

LAMONT GEOLOGICAL OBSERVATORY
COLUMBIA UNIVERSITY

PALISADES, NEW YORK



SEISMOLOGICAL BULLETIN

By

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1 January 1960 - 30 April 1960

L.G.O. Contribution No. 435



STATIONS, INSTRUMENTS AND ABBREVIATIONS

Latitude: 41° 00' 25" North
 Longitude: 73° 54' 31" West
 Elevation: 102.59 meters
 Bedrock: Palisades diabase Triassic Age

INSTRUMENTS

Three component Columbia University seismographs.
 T₀ = 12 sec., T_g = 15 sec.

Three component Benioff seismographs. Short period, T₀ = 1 sec.,
 T_g = 0.2 sec. Long Period, T₀ = 1 sec., T_g = 75 sec.

One Columbia University vertical seismograph. T₀ = .33 sec.,
 T_g = 0.2 sec.

Three component Columbia University visual recording seismographs,
 T₀ = 12 sec.

One Columbia University vertical seismograph for visual recording
 T₀ = 12 sec.

Three component Columbia University long period seismographs.
 T₀ = 15 sec., T_g = 75 sec.

Three component Columbia University long period seismographs.
 T₀ = 30 sec., T_g = 100 sec.

Two Columbia University Microbarographs. T₀ = 10 sec., T_g = 75 sec.

ABBREVIATIONS

i = sudden beginning of the motion (impetus)

e = gradual beginning of the motion (emersio)

L_g = short period continental surface shear wave

R_g = Continental Rayleigh wave

Comp. = compression

All times are G.C.T.

Dil. = dilatation

Time - I.B.M. Invar pendulum clock corrected by Naval Observatory
 time signals every six hours.

Palisades, New York

1.

Date	Phase	h	m	s	Remarks
1960					
Jan. 1	eLR	00	31	07	
	1	eLR	02	13	37
	1	iP	04	23	53
		eLR	04	53	07
					Kurile Isls USCGS 0 = 04 11 40 49°N 152½°E Dist. 81°
	1	eLR	06	52	07
					Marianas
	1	eP	23	23	57
		eS	23	33	15
		eSS	23	38	27
		eLQ	23	42	07
		eLR(NE)	23	47	37
					Kamchatka USCGS 0 = 23 12 31 56°N 162½°E Dist. 72.1°
	2	eLQ	02	27	07
		eLR	02	30	37
					Kamchatka
	2	eLQ	03	39	27
		eLR	03	45	07
					Bolivia
	2	ePP	05	29	15
		ePPS	05	41	17
		e(SS)	05	48	37
		e	05	52	37
		e	06	08	37
		eLR(N)	06	12	37
					off coast Sumatra USCGS 0 = 05 06 54 2½°N 96°E Dist. 135.7°
	2	eP	07	11	02
		eLQ	07	30	07
		eLR	07	36	07
					Kamchatka USCGS 0 = 06 59 36 56½°N 163½°E Dist. 71.5°
	2	e	09	01	17
		eLR	09	18	37
					Sandwich Isls.
	2	eLQ	11	52	07
		eLR	11	58	07
					S. Atlantic W. of Bouvet Isl. USCGS 0 = 12 21 51 Dist. 115°
	2	ePP	12	41	27
		eSKS	12	47	57
		ePS	12	51	07
		ePPS	12	52	17
		eSS	12	58	07
		e(SKKKS)	13	01	47
		eLQ	13	08	07
		eLR(SSE)	13	14	07

		Palisades, New York			
		h	m	s	Remarks
1960					
Jan. 2	eLR	14	15	07	
2	eLR	17	22	07	
2	eLQ	22	16	07	New Britain
	eLR(NW)	22	21	07	
2	eLR	23	18	07	
3	eP	11	47	27	S. Central Alaska USCGS 0 = 11 38 30 61°N 152°W Dist. 49.7
	e	11	56	07	
	eLQ	12	02	37	
	eLR(NW)	12	08	37	
3	eLR(NE)	12	12	07	
3	eLR	20	46	07	
3	eLR	21	44	07	
3	eLR	22	01	07	Kurile Isls.
4	eLQ	01	56	07	
	eLR	02	02	07	
4	e	06	44	47	
	e	06	52	31	
	eLQ	06	58	07	
	eLR(ENE)	07	04	07	
4	e	12	17	17	
	e	12	23	37	
	eLR	12	43	07	
4	eLR	13	25	07	Romania
4	eLR	15	20	07	N. Peru
5	eLR	03	05	07	
5	eLR	03	32	07	
5	eLR	05	44	07	N. Chile
5	eLR	07	23	07	
5	ePS	10	00	25	Samoa Isls USCGS 0 = 09 32 07 15°S 173°W Dist. 106.5°
	eSS	10	06	19	
	eLR	10	22	07	

		Palisades, New York			3.
Date	Phase	h	m	s	Remarks
1960					
Jan. 6	eLQ	08	30	06	Santa Cruz Isls.
	eLR(NW)	08	33	06	
6	eLR(NW)	14	06	06	Santa Cruz Isls.
6	eLR	16	54	06	
6	eLR(W)	20	50	06	Banda Sea
6	eLR	22	47	06	
7	eSS	08	54	36	Nicobar Isls. USCGS 0 = 08 15 21 6½°N 94°E Dist. 131.4°
	eLQ	09	09	36	
	eLR(NNE)	09	17	06	
7	eLR	11	45	26	
7	eP	13	42	26	S. Sandwich Isls. USCGS 0 = 13 28 16 Dist. 105° Mag. 6½
	ePP	13	46	50	
	eSKS	13	52	56	
	eS	13	54	18	
	ePS	13	55	42	
	ePPS	13	56	34	
	eSS	14	01	26	
	e	14	11	22	
	eLQ	14	13	50	
	e	14	16	36	
	eLR(SSE)	14	20	06	
7	eLR(SW)	15	14	06	
7	e	17	58	06	
	eLQ	18	11	06	
	eLR(NW)	18	16	06	
7	eLR	19	12	36	
7	eSS	23	56	34	Nicobar Isls. USCGS 0 = 23 17 18 6½°N 94½°E Dist. 131.0°
8	e(PKPSKS)	00	01	56	
	e	00	10	50	
	eLQ	00	13	50	
	eLR(NE)	00	21	06	
8	eLR	03	26	06	S. Sandwich Isls.
8	eLR	04	42	06	

Palisades, New York

1960		h	m	s	Remarks
Jan. 8	eLQ	08	31	06	
	eLR(w)	08	37	06	
8	eLQ	10	27	06	
	eLR	10	29	06	
8	ePS	11	56	48	S. Sandwich Isls.
	eSS	12	02	34	USCGS 0 = 11 29 18
	eLQ	12	12	36	55°S 27½°W
	eLR(SSE)	12	17	26	Dist. 103.4°
8	eSS	15	19	06	S. Sandwich Isls
	ePKKS	15	19	46	USCGS 0 = 14 45 53
	eLQ	15	31	36	55½°S 27½°W
	eLR(SSE)	15	34	06	Dist. 104.3°
8	eLQ	22	20	15	
	eLR(SSE)	22	25	45	
8	eLR	23	58	15	
9	eLR	02	16	45	
9	eLQ	04	32	15	S.W. Turkey
	eLR	04	38	35	
9	eSKS	07	47	15	Hindu Kush
	eSKKS	08	01	45	USCGS 0 = 07 23 50
	e(LQ)	08	03	55	36°N 69°E
	eLR	08	06	15	Dist. 96.1°
9	eLR	08	54	45	Celebes
9	e	10	15	15	
	eLR	10	38	15	
9	e	12	13	45	
	eLR	12	19	55	
9	ePPS	18	07	25	Unimak, Alaska
	eLQ	18	10	15	USCGS 0 = 17 49 07
	eLR(NW)	18	16	15	55½°N 165°W Dist. 58.0°
9	eLR	22	26	15	
9	eLR	23	10	15	

Palisades, New York

5.

Date	Phase	h	m	s	Remarks
1960					
Jan 10	eLR	05	34	45	
10	eLR	06	08	15	
10	eLR	07	30	15	Marianas Isls.
10	eLR	08	16	15	
10	eLR	12	52	15	
10	eLR	19	22	16	
10	e	23	49	46	
	eLQ	23	56	16	
11	eLR(NW)	00	01	46	
11	eLQ	03	15	46	Ryukyu Isls.
	eLR	03	19	56	
11	eLQ	04	10	16	S. Coast Burma
	eLR	04	18	16	
11	eLR	06	32	16	
11	eLR	09	33	16	
11	eL	12	15	16	
11	eLR	18	48	36	Kermadec
11	eLR	23	52	16	New Guinea
12	eLR	02	48	16	Formosa
12	eLR	03	36	26	
12	eLR	04	55	16	
12	eLR	07	21	46	
12	eLQ	22	43	16	
	eLR	22	51	16	
13	eLR	02	32	16	
13	e	08	05	46	New Guinea
	eLR	08	26	56	

Palisades, New York

Date	Phase	h m s	Remarks
1960			
Jan. 13	eLR	09 16 46	
13	iP (dil from S)	15 50 00	Southern Peru
	e	15 50 03	USCGS 0 = 15 40 34
	e	15 50 07	16°S 72°W
	epP	15 50 48	Dist. 56.7°
	ePP	15 51 22	Mag. 7½
	ePPP	15 53 28	
	iS	15 57 50	
	eSS	16 03 46	
	eLQ	16 06 16	
	eLR	16 09 16	
13	iP	16 40 40	Aleutians USCGS 0 = 16 29 41 51½°N 180°W Dist. 67.8°
13	i(P) i(S)	20 03 20 20 03 45	Local ?
14	eLR	03 59 46	Sumatra
14	e	08 05 06	
	eLR	08 20 16	
14	eLQ	11 03 16	
	eLR	11 12 46	
14	eLR	17 09 17	Ceram Isl.
14	eLR	19 06 17	
14	eLR	19 49 17	
14	eP	21 33 07	Atlantic Ocean
	eS	21 39 13	USCGS 0 = 21 25 15
	eLQ	21 41 57	11°N 43°W
	eLR(SE)	21 43 17	Dist. 40.4°
15	eLR	00 05 17	
15	eLR	04 05 17	
15	eLR	07 52 17	

Palisades, New York

7.

Date	Phase	h m s	Remarks
1960			
Jan. 15	iP	09 39 50	Near coast S. Peru
	epP	09 40 45	USCGS 0 = 09 30 24
	ePP	09 41 57	15°S 75°W
	ePPP	09 43 25	Dist. 55.7°
	iS	09 47 37	Mag. 7
	eScS	09 49 37	
	eSS	09 51 17	
	eSSS	09 52 33	
	eLQ	09 53 17	
	eLR(S)	09 57 17	
15	e	16 48 46	
	eLR(SW)	16 53 46	
15	eLR	21 45 16	
16	eLR	05 49 46	
16	eLR	06 07 56	
16	eLR	08 24 16	Macquarie Isls.
16	iP	20 58 01	Alaska
	ipP	20 58 08	USCGS 0 = 20 49 31
	eS	21 04 52	63°N 151°W
	eScS	21 07 46	Dist. 48.7°
	eSS	21 08 26	
	eLQ	21 10 16	
	eLR(NW)	21 12 16	
16	eLR(NW)	22 40 16	Solomon Isls.
16	eLR	23 42 16	
17	iP	03 07 22	near coast S. Peru
	ePP	03 09 46	USCGS 0 = 02 57 58
	eS	03 15 16	14½°S 74½°W
	eSS	03 18 46	Dist. 55.2°
	eSSS	03 19 36	Mag. 6¼
	eLQ	03 21 36	
	eLR(SSW)	03 24 16	
17	eLR	05 09 56	Honshu, Japan
17	eLR	06 19 16	
17	eLQ	12 37 16	
	eLR	12 40 16	

Palisades, New York

		h	m	s	Remarks
Jan. 17	eLR	13	15	16	
17	eLR	15	35	16	
17	eLQ	17	50	16	
	eLR	17	51	16	
17	eLR	18	25	16	
17	e	19	46	36	
	eLR	19	51	46	
17	eLQ	21	20	16	
	eLR	21	24	16	
18	eLR	00	48	16	
18	eLR	03	00	16	
18	eLQ	05	24	16	
	eLR	05	26	16	
18	ePP	09	26	16	S. coast Mindanao, P.I.
	ePPS	09	38	16	USCGS 0 = 09 04 43
	eSS	09	43	46	5°N 120½°E
	ePKPPKS	09	45	16	Dist. 130.5°
	eSSS	09	49	36	
	eLQ	09	59	36	
	eLR(NW)	10	06	16	
18	eP	19	36	46	off coast Panama
	eS	19	42	02	USCGS 0 = 19 30 18
	ePcS	19	43	16	9°N 77°W
	eLR(S)	19	45	36	Dist. 32.0°
19	eS	02	39	00	Kamchatka
	eLQ	02	49	36	USCGS 0 = 02 16 52
	eLR(NW)	02	53	16	52°N 158°E
					Dist. 76.9°
					Mag. 6½

Palisades, New York

9.

Date	Phase	h	m	s	Remarks
1960					
Jan. 19	eLQ	06	04	16	
	eLR	06	08	16	
19	e	09	02	08	Mexico
	eLQ	09	04	16	USCGS 0 = 08 50 24
	eLR(S)	09	07	16	17°N 98°W
					Dist. 31.7°
19	eSKKS	09	41	16	S. of Fiji Isls
	ePPS	09	44	56	USCGS 0 = 09 15 04
	eSS	09	49	44	23°S 180°E
	e	09	53	06	Dist. 116.6°
	e(L)	10	03	36	Mag. 6
19	eLR	12	15	32	
19	eLQ	16	56	16	Volcano Isls.
	eLR	17	05	16	
19	eLR	23	34	16	
20	eLR	00	15	16	
20	eS	01	20	16	Mid-Atlantic
	eLQ	01	25	16	USCGS 0 = 01 03 25
	eLR	01	27	16	3½°N 31°W
					Dist. 53.7°
20	eLQ	03	43	16	W. U.S.A., Near coast
	eLR(W)	03	46	16	central California
					USCGS 0 = 03 25 50
					36½°N 122°W
					Dist. 37.4°
					Mag. 5
20	eLR	10	10	16	
20	eLR	17	03	05	
20	eLR	18	10	15	
20	iP	20	10	45	New Britain Reg.
	eLR	20	57	45	USCGS 0 = 19 56 14
					4½°S 153½°E
					Dist. 124.1°
20	eLR	21	31	35	

Palisades, New York			
		h m s	Results
1960			
Jan. 21	eLQ	00 25 15	
	eLR	00 30 15	
21	eLR	05 56 15	
21	eSS	11 18 03	Fiji Isls.
	eLQ	11 29 15	USCGS 0 = 10 43 33
	eLR(NW)	11 35 45	16°S 179½°E Dist. 112.7°
21	e	21 28 16	
	eLQ	21 40 36	
	eLR	21 42 16	
21	eLR	23 02 16	
22	eLR	00 29 16	
22	eLR	08 01 16	
22	eLR	08 41 16	
22	eLR	14 44 16	Molucca Passage
23	ePKP	05 00 20	Ceram Isls Reg.
	e	05 00 52	USCGS 0 = 04 40 56
	ePP	05 03 28	4°S 127½°E
	ePKS	05 04 02	Dist. 138.4°
	ePPS	05 15 34	Mag. 6½
	eSS	05 22 08	
	e	05 27 00	
	e	05 30 04	
	eLQ	05 39 18	
	eLR(NW)	05 46 08	
23	ePKP	07 50 47	Ceram Isls. Reg.
	ePP	07 53 40	USCGS 0 = 07 31 14
	ePKS	07 54 16	4°S 127½°E
	eSKKS	08 07 36	Dist. 138.4°
	eSS	08 12 20	Mag. 6¾
	eSSS	08 17 24	
	eLQ	08 29 34	
	eLR(NW)	08 36 32	
23	eLR	13 12 08	

Palisades, New York			
Date	Phase	h m s	Remarks
1960			
Jan. 23	ePKP	18 16 04	Ceram Isls. Reg.
	e	18 16 16	USCGS 0 = 17 56 30
	ePKS	18 19 50	4°S 127½°E
	ePPP	18 22 32	Dist. 138.4°
	ePPS	18 31 58	Mag. 6¾
	eSS	18 38 08	
	eSSS	18 42 48	
	eLQ	18 54 56	
	eLR(NW)	19 01 38	
	eLR ₂	19 39 18	
23	eLQ	22 50 08	New Britain
	eLR(NW)	22 58 08	
24	ePP	00 48 34	off coast Oregon
	eS	00 53 12	USCGS 0 = 00 39 33
	eLQ	00 57 38	43½°N 127½°W
	eLR(NW)	00 58 32	Dist. 39.1°
	Rg	01 13 20	Mag. 4½
24	ePP	04 41 20	Fiji Isls
	e(PKS)	04 44 44	USCGS 0 = 04 21 42
	eSKKS	04 48 48	15½°S 179°W
	ePS	04 50 38	Dist. 111.3°
	ePPS	04 51 36	Mag. 6½
	eSS	04 56 48	
	ePKPPKP	05 00 36	
	eSSS	05 06 28	
	eLQ	05 07 48	
	eLR(W)	05 13 58	
	eLQ ₂	06 02 08	
	eLR ₂ (NE)	06 19 38	
24	eLR	08 16 08	
24	eLR	13 15 08	New Guinea
24	eLR	14 05 08	
24	eLR	17 54 38	New Hebrides
24	eLR	19 30 08	Kamchatka
25	eLQ	09 16 08	Kamchatka
	eLR(NW)	09 24 08	
25	eLR	10 54 08	

Palisades, New York

		h	m	s	Remarks
1960					
Jan. 25	eSKKS	16	56	38	Fiji Isls.
	e(PS)	16	58	18	USCGS 0 = 16 29 26
	eSS	17	04	32	16°S 179°W
	e(PKPPKP)	17	07	44	Dist. 111.6
	e	17	15	32	Mag. 6¼
	eLQ	17	17	08	
	eLR(WNW)	17	22	08	
26	e(S)	03	39	24	
	e(SS)	03	44	26	
	e(SSS)	03	50	08	
	eLR(SE)	03	53	24	
26	eLR	09	53	08	
26	eLQ	10	15	38	Turkey
	eLR(NE)	10	26	08	
26	eLR(NE)	13	50	08	Turkey
26	e	18	31	28	Nicaragua
	e	18	33	00	USCGS 0 = 18 19 55
	eLR(SW)	18	34	08	15°N 87½°W Dist. 30.3°
26	eLQ	23	18	08	Kermadec
	eLR(SW)	23	20	08	
27	eLQ	00	30	08	
	eLR(NW)	00	33	48	
27	eLQ	02	10	08	
	eLR	02	14	08	
27	eL	13	20	08	
27	eLR	20	24	14	
28	eLQ	00	08	44	
	eLR	00	10	14	
28	eLQ	02	39	14	
	eLR	02	42	14	
28	eLR	15	26	08	
28	eLR	22	50	08	
29	eLR	00	54	08	

Palisades, New York

13.

Date	Phase	h	m	s	Remarks
1960					
Jan. 29	eLR	02	11	08	
29	e	08	16	12	
	e	08	22	52	
	eLQ	08	33	08	
	eLR	08	40	08	
29	eLQ ₂	09	26	08	
	eLR ₂	09	38	08	
29	eLR(SW)	15	48	09	
29	e	23	21	53	Marianas
	e	23	38	49	USCGS 0 = 22 47 20
	eLR(NW)	23	44	09	
30	eSS	03	19	43	Marianas
	eLR	03	36	09	USCGS 0 = 02 45 03 22°N 144½°E Dist. 107.8°
30	eLR	08	55	09	
30	eLR	09	49	09	
30	eLR	10	39	09	
30	eLR	12	04	09	
30	eLR	17	16	09	
30	e	19	12	49	Marianas
	e	19	17	09	USCGS 0 = 18 38 10
	eLR(NW)	19	27	39	22°N 144°E Dist. 108.1°
30	e	22	22	09	
	eLR	22	27	09	
31	ePKP	04	25	09	Santa Cruz Isls. USCGS 0 = 04 03 11 12½°S 167½°E

Palisades, New York

Date	Phase	h m s	Remarks
1960			
Jan. 31	ePP	05 26 29	Japan
	eSKKS	05 33 49	USCGS 0 = 05 08 18
	ePS	05 35 25	33½°N 134½°E
	ePKKP	05 38 17	Dist. 101.3°
	eSS	05 41 05	
	eSKKS	05 44 25	
	eLQ	05 52 09	
	eLR(N)	05 57 09	
31	eLR(NW)	09 17 09	Mariana Isls.
31	eLR	15 10 09	China
31	eLR	16 02 39	
Feb. 1	eS	02 23 03	Pacific Ocean
	e	02 27 35	USCGS 0 = 02 08 37
	eLR(NW)	02 33 09	43°N 132°W Dist. 42.3°
1	eLR(NE)	12 41 09	near W. coast Crete
1	eLQ	14 35 09	Kamchatka
	eLR	14 39 09	
2	eSS	07 07 23	Kermadec Isls.
	eLQ	07 21 09	USCGS 0 = 06 29 52
	eLR	07 27 09	33½°S 179°W Dist. 121.5°
2	eLR	10 14 09	San Juan Prov, Argentina
3	eLQ	00 49 09	Molucca Passage
	eLR	00 51 49	
3	eSS	02 58 09	N. Isl New Zealand
	eLQ	03 14 09	USCGS 0 = 02 20 55
	eLR(W)	03 21 09	37°S 179°E Dist. 124.7°
3	eLR(W)	04 40 09	
3	eS	11 42 09	Gulf of Calif
	eLQ	11 45 01	USCGS 0 = 11 29 55
	eLR(W)	11 48 09	24°N 108½°W Dist. 33.4°
3.	eLR	12 51 09	New Britain

Palisades, New York

15.

