

22 APR 1969

University of Washington  
Seattle, Washington  
U.S.A.

Seismological Bulletin No. 14  
Registration of Earthquakes from University  
of Washington Seismic Net  
1959  
by  
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and  
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University of Washington, Geology Department  
January, 1969

1.

## Seismograph Station

All magnifications are approximate. Response curves are not currently available.

## Longmire (LON)

Latitude:  $46^{\circ} 45.0'$  N Elevation: 2800 ft.  
Longitude:  $122^{\circ} 48.6'$  W Foundation: Volcanic Breccia

## Instruments:

SPZ Wilson-Lamison, To 1.0 sec., Tg .95 sec., Mag. \*  
SPN-S Sprengnether, To 1.4 sec., Tg 1.40 sec., Mag. 1800  
SPE-W Sprengnether, To 1.4 sec., Tg 1.40 sec., Mag. 1800  
\*Magnification is approximately 50K.

## Seattle (SEA)

Latitude:  $47^{\circ} 39.3'$  N Elevation: 98.5 ft.  
Longitude:  $122^{\circ} 18.5'$  W Foundation: compact glacial till

## Instruments:

SPZ Sprengnether, To 1.4 sec., Tg 1.4 sec., Mag. 1800  
SPN-S Sprengnether, To 1.4 sec., Tg 1.4 sec., Mag. 1800  
SPE-W Sprengnether, To 1.4 sec., Tg 1.4 sec., Mag. 1800  
LPN-S Sprengnether, To 15.0 sec., Tg 5.2 sec., Mag. 1200  
LPE-W Sprengnether, To 15.0 sec., Tg 7.9 sec., Mag. 1200

NOTE: At Seattle it is necessary to reduce the sensitivity of all instruments during the winter months because of the excessive microseism amplitudes registered on the glacial till foundation.

## Tumwater (TUM)

Latitude:  $47^{\circ} 00.9'$  N Elevation: 275 ft.  
Longitude:  $122^{\circ} 54.5'$  W Foundation: Basalt.

## Instruments:

SPZ Sprengnether, To 1.4 sec., Tg 1.4 sec., Mag. 1800  
SPN-S Sprengnether, To 1.4 sec., Tg 1.4 sec., Mag. 1800  
SPE-W Sprengnether, To 1.4 sec., Tg 1.4 sec., Mag. 1800

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Jan. 1	LON	e Z	03:15.2	
Jan. 3	LON	e P Z i S Z	11:22:04 11:22:27.3	Local
Jan. 3	LON	e P Z	11:29:18	0 = 11:17:38; 14 1/2 S, 75 1/2 W. Near coast of Peru.
Jan. 5	LON SEA TUM	i P Z i P Z i P Z	08:59:53.6R 59:55 R 08:59:50	
Jan. 8	LON SEA TUM	i P Z e P Z e P Z	01:43:42.9C 43:47 01:43:48	0 = 01:33:48; 15 1/2 N, 61 W. Windward Islands, h about 100 km. Mag. = 6 1/2 - 6 3/4.
Jan. 8	LON	e P Z	12:35:27.8	
Jan. 10	LON	e Z	16:57:53	
Jan. 11	LON	e Z iPP Z	04:43:44 04:44:06.6	0 = 04:27:23; 36 1/2 N, 29 E. Near south coast of Turkey.
Jan. 11	LON	e P Z	06:08:05	
Jan. 11	LON	ipPPZ isPPZ	07:30:11.5 07:30:54.0	0 = 07:22:40; 15 N, 90 W. Guatemala, h about 200 km.
Jan. 11	LON	e P Z	10:31:04	
Jan. 12	LON	e P Z e Z	08:56:19 08:56:49	
Jan. 12	LON	e P Z	10:47:09	
Jan. 12	LON	i P Z	15:26:37.7R	
Jan. 12	LON	e P Z	19:14:35	
Jan. 13	LON	e P Z	01:27:49	0 = 01:15:25; 13 1/2 N, 146 E. Mariana Islands Mag. = 6 3/4.
Jan. 15	LON	i P Z	08:43:43.2R	0 = 08:42:09; 44 N, 130 W. Off coast of Oregon.
Jan. 15	LON SEA	i P Z e P Z	19:17:39.6 19:17:43	0 = 19:16:23; 49 1/2 N, 128 W. Vancouver Island Region.
Jan. 15	LON  SEA	i P Z i Z i Z e Z i P Z	21:32:32.7R 32:40.7 35:58.7 41:52 21:32:36.6C	0 = 21:20:26; 25 1/2 S, 180. South of Fiji Islands, h about 500 km. Mag. = 6 1/2.

Date 1959	Sta.	Phase	Time G.M.T.	Remarks
Jan. 16	LON	i P Z ePcSZ	01:37:51.3C 44:18	O = 01:31:25; 52 N, 171 W. Fox Islands, Aleutian Islands. h about 60 km.
	SEA	i P Z	01:37:46.6R	
Jan. 16	LON	i P Z e S E	16:52:42.0C 54:52	O = 16:50:40; 52 N, 131 1/2 W. Queen Charlotte Islands.
	SEA	e P Z	52:32	
		e Z	52:41	
		e S E	54:18	
		e S Z	54:36	
		e Z	16:57.0	
		e Z	17:00:52	
	TUM	e P NE	16:52:34	
		e S N	54:43	
		e S E	16:54:44	
Jan. 18	LON	i P Z e S E	17:16:18.3R 17.3	O = 17:15:03; 44 N, 127 1/2 W. 150 mi. off coast of Oregon.
	TUM	e S Z	17:23	
		i P Z	16:13	
	SEA	e S E	17:08	
		e S N	17:17:09	
	Jan. 18	LON	i P Z	
SEA		e P Z	22:34:56	
Jan. 20	LON	e P Z	08:56:15	
Jan. 21	LON	e P Z	11:21:34	O = 11:08:10; 19 N, 120 E. Luzon, Philippine Islands.
Jan. 21	LON	e P Z	12:07:19	
Jan. 21	LON	e P Z	18:01:40	
		i Z	01:56.0	
		i Z	18:07:02.5	
Jan. 21	LON	e P Z	20:19:54.3	Local
		i Z	20:20:08.2	
	TUM	i P Z	20:19:45.3	
		i NE	20:19:53	
Jan. 22	LON	e P Z	05:21:25	O = 05:10:25; 34 N, 142 E. Near coast, Honshu, Japan. Mag. = 6 3/4 - 7.
		e S Z	30.2	
	SEA	e P Z	21:25	
		e S E	30:04	
		e S N	30:18	
	TUM	e P Z	21:21	
		e S N	30:09	
		e S E	05:30:10	
	Jan. 22	LON	e Z	

Date 1959	Sta.	Phase	Time G.M.T.	Remarks
Jan. 23	LON	e Z	05:19:34	
Jan. 23	LON	e Z	07:02:15	
		e Z	07:04:41	
Jan. 23	LON	e Z	07:58:50	
Jan. 24	TUM	e P Z	09:19:29	
Jan. 24	LON	e P Z	19:50:01	O = 19:42:50; 15 N, 92 1/2 W. Mexico-Guatemala Border. Mag. = 6 1/4.
Jan. 24	LON	i P Z	22:29:02.6	
Jan. 28	TUM	i P Z	01:01:48.9	Local
Jan. 28	LON	i P Z	10:16:53.4	O = 10:04:10; 30 1/2 S, 79 W.
	TUM	i P Z	10:16:57.9	Juan Fernandez Islands Region. Mag. = 6 1/4.
Jan. 29	LON	e P Z	20:28:13	O = 20:21:27; 52 N, 174 W.
	TUM	i P Z	20:28:06.0	Andreanof Islands, Aleutian Islands. Mag. = 5 3/4 - 6.
Jan. 29	LON	i P Z	21:05:02.9	O = 20:58:18; 52 N, 174 W.
	TUM	i P Z	21:04:57.0	Andreanof Islands, Aleutian Islands.
Jan. 29	LON	i P Z	23:34:19.4	O = 23:24:30; 71 N, 8 E.
	SEA	e Z	34:34	Off coast Norway.
		e L E	55:35	
	TUM	i P Z	23:34:20.8	
Jan. 30	LON	e P Z	00:32:21	O = 00:19:25, 10 S, 161 E. Solomon Islands, Mag. = 6 3/4.
Jan. 30	LON	i P Z	08:51:16.7	
	TUM	e P Z	08:51:15	
Jan. 30	TUM	e P Z	16:28:32.0	O = 16:15:58; 26 1/2 S, 71 W. Near coast of Chile. h about 100 km.
Jan. 30	LON	i P Z	18:22:22.1	O = 18:09:02; 31 S, 179 W.
	TUM	i P Z	18:22:22	Kermadec Islands.
Jan. 30	LON	e P Z	20:49:24	O = 20:38:58; 44 N, 144 E.
	SEA	e P Z	20:49:23	Hokkaido, Japan. Mag. = 5 3/4 - 6.
	TUM	e P Z	20:49:20	
Jan. 30	LON	e P Z	22:27:14.6	O = 22:16:47; 44 N, 144 E.
	SEA	e P Z	22:27:11	Hokkaido, Japan. Mag. = 6 1/4.
	TUM	i P Z	22:27:11	
Jan. 31	LON	e P Z	19:59:26	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Feb. 1	LON	i P Z ePP Z	03:26:37.5 03:30:23	0 = 03:13:32; 36 1/2 N, 71 1/2 E. Hindukush. h about 300 km.
Feb. 2	LON	e P Z	22:55:16	
Feb. 3	LON	i P Z i S Z	00:15:05.3 00:15:06.3	Local
Feb. 3	LON	e P Z	03:28:43	
Feb. 3	LON	i P Z	10:47:31.7	
Feb. 3	LON	i P Z	11:45:31.5	
Feb. 3	LON	i P Z i NE e Z	23:51:42.6 52:25.1 23:52:27	
Feb. 4	LON	e PPZ	00:13.5	0 = 00:06:25; 51 N, 177 1/2 W. Andreanof Islands, Aleutian Islands.
Feb. 4	LON	e P Z	20:23:34.0	0 = 20:19:40; 59 1/2 N, 138 W. Southeastern Alaska-Canada Border;
Feb. 4	LON	e P Z	22:52:26	
Feb. 5	LON SEA TUM	i P Z e P Z i P Z e PPZ	01:09:59.5 10:03 09:52.4R 01:10:16.0	0 = 01:04:50; 57 N, 157 W. Alaska Peninsula. h about 100 km.
Feb. 5	LON	e P Z	10:16.7	0 = 10:05:42; 37 N, 141 1/2 E. Near coast Honshu, Japan.
Feb. 6	LON TUM	i P Z i P Z	01:10:24.3 01:10:30.5R	
Feb. 6	LON	i P Z i SZNE	01:56:40.3 01:56:51.1	Local
Feb. 6	LON	i P Z i S ZE	02:35:44.7 02:35:55.5	
Feb. 6	LON TUM	e P Z i P Z	14:39:57 14:39:51.5R	0 = 14:33:02; 51 N, 175 1/2 W. Andreaof Islands, Aleutian Islands. h about 60 km. Mag. = 6.
Feb. 7	LON	i P Z e S N  e Z e Z	09:47:11.5R 55:32  10:07:57 10:11.5	0 = 09:36:51; 4 S, 81 1/2 W. Near coast Northern Peru. Felt strongly at Guayaquil. Mag. = 7 1/4 - 7 1/2.

Date 1959	Sta.	Phase	Time G.M.T.	Remarks
Feb. 7 (cont.)	SEA	i P Z	09:47:18.1C	
		i S NE	55:46.9	
	TUM	i P Z	47:16.4R	
		e S N	55:43	
		e S ZE	09:55:45	
Feb. 7	LON	i P Z	10:23:52.6C	O = 10:11:39; 16 N, 146 E. Mariana Islands.
	TUM	i P Z	10:23:49.1C	
Feb. 7	LON	i P Z	20:55:23.2	
Feb. 8	LON	e P Z	01:12:24	O = 01:02:26; 49 N, 28 1/2 W. N. Atlantic Ocean. Mag. = 6 1/4 - 6 1/2.
Feb. 8	LON	e Z	04:52.2	
Feb. 8	LON	e P Z	05:58:04	O = 05:46:15, 23 S, 180. S. of Fiji Islands. h about 600 km.
Feb. 8	LON	i P Z	07:30:18.5	
Feb. 9	LON	i P Z	04:17:27.7	
	TUM	i P Z	04:17:22.6	
Feb. 9	LON	e P Z	04:49:41	O = 04:42:33; 50 1/2 N, 177 1/2 E. Andreanof Islands, Aleutian Islands.
	SEA	i Z	50:09	
	TUM	i P Z	04:49:35.0R	
Feb. 9	LON	i P Z	06:19:11.7	Local
		i Z	06:19:17.7	
Feb. 9	LON	e P Z	12:55:31	
Feb. 9	LON	i P Z	13:48:01.1	
Feb. 9	LON	e P Z	18:05:23	
Feb. 10	LON	e P Z	11:35:22	
		e Z	35:28.8	
	TUM	e Z	11:35:41.9	
Feb. 10	LON	e P Z	21:03:16	
		i Z	21:03:18.4	
Feb. 10	LON	e Z	22:35:16	
	TUM	e P Z	22:35:07	
Feb. 11	LON	e P Z	00:01:42	
		i Z	00:01:43.9	
Feb. 11	LON	i P Z	13:59:25.8	O = 13:52:13; 16 N, 97 W. Near coast of Oaxaca, Mexico. Mag. = 6.
		i PcPZ	14:01:44.2	
	SEA	i P Z	13:59:34.8	
	e L N	14:16:30		
	e L E	14:16:50		

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Feb. 11 (cont.)	TUM	i P Z	13:59:31.4R	
		i Z	13:59:36.5	
		e L E	14:16:08	
Feb. 11	LON	e P Z	20:07:24	0 = 19:57:05; 4 S, 82 1/2 W. Off coast of Peru.
Feb. 11	LON	i P Z	21:48:42.6	0 = 21:36:46; 15 S, 173 1/2 W. Samoa Islands Region.
	TUM	i P Z	21:48:41.3C	
Feb. 11	LON	i Z	23:07:43.1	
Feb. 12	LON	e P Z	05:18:51	
		i Z	05:18:53.0	
Feb. 12	LON	i P Z	09:08:43.2	
		i S Z	09:09:09.8	
Feb. 12	LON	i P Z	16:49:57.2	Local?
		i S Z	16:50:07.9	
		TUM	i P Z	
Feb. 12	LON	i P Z	17:16:20.7	0 = 17:03:10; 22 S, 173 E. Loyalty Islands Region.
Feb. 12	LON	e Z	22:42:37	
Feb. 12	LON	e P Z	23:46:46	
		e S Z	23:47:27	
Feb. 13	LON	i P Z	00:40:41.2	
	TUM	e P Z	00:40:32.9	
Feb. 13	LON	i P Z	01:57:40.1	0 = 01:44:47 Tonga-Kermadec Islands Region.
Feb. 15	LON	i P Z	03:15:10.3	
		e Z	03:18:39	
Feb. 15	LON	e P Z	03:22:01	
Feb. 15	LON	e P Z	04:01:48	
Feb. 15	SEA	ePPSN	05:16:00	0 = 04:42:35; 59 1/2 S, 26 W. Sandwich Islands. Mag. = 6 3/4.
		ePPSE	05:16:14	
Feb. 15	LON	i P Z	19:45:51.9	
Feb. 15	LON	i P Z	21:15:44.2	
	TUM	i P Z	21:15:49.7C	
Feb. 16	LON	i P Z	00:49:40.8	



Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Feb. 17	LON	i P Z	12:09:37.0	O = 12:03:05; 51 1/2 N, 171 W. Fox Islands, Aleutian Islands. Mag. = 6 - 6 1/4.
	SEA	i P Z	12:09:32.8C	
	TUM	i P Z	12:09:29.8R	
Feb. 17	LON	i P Z	13:00:43.2	O = 12:49:20; 32 1/2 N, 140 1/2 E. South of Honshu, Japan.
Feb. 18	LON	i P Z	02:07:44.1	
Feb. 18	LON	i P Z	23:38:47.8	O = 23:37:21; 49 1/2 N, 129 1/2 W. Off coast Vancouver, B. C.
Feb. 19	LON	e P Z	01:19:20	
Feb. 19	LON	i P Z	21:17:52.8	
Feb. 19	LON	i P Z	22:36:13.1	Local
		i S Z	22:36:18.5	
Feb. 20	LON	e P Z	00:21:29	
Feb. 20	LON	i P Z	00:55:09.6	
	TUM	e P Z	00:55:15.1	
		i Z	00:56:02.3	
Feb. 20	LON	i P Z	04:25:43.1	
Feb. 20	LON	i P Z	18:23:52.1	O = 18:16:22; 15 1/2 N, 91 W. Guatamala, Felt. h about 150 km. Mag. = 6 1/2.
	TUM	i P Z	18:23:58.2C	
Feb. 22	LON	e P Z	21:04:43	
Feb. 23	LON	e P Z	10:39:57	O = 10:31:14; 52 1/2 N, 159 E. Kamchatka, h about 100 km.
Feb. 23	TUM	i P Z	22:34:03.0	
Feb. 27	LON	e P Z	06:15:16	
		i Z	06:15:16.3	
	TUM	i P Z	06:15:11.2R	
	i Z	06:16:05.2		
Feb. 27	LON	e P Z	15:32:03	
Feb. 27	LON	i P Z	21:08:58.0	O = 20:56:30; 27 1/2 N, 129 E. Ryukyu Islands.
	TUM	e P Z	21:08:53	
Feb. 28	LON	i P Z	00:38:18.0	
		i Z	00:38:24.9	
Feb. 28	LON	i P Z	20:18:33.7	
	TUM	i P Z	20:18:35.1	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Mar. 1	LON TUM	e P Z e P Z	00:40:48 00:40:50.4	0 = 00:31:20; 74 1/2 N, 9 E. Arctic Ocean.
Mar. 1	LON	e Z	11:44:15	
Mar. 2	TUM	i P Z	16:04:45.9C	0 = 23:27:15; 37 N, 122 W. Hindu Kush. h about 250 km.
Mar. 2	LON SEA TUM	i P Z e E i P Z	23:29:43.7 33:24 23:29:46.9C	0 = 23:27:15; 37 N, 122 W. Near coast of California. Mag. = 4.9.
Mar. 3	LON	e Z	09:07:38	
Mar. 5	LON	e P Z	00:23:47	0 = 00:15:08; 54 N, 160 E. Near E. coast Kamchatka.
Mar. 6	LON	i P Z	19:03:24.0	
Mar. 6	LON TUM	e P Z e P Z	19:16:43 19:16:34	
Mar. 6	LON TUM	i P Z e P Z	19:48:10.0 19:48:01	
Mar. 7	LON	e P Z	15:47:53	0 = 15:42:17; 52 1/2 N, 161 1/2 W. S. of Alaska Peninsula.
Mar. 9	LON	i P Z	22:10:28.5	
Mar. 10	LON	e P Z	22:57:25	0 = 22:49:39; 14 N, 92 1/2 W. Near coast of Guatemala.
Mar. 11	LON TUM	i P Z	22:01:08.5 22:01:15.1C	
Mar. 12	LON	e P Z	01:41:58	0 = 01:29:07; 17 N, 145 E. Caroline Islands. Mag. = 6.
Mar. 12	LON	e P Z	11:23:53	
Mar. 12	LON	i P Z	12:41:52.8	
Mar. 15	LON	e P Z	08:03:50	
Mar. 15	LON	e P Z	20:45:41	
Mar. 15	LON	i P Z	22:57:00.6	
Mar. 16	LON	e P Z	01:42:41	0 = 01:36:45; 52 1/2 N, 164 1/2 W. S. of Unimak Island.

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Mar. 16	LON	e P Z	22:21:13	0 = 22:08:23. h about 100 km. Kermadec Islands Region.
	TUM	i P Z	22:21:10.8	
Mar. 16	LON	e P Z	23:40:58.4	0 = 23:34:48; 52 N, 168 1/2 W. Fox Islands, Aleutian Islands. h about 60 km.
Mar. 17	LON	e P Z	05:04:27	
Mar. 17	LON	i P Z	08:37:44.4C	0 = 08:25:22; 27 1/2 N, 130 E. Ryukyu Islands. Mag 5 3/4 - 6.
	SEA	i P Z	37:43C	
	TUM	e P Z	08:37:40C	
Mar. 17	LON	e Z	13:08:08	
Mar. 17	LON	i P Z	16:20:40.4	
	TUM	i P Z	20:29.4C	
		i Z	16:21:30.2	
Mar. 18	LON	i P Z	07:37:43.3	0 = 07:26:47; 37 N, 141 E. Near E. coast of Honshu, Japan. Felt at Tokyo. h about 100 km.
Mar. 18	LON	e P Z	12:45:58	0 = 12:38:46; 16 N, 96 1/2 W. Near coast, Oaxaca, Mexico.
Mar. 19	LON	e Z	07:25:36	
Mar. 19	LON	e P Z	08:35:59	0 = 08:25:32; 35 N, 36 W. North Atlantic Ocean. Mag. = 6 1/4.
Mar. 19	LON	e P Z	09:42:37	0 = 09:37:53; 61 1/2 N, 148 W. Southern Alaska. h about 100 km.
		ipP Z	09:42:53.6	
Mar. 19	LON	e Z	18:13:45	
Mar. 20	LON	i P Z	15:29:00.3	
Mar. 20	LON	i P Z	15:42:50.6R	0 = 15:41:30; 44 N, 128 W. Off coast of Oregon.
		e N	44:00	
	TUM	i P Z	15:42:43.5	
Mar. 21	LON	i P Z	04:38:48.4	0 = 04:27:21; 19 S, 178 W. Fiji Islands. h about 550 km.
Mar. 21	LON	i P Z	20:39:18.3R	Local
		i S ZN	20:39:34.3	
	TUM	i P Z	20:39:12.0C	
	e Z	20:39:25		
	SEA	i P Z	20:39:07	
		i S NE	20:39:17	

Date	Sta.	Phase	Time G.M.T.	Remarks	
1959					
Mar. 23	LON	e P Z	07:12:18	O = 07:10:22; 40 N, 118 W. Western Nevada. Felt at Reno. Mag. = 6 1/4 - 6 1/2.	
		i P Z	12:19.5		
		i Z	12:47.2		
		e E	14:26		
		i E	14:28.4		
		i N	14:44		
		SEA	i P Z		12:35
			i S E		13:26
			e N		14:10
			e N		14:56
			i L NE		15:06
			i L NE		07:15:36
Mar. 24	SEA TUM	i P Z	10:12:45	Local	
		e P Z	12:49		
		i S Z	10:13:01.3		
Mar. 27	LON	i P Z	07:03:39.3	Local	
		i S Z	03:55.3		
	SEA	e P Z	03:44		
		i P Z	03:31.2		
		i S Z	07:03:43.9		
Mar. 27	LON	i P Z	07:11:34.9C	O = 07:02:07; 17 1/2 N, 63 W. Leeward Islands. Felt at Antigua. h about 150 km.	
Mar. 28	LON	i P Z	06:45:47.0	Local	
		i S Z	06:45:49.1		
Mar. 28	LON TUM	i P Z	19:58:38.0C	O = 19:47:07; 20 S, 178 1/2 W. Fiji Islands, h about 600 km. Mag. = 5 3/4 - 6. 9,350 km.	
		i P Z	19:58:37.9		
Mar. 28	LON	i P Z	21:16:22.7		
Mar. 29	LON	i P Z	19:19:44.2	O = 19:09:33; 45 1/2 N, 137 1/2 E. Sikhota Alin. h about 300 km. 7,200 km.	
Mar. 29	LON	e P Z	20:15:38		
Mar. 30	LON	e P Z	18:01:13		
		i Z	18:01:23.6		
Mar. 31	LON TUM	e P Z	07:32:31	O = 07:20:45; 15 S, 173 W. Samoa Islands Region, Felt at Apia. Mag. = 6. 8,600 km.	
		i P Z	07:32:40.0C		
Mar. 31	LON TUM	i P Z	10:05:26.3C		
		i P Z	10:05:33.0C		

Date	Sta.	Phase	Time, G.M.T.	Remarks
1959				
Apr. 1	LON	i P Z	00:46:15.7	O = 00:34:18; 27 ½ N, 21 W. Canary Islands. Felt on Palma. Mag. = 6 ½.
		i Z	46:17.7	
	TUM	e P Z	00:46:20.7	
Apr. 1	LON	e Z	03:15:53	
Apr. 1	LON	i P Z	15:01:17.1	O = 14:48:34; 18 ½ S, 169 E. New Hebrides Islands h about 200 km.
Apr. 1	LON	e P Z	18:20:19	O = 18:18:28; 40 N, 120 W. Mag. = 6 (Berk).
		i P Z	20:22.1	
		i Z	22:39.8	
	SEA	i P N	20:47	
		e E	20:52	
		e NE	22:56	
TUM	i P Z	18:20:26.5		
Apr. 2	LON	e Z	00:02:02	
Apr. 2	LON	i P Z	22:00:50.7	O = 21:48:20 Tonga Islands
Apr. 3	LON	i P Z	01:34:28.1	O = 01:27:06; 51 ½ N, 179 E. Rat Islands, Aleutian Islands.
Apr. 3	LON	i P Z	14:34:46.0R	
	TUM	e P Z	34:48.5	
			14:35:15	
Apr. 4	LON	i P Z	13:29:57.2	Local
		i Z	30:25.1	
	TUM	e P Z	29:56	
		e Z	13:30:24	
Apr. 5	LON	i P Z	10:59:56.2	O = 10:47:52; 44 N, 7 E. S. E. France
Apr. 6	LON	e P Z	05:23:48	
Apr. 6	LON	i P Z	05:31:16.9	O = 05:24:11; 50 ½ N, 177 W. Aleutian Islands.
Apr. 6	LON	i P Z	18:37:42.8	
Apr. 8	LON	e P Z	01:36:08.8	O = 01:23:26; 32 ½ S, 179 ½ E. Kermadec Islands Region h about 400 km. Mag. = 6 - 6 ½.
	TUM	i P Z	01:36:07.9	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Apr. 8	LON	i P Z	08:13:30.7	O = 08:01:36; 175, 174 ½ W. Tonga Islands Region. Felt at Apia. h about 100 km.
		isP Z	14:06.8	
TUM	i P Z	13:31.4R		
	isP Z	08:14:05.0		
Apr. 8	LON	e P Z	13:20:02	
Apr. 8	LON	e Z	16:30:25	
		e Z	16:30:32	
Apr. 8	LON	i P Z	22:15:20.4	
Apr. 8	LON	i P Z	23:29:59.3	
	TUM	e P Z	23:29:57	
Apr. 9	LON	i P Z	03:18:06.3R	
	TUM	e P Z	03:17:59	
		i Z	03:17:59.9	
Apr. 9	LON	e P <sup>2</sup> Z	06:38.7	O = 06:18:34; 36 S, 77 E. Indian Ocean, Kerguelen Islands Region.
Apr. 9	LON	iPPZ	17:23:18.7	O = 17:08:30; 25 N, 95 E. India-Burma Border.
Apr. 9	LON	i P Z	17:45:15.1	
	LON	e Z	17:45:23	
	TUM	e Z	17:45:31.6	
Apr. 10	LON	i P Z	05:59:36.8	O = 05:47:34; 25 S, 178½ E. South of Fiji Islands h about 600 km.
		epP Z	06:01:46	
		eSKSZ	06:09:18	
	SEA	i P Z	05:59:40	
		epP Z	06:01:55	
	TUM	i P Z	05:59:35.2C	
	ipP Z	06:01:45.7		
Apr. 11	LON	i P Z	06:22:02.3	
Apr. 11	LON	e P Z	08:06:21.1	
Apr. 11	LON	e P Z	14:28:55	
Apr. 11	LON	i P Z	14:47:52.0	
Apr. 12	LON	e P Z	03:09:04	

Date	Sta.	Phase	Time G.M.T.	Remarks	
1959					
Apr. 12	LON	i P Z	10:02:54.1C	O = 09:54:51; 17½ N, 95 W. Mexico, Damage at Cordoba. h about 100 km. Mag. = 6 ½.	
		iSP Z	03:29.4		
		ePP N	03:30		
		e S N	07:44		
	SEA	e P Z	10:02:02		
Apr. 12	LON	i P Z	11:12:18.7	O = 10:59:21; 24 ½ N, 122 E. Near Formosa.	
Apr. 12	LON	e P Z	21:05:57	O = 20:54:00; 15½ S, 173 W. Samoa Islands Region. Felt at Apia. Mag. = 6 - 6 ½	
		i P Z	05:58.8		
		i Z	06:03.7		
		SEA	e P Z		06:04
		TUM	e P Z		05:55.1
		i Z	21:06:07.5		
Apr. 12	LON	e P Z	23:43:08		
Apr. 13	TUM	e Z	07:12:30		
Apr. 13	LON	i P Z	10:01:14.2		
	TUM	i P Z	10:01:08.3R		
Apr. 13	LON	e P Z	22:39:56	O = 22:32:34; 50 ½ N, 180. Andreanof Islands, Aleutian Islands.	
Apr. 14	LON	i P Z	02:58:29.6	O = 02:53:04; 24 N, 109 ½ W. Gulf of California. Mag. 5 ½ - 5 ½.	
	TUM	e Z	02:58.6		
	SEA	e NE	03:07.5		
		e L NE	03:08		
Apr. 14	LON	e P Z	06:50:32.4	O = 06:45:04; Gulf of California Aftershock.	
Apr. 14	LON.	e P Z	07:25:30.4	O = 07:20:28; 57 ½ N, 155 W. Alaska Peninsula. h about 60 km.	
		ipP Z	25:47.1		
	SEA	i P Z	25:23 C		
		e S Z	30:00		
	TUM	i P Z	07:25:22.7C		
Apr. 14	LON	i P Z	21:56:09.2	Local	
		i S Z	56:22.3		
	TUM	i P Z	21:56:13.2		
Apr. 15	LON	e P Z	00:26:01	O = 00:15:21, 41 ½ N, 143 E. Hokkaido, Japan	
	TUM	e P Z	00:25:55		

