

**BERMUDA-COLUMBIA UNIVERSITY  
SEISMOGRAPH STATION**

**SIGNAL HILL  
ST. GEORGES, BERMUDA**

**SEISMOLOGICAL BULLETIN**

By

**D. H. SHURBET**



*June 1, 1951 - May 31, 1952*

**LAMONT GEOLOGICAL OBSERVATORY  
(COLUMBIA UNIVERSITY)**

*Contribution No. 67*

## STATION CONSTANTS AND INSTRUMENTS

Latitude: 32°22'46"N  
 Longitude: 64°40'52"W  
 Elevation: 41 meters  
 Bedrock: Calcareous aeolionite

### INSTRUMENTS

Three component Short Period Benioff Seismographs (N,E,Z)  
 To = 1 sec., Tg = 0.2 sec.

Three component Long Period Benioff Seismographs (N,E,Z)  
 To = 1 sec., Tg = 75 sec.

One Columbia University Vertical Seismograph  
 To = 10 sec., Tg = 15 sec.

Two Milne-Shaw Horizontal Seismographs (NE, NW)  
 To = 12 sec., V = 250

One Columbia University Microbarograph  
 To = 10 sec., Tg = 75 sec.

Epicentral data from U. S. Coast and Geodetic Survey  
 preliminary determinations. Amplitudes are Milne-Shaw half trace.

The Bermuda-Columbia University seismograph station, formerly known as the Bermuda Seismograph Station, was initially sponsored by the Bermuda Government, the U. S. Coast and Geodetic Survey, the International Union of Geodesy and Geophysics and the Royal Society of London. Since 1951 new instruments were added under the joint sponsorship of the Bermuda Government and Columbia University. Records obtained prior to 1951 are filed with the U. S. Coast and Geodetic Survey, Washington, D. C. Records obtained after this date are kept in Bermuda. It is requested that exchange bulletins and papers be mailed directly to Bermuda.

## BERMUDA - COLUMBIA UNIVERS...

Date	Phase	h	m	s	Remarks
June					
1	e(LR)	17	35	54	O = 16:23:35 14.5°N, 145° E. (Mariana Islands)
2	e(PP) eLR	07 07	10 53	33 15	O = 06:47:52 7°N, 117°E (Near North Coast of Borneo)
5	eLR	01	48	30	O = 01:34:20 9.5°N, 86°W (Near Coast of Costa Rica) h ~ 60 km. T = 30 sec.
5	ePP eLR	17 17	17 54	31 36	O = 16:57:47 30°N, 132°E (South of Kyushu, Japan, felt in southern Kyushu) h ~ 100 km.
6	eP iS eLR	16 16 16	19 26 33	41 55 44	O = 16:10:52 71.5°N, 8°W (Jan Mayen Island) h ~ 60 km. SH = 6.1 mm. 13 sec.
9	eS	11	46	02	O = 11:22:05 (Western Iran)
13	eLR	01	12	45	O = 01:06:40 19.5°N, 63°W (No of Leeward Islands) h ~ 60 km. Max H 4.3 mm. 8 sec.
16	eS eLR	00 00	03 15	45 23	O = 23:46:58 44.5°N, 130°W (Oregon forshock)
17	eS eLR	09 10	56 05	47 23	O = 09:40:15 44.5°N, 130°W About 300 miles off Oregon Coast) SH 7 sec. 0.6 min.
18	eP eLR	07 07	36 41	07 00	O = 07:31:40 33.5°N, 41°W (N. Atlantic Ocean)
18	iP iS eLR	17 17 17	50 55 58	19.6 06 06	O = 17:44:27 11°N, 85°W (Costa Rica-Nicaragua border) h ~ 100 km.
24	i	05	04	23	
24	e eLR	11 11	27 52	18 36	O = 10:55:40 19°N, 146.5°E (Mariana Islands region)
24	ePKS e eLR	17 17 17	12 29 52	00 24 18	O = 16:49:13 5°S, 154°E (Solomon Islands)
25	e(LR)	03	53	00	O = 03:18:23 56°N, 154°W (South of Alaska)

Date	Phase	h	m	s	Remarks
June					
25	e(LR)	16	40	36	O = 16:12:32 61°N, 150°W (Southern Alaska. Felt at Anchorage) h ~ 100 km.
25	eP eS eLR	20 20 20	23 29 33	32 34 30	O = 20:16:26 1°N, 85°W (About 300 miles off Ecuador Coast) T = 33 sec.
29	eLR	03	54	45	O = 03:49:35 19.5°N, 66°W (North of Puerto Rico)
29	eLR	18	50	15	O = 18:34:00 4.5°N, 82°W (About 300 miles South of Panama) h ~ 100 km.
July					
2	eLR	07	13	18	O = 06:57:10 4°N, 82.5°W (About 300 miles South of Panama) h ~ 100 km.
2	eLR	07	49	42	O = 07:36:23 4°N, 82.5°W (About 300 miles South of Panama) h ~ 100 km.
2	eSS eLR	22 22	23 45	03 15	O = 21:46:30 21°S, 176°W (Tonga Is- lands region)
8	iPKP iPKS eLQ eLR	06 06 06 06	03 07 41 49	50 22 30 06	O = 05:44:20 11°N, 122°E (Panay Is- land, Philippines) T = 30 sec. T = 30 sec.
9	iP eS eLR	00 00 00	10 15 21	27 12 15	O = 00:03:54 16°N, 96°W (Near Coast of Oaxaca, Mexico, Felt.) h ~ 60 km. T = 25 sec.
9	e(LR)	21	33	15	O = 21:17:00 11°N, 85°W (Near Coast of Costa Rica)
11	e(PP) e(PPP) e(SKS)	18 18 18	40 43 45	33 26 45	O = 18:22:00 28.5°N, 139.5°E (Bonin Islands region. Felt) h ~ 550 km.
13	eLR	02	28	00	O = 02:02:25 50°N, 130°W (Off Coast of British Columbia)