Date	Phase	h m s	Remarks
1960			
Feb. 3	eLR	14 26 09	Solomons
3	eLR	16 36 09	
3	eLR	19 45 09	
4	eP	04 02 29	New Ireland
	epP	04 03 17	USCGS 0 = 03 46 30
	ePKP	04 05 44	4½°S 153½°E
	epPKP	04 06 12	Dist. 124.5°
	ePP	04 08 05	
	ePKS	04 09 21	
	eSKS	04 12 49	
	eSKKS	04 13 57	
	ePKKP	04 16 53	
	ePPS	04 19 09	
	eSS	04 24 25	
	eSS	04 27 41	
	e(LQ)	04 38 09	
	eLR(NNW)	04 44 39	
	eLR ₂	05 35 09	
4	ePPS	09 59 37	New Ireland Reg.
	eSS	10 05 09	USCGS 0 = 09 27 23
	e	10 09 17	5°S 154°E
	eSSS	10 13 09	Dist. 124.2°
	e	10 18 57	
	e	10 21 09	
	eLR(NW)	10 25 09	
4	eLQ	11 54 39	
	eLR(NW)	12 01 09	
4	eP	17 03 53	Honshu, Japan
	eSKKS	17 14 53	USCGS 0 = 16 50 30
	ePS	17 16 15	39°N 143°E
	eSS	17 21 29	Dist. 93.5°
	eL	17 31 29	
4	eLR(NE)	17 40 09	
4	eLQ	21 48 39	Japan
	eLR(N)	21 56 09	
5	eLQ	01 42 09	
	eLR	01 46 09	

Palisades, New York

Date	Phase	h	m	s	Remarks
1960					
Feb. 5	e	02	24	33	S. Pacific Ocean
	eLQ	02	35	49	USCGS 0 = 02 02 14
	eLR(SW)	02	40	09	37°S 95½°W Dist. 80.0°
5	e	06	01	09	New Britain
	eSKS	06	05	49	USCGS 0 = 05 39 46
	eSKKS	06	07	29	4½°S 153½°E
	ePPS	06	12	09	Dist. 124.3°
	eSS	06	16	49	
	eSSS	06	21	49	
	eLQ	06	31	39	
	eLR(NW)	06	37	39	
5	eLR	09	43	09	Japan
5	eLR	13	29	09	
6	eLR	02	21	09	
6	eLR	02	36	09	
6	eLR	02	55	09	
6	eLR	08	52	09	
6	eLR	12	35	09	
6	iPKP	17	30	24	Sumatra
	e	17	30	39	USCGS 0 = 17 10 45
	eLQ	18	19	09	6°S 104°E
	eLR	18	23	09	Dist. 145°
7	eLQ	04	39	09	Venezuela
	eLR	04	41	09	
7	iP	10	13	33	Marianas
					USCGS 0 = 10 00 34
					17°N 145°E
					Dist. 111.9°
7	e	12	50	49	
	eLR(W)	13	07	09	
8	eLQ	02	25	09	
	eLR	02	27	09	
8	eLR	04	06	09	Kodiak Isl. Alaska

Palisades, New York

17.

Date	Phase	h	m	s	Remarks
1960					
Feb. 8	eSS	09	57	39	Solomon Isls.
	e	10	00	27	USCGS 0 = 09 19 45
	eSSS	10	02	09	5°S 155°E
	eLQ	10	11	09	Dist. 123.5°
	eLR(NW)	10	15	09	
8	eP	12	59	23	Drake Passage
	ePP	13	03	21	USCGS 0 = 12 45 34
	eSKS	13	09	51	58°S 67°W
	eS	13	10	53	Dist. 98.8°
	ePS	13	12	19	
	ePPS	13	13	09	
	ePKKP	13	15	37	
	eSS	13	17	17	
	eSSS	13	21	17	
	eLQ	13	26	09	
	eLR(SSE)	13	29	29	
8	eLR(N)	14	53	09	Solomons
8	eLQ	19	21	09	Afghanistan or Peru
	eLR	19	25	09	
8	eL	20	03	09	
9	eSKKS	12	37	39	Banda Sea
	eSS	12	42	21	USCGS 0 = 11 56 12
	eLQ	13	00	59	4°S 128°E
	eLR(NW)	13	07	09	Dist. 138.2°
10	ePKP	00	15	13	Ceram
	epPKP	00	15	20	USCGS 0 = 23 55 49
	esPKP	00	15	28	4°S 128°E
	ePP	00	18	05	Dist. 138.2°
	epPP	00	18	24	Mag. 6¼
	ePKS	00	18	49	
	epPKS	00	19	50	
	ePKKP	00	25	18	
	ePPS	00	31	30	
	eSKKKS	00	35	50	
	eSS	00	36	34	
	eSSS	00	41	50	
	e(SSSS)	00	45	40	
	eLQ	00	52	10	
	eLR(NNW)	01	01	54	
10	eLQ	06	21	10	
	eLR(SW)	06	23	10	

Palisades, New York					
Date	Phase	h	m	s	Remarks
1960					
Feb. 10	eLR(NE)	13	04	30	
10	eLR(NW)	16	45	10	Solomons
10	e	23	03	06	
10	eSKS	23	44	54	Samoa Isls.
	eSKKS	23	46	14	USCGS 0 = 23 19 55
	e	23	47	54	15½°S 173°W
	ePS	23	48	18	Dist. 106.4°
	eSS	23	53	54	
	ePKPPKP	23	58	34	
11	e	00	04	10	
	eLQ	00	05	50	
	eLR(W)	00	10	10	
11	eLR	01	34	10	
11	eLQ	13	15	10	
	eLR	13	19	10	
11	eLR	13	31	30	Chile
11	ePP	21	16	26	Santa Cruz Isls
	ePS	21	26	22	USCGS 0 = 20 56 08
	eSS	21	33	42	11½°S 166½°E
	eLQ	21	46	10	Dist. 119.3°
	eLR(NW)	21	52	30	
12	e	02	07	30	New Ireland
	eLR(NW)	02	27	10	
12	eLR	09	56	30	

Palisades, New York

19.

Date	Phase	h	m	s	Remarks
1960					
Feb. 13	e	00	01	12	
	e	00	05	12	
	eLR(SW)	00	10	12	
13	eLR	00	45	12	
13	eLQ	01	31	12	
	eLR	01	35	12	
13	eLR	05	56	12	
13	eLR	06	17	12	
13	eLQ	08	15	12	
	eLR	08	17	12	
13	eLR	10	02	12	Aleutians
13	e	16	20	25	Halmahera
	eLQ	16	38	33	USCGS 0 = 15 41 04
	eLR	16	43	13	1½°N 127½°E
13	e	17	25	13	
	eLR	17	28	13	
13	eS	20	57	33	Peru
	eSS	21	02	13	USCGS 0 = 20 40 06
	eLR	21	07	13	17½°S 70°W
					Dist. 58.3°
14	eLQ	00	20	13	
	eLR	00	22	13	
14	eLR	03	30	13	
14	eLR	05	30	13	Argentina
14	eLQ	14	57	13	
	eLR	15	01	13	
14	e	16	16	45	Kermadec Isls.
	e	16	27	25	USCGS 0 = 15 39 45
	eLR	16	36	15	29°S 177°W
14	eLR	21	25	15	Solomons
14	eLQ	22	49	15	Aleutians
	eLR(NW)	22	52	15	

Palisades, New York

		h	m	s	Remarks
1960					
Feb. 15	eLR	00	38	35	
15	eLQ	07	48	15	Nicaragua
	eLR(SW)	07	51	15	
15	eL	09	22	35	
15	eLR	10	32	45	
15	eLR	11	58	45	
15	eLR	14	22	45	
15	e	22	59	17	Kermadec
	e	23	06	27	USCGS 0 = 22 18 27
	eLR	23	15	37	29½°S 176½°W
					Dist. = 117.6°
16	e	01	36	47	Kermadec
	e	01	45	17	
16	e	01	57	29	
	eLR	02	05	17	
16	eL	02	38	17	
16	eLR	03	19	57	
16	eLQ	05	48	17	Marianas
	eLR	05	50	37	
16	eLR	09	30	17	
16	eLR	11	36	17	Solomon Isls.
16	eLQ	13	27	17	Atlantic Ocean
	eLR(SE)	13	28	47	
16	eLR	16	14	19	Honshu, Japan
17	e(S)	05	23	19	
	e(SS)	05	28	39	
	eLQ	05	35	07	
	eLR(SW)	05	39	49	
17	eLQ	09	58	19	
	eLR	10	00	19	

Palisades, New York

21.

Date	Phase	h	m	s	Remarks
1960					
Feb. 17	eLR(W)	10	58	39	
17	eP	12	44	27	Easter Islands
	e(PPP)	12	47	59	USCGS 0 = 12 32 10
	eSKS	12	54	21	30°S 112½°W
	eS	12	54	39	Dist. 79.2
	eSS	12	59	35	Mag. 6½
	eLQ	13	05	33	
	eLR(SW)	13	09	29	
17	ePKP	17	09	00	New Guinea
	e	17	19	40	USCGS 0 = 16 49 42
	eLQ	17	45	20	5°S 142½°E
	eLR	17	54	20	Dist. 131.6°
18	eL	06	32	20	
18	eLR	08	09	20	
18	e(PKKS)	22	09	20	Kamchatka
	eLQ	22	13	00	USCGS 0 = 21 35 11
	eLR(NW)	22	17	10	52½°N 160°E
					Dist. 76°
18	eLQ	22	59	20	Fox Islands, Aleutians
	eLR	23	10	50	
19	e	01	13	50	
	e	01	17	40	
	eLR(SW)	01	21	20	
19	eLR(NW)	05	36	20	Alaska
19	eP	10	49	58	Hindu Kush
	epP	10	50	52	USCGS 0 = 10 36 46
	ePP	10	53	54	36°N 70½°E
	ePPP	10	55	02	Dist. 96.7°
	eSKS	11	00	06	
	ePS	11	02	24	
	ePPS	11	03	28	
	e	11	03	54	
	eSS	11	07	44	
	e	11	09	50	
	eSSS	11	12	00	
	e(LR)(NE)	11	16	50	
20	eLR	01	12	30	

Palisades, New York

		h	m	s	Remarks
1960					
Feb. 20	eLR	09	19	50	
21	eLR(SW)	01	50	21	S. Isl - New Zealand
21	eLR(SW)	02	30	51	
21	eS	08	32	21	Northern Algeria
	eLQ	08	41	21	USCGS 0 = 08 13 31
	eLR	08	45	21	36°N 4½°E Dist. 59.5°
21	eLR	10	10	21	Turkey
21	eLR	11	43	21	
21	eLQ	17	55	21	Aleutians
	eLR	17	58	21	
21	e	23	49	11	Halmahera
	eLQ	23	50	51	USCGS 0 = 22 43 11
	eLR(N)	23	53	01	2½°N 128½°E Dist. 132.1°
22	ePPS	01	23	57	Fiji Islands
	eSS	01	28	21	USCGS 0 = 00 54 30
	e(SKKS)	01	31	51	20°S 178½°W
	e(SKKKS)	01	36	01	Dist. 113.7°
	eL	01	41	05	
22	e	05	32	47	Jan Magen Isl
	eLQ	05	37	21	USCGS 0 = 05 17 18
	eLR(ENE)	05	39	21	71½°N 2½°E Dist. 45.9°
22	eLR(SW)	06	17	21	
22	eLR(NW)	09	22	21	Fiji Isls
22	eLR	13	05	21	
22	eLR	21	37	23	Greece
22	e	23	21	43	
	eLR	23	38	23	
23	eLQ	00	00	23	
	eLR(ENE)	00	04	23	

Palisades, New York

23.

Date	Phase	h	m	s	Remarks
1960					
Feb. 23	eLQ	08	02	23	Greece
	eLR(NE)	08	07	23	
23	eLR(NE)	09	11	23	
23	ePPP	16	27	53	Solomon Isls.
	ePKKS	16	38	19	USCGS 0 = 16 04 50
	eSS	16	43	11	6°S 154½°E
	e	16	47	43	Dist. 124.6°
	eLQ	16	57	23	Mag. 6½
	eLR(NW)	17	02	35	
23	eLQ	19	26	43	
	eLR(SW)	19	33	33	
24	eLR	02	56	23	
24	eLR	06	11	23	
24	e	09	19	05	New Hebrides
	eLR(NW)	09	45	23	USCGS 0 = 08 41 00 17½°S 168°E Dist 122.3°
24	e	19	29	22	
	e	19	29	30	
24	e	20	16	58	
24	eP	21	52	59	Solomon Isls
	ePKP	21	56	05	USCGS 0 = 21 37 04
	ePP	21	57	49	7½°S 156°E
	ePKS	21	59	19	Dist. 124.6°
	eSKS	22	03	27	Mag. 6½
	eSKKS	22	05	03	
	ePS	22	07	59	
	ePPS	22	09	23	
	eSS	22	15	23	
	eSSS	22	23	33	
	eLQ	22	28	51	
	cLR(WNW)	22	35	23	
	eLR ₂ (ESE)	23	33	03	
25	eLR	01	44	23	
25	eLR	07	52	23	

24.				Palisades, New York			
Date	Phase	h m s	Remarks	Date	Phase	h m s	Remarks
1960							
Feb. 26	e	02 48 32	New Guinea				
	eLQ	03 07 42	USCGS 0 = 02 08 31				
	eLR(NW)	03 14 12	1°S 138°E Dist. 130.8°				
26	eLQ	07 26 12					
	eLR(SW)	07 31 04					
26	eP	23 40 20	Aleutians				
	ePcP	23 40 34	USCGS 0 = 23 29 25				
	ePP	23 41 48	51½°N 178°W				
	eS	23 49 10	Dist. 66.7°				
	eScS	23 50 02	Mag. 6-6½				
	eSS	23 54 08					
	eLQ	23 56 52					
27	eLR(NW)	00 01 12					
27	eP	08 20 56	Aleutians				
	epP	08 21 14	USCGS 0 = 08 10 03				
	eS	08 29 52	51½°N 178°W				
	eSS	08 35 04	Dist. 66.7°				
	eLQ	08 37 32					
	eLR(NW)	08 42 12					
27	iPKP	09 25 06	Sumatra				
	ePKP	09 25 18	USCGS 0 = 09 05 25				
	eSKS	09 32 46	6½°S 102½°E Dist. 145.5°				
27	eLQ	09 47 12	Kermadec				
	eLR(SW)	09 53 12	USCGS 0 = 08 56 00 30½°S 179½°W Dist. 121.1°				
27	eLR	15 02 32	Solomons				
27	eLQ	20 31 12					
	eLR	20 35 12					
28	eLQ	00 12 12	Celebes Sea				
	eLR	00 17 12					
28	eLQ	08 05 02	off Coast Norway				
	eLR	08 10 12					
28	eP	23 25 02					
29	ePPS	00 40 12					
	eSS	00 45 04					
	eLQ	00 58 12					
	eLR(NW)	00 06 12					
	eLR ₂ (SE)	00 54 12					

Palisades, New York				.25.			
Date	Phase	h m s	Remarks	Date	Phase	h m s	Remarks
1960							
Feb. 29	eLQ	02 24 32	Panama				
	eLR(SW)	02 29 12					
29	e	06 01 52	Luzon, Philippines				
	eLR	06 25 12	USCGS 0 = 05 22 53 14°N 120°E Dist. 123.8				
29	eLR	09 32 12	Western Burma				
29	e	23 19 12					
	eLQ	23 29 12					
	eLR(SW)	23 35 42					
29	eP	23 49 32	Morocco				
	eS	23 56 54	USCGS 0 = 23 40 12				
Mar. 1	eLQ	00 01 12	30°N 9°W				
	eLR(E)	00 03 58	Dist. 52.9° Mag. 5½				
1	eLR(SW)	02 11 12					
1	eLR(NW)	09 10 12					
1	eSS	20 35 43	Tonga Islands				
	eLQ	20 45 13	USCGS 0 = 19 59 33				
	eLR	20 50 13	22°S 175°W Dist. 112.3°				
2	eP	00 17 01	Mexico				
	eS	00 22 29	USCGS 0 = 00 10 26				
	eLQ	00 23 13	19°N 101½°W				
	eLR(W)	00 25 43	Dist. 32.2°				
2	eLR	03 30 13					
2	eLQ	04 49 13	Mexico				
	eLR(SW)	04 52 13	USCGS 0 = 04 34 46 17°N 93°W Dist. 29.1°				
2	eLQ	06 51 13					
	eLR(SE)	06 53 13					
2	eLR	13 10 13					
2	eLQ	22 04 13	North Atlantic Ocean				
	eLR(E)	22 09 13	USCGS 0 = 21 56 25 52°N 30°W Dist. 31.7°				

Palisades, New York			
Date	Phase	h m s	Remarks
1960			
Mar. 3	e	01 57 43	Solomons
	eLR(NW)	02 01 13	USCGS 0 = 01 02 20 7°S 156°E Dist. 124.3°
3	eLR	03 02 13	
3	eLQ	05 23 13	Central Alaska
	eLR	05 27 13	
3	e(PS)	11 55 23	
	e(SS)	12 01 43	
	eLQ	12 12 43	
	eLR(E)	12 18 43	
3	eLR	20 21 13	
4	eLR(SE)	01 01 13	
4	iP	02 26 53	Aleutians
	ipP	02 27 05	USCGS 0 = 02 15 56
	eS	02 36 03	50½°N 177°W
	eSS	02 40 55	Dist. 66.8°
	eLQ	02 45 13	
	eLR(NW)	02 48 13	
4	ePP	04 11 33	S. Coast Japan
	eSKS	04 17 29	USCGS 0 = 03 53 00
	ePS	04 19 19	31°N 129°E
	eSS	04 26 01	Dist. 105.3°
	eLQ	04 39 33	Mag. 6½
	eLR	04 43 13	
4	eS	16 40 56	Jan Mayen Isls.
	eLQ	16 46 12	USCGS 0 = 16 25 25
	eLR(NE)	16 49 12	72°N 1½°W Dist. 46.2°
4	ePKPKP	21 42 22	Nicobar Isls.
	eSS	21 44 32	USCGS 0 = 21 05 45
	eSSS	21 49 12	7½°N 94°E
	e	21 56 12	Dist. 130.5°
	eLQ	22 01 52	
	eLR(NE)	22 10 32	
5	eLR	04 50 12	
5	eLR	10 25 12	

Palisades, New York				27.
Date	Phase	h m s	Remarks	
1960				
Mar. 5	eLR	11 05 42		
5	eLQ	12 13 12	Nepal	
	eLR	12 18 42	USCGS 0 = 11 25 00 29°N 81°E Dist. 106.6°	
5	ePKP	14 08 43	Halmahera Isl.	
	ePP	14 11 06	USCGS 0 = 13 49 16	
	eSS	14 29 02	1°N 129°E	
	e	14 34 12	Dist. 133.3°	
	e	14 40 12	Mag. 6¾	
	eLQ	14 45 12		
	eLR(N)	14 52 12		
	G ₂	15 23 12		
	G ₃	15 35 42		
5	eLR	17 54 12		
5	eLR	21 50 12		
6	eLR	00 35 12	Nepal	
6	ePKS	02 45 04	Halmahera aftershock	
	eSKKS	02 57 32	USCGS 0 = 02 22 06	
	eSS	03 02 00	1°N 129°E	
	e	03 10 22	Dist. 133.3	
	e	03 13 32		
	eLQ	03 17 12		
	eLR(NW)	03 26 12		
6	eP	04 18 45	Gulf of Calif.	
	eS	04 24 06	USCGS 0 = 04 11 54	
	e	04 24 34	24°N 108°W	
	eLQ	04 26 04	Dist. 33.1	
	eLR(W)	04 28 12	Mag. 5-5½	
	Rg	04 32 52		
6	eLR	05 51 12		
6	eLR	06 05 12		
6	eLR	06 59 12		
6	eLQ	11 17 12		
	eLR	11 21 52		

28.		Palisades, New York		
Date	Phase	h m s	Remarks	
1960				
Mar. 7	e eLR	01 04 32 01 30 12	Iran USCGS 0 = 00 51 40 34½°N 55°E Dist. 91.4°	
7	eLR	03 21 12	Sumatra	
7	ePKP ePKS eLQ eLR	05 32 30 05 35 49 06 14 12 06 21 12	Celebes USCGS 0 = 05 13 10 1½°N 125½°E Dist. 134.1°	
7	eLQ eLR	10 31 12 10 40 12	Solomons	
7	eLQ eLR	12 25 12 12 33 12	Ryukyu Isls.	
7	eLQ eLR	16 42 27 16 49 11	Ryukyu Isls.	
8	eSS e e eLQ eLR(SW)	12 31 27 12 35 19 12 47 11 12 50 11 12 55 35	Antarctic Ocean USCGS 0 = 11 51 10 65°S 179½°E Dist. 133.1°	
8	eLR	13 20 11		
8	eP iPKP(D) iPP ePKKP eScSP ePKKS eSS e eSSS eLQ eLR(NW)	16 48 38 16 52 05 16 53 39 17 02 08 17 03 07 17 05 49 17 10 01 17 11 35 17 14 51 17 22 41 17 28 41	New Hebrides USCGS 0 = 16 33 38 16½°S 168½°E Dist. 121.4° Mag. 7	
9	eLR	02 50 11	New Britain	
9	eLR	08 16 11		
9	e	20 46 00		
9	c eLR	20 46 12 20 48 12	Solomon Isls	

Palisades, New York		29.		
Date	Phase	h m s	Remarks	
1960				
Mar. 9	eL	21 16 52		
9	eLR	23 20 12		
10	iP epP iS esS eSS eSSS eLQ eLR(S)	00 04 01 00 04 32 00 11 46 00 12 28 00 15 42 00 17 42 00 19 24 00 22 12	Southern Peru USCGS 0 = 23 54 20 16°S 72°W Dist. 56.8°	
10	e e(Rg)	00 47 12 00 49 12	Central Alaska USCGS 0 = 00 24 20 64°N 149°W Dist. 39.0°	
10	eL	01 22 42		
10	eL	01 41 12		
10	eLR(S)	01 50 12		
10	eLR	08 57 12		
10	ePP ePS eSS eLQ eLR(NW)	10 05 32 10 15 42 10 23 12 10 36 42 10 46 12	Solomons USCGS 0 = 09 44 57 10°S 161°E Dist. 122.8°	
10	ePS eSS eLQ eLR(NW)	14 12 42 14 18 12 14 28 12 14 34 12	Samoa Isls. USCGS 0 = 13 44 25 15°S 174°W Dist. 107.2°	
10	eLR(NE)	15 59 12		
10	i(P) i(S) Lg	16 02 00 16 02 46 16 02 49		
10	ePPP eS eLR(SW)	19 03 16 19 06 42 19 10 12	Guatemala USCGS 0 = 18 55 55 14½°N 91½°W Dist. 30.5°	
11	eLR(SE)	00 53 42		

Palisades, New York					
Date	Phase	h	m	s	Remarks
1960					
Mar. 11	e	02	34	12	
	eLR(NW)	02	49	12	
11	e	05	21	12	
	eLQ	05	28	12	
	eLR(SE)	05	30	12	
11	eLR(SW)	10	23	12	
11	eLR(W)	11	09	42	
12	eLR(SE)	00	30	13	
12	eLR	01	05	13	
12	eLR(NW)	03	16	13	New Britain
12	eP	12	04	58	S. Yugoslavia
	eS	12	13	55	USCGS 0 = 11 54 00
	eSS	12	18	29	42°N 21°E
	eLQ	12	23	53	Dist. 67.2°
	eLR(ENE)	12	26	13	
12	eP	12	49	57	Charleston, S.C.
	eS	12	51	40	USCGS 0 = 12 47 40
	Lg	12	52	34	No coord. given
					Dist. 9.5°
12	eLR	19	25	52	
12	ePKP	20	49	47	New Britain
	ePP	20	51	42	USCGS 0 = 20 30 39
	ePKS	20	53	06	6°S 152°E
	eSKS	20	56	44	Dist. 126.3°
	eSKKS	20	58	44	Mag. 6½
	ePKKP	20	59	20	
	ePS	21	01	40	
	ePPS	21	03	18	
	eSS	21	09	02	
	eSSS	21	13	20	
	eLQ	21	23	12	
	eLR(NW)	21	29	12	
13	eLQ	09	28	04	
	eLR(SE)	09	30	12	

