14		
	MH	eP	19.4	c	
	F	eP	27.0	c	
		e	07 26.0		
	R	eP	06 19.5	c	
		eE	36.5		
		eN	07 06.5		
Dec. 6	MH	e	04 13 46.0	d	
Dec. 6	MH	iP	09 55 26.9	d	
Dec. 6	B	eP	17 06 51.8		
		epP	07 02.0		
	MH	iP	06 52.9	d	
		ipP	07 03.0	c	
	F	iP	06 58.1	d	
		epP	07 09.5		
		e	09 13.0		
	M	eP	06 59.4		
		eEZ	07 31.4		
Dec. 6	MH	eP	17 28 50.7	d	
		e	59.7	c	
Dec. 6	B	iP	17 56 24.7		USCGS: Near Kyushu, Japan.
		iPP	59 19.1		O = 17-44-30.
	MH	iP	56 28.4	d	
	M	eP	20.1		
Dec. 6	MH	eP	21 18 49.1	c	USCGS: Aftershock of Dec. 2 at 1951.
	F	eP	53.5	d	O = 21-06-03.
	M	eP	55.1		
Dec. 7	F	eP	05 06 44.5		Pas: 32.4°N, 115.1°W. O = 05-04.9.
		eE	07 38.5		Mag. 4.1 (Pas).
		eNE	08 06		
	R	e	07 38	c	
Dec. 8	M	eP	01 11 12.5		USCGS: Aftershock of Dec. 2 at 1951.
		epP	26.3		O = 00-58-37.
		e	53.7		
Dec. 8	M	eP	07 21 32.0		USCGS: 23°S, 178°W. O = 07-09-12.
Dec. 8	B	eP	13 01 14		USCGS: 15°S, 173°W. O = 12-49-57.
	BG	eLNE	28.6		
	F	eP	01 24.0	c	
		e	02 10.5		
	M	eP	01 31.0		
		e	50.5		
	R	eP	35.0	d	
Dec. 8	M	eP	15 44 27.8		USCGS: Aftershock of Dec. 2 at 1951.
		epP	37.8		
	R	eP	34.1	c	
Dec. 8	MH	iP	16 48 51.8	c	Aftershock of Dec. 2 at 1951.
Dec. 9	MH	eP	17 59 01.3	d	USCGS: Aftershock of Dec. 2 at 1951.
					O = 17-46-19.
Dec. 9	B	eiP	21 50 47.3	d	USCGS: 24°S, 67½°W. h = 200.
					O = 21-38-56.

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		eSNE	22 00 42		Pas: 23½°S, 67½°W. h = 100.
		e(sS)NE	01 12		O = 21-38-48. Mag. 8.(Pas).
		eNE	49		BCIS: 25.0°S, 68.5°W. h = 200.
		eL	11.3		O = 21-38-54.
		eP'P'	17 34		
		eSKPP'	20 48		
		eP'P'P'	37 42		
			A T		
		PZ	85 10		
		PH	45 12		
		SH	40 7		
	MH	iP	21 50 44.8	d	
		i	47.2	d	
		iE	51 21.4		
		eSE	22 00 30.8		
		eN	35.6		
		i	51.8		
		eN	02 01.5		
		eE	06 33		
		iPKKP	09 35.1		
		eN	12 43		
		iP'P'	17 35.8		
		eSKPP'	20 49.3	d	
		eP'P'P'	37 30.3	d	
	F	eP	21 50 34.9	d	
		iE	51 17.8		
		e	20.5		
		eE	49.5		
		eE	52 21.5		
		eSN	22 00 16.5		
		eP'P'	17 41	d	
		eP'P'P'	37 28		
	M	iPEZ	21 50 53.6	d	
		eN	51 44.7		
		i	45.4		
		eE	52 59.2		
		ePPNZ	54 14		
		iNEZ	53.8		
		iNZ	55 14.4		
		eS	22 00 51.2		
		eNE	56.2		
		iNZ	01 05.6		
		e	47.0		
		ePKKP	09 28.1		
		eP'P'EZ	17 27.1		
		eP'P'P'	37 46	d	
	R	eP	21 50 47.0	d	
		i	51.6		
		i	51 15.5		
		eS	22 00 41.5		
		eNE	44.0		
		eN	01 02.5		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		e	12.0		
		eSSNE	05.5		
		eP'P'	17 44		
		eP'P'P'	37 36		
Dec. 9	B	iP	14 14 45.7	d	Aftershock.