Date	Phase	h	m	s	Remarks
July					
16	ePKP ePKS e eLR	10 11 11 11	59 02 21 49	42 42 50 45	O = 10:40:23 6°S, 146°E (Eastern New Guinea) h ~ 200 km.
17	e(LR)	07	22	00	O = 07:23:23 14°S, 173°W (Somoa Is- lands)
17	ePKS	14	10	50	O = 14:48:46 14°S, 167°E (New Hebrides Islands) h ~ 150 km.
18	iP iPP eS	09 09 09	14 16 21	52 58 48	O = 09:06:16 1°N, 27°W (Mid Atlantic Ocean)
19	iP ePP e(SKS)	20 20 21	53 56 03	22 15 13	O = 20:41:25 51.5°N, 177.5°W (Near Adak, Aleutian Islands. Felt) h ~ 60 km.
21	eL	02	37	30	O = 01:32:21 (Northern Assam)
25	eLR	11	02	15	O = 10:47:30 47°N, 27°W (North At- lantic Ocean)
25	eLR	18	55	06	O = 18:42:14 14°N, 90.5°W (Off Coast of Guatemala) h ~ 100 km.
26	eLR	10	50	30	O = 10:00:00 41°N, 143°E (South of Hokkaido, Japan. Felt) h ~ 100 km.
29	eLR	11	20	30	O = 10:53:44 36.5°N, 121.5°W (Near West Central Coast of Calif. Felt in Hollister and vicinity)
29	e	23	52	32	
30	eL	17	04	54	O = 16:51:25 10.5°N, 85°W (Near Coast of Costa Rica) Time doubtful. Clock stopped earlier. h ~ 100 km.
August					
1	eP eLR	03 03	29 39	27 39	O = 03:22:46 $\Delta \sim 34^\circ$ 3°N, 84°W (Off Coast of Columbia) h ~ 100 km. T = 30 sec.
2	i(PP)	04	01	36.5	O = 03:40:27 $\Delta \sim 134^\circ$ 4°S, 154.5°E (New Britain Islands Region) h ~ 500 km.

Date	Phase	h	m	s	Remarks
August					
2	e ePS e eLR	10 10 10 10	39 40 46 58	57 27 55 49	O = 10:16:03 $\Delta \sim 87^\circ$ (1700 miles South of Easter Island)
				T = 23 sec.	
3	eP	00	29	55	O = 00:23:58 $\Delta \sim 29^\circ$ 13°N, 87.5°W (Near S. Coast of Nicaragua) h ~ 100 km.
8	eLR	21	27	10	T = 25 sec.
10	iP iS i eLR	05 05 05 05	39 44 40 46	11.5 30 19 15	O = 05:32:33 $\Delta \sim 34^\circ$ 8.5°N, 40°W (Atlantic Ocean, 700 miles off N. Coast of Brazil)
				T = 22 sec.	
12	eLR	22	21	30	O = 21:00:00 3.5°S 141°E (Near North Coast of New Guinea)
				T = 30 sec.	
13	iP iPP iS iSS eLR	18 18 18 18 19	45 48 54 59 08	15.7 10 46 41 00	O = 18:33:40 43°N, 32.5° E (Black Sea off North Coast of Turkey. Severe casualties and heavy property damage) PH 5 sec. 0.7mm.
				T = 30 sec.	
16	e eLR	00 00	16 46	21 00	O = 23:52:10 (Southern Iran)
				T = 25 sec.	
17	i i i i	22 22 22 22	38 39 41 44	10.5 38 38 47	
18	i(PKP) eLR	03 04	57 58	50.6 00	O = 03:38:19 (Gilelo Island Region)
				T = 35 sec.	
18	i(P)	11	28	53.5	
21	iP iPP iS i	11 11 11 11	09 12 19 20	13 24 28 06	O = 10:56:57.5 19.75°N, 156°W (Near West Coast of Hawaii. Slight property dam- age on Kona Coast.)
21	e	19	24	03	

Date	Phase	h	m	s	Remarks
August					
21	i i	20 20	15 23	31 48	
22	eLR	05	52	24	O = 05:41:31 10°N, 83°W (Costa Rica)
				T = 24 sec.	
24	eP iPP e e	14 14 14 14	34 38 44 46	39 30 56 55	O = 14:21:15 47°N, 151°E (Kurile Is- lands)
27	iP iS Tmax	01 01 01	36 38 50	16 41 23	O = 01:32:56 (Dominican Republic)
27	iP iS Tmax	21 21 21	24 27 38	47.8 05.8 54	
29	iP iS Tmax	03 03 03	43 46 57	51 04 47	
30	iP iS Tmax	01 01 01	07 09 22	36 45 26	
31	i i i	23 23 23	52 54 58	37 47 12	
September					
1	e e	05 05	02 14	59 17	O = 04:40:40 (Foreshock of quake at 08:49:18)
1	eP eS e eLQ eLR	09 09 09 09 09	01 11 14 20 27	46 37 45 06 18	O = 08:49:18 33°S, 110°W (Easter Is- lands Region) SH 8 sec. 0.9 mm.
				T = 30 sec.	
				T = 38 sec.	
2	eLR	16	50	06	O = 16:27:32 31°N, 117°W (Off Northwest Coast of lower California.)
5	i i i i i i i	18 18 18 19 20 20 20	43 55 56 07 13 21 26	40 34 18 19 25 51 58	

Date	Phase	h	m	s	Remarks
September					
8	eP eS eT Tmax	06 06 07 07	44 48 02 03	43 21 29 30	O = 06:40:23 28.5°N, 43°W (N. Atlantic Ocean)
8	eT Tmax e max	07 07 07 07	15 15 20 21	00 45 57 37	O = 06:52:40 29°N, 43½°W (N. Atlantic Ocean)
8	eP eS eT Tmax	12 12 12 12	51 55 09 10	38 15 42 32	O = 11:47:23 28½°N, 43°W (N. Atlantic Ocean)
8	eT Tmax	12 12	26 27	53 30	O = 12:04:17 29°N, 44°W (N. Atlantic Ocean)
12	i(P)	05	40	02.5	
12	eLR T = 40 sec.	16 T = 40 sec.	06 30	30	O = 15:10:18 45½°N, 151°E (Kurile Islands Region)
13	ePKP	16	46	17	O = 16:26:25 (Banda Sea Region)
15	iP eS eT Tmax	08 08 08 08	14 16 28 29	32 47 12 12	O = 08:11:14 (Near San Juan, Porto Rico, felt.) h ~ 100 km.
17	iP	21	07	44.2	
18	i(P)	07	06	58.7	O = 07:07:00 (N. Atlantic, about 50 miles NW of Bermuda. Local quake, felt.) Replotted by USCG as 07:06:45, (50 miles SE of Bda.)
19	eP ipP	04 04	22 23	54 18	O = 04:14:09 17°S, 71°W (Near Coast of Northern Chile) h ~ 100 km.
19	i(P)	07	22	18.6	
21	eLR T = 19 sec.	04 T = 19 sec.	27 51	51	O = 04:22:11 19°N, 70°W (Dominican Republic) h ~ 100 km.
21	ePKP ePKS	09 09	30 33	02 24	O = 09:10:16 (Molucca Passage)