Palisades, New York					
Date	Phase	h	m	s	Remarks
1960					
Mar. 13	eS	11	58	46	Oaxaca, Mexico
	eLQ	12	05	56	USCGS 0 = 11 46 40
	eLR	12	08	12	No coord. given
13	eLR	18	39	42	
13	eLR	21	41	52	
14	eP	00	00	12	Panama-Colombia Bord.
	eS	00	05	40	USCGS 0 = 23 53 32
	eLQ	00	07	32	7½°N 77°W
	eLR(SSE)	00	09	00	Dist. 33.5°
					Mag. 6¼
14	eLR(SE)	10	08	42	
14	eLR(SE)	10	45	52	
14	e	17	36	47	
14	eP	19	25	23	Off coast Oregon
	eS	19	31	22	USCGS 0 = 19 17 27
	eSS	19	34	35	44½°N 129½°W
	eLQ	19	36	51	Dist. 40.1°
	eLR(NW)	19	38	41	
14	e	20	59	11	Persian Gulf
14	ePP	21	06	31	Off coast Oregon
	e	21	09	07	USCGS 0 = 20 57 03
	eS	21	11	01	44½°N 129½°W
	eLQ	21	14	31	Dist. 40.1°
	eLR(NW)	21	17	11	
14	eLR	22	38	41	
15	eLR	07	45	11	
15	eP	09	31	43	Aleutians
	epP	09	32	03	USCGS 0 = 09 20 56
	eS	09	40	31	51°N 174½°W
	ePS	09	41	15	Dist. 65.2°
	eSS	09	45	19	
	eSSS	09	47	59	
	eLQ	09	50	11	
	eLR(NW)	09	52	41	
15	eLR(SW)	11	05	11	

Palisades, New York

		h	m	s	Remarks
1960					
Mar. 15	ePPS	20	30	10	S. Sandwich Isls.
	eSS	20	35	58	Dist. 110°
	eSSS	20	43	20	
	eLQ	20	46	06	
	eLR(SE)	20	51	30	
Mar. 15	iP	20	39	18	
	iS	20	39	40	
Mar. 16	ePP	00	52	10	S. Sandwich Isls.
	ePS	01	01	18	USCGS 0 = 00 33 05
	eSS	01	07	30	59½°S 26°W
	eLQ	01	18	10	Dist. 107.7°
	eLR(SE)	01	23	50	
Mar. 16.	eLR(NW)	02	44	10	
Mar. 16	eLR(SE)	05	21	10	
Mar. 16	eLR	06	54	10	
Mar. 16	eLR	14	16	10	
Mar. 16	e	16	28	38	
Mar. 16	e	17	27	18	
	e	17	27	23	
Mar. 16	eP	17	53	45	Samoa
	ePP	17	58	15	USCGS 0 = 17 39 16
	eSKS	18	04	17	15½°S 173½°W
	eSKKS	18	05	37	Dist. 107.2°
	ePS	18	07	19	
	ePPS	18	08	23	
	eSS	18	13	19	
	ePKPPKP	18	17	21	
	eSSS	18	21	21	
	e	18	23	09	
	eLQ	18	25	09	
	eLR(WSW)	18	29	49	
Mar. 17	eLR(SW)	05	15	09	
Mar. 17	eLR(SW)	08	41	39	
Mar. 17	eLR(SW)	12	26	09	
Mar. 17	eLR(SW)	15	36	09	

Palisades, New York

Date	Phase	h	m	s	Remarks
1960					
Mar. 17	eLQ	20	45	10	Aleutians
	eLR(NW)	20	48	10	
Mar. 17	eLR(SE)	22	26	10	
Mar. 18	eP	01	20	56	Guatemala
	eS	01	25	44	USCGS 0 = 01 14 53
	eSS	01	26	46	15°N 90°W
	eLR(SW)	01	28	40	Dist. 29.5°
Mar. 18	eLR(SW)	02	50	10	Guatemala
Mar. 18	eLR(SE)	06	40	10	
Mar. 18	eLR(SE)	11	51	10	
Mar. 18	eLR(NW)	13	17	10	New Britain
Mar. 18	eLQ	19	08	10	
	eLR(E)	19	12	10	
Mar. 18	e	22	14	34	
	eLR(W)	22	20	10	
Mar. 19	eLR(NE)	00	09	10	
Mar. 19	eLR(NW)	02	05	30	
Mar. 19	eLR(SW)	05	11	10	
Mar. 19	eLR(NW)	10	27	10	Molucca Passage
Mar. 19	eLR(SE)	15	09	10	
Mar. 19	eLR	17	23	10	
Mar. 19	e	19	27	54	
	e	19	32	44	
Mar. 19	ePP	19	37	22	New Guinea
	ePKS	19	38	30	USCGS 0 = 19 15 37
	ePS	19	47	34	3°S 138°E
	eSS	19	55	22	Dist. 132.5°
	eLQ	20	08	50	
	eLR(NW)	20	17	40	
	eLQ ₂	20	49	40	
	eLR ₂ (SE)	21	01	40	

Palisades, New York

		h	m	s	Remarks
		04	51	10	
Mar. 20	eLQ	06	58	10	
	eLR	07	01	40	
Mar. 20	eLQ	08	37	40	
	eLR(NE)	08	41	10	
Mar. 20	eLQ	11	11	10	
	eLR(SW)	11	14	10	
Mar. 20	eLQ	11	58	50	
	eLR(N)	12	04	10	
Mar. 20	eLR(NW)	13	32	10	
Mar. 20	eSKS	14	01	10	Off N. Coast Honshu, Japan
	eSS	14	07	40	USCGS 0 = 13 36 54
	eLQ	14	17	10	40°N 143½°E
	eLR(N)	14	22	10	Dist. 92.5°
Mar. 20	eP	17	20	44	Japan
	iP	17	20	49	USCGS 0 = 17 07 30
	P(Z) Comp. from NW				40°N 143½°E
	ipP	17	20	59	Dist. 92.5°
	ePP	17	24	34	Mag. 7
	eSKS	17	31	22	
	eS	17	32	10	
	ePS	17	32	50	
	ePPS	17	34	30	
	eSS	17	38	10	
	eSKKS	17	44	40	
	eLQ	17	46	40	
	eLR(NNW)	17	52	10	
Mar. 20	eLR(SW)	20	45	40	
Mar. 20	eLQ	23	41	10	North Atlantic Ocean
	eLR(SE)	23	43	50	
Mar. 21	eLQ	01	15	10	Honshu, Japan
	eLR(N)	01	23	10	39½°N 143°E
					Dist. 93.1°
					Mag. 6½
Mar. 21	eLQ	02	44	10	Tonga Isls.
	eLR(N)	02	47	10	

Palisades, New York

Date	Phase	h	m	s	Remarks
1960					
Mar. 21	eLR	04	03	40	Burma
Mar. 21	eLR	05	36	10	Honshu, Japan
Mar. 21	eLR	07	44	10	Honshu, Japan
Mar. 21	eLQ	09	59	10	Honshu, Japan
	eLR(N)	10	10	40	
Mar. 21	eLQ	12	29	10	Samoa Isls.
	eLR	12	36	10	
Mar. 21	e	17	33	18	New Ireland
	eLQ	17	36	10	USCGS 0 = 16 37 46
	eLR(NW)	17	38	50	4½°S 154°E
					Dist. 123.9°
Mar. 21	eS	20	07	40	Near coast Chile
	eLQ	20	09	50	USCGS 0 = 19 48 56
	eLR(SE)	20	18	40	21°S 70½°W
					Dist. 61.8°
Mar. 21	e	23	42	40	Honshu, Japan
	eLQ	23	48	10	USCGS 0 = 22 56 58
	eLR(NW)	23	52	10	39½°N 143½°E
					Dist. 92.9°
Mar. 22	eLQ	00	06	50	Honshu, Japan
	eLR(NW)	00	14	10	
Mar. 22	eP	01	55	00	Oaxaca, Mexico
	eS	02	00	28	USCGS 0 = 01 48 24
	eLQ	02	03	12	16°N 97½°W
	eLR(SW)	02	05	40	Dist. 32.2°
Mar. 22	ePKP	02	51	10	400 mi. N.W. Balleny Isls.
	ePKS	02	54	40	USCGS 0 = 02 31 17
	eSS	03	14	10	61½°S 154°E
	e	03	18	10	Dist. 144.8°
	e(LQ)	03	32	10	
	eLR(W)	03	40	10	
	G ₂	04	01	10	
Mar. 22	eLQ	11	09	10	
	eLR(NW)	11	18	10	

Palisades, New York

		h	m	s	Remarks
1960					
Mar. 22	eP	13	26	28	Jolisco, Mexico
	ePP	13	27	40	USCGS 0 = 13 19 52
	eS	13	32	10	20°N 104½°W
	eSS	13	34	22	Dist. 33.4°
	eLQ	13	35	10	Mag. 5½
	eLR(WSW)	13	36	40	
Mar. 22	e	20	38	09	
	e	20	40	37	
	eLQ	20	41	09	
	eLR(SE)	20	42	35	
Mar. 23	eP	00	36	48	Honshu, Japan
	epP	00	37	33	USCGS 0 = 00 23 22
	eSKS	00	47	17	39½°N 143°E
	eS	00	47	39	Dist. 93.1°
	ePS	00	48	49	Mag. 6¼-7
	eSS	00	54	23	
	eLQ	01	02	39	
	eLR(NNW)	01	08	09	
Mar. 23	eLQ	09	33	09	Honshu, Japan
	eLR(N)	09	42	09	
Mar. 23	eS	10	53	13	Honshu, Japan
	eLQ	11	09	09	USCGS 0 = 10 29 01
	eLR(NW)	11	20	09	39½°N 143°E
					Dist. 93.1°
Mar. 23	eLQ	12	32	09	Honshu, Japan
	eLR(NW)	12	43	09	
Mar. 23	eLQ	14	22	39	
	eLR(WSW)	14	24	09	
Mar. 23	e	16	47	37	Honshu, Japan
	eLQ	16	53	09	USCGS 0 = 16 01 13
	eLR(NW)	16	58	09	39°N 144°E
					Dist. 93.2°
Mar. 23	e	22	26	25	
	e	22	28	37	
	e	22	33	21	

Palisades, New York

Date	Phase	h	m	s	Remarks
1960					
Mar. 23	eSKS	22	46	25	Honshu, Japan
	ePS	22	48	11	USCGS 0 = 22 22 36
	eSS	22	53	25	39½°N 143°E
	e	22	55	25	Dist. 93.1°
	eSKKS	23	00	39	Mag. 6
	eLQ	23	03	09	
	eLR(N)	23	11	39	
Mar. 24	eP	03	07	52	Aleutians
	eS	03	16	41	USCGS 0 = 02 57 01
	eSS	03	22	09	50°N 175½°W
	eLR(NW)	03	29	39	Dist. 66.3°
Mar. 24	eSKS	06	17	21	Kurile Isls.
	eSS	06	23	17	USCGS 0 = 05 54 28
	ePKKS	06	27	09	47°N 152½°E
	eSSS	06	29	09	Dist. 83.1°
	ePKPPKP	06	33	09	
	eLR(NW)	06	36	09	
Mar. 24	eP	10	06	44	Aleutians
	epP	10	06	52	USCGS 0 = 09 56 00
	eS	10	15	19	50½°N 173°W
	eSS	10	20	39	Dist. 64.7°
	eLQ	10	22	49	
	eLR(NW)	10	26	39	
Mar. 24	eLQ	10	40	49	
	eLR(N)	10	47	09	
Mar. 24	e	13	07	59	
	eLQ	13	13	09	
	eLR	13	18	09	
Mar. 24	eLQ	14	16	09	
	eLR(SW)	14	20	09	
Mar. 24	eLR	16	22	10	
Mar. 24	eLQ	20	53	10	Honshu, Japan
	eLR	20	59	10	
Mar. 25	eLR	02	56	10	Fiji Isls.
Mar. 25	eLR	08	45	10	
Mar. 25	eLR	17	19	10	

Palisades, New York			
Date	Phase	h m s	Remarks
1960			
Mar. 26	eLR	16 29 09	
Mar. 26	eLR	16 39 09	
Mar. 26	eLQ	19 24 09	
	eLR	19 27 09	
Mar. 27	eLQ	00 34 39	N. Isl. New Zealand
	eLR	00 38 29	
Mar. 27	eL	01 01 09	
Mar. 27	iPKP	04 07 23	New Hebrides
	ePP	04 08 53	USCGS 0 = 03 48 27
	ePPP	04 11 29	13½°S 166°E
	ePKKP	04 17 01	Dist. 121.4°
	ePS	04 18 53	Mag. 6½
	ePPS	04 19 45	
	eSS	04 25 33	
	eSSS	04 30 23	
	eLQ	04 38 09	
	eLR(NW)	04 45 09	
	eLR ₂	05 43 09	
Mar. 27	eLQ	07 42 29	off coast Mexico
	eLR(W)	07 44 39	USCGS 0 = 07 26 58
	Rg	07 48 57	21½°N 109½°W Dist. 35.8°
Mar. 27	ePKP	09 16 50	New Hebrides
	ePP	09 18 17	USCGS 0 = 08 57 53
	eSKS	09 23 53	13½°S 166°E
	ePKKP	09 26 33	Dist. 121.4°
	ePS	09 28 13	Mag. 6½
	eSS	09 35 01	
	ePKPPKP	09 35 37	
	e	09 38 13	
	eSSS	09 40 19	
	e	09 44 09	
	eLQ	09 48 29	
	eLR(NW)	09 54 49	
	eLQ ₂	10 49 49	
	eLR ₂ (SE)	10 52 21	
Mar. 27	eLQ	13 19 09	New Hebrides
	eLR	13 21 09	
Mar. 27	eLR	14 18 09	

Palisades, New York			
Date	Phase	h m s	Remarks
1960			
Mar. 27	eLR	18 24 09	Kermadec
Mar. 27	eP	20 22 29	Jalisco, Mexico
	iP	20 22 30	USCGS 0 = 20 15 46
	epP	20 22 35	20°N 104½°W
	ePP	20 23 35	Dist. 35.4°
	eS	20 27 46	Mag. 6
	ePcS	20 28 13	
	eSS	20 30 21	
	eLR(SW)	20 32 49	
Mar. 27	eP	21 25 21	
	ePP	21 26 29	
	e(S)	21 31 39	
	eLQ	21 34 09	
	eLR(SW)	21 36 19	
Mar. 27	eLR	22 53 09	
Mar. 27	eLR	23 26 09	
Mar. 27	iPKP	23 47 06	off coast N. Isl. N.Z.
	e	23 48 15	USCGS 0 = 23 28 04
	ePP	23 49 01	37½°S 177°E
	e	23 49 17	Dist. 126.3°
	eSS	00 06 17	
	e(SKSSKS)	00 08 53	
	e	00 11 09	
Mar. 28	eP	00 20 26	off S. coast Panama
	iP	00 20 40	USCGS 0 = 00 13 38
	e(pP)	00 21 05	7½°N 82°W
	ePP	00 21 37	Dist. 35.5°
	ePPP	00 21 49	Mag. 6½
	ePcP	00 22 43	
	iS	00 25 57	
	ePcS	00 26 29	
	eLR(SW)	00 29 09	
Mar. 28	e	03 04 39	
	eLR	03 10 09	
Mar. 28	ePS	07 06 29	New Hebrides Isls.
	ePPS	07 08 09	USCGS 0 = 06 36 27
	eSS	07 13 19	13½°S 165°E
	eSKKS	07 13 35	Dist. 122.1°
	e	07 23 19	
	eLQ	07 26 39	
	eLR(NW)	07 33 39	
	eLR ₂	08 30 09	

Palisades, New York

		h	m	s	Remarks
1960					
Mar. 28	eLR	10	06	09	
Mar. 28	eLR	11	01	09	
Mar. 28	eLR	12	13	09	
Mar. 28	ePS	13	07	09	Tonga Isls
	eSS	13	13	09	USCGS 0 = 12 37 50
	eLQ	13	23	49	23°S 176°W
	eLR	13	27	09	Dist. 113.6°
Mar. 28	eLQ	21	03	09	N. Atlantic Ocean
	eLR(NE)	21	03	49	
Mar. 29	eSS	00	48	29	Kermadec
	eLQ	01	01	09	USCGS 0 = 00 10 45
	eLR(W)	01	11	09	33½°S 177½°W
					Dist. 120.6°
Mar. 29	eLR	01	56	09	
Mar. 29	eLR	05	26	09	
Mar. 29	eP	06	46	39	New Hebrides
	e	06	47	43	USCGS 0 = 06 30 54
	iPKP	06	49	55	17°S 167°E
	e	06	49	59	Dist. 123.6°
	i	06	50	01	Mag. 6¼
	e	06	50	15	
	ePP	06	51	34	
	ePKS	06	53	17	
	ePPP	06	54	23	
	eSKS	06	56	57	
	eSKKS	06	58	33	
	eScSP	07	01	13	
	ePS	07	01	37	
	ePPS	07	02	55	
	eSS	07	08	09	
	e	07	11	29	
	eLQ	07	22	09	
	eLR(NW)	07	28	09	
	eLQ ₂	08	04	09	
	eLR ₂ (SE)	08	24	09	
Mar. 29	eLR	12	26	39	
Mar. 29	eLR	16	24	39	
Mar. 29	e	16	50	27	

Palisades, New York

41.

Date	Phase	h	m	s	Remarks
1960					
Mar. 29	eLR	17	53	49	
Mar. 29	eLR	21	30	09	
Mar. 29	ePKP	22	29	39	off coast New Guinea
	ePP	22	31	39	USCGS 0 = 22 10 20
	ePKS	22	33	03	6°S 147°E
	ePKKS	22	43	09	Dist. 129.5°
	ePPS	22	43	39	
	e(ScSPKP)	22	44	49	
	eSS	22	49	53	
	e(SSS)	22	53	59	
	e	23	03	57	
	eLQ	23	04	29	
	eLR(NW)	23	09	39	
Mar. 30	eLR ₂ (SE)	00	00	39	
Mar. 30	eLQ	02	31	09	
	eLR(NW)	02	33	09	
Mar. 30	eLQ	07	29	09	Aleutians
	eLR(N)	07	33	09	
Mar. 30	ePKP	11	08	45	New Hebrides
	ePP	11	10	21	USCGS 0 = 10 49 47
	ePKS	11	11	59	13¼°S 166°E
	ePKKP	11	18	29	Dist. 121.4°
	ePS	11	20	09	Mag. 6
	eSS	11	27	01	
	ePKPPKP	11	27	39	
	eLQ	11	39	29	
	eLR(NNW)	11	46	29	
	eLR ₂ (SSE)	12	43	09	
Mar. 30	ePKP	15	39	56	Loyalty Isls.
	eSKKS	15	48	18	USCGS 0 = 15 19 30
	ePPS	15	52	20	22¼°S 174°E
	eSS	15	56	48	Dist. 120.7°
	eSKKS	15	57	38	
	eLQ	16	10	08	
	eLR(NW)	16	17	38	
Mar. 30	i	19	42	23	
Mar. 31	e	02	00	52	
	eLQ	02	04	08	
	eLR(SW)	02	06	08	

Palisades, New York

1960		h	m	s	Remarks
Mar. 31	eLQ eLR	03	48	08	Honshu, Japan
Mar. 31	eLQ eLR(NW)	03	56	08	New Guinea
Mar. 31	e eLR	05	01	08	
Mar. 31	e(PP) e(S) eLQ eLR(WNW)	11	50	52	off coast Vancouver
		11	55	34	USCGS 0 = 11 41 45
		11	58	28	49°N 129½°W
		12	00	08	Dist. 39.3°
Mar. 31	eLR(SW)	15	30	08	S.W. of Galapagos
Mar. 31	e eLQ eLR(NW)	16	34	28	Honshu, Japan
		16	38	08	USCGS 0 = 15 48 13
		16	40	08	39½°N 143°E
					Dist. 93.0°
Mar. 31	eLR	17	04	08	
Mar. 31	e	18	20	29	
Mar. 31	iP eLQ eLR	18	59	58	
		19	06	48	
		19	10	08	
Mar. 31	eP ePP eS eSS eLQ eLR(W) Lg Rg	20	02	56	Gulf of Calif.
		20	04	08	USCGS 0 = 19 56 14
		20	08	22	26°N 110°W
		20	10	22	Dist. 33.4°
		20	11	08	Mag. 5½
		20	13	08	
		20	15	48	
		20	19	08	
Apr. 1	e eSS eLQ eLR(S)	13	35	26	S. Peru
		13	36	28	USCGS 0 = 13 18 23
		13	44	08	4½°S 73½°W
		13	47	28	Dist. 45.3°
Apr. 1	iP ePP eS e(PcS) eLQ eLR(WNW)	14	19	38	off coast Vancouver
		14	21	08	USCGS 0 = 14 12 05
		14	25	38	49°N 129½°W
		14	26	12	Dist. 39.3°
		14	29	08	
		14	30	48	

Palisades, New York

43.