	MH	iP	42.2		
Dec. 10	B	eiP	03 01 37.3	c	USCGS: 14½°S, 76½°W. h = 60.
		e	02 08		0 = 02-50-40. Several killed, severe
	BG	iSNE	10 37.3		property damage reported near southern
		e(sS)NE	11 02		coast of Peru.
		eSSNE	15 08		Mag. 6 3/4 (Pas).
			A T		
		SH	23 11		BCIS: 14.3°S, 77.4°W. 0 = 02-50-40.
	MH	iP	03 01 32.5	c	
		i	54.1		
		e(ScS)	11 30.9		
		eP'P'	30 02.6	c	
	F	eP'P'	06.5	d	
		e	24.5		
	M	eP	01 43.5		
		e	03 08.7		
		eSNE	10 46		
		e	53.7		
		eP'P'	29 54.5		
		e	30 46.9		
Dec. 10	MH	iP	04 47 05.1	c	
		ipP	38.4	d	
Dec. 10	MH	eP	05 21 37.3	c	USCGS: Solomon Islands Region.
		i	59.9	c	0 = 05-08-58.
Dec. 10	MH	iP	06 52 00.6	d	
	M	eP	18.7		
		e	53 27.5		
	F	eP	52 23.0	c	
Dec. 10	MH	iP	08 51 01.0	c	USCGS: Near Southwest Coast of
		ipP	11.9		Kamchatka. 0 = 08-41-20.
	M	eP	50 45.8		
		e	51 13.1		
Dec. 10	MH	eP	09 19 45.8	c	Pas: South America.
Dec. 10	MH	eP	09 58 26.3	c	Aftershock of Dec. 2 at 1951.
		epP	38.8	c	
	F	e	33.0	d	
	M	eP	35.5		
Dec. 10	MH	eP	10 45 50.2		Aftershock of Dec. 2 at 1951.
	M	e(pP)	46 07.0		
Dec. 10	F	eP	11 29 29.0		Aftershock of Dec. 2 at 1951.
		epP	40.4		
	M	eP	30		
Dec. 10	MH	iP	13 33 33.3	d	
Dec. 10	B	iP	13 35 17.0	d	Mag. 7¼.
	BG	epP	36 27		USCGS: 28½°S, 179°W. h = 300.
		esP	37 03		0 = 13-23-10.
		eSNE	45 13		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		iX	45 27.6		(SP)
		eSSNE	50 57		
	B	eP'P'	14 01 32.1	c	
		eSKPP'	04 24		
			A T		
		PZ	26 8		
		SH	35 8		
		XZ	44 10		(SP)
	MH	iP	13 35 16.1	d	
		ipP	36 28.2	d	
		i	37.6	d	
		eX	45 23.0		(SP)
		eNE	24.8		
		iPKKP	53 24.4	d	
		eN	57.8		
		eP'P'	14 01 25.1	c	
		i	02 16.2	c	
		iSKPP'	04 24.8	c	
		i	41.5		
	F	eiP	13 35 20.0	d	
		epPN	36 30.5		
		eE	33.3		
		e	35.5		
		eSE	45 15		
		eN	21		
		eX	30		(SP)
		eSPNE	46 20		
		esSN	47 42		
		eP'P'	14 01 25.8		
		eSKPP'	04 20.5		
		e	40.5		
	M	iP	13 35 25.6		
		i	28.1		
		i	36 17.7		
		i	58.3		
		e	37 25.0		
		e	45 00		
		eS	27		
		eXNE	44		(SP)
		e	49		
		ePSNEZ	46 48		
		iPKKP	53 18.2		
		eP'P'	14 01 24		
		eSKPP'	04 14.2		
Dec. 10	MH	iP	18 29 54.5	d	
Dec. 11	B	iP	03 44 46.5	d	USCGS: 24°S, 68°W. h = 200. 0 = 03-32-56.
	MH	iP	42.3	d	
		i	45 29.8		
	F	eP	44 33.0	d	

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	M	iPNZ	51.3		
		e	45 00.8		
	R	eP	44 45.0	d	
Dec. 11	MH	iP	04 09 05.0	c	Pas: South America.