Date	Phase	h	m	s	Remarks
September					
22	eP eS eL T = 18 sec. eT Tmax	23 23 23 T = 18 sec. 00 00	45 49 50 07 07 08	40 46 07 50 56	O = 23:40:37 16½°N, 47°W (N. Atlantic Ocean)
26	eL e(T) Tmax	17 18 18	56 10 10	42 46 54	
27	iP	09	17	21.5	O = 09:08:32 17°S, 72°W (Near Coast of Peru)
27	iP iS eT Tmax	13 13 14 14	55 59 09 10	46.5 07.7 42 12	O = 13:51:46 16°N, 62°W (Windward Islands)
27	iP eS e(SS) eLR T = 40 sec.	19 19 19 19 T = 40 sec.	33 40 44 48 36	06.2 23 32 36	O = 19:24:12 49°N, 129°W (Off Coast of Vancouver Island, British Columbia)
28	eLR	02	23	18	O = 01:25:22 (About 300 miles South of Fiji Islands)
28	iP	03	51	52	
28	iP eLR	12 12	13 20	11.1 54	O = 12:07:24 11½°N, 86°W (Near S. Coast of Nicaragua) h ~ 200 km.
28	eP e(LR)	14 14	57 04	02 54	O = 14:51:17 (Aftershock, near S. Coast of Nicaragua)
28	eSKS eSS eLR	23 00 00	54 06 27	40 29 54	O = 23:28:37 30°S, 178°W (Kermadec Islands)
29	iP	18	27	12	O = 18:15:05 26½°S, 120°W (Pacific Ocean, W. of Easter Islands)
October					
1	eP eLR	10 10	23 45	02 24	O = 10:11:40 55°N, 166°W Fox Islands, Aleutians)
2	e e eL T = 30 sec.	06 06 06 T = 30 sec.	52 55 57	11 19 34	

Date	Phase	h	m	s	Remarks
October					
2	e eL	07 08	57 02	09 00	
		T = 30 sec.			
3	iP iS eLR eT Tmax	02 02 02 02 02	04 06 07 18 19	14.2 38.8 10 12 00	O = 02:00:06 16½°N, 61°W (Leeward Islands)
3	iP	11	16	04	O = 11:07:21 17°S, 71°W (Southern Peru. Felt at Airca, Chile) h ~ 100 km.
3	e(P) eLR	23 23	07 12	42 18	
5	eLR	12	38	36	O = 11:37:30 28½°S, 177°W (Kermadec Islands Region)
6	eLR	06	33	24	O = 05:54:50 (Andeanof Islands) h ~ 100 km.
6	iP eS eT Tmax	18 18 19 19	46 49 00 01	38.3 02 25 00	
8	iP eS eLR	04 04 04	19 26 33	17.2 19 00	O = 04:10:35 40°N, 125°W (Off Cape Mendocino, Calif.)
8	eP	05	43	17	O = 05:33:40 (Bolivia, Argentina border Region)
11	ePKS eSS eLR	02 02 02	00 17 41	27.6 34 33	O = 01:37:31 5°S, 152°E (New Britain Island)
12	i(P)	00	10	24.8	
13	eL	20	12	36	O = 19:45:06 43½°N, 127°W (Off Coast of Oregon)
13	ePP eSKS eLR	22 22 23	45 52 15	04 31 12	O = 22:28:06 60°S, 19°W (Sandwich Islands Region)
		T = 23 sec.			

Date	Phase	h	m	s	Remarks
August					
21	i i	20 20	15 23	31 48	
22	eLR	05	52	24	O = 05:41:31 10°N, 83°W (Costa Rica)
		T = 24 sec.			
24	eP iPP e e	14 14 14 14	34 38 44 46	39 30 56 55	O = 14:21:15 47°N, 151°E (Kurile Islands)
27	iP iS Tmax	01 01 01	36 38 50	16 41 23	O = 01:32:56 (Dominican Republic)
27	iP iS Tmax	21 21 21	24 27 38	47.8 05.8 54	
29	iP iS Tmax	03 03 03	43 46 57	51 04 47	
30	iP iS Tmax	01 01 01	07 09 22	36 45 26	
31	i i i	23 23 23	52 54 58	37 47 12	
September					
1	e e	05 05	02 14	59 17	O = 04:40:40 (Foreshock of quake at 08:49:18)
1	eP eS e eLQ eLR	09 09 09 09 09	01 11 14 20 27	46 37 45 06 18	O = 08:49:18 33°S, 110°W (Easter Islands Region) SH 8 sec. 0.9 mm.
		T = 30 sec.			
		T = 38 sec.			
2	eLR	16	50	06	O = 16:27:32 31°N, 117°W (Off Northwest Coast of lower California.)
5	i i i i i i	18 18 18 19 20 20	43 55 56 07 13 21	40 34 18 19 25 51	
		20 26 58			