Date	Phase	h	m	s	Remarks
1960					
Apr. 1	e	17	43	22	
Apr. 1	eLR(SE)	18	59	07	
Apr. 2	eLR	11	25	07	Near coast Ecuador
Apr. 2	eLR(NW)	15	17	07	New Britain
Apr. 2	eLQ eLR(SW)	15	37	07	Colombia
		15	39	07	
Apr. 2	eLR(E)	23	22	07	Western Iran
Apr. 3	eLR(E)	00	20	07	Iran
Apr. 3	eLR(N)	08	18	07	Honshu, Japan
Apr. 3	eLR(NW)	10	51	07	New Britain
Apr. 3	e e eLQ eLR(SE)	11	45	07	
		11	51	27	
		12	03	27	
		12	07	57	
Apr. 4	eLQ eLR(SE)	00	09	06	Lesser Antilles
		00	11	26	
Apr. 4	eLQ eLR(W)	04	42	36	
		04	45	06	
Apr. 4	ePS eSS eLQ eLR(WNW)	08	26	36	Solomon Isls.
		08	34	14	USCGS 0 = 07 56 15
		08	48	06	10°S 161½°E
		08	53	06	Dist. 122.4°
Apr. 4	eLR	09	48	06	
Apr. 4	eLR	11	22	06	Bismarck Archipelago
Apr. 4	eLQ eLR(NW)	13	38	36	New Britain
		13	45	06	
Apr. 4	eLQ eLR	14	37	36	China
		14	41	56	
Apr. 4	eLR	22	05	06	

Palisades, New York

		h	m	s	Remarks
1960					
Apr. 4	e(SS)	23	47	56	Alentians
	eLQ	23	55	46	USCGS 0 = 23 22 47
Apr. 5	eLR	00	00	46	50½°N 177°W Dist. 66.8°
Apr. 5	e	02	04	26	
	eLQ	02	08	06	
	eLR	02	10	06	
Apr. 5	ePP	07	36	46	S. Sandwich Isls
	ePPP	07	39	14	USCGS 0 = 07 17 45
	eSKS	07	42	50	61°S 26°W
	eSKKS	07	43	40	Dist. 108.9°
	ePS	07	46	06	
	eSS	07	52	26	
	ePKPPKP	07	55	56	
	e	07	59	26	
	eLQ	08	02	46	
	eLR(SSE)	08	08	16	
Apr. 5	eSKS	13	01	26	S. Sandwich
	ePS	13	04	36	USCGS 0 = 12 36 15
	eSS	13	10	58	60½°S 25°W
	eLQ	13	21	06	Dist. 108.8°
	eLR(SSE)	13	26	06	
Apr. 5	eLR	17	48	06	North Atlantic
Apr. 6	eLR	02	39	36	Chile-Bolivia Border
Apr. 6	eLR(SE)	21	28	06	
Apr. 7	eLR(SE)	06	36	04	
Apr. 7	eLR(NW)	09	34	04	Honshu, Japan
Apr. 7	eSKS	14	13	04	Fiji Isls.
	eSKKS	14	15	44	USCGS 0 = 13 47 28
	eSS	14	26	04	24°S 179½°W Dist. 129.8° Mag. 6
Apr. 7	eLR(SW)	15	29	03	
Apr. 7	eLQ	20	58	03	Marianas Isls.
	eLR(N)	21	03	03	

Palisades, New York

Date	Phase	h	m	s	Remarks	45.
1960						
Apr. 8	eP	00	10	33	Tonga Isls.	
	ePP	00	15	11	USCGS 0 = 23 55 54	
	eSKS	00	20	43	21°S 177°W	
	ePS	00	24	27	Dist. 113.1°	
	eSS	00	30	13	Mag. 6	
	eSSS	00	35	03		
Apr. 8	eLR(SE)	02	10	03		
Apr. 8	eLR	02	52	03		
Apr. 8	eLR(W)	05	49	03		
Apr. 8	eLR	09	30	03		
Apr. 8	eLQ	09	30	33	New Guinea	
	eLR(NW)	09	38	03		
Apr. 8	eLR(SE)	10	35	03		
Apr. 8	eLR(SE)	14	13	03		
Apr. 9	e	02	22	33		
	eLQ	02	25	33		
	eLR	02	28	03		
Apr. 9	e	03	30	11	Honshu, Japan	
	eLQ	03	35	03	USCGS 0 = 02 43 51	
	eLR	03	41	03	40°N 143°E Dist. 92.7°	
Apr. 9	eLR	08	05	33		
Apr. 9	eLR	09	14	03		
Apr. 9	eLR	20	22	03		
Apr. 10	eLQ	00	57	03	Honshu, Japan	
	eLR	01	03	23		
Apr. 10	eLR	05	50	36	Mariana Isls.	
Apr. 10	e	08	35	06	Argentina	
	eLQ	08	47	06		
	eLR	08	52	06		
Apr. 10	eLQ	11	45	06		
	eLR	11	48	06		

Palisades, New York

1960		h	m	s	Remarks
Apr. 10	eP	20	36	22	Fox Isl. Aleutians
	eS	20	44	34	USCGS 0 = 20 26 12
	eScS	20	46	26	53°N 167½°W
	eSS	20	48	46	Dist. 60.5°
	eLQ	20	54	06	
	eLR(NW)	20	56	06	
Apr. 11	eLR	17	07	09	New Hebrides
Apr. 12	eLQ	04	55	09	Western Turkey
	eLR	05	02	39	
Apr. 12	eLQ	08	05	09	
	eLR	08	10	39	
Apr. 12	eLQ	12	27	09	
	eLR	12	34	09	
Apr. 12	i	19	00	08	
Apr. 12	ePP	23	14	10	
	eSKS	23	20	10	
	eSS	23	29	42	
	eSSS	23	33	34	
	eLQ	23	39	50	
	eLR(SW)	23	44	56	
Apr. 13	eLR	05	24	10	Aleutians
Apr. 13	e(SS)	08	28	46	Manchuria
	eLQ	08	38	40	
	eLR(NW)	08	43	10	
					USCGS 0 = 07 57 46
					42½°N 127°E
					Dist. 92.8°
Apr. 13	iP	12	43	50	Guatemala-Mexico Border
	P(Z) 8 sec 2 mic dil				
	from SW				
	ePP	12	44	44	
	eS	12	48	50	
	e	12	49	34	
	ePcS	12	50	30	
	eLQ	12	51	10	
	eLR(SW)	12	53	10	
					15½°N 92½°W
					Dist. 30.1°
					Mag 6
Apr. 13	eLQ	15	41	41	
	eLR	15	46	01	
Apr. 13	i	17	38	53	

Palisades, New York

47.

Date	Phase	h	m	s	Remarks
1960					
Apr. 14	eLR	01	34	11	
Apr. 14	eLR	07	54	11	
Apr. 14	i	17	25	21	
Apr. 14	eLR	20	13	10	
Apr. 14	i	21	00	32	
	e	21	01	17	
	eLR	21	08	10	
	eP	03	37	32	
	eS	03	47	24	
Apr. 15	ePPS	03	48	18	Easter Isl. Region
	eSS	03	52	26	
	eSSS	03	58	14	
	eLQ	03	59	10	
	eLR(SW)	04	02	30	
Apr. 15	eLR(NW)	05	13	10	New Hebrides
Apr. 15	eLR(NE)	05	46	10	
Apr. 15	eLR	09	30	00	Kermadec Isls.
Apr. 15	eLQ	10	47	40	Hokkaido, Japan
	eLR(NW)	10	53	10	
Apr. 15	eP	11	52	22	Honshu, Japan
	eSKS	12	02	58	
	eS	12	03	26	
	eLQ	12	18	10	
	eLR(NW)	12	23	10	
Apr. 15	eLQ	17	09	51	
	eLR	17	13	41	
Apr. 15	eLQ	17	25	00	
	eLR	17	29	00	
Apr. 15	i	19	57	46	
Apr. 15	i	20	28	06	
Apr. 15	e	21	15	56	
	e	21	16	06	
	eLR	21	34	11	

Palisades, New York			
Date	Phase	h m s	Remarks
1960			
Apr. 15	eP	22 20 37	New Hebrides Isls.
	ePKP	22 24 05	USCGS 0 = 22 05 06
	ePP	22 25 35	13½°S 166°E
	ePKS	22 28 07	Dist. 121.4°
	ePPP	22 28 59	Mag. 6½
	eSKS	22 31 11	
	eSKKS	22 32 41	
	ePKKP	22 33 43	
	eScSP	22 35 11	
	ePS	22 35 31	
	ePPS	22 37 41	
	eSS	22 42 11	
	eSSS	22 54 11	
	eLQ	22 56 31	
	eLR(NW)	23 02 31	
	eLR ₂ (SE)	23 57 41	
Apr. 16	eLR	13 25 41	
Apr. 16	eLR	19 49 11	
Apr. 16	eLR	23 59 51	
Apr. 16	e	06 48 31	
	eLQ	07 58 11	
	eLR(SW)	08 01 11	
Apr. 16	eLR(SW)	11 47 11	
Apr. 17	eSKS	16 05 15	Tonga Isls.
	ePS	16 09 01	USCGS 0 = 15 40 02
	eSS	16 15 27	21°S 175½°W
	eSSS	16 24 31	Dist. 112.1°
	eLR(SW)	16 32 11	
Apr. 17	eLR	17 46 31	
Apr. 17	eLR(SW)	18 45 11	
Apr. 18	eLR(W)	04 55 31	
Apr. 18	eLR	06 13 41	
Apr. 18	eLR(W)	10 00 11	New Hebrides
Apr. 18	eLR(NW)	13 58 41	New Hebrides

Palisades, New York				49.
Date	Phase	h m s	Remarks	
1960				
Apr. 18	eLR	19 39 11		
Apr. 18	eLR	20 50 11		
Apr. 19	eLR	01 19 11		
Apr. 19	e	09 57 31	Tonga Islands	
	eLQ	10 07 41		
	eLR(SW)	10 14 11		
Apr. 19	eLR	15 31 11		
Apr. 19	eLR	15 50 11		
Apr. 19	eP	19 36 44	Aleutians	
	ePcP	19 36 58	USCGS 0 = 19 26 00	
	eLR	20 02 11	51½°N 174°W	
			Dist. 64.7°	
Apr. 19	e	21 07 01	New Hebrides	
	eLR	21 10 11		
Apr. 19	eLR	23 16 41	New Hebrides	
Apr. 19	eLR	23 45 11	New Hebrides	
Apr. 20	eLQ	00 38 31		
	eLR	00 43 41		
Apr. 20	eLR	06 33 11		
Apr. 20	eLR	10 52 31		
Apr. 20	eLR	14 09 11		
Apr. 20	i	17 18 07		
Apr. 20	i	17 19 55		
Apr. 20	eLR	22 34 41	New Guinea	
Apr. 21	iP	02 25 59	Pacific Ocean, 1200 mi.	
	P(Z) 6 sec. 1.2 mic.		W. of Galapagos	
	ePP	02 28 15	USCGS 0 = 02 16 29	
	ePPP	02 29 21	2½°S 110°W	
	eS	02 33 35	Dist. 54.4°	
	ePPS	02 33 47	Mag. 5¼	
	eSS	02 37 29		
	eLQ	02 39 35		
	eLR(SW)	02 42 41		

Palisades, New York

		h	m	s	Remarks
1960					
Apr. 21	eLR	03	40	11	
Apr. 21	eLR	09	59	11	
Apr. 21	eLR	11	56	11	
Apr. 21	eLR	17	17	11	
Apr. 22	eLR	01	07	01	
Apr. 22	eLR	14	16	11	
Apr. 22	eLR	15	57	11	Kermadec Isls.
Apr. 22	ePP	20	45	11	Tonga Isls.
	eSKKS	20	52	35	USCGS 0 = 20 26 28
	ePS	20	54	47	17½°S 174½°W
	eSS	21	00	15	Dist. 109.2°
	eSSS	21	04	31	
	eLQ	21	10	41	
	eLR(w)	21	15	11	
	eLQ ₂	21	32	31	
	eLQ ₃	22	07	41	
Apr. 22	eLR	22	40	11	
Apr. 23	eLR	06	51	11	Iran
Apr. 23	e	11	51	17	
	i	11	51	28	
Apr. 23	eLR	13	57	11	Outer Mongolia
Apr. 23	eLR	18	58	41	Solomon Isls.
Apr. 23	eLR	20	50	11	
Apr. 23	e	22	14	21	
	eLR(w)	22	28	11	
Apr. 24	eLQ	00	34	01	Aleutians
	eLR	00	37	11	

Palisades, New York

Date	Phase	h	m	s	Remarks
1960					
Apr. 24	iPKP	03	40	59	Java Sea
	PKP (Z) 10 sec	18	mic		USCGS 0 = 03 22 23
	dil from N				6°S 113½°E
	ipPKP	03	43	19	Dist. 144.5°
	ePKS	03	44	11	
	epPKS	03	47	23	
	e(PKKP)	03	50	37	
	e	03	51	44	
	ePS	03	54	19	
	esPS	03	57	41	
	e(PKPPKS)	03	58	39	
	eSS	04	02	17	
	eSSS	04	07	21	
	eSSSS	04	11	47	
	eL(N)	04	17	51	
	e	04	21	19	
	e	04	23	21	
	e	04	37	31	
Apr. 24	eLR	06	41	11	E. Turkey
Apr. 24	e(PP)	12	30	51	So. Iran
	ePS	12	40	39	USCGS 0 = 12 14 26
	ePKKP	12	44	15	28°N 54½°E
	eSS	12	45	51	Dist. 96.3°
	eSSS	12	49	39	
	e	12	53	31	
	eLQ	12	55	41	
	eLR(NE)	13	01	25	
Apr. 24	eLR	20	15	11	
Apr. 25	eLQ	01	03	11	Hokkaido, Japan
	eLR	01	05	11	
Apr. 25	eLR	12	15	31	
Apr. 25	eS	15	10	47	Kodiak Isls. reg.
	eSS	15	14	31	USCGS 0 = 14 53 53
	eLR(NW)	15	21	41	56°N 155°W
					Dist. 52.7°
Apr. 25	eLQ	16	59	11	Aegean Sea
	eLR	17	04	11	
Apr. 25	eS	19	04	31	El Salvador
	eLR	19	07	11	USCGS 0 = 18 53 17
					13½°N 88½°W
					Dist. 30.2°

Palisades, New York

		h	m	s	Remarks
1960					
Apr. 26	e	00	11	31	
	eLR	00	38	11	
Apr. 26	ePcP	04	43	21	Nicaragua-Costa Rica
	eS	04	46	31	Border
	eLR(SW)	04	50	11	USCGS 0 = 04 34 06 11°N 84½°W Dist. 31.3°
Apr. 26	eLQ	07	30	11	
	eLR(NW)	07	38	11	
Apr. 26	eLR	11	23	11	
Apr. 26	eLR	14	58	10	
Apr. 26	eLR	19	04	10	Santa Cruz Isls.
Apr. 27	eLR	04	48	10	Hebgen Lake, Montana
Apr. 27	eSS	11	43	30	Solomon Isls.
	eLR	12	11	10	USCGS 0 = 11 05 48 9°S 160°E
Apr. 27	eSS	17	50	20	Bismarck Sea
	eSSS	17	58	30	USCGS 0 = 17 11 30
	e	18	03	00	3½°S 146½°E
	eLQ	18	04	40	Dist. 127.9°
	eLR(NW)	18	10	30	
	eLR ₂	19	05	10	
Apr. 27	eLQ	21	57	10	Honshu, Japan
	eLR	22	03	40	
Apr. 27	eLQ	23	36	40	Luzon, Philippines
	eLR	23	47	40	
Apr. 28	ePS	02	38	20	Sandwich Isls.
	eSS	02	44	46	USCGS 0 = 02 10 14
	eSSS	02	52	30	59½°S 26°W
	eLQ	02	54	40	Dist. 107.7°
	eLR(SE)	03	00	10	
Apr. 28	eLR	04	23	10	
Apr. 28	e	05	47	30	Near coast New Guinea
	eLQ	06	01	20	
	eLR(NW)	06	08	10	

Palisades, New York

53.

Date	Phase	h	m	s	Remarks
1960					
Apr. 28	eLR	07	02	10	
Apr. 28	eLR	17	17	10	Dodecanese Isls.
Apr. 29	ePP	02	34	18	Sandwich Isls.
	eSKS	02	40	20	USCGS 0 = 02 15 35
	ePS	02	43	18	56½°S 26°W
	eSS	02	49	10	Dist. 107.6°
	eSSS	02	53	10	
	eLQ	02	58	56	
	eLR(SE)	03	04	10	
Apr. 29	eLR	04	25	10	Sandwich Isls.
Apr. 29	eL	06	25	10	Sandwich Isls.
Apr. 29	eLR	10	12	10	Celebes
Apr. 29	eLQ	11	00	10	Celebes
	eLR	11	09	10	
Apr. 29	eS	13	01	30	Ecuador
	eLQ	13	06	50	USCGS 0 = 12 47 16
	eLR	13	13	10	1°S 78½°W Dist. 42°
Apr. 29	eLR	14	23	50	Celebes
Apr. 29	i	15	55	51	
Apr. 29	ePKP	19	51	34	Celebes
	ePP	19	54	19	USCGS 0 = 19 32 12
	ePKS	19	55	15	0° 122°E
	ePPP	19	57	23	Dist. 136.7°
	ePKKP	20	01	31	
	ePPS	20	06	41	
	eSS	20	12	55	
	e(LQ)	20	27	41	
	eLR(N)	20	36	11	
	eLQ ₂	21	04	41	
Apr. 29	i	20	17	47	
Apr. 30	eLR	00	53	11	

54.		Palisades, New York			
Date	Phase	h	m	s	Remarks
1960					
Apr. 30	ePKP	04	20	59	Celebes
	ePP	04	23	41	USCGS 0 = 04 01 32
	ePKS	04	24	31	0° 122°E
	ePPS	04	36	01	Dist. 136.7°
	eSS	04	41	41	
	eLQ	04	56	11	
	eLR(N)	05	05	11	
	eLQ ₂	05	34	11	
	eLR ₂	05	47	11	
Apr. 30	eLQ	11	51	11	Celebes
	eLR	11	54	11	
Apr. 30	e	15	11	21	Solomon Isls
	e	15	16	41	USCGS 0 = 14 17 04
	eLR(NW)	15	20	31	9°S 157°E Dist. 124.9°
Apr. 30	iPKP	22	28	30	Banda Sea
	ipPKP	22	31	13	USCGS 0 = 22 10 07 6°S 124½°E Dist. 141.4°
Apr. 30	eLR	23	21	11	

LAMONT GEOLOGICAL OBSERVATORY
COLUMBIA UNIVERSITY
PALISADES, NEW YORK



●

SEISMOLOGICAL BULLETIN

By

RUTH B. SIMON

1 May 1960 - 31 August 1960

L.G.O. Contribution No. 469

Latitude: 41° 00' 25" North

Longitude: 73° 54' 31" West

Elevation: 102.59 meters

Bedrock: Palisades diabase Triassic Age

INSTRUMENTS

Three component Columbia University seismographs.
To = 12 sec., Tg = 15 sec.

Three component Benioff seismographs. Short period, To = 1 sec.,
Tg = 0.2 sec. Long Period, To = 1 sec. Tg = 75 sec.

One Columbia University vertical seismograph. To = .33 sec.,
Tg = 0.2 sec.

Three component Columbia University visual recording seismographs,
To = 12 sec.

One Columbia University vertical seismograph for visual recording
To = 1 sec.

Three component Columbia University long period seismographs.
To = 15 sec., Tg = 75 sec.

Three component Columbia University long period seismographs.
To = 30 sec., Tg = 100 sec.

Three component Columbia University long period seismographs.
To = 30 sec., Tg = 100 sec. P2*

Two Columbia University Microbarographs. To = 10 sec., Tg = 75 sec.

ABBREVIATIONS

i = sudden beginning of the motion (impetus)

e = gradual beginning of the motion (emersio)

Lg = short period continental surface shear wave

Rg = Continental Rayleigh wave Comp. = compression

All times are G.C.T. Dil. = dilatation

Time - I.B.M. Invar pendulum clock corrected by Naval Observatory
time signals every six hours.

* Seismographs of High Magnification at Long Periods,
Annales de Geophysique, Tome 15, No. 4, 1959, pp. 423-433.

G. Sutton and J. Oliver,

Palisades, New York				1.
Date	Phase	h m s	Remarks	
1960				
May 1	eLR	00 45 41		
May 1	e	18 23 11		
	eLQ	18 31 11		
	eLR(SE)	18 35 11		
May 2	eLQ	01 52 31	Sinkiang, China	
	eLR(N)	01 58 11		
May 2	e(S)	02 30 39		
	eLQ	02 32 21		
	eLR(SW)	02 33 21		
May 2	eLR	05 12 11	Kermadec Isls	
May 2	e	09 03 11		
	e	09 06 11		
	eLR(SE)	09 15 11		
May 2	ePP	12 32 21	Celebes	
	ePKS	12 33 31	USCGS 0 = 12 10 11	
	eSS	12 50 19	0° 121½°E	
	e	12 52 19	Dist. 136.8°	
	eSSS	13 00 41		
	eLQ	13 07 11		
	eLR(NW)	13 14 11		
May 2	e	19 02 51		
	eLQ	19 09 11		
	eLR	19 15 11		
May 3	e	07 54 07	Iran	
	eLR	07 57 11	USCGS 0 = 06 59 04	
			29½°N 55°E	
			Dist. 95.4°	
May 3	ePPS	08 25 00	China	
	eLQ	08 44 11	USCGS 0 = 07 55 07	
	eLR(N)	08 49 11	29°N 99½°E	
			Dist. 110.1°	
May 3	eLR	14 27 41	Celebes	
May 3	eLR	23 06 11	Honshu, Japan	
May 4	eLR	02 02 11		
May 4	eLR	05 40 11		

2.		Palisades, New York			
Date	Phase	h	m	s	Remarks
1960					
May 4	e	16	06	26	
May 4	e	16	20	08	
May 4	eSS	19	06	35	Celebes
	e	19	09	51	USCGS 0 = 18 26 37
	eLQ	19	19	55	0° 122°E
	eLR(NW)	19	26	41	Dist. 136.7°
May 5	iP	11	37	52	E. Coast Kamchatka
	ePcP	11	38	09	USCGS 0 = 11 26 00
	eS	11	47	31	52½°N 158½°E
	eSS	11	53	31	Dist. 76.4°
	e(PKKP)	11	57	11	
	eLQ	11	59	51	
	eLR(NW)	12	04	21	
May 5	eLQ	23	54	41	
May 6	eLR(N)	00	11	11	
May 6	eLR	06	48	11	Near Coast Chile
May 6	eLQ	12	25	11	
	eLR	12	30	31	
May 6	e	18	51	01	
	eLQ	19	11	11	
	eLR	19	19	11	
May 8	eS	03	40	21	Pacific Ocean
	eSS	03	44	11	900 mi. S.W. Galapagos
	eLQ	03	46	31	USCGS 0 = 03 22 41
	eLR(SW)	03	49	11	Dist. 55° No coord. given
May 8	e	12	21	31	
	eLR	12	26	11	
May 8	eLQ	14	44	41	Hindu Kush
	eLR	14	49	31	
May 8	eLQ	15	11	41	Kurile Isls.
	eLR	15	16	11	
May 9	e	06	58	03	Near coast Venezuela
	eLR	07	00	41	USCGS 0 = 06 46 00 11°N 63½°W Dist. 31.3°