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Apr. 15	LON	e Z	06:18:18	
Apr. 15	LON	e Z	17:31:29	
Apr. 15	LON	i P Z	17:06:40.6	Local
		i S Z	06:52.9	
	TUM	i P Z	06:37.5R.	
		i S Z	17:06:52.0	
Apr. 16	LON	e Z	01:19:07	
Apr. 16	LON	i P Z	07:39:25.4	O = 07:27:27; 23 ½ S, 179 E. S. of Fiji Islands. h about 550 km.
	TUM	i P Z	07:39:44.0	
Apr. 16	LON	i P Z	16:26:23.6	
	SEA	i P Z	:26:22.2R	
	TUM	e P Z	16:26:35R	
Apr. 17	LON	e P Z	22:43:05	
Apr. 18	LON	e P Z	19:06:05	
Apr. 18	LON	i P Z	20:03:21.1	
Apr. 19	LON	e P Z	04:41:13.2	
		i P Z	04:41:14.3	
Apr. 19	LON	i P Z	06:47:10.1	O = 06:43:29. Yukon, Canada, Region
Apr. 19	LON	e P Z	08:16:09	
Apr. 19	LON	i P Z	15:08:17.2	O = 15:03:26; 58 N, 152 ½ W. Near Kodiak Island, Alaska. Mag. = 6 ½.
	TUM	e P Z	08:07.3C	
		i Z	08:08.5	
	SEA	e P Z	08:10	
		e E	12:08	
		e N	15:12:10	
Apr. 19	LON	e P Z	19:54:59.1	O = 19:43:04; 16 S, 172 W. Samoa Islands Region
	TUM	i P Z	19:54:57.0C	
Apr. 19	LON	e P Z	23:04:35.0	Local
		i S Z	23:05:00.9	
Apr. 20	LON	i P Z	00:41:01.5	
Apr. 20	LON	e P Z	07:40:59	Local
		i S Z	07:41:09.0	



Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Apr. 21	LON	i P Z	12:48:31.8	O = 12:42:50; 56 N, 162 ½ W. Bristol Bay
		i Z	:48:32.8	
	SEA	e P Z	:48:26.7	
	TUM	i P Z	12:48:24.5C	
Apr. 21	LON	i P Z	13:50:12.0C	
	SEA	e P Z	50:12	
	TUM	i P Z	50:07.7	
		i Z	13:50:11.4	
Apr. 22	LON	e P Z	11:16:10	
		i Z	11:16:10.5	
Apr. 22	LON	i P Z	17:33:57.5	O = 17:24:05; 7 ½ N, 72 W. Venezuela-Colombia Border
Apr. 22	LON	e Z	18:31.7	
Apr. 22	LON	i P Z	19:10:06.7	O = 19:01:41; 11 ½ N, 86 ½ W. Near Coast of Nicaragua
		iPcPZ	19:11:41.9	
Apr. 22	LON	e Z	20:39:25	
Apr. 23	LON	i P Z	18:35:08.3	
Apr. 23	LON	i P Z	23:52:23.0	Local
		i S Z	23:52: 28.9	
Apr. 24	LON	e P Z	02:16:02	
Apr. 24	LON	e P Z	09:39:59	O = 09:31:33; 11 ½ N, 86 ½ W. Near Coast of Nicaragua. Mag. = 6 ½ - 6 ½.
		i P Z	40:00.4	
		iPP Z	41:36.2	
	TUM	e P Z	40:04.6	
		iPP Z	09:41:39.1	
Apr. 24	LON	e P Z	11:26.8	
		i Z	11:26:55.6	
Apr. 24	LON	e P Z	18:06:23	
Apr. 24	LON	e P Z	18:11:18	O = 17:57:58; 31 S, 178 W. Kermadec Islands, Mag. = 6 ¾ - 7.
		i P Z	11:18.7	
		ePP Z	15:14	
	TUM	e P Z	11:16	
		i Z	18:11:17.6	
Apr. 24	LON	e P Z	18:28:26	

Date	Sta.	Phase	Time G.M.T.	Remarks	
1959					
Apr. 24	LON	e Z	18:36:36		
Apr. 24	LON	i P Z	19:32:00.7R		
	TUM	i P Z	19:31:53.3C		
Apr. 25	LON	e P Z	00:39:52	O = 00:26:40; 37 N, 28 ½ E. Turkey, Extensive Damage in Mugla Province.	
		i Z	:39:53.2		
	TUM	i P Z	00:39:52.8C		
Apr. 25	LON	i P Z	01:18:53.7	O = 01:05:37 Dodecanese Islands.	
	TUM	i P Z	01:18:53.8C		
Apr. 25	LON	e P Z	18:15:24	Local	
		i S Z	18:15:24.8		
Apr. 26	LON	i P Z	05:29:42.0	O = 05:17:47; 16 S, 171 ½ W. Samoa Islands Region	
Apr. 26	LON	e P Z	06:00:37	O = 05:47:28; 19 ½ S, 169 ½ E. New Hebrides Islands	
Apr. 26	LON	i P Z	20:53:16.7	O = 20:40:38; 25 N, 122 ½ W. Near Northeast Coast of Formosa. 2 killed, minor damage at Taipei h about 150 km. Mag. = 7 ½ - 7 ¾.	
		e S N	21:03:35		
		e S E	03:37		
		e S Z	21:03:40		
		SEA	i P Z		20:53:15R
			e S N		21:03:34
	e S E	21:03:40			
Apr. 27	LON	e P Z	14:28:57.5		
Apr. 28	LON	i P Z	11:17:11.3		
		e Z	32:04		
	SEA	i P Z	11:17:19		
Apr. 28	LON	i P Z	14:25:39.5C	O = 14:18:10; Rat Island, Aleutian Islands	
Apr. 30	LON	e P Z	01:27:50		
Apr. 30	LON	i P Z	13:44:39.5C	O = 13:25:35; 55 ½ S, 26 W. Sandwich Islands	
May 1	LON	e Z	18:25:17		
May 2	LON	i P Z	00:37:53.3		
May 2	LON	e P Z	05:02:39.0		
May 3	LON	i P Z	04:49:33.1R	O = 04:41:24; 12 ½ N, 87 ½ W. Near coast of Nicaragua, h about 100 km.	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
May 3	LON	i P Z	06:38:58.2	
May 3	LON	e P Z	10:22:31	
May 3	LON	e Z	13:14:42	
May 4	LON	i P Z	07:24:24.5C	O = 07:15:42; 52 ½ N, 159 ½ E Near Coast of Kamchatka. 1 killed, 13 injured. h about 60 km. Mag. = 8.
		e S N	31:19.9	
		e S E	31:20.7	
		e L Z	35.6	
	SEA	i P Z	24:19.9R	
		i S N E	31:19.9	
	TUM	i P Z	24:19.3	
		e N	31:09	
		e S N	07:31:13	
May 5	SEA	e P Z	18:41:31	
May 5	LON	e P Z	19:13:07	O = 19:04:16; 53 N, 159 E Kamchatka Aftershock. Mag. = 6.
	SEA	e P Z	19:13:09	
May 6	LON	e P Z	07:51:21.2	O = 07:44:25; 51 ½ N, 176 W. Andreanof Islands, Aleutian Islands
		e Z	07:57:31	
May 7	LON	e P Z	01:12:29	
		i Z	01:12:40.1	
May 7	LON	i P Z	17:46:57.9	
May 7	LON	i P Z	18:24:30.5C	Local
		i S Z	18:24:40.7	
May 8	LON	i P Z	07:23:08.7	
May 8	LON	e P Z	11:43:25	O = 11:34:50; 53 ½ N, 160 ½ E. Near East Coast of Kamchatka. h about 60 km. Mag. = 6.
	SEA	e P Z	11:43:21	
May 9	LON	i P Z	00:25:02.3	Local
		i S Z	25:11.9	
	SEA	e P Z	24:55	
	TUM	i P Z	00:24:58.1 R	
May 10	LON	e P Z	00:07:00	O = 23:57:03; 45 N, 149 E. Kurile Islands
May 10	LON	i P Z	01:25:12.4 C	

Date	Sta.	Phase	Time G.M.T.	Remarks
<b>1959</b>				
May 10	LON	e P Z	02:19:49	
May 10	LON	i P Z	03:59:42.4 C	Local
May 10	LON	e P Z	22:54:01	
May 11	SEA	e P Z	16:37:28	O = 16:28:49; 53 $\frac{1}{2}$ N, 160 E. Kamchatka Slightly Deeper Than Normal.
May 12	LON	e P Z	00:45:43	
May 12	LON	e P Z	03:52:18	O = 03:42:47; 7 $\frac{1}{2}$ N, 77 W. Panama - Columbia Border.
May 12	LON	e P Z e S E	05:05:39 12:05	O = 04:57:35; 54 $\frac{1}{2}$ N, 168 E. Komandorski Islands. Mag. = 6 $\frac{1}{2}$ .
	SEA	e S E e P Z	12:08 05:05:35	
May 12	LON	e P Z	06:55:24	
May 12	LON	e P Z e S N	09:59:37R 10:10:08	O = 09:46:51; 23 $\frac{1}{2}$ S, 64 $\frac{1}{2}$ W. Salta Province, Argentina. Mag. = 6 $\frac{3}{4}$ .
	SEA	e S E i P Z	10:10:15 09:59:44R	
May 12	LON	i P Z	10:26:33.1 C	O = 10:14:00; 20 $\frac{1}{2}$ S, 63 $\frac{1}{2}$ W. Bolivia.
May 12	LON	e Z	13:58.6	
May 12	LON SEA	i P Z i P Z	21:47:25.7 47:22.8R	O = 21:40:22; 51 $\frac{1}{2}$ N, 177 W. Andreanof Islands, Aleutian Islands.
		e S E	21:53.2	
May 12	LON SEA	e P Z i P Z	22:06:59 22:06:56.8R	O = 21:59:56; 51 $\frac{1}{2}$ N, 177 W. Andreanof Islands, Aleutian Islands. Mag. = 6.
May 12	LON	e P Z	22:46:18	
May 14	LON	i P Z	07:50:09.1C	
May 14	TUM	e P Z e Z	09:59:42 10:11:38	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
May 14	SEA	e P Z	11:54:56	
May 14	LON	e Z	12:47:15	
May 14	LON	e Z	14:32:19	
May 14	TUM	e P Z	21:47:19	
May 14	TUM	e P Z	22:06:53	
May 15	LON	e P Z	14:49:46.9	0 = 14:42:48; Oaxaca, Mexico
May 16	LON	e P Z	05:04:02	0 = 04:58:25; 65 ½ N, 156 W. Alaska
	SEA	e P Z	04:13	
		e E	05:12.0	
May 16	LON	e P Z	06:29.4	0 = 06:16:23; 4 ½ S, 133 ½ E. New Britain. h about 60 km.
	SEA	ipP Z	29:41.6R	
		e S E	06:40.3	
May 17	LON	e Z	10:58:17	0 = 10:56:52; 47 ½ N, 113 W. Northwestern Montana. Felt at Ovando, Helmville, and Polson.
		i Z	10:58:18.6	
	SEA	e P E	10:58:49	
		e N	11:00:12	
		e E	11:00:16	
May 20	LON	i P Z	19:45:05.8	0 = 19:35:03; 44 ½ N, 149 E. Kurile Islands
	SEA	e P Z	19:45:01	
May 20	LON	e Z	21:08:45	
May 21	SEA	e P Z	11:47:14	0 = 11:34:23; 28 S, 69 W. Northern Chile - Argentina Border, h about 60 km. Mag. = 6.
	TUM	e P Z	11:47:14	
May 21	LON	e S Z	17:53.6	0 = 17:51:40; 39 ½ N, 118 W. Western Nevada Mag. = 4 ¾ (Berk).
	SEA	e S Z	17:53:59	
		e N E	17:56:23	
May 24	LON	i P Z	19:24:32.0 C	0 = 19:17:40; 17 ½ N, 97 W. Oaxaca, Mexico. 5 killed, 10 injured and minor property damage. Felt also at Mexico City. h about 100 km. Mag. = 6 ¾ - 7.
	SEA	i P Z	24:42.7 C	
		e E	28:22	
		e S N	29:30	
		esS E	30.4	
	TUM	e P Z	24:37	
		i Z	24:39.7	
		e N	38.6	
		e Z	40:34	
		e E	19:41:24	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
May 24	LON	iPPPZ	20:22:39.5 C	O = 20:04:33; 5 ½ S, 152 E. New Britain Region. Slightly Deeper Than Normal.
May 25	LON	e P Z	04:40:00	
May 25	LON	i Z	05:51:384	
May 25	LON	e Z	13:18:49	
May 26	LON SEA	i P Z i P Z	04:25:22.7 C 04:25:21	O = 04:13:01; 27 ½ N, 126 ½ E. Ryukyu Islands Region. h about 100 km. Mag. = 6 ½ - 6 3/4.
May 26	LON	e Z	08:13:23	
May 28	LON	i P Z i S Z	22:20:27.7 22:20:31.7	Local
May 29	LON	i P Z	04:04:40.2	
May 29	LON SEA TUM	i P Z esPPZ i P Z i P Z	10:55:39.3 R 59:44 55:46 10:55:42.7	O = 10:42:48; 19 S, 169 ½ E. New Hebrides Islands. h about 100 km. Mag. = 6 ½
May 31	LON	e P Z	05:44.4	O = 05:36:25; 20 N, 80 W. Cayman Islands.
May 31	LON SEA TUM	i P Z i P Z i S E e Z e P Z	15:02:58.0 02:51 04:31 05:05.0 15:02:39	O = 15:01:10; 51 N, 130 W. Queen Charlotte Islands Region.
May 31	LON	e P Z	16:37:40	
May 31	SEA	i P Z i S N i S E	16:38:30 39:21 16:39:25	
June 2	SEA	e P Z	02:50:52	O = 02:37:46; 21 N, 121 E. Batan Islands Region
June 2	LON TUM	e P Z e P Z	03:44:46 03:44:44	O = 03:31:55; 25 ½ S, 176 W. Tonga Islands Region
June 2	LON	e P Z	18:50:33.1	

Date	Sta.	Phase	Time G.M.T.	Remarks
<b>1959</b>				
June 3	LON	i P Z	03:53:37.6 C	O = 03:43:42; 4 N, 77 W. Near West Coast of Colombia.
	SEA	i P Z	03:53:43	
June 3	LON	ePPPZ	05:49:50	O = 05:43:28; 52 ½ N, 170 W. Fox Islands, Aleutian Islands.
June 4	LON	e Z	03:48:15	
		i Z	03:48:19.0	
June 4	LON	i P Z	11:02:27.6	
June 4	LON	i P Z	12:36:51.0	O = 12:31:56, 59 ½ N, 153 W. Cook Inlet. h about 100 km, Mag. = 5 ½.
		SEA	i P Z	
		i N	36:54.7	
		i N	37:17.7	
		e N	37:36	
	TUM	e P Z	12:36:42	
June 5	LON	e P Z	20:45:32	O = 20:37:15; 12 N, 86 ½ W. Near Coast of Nicaragua. h about 100 km.
		iPcPZ	20:47:10.1	
June 6	LON	i P Z	00:31:59.3	
		i Z	00:32:19.0	
June 6	LON	e Z	07:58.1	
June 7	LON	e P Z	19:57:18	
		i Z	57:19.4	
		i Z	19:57:21.4	
June 9	LON	i P Z	09:02:30.8 C	
June 9	LON	i P Z	15:06:26.7	Local
		i S Z	15:06:40.4	
June 10	LON	e P Z	04:29:15.0	O = 04:16:01; 36 N, 24 E. Crete. Felt.
June 10	LON	e Z	07:37:04	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
June 14	LON	i P Z	00:24:13.5 C	O = 00:11:57; 20 $\frac{1}{2}$ S, 68 W. Southwestern Bolivia. 1 killed and minor damage in northern Chile. h about 100 km. Mag. 7 $\frac{1}{4}$ - 7 $\frac{1}{2}$
		ipP Z	24:13.5	
		e S Z	34:19	
		e S E	34:22	
		e S N	34:25	
		esS E	34:13	
	SEA	i P Z	24:19 R	
		ipP Z	24:22	
		iSKSN	34:27	
	TUM	iSN E	34:34	
		i P Z	24:27.5	
		i S N	34:33.4	
		i S E	34:33.9	
			i S Z	
June 14	LON	i P Z	01:28:21.3	O = 01:26:34; 39 $\frac{1}{2}$ N, 120 $\frac{1}{2}$ W. California. Felt.
June 14	LON	e P Z	05:10:35	
		i Z	05:10:38.2	
June 14	LON	i P Z	06:17:28.1	
June 14	LON	e P Z	20:53:00.3	
June 14	LON	e Z	21:07:42	
June 15	LON	i P Z	02:51:41.3	O = 02:38:48; 25 N, 122 $\frac{1}{2}$ E. Near northeast coast of Formosa.
June 15	LON	i P Z	14:06:04.4	
June 15	LON	i P Z	19:02:42.5	
June 16	LON	i P Z	08:09:35.0 C	O = 08:02:05; 15 N, 93 $\frac{1}{2}$ W. Off Coast of Chiapas, Mexico. h about 100 km.
June 17	LON	i P Z	20:58:28.3 R	O = 20:46:03; 12 $\frac{1}{2}$ S, 167 $\frac{1}{2}$ E. Santa Cruz Island. H about 200 km.
June 17	LON	i P Z	23:21:27.2	Local
		i S Z	23:21:32.3	
June 18	LON	e Z	00:32.3	O = 00:29:48; 38 $\frac{1}{2}$ N, 119 $\frac{1}{2}$ W. California-Nevada Border. Felt.
June 18	LON	e P Z	15:40:16	O = 15:31:25; 54 N, 160 E. Near East Coast of Kamchatka. Mag. = 6 $\frac{1}{4}$ - 6 $\frac{1}{2}$ (Berk).
		i Z	40:17	
	SEA	i P Z	40:03 C	
		i N	40:15	
		e SNE	46:57	
	TUM	i P Z	15:40:01.9 C	
		e L Z	16:01:33	



Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
June 18	LON	e P Z	16:07:17	O = 15:58:38; 54 N, 161 E. Near East Coast of Kamchatka. Mag. = 6 ½ - 6 ¾.
	SEA	i P Z	16:07:18	
	TUM	i P Z	16:07:16.4 C	
June 19	LON	i P Z	00:07:53.1	Local
		i S Z	00:07:54.5	
June 19	LON	i P Z	01:47:10.5	O = 01:37:51; 6 N, 82 ½ W. South of Panama.
June 19	LON	i P Z	05:46:13.1	Local
		i S Z	46:34.2	
	TUM	i P Z	05:46:19.6	
June 19	LON	i P Z	20:39:24.5	O = 20:34:40; 27 ½ N, 111 W. Gulf of California.
	SEA	ePP Z	39:49	
		e LNE	05:47:55	
June 19	TUM	i P Z	05:46:19.6	
June 20	LON	e P Z	04:09:42	
June 21	LON	e Z	02:39.1	
June 22	LON	i P Z	03:33:16.7 C	O = 03:22:51; 4 S, 81 W. Near Coast of Northern Peru.
June 22	LON	i P Z	03:57:05.7	
		i Z	03:57:09.1	
June 22	LON	i P Z	07:14:57.0	
June 22	LON	e Z	13:28:59	
June 23	LON	i P Z	14:37:03.1	O = 14:35:02; 39 N, 119 W. Western Nevada. Felt. Mag. = 6 ¼.
		i Z	37:33.4	
		e E	39:13	
	TUM	i N	39:25.4	
		i P Z	37:10.3	
		i Z	37:11.7	
		i Z	37:42.0	
		e Z	39:34.4	
		i Z	39:46.9	
June 23	LON	e S Z	15:06:34	O = 15:03:48; 39 ½ N, 119 W. Nevada Aftershock. Felt. Mag. = 4 ½ (Berk).
	TUM	i S Z	15:06:42.9 C	
		i Z	15:09:17.9	
June 25	LON	i P Z	00:55:37.1	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
June 25	LON	e P Z	06:56:07	0 = 06:46:55; 62 N, 27 ½ W. South of Iceland
June 26	LON	i P Z	00:13:12.6	0 = 00:05:50; 51 ½ N, 179 E. Rat Islands, Aleutian Islands.
June 26	LON	i P Z	05:13:58.4	
June 27	LON	i P Z	19:17:47.0	
		iPP Z	21:37	
	SEA	i P Z	17:51	
		i SNE	28:14	
	TUM	i P Z	17:45.6	
		iPP Z	19:21:36	
June 27	LON	e P Z	19:24:25	
	SEA	i P Z	19:24:24	
	TUM	i P Z	19:24:24	
June 28	LON	e Z	18:30:23	0 = 18:25:37; Gulf of California.
	SEA	e L E	38:14	
		e L N	18:38:18	
June 28	LON	iPKPZ	20:02:07.6 C	0 = 19:43:22; 9 ½ S, 122 E. Sawoe Sea
	SEA	ePKPZ	02:08	
		eSkSNE	20:08:50	
July 1	TUM	i P Z	16:22:02.6	
July 2	LON	i P Z	11:45:50.5	
	TUM	i P Z	11:45:48.9 R	
July 2	LON	e P Z	19:45:40	
		i Z	19:45:41.7	
July 2	LON	e P Z	20:01:21.5	
		i Z	20:01:28.7	
July 2	LON	i P Z	21:20:37.2 R	Local
		i S Z	21:20:41.6	
July 3	LON	e P Z	05:26:03	0 = 05:21:13; 58 ½ N, 152 W, Kodiak Island Region
	SEA	e P Z	26:08	
	TUM	e P Z	05:26:06	
July 3	LON	i P Z	12:39:23.7	Local
		i S Z	39:37.7	
		TUM	i P Z	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
July 3	LON	e P Z	18:07:52	
		i Z	08:35.4	
	SEA	i P Z	07:55 R	
		e Z	17:22	
		ePS E	19:19	
	TUM	i P Z	18:07:50.5 R	
July 3	LON	e P Z	20:03:05	Local
		i S Z	20:03:19.5	
July 4	LON	i P Z	05:23:54.5	Local
	SEA	e P Z	27:36	
	TUM	i P Z	24:00.6	
		i S Z	05:24:16.5	
July 4	LON	e P Z	05:27:47	
		i Z	27:57.8	
		i Z	28:04.2	
	TUM	i P Z	05:27:42.9	
July 5	TUM	iPPPZ	16:09:04.8	O = 15:53:37; 8 S, 74 W. Peru-Brazil Border. h about 200 km.
July 6	LON	i P Z	09:22:21.0 R	O = 09:10:17; 26 ½ S, 61 W. Chaco Province, Argentina h about 600 km. Mag. = 6 3/4.
	SEA	i P Z	22:26.8	
	TUM	i P Z	22:24.8 C	
		ipP Z	09:24:42.9	
July 6	LON	i P Z	09:35:31.2 R	O = 09:23:21; 26 ½ S, 61 ½ W. Chaco Province, Argentina h about 600 km. Mag. = 6 3/4 - 7
		i Z	36:58.2	
	SEA	i P Z	35:35.8	
	TUM	i P Z	35:34.9 C	
		ipZ Z	09:37:50.8	
July 9	LON	i P Z	16:17:32.9 C	O = 16:05:18; 20 ½ S, 68 W. Chile-Bolivia Border. h about 100 km. Mag. = 6 3/4
	SEA	i P Z	17:38 C	
		i SNE	27:50	
	TUM	i P Z	17:36.6 R	
		eSZNE	16:27:51	
July 10	LON	e P Z	20:57:39	
July 11	LON	e P Z	08:02:06.6	
		i Z	02:12.1	
		e Z	02:33	
		i Z	02:36.6	
		e NE	08:02:37	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
July 11	LON	e P'Z	12:21:45	O = 12:01:39; 37 S, 79 E. Indian Ocean. Mag. $6 \frac{1}{2}$ - $6 \frac{1}{2}$ .
July 11	LON	e P Z e Z	17:11:28 17:12:49	
July 11	LON	i P Z	17:52:45.9	
July 11	LON	e P Z	18:33:05	O = 18:23:00; $44 \frac{1}{2}$ N, $148 \frac{1}{2}$ E. Kurile Islands
July 12	LON	i P Z epP Z	00:36:10.1 00:37:36	O = 00:24:22; $19 \frac{1}{2}$ S, $177 \frac{1}{2}$ W. Fiji Islands Region h about 400 km. Mag. = $6 \frac{1}{2}$ .
July 12	LON	e Z	01:31:34	
July 12	LON	e Z	15:33:32	
July 13	LON	e P Z e Z	12:35:21 R 38:06	O = 12:28:45; 52 N, $172 \frac{1}{2}$ W. Andreanof Islands, Aleutian
	SEA	i P Z e S E e S N e E eScSN	35:16 R 40:29 40:43 45:29 45:48	Islands. Mag. = $6 \frac{1}{2}$
	TUM	i P Z	12:35:13.7 C	
July 13	LON	e P Z	23:05:49	
July 14	LON	e Z	00:06:24	O = 23:59:59; $50 \frac{1}{2}$ N, 170 W.
	TUM	e P Z i Z	06:06 00:06:17.9	Fox Islands Region, Aleutian Islands
July 14	LON	e P Z	03:52:28	
July 14	LON	i P Z	11:39:06.2 R	O = 11:33:51; 57 N, 158 W. Alaska Peninsula. h about 60 km.
July 14	LON	e P Z	13:12:59	O = 13:00:24; $16 \frac{1}{2}$ S, 173 E. New Hebrides Islands Region. h about 100 km.
July 16	LON	i P Z	15:24:33.0 <sup>R</sup>	O = 15:17:27; $50 \frac{1}{2}$ N, 177 W. Andreanof Islands Region, Aleutian Islands
July 16	LON	e P Z	16:14:38	
July 16	LON	e Z	19:27:10	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
July 17	LON	i P Z	19:04:59.7	
July 17	LON	e P Z	19:42:23	
July 17	LON	i P Z	23:02:03.8	0 = 22:52:08; 7 ½ N, 71 ½ W. Colombia-Venezuela Border
July 17	LON	epP Z	23:26:48	0 = 23:21:28; 60 ½ N, 153 ½ W. Southern Alaska. h about 150 km.
July 18	LON	e Z	01:34:01	
July 18	LON	e P Z	12:20:16	0 = 12:18:35; 50 ½ N, 130 W.
		i Z	20:17.9	Off Coast of Vancouver, British
	SEA	e P Z	20:11	Columbia
		e NE	22:00	
		e Z	12:22:16	
July 18	LON	e P Z	15:26:42	
July 18	LON	e P Z	19:41:44.4	0 = 19:29:22 Fiji Islands Region
July 18	LON	i P Z	20:08:16.1	0 = 19:54:57; 15 ½ N, 120 ½ E.
		eSkSZ	18:40	Luzon, Philippine Islands. Felt.
		eSkSNE	18:41	h about 150 km. Mag. = 6 ½ -
		e Z	25:02	6 ¾.
	SEA	i P Z	08:15 R	
		eSkSZ	18:16	
		iSkSNE	20:18:21	
July 19	LON	i P Z	04:01:03.3	0 = 03:42:02; 16 ½ S, 105 E. Sunda Strait.
July 19	LON	i P Z	15:17:44.4	0 = 15:06:10; 15 S, 70 ½ W.
		e S E	27:17	Peru. Felt in Northern Chile.
		e S N	27:18	h about 200 km. Mag. = 7.
	SEA	i P Z	17:50.5	
		e S E	27:29	
		e S N	27:32	
		e S Z	27:35	
	TUM	i P Z	17:50.8	
		e Z	18:43	
		iSZNE	15:27:28	
July 20	LON	i P Z	17:05:30.8	0 = 16:53:38; 23 ½ S, 179 E. Fiji Islands Region. h about 600 km.

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
July 21	LON	e P Z	07:56:02	O = 07:43:13; 14 $\frac{1}{2}$ S, 167 $\frac{1}{2}$ E. New Hebrides Islands. Mag. = 6 $\frac{1}{2}$ .
	SEA	i P Z	07:56:05 C	
July 21	LON	e P Z	09:27:02	
July 21	LON	i P Z	12:36:17.3 C	O = 12:29:09; 16 N, 98 W. Near Coast of Oaxaca, Mexico Mag. = 6
		e L Z	48.2	
		e LNE	49.5	
		e L Z	52.5	
	SEA	e P Z	36:26	
	TUM	e L N	49.0	
		e L E	12:49.7	
July 21	LON	e P Z	13:10:38	O = 13:03:31; 16 N, 98 W. Near Coast of Oaxaca, Mexico
		e Z	15:13	
		e L Z	13:26:48	
July 21	LON	e P Z	17:42:29	O = 17:39:29; 37 N, 112 $\frac{1}{2}$ W. Utah - Arizona Border. Mag. = 5 $\frac{1}{2}$ - 5 $\frac{3}{4}$ .
		e ZNE	46:53	
	SEA	e P Z	42:45	
		e N	46:43	
	TUM	e Z	46:45	
		e E	46:47	
	e NE	17:46.4		
July 22	LON	e P Z	04:06:23	
	SEA	e P Z	06:15	
		eS NE	04:12:18	
July 22	LON	e P Z	04:58:42	O = 04:51:30; 15 $\frac{1}{2}$ N, 97 $\frac{1}{2}$ W. Off Coast of Oaxaca, Mexico.
July 22	LON	e P Z	10:40:57	Local
July 22	SEA	e NE	16:14.2	
July 22	LON	i P Z	19:32:34.8	O = 19:24:17; 53 N, 153 E. Sea of Okhotsk. h about 650 km. Mag. = 6 $\frac{1}{2}$ (Berk.)
		ePPN	34:36	
		iPcSZ	36:30	
		esS Z	42:33	
	SEA	i P Z	32:30 C	
		e S E	39:08	
		e S N	19:39:12	
July 22	LON	e P Z	23:15:27	O = 23:02:27; 5 S, 152 $\frac{1}{2}$ E. New Britain. Felt. h about 60 km.
	TUM	e P Z	23:15:26	