Date	Phase	h	m	s	Remarks
September					
8	eP	06	44	43	O = 06:40:23 28.5°N, 43°W (N. Atlantic Ocean)
	eS	06	48	21	
	eT	07	02	29	
	Tmax	07	03	30	
8	eT	07	15	00	O = 06:52:40 29°N, 43½°W (N. Atlantic Ocean)
	Tmax	07	15	45	
	e	07	20	57	
	max	07	21	37	
8	eP	12	51	38	O = 11:47:23 28½°N, 43°W (N. Atlantic Ocean)
	eS	12	55	15	
	eT	12	09	42	
	Tmax	12	10	32	
8	eT	12	26	53	O = 12:04:17 29°N, 44°W (N. Atlantic Ocean)
	Tmax	12	27	30	
12	i(P)	05	40	02.5	
12	eLR	16	06	30	O = 15:10:18 45½°N, 151°E (Kurile Islands Region) T = 40 sec.
13	ePKP	16	46	17	O = 16:26:25 (Banda Sea Region)
15	iP	08	14	32	O = 08:11:14 (Near San Juan, Porto Rico, felt.)
	eS	08	16	47	
	eT	08	28	12	h ~ 100 km.
	Tmax	08	29	12	
17	iP	21	07	44.2	
18	i(P)	07	06	58.7	O = 07:07:00 (N. Atlantic, about 50 miles NW of Bermuda. Local quake, felt.) Replotted by USCG as 07:06:45, (50 miles SE of Bda.)
19	eP	04	22	54	O = 04:14:09 17°S, 71°W (Near Coast of Northern Chile)
	ipP	04	23	18	h ~ 100 km.
19	i(P)	07	22	18.6	
21	eLR	04	27	51	O = 04:22:11 19°N, 70°W (Dominican Republic) h ~ 100 km.
	T = 19 sec.				
21	ePKP	09	30	02	O = 09:10:16 (Molucca Passage)
	ePKS	09	33	24	

Date	Phase	h	m	s	Remarks
September					
22	eP	23	45	40	O = 23:40:37 16½°N, 47°W (N. Atlantic Ocean)
	eS	23	49	46	
	eL	23	50	07	
	T = 18 sec.				
	eT	00	07	50	
	Tmax	00	08	56	
26	eL	17	56	42	
	e(T)	18	10	46	
	Tmax	18	10	54	
27	iP	09	17	21.5	O = 09:08:32 17°S, 72°W (Near Coast of Peru)
27	iP	13	55	46.5	O = 13:51:46 16°N, 62°W (Windward Islands)
	iS	13	59	07.7	
	eT	14	09	42	
	Tmax	14	10	12	
27	iP	19	33	06.2	O = 19:24:12 49°N, 129°W (Off Coast of Vancouver Island, British Columbia)
	eS	19	40	23	
	e(SS)	19	44	32	
	eLR	19	48	36	
	T = 40 sec.				
28	eLR	02	23	18	O = 01:25:22 (About 300 miles South of Fiji Islands)
28	iP	03	51	52	
28	iP	12	13	11.1	O = 12:07:24 11½°N, 86°W (Near S. Coast of Nicaragua)
	eLR	12	20	54	h ~ 200 km.
28	eP	14	57	02	O = 14:51:17 (Aftershock, near S. Coast of Nicaragua)
	e(LR)	14	04	54	
28	eSKS	23	54	40	O = 23:28:37 30°S, 178°W (Kermadec Islands)
	eSS	00	06	29	
	eLR	00	27	54	
29	iP	18	27	12	O = 18:15:05 26½°S, 120°W (Pacific Ocean, W. of Easter Islands)
October					
1	eP	10	23	02	O = 10:11:40 55°N, 166°W Fox Islands, Aleutians)
	eLR	10	45	24	
2	e	06	52	11	
	e	06	55	19	
	eL	06	57	34	
	T = 30 sec.				

Date	Phase	h	m	s	Remarks
October					
2	e	07	57	09	
	eL	08	02	00	
		T = 30 sec.			
3	iP	02	04	14.2	O = 02:00:06 16½°N, 61°W
	iS	02	06	38.8	(Leeward Islands)
	eLR	02	07	10	
	eT	02	18	12	
		T = 12 sec.			
	Tmax	02	19	00	
3	iP	11	16	04	O = 11:07:21 17°S, 71°W
		(Southern Peru. Felt at Airca, Chile)			
		h ~ 100 km.			
3	e(P)	23	07	42	
	eLR	23	12	18	
5	eLR	12	38	36	O = 11:37:30 28½°S, 177°W
		(Kermadec Islands Region)			
6	eLR	06	33	24	O = 05:54:50 (Andreanof Islands)
		h ~ 100 km.			
6	iP	18	46	38.3	
	eS	18	49	02	
	eT	19	00	25	
	Tmax	19	01	00	
8	iP	04	19	17.2	O = 04:10:35 40°N, 125°W (Off Cape
	eS	04	26	19	Mendocino, Calif.)
	eLR	04	33	00	
8	eP	05	43	17	O = 05:33:40 (Bolivia, Argentina border
		Region)			
11	ePKS	02	00	27.6	O = 01:37:31 5°S, 152°E (New Britain
	eSS	02	17	34	Island)
	eLR	02	41	33	
12	i(P)	00	10	24.8	
13	eL	20	12	36	O = 19:45:06 43½°N, 127°W (Off Coast
		of Oregon)			
13	ePP	22	45	04	O = 22:28:06 60°S, 19°W
	eSKS	22	52	31	((Sandwich Islands Region)
	eLR	23	15	12	
		T = 23 sec.			

Date	Phase	h	m	s	Remarks
January					
21	iP	03	54	18	O = 03:43:04 53°N, 166½°W (Fox Is-
	iS	04	03	38	lands, Aleutian Islands)
	ePS	04	04	14	
	iSS	04	08	15	
	eLR	04	17	30	
24	eLR	09	53	12	O = 09:14:08 53°N, 166½°W (Fox Is-
		(doubtful)			
28	Tmax	07	05	36	O = 06:25:51 (Atlantic Ocean, about 700
		miles North of Azores)			
31	i(P)	20	23	23.5	O = 20:16:43 15½°N, 93½°W
	eLR	20	31	42	(Near Coast of Chiapas, Mexico. Felt.)
		T = 35 sec.			
		h ~ 60 km.			
31	eLR	21	41	36	O = 20:55:12 4°S, 30½°E
		T = 30 sec.			
		(Ruanda-Urundi, Tanganyika border)			
February					
2	eLR	00	01	38	O = 22:59:45 11°S, 165°E (Santa Cruz
		T = 40 sec.			
		Islands)			
		h ~ 100 km.			
2	eP	10	32	04	O = 10:20:06 51½°N, 179°W
	eLR	10	59	24	(Andreanof Islands, Aleutian Islands. Felt;
		Adak.)			
		h ~ 100 km.			
2	iP	12	27	14.4	O = 12:24:02 (Off West Coast of Puerto
	iS	12	29	23.9	Rico.)
	eLR	12	29	40	
		T = 15 sec.			
	Tmax	12	42	06	
3	i(P)	03	01	26.8	
	i(S)	03	03	39	
	(Tmax)	03	16	06	
4	eL	19	31	28	O = 19:09:30 (Southern Gulf of Calif.)
11	iPKP	07	19	45.1	O = 07:01:04 6°S, 110°E (Java Sea)
	i	07	22	14.1	h ~ 700 km.
	eSS	07	42	33	
12	iP	02	05	53.2	O = 01:58:02 9°S, 74°W
		(East Central Peru)			