Palisades, New York		3.			
Date	Phase	h	m	s	Remarks
1960					
May 9	eLR	10	01	51	Solomon Isls.
May 9	eLR	13	10	41	
May 9	eLR	15	21	51	
May 9	eLR	16	51	03	Atlantic Ocean
May 9	eP	20	22	39	Pacific Ocean
	eS	20	30	23	USCGS 0 = 20 13 25
	eSS	20	34	03	900 mi. S.W. Galapagos
	e(SSS)	20	36	11	no coord. given
	eLQ	20	37	31	Dist. 52°
	eLR(SW)	20	39	41	
May 10	eL	10	54	11	Fiji
May 10	ePS	11	23	35	Sandwich Isls.
	eSS	11	29	31	USCGS 0 = 10 56 02
	eLQ	11	39	11	55½°S 26°W
	eLR(SE)	11	44	51	Dist. 104.4°
May 10	eLR	18	25	41	Kamchatka
May 10	eLR	21	53	41	
May 10	eP	23	22	49	Chipas, Mexico
	e(S)	23	28	19	USCGS 0 = 23 16 17
	eLR(SW)	23	30	55	15½°N 92½°W
May 11	eLR ₂	00	08	51	Dist. 30.1°
May 11	eLQ	05	06	41	
	eLR(NE)	05	17	31	
May 11	eLR	06	38	11	
May 11	ePKP	18	55	30	Ceram Sea
	epPKP	18	56	14	USCGS 0 = 18 36 00
	ePP	18	57	32	3°S 131°E
	ePKS	18	58	58	Dist. 136.0°
	eSKP	18	59	10	Mag. 6½
	ePKKP	19	05	00	
	ePS	19	08	18	
	ePPS	19	10	18	
	e	19	11	18	
	eSS	19	16	10	
	eSSS	19	21	16	
	eLQ	19	33	40	
	eLR(NW)	19	39	50	

4.				Palisades, New York	
Date	Phase	h m s	Remarks		
1960					
May 12	eLQ	07 27 40	Sundra Strait		
	eLR	07 36 00			
May 12	e	16 23 00			
	eLR	16 27 10			
May 12	eP	22 39 18	Panama		
	P (Z) 8 sec. 1.2 mic.		USCGS 0 = 22 32 32		
	(C) from S		7½°N 81°W		
	ePP	22 39 56	Dist. 34.0		
	ePPP	22 40 40			
	eS	22 44 46			
	eLQ	22 46 34			
	eLR(SSW)	22 48 10			
May 13	eLQ	00 44 30	Panama		
	eLR(SW)	00 48 10			
May 13	eP	10 07 50	Revilla Gigedo		
	eS	10 13 40	USCGS 0 = 10 00 40		
	eScS	10 16 02	20°N 109°W		
	eSS	10 18 00	Dist. 36.4°		
	eSSS	10 19 20			
	eLQ	10 20 10			
	eLR(SW)	10 22 10			
May 13	iP	16 16 58	Alaska Peninsula		
	P (Z) 6 sec. 1 mic.		USCGS 0 = 16 07 12		
	comp from NW		55°N 161½°W		
	ipP	16 17 05	Dist. 56.0°		
	ePeP	16 17 38			
	ePP	16 18 58			
	iS	16 24 44			
	ePPS	16 25 10			
	eScS	16 25 50			
	eSS	16 28 34			
	eSSS	16 30 50			
	eLQ	16 31 22			
	eLR(NW)	16 35 10			
May 13	eLR(SW)	21 46 30	Kermadec		

Palisades, New York				5.
Date	Phase	h m s	Remarks	
1960				
May 14	eP	22 31 39	Kamchatka	
	ePcP	22 31 53	USCGS 0 = 22 19 55	
	eS	22 41 14	53½°N 159½°E	
	eSS	22 46 20	Dist. 75.2°	
	eSSS	22 50 30		
	eLQ	22 52 10		
	eLR(NW)	22 56 10		
May 15	e	06 46 02		
	e	06 51 40		
	eLR(SE)	07 01 10		
May 15	eLR	14 40 10	Formosa	
May 15	eS	21 55 20	Alaska Peninsula	
	eLQ	22 01 10	USCGS 0 = 21 37 08	
	eLR	22 05 10	54½°N 164½°W	
			Dist. 58.2°	
May 16	eL	05 12 40	Honshu, Japan	
May 17	eLQ	09 18 30		
	eLR	09 20 50		
May 17	eS	09 35 20	Svalbard Region	
	eLR(NE)	09 42 10	USCGS 0 = 09 19 32	
			78°N 8°E	
			Dist. 48.5°	
May 17	eLR(SW)	15 26 10		
May 18	eP	06 49 18	Ryukyu Isls.	
	ePP	06 53 40	USCGS 0 = 06 35 09	
	ePPP	06 56 00	29°N 130°E	
	e	06 58 02	Dist. 106.9°	
	e(SKS)	06 59 56		
	e(SKS2)	07 00 18		
	eSKKKS	07 01 16		
	ePS	07 02 58		
	ePPS	07 04 10		
	eSS	07 08 42		
	e(SKKKS)	07 12 54		
	eSSS	07 17 10		
	eLR(NNW)	07 22 50		

6.				Palisades, New York	
Date	Phase	h m s	Remarks		
1960					
May 18	e	13 28 40			
	e	13 32 40			
	eLQ	13 47 30			
	eLR(SW)	13 53 40			
May 18	eLR	15 44 10			
May 18	e(PPS)	18 41 50	Celebes		
	e(ScSPKP)	18 43 30	USCGS 0 = 18 08 45		
	eLR	19 01 10	No coord. obt.		
May 19	ePP	02 24 34	Hindu Kush		
	eSKKS	02 31 42	USCGS 0 = 02 07 00		
	ePS	02 32 58	36°N 71°E		
	ePPS	02 33 40	Dist. 96.9°		
	eSS	02 38 50			
	eLQ	02 48 50			
	eLR(NE)	02 53 40			
May 19	eLR(W)	08 25 10			
May 19	eP	10 09 46			
	ePP	10 12 50			
	eS	10 19 54			
	ePPS	10 21 22			
	eSS	10 24 40			
	eLQ	10 31 20			
	eLR(SW)	10 35 10			
May 19	e	10 32 10	Mascarene Isls		
	ePPP	10 36 22	USCGS 0 = 10 11 51		
	eSS	10 52 50	17°S 66°E		
	eSSS	11 05 20	Dist. 138°		
	e	11 07 26			
	eLQ	11 09 10			
	eLR(ESE)	11 16 30			
May 20	eS	00 14 17			
	eSS	00 18 00			
	eLQ	00 19 39			
	eLR(SW)	00 23 29			
May 20	e	01 02 19			
	eLR(SW)	01 08 39			
May 20	eLR(NW)	01 23 29	New Guinea		

Palisades, New York				7.
Date	Phase	h m s	Remarks	
1960				
May 20	eP	11 28 39	Norfolk Isl.	
	ePKP	11 31 42	USCGS 0 = 11 12 31	
	ePP	11 33 49	28°S 167½°E	
	ePKS	11 35 03	Dist. 128.7°	
	eSKKKS	11 40 53	Mag. 6½-6¾	
	ePS	11 43 49		
	ePPS	11 45 25		
	eScSPKP	11 46 49		
	eSS	11 51 33		
	eSSS	11 56 17		
	eLQ	12 06 39		
	eLR(WNW)	12 13 09		
	G ₂	13 01 49		
May 20	eS	18 04 37	Hebgen Lake	
	eLQ	18 08 21	USCGS 0 = 17 54 02	
	eLR(WNW)	18 09 19	45°N 111°W	
			Dist. 27.2°	
May 20	eLR	18 44 09		
May 20	eLR	20 38 29		
May 20	eLR	21 34 09		
May 21	eLR	07 19 09	W. Coast Greece	
May 21	eLQ	09 10 39	Philippines	
	eLR	09 18 09		
May 21	iP	10 14 54	Near coast Chile	
	P(Z) 10 sec. 9 mic.		USCGS 0 = 10 02 50	
	Comp from S		37½°S 73½°W	
	ipP	10 15 08	Dist. 78.1	
	e	10 16 09	Mag. 7½	
	ePP	10 18 15		
	iS	10 24 41		
	eSS	10 29 29		
	eLR	10 35 39		
May 21	eP	11 05 56	Chile	
			USCGS 0 = 10 53 51	
			37½°S 72½°W	
			Dist. 78.1°	
May 21	iP	12 06 39		

8.		Palisades, New York			
Date	Phase	h	m	s	Remarks
1960					
May 21	eP	13	11	00	Chile
	epP	13	12	21	USCGS 0 = 12 59 58 37½°S 72½°W Dist. 78.1°
May 21	eLQ	19	24	09	Chile
	eLR	19	26	49	
May 21	e	22	25	49	
	eLR	22	40	39	
May 22	e	01	37	29	
May 22	eLQ	01	54	29	
	eLR	01	58	09	
May 22	e	04	00	29	Chile
	e	04	03	33	USCGS 0 = 03 46 22
	e	04	08	13	37½°S 73°W
	eLR	04	25	09	Dist. 77.1°
May 22	eP	06	13	39	Chile
	eS	06	23	39	USCGS 0 = 06 01 36
	ePPS	06	24	17	38°S 73½°W
	eLQ	06	36	09	Dist. 78.6°
	eLR	06	41	09	
May 22	eP	08	22	53	Chile
	eS	08	32	53	USCGS 0 = 08 10 53
	eLQ	08	45	09	37½°S 73°W
	eLR	08	51	29	Dist. 77.1°
May 22	eP	10	42	42	Chile
	P (Z) 8 sec. 3.5 mic.				USCGS 0 = 10 30 39
	Comp from S				38°S 73½°W
	ePPP	10	47	33	Dist. 78.6°
	eS	10	52	37	Mag. 6½
	ePS	10	53	21	
May 22	eP	10	44	45	Chile
	P(Z) 16 sec. 9.5 mic.				USCGS 0 = 10 32 43
	Comp from S				37½°S 73°W
	ePP	10	48	13	Dist. 78.1°
	ePPP	10	49	57	Mag. 7¼-7½
	eS	10	54	39	
	eSS	10	59	09	
	eLQ	11	05	09	
	eLR	11	11	09	

Palisades, New York		9.			
Date	Phase	h	m	s	Remarks
1960					
May 22	iP	19	07	43	Chile
	P (Z) 10 sec. 18 mic.				USCGS 0 = 18 55 57
	Comp. from SSW				38°S 73½°W
	ePP	19	11	21	Dist. 78.6°
	ePPP	19	13	23	Mag. 7¼
	iS	19	17	59	
	ePS	19	18	21	
	ePPS	19	18	59	
	eSS	19	22	29	
	e(PKKP)	19	26	49	
	eL	19	29	39	
May 22	eP	19	22	41	Chile
					USCGS 0 = 19 10 47
					38°S 73½°W
					Dist. 78.6°
					Mag. 7¼
May 22	iP	19	23	14	Chile
					USCGS 0 = 19 11 20
					38°S 73½°W
					Dist. 78.6°
					Mag. 8¼-8½
May 22	eP	22	20	22	
May 22	eP	22	26	13	
May 22	eP	22	27	38	
May 23	iP	00	37	52	Chile
					USCGS 0 = 00 25 44
					38½°S 75°W
					Dist. 79.1°
May 23	eP	01	05	08	Chile
	e	01	06	11	USCGS 0 = 00 51 12
					37½°S 72°W
					Dist. 78.1°
May 23	eP	01	47	04	Chile
					USCGS 0 = 01 34 53
					39½°S 74°W
					Dist. 80.1°

10.				Palisades, New York			
Date	Phase	h m s	Remarks	Date	Phase	h m s	Remarks
1960							
May 23	eP	02 58 53	Chile USCGS 0 = 02 46 30 41½°S 73½°W Dist. 82.2°	May 24	ePKP	15 06 01	S. Isl New Zealand
					epPKP	15 06 13	USCGS 0 = 14 46 34
					ePP	15 08 41	44½°S 167½°E
					ePKS	15 09 33	Dist. 136°
					eSKS	15 13 09	Mag. 6¼-7
					eSKKS	15 15 31	
May 23	eP	05 25 41	Chile		e(SKSP)	15 18 35	
	ePcP	05 25 52	USCGS 0 = 05 13 35		ePS	15 18 59	
	eS	05 35 53	38°S 73½°W		ePPS	15 21 15	
	eLR	05 51 49	Dist. 78.6°		eSS	15 26 29	
					eSSS	15 31 29	
May 23	eLR	07 53 09	Chile		eLQ	15 41 39	
					eLR(WSW)	15 48 19	
May 23	eS	11 01 03	Chile		eLQ ₂	16 18 09	
	eLR	11 20 09	USCGS 0 = 10 37 59 43½°S 73½°W Dist. 84.1°	May 24	eP	20 45 51	S. Chile
					ePP	20 49 33	USCGS 0 = 20 32 43
					eSKS	20 56 23	50½°S 74°W
May 23	e	16 07 41			eS	20 56 49	Dist. 91.1°
	eLQ	16 18 09			ePPS	20 58 05	
	eLR(W)	16 21 09			eSS	21 02 09	
					e(PKCP)	21 03 23	
May 23	e	17 14 19			e(PKKS)	21 07 39	
	eLR(E)	17 18 29			eLQ	21 10 09	
					eLR(SSE)	21 15 09	
May 23	e	20 22 17		May 25	e(S)	00 42 37	
	eLQ	20 32 19			eLQ	00 54 39	
	eLR(SSW)	20 38 09			eLR(SSE)	01 00 39	
				May 25	e	03 38 53	S. Isl. New Zealand
May 23	e	22 27 29			e	03 39 29	USCGS 0 = 02 37 42
	e	22 32 25			eLR	03 45 09	44°S 168°E Dist. 135.2°
	eLR(SSW)	22 37 09		May 25	eSKS	05 07 43	S. Chile
May 24	eLR(SSE)	04 04 09			eS	05 07 53	USCGS 0 = 04 44 06
May 24	eLR	05 43 09			ePS	05 08 45	No coord. given
May 24	eLQ	08 28 09			eSS	05 13 29	
	eLR(SSE)	08 33 09			eSSS	05 16 49	
May 24	eLR	09 47 09			e(PKKS)	05 18 09	
May 24	eLR	13 50 09			eLR(SSE)	05 25 09	
				May 25	eLR	07 06 09	

Palisades, New York				11.
Date	Phase	h m s	Remarks	
1960				
May 24	ePKP	15 06 01	S. Isl New Zealand	
	epPKP	15 06 13	USCGS 0 = 14 46 34	
	ePP	15 08 41	44½°S 167½°E	
	ePKS	15 09 33	Dist. 136°	
	eSKS	15 13 09	Mag. 6¼-7	
	eSKKS	15 15 31		
	e(SKSP)	15 18 35		
	ePS	15 18 59		
	ePPS	15 21 15		
	eSS	15 26 29		
	eSSS	15 31 29		
	eLQ	15 41 39		
	eLR(WSW)	15 48 19		
	eLQ ₂	16 18 09		
May 24	eP	20 45 51	S. Chile	
	ePP	20 49 33	USCGS 0 = 20 32 43	
	eSKS	20 56 23	50½°S 74°W	
	eS	20 56 49	Dist. 91.1°	
	ePPS	20 58 05		
	eSS	21 02 09		
	e(PKCP)	21 03 23		
	e(PKKS)	21 07 39		
	eLQ	21 10 09		
	eLR(SSE)	21 15 09		
May 25	e(S)	00 42 37		
	eLQ	00 54 39		
	eLR(SSE)	01 00 39		
May 25	e	03 38 53	S. Isl. New Zealand	
	e	03 39 29	USCGS 0 = 02 37 42	
	eLR	03 45 09	44°S 168°E Dist. 135.2°	
May 25	eSKS	05 07 43	S. Chile	
	eS	05 07 53	USCGS 0 = 04 44 06	
	ePS	05 08 45	No coord. given	
	eSS	05 13 29		
	eSSS	05 16 49		
	e(PKKS)	05 18 09		
	eLR(SSE)	05 25 09		
May 25	eLR	07 06 09		

12.		Palisades, New York		
Date	Phase	h m s	Remarks	
1960				
May 25	eP	08 47 20	off coast Chile	
	P (Z) 16 sec. 5.5 mic.		USCGS 0 = 08 34 33	
	dil from S		45°S 76°W	
	epP	08 47 29	Dist. 86°	
	ePP	08 50 45	Mag. 6¼	
	eSKS	08 57 35		
	eS	08 57 53		
	ePS	08 58 53		
	eSS	09 03 17		
	e(PKKP)	09 09 39		
	eLQ	09 13 29		
	eLR(SSE)	09 20 09		
	G ₂	10 31 39		
May 25	eLR(NW)	14 42 09	Halmahera	
May 25	eLQ	18 01 09		
	eLR	18 04 09		
May 25	e	19 44 15	Chile	
	eLQ	19 55 09	USCGS 0 = 19 21 48	
	eLR(SSE)	20 02 09	40°S 75½°W	
May 25	e	21 26 17		
	eLR(S)	21 49 09		
May 25	eLR(SSE)	23 40 09		
May 26	eP	01 23 49		
	eSKS	01 34 13		
	eS	01 34 21		
	ePS	01 35 17		
	eLQ	01 46 09		
	eLR(SSE)	01 52 29		
May 26	eP	01 41 25		
	eS	01 51 39		
May 26	eP	05 21 14	Albania-Greece Border	
	ePP	05 23 41	USCGS 0 = 05 10 05	
	ePPS	05 25 21	40°N 20°E	
	eS	05 30 13	Dist. 67.7°	
	ePS	05 30 39	Mag. 6½	
	ePPS	05 31 17		
	eSS	05 34 49		
	eLQ	05 37 45		
	eLR(NE)	05 42 05		
May 26	e	08 06 01		
May 26	eLR	09 32 39		

13.		Palisades, New York		
Date	Phase	h m s	Remarks	
1960				
May 26	eLR(NW)	10 30 09		
May 26	eLR	12 37 09		
May 26	e	15 29 18		
	eLR	15 48 08		
May 26	e	17 26 28		
	e	17 38 08		
	eLQ	17 41 08		
	eLR	17 49 08		
May 26	eLR	18 27 08		
May 26	e	19 55 58		
	eLR(SSE)	20 00 08		
May 26	eLR	21 06 08	Chile	
May 26	e	23 20 56		
	eLQ	23 37 08		
	eLR	23 41 08		
May 27	eLQ	01 15 08		
	eLR(SSE)	01 20 08		
May 27	eP	03 29 40	Chile	
	eSKS	03 40 00	USCGS 0 = 03 17 21	
	eS	03 40 38	41°S 76°W	
	ePS	03 41 08	Dist. 81.7°	
	eSS	03 45 08		
	eSSS	03 51 48		
	eLQ	03 55 08		
	eLR(SSW)	03 59 08		
May 27	eLR(NW)	05 36 08		
May 27	eLR(S)	12 02 08		
May 27	eLQ	16 42 28		
	eLR	16 45 08		
May 27	e	21 02 08	New Britain Region	
	eLQ	21 05 08	USCGS 0 = 20 10 00	
	eLR(NW)	21 11 08	5½°S 153°E	
			Dist. 125.2°	

14.				Palisades, New York			
Date	Phase	h	m	s	Remarks		
1960							
May 27	eP	23	19	34	off coast Chile		
	e	23	21	20	USCGS 0 = 23 06 55		
	eSKS	23	29	56	45°S 77°W		
	eS	23	30	12	Dist. 85.7°		
	eSS	23	35	48			
	eLQ	23	41	28			
	eLR(SSE)	23	48	08			
May 27	eLR(NW)	23	24	28			
May 28	eLR(SW)	00	41	08			
May 28	eP	03	18	08	Chile		
	ePP	03	21	24	USCGS 0 = 03 05 53		
	e	03	25	42	39½°S 74½°W		
	eS	03	28	10	Dist. 80.1°		
	ePPS	03	28	52			
	eSS	03	32	40			
	eLQ	03	41	08			
	eLR(SSE)	03	45	48			
May 28	eLR	05	44	28			
May 28	e	06	29	38			
	e	06	35	08			
	eLR(S)	06	47	08			
May 28	eLR	08	14	08			
May 28	e	10	34	38			
	e	10	37	48			
	e	10	49	24			
	e	10	56	08			
	eLR(SSE)	11	07	38			
May 28	e(S)	11	06	38			
	eLR	11	25	38			
May 28	eP	11	17	40	Chile		
	ePP	11	20	28	USCGS 0 = 11 05 40		
	eS	11	27	36	38°S 73°W		
	ePS	11	28	22	Dist. 78.6°		
	eSS	11	32	28			
	eSSS	11	37	08			
	eLQ	11	39	08			
	eLR(SSE)	11	43	08			

15.				Palisades, New York			
Date	Phase	h	m	s	Remarks		
1960							
May 28	e	18	52	08			
	e	18	56	58			
	eLR(SW)	19	05	48			
May 28	eLR	19	21	08			
May 28	eLR	19	36	28			
May 28	eLR	20	37	38			
May 29	eLR	03	33	48			
May 29	eLR	06	06	08			
May 29	eP	07	51	31	Chile		
	P (Z) 7 sec. 3 mic.				USCGS 0 = 07 39 29		
	Comp from S				38°S 72½°W		
	ePP	07	54	18	Dist. 78.6°		
	eS	08	01	28			
	ePPS	08	02	12			
	eSS	08	06	24			
	eSSS	08	10	16			
	eLQ	08	12	08			
	eLR(SSE)	08	17	38			
May 29	eP	08	46	24	S. Chile		
	epP	08	46	33	USCGS 0 = 08 34 20		
					37½°S 73°W		
					Dist. 78.1°		
May 29	eLR(S)	14	16	38			
May 29	eLR	14	44	08	Chile		
May 29	eLR	16	35	08			
May 29	eLQ	18	03	08			
	eLR	18	05	08			
May 29	eLR	21	04	38			
May 29	eP	21	36	26	S. Chile		
	ePP	21	39	42	USCGS 0 = 21 23 54		
	eSKS	21	46	42			
	eS	21	46	56			
	eSS	21	52	38			
	eLQ	21	58	08			
	eLR(SSE)	22	03	38			

16.				Palisades, New York	
Date	Phase	h m s	Remarks		
1960					
May 29	eLR	23 49 38			
May 30	eLR(S)	02 59 08			
May 30	eLR	05 27 08			
May 30	eLR	06 17 08			
May 30	e	07 12 16	Unimak Isls.		
	e	07 19 26	USCGS 0 = 07 01 15		
	e	07 23 58	55½°N 164°W		
	eLR(NW)	07 28 08	Dist. 58.4°		
May 30	e	09 11 14	Kermadec		
	eLR	09 14 08			
May 30	eLR	10 44 08			
May 30	eLQ	13 18 38			
	eLR	13 26 38			
May 30	eLR	18 28 08			
May 31	eLR	01 15 08			
May 31	eP	02 52 15	Chile		
	epP	02 52 19	USCGS 0 = 02 40 00		
	eS	03 02 20	39½°S 75°W		
	ePPS	03 03 40	Dist. 80.1°		
	eSS	03 07 28			
	eLQ	03 13 28			
	eLR(SSE)	03 17 08			
	eLQ ₂	04 33 48			
May 31	eLR(NW)	05 05 08	New Hebrides		
May 31	eLR	05 51 38			
May 31	iF	11 07 48	Leeward Isls.		
	P (Z) 12 sec. 3.5 mic.		USCGS 0 = 11 02 20		
	Comp. from SSE		18°N 62°W		
	ePcP	11 11 19	Dist. 25.1°		
	eS	11 12 16	Mag. 6¼-6½		
	eLQ	11 13 08			
	eLR(SSE)	11 14 08			
	T	11 32 10			
	T (max)	11 33 06			
May 31	eLR(NW)	14 09 08	Solomon Isls.		