Date	Sta.	Phase	Phase G.M.T.	Remarks
1959				
July 23	LON	i P Z e Z	01:02:06.0 R 01:02:17	
July 23	LON	e P Z e Z	03:43:09 03:45:17	
July 23	LON	i P Z e NE	08:16:03.4 R 16:41.3	0 = 08:15:12; 44 $\frac{1}{2}$ N, 124 $\frac{1}{2}$ W. Near Coast of Oregon.
	SEA	e P Z i N i Z e N e Z iS NE	16:15 16:17.5 16:26 16:27 16:44 16:57	
	TUM	i P Z iS NE	15:57 R 16:34.2	
July 23	LON	i P Z e Z	15:09:26.7 C 10:00	0 = 14:56:45, 24 $\frac{1}{2}$ S, 176 W. Tonga Islands Region.
	SEA	i P Z	15:09:31 C	h about 60 km. Mag. - 5 $\frac{3}{4}$ (Berk.).
July 24	LON	e P Z e SNE e NE	01:24:39.9 25:44 26:14	0 = 01:23:09; 41 N, 125 $\frac{1}{2}$ W. Off Coast of Northern California. Felt at Humboldt County.
	SEA	i P Z e E	24:52 R 26:59	Mag. = 5 $\frac{3}{4}$ .
	TUM	i P Z i Z e E e Z	24:41.6 R 26:34.0 26.8 01:27:04	
July 24	LON	e P Z e Z	03:37:25 40.0	0 = 03:35:24; 41 N, 125 $\frac{1}{2}$ W. Off Coast of California.
	SEA	e P Z e NE	37:46 40:13	
	TUM	e P Z	03:37:27	
July 24	LON	e P Z	12:20:03	
July 24	LON	i P Z i Z	20:59:55.4 R 20:59:59.5	Local
July 24	LON	eSS Z e L Z	23:22:15 23:25:24	0 = 23:03:08; 56 $\frac{1}{2}$ S, 28 $\frac{1}{2}$ W. Sandwich Islands
July 25	LON	i P Z e Z	02:32:23.6 R 02:32:34	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
July 25	LON	e P Z	21:31:30	0 = 21:20:35; 37 N, 140 ½ E. Honshu, Japan. h about 100 km.
July 26	LON	e P Z	12:25:31	Local
July 29	LON	e P Z	03:00:48	
July 30	SEA	e P E e P N	07:19:44 07:19:45	
July 30	LON	e P Z	22:25:31	
July 31	LON	e P Z	12:52:09	
July 31	LON	i P Z	20:06:23.9 C	0 = 19:53:02, 38 ½ N, 70 E. Tadzhik S.S.R.
July 31	LON	i P Z	21:26:56.0 R	
Aug. 2	LON	i P Z i S Z	23:46:46 47:54	0 = 23:45:19; 49 ½ N, 129 ½ W. Off Coast of Vancouver, B.C.
	SEA	e Z e N	47:24 23:48.3	
Aug. 4	LON	e P Z e Z	05:15:17 05:17:39	
Aug. 4	LON	e P Z e Z	07:39:25 42:24	0 = 07:36:59; 37 ½ N, 118 ½ W. Central California. Felt at
	SEA	e P Z e E	39:43 07:43.0	Bishop and Fresno. Mag. = 5 ½.
Aug. 4	LON	i P Z	08:13:51.5	
Aug. 4	TUM	e P Z	08:28:51	
Aug. 4	LON	i P Z i S NE i S E i L N	23:53:53.3 54:09.5 54:12.0 54:15.0	0 = 23:53:30 45.7 N, 122.3 W. Skamania County, Wash. Felt at Portland, Ore. Camas, Wash. and Troutdale, Wash.
	SEA	e P Z e SNE	54:09.0 54:36	M M Intensity = V
	TUM	i P Z e S E	53:56.6 C 23:54:12	
Aug. 6	LON	i P Z i S E	03:45:04.1 C 45:24.9	0 = 03:44:35; 47.8 N, 120.0 W. Chelan, Wash. Felt in
	SEA	i P Z	45:06	Seattle. Minor Damage
	TUM	i P Z i Z i SNE	45:12.9 45:16.8 03:45:38.8	in Chelan and Wenatchee. M. M. Intensity = VI



Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Aug. 6	LON	i P Z	22:18:40.8	0 = 22:18:24.6 Aftershock of Aug. 4 Skamania Co. Shock.
		i S E	18:52.7	
	TUM	e P Z	22:18:47	
Aug. 7	SEA	i P Z	10:48:19 C	0 = 10:43:32; 56 N, 154 W. Kodiak Island Region. Mag. = 5 3/4
		e S NE	52:25	
	TUM	e P Z	10:48:17	
Aug. 7	LON	i P Z	21:50:18.3	0 = 21:45:26 56 1/2 N, 154 W. Kodiak Island Region.
		e N	53:15	
		e S N	54:43	
	SEA	i P Z	50:14 C	
		e SNE	54:18	
	TUM		21:50:10.9	
Aug. 7	LON	i P Z	23:56:03.4	
Aug. 8	SEA	i P Z	00:56:06 C	0 = 00:47:38; 55 N, 162 1/2 E Near E. Coast Kamchatka Mag. = 6 1/2
Aug. 9	LON	e P Z	12:28:09	Local
		e S Z	12:28:28	
Aug. 9	LON	e P Z	20:42:18	0 = 20:29:28; 10 S, 161 E. Solomon Islands. h about 100 km.
Aug. 11	LON	e P Z	21:02:36	
		e Z	21:05:30	
Aug. 11	LON	e P Z	23:41:56	
		i Z	43:30.5	
		e Z	23:45:28	
Aug. 12	LON	e P Z	09:32:59	
Aug. 12	LON	e P Z	10:10:36	0 = 09:58:22; 16 1/2 S, 177 1/2 W. Fiji Islands Region, Mag. = 6 1/2.
	SEA	i P Z	10:10:41 R	
	TUM	i P Z	10:10:34	
Aug. 13	LON	i P Z	19:08:14.2	0 = 19:06:59; 43 1/2 N, 126 1/2 W. Off Coast of Oregon
		i SNE	09:12.4	
		e N	13:26	
		e Z	17:28	
	SEA	e P Z	08:10	
		e Z	08:50	
		e S E	09:27	
		e S N	09:34	
	TUM	e P Z	08:09	
		e NE	19:09:03.1	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Aug. 13	LON	i P Z	21:32:26.3	Local
		i Z	21:32:27.5	
Aug. 15	LON	i P Z	07:00:22.1	Local
		i Z	07:00:25.5	
Aug. 15	LON	e P Z	09:10:08	O = 08:57:04; 23 N, 121 E. Formosa, 16 killed, many injured and extensive property damage. Mag. = 6 3/4 - 7
		e S N	20:24	
		e L Z	50.3	
	SEA	i P Z	10:06 R	
		e Z	10:25	
		e Z	10:34	
		e SNE	20:30	
		e NE	09:21:22	
Aug. 15	LON	i P Z	18:58:05.5	
		i Z	18:58:25.3	
Aug. 17	LON	e P Z	01:45:58	O = 01:33:11; 41 N, 20 E. Albania.
Aug. 17	LON	i P Z	17:11:39.5	Local
		i Z	17:11:43.6	
Aug. 17	LON	i P Z	21:06:43.3	Local
Aug. 17	LON	e P Z	21:17:45	
		e S	21:06	
	SEA	i P Z	17:49	
		e SNE	29:15	
	TUM	e P Z	17:44	
		e E	28:35	
		e Z	46.5	
e Z	21:56:55			
Aug. 17	LON	e N	21:46.2	O = 21:24:40; 7 1/2 S, 156 E. Solomon Islands. Mag. = 7 1/2.
Aug. 18	LON	i P Z	00:46:46.4	O = 00:34:03; 22 1/2 N, 122 E. Near East Coast of Formosa. h about 200 km.
	SEA	i P Z	00:46:45	
Aug. 18	LON	i P Z	04:40:35.8	
		e Z	04:43:32	
Aug. 18	LON	i P Z	05:15:01.4	O = 05:13:30; 42 N, 127 W. Off Coast of Oregon
		e N	17:47	
	TUM	e P Z	05:14:58	

		Phase	Time G.M.T.	Remarks
1959				
Aug. 18	LON SEA	i P Z	06:39:08.6	O = 06:37:15.0; 44° 55' N, 111° 05' W. Hebgen Lake, Montana. Many killed and injured. Major property damage. Mag. = 7.1
		e P Z	39:16.5	
		e Z	39:19.5	
		i Z N	39:20.8	
		i E	39:23.3	
	TUM	i N	39:27.6	
		e P Z	39:19	
		i Z	39:27	
		e N	41:36	
		e Z	06:41:43	
Aug. 18	LON	eP NE	07:56:26	O = 07:54:32; 45 N, 111 W. Hebgen Lake Aftershock. Felt.
		e NE	07:58:14	
Aug. 18	LON	i PNE	08:43:43.4	O = 08:41:50; 44.8 N, 110.7 W. Hebgen Lake Aftershock. Felt. Mag. = 6 ½ (Berk).
		e SNE	44:56	
	TUM	e P Z	43:54	
		i Z	43:56.8	
		e N	45:58	
e Z	08:46:17			
Aug. 18	SEA	e P Z	08:48:16	Hebgen Lake Aftershock
Aug. 18	SEA	e P Z	09:06:50	Do.
Aug. 18	LON	e N	10:17:40	Do.
Aug. 18	LON	e N	10:21:16	Do.
Aug. 18	LON	i E	10:28:40.5	Do.
Aug. 18	SEA	e P Z	10:29:33	Do.
Aug. 18	SEA	e P Z	10:46:00	Do.
		e NE	10:48:18	
Aug. 18	SEA	e P Z	11:05:08	O = 11:03:52; 44.8 N, 111.1 W. Hebgen Lake Aftershock. Felt. Mag. = 5 ½ - 5 3/4 (Berk).
		i E	07:27.7	
		i N	07:28.7	
	TUM	e P Z	05:04	
			08:26	
			11:08:30	
Aug. 18	TUM	e P Z	12:14:32	Hebgen Lake Aftershock.
		e Z	12:14:59	
Aug. 18	SEA	e P Z	13:22:32	Do.
		e S E	24:09	
		e S N	13:24:10	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Aug. 18	LON	e PNE	15:25:14	Do.
		e SNE	26:38	
		e E	27:20	
		i E	28:04.4	
		i N	28:11.5	
		i E	40:04.7	
		i N	40:05.3	
	SEA	e P Z	25:23	
		e NE	27:51	
	TUM	e P Z	25:20	
		e Z	28:16	
		e Z	30.2	
		e N	30:39	
	e N	15:30:48		
Aug. 18	SEA	e P Z	16:15.5	Do.
Aug. 18	SEA	e P Z	16:26.3	Do.
Aug. 18	SEA	e P Z	16:31:15	Do.
Aug. 18	LON	e P Z	16:56:42	Do.
		i S Z	16:57:52.5	
Aug. 18	LON	e P Z	17:52:42	Do.
		e S Z	17:54:13	Do.
Aug. 18	LON	i P Z	18:07:58.9	Local. Felt at Chelan, Wash.
		i SNE	08:19.9	
	SEA	e P Z	08:01	
	TUM	i P Z	08:08.9	
		e S Z	18:08:35	
Aug. 18	LON	i P Z	20:02:28.9	Hebgen Lake Aftershock
		e Z	20:04:53	
Aug. 18	SEA	e P Z	20:05:13	Do.
Aug. 18	LON	e P Z	20:11:20	Do.
Aug. 18	LON	i P Z	20:15:42.0	Do.
Aug. 18	SEA	e P Z	20:18.2	Do.
Aug. 18	LON	e P Z	21:19:31	Do.
Aug. 18	LON	e P Z	21:24:49	Do.

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Aug. 18	LON	i PPZ	21:36:58.1	0 = 21:13:09; 11 S, 162 $\frac{1}{2}$ E. Solomon Islands. h about 200 km.
Aug. 18	LON	i P Z	21:46:09.6	Hebgen Lake Aftershock.
		e Z	21:48:14	
Aug. 18	SEA	e Z	21:48:51	Do.
	LON	i P Z	21:53:23.6	
Aug. 18		e N	55:41	Do.
	SEA	e Z	21:55.3	
Aug. 18	LON	i P Z	22:14:54.8	Do.
Aug. 18	LON	i P Z	23:17:49.1	Do.
Aug. 18	LON	i P Z	23:48:22.9	Do.
		e Z	50:28	
Aug. 19	SEA	e Z	23:51:07	Do.
	LON	i P Z	00:38:33.3	
Aug. 19		e Z	00:40:59	Do.
	SEA	e Z	00:58:09	
Aug. 19	LON	e P Z	02:30:21	Do.
Aug. 19		e Z	02:32:25	Do.
	LON	e P Z	03:32:40	
Aug. 19	LON	e P Z	03:50:38	
Aug. 19		i Z	03:50:46.1	Do.
	LON	i P Z	04:05:50.9	
Aug. 19	SEA	e P Z	05:47	0 = 04:04:03.0; 44°5'N, 111°38'W Hebgen Lake Aftershock Mag. = 6 (Berk).
	TUM	e P Z	06:05	
		e Z	08:05	
		e E	04:08:20	
Aug. 19	LON	e P Z	04:14:06	
Aug. 19	LON	i P Z	05:35:55.4	
Aug. 19	LON	i P Z	05:51:00.7	Hebgen Lake Aftershock.
		i N	52:45.5	
	SEA	e P Z	05:51:00	
	TUM	e P Z	51.2	
		e E	53:02	
		e Z	53:04	
	e N	05:53:05		

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Aug. 19	LON	i P Z	06:52:58.8	Do.
		e Z	55:03	
	SEA	e Z	06:55:34	
Aug. 19	LON	i P Z	07:14:14.7	Do.
		e N	16.1	
	SEA	e Z	07:16:54	
Aug. 19	LON	e P Z	09:05:44	Do.
		e Z	08:03	
		e Z	09:13	
		e Z	09:11:29	
Aug. 19	LON	i P Z	09:29:41.9	Do.
		e ZN	31:52	
	SEA	e Z	09:31:50	
Aug. 19	LON	e P Z	11:05:27	Do.
		e Z	07:39	
	SEA	e Z	11:07:50	
Aug. 19	LON	e P Z	11:22:16	Do.
		e Z	11:24:43	
Aug. 19	LON	e P Z	19:01:39	
Aug. 19	LON	i P Z	19:08:16.8	O = 19:06:29; 45.0 N, 111.4 W. Hebgen Lake Aftershock.
		e ZNE	10:30	
	SEA	e P Z	19:08:26	
Aug. 19	LON	i P Z	19:45:43.5	O = 19:43:47.5; 45 N, 110 ½ W. Hebgen Lake Aftershock
		e Z N	48.0	
	SEA	e Z	46:07	
	TUM	e P Z	19:45:56	
Aug. 19	LON	e P Z	21:47:48	O = 21:45:57; 45 N, 111 ½ W. Hebgen Lake Aftershock
		e NE	21:49:46	
	TUM	e P Z	21:48:02	
Aug. 19	LON	e P Z	22:08:44	
Aug. 20	LON	i P Z	07:13:11.1;	Hebgen Lake Aftershock.
		e Z	07:15:24	
Aug. 20	LON	i P Z	07:29:01.5	O = 07:18:34; 7 S, 85 W. Off Coast of Peru
Aug. 20	LON	e P Z	09:45:34	Hebgen Lake Aftershock
		e Z	09:47:43	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Aug. 20	LON	i P Z	11:01:04.2	O = 10:59:11; 45 N, 111 W. Hebgen Lake Aftershock.
		e Z	03:17	
	SEA	e Z	11:03:10	
Aug. 20	LON	i P Z	17:37:30.3	
Aug. 20	LON	i P Z	19:13:17.4	O = 19:11:27; 45 N, 111 W. Hebgen Lake Aftershock. Felt.
		e N	15:25	
	SEA	e P Z	13:31	
	TUM	e P Z	19:13:28	
Aug. 20	LON	e P Z	19:34:36	
Aug. 20	LON	e P Z	22:07:54	Hebgen Lake Aftershock.
		e Z	22:09:58	
Aug. 20	LON	e P Z	22:58:20	Do.
		e Z	00.5	
	SEA	e Z	23:00:57	
Aug. 21	LON	e P Z	05:30:34	Do.
		e Z	32:46	
	SEA	e Z	05:33.3	
Aug. 21	SEA	e Z	10:47.2	Do.
Aug. 21	LON	i P Z	13:09:38.4	Do.
		e N	11:50	
	SEA	e Z	13:12.4	
Aug. 21	SEA	e Z	13:17.6	Do.
Aug. 21	LON	e P Z	14:53:17	Do.
		e Z	55.5	
	SEA	e Z	14:55.7	
Aug. 21	SEA	e Z	15:07.2	Do.
Aug. 21	LON	e P Z	15:34:33	Do.
Aug. 21	LON	i P Z	16:24:22.3	Do.
		e N	26:30	
	SEA	e Z	16:26.8	
Aug. 21	LON	e P Z	17:55:36	Do.
		e Z	17:57:49	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Aug. 21	LON	e P Z	19:55:32	Do.
		e Z	57:32	
	SEA	e Z	19:58.1	
Aug. 22	SEA	e Z	06:11.2	Do.
Aug. 22	LON	i P Z	06:59:04.9	Do.
		e N	07:01:22	
	SEA	e Z	07:01.3	
Aug. 22	LON	e P Z	07:24:36	Local (MR)
Aug. 22	LON	e P Z	08:35:57	Hebgen Lake Aftershock
		e Z	38:10	
	SEA	e Z	08:38.6:	
Aug. 22	LON	e P Z	08:59:29	Do.
		i Z	08:59:31.8	
		e ZN	09:01:40	
	SEA	e Z	09:02.1	
Aug. 22	LON	e P Z	10:42:38	Do.
		e Z	44:44	
	SEA	e Z	10:45.5	
Aug. 22	LON	i P Z	11:15:10.9	
Aug. 22	LON	i P Z	15:28:38.4	Do.
		e ZN	31:42	
	SEA	e Z	15:31.2	
Aug. 22	LON	i P Z	18:58:37.8	Do.
		e Z	19:00:42	
	SEA	e Z	19:01.2	
Aug. 22	LON	i P Z	19:27:43.7	Do.
		e Z	31:43	
	SEA	e Z	19:30.2	
Aug. 23	SEA	e Z	08:20.9	Do.
Aug. 23	SEA	e Z	14:48.9	Do.
Aug. 23	SEA	e Z	21:44.3	Do.
	TUM	e P Z	42.7	
		e Z	21:43:41	
Aug. 24	SEA	e Z	06:03.6	Do.



Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Aug. 24	SEA	e Z	15:12.4	Do.
Aug. 24	SEA	e Z	21:12.9	Do.
Aug. 24	TUM	e Z	22:44.4	Do.
Aug. 25	SEA	e Z	00:52.0	Do.
Aug. 25	SEA	e Z	02:16.5	Do.
Aug. 25	LON	e P Z	17:12:50	Do.
	SEA	e P Z	17:12:39	
Aug. 25	LON	e P Z	21:09:42	Do.
		e Z	11:43	
	SEA	e Z	21:12:25	
Aug. 26	SEA	e P Z	00:44:37	Do.
Aug. 26	LON	e P Z	02:09:15	Local (MR)
Aug. 26	LON	i P Z	08:32:38.2	0 = 08:25:30; 18 N, 94 1/2 W. Vera Cruz, Mexico. 14 killed, many injured and extensive damage throughout Tehuantepec Isthmus. Mag. = 6 3/4.
		e N	37:22	
		e SNE	38:32	
		e LNE	45.6	
	SEA	i P Z	32.46 C	
	TUM	i P Z	32:38.9	
	e L E	08:47.3		
Aug. 26	LON	e P Z	10:29:21	0 = 10:27:41; 51 N, 132 W. Queen Charlotte Islands Region
		e NE	31:22	
		i N	31:46.3	
	SEA	i P Z	29:11	
	TUM	e P Z	29:11	
		i Z	29:13.9	
	e S Z	10:30:58		
Aug. 26	LON	i P Z	13:03:09.1	0 = 13:01:26; 50 1/2 N, 130 1/2 W. Queen Charlotte Islands Region.
		e NE	05:20	
	SEA	e P Z	13:03:00	
Aug. 26	LON	i P Z	23:45:23.5	Local
		i S NE	23:45:25.1	
Aug. 27	SEA	e Z	03:04.2	Hebgen Lake Aftershock.
Aug. 27	LON	i P Z	04:09:27.3	
Aug. 27	LON	e P Z	09:53:23	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Aug. 27	LON	i P Z	12:01:33.1	Do.
		e N	03:48	
	SEA	e Z	12:04.0	
Aug. 27	LON	i P Z	13:34:24.1	Do.
	SEA	e Z	13:36.0	
Aug. 27	LON	i P Z	20:22:31.5	
		i Z	20:22:35.4	
Aug. 27	LON	i P Z	23:35:48.4	Do.
		e Z	37:50	
	i Z	38:09.9		
	SEA	e Z	23:38.2	
Aug. 28	LON	i P Z	08:18:19.0	Local
		i Z	08:18:21.1	
Aug. 28	LON	e P Z	10:23:09	Hebgen Lake Aftershock.
		e Z	10:25.6	
Aug. 28	LON	e P Z	12:12:46 R	0 = 12:07:44; 63 ½ N, 149 W. Central Alaska. Felt at College and Fairbanks
		e NE	20:05	
	SEA	i P Z	12:39	
		e S NE	16:29	
		e NE	19.5	
	TUM	e P Z	12:12:40	
Aug. 28	LON	e Z	18:14:07	
Aug. 29	LON	e P Z	03:07:33	
Aug. 29	LON	i P Z	08:15:53.7 R	Hebgen Lake Aftershock
		e Z	17:56	
	SEA	e Z	08:18.5	
Aug. 29	TUM	e P Z	12:12:40	
Aug. 29	SEA	e Z	12:53.9	Do.
Aug. 29	LON	i P Z	17:14:41.2 C	0 = 17:03:10; 52 N, 106 ½ E. Lake Baikal, U.S.S.R. Mag. = 6 ½ - 6 ¾
	SEA	i P Z	14:39 R	
		e S NE	24:00	
	TUM	e P Z	17:14:39	
Aug. 30	LON	e P Z	03:08:14	Hebgen Lake Aftershock
	SEA	e Z	10.2	
		e NE	10.3	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Aug. 30	LON	i P Z	03:27:07.5	
Aug. 30	LON	e P Z	03:37:11	0 = 03:24:54; 35 ½ N, 3 W. Mediterranean Sea, North of Spanish Morocco. Felt at Melilla.
Aug. 30	LON	i P Z	05:51:55.0 R	
Aug. 30	SEA	e Z	07:19.7	Hebgen Lake Aftershock
Aug. 30	LON	e P Z e Z	07:47:12 07:49:30	Do.
Aug. 30	SEA	e Z	13:19.2	Do.
Aug. 30	SEA	e Z e E	16:25.5 16:26.1	Do.
Aug. 31	LON	i P Z	01:20:21.3 R	Local
Aug. 31	LON	i P Z e Z	01:56:18.3 58:11	Hebgen Lake Aftershock.
	SEA	e N e Z E	58:44 01:58:53	
Aug. 31	SEA	e NE e Z	03:53:46 03:53:57	Do.
Aug. 31	LON	e P Z i Z	08:30:11 08:30:23.3	
Sept. 1	SEA	e Z	07:43.2	
Sept. 1	LON	i P Z	10:59:05.9 C	0 = 10:49:43; 20 N, 64 ½ W. North of Puerto Rico
Sept. 1	LON	e P Z e E e N	11:50:25 52:44 53:51	0 = 11:37:42; 41 ½ N, 20 E. Albania, 2 killed, 34 injured and extensive property damage
	SEA	i P Z e SNE	11:50:24 R 12:01:11	
	TUM	e P Z	11:50:27	
Sept. 1	SEA	e Z	18:23.7	Hebgen Lake Aftershock
Sept. 1	LON	i P Z e Z	19:21:32.2 R 19:23:15	Do.
Sept. 1	SEA	e Z	19:36.9	Do.

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Sept. 1	LON	e P Z	20:34:18	Do.
Sept. 1	LON	e E	21:12:15	
Sept. 1	LON	i P Z e Z	21:21:39.4 R 21:23:45	Do.
Sept. 1	SEA	e Z	23:10.2	Do.
Sept. 2	SEA	e Z	00:58.2	Do.
Sept. 2	LON	e P Z e Z	01:55:18 01:57:25	Do.
Sept. 2	SEA	e Z	04:28.8	Do.
Sept. 2	LON	e P Z e Z	05:26:32 05:28:30	Do.
Sept. 2	SEA	e Z	06:45.8	Do.
Sept. 2	LON SEA	e P Z e S Z	07:06:26 07:07.9	Do.
Sept. 2	LON	e P Z e Z	07:42:51 07:44:53	Do.
Sept. 2	LON	i Z	09:38:15.4	
Sept. 2	LON	e Z	12:16:49.1	
Sept. 3	LON	e P Z	00:03:48	Do.
Sept. 3	LON	e P Z	03:14:43	Do.
Sept. 4	LON TUM	i P Z i S ZNE i P Z	18:06:52.5 C 07:03.7 18:07:00	Local
Sept. 4	LON	i P ZNE	18:53:51.6	Local
Sept. 4	LON TUM	i P Z e ZE e P Z	20:58:07.9 58:35 20:58.1	
Sept. 5	LON	i P Z e Z	01:21:59.5 01:24:10	Hebgen Lake Aftershock

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Sept. 5	LON	i P Z	08:16:22.3	
Sept. 5	LON	e P Z	12:05:35	
Sept. 5	LON	i P Z	18:12:44.2 R	Do.
		e Z	18:14:55	
Sept. 5	LON	e P Z	21:36:02	
Sept. 5	LON	e P Z	23:16:28.1	
	TUM	i P Z	23:16:26.9 R	
Sept. 6	LON	e P Z	04:33:29	Do.
		e Z	04:35:39	
Sept. 6	LON	e P Z	14:36:28.7 C	Do.
		e Z	14:38.6	
Sept. 6	LON	e P Z	16:39:16.6	Do.
		e Z	16:41:23	
Sept. 7	LON	i P Z	06:43:41.7	
		i Z	44:44.1	
		e E	46:20	
		e N	06:46:36	
Sept. 7	LON	i P Z	11:41:05.9	0 = 11:39:30; 45 N, 111 W.
		e ZN	43:00	Hebgen Lake Aftershock.
	SEA	e Z	41:47	
		e NE	11:43:32	
Sept. 7	SEA	e P Z	14:46.1	Hebgen Lake Aftershock.
Sept. 7	LON	e P Z	15:43:57	
		e Z	15:45:05	
Sept. 8	LON	i P Z	02:04:11.2	Do.
		e Z	02:06:05	
Sept. 8	LON	i P Z	07:11:38.5	Do.
		e NE	13:44	
	SEA	e N	13:00	
		e E	13:07	
		e E	14:18	
		e N	14:20	
		e Z	07:14:25	
Sept. 8	SEA	e Z	16:04:23	Do.

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Sept. 8	SEA	e Z	18:52.3	Do.
Sept. 8	LON	e P Z	19:30:09	0 = 19:19:39; 42 ½ N, 142 ½ E. Hokkaido, Japan. Felt.
Sept. 9	LON	i P Z e S Z	01:57:33.0 01:58:50	Hebgen Lake Aftershock.
Sept. 9	SEA	e E e N e Z e Z	11:10:00 10:03 10:09 11:10:25	Do.
Sept. 13	LON	i P Z e E	20:42:37.4 R 43:32	0 = 20:40:41; 45 N, 110 ½ W. Hebgen Lake Aftershock
	TUM	e Z	20:45.0	
Sept. 13	LON	i P Z e S N e N e N	21:25:25.1 26:50 27:24 27:33	0 = 21:23:31; 45 N, 111 W. Hebgen Lake Aftershock.
	TUM	e S Z	21:26.8	
Sept. 13	LON	e P Z	21:40:50	Hebgen Lake Aftershock.
Sept. 13	LON	e P Z	23:41:21	0 = 23:39:46; 45 N, 111 W. Hebgen Lake Aftershock.
Sept. 13	TUM	e Z	23:44.1	Hebgen Lake Aftershock.
Sept. 14	LON	e P Z e Z	06:24:53 06:27:13	0 = 06:22:59; 45 N, 111 W. Hebgen Lake Aftershock
Sept. 14	LON	e P Z e S Z e N e E	09:36:45 38:02 38:57 39:05	0 = 09:34:52; 45 N, 111 W.
	TUM	e P Z e Z e E e N	36:56 39:27 39:28 09:39:30	
Sept. 14	LON	i P Z e S E e S N	14:22:43.6 R 33:08 33:23	0 = 14:09:39; 28 ½ S, 177 W. Kermadec Islands. Felt on Raoul. Mag. = 7 3/4.
	TUM	i PSZ i P Z e S E e S N e Z e PSZ e Z e L Z	34:15.7 22:42.8 33:24 33:42 33:45 34:08 36.5 14:57.2	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Sept. 14	LON	e P Z	14:46:32	
Sept. 14	LON	e P Z	17:19:18	0 = 17:06:15; 29 S, 176 1/2 W. Kermadec Aftershock Felt on Raoul
Sept. 14	LON	e P Z	22:36:57	0 = 22:23:53; 29 S, 177 W. Kermadec Aftershock. Felt on Raoul. Mag. = 6 1/2 (Berk).
Sept. 15	LON TUM	e P Z e L Z	06:11:12 06:47.2	0 = 05:58:11; 28 S, 176 1/2 W. Kermadec Aftershock
Sept. 15	LON SEA TUM	i P Z i P Z e S NE e P Z e S NE	06:12:42.2 12:47 22.3 12:41 06:23.3	0 = 05:59:42; 28 1/2 S, 177 W. Kermadec Aftershock. Felt Raoul. Mag. = 6 1/2 - 6 3/4.
Sept. 15	LON SEA	e P Z i P Z	06:30.4 06:30:35	0 = 06:17:28; 28 1/2 S, 176 1/2 W. Kermadec Aftershock
Sept. 15	LON  SEA TUM	i P Z epP Z e S Z  i P Z i P Z epP Z e S E e S N	11:17:16.2 19:25 26:59  17:19 C 17:14.9 R 19:23 26:58 11:26:59	0 = 11:05:33; 21 1/2 S, 179 1/2 W. Fiji Islands Region h about 600 km. Mag. = 6 1/2 (Berk).
Sept. 15	LON	e P Z	13:46:28	
Sept. 16	SEA	e P Z e S NE	16:10:11 16:20.8	0 = 15:57:03; 28 1/2 S, 176 W. Kermadec Aftershock Mag. = 5 3/4 - 6 (Berk).
Sept. 16	LON SEA	i P Z e Z e Z e NE	21:17:15.5 19:16 17:41 21:19:45	0 = 21:15:28; 45 N, 111 W. Hebgen Aftershock
Sept. 16	LON SEA	i P Z e Z e Z	21:36:13.9 36:29 21:38.2	Hebgen Aftershock

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Sept. 16	LON	e P Z	21:45:41 21:47:43	0 = 21:43:57; 45 ½ N, 111 W. Hebgen Lake Aftershock.
Sept. 16	LON	i P Z i Z	22:01:23.3 22:01:25.9	Local
Sept. 16	LON SEA	e P Z e Z	23:24:48 23:27.5	Hebgen Lake Aftershock
Sept. 17	LON SEA	i P Z e ZN e Z	00:27:14.3 29:02 00:29.2	0 = 00:25:31; 45 N, 112 W. Hebgen Lake Aftershock
Sept. 17	LON	e P Z	01:16:03	Local (MR)
Sept. 17	LON SEA	i P Z e Z e Z	02:31:37.0 33:36 02:34.2	0 = 02:29:53; 45 N, 111 W. Hebgen Lake Aftershock.
Sept. 17	LON SEA	e P Z e ZN e Z	03:01:16 03:17 03:03.0	Hebgen Lake Aftershock.
Sept. 17	LON SEA	i P Z e Z e Z	04:41:28.6 43:30 04:43.5	Do.
Sept. 17	LON SEA	e P Z e P Z	14:49:13 14:49.3	0 = 14:36:11; 28 ½ S, 176 W. Kermadec Aftershock. Mag. = 5 ¾ - 6 (Berk).
Sept. 17	LON	i P Z i PPZ	21:32:25.1 C 21:34:08	0 = 21:24:27; 13 ½ N, 88 ½ W. El Salvador Felt. h about 60 km.
Sept. 17	LON SEA TUM	e P Z e S NE e S Z e ZN e P Z e Z e E e N e Z	22:18:44 21:14 21:23 22:49 19.1 24:48 25:03 25.8 22:26:06	0 = 22:14:40; 30 ½ N, 114 W. Gulf of California. Mag. = 5 ½.
Sept. 17	LON	i P Z	22:21:40.2	Local
Sept. 18	LON	e P'Z ePKSZ	12:20:24 12:23:45	0 = 12:01:11; 57 ½ S, 24 W. Sandwich Islands.