Date	Phase	h	m	s	Remarks
February					
14	iPKP	03	58	05	O = 03:38:06 8°S, 125°E (Flores Sea, North of Timor Island)
	i	04	00	49	
	i	04	08	13	
	eLR	04	50	24	
		T = 43 sec.			
14	i(SS)	21	13	18.5	O = 21:02:35 7½°N, 76½°W (Northwestern Colombia)
	i(SSS)	21	14	57.5	
	e(LR)	21	17	30	
		T = 30 sec.			
16	e	07	44	40	O = 07:25:15 (Near Coast of Oaxaca, Mexico)
17	i(P)	17	44	53.6	O = 17:35:45 (Southern Gulf of Calif.)
	e(S)	17	48	55	
	e(LR)	17	53	40	
20	e(S)	09	25	30	O = 09:10:06 16°S, 74°W (Near Coast of Southern Peru)
22	eLR	12	48	45	O = 11:42:28 11½°S, 166°E (Santa Cruz Islands)
		T = 30 sec.			
23	Tmax	16	16	28	
23	i(S)	17	57	22.4	
	e(LR)	17	58	12	
		T = 15 sec.			
	Tmax	18	09	04	
23	iP	21	39	37.8	O = 21:35:15 29°N, 43°W (N. Atlantic Ocean)
	eLR	21	44	06	
	Tmax	21	58	21	
	i	22	09	34.8	
24	eLR	19	19	06	T = 35 sec.
		T = 35 sec.			
25	iSKKS	01	43	43	O = 01:17:00 17°S, 173½°W (Tonga Islands, felt Apia)
	iPS	01	46	14	
	iSS	01	52	44	
	eLR	02	10	06	
		T = 30 sec.			
26	iP	11	39	10.6	O = 11:31:04 14½°S, 70°W (Peru-Bolivia border) h ~ 300 km.
	i(PcP)	11	40	04.2	
	i(L)	11	50	44	
	i	11	54	03.6	

Date	Phase	h	m	s	Remarks
February					
26	iP	15	45	21.1	O = 15:39:23 11½°N, 86½°W (Near Coast of Nicaragua. Felt) h ~ 100 km.
	eLR	15	53	36	
		T = 30 sec.			
March					
1	e	03	44	48	T = 26 sec.
		T = 26 sec.			
2	e	04	29	45	O = 04:16:22 Azores Islands
		T = 25 sec.			
2	eLR	19	06	24	O = 18:52:56 11°N, 86½°W (Near Coast of Nicaragua)
		T = 20 sec.			
3	eLR	08	15	20	O = 07:12:39 21½°S, 174½°W (Tonga Islands)
		T = 20 sec.			
3	iP	17	47	56.5	O = 17:42:07 11°N, 86½°W (Near Coast of Nicaragua) h ~ 100 km.
	eLR	17	54	36	
		T = 30 sec.			
4	eP	01	36	48.6	O = 01:22:41 42½°N, 143½°E (Near Coast of Hokkaido, Japan. Heavy casualties and extensive property damage. Seismic sea wave)
	ePP	01	40	49.6	
	iSKS	01	47	30	
	eLR	02	11	54	
		T = 49 sec.			
4	i(P)	07	23	15	e(LR)
	e(LR)	08	34	30	
4	e	17	27	18	O = 16:31:00 43°N, 146°E (Off Coast of Hokkaido, Japan)
		T = 30 sec.			
4	iPKS	19	53	22	O = 19:30:28 10°S, 161½°E (Solomon Islands)
	iPPS	20	04	03.6	
4	e(PPS)	20	24	04	O = 19:56:10 42°N, 146°E (Off East Coast of Hokkaido, Japan)
	e(SS)	20	28	37	
	e(LQ)	20	40	24	
		T = 30 sec.			
5	e(S)	04	14	37	O = 03:49:03 (Hokkaido, Japan, after- shock)
	e(PS)	04	16	08	
	e(LR)	04	40	18	
		T = 35 sec.			
5	e	10	13	00	O = 09:22:15 42½°N, 145½°E (Off Coast of Hokkaido, Japan)
		T = 30 sec.			

Date	Phase	h	m	s	Remarks
March					
5	eP	15	53	18	O = 15:46:08 24½°N, 108½°W (Gulf of California)
	iPPP	15	55	13.7	
	e	15	59	51	
	eLR	16	04	42	
	T = 40 sec.				
7	eLR	08	25	15	O = 07:32:38 36°N, 136½°E (Honshu, Japan. Felt)
	T = 30 sec.				
8	i(S)	21	57	17	O = 17:03:43 42°N, 143½°E (Near South Coast of Hokkaido, Japan. Slight property damage.)
	(Tmax)	22	09	40	
9	ePP	17	21	59	O = 17:03:43 42°N, 143½°E (Near South Coast of Hokkaido, Japan. Slight property damage.)
	eSKS	17	28	19	
	eSKS	17	29	23	
	e	17	30	53	
	eLQ	17	45	15	
	T = 30 sec.				
eLR	17	51	15	T = 23 sec.	
	T = 23 sec.				
9	eP	20	09	40	O = 20:00:17 59½°N, 136°W (Alaska-Canada border. Felt: Sitka)
	iPS	20	17	15	
	eLR	20	26	00	
15	eP	08	15	39	O = 11:15:46 5½°S, 100½°E (Off Southwest Coast of Sumatra)
	iS	08	17	48.9	
	Tmax	08	28	49	
15	iPKP	11	35	41	O = 11:15:46 5½°S, 100½°E (Off Southwest Coast of Sumatra)
	e(SS)	11	58	24	
	eLR	12	27	45	
18	e(PP)	11	17	53	O = 10:56:27 12°S, 168°E (Santa Cruz Islands)
19	iPKP	11	16	36	O = 10:57:09 9½°N, 127°E (Off East Coast of Mindanao, Philippine Islands)
20	eLR	00	40	24	O = 23:39:08 11°S, 165°E (Santa Cruz Islands) h ~ 60 km.
	T = 25 sec.				
21	eLR	16	13	24	O = 15:07:44 (Santa Cruz Islands) h ~ 60 km.
21	eLR	17	13	24	O = 16:10:38 11°S, 165°E (Santa Cruz Islands) h ~ 60 km.
	T = 35 sec.				