Palisades, New York				17.
Date	Phase	h m s	Remarks	
1960				
May 31	eLR(SSE)	15 05 08		
May 31	eLR(SSE)	17 00 08		
May 31	eLR(S)	19 43 38		
May 31	eLR	22 17 08	Java Sea	
May 31	eLR	23 20 38		
June 1	eLR	02 14 08		
June 1	eLR	04 47 08		
June 1	iP	05 15 00	Chile	
	ePP	05 17 46	USCGS 0 = 05 02 56	
	eS	05 24 56	38°S 73°W	
	ePPS	05 25 44	Dist. 78.6°	
	eSS	05 30 08		
	eLQ	05 36 08		
	eLR(SSE)	05 41 08		
June 1	eLR	07 35 08		
June 1	e	11 28 12		
	eLQ	11 44 18		
	eLR(SSE)	11 48 08		
June 1	eLR	12 31 08		
June 1	eLR	13 37 48		
June 1	e	21 35 37	near coast Chile	
	eLQ	21 50 47	USCGS 0 = 21 12 50	
	eLR	21 56 07	42°S 74°W	
			Dist. 82.6°	
June 2	eLR	00 06 07		
June 2	eLR	03 22 07		
June 2	eLR	04 27 37		
June 2	eLR	05 42 37		

18. Palisades, New York			
Date	Phase	h m s	Remarks
1960			
June 2	eP (D from S)	06 10 50	S. Chile
	ePP	06 10 56	USCGS 0 = 05 58 03
	ePP	06 14 17	46½°S 74°W
	eSKS	06 21 15	Dist. 87.1°
	eS	06 21 31	Mag. 6¼
	ePS	06 22 27	
	eSS	06 27 11	
	eSSS	06 31 27	
	eLQ	06 36 37	
	eLR(SSE)	06 41 27	
June 2	ePKP	08 06 14	New Britain
	ePP	08 08 13	USCGS 0 = 07 47 11
	ePKS	08 09 37	5½°S 151½°E
	ePPP	08 11 07	Dist. 126.2°
	eSKKS	08 15 11	Mag. 6½
	ePPS	08 20 07	
	eScSPKP	08 21 07	
	eSS	08 26 07	
	e	08 30 17	
	eLQ	08 39 07	
	eLR(NW)	08 46 07	
June 2	eP	08 48 25	Chile
June 2	eLR	11 47 07	
June 2	eLR	19 18 07	
June 2	eLQ	22 06 07	Chile
	eLR	22 10 07	
June 2	e	22 39 37	
	eLQ	22 52 17	
	eLR	22 59 37	
June 3	eLR	04 06 07	
June 3	eLQ	08 31 07	New Britain
	eLR	08 38 07	
June 3	eLR	10 54 07	
June 3	eLR	13 45 07	

Palisades, New York				19.
Date	Phase	h m s	Remarks	
1960				
June 3	e	13 58 19	Fiji Isls	
	e	13 58 51	USCGS 0 = 13 23 37	
			17½°S 179°W	
			Dist. 112.5°	
			Mag. 6	
June 3	eLQ	14 41 27		
	eLR(NW)	14 47 07		
June 3	eP	16 31 15	Hokkaido, Japan	
	eSKS	16 41 37	USCGS 0 = 16 18 04	
	eS	16 41 57	41½°N 141½°E	
	ePS	16 42 53	Dist. 91.8°	
	ePPS	16 43 43		
	eSS	16 48 47		
	eLQ	16 54 17		
	eLR(NW)	16 58 07		
June 3	eLR(SSE)	19 20 07	Chile	
June 3	eLR(S)	20 38 07		
June 3	eS	21 50 19	Gulf of Calif.	
	eLR(WSW)	21 54 07	USCGS 0=21 38 02	
	Lg	21 56 17	31½°N 114°W	
	Rg	21 58 47	Dist. 33.5°	
June 4	iP(c)	02 33 47	near coast Jalisco, Mex.	
	ePP	02 34 51	USCGS 0 = 02 27 06	
	ePPP	02 35 15	20°N 104½°W	
	eS	02 39 11	Dist. 33.3°	
	eLQ	02 41 27	Mag. 6-6¼	
	e(SCS)LR	02 43 01		
	eLR(WSW)	02 44 37		
	Lg	02 46 19		
	Rg	02 49 07		
June 4	eLR(SE)	03 43 07	Chile	
June 4	eLQ	04 13 07		
June 4	eLR(NE)	04 24 07		
June 4	eLR	05 08 07		
June 4	eLR(NE)	07 37 27		
June 4	eLR(NE)	08 01 07		

Palisades, New York				
20.				
Date	Phase	h	m	s
1960				
June 4	e	08	21	39
	e	08	24	27
	eLR(NE)	08	25	07
June 4	eLR	10	15	37
June 4	eLR(NW)	11	09	37
June 4	eLR(NE)	11	20	27
				Azores Isls.
June 4	eLR	12	07	07
June 4	eLR	16	44	07
June 4	eLR	18	26	07
June 4	eLR	19	48	07
June 5	e	03	51	07
	eLQ	04	03	07
	eLR	04	10	47
June 5	e	05	20	17
	eLR	05	40	07
June 5	e	06	10	19
	eLQ	06	26	07
	eLR(SW)	06	34	07
				Antarctic Ocean E. of Balleny USCGS 0 = 05 29 37 65°S 178°E Dist. 133.8°
June 5	eLR(W)	06	47	37
June 5	eLR	07	22	27
June 5	eLR(WNW)	08	04	07
				Inyo Co. Calif. USCGS 0 = 07 47 08 37.5°N 118.6°W Dist. 36.5° Mag. 4.7
June 5	eLR(SW)	09	49	07
June 5	eLR	13	56	07
June 5	eLQ	14	35	37
	eLR	14	38	07

Palisades, New York				
21.				
Date	Phase	h	m	s
1960				
June 5	eLQ	16	54	37
	eLR	17	01	07
June 5	eLR	18	35	07
June 5	ePP	19	50	55
	ePS	20	00	55
	ePPS	20	01	27
	eSS	20	07	27
	eSKKS	20	10	17
	eSSS	20	12	07
	e	20	16	07
	e	20	21	07
	eLQ	20	24	07
	eLR(SW)	20	29	37
June 6	eP	01	25	06
	iP	01	25	11
	P (Z) 8 sec. 2 mic.			
	epP	01	25	17
	ePP	01	26	11
	ePPP	01	26	41
	ePcP	01	27	07
	eS	01	31	09
	e	01	31	51
	eSS	01	33	31
	eLQ	01	34	37
	eLR(WNW)	01	36	07
June 6	eP	01	27	34
June 6	eP	06	08	32
	P (Z) 10 sec. 8.5 mic.			
	Dil. from S.E.			
	epP	06	08	43
	e	06	09	35
	iS	06	18	51
	ePS	06	19	39
	ePPS	06	20	27
	e	06	21	15
	eSS	06	25	27
	eSSS	06	30	07
	eLQ	06	33	37
	eLR(SSE)	06	38	07
				off coast N. Calif. USCGS 0 = 01 17 48 41°N 125°W Dist. 38.1° Mag. 5½-5¾
				near coast Chile USCGS 0 = 05 55 44 45½°S 73½°W Dist. 86.1° Mag. 6¾

22. Palisades, New York

Date	Phase	h m s	Remarks
1960			
June 6	eP	17 28 22	Coast So. Chile
	ePP	17 31 56	USCGS 0 = 17 15 33
	eS	17 38 42	46°S 73½°W
	ePS	17 39 02	Dist. 86.6°
	ePPS	17 39 56	
	eSS	17 44 18	
	eSSS	17 48 32	
	eLQ	17 51 08	
	eLR(SSE)	17 58 08	
June 6	eLR	19 37 08	
June 7	eLR	00 01 26	S. of Fiji
June 7	eLR	02 57 38	
June 7	eLR	04 26 08	
June 7	eP	05 35 08	S. Chile
	eS	05 45 08	USCGS 0 = 05 22 34
	eSS	05 50 08	40½°S 72°W
	eSSS	05 56 12	Dist. 81.2°
	eLQ	05 59 38	
	eLR(SSE)	06 04 08	
June 7	eLR	07 48 08	Tonga
June 7	e	11 21 56	
	e	11 27 48	
	e	11 36 32	
	e	11 40 28	
	eLQ	11 42 08	
	eLR	11 47 28	
June 7	e(S)	12 25 28	
	eLQ	12 35 28	
	eLR	12 38 48	
June 7	e(P)	13 07 12	off coast S. Chile
	e(S)	13 18 18	USCGS 0 = 12 55 51
	eLQ	13 28 38	no coord. given
	eLR(SSE)	13 34 08	

Palisades, New York

23.

Date	Phase	h m s	Remarks
1960			
June 7	e	14 25 08	Fiji
	eLQ	14 36 08	USCGS 0 = 13 27 49
	eLR	14 44 48	20°S 177½°W Dist. 112.9°
June 7	eLQ	16 20 52	
	eLR(SE)	16 28 38	
June 7	e	19 08 16	
	eLQ	19 11 28	
	eLR(W)	19 14 08	
June 8	eLQ	03 11 08	
	eLR(WNW)	03 14 08	
June 8	eLR(NE)	04 43 08	
June 8	eLQ	06 15 08	
	eLR(NW)	06 22 08	
June 8	eLQ	07 45 08	
	eLR(SE)	07 52 08	
June 8	eLR(NW)	10 36 08	
June 8	eLR(S)	11 46 08	
June 8	eLR	12 54 08	
June 8	iP	16 26 07	N. Atlantic
	epP	16 26 15	USCGS 0 = 16 19 48
	ePP	16 27 00	35°N 35°W
	e	16 30 12	Dist. 31.1°
	eS	16 31 12	
	eLQ	16 32 38	
	eLR(E)	16 33 48	
June 8	eLR	19 05 08	
June 8	eLR	20 26 38	
June 8	e	22 11 16	
	eLR(SE)	22 15 08	
June 9	eLR(SW)	01 24 08	
June 9	eLR(E)	03 26 08	E. Turkey

24. Palisades, New York			
Date	Phase	h m s	Remarks
1960			
June 9	ePKP	05 24 15	S. Coast Java
	ePKP	05 24 39	USCGS 0 = 05 05 01
	epPKP	05 25 16	9°S 112½°E
	ePPP	05 30 08	Dist. 147.6°
June 9	e	05 42 18	
	eLQ	06 09 38	
	eLR	06 16 08	
June 9	e	08 47 18	
	eLQ	08 51 38	
	eLR(NE)	08 54 28	
June 9	eLQ	11 32 38	
	eLR(WNW)	11 35 28	
June 9	eP	11 39 28	New Hebrides
	ePKP	11 42 52	USCGS 0 = 11 23 51
	ePP	11 44 32	18°S 169°E
	ePKS	11 46 04	Dist. 121.9°
	eSKS	11 49 52	Mag. 5¼-6
	eSKKS	11 51 28	
	ePKKP	11 53 18	
	eScSP	11 54 18	
	ePPS	11 57 08	
	eSS	12 02 08	
	e	12 05 18	
	eLQ	12 15 38	
	eLR(NNW)	12 23 08	
	eLR ₂ (SSE)	13 22 08	
June 9	eLR(NW)	16 11 08	
June 9	eP	17 54 46	Azores Isls.
	ePPP	17 56 12	USCGS 0 = 17 47 41
	ePcP	17 57 32	38°N 26°W
	eS	18 00 32	Dist. 36.7°
	eSS	18 02 14	
	eLQ	18 03 28	
	eLR(E)	18 05 08	
June 9	e	21 11 48	
	eLQ	21 17 38	
	eLR(W)	21 19 08	
June 9	eLR	23 55 08	

Palisades, New York			
Date	Phase	h m s	Remarks
1960			
June 10	eLR(SE)	00 25 38	
June 10	eSKKS	09 33 38	Samoa Isls.
	ePKKP	09 37 48	USCGS 0 = 09 08 02
	eLR(NW)	09 57 08	15½°S 174°W Dist. 107.5°
June 10	eLQ	12 20 08	
	eLR(NW)	12 27 38	
June 10	eLQ	12 59 38	Banda Sea
	eLR(NW)	13 08 28	
June 10	eP	14 41 54	near coast Chile
	ePcP	14 42 42	USCGS 0 = 14 29 47
	e(S)	14 50 38	37°S 75°W
	eScS	14 52 08	Dist. 77.6°
	eSS	14 53 08	
	eSSS	14 56 28	
	eLQ	14 58 08	
	eLR(SSE)	15 01 38	
June 10	eP	21 26 36	Samoa Isls.
	ePP	21 31 08	USCGS 0 = 21 12 05
	eSKS	21 37 24	15½°S 174°W
	eSKKS	21 38 28	Dist. 107.5°
	ePS	21 40 28	Mag. 5½
	ePPS	21 41 28	
	eSS	21 46 08	
	e	21 55 24	
	eLQ	21 57 48	
	eLR(NNW)	22 02 08	
June 10	eLR(SSE)	23 25 48	
June 11	eP	00 44 44	S. Bolivia
	P (Z) 10 sec. 1 mic.		USCGS 0 = 00 34 48
	Dil from S		21°S 64½°W
	ep ^p	00 45 48	Dist. 62.2°
	e(sP)	00 46 16	
	ePP	00 47 20	
	ePPP	00 48 30	
	ePcS	00 50 04	
	eS	00 52 48	
	eScS	00 54 08	
	eSS	00 56 08	
	esSS	00 58 08	
	eSSS	00 59 48	
	eLR(SSW)	01 03 08	

26.		Palisades, New York		
Date	Phase	h m s	Remarks	
1960				
June 11	eLR	12 33 38		
June 11	ePKP	15 33 18	D'Entrecasteaux	
	ePP	15 35 24	USCGS 0 = 15 14 07	
	ePKS	15 36 32	9°S 152½°E	
	eSKS	15 40 32	Dist. 128.2°	
	eSKKS	15 42 24	Mag. 6	
	ePS	15 45 28		
	eScSPKP	15 48 04		
	eSS	15 52 48		
	eSSS	15 57 18		
	eLQ	16 07 28		
	eLR(NW)	16 13 52		
	eLQ ₂	16 49 08		
	eLR ₂	17 04 08		
	G ₃	17 16 08		
June 11	eLQ	17 32 08	D'Entrecasteaux Isl.	
	eLR(NW)	17 37 08	USCGS 0 = 17 07 52	
	eLQ ₂	18 09 38	9½°S 152½°E	
	eLR ₂	18 27 08	Dist. 128.7°	
June 11	eLR	20 41 08		
June 12	eS	00 24 34	off coast Chile	
	eSS	00 29 28	USCGS 0 = 00 02 55	
	eLQ	00 38 08	37°S 75°W	
	eLR(SSE)	00 43 08	Dist. 77.6°	
June 12	eP	07 31 52	So. Pacific Ocean	
	ePP	07 35 00	USCGS 0 = 07 19 43	
	eS	07 41 52	36°S 98°W	
	ePS	07 42 40	Dist. 79.7°	
	eSS	07 46 56	Mag. 6½	
	ePKKP	07 50 16		
	eLQ	07 53 16		
	eLR(SSW)	07 56 48		
June 12	e	15 28 28		
	eLR(NW)	15 30 54		
June 12	eLQ	15 44 08	S. Chile	
	eLR(SSE)	15 50 08		
June 12	eLR(NW)	16 58 08	Loyalty Isls.	

Palisades, New York		27.		
Date	Phase	h m s	Remarks	
1960				
June 12	e	21 27 36		
	e	21 33 40		
	eLR(SSE)	21 46 08		
June 12	eLQ	23 25 08		
	eLR(S)	23 31 48		
June 15	e	00 54 38		
	eLR(SSE)	01 17 08		
June 13	eP (dil. S)	05 59 44	Chile	
	epP	06 00 02	USCGS 0 = 05 47 05	
	ePP	06 03 08	44½°S 76½°W	
	eSKS	06 10 08	Dist. 85.2°	
	eS	06 10 20		
	ePS	06 11 44		
	eSS	06 15 40		
	e	06 22 28		
	eLQ	06 24 38		
	eLR(SSE)	06 28 08		
June 13	eLR(NW)	09 42 38		
June 13	e	12 16 52		
	e	12 24 28		
	e	12 33 28		
June 13	eLQ	12 52 38	Hebgen Lake, Montana	
	eLR(NW)	13 00 48	USCGS 0 = 12 38 45	
			45°N 111°W	
			Dist. 27.2°	
June 13	e	14 52 39		
	eLQ	14 55 09		
	eLR(WSW)	14 58 09		
	Rg	15 01 09		
June 13	eLR	16 44 39		
June 13	eLR	17 57 09		
June 13	i(P)	20 00 17		
June 13	eLQ	20 12 49		
	eLR(WSW)	20 15 39		
	Rg	20 18 39		

28.		Palisades, New York		
Date	Phase	h m s	Remarks	
1960				
June 13	e	23 54 45		
June 14	e	00 06 53		
	eLQ	00 10 53		
	eLR(SSE)	00 15 09		
June 14	eP	03 06 53	near coast S. Chile	
	eS	03 17 09	USCGS 0 = 02 54 13	
	eSS	03 22 49	43°S 73°W	
	eLR(SSE)	03 27 09	Dist. 83.6°	
June 14	eLR	05 12 09	Kurile Isls.	
June 14	eLR	11 54 09		
June 14	e	20 09 09		
	eLR(SW)	20 12 09		
June 15	eLQ	00 30 09	D'Entrecasteaux Isls.	
	eLR(NW)	00 37 49		
June 15	eLQ	08 33 09		
	eLR(S)	08 36 09		
June 15	eLQ	09 05 09		
	eLR(NW)	09 09 39		
June 15	e	10 04 49		
	e	10 09 29		
	e	10 16 17		
	eLQ	10 19 39		
	eLR(SW)	10 23 09		
June 15	e	11 41 09		
	e	11 46 39		
	eLQ	11 53 09		
	eLR(SSE)	11 59 09		
June 15	e	12 35 31		
	eLR(SW)	12 40 09		
June 15	eLR	14 47 09		
June 15	eLQ	15 35 49		
	eLR	15 42 09		

Palisades, New York		29.		
Date	Phase	h m s	Remarks	
1960				
June 15	eP	15 50 19	N. Honshu, Japan	
	ePP	15 54 01	USCGS 0 = 15 36 51	
	eSKS	16 01 15	41°N 142½°E	
	ePS	16 02 17	Dist. 91.9°	
	eSS	16 06 39		
	e(SKKKS)	16 12 49		
	e	16 13 53		
	eLQ	16 17 09		
	eLR(N)	16 23 39		
June 15	e(LQ)	17 11 09		
	e(LR)	17 14 21		
June 15	eSKS	23 15 29	Kermadec Isls.	
	ePS	23 20 01	USCGS 0 = 22 49 39	
	eSKKS	23 26 25	32°S 177½°W	
	eSS	23 27 01	Dist. 119.6°	
	eSSS	23 35 09		
	eLQ	23 40 09		
	eLR(SW)	23 46 09		
June 16	eSS	00 07 53	S. of Fiji	
	eSSS	00 08 15	26°S 178½°E	
	e	00 12 39	Dist. 119.3°	
	eSSS	00 16 39		
	e(SKKKS)	00 21 35		
	eLQ	00 21 57		
	eLR(SW)	00 29 09		
June 16	e(SKS)	03 48 55	Marianas Isls.	
	ePS	03 54 39	USCGS 0 = 03 24 42	
	eSS	04 01 09	12°N 143½°E	
	eSSS	04 08 49	Dist. 116.9°	
	eLQ	04 14 09		
	eLR(S)	04 19 09		
June 16	eLQ	09 57 39	N. Isl. New Zealand	
	eLR	10 04 59		
June 16	eSS	10 58 39	Indian Ocean	
	eSSS	11 05 19	USCGS 0 = 10 20 04	
	e	11 13 29	2°S 69°E	
	eLQ	11 16 49	Dist. 128.7°	
	eLR(NE)	11 22 29		
June 16	eLR(S)	18 37 09		
June 16	eLR(S)	22 54 39		

30.				Palisades, New York			
Date	Phase	h	m	s	Remarks		
1960							
June 17	eLR(SE)	00	00	09			
June 17	eLQ	01	02	09			
	eLR(SSE)	01	03	59			
June 17	eLR(SW)	03	06	09			
June 17	eLR(NW)	06	08	09	Fiji Isls.		
June 17	eLR(NE)	11	39	09			
June 17	eP	16	46	02	Aleutians		
	iP (Comp. NW)	16	46	11	USCGS 0 = 16 35 32		
	ePcP	16	46	23	52½°N 173½°W		
	ePP	16	48	17	Dist. 64.0°		
	iS	16	54	45			
	eScS	16	55	53			
	eSS	16	59	09			
	eLQ	17	02	29			
	eLR(NW)	17	06	39			
June 17	eP	17	02	40			
June 17	eLR(SE)	18	38	29			
June 17	eLR	21	12	09			
June 18	e	01	06	49			
	eLR(WSW)	01	11	09			
June 18	e(PP)	03	02	33			
	e(S)	03	09	33			
	eLQ	03	22	29			
	eLR(SW)	03	28	09			
June 18	eLQ	04	13	39	D'Entrecasteaux Isls.		
	eLR(W)	04	20	29			
June 18	eLQ	12	08	09			
	eLR(SW)	12	13	09			
June 18	eLR(SW)	23	42	10			
June 19	eLQ	00	40	40			
	eLR(NE)	00	50	30			
June 19	e	05	02	40	Andaman Isl.		
	eLR(NE)	05	09	10			