Date	Sta.	Phase	Time G.M.T.	Remarks
Sept. 18	LON	e P Z	23:18:48	Local (MR)
Sept. 19	LON	e P Z e Z	21:55:31 21:57:48	0 = 21:53:38; 45 N, 111 $\frac{1}{2}$ W. Hebgen Lake Aftershock.
Sept. 20	LON	i P Z e Z	06:34:13.5 06:34:14.8	
Sept. 21	LON	i P Z e Z	15:25:52.2 C 28:39	
Sept. 21	LON	i P Z i S E	15:37:00.3 C 15:38:07.7	Local
Sept. 21	SEA	e N e E	16:28.7 16:30.6	
Sept. 21	LON	e P Z	23:56:35	Local (MR)
Sept. 22	SEA	e P Z	00:07:39	
Sept. 22	LON	i P Z e Z	02:24:17.7 C 02:24:28	
Sept. 22	LON	e P Z	21:15:48	
Sept. 23	LON	i P Z	21:56:27.7 R	Local
Sept. 23	LON	e P Z	22:34:30	0 = 22:23:11; 35 $\frac{1}{2}$ N, 138 $\frac{1}{2}$ E. Honshu, Japan. Felt.
Sept. 24	LON	i P Z	00:06:11.7	Local
Sept. 24	LON	e P Z	05:52:11	
Sept. 24	LON	i P Z e Z	13:46:08.5 13:47:15	
Sept. 24	LON SEA	e P Z e Z	18:27:38 18:30:39	0 = 18:25:47; 45 N, 111 W. Hebgen Lake Aftershock.
Sept. 24	LON	i P Z	18:42:58.8	Do.
Sept. 25	LON	e P Z	02:49:54	0 = 02:36:48; 22 N, 122 E. Near East Coast of Formosa.
Sept. 25	LON	e P Z	09:00:18	Local (MR)
Sept. 26	LON	i P Z	04:50:14 rC	0 = 04:48:53; 44 N, 128 W. Off Coast of Oregon

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Sept. 26	LON	i P Z	08:22:13.5	0 = 08:20:51; 43 ½ N, 128 ½ W. Off Coast of Oregon
		i Z	22:15.0	
		e NE	22:26	
	SEA	e E	23.8	
		i P Z	22:17.1	
	TUM	i Z	22:27.1	
		e P Z	22:04.1 C	
		e SNE	23:03	
		e ZNE	23.6	
		e Z	24:22	
	e ZN	08:26.2		
Sept. 26	LON	i P Z	20:09:32.2 C	
Sept. 27	LON	e P Z	02:36:44	Local (MR)
Sept. 27	LON	i P Z	04:23:59.0 R	
Sept. 27	LON	e P Z	05:27:32	
		e Z	05:28:35	
Sept. 27	LON	e P Z	10:15:51	
Sept. 27	LON	i P Z	19:25:03	
Sept. 27	LON	i P Z	21:12:40	
		e Z	21:13:44	
Sept. 28	LON	i P Z	01:51:55 R	0 = 01:50:27; 42 N, 127 W. Off Coast of Oregon
		e Z	01:53:04	
Sept. 28	LON	i P Z	07:25:00	
Sept. 28	LON	i P Z	08:07:29.5	
		e N	07:40	
	SEA	e Z	07:43	
		e E	09:45	
	e E	10:07		
	e N	08:10:14		
Sept. 28	LON	i P Z	22:02:53.3 R	Local
Sept. 29	SEA	e P Z	15:45:04	0 = 15:31:57; 29 S, 176 ½ W. Kermadec Islands Mag. = 6 ½ - 6 ¾.
		e S E	55:38	
		e S N	15:55:44	
Sept. 30	LON	i P Z	01:37:55.6 R	0 = 01:36:00; 45 N, 111 W. Hebgen Lake Aftershock.
		e N	01:40:09	
	SEA	e Z	01:38.3	
Sept. 30	LON	i P Z	01:53:37.5 rC	
		e NE	01:54:20	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Sept. 30	LON	e P Z	20:38:01	
Sept. 30	LON	e P Z	20:39:04	O = 20:25:58; 18 S, 168 E. New Hebrides Islands. Felt. Mag. = 6 ½.
Sept. 30	LON	i P Z e Z	23:56:13.9 R 23:56:20	
Oct. 1	LON	i P Z	03:52:29.2 R	
Oct. 1	LON	e P Z e Z	04:38:39 04:39:51	O = 04:35:30; 34 N, 121 W. Off Coast of S. Calif. Damage at Santa Barbara. Mag. = 4.8.
Oct. 1	LON	i P Z e Z	06:46:56.6 C 06:48:02	
Oct. 2	LON	e P Z	05:09:00	Local (M.R.)
Oct. 2	LON	e P Z	10:41:55	Hebgen Lake Aftershock.
Oct. 2	LON	i P Z	18:02:32.9 R	
Oct. 2	LON	i P Z	23:47:35.2 R	
Oct. 3	LON	i P Z	23:11:46.4 R	
Oct. 5	LON	i P Z e Z	11:35:02.0 R 37:00	O = 11:33:14; 45 N, 111 ½ W. Hebgen Lake Aftershock.
	SEA	e Z	36.1	
		e Z	11:37:39	
Oct. 5	LON	i P Z e Z e PPZ	18:36:21.5 37.0 18:38:14	O = 18:27:47; 83 ½ N, 112 ½ E. North Polar Region Mag. = 5 ¾ - 6 (Berk).
Oct. 6	LON	e P Z e Z	01:29:12 31:14	Hebgen Lake Aftershock
	SEA	e Z	01:31:38	
Oct. 6	LON	i P Z e NE	01:43:04.9 R 01:45:15	
Oct. 6	LON	i P Z i Z	08:25:34.7 25:46.0	
	SEA	e Z	25:29	
	TUM	i P Z	08:25:27.2 C	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Oct. 6	LON	i P Z	11:39:09.8 cR	0 = 11:37:21; 45 N, 111 ½ W. Hebgen Lake Aftershock.
		i Z	39:10.5	
		e NE	41:16	
	SEA	e P Z	39:19	
		e E	41:35	
		e Z	41:47	
	TUM	e P Z	39.4	
		e NE	41:38	
		e Z	11:41:43	
Oct. 6	LON	i P Z	12:31:54.6 R	Hebgen Lake Aftershock.
	SEA	e Z	12:34:16	
Oct. 6	LON	e P Z	12:36:51	Do.
		e Z	38:55	
	SEA	e Z	12:39.5	
Oct. 7	LON	i P Z	08:43:24.9 R	0 = 08:30:39; 41 N, 20 E. Albania
	SEA	i P Z	08:43:24	
	TUM	i P Z	08:43:26.3	
Oct. 8	LON	e P Z	02:41:50	0 = 02:35:20; 52 ½ N, 171 W. Fox Islands, Aleutian Islands.
Oct. 9	LON	e P Z	21:56:31	
		e Z	56:44	
		i Z	56:46.4	
		e N	21:57:53	
Oct. 10	LON	e P Z	13:32:00	Hebgen Lake Aftershock.
		e N	34:05	
	SEA	e Z	34.2	
		e N	13:34:29	
Oct. 13	LON	e P Z	07:31:13	
		e Z	07:31:58	
Oct. 13	LON	e P Z	23:13:35	
Oct. 14	LON	e P Z	08:08:00	0 = 08:01:04; 51 ½ N, 176 W. Andreanof Islands, Aleutian Islands.
		e Z	08:08:19	
Oct. 14	LON	e Z	14:36.4	
		e Z	36:36	
		e Z	14:37:50	
Oct. 14	LON	i P Z	21:35:57.6 C	0 = 21:35:39; 47.8 N, 122. 0 W. Local Felt over 2800 sq. mi. Strongest at Monroe, Wash. M.M. = V.
		SEA	i P Z	
		i S N	35:51	
		i S E	35:52	
	TUM	e P Z	35:57	
		eSZNE	21:36:10	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Oct. 15	LON	i P Z e Z	10:14:27.3C 10:15:31	
Oct. 15	LON	e P Z e Z i Z	19:41:52 41:56 19:42:00.0	
Oct. 16	LON	e P Z	10:09:45	Local (M.R.)
Oct. 17	LON	e P Z	02:33:31	
Oct. 17	LON	i P Z	18:54:48.5R	
Oct. 17	SEA	e Z	20:05.7	
Oct. 17	LON	e P Z e Z	20:31:29 20:36.0	O = 20:27:35; 60 N, 138 ½ W. Yukon - British Columbia Border
Oct. 19	LON SEA	e P Z e P Z	08:40:21 08:40:2.	O = 08:27:21; 27 ½ S, Kemadec Islands. Mag. = 6 ¼.
Oct. 19	LON	e P Z e Z	16:14:37 16:14:41	O = 15:55:30; 54 ½ S, 29 W. Sandwich Islands Region
Oct. 19	LON	e P Z	22:41:02	
Oct. 22	LON	i P Z i S	03:37:44.3 C 03:38:00	Local
Oct. 22	LON	i P Z i Z	16:35:26.5 C 16:35:28.6	
Oct. 22	LON	i P Z e Z	20:24:23.1 20:24:50	
Oct. 23	LON	i P Z	20:42:24.3 R	
Oct. 24	LON SEA	i P Z e E e Z	13:45:17.3 C 48:24 13:45.6	O = 13:43:39; 50 ½ N, 130 W. Vancouver Island Region
Oct. 24	LON SEA	i P Z e P Z	23:53:43.9 R 23:53:38	O = 23:40:34; 41 ½ N, 70 E Kazakh S.S.R.
Oct. 25	LON	e P Z e Z	09:21:50 09:21:53	
Oct. 26	LON	e P Z	01:37:32	

Date	Sta.	Phase	Time		Remarks
				G.M.T.	
1959					
Oct. 26	LON	e P Z	07:46:05		O = 07:35:12; 37 ½ N, 142 ½ E. Near East Coast of Honshu, Japan h about km. Mag. = 6 ½.
	SEA	e P Z	07:46:02		
Oct. 27	LON	e P Z	06:13:41		O = 06:12:17; 52 ½ N, 127 W. Off Coast of Oregon. Mag. = $5-5\frac{1}{2}$ (Ber <sub>8</sub> )
		e S NE	14:42		
		e E	16:32		
	SEA	e P Z	13:52		
		e E	15:05		
	TUM	e P Z	13:37		
		e S N	14:33		
		e N	14:46		
		e Z	14:52		
		e Z	16:14:57		
Oct. 27	LON	e P Z	06:41:53		
		e Z	06:42:56		
Oct. 27	LON	i P Z	07:02:31.5 R		O = 06:52:50; 45 ½ N, 151 E. Kurile Islands h about 100 km. Mag. = 6 ½
	TUM	e P Z	07:03:36		
Oct. 27	LON	e P Z	07:37:06		
Oct. 27	LON	i P Z	23:57:30.9 R		
Oct. 28	LON	e P Z	01:34:10		
Oct. 29	SEA	i P Z	14:32:57		O = 14:19:51; 29 ½ S, 176 ½ W. Kermadec Islands. Felt on Raoul. h about 60 km. Mag. = 5 ¾ (Ber <sub>8</sub> ).
	TUM	e P Z	14:32:53		
Oct. 29	LON	i P Z	14:40:44.1 R		O = 14:30:24; 43 N, 131 E. China - Korea Border h about 550 km. Mag. = 6 ½
	SEA	i P Z	40:41 C		
	TUM	i P Z	14:40:40.3 R		
Oct. 29	LON	e P Z	14:47:56		
Oct. 29	LON	e P Z	17:55:18		
		e Z	17:56:21		
Oct. 30	LON	i P Z	12:09:43.9		
Oct. 30	LON	e P Z	14:03:38		
		e Z	14:03:50		

Date	Sta.	Phase	Time G.M.T.	Remarks
1959 Oct. 31	LON	e P Z i P Z	04:38:41 38:42.1	O = 04:27:12; 16 ½ S, 178 W. Fiji Islands. Felt at Apia h about 450 km. Mag. = 6 ½ - 6 3/4
	TUM	e P Z i P Z	38:40 04:38:40.5	
Oct. 31	LON	e P Z	18:41:05	O = 18:31:18; 2 N, 77 ½ W. Southern Columbia. h about 100 km.
Oct. 31	LON	i P Z	19:24:15.1 C	
Oct. 31	LON	e P Z	19:43:39	
Nov. 1	LON	i P Z	23:05:20.4 R	O = 23:03:25; 45N, 111 W. Hebgen Lake
		e Z NE	07:34	
	SEA	e Z	23:07:7	
Nov. 2	LON	e P Z	08:55:51	O = 08:44:01; 22 ½ N, 144 ½ E. Mariana Island Region h about 100 km.
Nov. 3	LON	i P Z	07:26:38.1	
Nov. 3	LON	i P Z	09:59:05.8 C	O = 09:40:05; 10 ½ S, 111 E. South of Java
	SEA	i P Z	09:59:06.8	
Nov. 4	LON	e P Z e Z	16:34:57 16:36:03	
Nov. 4	LON	e P Z e Z	19:01:51 19:02:54	
Nov. 5	LON	e P Z	07:48:01	
Nov. 5	LON	e P Z	12:02:59	O = 11:50:17; 13 S, 166 ½ E. New Hebrides Islands Region h about 100 km.
Nov. 5	LON	e P Z	20:20:06.4	
Nov. 6	LON	i P Z	11:55:57.7 C	O = 11:43:06; 24 S, 174 ½ W. Tonga Islands Region
	SEA	i P Z	55:51.3 R	
	TUM	i P Z	11:55:45.9 C	
Nov. 7	TUM	e P Z	02:44:37	O = 02:32:07; 36 ½ N, 2 ½ E. Near Coast of Algeria
Nov. 7	LON	e P Z	22:28:57	O = 22:16:14; 23 ½ S, 176 W. Tonga Islands Region. Mag. = 6 ½
	TUM	e P Z	22:28:52	
Nov. 8	LON	i P Z	14:05:34.5 R	O = 13:54:55; 44 N, 140 ½ E. Near West Coast of Hokkaido, Japan Felt. Mag. = 6 ½.
	SEA	i P Z	05:30.7	
		e Z	06:36	
	TUM	i P Z	14:05:29.8	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Nov. 8	LON	e P Z	21:14:06	
Nov. 9	LON	e P Z	00:12:04	O = 00:05:36; 18 ½ N, 103 W. Mexico
Nov. 9	LON	e P Z	03:17:02	
Nov. 9	LON	e P Z	20:20:01	
Nov. 9	LON	e P Z	03:06:02	
Nov. 11	LON	e P Z	02:03:09	
		e Z	02:03:32	
Nov. 11	LON	i P Z	02:33:01.3 R	
		i Z	02:33:02.9	
Nov. 11	LON	e P Z	23:39:03	
Nov. 12	LON	e P Z	17:51:13	
Nov. 14	LON	i P Z	11:39:46.6 C	
		i Z	11:39:52.6	
Nov. 14	LON	e P Z	18:00:17	
		e Z	18:01:09	
Nov. 15	LON	e P Z	10:38:28	O = 10:25:07; 38 ½ N, 75 E. Tadzhik S. S. R. - China Border
Nov. 15	LON	e P Z	17:21:42	O = 17:08:41; 37 ½ N, 20 ½ E.
		e NS	22:05	Near West Coast of Greece. Felt
	SEA	e Z	22.2	in Greece and Italy. Several
		e S NE	32:14	Injured at Agrinion, Greece.
	TUM	e P Z	17:21.7	Slight Damage. Mag. = 6 ½ - 6 3/4
Nov. 16	SEA	e P Z	10:34:45	O = 10:21:17; 1 N, 26 ½ W.
	TUM	e P Z	10:34:38	Mid-Atlantic Ocean. Mag. - 6 ½ - 6 ½
Nov. 17	LON	e P Z	12:23:37	
		i Z	12:25:43.3	
Nov. 18	LON	i P Z	00:10:51.4 C	
		e Z	00:11:16	
Nov. 18	LON	i P Z	10:47:38.8 R	



Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Nov. 18	LON	e P Z	23:49:02	O = 23:48:51 Anacortes, Wash. M.M. = III
		i P Z	49:02.4	
		i S Z	49:23.7	
		e Z	49:59	
	SEA	e P Z	23:48.9	
Nov. 19	LON	e P Z	04:38:21	O = 04:38:08 Anacortes, Wash.
		i P Z	38:21.2	
		i S Z	38:42.1	
	SEA	e Z	04:38.1	
Nov. 19	LON	e P Z	08:06:50	
		e Z	08:07:48	
Nov. 19	LON	i P Z	11:22:00.3 C	O = 11:08:41; 5 ½ S, 146 E. Near North Coast of New Guinea. Slight Damage at Lae and Madang. h about 100 km. Mag. = 7.
		e PPZ	25:46	
	SEA	e P Z	:22.0	
		eSKSZ	32.2	
		eSKSE	11:32:7 .	
Nov. 19	LON	e P Z	12:34:46	
Nov. 19	LON	i P Z	23:55:11.8 C	O - 23:53:49; 42 ½ N, 126 W. Off Coast of Oregon
		i S NE	56:12:8	
		e N	57:59	
	SEA	e P Z	55:20	
		e S Z	56:35	
	TUM	<del>i P Z</del>	55:08.6	
		e S E	56:08	
		e S Z	23:56:11	
Nov. 20	LON	e P Z	00:54:53	
		e Z	00:55:53	
Nov. 20	LON	e P Z	05:02:31	
		e Z	05:03:30	
Nov. 20	LON	e P Z	09:18:07	
		e Z	09:19:11	
Nov. 20	LON	i P Z	12:11:25.4 C	
		e Z	12:12;26	
Nov. 21	LON	i P Z	16:39:39.6 C	
Nov. 22	LON	e P Z	09:47:04	
		e Z	09:47:40	

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Nov. 22	LON	i P Z	12:42:38.6 C	
Nov. 23	LON	e P Z	05:40:21	
Nov. 24	TUM	i P Z	04:16:39.7	
Nov. 24	LON SEA	i P Z e P NE e NE	06:15:27.4 C 15.0 06:15:03	O = 18:15:25; 46.7 N, 121.7 W. Near Longmire, Wash. M.M. = V
Nov. 26	LON	e P Z	07:25:20	O = 07:06:19; 5 1/2 S, 102 1/2 E. Near Coast of Sumatra. Mag. 6 1/2
Nov. 26	LON	e P Z	23:28:25	
Nov. 28	SEA	e E	11:18.0	
Nov. 28	LON SEA	i P Z e P Z	12:47:45.8 R 12:47:51	O = 12:34:53, 28 1/2 S, 71 W. Chile, Mag. = 6 1/2
Nov. 30	LON	e P Z	12:25:44	
Nov. 30	LON SEA TUM	i P Z i P Z e P Z	15:23:30.9 C 23:23 C 15:23:34	O = 15:18:37; 59 1/2 N, 152 W. Kenai Peninsula, Alaska
Dec. 2	LON	e P Z	07:13:48	O = 07:02:52; 95, 80 W. Off Coast of Peru
Dec. 2	LON	e PPZ	09:52:31	O = 08:34:00; 15, 123 E. Celebes, Mag. = 6 1/2 - 6 3/4
Dec. 2	LON	i P Z	23:03:32.5 C	O = 22:52:45; 52 N, 174 E. Near Islands, Aleutian Islands
Dec. 3	LON	i P Z	18:27:42 R	
Dec. 4	LON	e P Z	09:35:40	O = 09:24:04; 21 S, 178 1/2 W. Fiji Islands. h about 650 km.
Dec. 4	LON SEA	e P Z e Z e Z	20:58:05 21:00.15 21:00:48	Hebgen Lake After Shock
Dec. 5	LON SEA TUM	i P Z i Z e P Z e E e P Z	08:15:25.4 C 15:26.8 15:42 18.3 08:15:28	O = 08:13:36; 40 1/2 N, 126 W. Off Coast of Northern California Felt in Humboldt County Mag. = 5 (Berk).
Dec. 6	LON	e P Z	06:31:25	Local (M.R.)

Date	Sta.	Phase	Time G.M.T.	Remarks
1959				
Dec. 7	LON	e P Z	04:15:01	O = 04:10:45; Northern Gulf of California
Dec. 8	LON	i P Z	04:32:22.9 R	Local
		i S Z	04:32:37.1	
	SEA	e P Z	04:32:28	
Dec. 8	LON	e P Z	13:47:06	O = 13:33:59; 42 N, 44 ½ E. Georgia S.S.R.
Dec. 8	LON	i P Z	19:03:02.6 r C	
Dec. 8	LON	e P Z	20:45:15	
Dec. 9	LON	i P Z	14:16:00.5 R	O = 14:04:28; 17 S, 177 ½ W. Fiji Islands. h about 450 km.
Dec. 9	LON	e P Z	20:39:27	
		e Z	39:51	
	SEA	i NE	20:40:09	
Dec. 10	LON	e P Z	14:04:54	O = 14:03:01; 44 ½ N, 111 W. Hebgen Lake
Dec. 10	LON	e P Z	19:15:15	
Dec. 12	LON	i P Z	01:01:40.1 C	
		i NE	01:01:42.4	
Dec. 12	LON	i P Z	06:24:52.8 R	O = 06:24:20; 48½ N, 123 ½ W. (USC/GS)
		e E	25:20	O = 06:24:17; 48.7 N, 123.3 W (SEA)
		e N	25:24	
	SEA	i P Z	24:38.8	Puget Sound, Washington Felt over 8,000 Sq. Mi. M.M. = VI
		i E	24:52.8	
		i N	24:54.8	
	TUM	i P Z	24:45.8	
		e N E	25:08	
		e N	06:25:13	
Dec. 12	LON	e P Z	06:51:04	
		e Z	06:51:30	
Dec. 12	SEA	e P Z	17:43:53	
Dec. 13	LON	e P Z	07:07:20	
		e Z	09:28	
		e Z	07:09:39	

Date	Sta.	Phase	Time G.M.T.	Remarks	
1959					
Dec. 13	LON	e P Z	17:48:19	O = 17:36:07; 18 S, 173 ½ W. Tonga Islands	
Dec. 14	LON	e PPZ	18:16:15	O = 17:58:33; 5 ½ N, 125 ½ E. Near Coast of Mindanao, Philippine Islands. h about 200 km.	
Dec. 14	LON	e P Z	22:07:06	O = 22:00:50; 52 ½ N, 168 W. Fox Islands, Aleutian Islands Mag. = 6.	
Dec. 14	LON	e P Z	22:46:41		
		e Z	22:46:47		
Dec. 14	LON	e P Z	23:41:11	O = 23:21:56; 59 ½ S, 31 W. Sandwich Islands, Mag. = 7.	
		e PPZ	44:32		
		SEA	e P Z		41:15
			e PPZ		44:51
		TUM	e P Z		41.13
			e Z		43:44
		e PPZ	23:44:39		
Dec. 15	LON	e P Z	09:17:36		
Dec. 15	LON	e P Z	09:40:22		
		e Z	09:42:34		
Dec. 15	LON	e P Z	11:33.6		
Dec. 15	LON	i P Z	17:12:50.6	O = 17:05:30, 50 ½ N, 179 E. Rat Islands, Aleutian Islands.	
Dec. 17	LON	e P Z	02:44:12	⊖ = 02:31:02; 21 ½ N, 121 E. Off South Coast of Formosa	
Dec. 17	LON	e P Z	06:42:51		
Dec. 17	LON	e P Z	17:01:30	O = 16:48:55; 36 ½ S, 101 ½ W. South Pacific Ocean. Mag. = 6.	
Dec. 18	LON	e P Z	09:13:53		
		e Z	09:16.3		
Dec. 18	LON	e P Z	10:08:31	O = 09:57:07; 18 S, 178 ½ W. Fiji Islands. h about 600 km.	
Dec. 18	LON	e P Z	16:31:05	O = 16:24:50; 53 N, 168 ½ W. Fox Islands, Aleutian Islands	
		e N	34:30		
		SEA	e P Z		16:31:03

Date 1959	Sta.	Phase	Time G.M.T.	Remarks
Dec. 19	LON	i P Z	13:55:06.6	O = 13:46:14; 19 N, 71 ½ W. Haiti - Cominican Republic Border
Dec. 19	LON	e P Z	15:11:44	O = 15:07:00; 27 ½ N, 112 ½ W. Near East Coast of Baja, California
		e NE	18.5	
	SEA	e P Z	12:00	
		e E	19.4	
	TUM	e P E	11.8	
		e E	15.18.5	
Dec. 21	SEA	e Z	02:27.7	O = 02:23:58; 45 N, 111 ½ W. Hebgen Lake, Montana
Dec. 21	TUM	e N	02:40.8 :	
Dec. 21	SEA	e P Z	10:33.6	O = 10:20:33; 27 ½ S, 176 W. Kermadec Islands Region. Mag. = 6.
Dec. 21	SEA	i P Z	11:27:17.8	O = 11:14:17; 27 ½ S, 176 W. Kermadec Islands Region. Mag. = 6½
Dec. 21	SEA	e PPZ	11:39.4	O = 11:19:14; 14 N, 52 E. Gulf of Aden. Mag. = 6 ½ - 6 ¾
Dec. 22	LON	e P Z	02:40:32	O = 02:39:02; 50 ½ N, 124 W. California Felt in Humboldt County. Mag. = 4 ½ (Berk).
	SEA	e Z	02:41.2	
Dec. 22	LON	e P Z	17:31:19	O = 17:20:19; 37 ½ N, 141 ½ E. Off East Coast of Honshu, Japan. Felt at Tokyo. Depth Slightly Greater than Normal.
Dec. 23	LON	i P Z	03:54:19.2 C	O = 03:49:00; 56 ½ N, 158 W. Alaska Peninsula
Dec. 23	LON	e P Z	09:41.7	O = 09:28:56; 38 N, 14 ½ E. Near North Coast of Sicily, Minor Damage at Catania and Palermo
Dec. 23	LON	e P Z	14:12:00	
Dec. 24	LON	i P Z	08:16:18:8 R	O = 08:09:32; 18 ½ N, 95 W. Vera Cruz, Mexico. h about 200 km.
Dec. 24	LON	e P Z	09:27.4	O = 09:14:24; 27 ½ S, 176½ W. Kermadec Islands Region.
Dec. 25	LON	i P Z	01:26:14.6 R	
		e Z	28:10	
	SEA	e Z	01:28.1	

Date	Sta.	Phase	Time		Remarks
				G.M.T.	
1959					
Dec. 25	SEA	i P Z	10:31:27.8		O = 10:18:47; 25 ½ S, 68 ½ W. Chile - Argentina Border Region. h about 100 km. Mag. = 6 ½ - 6 ¾
Dec. 25	LON	i P Z	16:31:22.8	C	
Dec. 26	LON	i P Z	11:00:59.7		
Dec. 26	LON	i P Z	12:31:06		O = 12:11:09; 52 S, 101 ½ E. South Indian Ocean
Dec. 26	LON	e P Z	18:24:01		O = 18:19:10; 59 ½ N, 151 ½ W. Kenai Peninsula, Alaska Mag. = 6 ½
	SEA	i p Z	23:55	C	
	TUM	e P Z	18:23:55		
Dec. 26	LON	e P Z	22:11:22		O = 22:02:35; 53 N, 160 E. Near Southeast Coast of Kamchatka.
Dec. 27	LON	e P Z	04:56.7		O = 04:47:45; 52 ½ N, 160 ½ E. DO.
Dec. 27	LON	e P Z	05:11.0		O = 05:01:55; 52 ½ N, 160 E. DO.
Dec. 27	LON	e Z	08:14.6		O = 08:05:30; 52 ½ N, 160 E. DO.
Dec. 27	LON	e P Z	11:57:52		O = 11:48:55; 52 ½ N, 160 E. DO.
Dec. 27	LON	e Z	12:03:41		O = 11:54:48; 52 ½ N, 160 E. DO.
Dec. 27	LON	i P Z	12:36:15.8	C	
Dec. 27	LON	i P Z	14:33:50.2		
Dec. 27	LON	e P Z	16:01:19		O = 15:52:55; 56 N, 162 ½ E. Near East Coast of Kamchatka. Mag. = 6 ¾ - 7.
		e NE	16:08.1		
	SEA	e P Z	16:01:18		
	TUM	e P Z	16:01.2		
Dec. 27	LON	e P Z	19:53.0		
Dec. 28	LON	e P Z	07:29:21		O = 07:20:32; 52 ½ N, 160 E. Near Southeast Coast of Kamchatka. Mag. = 6 ½
	SEA	e P Z	07:29.3		
Dec. 28	LON	e P Z	10:15:34		O = 10:03:08; 22 ½ S, 67 ½ W. Chile - Bolivia Border Felt at Antofagasta. h about 100 km.

Date	Sta.	Phase	Time		Remarks
				G.M.T.	
1959					
Dec. 28	LON	e P Z	13:13.4		O = 13:04:30; 52 $\frac{1}{2}$ N, 160 E. Near Southeast Coast of Kamchatka. Mag. = 6.
Dec. 29	LON	e P Z	12:08:57		O = 12:07:12; 51 N, 130 W. Queen Charlotte Islands Region.
		i P Z	08:58.1		
	SEA	e Z	12:09.3		
Dec. 29	LON	i P Z	12:48:59.4	C	
Dec. 29	LON	e P Z	17:27:09		O = 17:14:40; 21 $\frac{1}{2}$ S, 174 W. Tonga Islands.
	SEA	e Z	27.2		
	TUM		17:27:05		
Dec. 29	LON	i P Z	20:46:40.7	C	O = 20:35:08; 18 N, 145 E. Mariana Islands. h about 350 km. Mag. = 6 - 6 $\frac{1}{2}$
	SEA	i P Z	46:39		
	TUM	i P Z	20:46:35.2		
Dec. 30	LON	e P Z	19:13:26		
Dec. 30	LON	e P Z	21:43:43		