Date	Phase	h	m	s	Remarks
January					
21	iP	03	54	18	O = 03:43:04 53°N, 166½°W (Fox Islands, Aleutian Islands)
	iS	04	03	38	
	ePS	04	04	14	
	iSS	04	08	15	
	eLR	04	17	30	
24	eLR	09	53	12	O = 09:14:08 53°N, 166½°W (Fox Islands, Aleutian Islands) (doubtful)
28	Tmax	07	05	36	O = 06:25:51 (Atlantic Ocean, about 700 miles North of Azores)
31	i(P)	20	23	23.5	O = 20:16:43 15½°N, 93½°W (Near Coast of Chiapas, Mexico. Felt.) h ~ 60 km.
	eLR	20	31	42	
	T = 35 sec.				
31	eLR	21	41	36	O = 20:55:12 4°S, 30½°E (Ruanda-Urundi, Tanganyika border)
	T = 30 sec.				
February					
2	eLR	00	01	38	O = 22:59:45 11°S, 165°E (Santa Cruz Islands) h ~ 100 km.
	T = 40 sec.				
2	eP	10	32	04	O = 10:20:06 51½°N, 179°W (Andreanof Islands, Aleutian Islands. Felt; Adak.) h ~ 100 km.
	eLR	10	59	24	
2	iP	12	27	14.4	O = 12:24:02 (Off West Coast of Puerto Rico.)
	iS	12	29	23.9	
	eLR	12	29	40	
	T = 15 sec.				
Tmax	12	42	06		
3	i(P)	03	01	26.8	O = 12:24:02 (Off West Coast of Puerto Rico.)
	i(S)	03	03	39	
	(Tmax)	03	16	06	
4	eL	19	31	28	O = 19:09:30 (Southern Gulf of Calif.)
11	iPKP	07	19	45.1	O = 07:01:04 6°S, 110°E (Java Sea) h ~ 700 km.
	i	07	22	14.1	
	eSS	07	42	33	
12	iP	02	05	53.2	O = 01:58:02 9°S, 74°W (East Central Peru)

Date	Phase	h	m	s	Remarks
February					
14	iPKP	03	58	05	O = 03:38:06 8°S, 125°E (Flores Sea, North of Timor Island)
	i	04	00	49	
	i	04	08	13	
	eLR	04	50	24	
		T = 43 sec.			
14	i(SS)	21	13	18.5	O = 21:02:35 7½°N, 76½°W (Northwestern Colombia)
	i(SSS)	21	14	57.5	
	e(LR)	21	17	30	
		T = 30 sec.			
16	e	07	44	40	O = 07:25:15 (Near Coast of Oaxaca, Mexico)
17	i(P)	17	44	53.6	O = 17:35:45 (Southern Gulf of Calif.)
	e(S)	17	48	55	
	e(LR)	17	53	40	
20	e(S)	09	25	30	O = 09:10:06 16°S, 74°W (Near Coast of Southern Peru)
22	eLR	12	48	45	O = 11:42:28 11½°S, 166°E (Santa Cruz Islands)
		T = 30 sec.			
23	Tmax	16	16	28	
23	i(S)	17	57	22.4	O = 21:35:15 29°N, 43°W (N. Atlantic Ocean)
	e(LR)	17	58	12	
		T = 15 sec.			
	Tmax	18	09	04	
23	iP	21	39	37.8	O = 21:35:15 29°N, 43°W (N. Atlantic Ocean)
	eLR	21	44	06	
	Tmax	21	58	21	
	i	22	09	34.8	
24	eLR	19	19	06	O = 01:17:00 17°S, 173½°W (Tonga Islands, felt Apia)
		T = 35 sec.			
25	iSKKS	01	43	43	O = 01:17:00 17°S, 173½°W (Tonga Islands, felt Apia)
	iPS	01	46	14	
	iSS	01	52	44	
	eLR	02	10	06	
		T = 30 sec.			
26	iP	11	39	10.6	O = 11:31:04 14½°S, 70°W (Peru-Bolivia border) h ~ 300 km.
	i(PcP)	11	40	04.2	
	i(L)	11	50	44	
	i	11	54	03.6	

Date	Phase	h	m	s	Remarks
February					
26	iP	15	45	21.1	O = 15:39:23 11½°N, 86½°W (Near Coast of Nicaragua. Felt) h ~ 100 km.
	eLR	15	53	36	
		T = 30 sec.			
March					
1	e	03	44	48	O = 04:16:22 Azores Islands
		T = 26 sec.			
2	e	04	29	45	O = 04:16:22 Azores Islands
		T = 25 sec.			
2	eLR	19	06	24	O = 18:52:56 11°N, 86½°W (Near Coast of Nicaragua)
		T = 20 sec.			
3	eLR	08	15	20	O = 07:12:39 21½°S, 174½°W (Tonga Islands)
		T = 20 sec.			
3	iP	17	47	56.5	O = 17:42:07 11°N, 86½°W (Near Coast of Nicaragua) h ~ 100 km.
	eLR	17	54	36	
		T = 30 sec.			
4	eP	01	36	48.6	O = 01:22:41 42½°N, 143½°E (Near Coast of Hokkaido, Japan. Heavy casualties and extensive property damage. Seismic sea wave)
	ePP	01	40	49.6	
	iSKS	01	47	30	
	eLR	02	11	54	
		T = 49 sec.			
4	i(P)	07	23	15	O = 16:31:00 43°N, 146°E (Off Coast of Hokkaido, Japan)
	e(LR)	08	34	30	
4	e	17	27	18	O = 16:31:00 43°N, 146°E (Off Coast of Hokkaido, Japan)
		T = 30 sec.			
4	iPKS	19	53	22	O = 19:30:28 10°S, 161½°E (Solomon Islands)
	iPPS	20	04	03.6	
4	e(PPS)	20	24	04	O = 19:56:10 42°N, 146°E (Off East Coast of Hokkaido, Japan)
	e(SS)	20	28	37	
	e(LQ)	20	40	24	
		T = 30 sec.			
5	e(S)	04	14	37	O = 03:49:03 (Hokkaido, Japan, after-shock)
	e(PS)	04	16	08	
	e(LR)	04	40	18	
		T = 35 sec.			
5	e	10	13	00	O = 09:22:15 42½°N, 145½°E (Off Coast of Hokkaido, Japan)
		T = 30 sec.			