Palisades, New York				31.	
Date	Phase	h	m	s	Remarks
1960					
June 19	eLQ	03	19	10	
	eLR(S)	03	22	48	
June 19	e	05	47	50	
	eLR(SE)	06	04	30	
June 19	eLQ	10	37	10	Solomon Isls.
	eLR(NW)	10	45	30	
June 19	eL	12	09	10	
June 19	eLQ	13	16	10	Fiji Isls.
	eLR(NW)	13	20	40	
June 19	eL	14	13	00	
June 19	eLQ	18	00	10	Bonin Isls.
	eLR(NW)	18	07	40	
June 19	e(P)	21	54	50	
	e(S)	22	04	30	
	e(SS)	22	09	20	
	eLQ	22	14	10	
	eLR(SSE)	22	20	10	
June 20	iP	02	13	15	near coast Chile
	P (Z) 16 sec.	10.5	mic.		USCGS 0 = 02 01 08
	Comp from S.				33°S 73½°W
	ePcP	02	15	26	Dist. 78.6°
	e	02	14	10	Mag. 7.0
	ePP	02	16	30	
	iS	02	23	12	
	ePS	02	23	58	
	eSS	02	27	58	
	cLQ	02	51	10	
	eLR	02	39	40	
June 20	eLR(S)	08	46	00	
June 20	iP	13	11	53	Chile
	P (Z) 8 sec.	8	mic.		USCGS 0 = 12 59 40
	Comp. from S				39½°S 73°W
	ePcP	13	12	02	Dist. 80.1°
	ePP	13	14	10	Mag. 6¼
	iS	13	21	56	
	ePPS	13	22	42	
	eSS	13	26	30	
	eLQ	13	32	50	
	eLR	13	36	22	

32.		Palisades, New York			
Date	Phase	h	m	s	Remarks
1960					
June 20	e(P)	19	41	11	
	c(S)	19	41	34	
June 21	eS	08	51	34	Pacific Ocean
	eSS	08	55	22	S.W. of Galapagos
	eLQ	08	57	20	USCGS 0 = 08 34 39
	eLR(SSW)	09	00	54	4½°S 105°W Dist. 53.5°
June 21	eLR	09	16	10	
June 21	ePP	21	52	53	Sandwich Isls.
	epPP	21	53	19	USCGS 0 = 21 33 45
	ePKS	21	55	27	61°S 21°W
	ePS	22	02	21	Dist. 110.3°
	e	22	04	09	
	eSS	22	08	25	
	e	22	16	39	
	eLR(SSL)	22	18	32	
June 21	eLR(NW)	23	38	09	
June 22	eLR(SSE)	01	30	09	
June 22	eLQ	03	39	29	Kermadec
	eLR	03	44	39	
June 22	eLQ	03	59	09	Antarctic Ocean
	eLR(SW)	04	07	09	
June 22	e	07	02	25	near coast Chile
	e	07	07	19	USCGS 0 = 06 40 10
	eLR(SSE)	07	13	39	no coord. given
June 22	eP	09	09	13	
	eS	09	18	57	
	ePS	09	19	43	
	eSE	09	23	55	
	eLQ	09	28	09	
	eLR(SSE)	09	33	39	
June 22	eLR(NE)	10	17	21	
June 22	e	12	54	49	
	eLQ	12	55	49	
	eLR(WNW)	12	58	39	

Palisades, New York		33.			
Date	Phase	h	m	s	Remarks
1960					
June 22	eLR	14	17	29	
June 22	ePPS	16	41	59	Arabian Sea
	eSS	16	47	09	USCGS 0 = 16 12 00
	eLQ	17	00	39	12°N 57½°E
	eLR	17	05	49	Dist. 110.7°
June 22	eP	20	25	25	near coast Chile
	eS	20	35	21	USCGS 0 = 20 13 18
	ePS	20	35	55	38½°S 73½°W
	eSS	20	41	19	Dist. 79.1°
	eLQ	20	47	09	
	eLR(S)	20	51	09	
June 22	eLR(SSE)	21	07	09	
June 22	eLR(SW)	22	26	33	
June 22	iP	23	39	26	Aleutians
	eS	23	48	03	USCGS 0 = 23 28 50
	ePPS	23	48	13	52°N 173°W
	eScS	23	49	29	Dist. 63.9°
	eSS	23	53	09	
	eLQ	23	56	29	
June 23	eLR(NW)	00	01	09	
June 23	eLR(S)	04	57	09	
June 23	eLR(S)	12	59	09	
June 23	eLR(N)	13	15	09	Timor Isl.
June 23	eLR	21	19	09	
June 24	eLR	08	08	09	
June 24	eLR(NW)	14	55	39	
June 24	eSKS	16	06	25	
	ePPS	16	09	59	
	eSS	16	13	59	
	e(SKKS)	16	19	09	
	eSSS	16	22	49	
	eLR(WNW)	16	30	21	
June 24	e	18	18	09	
	eLR(S)	18	35	09	

34. Palisades, New York			
Date	Phase	h m s	Remarks
1960			
June 24	eLQ	23 25 09	Kermadec
	eLR(W)	23 33 09	
June 25	e	01 40 21	
	eLQ	01 42 57	
	eLR(W)	01 45 25	
	Lg	01 46 25	
	Rg	01 49 09	
June 25	e (SKKS)	02 32 45	Kermadec Isl.
	e (SS)	02 39 25	USCGS 0 = 02 02 35
	eLQ	02 52 37	30½°S 177°W
	eLR(WSW)	02 58 59	Dist. 118.5°
June 25	iP	14 00 29	Colombia
	ipP	14 00 38	USCGS 0 = 13 53 37
			6½°N 72½°W
			Dist. 34.3°
June 25	ePP	15 01 45	Kermadec Isla.
	eSKS	15 07 31	USCGS 0 = 14 41 42
	eSKKS	15 08 53	30½°S 177°W
	ePS	15 11 37	Dist. 118.5°
	ePPS	15 13 09	Mag. 0½
	eSS	15 18 25	
	eSKKKS	15 22 17	
	eLQ	15 31 53	
	eLR(SW)	15 38 09	
	eLR ₂ (NE)	16 41 09	
June 25	eLR(S)	20 09 09	Argentina
June 25	eLR	23 21 09	
June 26	eLR	05 17 09	
June 26	eLQ	05 58 09	
	eLR	06 04 09	
June 26	eLR(SW)	06 15 09	
June 26	e	06 40 17	
	eLQ	06 52 09	
	eLR(SW)	06 58 09	
June 26	eLR	12 21 09	
June 26	eLR(SE)	18 02 39	

Palisades, New York				35.
Date	Phase	h m s	Remarks	
1960				
June 26	eLR	21 57 39		
June 27	eL	01 54 09		
June 27	e	03 32 43		
	eLQ	03 46 09		
	eLR(SE)	03 51 29		
June 27	eLQ	06 45 09		
	eLR	06 51 09		
June 27	eL	07 58 39		
June 27	e	09 25 57		
	eLQ	09 31 09		
	eLR(SW)	09 34 39		
June 27	ePKP	17 09 55	Kermadec	
	ePP	17 11 17	31½°S 178°W	
	ePPPP	17 15 29	Dist. 119.8°	
	eSKKS	17 17 33		
	ePKKP	17 20 45		
	ePS	17 21 01		
	ePPS	17 22 12		
	e(PKKS)	17 23 29		
	eSS	17 27 14		
	eSSS	17 31 09		
	eLQ	17 41 29		
	eLR(WSW)	17 47 09		
June 28	eLQ	15 09 37		
	eLR(WSW)	15 12 09		
June 28	ePS	15 58 53		
	eSS	16 05 05		
	eSSS	16 09 05		
	eLQ	16 15 49		
	eLR(SE)	16 21 49		
June 28	eLR	20 50 09		
June 28	e	21 34 09		
	eLR	21 40 09		
June 29	e	01 30 17	S. Chile	
	e	01 39 09		
	c	01 40 19		
	eLR(SE)	01 51 09		

36. Palisades, New York				
Date	Phase	h m s	Remarks	
1960				
June 29	eLQ	01 58 09		
	eLR(SE)	02 01 49		
June 29	e(S)	02 20 09		
	e(SS)	02 25 09		
	e(SSS)	02 31 09		
	eLR(SE)	02 38 09		
June 29	eLR(N)	04 25 09		
June 29	eSKS	04 54 59	Kermadec Isls.	
	eSKKS	04 56 19	USCGS 0 = 04 29 12	
	ePS	04 59 17	30°S 177½°W	
	eSS	05 06 09	Dist. 118.6°	
	e(SKKKS)	05 09 09		
	eLQ	05 19 09		
	eLR(WSW)	05 25 29		
June 29	eLQ	06 25 09		
	eLR(NE)	06 28 39		
June 29	eS	10 07 05		
	ePS	10 07 53		
	eSS	10 11 59		
	eLQ	10 18 25		
	eLR(SSW)	10 23 19		
June 29	eLR(NE)	10 39 09	Atlantic Ocean	
June 29	eLR(SE)	11 22 39		
June 29	eLR	11 58 29		
June 29	eLR	12 08 29		
June 29	eLQ	15 39 09		
	eLR(NW)	15 44 09		
June 29	eP	17 17 13	Aleutians	
	ePcS	17 22 09	USCGS 0 = 17 07 00	
	eS	17 25 29	53°N 168½°W	
	eSS	17 29 25	Dist. 61.0°	
	eLQ	17 32 23		
	eLR(NW)	17 35 09		
June 30	eLR(NW)	05 37 09		
June 30	eLR	06 38 09		

Palisades, New York 37.				
Date	Phase	h m s	Remarks	
1960				
June 30	eLQ	12 19 09		
	eLR(SE)	12 25 09		
June 30	eLR(S)	13 22 39		
June 30	eLR	18 08 09		
June 30	iP	20 07 23	Kenai Peninsula,	
	epP	20 07 41	Alaska	
	ePcP	20 08 45	USCGS 0 = 19 58 33	
	eS	20 14 25	60°N 151°W	
	esS	20 14 49	Dist. 49.4°	
	cSS	20 18 23		
	esSS	20 18 45		
	eLQ	20 19 09		
	eLR(NW)	20 22 09		
July 1	iPKP	00 16 12	Sumba Isls	
	eSS	00 39 59	USCGS 0 = 23 56 23	
	e	00 46 09	10°S 119°E	
	e	00 48 09	Dist. 147°	
	eLR	00 53 39		
July 1	eLQ	07 51 09		
	eLR	07 57 09		
July 1	eS	08 19 29	Komandorski Isls.	
	eSS	08 24 13	USCGS 0 = 07 58 58	
	eSSS	08 27 33	56°N 165°E	
	eLQ	08 29 57	Dist. 71.2°	
	eLR(NW)	08 35 09		
July 1	eLR	16 38 09		
July 1	eLR(SW)	17 08 09		
July 1	eLR	17 46 09		
July 1	eLQ	18 33 09	Marianas Isls.	
	eLR(NW)	18 38 09		
July 1	e	20 39 09		
	eLQ	20 40 39		
	eLR(SE)	20 44 39		
July 1	eLQ	22 30 39		
	eLR(SW)	22 33 29		
July 2	eLR(SE)	01 29 09		

38.		Palisades, New York			
Date	Phase	h	m	s	Remarks
1960					
July 2	eP	04	40	10	Aleutians
	ePcP	04	40	37	USCGS 0 = 04 29 30
	ePPP	04	44	09	51½°N 173½°W
	eS	04	48	45	Dist. 64.5°
	eScS	04	50	01	
	eSS	04	53	49	
	eLQ	05	57	09	
	eLR(NW)	05	00	29	
July 2	eLR(SE)	07	32	29	
July 2	eP	09	10	49	S. Chile
	ePP	09	14	23	USCGS 0 = 08 58 05
	eS	09	21	31	45½°S 73½°W
	ePS	09	21	45	Dist. 86.1°
	eSS	09	27	37	
	eLQ	09	34	09	
	eLR(SE)	09	41	09	
July 2	eLR(W)	10	35	09	
July 2	eLR(SE)	11	04	29	
July 2	eLR(N)	11	26	09	
July 2	eLQ	11	44	39	
	eLR(NW)	11	51	09	
July 2	eP	12	09	49	Sandwich Isls.
	ePP	12	13	47	USCGS 0 = 11 55 41
	ePPP	12	16	33	56°S 27°W
	eSKS	12	20	09	Dist. 104.5°
	ePS	12	23	09	
	eSS	12	29	49	
	eSKKS	12	32	39	
	eLQ	12	38	09	
	eLR(SE)	12	44	09	
July 2	eLR(NW)	14	05	49	
July 2	eLR	16	51	09	
July 2	eLQ	21	18	09	
	eLR	21	19	39	

39.		Palisades, New York			
Date	Phase	h	m	s	Remarks
1960					
July 2	e(PP)	22	05	33	Aleutians
	eS	22	12	55	USCGS 0 = 21 53 22
	eSS	22	17	19	51½°N 175½°W
	eLQ	22	23	29	Dist. 65.5°
	eLR(NW)	22	27	09	
July 3	eLR	00	41	09	
July 3	eP	03	29	56	Aleutians
	ePcP	03	30	09	USCGS 0 = 03 19 19
	ePP	03	32	05	52°N 174°W
	ePPP	03	33	39	Dist. 64.4°
	eS	03	38	33	
	eSS	03	43	39	
	eLQ	03	46	49	
	eLR(NW)	03	50	09	
July 3	eLR ₂	04	55	49	
July 3	iP	05	26	46	Aleutians
	eS	05	35	37	USCGS 0 = 05 16 08
	eSS	05	40	29	52°N 173°W
	eLQ	05	45	09	Dist. 63.9°
	eLR(NW)	05	48	49	
July 3	eP	07	26	53	Aleutians
	eS	07	35	29	USCGS 0 = 07 16 14
	eSS	07	40	29	52°N 173½°W
	eLQ	07	44	49	Dist. 64.1°
	eLR(NW)	07	48	33	
July 3	eLQ	09	39	09	
	eLR(SW)	09	40	33	
July 3	eLR	17	15	09	
July 3	iP	20	31	42	Aleutians
	P(Z) 10 sec. 7 mic.				USCGS 0 = 20 20 46
	Dil from NW				50½°N 177°W
	ePcP	20	32	09	Dist. 66.8°
	ePP	20	34	17	Mag. 6½
	iS	20	40	37	
	ePPS	20	40	49	
	eSS	20	45	33	
	eLQ	20	48	09	
	eLR(NW)	20	51	09	
July 3	e	23	03	21	

40.				Palisades, New York			
Date	Phase	h m s	Remarks	Date	Phase	h m s	Remarks
1960							
July 4	eP(comp NW)	04 36 13	Queen Charlotte Isls.				
	ePP	04 37 44	USCGS 0 = 04 28 33				
	eS	04 42 17	52°N 131½°W				
	eSS	04 45 17	Dist. 40.1°				
	eLQ	04 46 05	Mag. 6½				
	eLR(NW)	04 46 49					
	Lg	04 50 09					
July 4	eLQ	09 09 39	Queen Charlotte Isl.				
	eLR(NW)	09 11 57	USCGS 0 = 08 51 20				
			52°N 131°W				
			Dist. 39.8°				
July 4	eLQ	11 31 39	Queen Charlotte Isls.				
	eLR(NW)	11 33 57	USCGS 0 = 11 13 17				
			52°N 130½°W				
			Dist. 39.5°				
July 4	eLQ	13 11 29					
	eLR(NW)	13 14 09					
July 4	ePP	13 19 25	Queen Charlotte Isls.				
	eS	13 23 57	USCGS 0 = 13 10 05				
	eSS	13 26 33	52°N 131°W				
	eLQ	13 27 29	Dist. 39.8°				
	eLR(NW)	13 29 09	Mag. 6				
	Lg	13 31 09					
	Rg	13 33 39					
July 4	e	18 34 29					
	e	18 36 13					
	eLQ	18 40 09					
	eLR(NW)	18 42 25					
July 4	e(P)	21 52 17	S. Chile				
	e	21 57 53	USCGS 0 = 21 39 20				
	e(PPS)	22 03 57	43°S 73°W				
	eLR(SE)	22 18 09	Dist. 83.6°				
July 4	eLR(SW)	23 10 09					
July 4	eLQ	23 29 39					
	eLR	23 36 09					
July 5	iP	05 57 33	near coast Chile				
	eSKS	06 07 33	USCGS 0 = 05 45 26				
	eS	06 08 15	39°S 73½°W				
	ePS	06 08 49	Dist. 79.6°				
	ePPS	06 09 09					
	eSS	06 12 37					
	eSSS	06 17 29					
	eLQ	06 20 09					
	eLR(SE)	06 24 09					

Palisades, New York				41.
Date	Phase	h m s	Remarks	
1960				
July 5	eP	05 18 49	Aleutians	
	eS	05 27 45	USCGS 0 = 05 07 59	
	eSS	05 32 49	51½°N 178½°W	
	eSSS	05 35 19	Dist. 67.0°	
	eLQ	05 37 39		
	eLR (NW)	05 40 09		
July 5	eS	08 28 35	near coast Chile	
	eSS	08 33 39	USCGS 0 = 08 06 30	
	eLQ	08 42 09	38½°S 73½°W	
	eLR(SE)	08 48 09	Dist. 79.3°	
July 5	eLR(SW)	19 10 49		
July 6	eP	05 29 49	Hindu Kush	
	ePP	05 33 49	USCGS 0 = 05 16 44	
	ePPP	05 35 05	36½°N 70½°E	
	eS	05 41 01	Dist. 96.2°	
	ePPS	05 43 49		
	eSS	05 47 09		
	eSKKS	05 53 09		
July 6	e(PKP)	07 28 17		
	e(PKKP)	07 38 29		
	e(SS)	07 46 59		
	e	07 57 01		
	eLQ	08 00 49		
	eLR(SE)	08 07 09		
July 6	eLR(NW)	08 51 09		
July 6	eLR(SE)	12 58 09		
July 6	eLQ	15 47 09	Molucca Passage	
	eLR(ENE)	15 51 09		
July 6	eLR(W)	22 33 09		
July 6	e	23 58 09	Tadzhik SSR	
July 7	eLQ	00 13 09	USCGS 0 = 23 14 19	
	eLR(NW)	00 22 09	39½°N 71½°E	
			Dist. 93.8°	
July 7	eLR(SE)	00 51 09		
July 7	eL	01 05 49		
July 7	eLQ	02 33 09		
	eLR(ESE)	02 35 09		

42.				Palisades, New York	
Date	Phase	h m s	Remarks		
1960					
July 7	eLQ	05 11 09			
	eLR(W)	05 16 09			
July 7	eLR	06 50 09			
July 7	e	08 51 29			
	eLR(SE)	09 05 09			
July 7	eP	15 59 40			
	eS	16 09 54			
	eSS	16 15 38			
	eSSS	16 21 20			
	eLQ	16 24 08			
	eLR(SW)	16 28 28			
July 7	eS	17 07 56			
	eSS	17 12 48			
	eLQ	17 19 20			
	eLR(SW)	17 23 38			
July 7	e	17 59 48			
	e	18 13 18			
	eLQ	18 16 28			
	eLR(NW)	18 21 08			
July 7	eSKS	22 03 04	near coast Chile		
	eSS	22 08 28	USCGS 0 = 21 40 57		
	eLQ	22 16 08	39°S 73°W		
	eLR(SE)	22 20 08	Dist. 79.6°		
July 8	eLR	00 20 08			
July 8	eLR	04 28 08			
July 8	eLR	08 35 08			
July 8	eLR(SW)	09 14 08			
July 8	eP	10 19 51	Aleutians		
	ePcP	10 20 06	USCGS 0 = 10 09 11		
	eS	10 28 32	52°N 174½°W		
	eScS	10 29 24	Dist. 64.7°		
	eSS	10 33 08			
	eLQ	10 36 08			
	eLR(NW)	10 41 08			
July 8	e	13 20 18	Japan		
	eLQ	13 38 38	USCGS 0 = 12 51 21		
	eLR(NW)	13 45 08	31°N 130½°E		
			Dist. 104.8°		
July 8	e	19 28 08			

Palisades, New York				43.
Date	Phase	h m s	Remarks	
1960				
July 8	eLR	20 58 08		
July 9	ePP	01 01 51	Ryuku Isls.	
	e(PKS)	01 05 08	USCGS 0 = 00 42 29	
	eSKS	01 08 08	25½°N 125½°E	
	ePPS	01 12 22	Dist. 111.7°	
	eSS	01 17 23		
	eSKKKS	01 22 48		
	eSSS	01 25 58		
	eLQ	01 32 28		
July 9	eLR	04 40 34		
July 9	eLR	09 10 28		
July 9	eL	10 19 00		
July 9	eLR	18 35 52		
July 9	eLR	19 36 08		
July 10	eLR	00 15 08		
July 10	ePKP	00 24 32	off W. coast Sumatra	
	ePKP	00 24 57	USCGS 0 = 00 05 18	
	ePP	00 27 30	0° 98°E	
	ePKS	00 28 25	Dist. 138.5°	
	ePPP	00 30 08		
	eSKS	00 31 38		
	ePKKP	00 33 38		
	eSKKKS	00 34 30		
	ePS	00 37 38		
	ePPS	00 39 52		
	eSKKS ₂	00 40 58		
	eSS ₂	00 45 35		
	eSSS	00 51 38		
	eLQ	01 03 08		
	eLR	01 14 08		
July 10	eLR	08 35 28		
July 10	eLR	09 26 08		
July 10	eP	13 45 36	Nicaragua	
	epP	13 46 00	USCGS 0 = 13 39 55	
	e(sP)	13 46 08	12½°N 86°W	
	ePP	13 47 08	Dist. 30.3°	
	iS	13 50 58		
	eLQ	13 52 58		
	eLR	13 54 16		

44. Palisades, New York			
Date	Phase	h m s	Remarks
1980			
July 10	eLR	14 46 30	
July 10	eLR	21 43 08	S. of Australia
July 10	eL	23 38 08	
July 11	eL	07 33 08	Chile
	eL	07 39 08	
July 11	e	08 28 38	S. of Australia
	eLQ	08 41 08	
	eLR	08 45 08	
July 11	eP	12 09 17	Tonga Isls.
	iPKP	12 13 27	USCGS 0 = 11 55 10
	ePP	12 13 42	16°S 172°W
	eSKKS	12 21 24	Dist. 106.4°
	ePS	12 23 03	Mag. 6
	eSS	12 29 08	
	eLQ	12 39 08	
	eLR	12 44 38	
July 11	eLR	12 51 08	
July 11	eLR	16 41 08	
July 11	eLQ	17 27 08	
	eLR	17 37 38	
July 11	eLR	17 43 38	
July 12	eLR	09 51 08	
July 12	eLR	15 53 38	
July 12	eLR	21 49 08	
July 12	eLR	22 01 08	
July 13	eLR	06 29 28	
July 13	eLR	06 53 08	
July 13	eLR	07 09 08	
July 13	eLQ	07 39 08	Gulf of California
	eLR(WSW)	07 42 48	

Palisades, New York 45.			
Date	Phase	h m s	Remarks
1960			
July 13	ePP	08 15 43	Bouvet Isl. reg.
	ePPP	08 18 56	USCGS 0 = 07 55 54
	eSKKS	08 23 18	53½°S 1½°E
	ePS	08 25 20	Dist. 114.2°
	ePPS	08 25 58	Mag. 6
	eSS	08 31 36	
	eSSS	08 35 48	
	eSSSS	08 39 12	
	eLQ	08 43 08	
	eLR(SSE)	08 50 08	
July 13	e	13 20 27	Greece
		13 32 08	USCGS 0 = 13 01 00
			41°N 23½°E
			Dist. 69.3
July 13	eLR	16 16 08	
	eLR	16 36 40	
July 13	eLR	21 19 40	Honshu, Japan
July 14	eLQ	02 53 08	Ryukyu Isls.
	eLR	03 01 08	
July 14	iPKP	10 46 05	Molucca Passage
	iPP	10 48 25	USCGS 0 = 10 26 58
	iPKS	10 49 38	5°N 127½°E
	iPPP	10 51 32	Dist. 130.1
	iSKS	10 53 31	
	iPS	10 58 32	
	iSS	11 05 50	
	eLR(NNE)	11 28 34	
July 14	eLQ	19 22 20	Ethiopia
	eLR(E)	19 28 40	
July 15	eLR	06 02 30	Madagascar
July 15	eLQ	23 54 30	
	eLR	23 57 10	
July 16	eLR	01 21 25	
July 16	e	04 15 42	
	eLR	04 18 10	

46. Palisades, New York				
Date	Phase	h m s	Remarks	
1960				
July 16	eS	05 03 06	S. Bolivia	
	e	05 10 20	USCGS 0 = 04 44 34	
	eLQ	05 12 30	21½°S 67°W	
	eLR	05 15 00	Dist. 62.5°	
July 16	e	08 41 47		
	e	08 46 52		
	eLR	09 06 30		
July 16	eLR	10 20 30		
July 16	eLR	15 31 13		
July 16	eLR	17 06 03		
July 16	e	19 25 45		
July 16	eS	21 36 55	Seward Peninsula, Alaska	
	eSS	21 40 27	USCGS 0 = 21 19 37	
	eLQ	21 43 29	65½°N 167½°W	
	eLR	21 46 05	Dist. 54.9°	
	eLg	21 48 38		
July 16	eS	22 20 05	Seward Peninsula, Alaska	
	eSS	22 23 36	USCGS 0 = 22 02 53	
	eLQ	22 26 33	65½°N 167½°W	
	eLR	22 29 13	Dist. 54.9°	
	eLg	22 31 53		
July 17	eSS	05 46 21	Hindu Kush	
	eLQ	05 57 39	USCGS 0 = 05 14 56	
	eLR	06 02 19	36°N 69°E Dist. 96.1°	
July 17	eLR	12 05 13	Venezuela	
July 17	eS	20 04 10	Ascension Isl.	
	eLQ	20 12 47	USCGS 0 = 19 42 38	
	eLR	20 15 33	10°S 13°W Dist. 75.5°	
July 18	e	00 29 29	Nicobar Isls.	
July 18	eLR	01 54 21	Nicobar Isls.	