Dec. 11	BG	eLN	07 39.5		USCGS: 19½°N, 155½°W. O = 07-25-06.
	MH	iP	31 55.1	d	
		e	32 19.1	c	
	F	eP	05.5	d	
		e	33 15.0		
	M	eP	05.0		
		e	26.8		
Dec. 11	MH	iP	10 56 53.7	c	
	M	iP	48.1		
Dec. 11	MH	iP	11 44 57.7	d	Tacubaya: 15°20'N, 92°36'W. O = 11-38-26.
Dec. 11	B	iP	14 56 30.9	d	USCGS: 8°S. 71°W. h = 650. O=14-46-41.
	BG	ePP	59 11		Mag. 6¼ (Pas).
			A T		
		PZ	1½ 4		
	MH	iP	14 56 26.1	d	
		i(PcP)	57 05.6	c	
		ipP	58 31.9	c	
	F	eP	56 15.4	d	
		ePP	58 52		
		eSN	15 04 05.5		
		e	15		
	M	iPNZ	14 56 35.5		
		i	56.9		
	R	eP	27.6	d	
		eS	15 04 35		
Dec. 11	B	iP	15 28 43.4	d	
Dec. 12	BG	eLEZ	02 52.1		
	R	e	52 16		
Dec. 14	B	eP	00 44 36.0	c	USCGS: 19°S, 171°E. O = 00-31-53.
		e	47.9		
		e	45 44.4		
	BG	e(PS)NE	56 08		
		eLE	01 11.5		
	F	eP	00 44 39.5	c	
		epP	45 03.0		
		e	50.0		
	M	eP	44 41.8		
		epP	45 04.8		
		e	55.6		
	R	eP	44 46.5		
Dec. 14	B	iP	02 04 18.0	c	USCGS: 19½°S, 176°W. h = 200. O = 01-52-47.
	BG	iNEZ	20	c	Mag. 7.7 (Pas).
		ipPNEZ	05 11		
	B	ePPN	07 13		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		eSNEZ	13 46.9		
		eNE	14 20		
		eNE	17.0		
		eNE	24.2		
		eP'P'	31 20		
		i	42.7		
		eSKPP'	34 54		
		eP'P'P'	51 24		
			A T		
		PZ	35 6		
		PH	10 7		
		pPZ	120 10		
		pPH	110 13		
		SH	30 4½		
	F	iP	02 04 22.7	c	
		i	33.1		
		e	53.0		
		epPE	05 14		
		i	17.0		
		ePPN	07 29		
		eSE	13 52		
		eNZ	58		
		eE	14 28		
		eP'P'	31 28		
		e	41		
		eNE	33.3		
		eE	35 25		
		eN	36 17		
	M	iP	04 28.7		
		eN	05 29.0		
		e	13 27		
		eSN	14 07		
		e	37		
		eNZ	23.4		
		iP'P'	31 28.5		
		eSKPP'N	34 36		
		eP'P'P'	51 29		
	R	eP	04 33	c	
		epP	05 28		
		iSNZ	14 18		
		eP'P'	31 36		
Dec. 14	M	eP	03 12 09.3		USCGS: Samoa Islands Region. h = 200.
		e	30.4		0 = 03-00-45.
		epP	13 03.6		
Dec. 14	B	iP	09 00 19.5	c	Foreshock of Herlong, Calif.,
		iSNE	54.9		earthquake at 1324.
	PA	iPNZ	23.5	d	Mag. 4.5. 0 = 08-59-34.
		iSN	01 05.1		
	SF	ePNE	00 23.0		
	F	eP	26.0	d	
	iP	iP	08 59 54.5		
	R	iPNZ	43.9	d	
		iSE	51.4		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	F	eP	18.1	c	
		epP	47.0		
	M	iP	04.1		
		epP	33.6		
	R	ePNZ	12.0		
		epP	40.9		
		e(PP)	53 08.8		
Dec. 15	B	iP	18 02 02.6	d	Aftershock of Dec. 14 at 1324.
		iSN	33.9		Felt. O = 18-01-15.