Date	Phase	h	m	s	Remarks
March					
5	eP	15	53	18	O = 15:46:08 24½°N, 108½°W (Gulf of California)
	iPPP	15	55	13.7	
	e	15	59	51	
	eLR	16	04	42	
		T = 40 sec.			
7	eLR	08	25	15	O = 07:32:38 36°N, 136½°E (Honshu, Japan. Felt)
		T = 30 sec.			
8	i(S)	21	57	17	
	(Tmax)	22	09	40	
9	ePP	17	21	59	O = 17:03:43 42°N, 143½°E (Near South Coast of Hokkaido, Japan. Slight property damage.)
	eSKS	17	28	19	
	eSKS	17	29	23	
	e	17	30	53	
	eLQ	17	45	15	
		T = 30 sec.			
9	eLR	17	51	15	
		T = 23 sec.			
9	eP	20	09	40	O = 20:00:17 59½°N, 136°W (Alaska-Canada border. Felt: Sitka)
	iPS	20	17	15	
	eLR	20	26	00	
15	eP	08	15	39	
	iS	08	17	48.9	
	Tmax	08	28	49	
15	iPKP	11	35	41	O = 11:15:46 5½°S, 100½°E (Off Southwest Coast of Sumatra)
	e(SS)	11	58	24	
	eLR	12	27	45	
18	e(PP)	11	17	53	O = 10:56:27 12°S, 168°E (Santa Cruz Islands)
19	iPKP	11	16	36	O = 10:57:09 9½°N, 127°E (Off East Coast of Mindanao, Philippine Islands)
20	eLR	00	40	24	O = 23:39:08 11°S, 165°E (Santa Cruz Islands) h ~ 60 km.
		T = 25 sec.			
21	eLR	16	13	24	O = 15:07:44 (Santa Cruz Islands) h ~ 60 km.
21	eLR	17	13	24	O = 16:10:38 11°S, 165°E (Santa Cruz Islands) h ~ 60 km.

Date	Phase	h	m	s	Remarks
March					
22	iP	18	27	31	O = 18:15:43 52°N, 173°W ((Andreanof Islands, Aleutian Islands) SH 7 sec 1.2 mm.
	iS	18	37	12	
	eLR	18	53	24	
		T = 35 sec.			
23	eLR	14	21	30	O = 13:13:25 11°S, 165°E (Santa Cruz Islands) h ~ 60 km.
		T = 30 sec.			
23	ePKP	15	40	50	O = 15:21:30 (Near Samar, Philippine Islands)
	e(PP)	15	43	46	
	e(LR)	16	36	30	
		T = 30 sec.			
24	iP	04	50	37	
	iS	04	52	47.4	
	Tmax	05	04	43	
24	eLR	23	46	40	
25	eLR	10	35	48	O = 09:29:42 5½°S, 150°E (New Britain)
		T = 40 sec.			
27	eScS	16	29	16	O = 16:09:50 Ascension Island Region
	eLR	16	39	20	
		T = 25 sec.			
	i	17	28	58.4	
	max	17	29	24	
	i	17	37	58.2	
max	17	38	16		
April					
1	eLR	15	03	06	O = 14:08:47 15°S, 175½°W (Samoa Islands Region)
		T = 40 sec.			
1	i(P)	18	40	41.4	
2	iP	18	41	50.3	O = 18:34:50 16½°N, 99½°W (Near Coast of Guerrero, Mexico. Felt)
	eLR	18	51	30	
		T = 40 sec.			
4	iP	03	05	46	O = 02:52:55 52°N, 159½°E (Near Coast of Kamchatka)
	eS	03	16	24	
	eLR	03	34	36	
4	eLR	21	01	36	
5	eL	09	35	00	O = 08:33:12 15½° 177½°E (Fiji Islands)

Date	Phase	h	m	s	Remarks
April					
8	eL	11	17	10	O = 10:00:06 Sulu Sea T = 30 sec.
9	eS eLR	08	13	48	O = 07:57:10 (About 1000 miles south- west of Galapagos Islands)
9	e(LR)	16	41	20	O = 16:29:29.5 34.4°N, 97.8°W (Slight property damage in Central Okla- homa. Felt in seven states) h ~ 125 km.
10	i(P)	05	01	43.5	
10	eLR	06	55	28	O = 05:57:20 25°N, 126°E (Ryukyu Is- lands) T = 35 sec.
12	eL	02	29	54	
14	iPKP iPKS eLR	00	09	20.6	O = 23:49:45 3½°N, 126½°E (Molucca Passage)
14	iP i i(PcP) iS	23	46	55.7	O = 23:37:20 25°S, 69½°W (Northern Chile) h ~ 100 km.
15	eL	06	48	30	O = 05:59:53 43°N, 143½°E (Hokkaido, Japan)
15	e(PPP) eS eLR	19	21	44.6	O = 19:02:12 56°S, 24°W (Sandwich Islands Region) Max H 20 sec. 0.7 mm. T = 22 sec.
18	ePP ePKS eLR	16	20	41	O = 15:59:10 12°N, 140°E (Mariana Islands Region)
19	iP i(pP) iS eLR Tmax	10	04	27	O = 09:58:53 7°N, 71½°W (Colombia-Venezuela border. Minor proper- ty damage.) h ~ 60 km. PH 9 sec. 1.8 mm. SH 10 sec. 8.1 m.
19	eP ePP eS eLR	19	39	27	O = 19:26:12 (Sandwich Islands Region)

Date	Phase	h	m	s	Remarks
April					
21	eLR	03	04	18	T = 12 sec. (Tmax) 03 21 00
21	eLR	23	28	06	O = 23:15:07 7½°N, 83°W (Off Coast of Panama)
23	eLR Tmax	15	21	20	15 37 27
23	eLR Tmax	15	52	35	16 08 48
25	eLR	06	16	24	O = 06:02:00 8°N, 83°W (Near Coast of Costa Rica)
25	eLR	10	43	18	T = 18 sec. (Tmax) 11 01 48
26	eL	23	20	38	
28	eS eLR	11	19	49	O = 10:54:18 42½°N, 143°E (Hokkaido, Japan)
29	eLR	04	01	30	O = 03:07:35 15°S, 44½°E (Mozambique Channel) h ~ 200 km.
29	iP	19	53	21.5	O = 19:42:25 (Central Chile. Felt: Santi- ago and Valparaiso )
May					
1	eLR	15	46	00	O = 15:04:07 (Near Islands, Aleutian Is- lands)
1	iP eS eLR Tmax	16	15	04.9	O = 16:10:41 28°N, 43½°W (North Atlantic Ocean) PH 7 sec. 0.7 mm.
1	eL (Tmax)	17	12	30	17 27 03
3	eP eS eLQ	12	22	51	O = 12:14:09 15°S, 76½°W (Off Coast of Southern Peru)

Date	Phase	h	m	s	Remarks
May					
4	e	14	49	00	O = 14:15:16 24½°S, 177½°W (Tonga Islands Region)
	e(SS)	14	52	12	
	e(LQ)	15	06	30	
	e(LR)	15	12	42	
6	eLR	17	45	30	O = 17:21:02 41½°N, 125°W (Off Coast of Northern California)
7	eLR	16	40	00	O = 16:14:36 51°N, 131°W (Near Queen Charlotte Islands)
8	ePKP	21	30	20	O = 21:10:40 2½°N, 127°E (Molucca Passage)
	ePKS	21	33	57	
	e(SKKS)	21	40	24	
	eLR	22	55	24	
8	eLR	22	55	24	O = 21:49:36 5½°S, 145°E (Northern New Guinea) h ~ 200 km.
9	eL	04	38	15	O = 03:29:00 (Kermadec Islands Region) h ~ 400 km.
9	eL	16	57	40	O = 15:31:31 39½°N, 119¾°W (California-Nevada border, Felt: Reno)
9	ePKP	18	07	00	O = 17:47:40 6½°S, 155°E (Solomon Islands) h ~ 60 km.
	ePP	18	09	49	
	ePKS	18	10	41	
	ePPS	18	21	31	
	e(SSP)	18	28	16	
	eLR	18	50	06	
	T = 40 sec.				
10	eL	09	42	24	
10	eL	19	55	18	
13	iP	19	37	42.8	O = 19:31:45 10½°N, 85°W (Costa Rica) h ~ 100 km.
	eLR	19	44	42	
14	iP	21	17	02.3	O = 21:11:36 16½°N, 86½°W (Off North Coast of Honduras) Max H 20 sec. 2.8 mm.
	e(S)	21	21	35	
	eLR	21	23	39	
15	eP	18	50	14	O = 18:43:52 14°N, 92½°W (Foreshock near Coast of Guatemala)
	eLR	18	57	24	

Date	Phase	h	m	s	Remarks
May					
15	eLR	22	19	30	O = 21:36:48 (Rat Islands, Aleutian Islands)
16	eP	05	48	25	O = 05:42:09 14°N, 92½°W (Near Coast of Guatemala)
	eLR	05	55	48	
16	eP	10	58	50	O = 10:52:18 16½°N, 96½°W (Oaxaca, Mexico) h ~ 100 km.
	eLR	11	18	54	
16	iP	20	51	44.7	O = 20:45:40 6½°N, 79°W (Off Coast of Panama. Felt: Balboa Heights) PH 8 sec. 1.3 mm.
	eS	20	56	48	
	eLR	20	59	06	
17	eLR	07	23	14	
	Tmax	07	42	14	
17	eS	10	13	37	O = 09:48:16 42½°N, 144½°E (Near East Coast of Hokkaido, Japan)
	eLQ	10	30	24	
	eLR	10	35	18	
19	ePP	18	50	23	O = 18:32:24 43°N, 144½°E (Near East Coast of Hokkaido, Japan)
	ePPP	18	52	35	
	eS	18	57	52	
	ePS	18	59	23	
	ePPS	19	00	13	
19	eLQ	19	14	27	
22	eL	00	02	18	O = 23:08:21 29½°N, 131½°E (Ryukyu Islands) h ~ 60 km.
23	eLR	05	22	12	O = 04:20:52 33°N, 136°E (Near South Coast of Honshu, Japan. Felt: Honshu and Shikoku.) h ~ 60 km.
23	eS	22	34	55	O = 22:12:26 20°N, 156°W (Near West Coast of Hawaii, T.H. Felt: Hawaii and Maui)
	e(PPS)	22	35	42	
24	eP	02	08	27	O = 01:59:05 21½°S, 71°W (Near Coast of Northern Chile)
	iS	02	16	10	
	eLR	02	25	22	
	T = 23 sec.				

Date	Phase	h	m	s	Remarks
May					
24	iPKP	16	25	32.7	O = 16:05:53 (Off West Coast of Sumatra)
	i	16	26	22.2	
	e(PS)	16	39	15	
	eSS	16	47	47	
	eLR	17	15	00	
26	ePKP	03	05	20	O = 02:46:25 (Assam)
	ePP	03	06	30	
	ePS	03	16	10	
	ePPS	03	17	29	
	e(LR)	03	46	24	
28	ePP	08	17	30	O = 07:59:09 35½°N, 136°E (Central Honshu, Japan. Felt) h ~ 400 km.
	ePPP	08	19	52	
	e	08	24	35	
	e	08	26	22	
	ePS	08	27	11	
31	e	05	14	36	
	e	05	17	18	
	e	05	18	06	
	eL	06	23	12	