	MH	iP	04.2		Mag. 4.4.
		iE	25.2		
		iE	41.7		
	PA	ePN	07.5		
		iN	49.4		
	F	eP	10.3	c	
	M	iP	01 36.8		
	R	iP	26.8		
		iSN	34.3		
Dec. 16	MH	iP	00 03 37.2	d	Pas: South America.
	M	eP	45.6		
	R	eP	39		
Dec. 16	MH	eP	04 22 59.4	c	Pas: Aftershock of Dec. 14 at 1415.
Dec. 16	B	iP	10 50 42.6	d	USCGS: 43½°N, 127°W. O = 10-49-01.
		e	58.3		
	BG	eNEZ	52 12		
		eQNE	53 48		
		eRNZ	54 44		
	MH	iP	50 52.3	d	
		i	53 31.5		
	F	ePEZ	51 12.6	d	
	M	ePEZ	50 23.2		
		i	25.4		
		e	51 33.7		
		e	52 07.2		
	R	eP	50 45.5	d	
		eE	51 07		
		eE	52 49		
Dec. 16	MH	eP	15 32 02.9	c	Pas: Aftershock of Dec. 2 at 1951.
Dec. 16	MH	eP	16 35 18.3		
	M	eP	24.4		
Dec. 16	B	eP	16 59 13.8	c	Pas: Aftershock of Dec. 2 at 1951.
	MH	eP	14.5	c	
	R	eP	25.0		
Dec. 17	MH	iP	01 14 02.6	c	USCGS: Aftershock of Dec. 14 at 1415.
		i	30.9	d	O = 01-08-02.
	F	eP	13 48.5	c	Mag. 6¼ (Pas).
	M	eP	14 20.3		
	R	ePNZ	07.0		
Dec. 17	MH	eP	03 35 10.2		Pas: Aftershock of Dec. 14 at 1415.
Dec. 17	MH	eP	05 40 18.7	c	
	M	eP	25.5		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Dec. 18	M	eP	02 42 52.8		BCIS: Kermadec Islands. O = 02-29.5.
		e	44 18		
		ePP	46 20		
Dec. 18	M	eP	05 31 48		
		e	32 04		
		e	33 22		
Dec. 18	F	eP	08 11 18.5	c	USCGS: 15°N, 90°W. h = 200.
		ePcPNZ	13 26		O = 08-04-46.
		e	50		
	M	ePNZ	11 46.0		
		eNE	12 42		
		e	13 12		
		e	15 08		
		e(S)	17 29		
	R	ePNEZ	11 33.9	c	
		e	51.0		
		eN	12 15		
		e(S)	17 25		
Dec. 18	B	iP	15 39 19.5	d	South America.
		e	41 16.2		
	F	eP	39 09.8		
		e(S)	49 02		
		e	50.4		
	M	eP	39 28.0		
		e	41 21.4		
	R	ePEZ	39 23.5	d	
		eN	40 25		
		e	36		
		eE	43 01		
Dec. 18	BG	eLN	16 29.9		USCGS: Flores Sea. O = 15-44-15.
		eE	38.3		
	R	eP'	03 46.0	d	
		eN	04 36		
Dec. 19	MH	eP	09 29 44.4	d	Felt at Apia.
	M	eP	55.9		
Dec. 19	MH	iP	14 29 06.0	c	Pas: Aftershock of Dec. 2 at 1951.
		ipP	15.7	d	
	M	eP	12.2		
		e	19.9		
Dec. 19	MH	iP	17 44 33.5	c	
	M	eP	42.6		
Dec. 19	MH	eP	19 46 54.8	d	USCGS: 49°N, 129°W. O = 19-43-53.
		i	47 03.9	d	
		i	20.0		
	F	eP	11.0	d	
		e	28		
	M	eP	46 20.0		
	R	eP	40.0	c	
Dec. 20	MH	eP	02 19 07.8	d	USCGS: Aftershock of Dec. 14 at 1415.
		e	17.1	d	O = 02-13-09.
	M	eP	26.0		
	R	eP	13.0	d	
		eN	44		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
Dec. 20	MH	iP	03 46 38.0	c	
Dec. 20	MH	eP	08 30 09.5	c	BCIS: New Hebrides. 0 = 08-17.5.
		e	16.5	d	
	R	e(P)	27.5	d	
Dec. 20	MH	eP	17 20 40.3	c	
	R	eP	53.5	d	
Dec. 20	MH	iP	18 23 54.3	d	USCGS: Aftershock of Dec. 14 at 1415. 0 = 18-17-54.
Dec. 21	B	iP	11 49 05.0	d	USGGS: 30°S, 71°W. h = 150.
		i	24.0		0 = 11-36-50.
	MH	iP	01.0	d	
		ipP	27.7	d	
	F	eP	48 52.2	d	
		epPEZ	49 18.3		
		e	44		
		eE	51 19		
	M	eP	49 10.4		
		epP	36.0		
		e	50 06.4		
	R	eP	49 04.5	d	
		e	24.2		
		e	44		
		eN	52 03		
		eE	53 16		
		eN	39		
Dec. 22	MH	eP	00 03 22.2		Pas. Mexico.
		e	30.9		
Dec. 22	MH	eP	08 04 00.8	c	USCGS: Galapagos Islands Region.
		i	37.6	c	0 = 07-55-52.
	R	eP	00.5		
		e	16		
Dec. 22	B	eP"	09 29 53.9	d	USCGS: Nicobar Islands Region.
		e	30 37.5	d	0 = 09-10-36.
		ePP	31 39.6		
	MH	eP"	29 53.1	c	
		e	31 58.1	d	
	M	eP"	29 37.3		
		e	51.8		
		e	31 01.3		
		ePP	24.6		
	R	eP"	29 42.5		
		ePP	31 25		
		e	41.5		
Dec. 22	MH	iP	17 46 28.8	c	BCIS: Kermadec Islands.
	M	eP	38.6		
Dec. 23	B	eP	06 45 29.0	d	Pas: Mexico.
		e	39.0		
	MH	eP	29.7	d	
		e	47 57.9	c	
	F	e	45 30.5	d	
	M	eP	56.7		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	R	eP	26.0	d	
		e	43	d	
Dec. 23	B	iP	09 04 29.1	c	USCGS: Northern Honshu, Japan.
		ipP	44.3		O = 08-53-00.
		e	58.0		Pas. h = 50.
	MH	eP	31.1	c	BCIS: 35.5°N, 140.5°E.
		ipP	47.1	d	
	F	eP	41.0	c	
		epPNZ	56.4		
	M	eP	23.8		
		epP	38.7		
		e	05 36.2		
	R	eP	04 33.0	c	
		epP	46.5	c	
		e	05 20.5		
Dec. 23	B	iP	17 57 20.7	d	USCGS: 20°S, 179°W. h = 600.
	MH	iP	21.0	d	O = 17-46-14.
		epP	59 28.1	c	
	M	eP	57 30.2		
	R	ePNEZ	33.5	d	
		epP	59 33.0		
Dec. 24	B	eP	05 22 39.5		USCGS: Off Southern Coast of Kyushu,
	MH	eP	43.1	d	Japan. O = 05-10-03.
	F	eP	52.0	d	
		e	23 19.5		
		e	58.0		
	M	eP	22 26		
		epP	35.6		
	R	eP	44.5	d	
		eE	23 51.0		
Dec. 24	M	eP	09 28 35.1		USCGS: Kyushu, Japan. O = 09-16-20.
	R	eP	51.5		
Dec. 24	B	eP	20 49 28.4	d	USCGS: 18°S, 168°E. O = 20-36-47.
	MH	eP	29.8	c	
		i	50.1		
	F	eP	34.5	c	
		e	52 17		
	R	eP	49 40.5	c	
		e	55.0	d	
Dec. 26	MH	iP	06 29 54.8	c	USCGS: Southeastern Peru.
	M	eP	30 03.7		O = 06-18-35.
Dec. 26	BG	eQNE	14 06.6		USCGS: 17°N, 98°W. (Aftershock of
		eRNZ	09.0		Dec. 14 at 1415). O = 13-51-43.
	MH	iP	13 57 43.5	c	Mag. $6\frac{1}{2}$ (Pas).
		i	53.3	d	Felt.
		e	14 07 35		
		eE	10 31		
	M	ePEZ	13 57 59.9		
		e(S)	14 02 36		
		eLNEZ	08.3		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
	F	eP	13 57 28.8	d	
		eN	58 25		
		e	37		
		eN	59 21		
		e	14 06 27		
Dec. 26	M	eP	14 27 50.9		
Dec. 27	MH	eP	04 45 45.8	c	Pas: Andes, h = 150?
		i	46 03.3	c	
		i(pP)	17.6	c	
	M	eP	45 56.2		
		e(pP)	46 26.0		
		e	47 08.8		
	R	eP	45 48.5	c	
		e(pP)	46 20.0		
		eN	34.0		
Dec. 27	MH	iP	23 19 43.8	d	USCGS: Foreshock of Dec. 29 at 2016.
	M	iPEZ	44.4		h = 100. 0 = 23-10-02.
		eE	20 04.6		
Dec. 27	MH	iP	23 28 51.3	c	USCGS: Foreshock of Dec. 29 at 2016.
	M	eP	52.4		h = 100. 0 = 23-19-24.
		eE	29 10.3		
Dec. 28	M	iP	02 40 48.9		USCGS: Off southeast coast of
		eE	53.0		Kamchatka. 0 = 02-31-22.
	R	eP	41 00	c	
Dec. 28	B	iP	14 27 15.5	d	USCGS: 9°S, 72°W. h = 750.
	MH	iP	10.6	d	0 = 14-17-29. Mag. 6½ (Pas).
		i	28 03.1	c	Pas: Probably h = 650.
	F	ePNZ	27 00.5	c	
		e	44.5		
	M	eP	19.7		
		eEZ	28 01.8		
	R	eP	27 11.5	d	
		e	29 44.5		
Dec. 28	B	iP	21 17 13.9	d	USCGS: 11½°S, 73°W. h = 100.
		e	28.8		0 = 21-06-29.
	MH	iP	09.2	c	
		e	21.7	d	
	R	eP	11.0	d	
		e	57.5		
Dec. 28	B	iP	22 53 15.4	d	USCGS: 23°N, 143°E. h = 100.
		ipP	41.8		0 = 22-41-14.
	MH	iP	18.4	d	
		i	23.0	d	
		i	35.0	c	
		ipP	45.1	c	
	F	eP	26.5	d	
		e(pP)	56.5		
	M	iPNEZ	12.7		
		e	36.0		
		epP	39.7		
	R	eP	20.5		

Date 1950	Sta.	Phase	Time (GCT) h. m. s.	Ground Motion	Remarks
		epP	49.0		
Dec. 29	MH	iP	03 02 00.9	c	
		i	04.4	c	
Dec. 29	M	eP	11 27 00.2		BCIS: Samoa. 0 = 11-15.5.
Dec. 29	M	eP	12 14 14.4		BCIS: 38°N, 87.5°E. 0 = 11-56-07.
Dec. 29	MH	iP	20 25 58.9	c	USCGS: 17°N, 63°W. h = 100.
	M	eP	59.3		0 = 20-16-29.
		e	27 08.8		
	R	eP	25 49.5	d	
Dec. 30	R	eP	03 03 03.0	d	
Dec. 30	B	iP	06 55 29.1	c	USCGS: Kermadec Islands Region.
		e	56 09.0		h = 100. 0 = 06-42-56.
	MH	eP	55 27.8	d	
		i	36.2	c	
		ipP	43.1		
	F	eP	31.5	d	
		e	56 03.5		
	M	eP	55 37.5		
		e	56 57.0		
	R	eP	55 40.5	c	
		e(pP)E	56.0		
Dec. 30	B	iP	13 11 47.3	d	USCGS: 1°S, 77°W. h = 200.
		i	51.1		0 = 13-02-20.
	MH	iP	42.2	c	
		i	54.4	c	
		i	12 14.3	d	
		ipP	26.3	c	
	M	eP	11 52.2		
		e	12 26.9		
		epP	40.3		
	R	eP	11 42.5	d	
Dec. 30	MH	iP	21 26 06.8	c	USCGS: Fiji Islands Region. h = 300.
		i	14.9	c	0 = 21-14-53.
		epP	27 05.4	c	
	F	eP	26 10.5	d	
		epP	27 10.2		
	M	eP	26 16		
		ipP	27 16		
	R	eP	26 20.0	d	
		epP	27 18.0	d	