Palisades, New York 47.				
Date	Phase	h m s	Remarks	
1960				
July 18	iPKP	02 02 15	New Britain	
	ePP	02 04 05	USCGS 0 = 01 43 29	
	ePPS	02 15 31	4½°S 151°E	
	eSS	02 21 19	Dist. 125.8°	
	eLQ	02 35 53		
	eLR	02 41 59		
July 18	eLR	08 38 45	Tonga Isls.	
July 18	e(SKS)	17 15 34	Hindu Kush	
	eSS	17 23 52	USCGS 0 = 16 51 41	
	eLQ	17 35 10	37½°N 70½°E	
	eLR	17 39 44	Dist. 95.3°	
July 18	e	19 28 14	Amirante Isls.	
	e(LR)	19 46 50	USCGS 0 = 18 50 32 7°S 51½°E Dist. 121.0°	
July 19	iP	02 45 27	Galapagos	
	eS	02 56 44	USCGS 0 = 02 42 30	
	eLR	03 02 22	1°N 87½°W Dist. 41.5°	
July 19	e	04 34 50	near coast Peru	
	e	04 38 28	USCGS 0 = 04 19 14	
	e(LR)	04 43 00	7°S 80°W Dist. 48.1°	
July 19	e	10 01 16		
	e(LR)	10 14 34		
July 19	eLR	13 47 16		
July 19	eS	16 14 44	Chiapas, Mexico	
	eSS	16 15 17	USCGS 0 = 16 03 18	
	eLQ	16 18 50	16½°N 92½°W	
	eLR	16 21 16	Dist. 28.8°	
July 19	eLR	19 29 36	Mariannas Isls.	

48.		Palisades, New York			
Date	Phase	h	m	s	Remarks
1960					
July 20	iP	09	42	48	Kurile Isls.
	e	09	44	20	USCGS 0 = 09 30 38
	ePP	09	45	48	49°N 157½°E
	eS	09	52	48	Dist. 79.5°
	eSS	09	58	08	Mag. 5.5
	eLQ	10	02	58	
	e	10	09	20	
	eLR(NW)	10	15	22	
July 20	ePP	21	19	41	New Hebrides
	ePKS	21	21	17	USCGS 0 = 20 59 25
	eSKKS	21	26	39	20½°S 169°E
	ePKKP	21	27	53	Dist. 123.4°
	ePS	21	29	29	
	ePKKS	21	31	49	
	eSS	21	36	49	
	eSKKKS	21	40	39	
	eLQ	21	50	09	
	eLR(W)	21	56	09	
	eLR ₂ (E)	22	52	09	
July 21	eLR(NW)	01	13	09	
	eLR(E)	02	18	29	
July 21	eLR(SE)	04	08	09	
July 21	e	04	23	25	
	eLR(SE)	04	37	39	
July 21	e	05	28	29	
	eLQ	05	35	09	
	eLR(NW)	05	40	09	
July 21	eLR	07	01	09	
July 21	e	08	33	59	
July 21	e	09	03	09	
	eLQ	09	06	09	
	eLR(W)	09	08	09	
July 21	e	09	17	39	
	eLQ	09	20	09	
	eLR(SW)	09	28	09	
July 21	eLQ	10	53	29	
	eLR(W)	10	56	09	
July 21	eLR(NW)	13	11	09	

Palisades, New York		49.			
Date	Phase	h	m	s	Remarks
1960					
July 22	eLQ	01	10	21	
	eLR	01	11	13	
July 22	eLR	05	43	35	
July 22	eLR	06	41	25	
July 22	e	10	44	41	
	eLR	10	44	53	
July 22	eLR	10	44	56	
July 22	eLR	12	02	59	
July 22	eLR	15	05	18	
July 22	eLR	19	04	40	
July 22	eL	19	54	26	
July 22	eLQ	22	01	54	
	eLR	22	05	36	
July 22	eLR	23	53	10	
July 23	eLR	01	26	15	
July 23	eLR	01	44	26	
July 23	eL	01	57	35	
July 23	eLR	03	36	40	
July 23	e	06	37	38	
	eLR	06	41	10	
July 23	eLR	09	02	25	
July 23	eLR	13	40	54	
July 23	eLR	14	15	40	
July 23	eLQ	18	06	50	
	eLR	18	10	40	
July 23	eLR	20	10	46	
July 23	eLR	23	52	10	
July 24	eLQ	01	30	34	
	eL	01	34	38	

50.				Palisades, New York			
Date	Phase	h m s	Remarks	Date	Phase	h m s	Remarks
1960							
July 24	eL	03 00 30	Aleutians				
July 24	eLR	03 24 02					
July 24	eL	09 00 50					
July 24	eP	10 00 18	Kamchatka				
	ePP	10 03 04	USCGS 0 = 09 48 56				
	ePPP	10 04 42	56°N 164°E				
	eS	10 09 30	Dist. 71.6°				
	eSKS	10 10 34					
	eSS	10 14 10					
	eSSS	10 17 30					
	eLQ	10 18 50					
	eLR(NW)	10 22 16					
July 24	eLR	23 08 03					
July 24	e	23 26 47					
	e	23 36 55					
	e	23 42 25					
	eLR	23 56 11					
July 25	eLR	01 52 11					
July 25	eP	03 52 36	Kamchatka				
	eS	04 01 53	USCGS 0 = 03 41 05				
	eScS	04 02 31	55°N 163°E				
	eSS	04 06 43	Dist. 72.7°				
	eSSS	04 10 01					
	eLQ	04 12 11					
	eLR(NW)	04 15 11					
	G ₂	04 53 11					
July 25	eLR	11 08 11					
July 25	iP	11 23 37	Kamchatka				
	ipP	11 24 12	USCGS 0 = 11 12 00				
	e	11 24 57	54°N 159°E				
	iPP	11 26 44	Dist. 75.0°				
	ePPP	11 28 23	Mag. 7				
	iS	11 33 03					
	eScS	11 33 53					
	eSS	11 37 47					
	eLQ	11 41 11					
	eLR(NW)	11 45 41					
July 25	eLR(NW)	14 54 11					

Palisades, New York				51.
Date	Phase	h m s	Remarks	
1960				
July 25	e	21 49 51	Iran	
	eLQ	21 52 41	USCGS 0 = 21 11 36	
	eLR(ENE)	21 57 11	32°N 56½°E	
			Dist. 94.0°	
July 25	e	22 15 27	Bismarck Sea	
	eLQ	22 28 51	USCGS 0 = 21 36 46	
	eLR(WNW)	22 35 11	3°S 148°E	
	G ₂	23 15 11	Dist. 126.6°	
	eLR ₂ (SE)	23 27 21		
July 26	eLR(NW)	01 05 11		
July 26	e	04 27 11	Hokkaido, Japan	
	eLQ	04 34 11	USCGS 0 = 03 55 54	
	eLR(NW)	04 39 11	40½°N 144½°E	
			Dist. 91.6°	
July 26	eLR(SW)	08 58 11		
July 26	eS	12 58 11	Turkey	
	eLQ	13 09 11	USCGS 0 = 12 36 20	
	eLR(ENE)	13 15 11	40½°N 37°E	
			Dist. 77.4°	
July 26	e	22 31 03		
	eLQ	22 42 11		
	eLR(SW)	22 48 11		
July 27	eLQ	04 14 11		
	eLR	04 20 41		
July 27	e(SS)	04 32 05	Sandwich Isls.	
	eLQ	04 42 11	USCGS 0 = 03 57 26.4	
	eLR(SE)	04 48 41	59.4°S 25.1°W	
			Dist. 107.5°	
July 27	eLR	06 08 11		
July 27	eLR	07 13 11		
July 27	ePKP	09 15 50	Sumatra	
	ePKP	09 16 08	USCGS 0 = 08 56 22.9	
	eSS	09 39 11	5.6°S 103.6°E	
			Dist. 144.5°	
July 27	eLR(NW)	10 11 11		

52. Palisades, New York			
Date	Phase	h m s	Remarks
1960			
July 27	eP	10 17 34	near coast S. Chile
	ePP	10 20 47	USCGS 0 = 10 04 53.0
	ePPP	10 23 07	44.7°S 75.1°W
	eSKS	10 27 55	Dist. 85.1°
	eS	10 28 07	
	ePS	10 29 01	
	eSS	10 33 59	
	eLQ	10 39 41	
	eLR(SSE)	10 43 11	
July 27	e(PPS)	21 32 40	Kermadec
	e	21 45 42	USCGS 0 = 21 01 06.9
	eLQ	21 56 42	28.7°S 176.7°W
	eLR(W)	21 58 12	Dist. 117°
July 28	eP	01 48 52	
	eS	01 58 00	
	eSS	02 01 20	
	eLQ	02 05 12	
	eLR(SE)	02 07 24	
July 28	eLR(NW)	02 18 12	
July 28	eLR(SE)	05 17 12	
July 28	e	06 46 56	
	eLQ	06 52 12	
	eLR(SW)	06 55 12	
July 28	eLQ	09 48 12	
	eLR(SW)	09 57 12	
July 28	eLQ	11 32 12	Santa Cruz Isls.
	eLR(NW)	11 34 12	
July 28	eL	12 33 12	
July 28	eLQ	13 21 42	
	eLR	13 24 12	
July 28	eLQ	17 27 12	
	eLR(NW)	17 34 12	
July 28	eLR	21 27 12	
July 28	eLR(NW)	22 01 12	

Palisades, New York				53.
Date	Phase	h m s	Remarks	
1960				
July 29	eP	00 39 40	Loyalty Isls.	
	ePKP	00 43 04	USCGS 0 = 00 24 06	
	ePP	00 44 40	19½°S 170½°E	
	ePS	00 54 38	Dist. 121.7°	
	ePKKS	00 56 48		
	eSS	01 01 28		
	eSKKKS	01 05 30		
	eLQ	01 15 42		
	eLR(W)	01 21 28		
	eLR ₂ (E)	02 16 12		
July 29	e	11 17 52	India	
	eLQ	11 30 12	USCGS 0 = 10 42 44.6	
	eLR(NE)	11 39 12	26.9°N 90.3°E	
			Dist. 110.7°	
July 29	eLR	14 23 32		
July 29	eLQ	15 16 42	E. Afghanistan	
	eLR	15 21 32	USCGS 0 = 14 33 46.1	
			31.7°N 67.0°E	
			Dist. 98.9°	
July 29	iP (comp NW)	17 44 50	Honshu, Japan	
	P(Z) 10 sec 2 mic		USCGS 0 = 17 31 39.5	
	epP	17 45 14	40.1°N 142.3°E	
	e	17 46 20	Dist. 93°	
	ePP	17 48 36	Mag. 6¼	
	ePPP	17 50 34		
	eSKS	17 55 16		
	eSKKS	17 55 46		
	e(SKKKS)	17 56 14		
	ePS	17 57 12		
	eSS	18 02 24		
	ePKKS	18 05 12		
	eSKKS	18 08 42		
	eLQ	18 11 42		
	eLR(NW)	18 16 12		
July 30	eP	02 12 52	Ecuador	
	ePP	02 14 20	USCGS 0 = 02 04 49.4	
	eS	02 19 16	1.4°S 79.1°W	
	e	02 20 24	Dist. 42.5°	
	eSS	02 22 46		
	eLQ	02 23 36		
	eLR(SSE)	02 26 12		

54.		Palisades, New York			
Date	Phase	h	m	s	Remarks
1960					
July 30	eLQ	06	43	12	
	eLR(NW)	06	45	42	
July 30	eLR(SE)	07	51	12	
July 30	eLR(SW)	13	27	12	
July 30	eLR	14	48	12	Kamchatka
July 31	eP	03	11	32	New Britain
	ePKP	03	14	45	USCGS 0 = 02 55 46.2
	ePP	03	16	52	5.6°S 150°E
	ePKS	03	18	12	Dist. 127.8°
	eSKKS	03	24	06	Mag. 6½
	ePPS	03	28	22	
	e(ScSPKP)	03	29	36	
	eSS	03	34	12	
	eSSS	03	39	04	
	e(SSSS)	03	43	04	
	eLQ	03	48	12	
	eLR(NW)	03	55	12	
July 31	eSS	07	43	32	New Britain
	e	07	47	12	USCGS 0 = 07 04 37.1
	eLQ	07	57	12	6.0°S 150.0°E
	eLR(NW)	08	04	12	Dist. 127.6°
					Mag. 6
July 31	e	15	17	58	near coast Chile
	eLQ	15	36	12	USCGS 0 = 14 55 03.3
	eLR(SE)	15	40	26	43.6°S 74.3°W
					Dist. 84.6°
July 31	e	19	24	32	Bismarck Sea
	eLQ	19	39	32	USCGS 0 = 18 46 13.9
	eLR(NW)	19	47	42	2.8°S 148.2°E
					Dist. 126.6°
July 31	eLQ	23	10	12	S. Iran
	eLR(ENE)	23	16	12	
Aug. 1	ePS	02	47	00	S. Iran
	ePKPPKP	02	59	28	USCGS 0 = 02 20 52.4
	eLQ	03	00	52	27.9°N 54.2°E
	eLR(ENE)	03	05	12	Dist. 96°
Aug. 1	eLR	05	54	12	
Aug. 1	eLR	13	33	12	Honshu, Japan

Palisades, New York		55.			
Date	Phase	h	m	s	Remarks
1960					
Aug. 1	eLR(NW)	17	30	42	New Britain
Aug. 1	e	18	48	20	
	e	19	00	42	
	eLQ	19	06	12	
	eLR(SE)	19	11	12	
Aug. 1	eL	19	56	42	
Aug. 1	e	20	34	24	
	e	20	39	32	
	eLQ	20	47	12	
	eLR(SW)	20	52	12	
Aug. 1	eLR(NW)	23	23	12	Bonin Isls.
Aug. 2	ePKP	05	26	06	Loyalty Isls.
	ePP	05	27	44	USCGS 0 = 05 07 22.1
	eSKS	05	33	42	22.2°S 171.5°E
	ePKKP	05	35	38	Dist. 122.3°
	ePKKP	05	36	38	Mag. 6½
	ePPS	05	38	22	
	ePKKS	05	40	20	
	eSS	05	44	32	
	ePKPPKP	05	45	24	
	e	05	58	42	
	eLR(WNW)	06	04	12	
Aug. 2	eSKS	09	56	04	Kermadec Isls.
	eSKKS	09	57	18	USCGS 0 = 09 30 26.5
	ePS	10	00	12	28.2°S 176.6°W
	eSS	10	06	48	Dist. 116.7°
	eLQ	10	19	32	
	eLR(W)	10	26	12	
Aug. 2	eLR(SW)	14	08	12	S.W. of Galapagos
Aug. 2	eLR	19	33	12	
Aug. 2	eLR(SW)	19	50	12	
Aug. 2	ePP	21	01	40	North Polar Region
	eS	21	06	42	USCGS 0 = 20 51 03.8
	eSS	21	10	16	84.2°N 2.3°E
	eLQ	21	12	12	Dist. 47.9°
	eLR(NE)	21	15	12	
Aug. 3	e	01	36	12	
	eLQ	01	42	12	
	eLR(SW)	01	48	12	

56.		Palisades, New York			
Date	Phase	h	m	s	Remarks
1960					
Aug. 3	eLR(SW)	02	50	52	
Aug. 3	e	04	06	56	
	eLQ	04	24	52	
	eLR(SW)	04	27	12	
Aug. 3	eLQ	15	50	12	
	eLR(SW)	15	54	12	
Aug. 3	e	18	11	42	
	e	19	30	12	
	e	19	35	12	
	e	19	39	12	
	e	19	46	12	
	eLR(SE)	19	48	32	
Aug. 3	eLQ	22	49	12	
	eLR	22	56	12	
Aug. 4	eLR(SE)	06	53	42	
Aug. 4	iP (comp from NW)	07	45	48	Aleutians
	ipP	07	45	56	USCGS 0 = 07 34 53.8
	ePP	07	47	58	51.4°N 179.1°E
	ePPP	07	50	22	Dist. 68.5°
	eS	07	54	46	Mag. 6-6½
	ePS	07	54	52	
	ePPS	07	56	02	
	eSS	08	00	00	
	eSSS	08	02	36	
	eLQ	08	05	12	
	eLR(NW)	08	08	32	
	G	09	34	12	
Aug. 4	eS	14	25	40	Aleutians
	eLQ	14	33	20	USCGS 0 = 14 05 28.2
	eLR(NW)	14	36	12	51.3°N 178.8°E
					Dist. 68.5°
Aug. 5	e	06	13	42	
	eLR(E)	06	22	42	
Aug. 5	eS	08	59	18	Queen Charlotte Isls.
	eLQ	09	03	52	USCGS 0 = 08 45 31.1
	eLR(WNW)	09	05	12	50.5°N 130.3°W
	Rg	09	09	28	Dist. 39.6°
Aug. 5	eLR(W)	10	24	12	
Aug. 5	eLR	10	49	12	

Palisades, New York		57.			
Date	Phase	h	m	s	Remarks
1960					
Aug. 5	e	16	38	20	S. of Kamchatka
	eLQ	16	44	12	USCGS 0 = 16 06 33.4
	eLR(NW)	16	48	12	50.1°N 156.8°E
					Dist. 78.9°
Aug. 5	eP	22	38	38	Aleutians
	ePcP	22	39	06	USCGS 0 = 22 27 34.2
	ePP	22	41	04	51.0°N 178.7°E
	ePPP	22	42	20	Dist. 69.1°
	ePcS	22	43	08	
	eS	22	47	36	
	ePS	22	47	46	
	eScS	22	48	32	
	eSS	22	52	56	
	eSSS	22	55	28	
	eLQ	22	57	12	
	eLR(NW)	23	01	12	
Aug. 6	eLQ	03	16	42	
	eLR	03	19	42	
	Rg	03	21	02	
Aug. 6	eLQ	05	20	12	
	eLR	05	25	12	
Aug. 6	eLR	08	24	12	
Aug. 6	eLQ	08	56	12	
	eLR(NW)	08	59	12	
Aug. 6	eLR(NW)	10	26	12	
Aug. 6	e	13	06	42	
	e	13	10	20	
	eLQ	13	12	42	
	eLR(NW)	13	16	12	
Aug. 6	eP	15	02	12	near coast Chile
	ePP	15	05	44	USCGS 0 = 14 49 44.9
	eSKS	15	12	32	42.4°S 74.8°W
	eS	15	12	40	Dist. 82.6°
	ePS	15	13	32	
	eSS	15	18	26	
	eSSS	15	24	52	
	eLQ	15	29	32	
	eLR(SE)	15	34	02	

58.				Palisades, New York			
Date	Phase	h m s	Remarks				
1960							
Aug. 7	eLQ eLR(NW)	04 03 12 04 11 28	Honshu, Japan				
Aug. 7	eLQ eLR(NW)	10 34 12 10 40 52					
Aug. 7	e eLQ eLR(SW)	17 39 32 17 54 32 18 00 12					
Aug. 7	eLR(NW)	23 03 12	Aleutians				
Aug. 8	eLQ eLR(NW)	01 56 12 02 02 56	Komandorski Isls.				
Aug. 8	eLQ eLR(SE)	07 24 12 07 27 32					
Aug. 8	eLQ eLR(NW)	09 41 42 09 46 42					
Aug. 8	eLQ eLR(E)	13 09 32 13 17 12	Gulf of Aden				
Aug. 8	eLQ eLR(SE)	16 03 42 16 06 42	S. Atlantic Ocean				
Aug. 8	e eLQ eLR(SE)	21 03 32 21 09 12 21 16 12	Dodecanese Isls. USCGS 0 = 20 36 28.4 36.0°N 27.3°E Dist. 74.5°				
Aug. 9	e e e eLQ eLR(SW)	04 19 42 04 26 52 04 27 44 04 34 52 04 40 42					
Aug. 9	eLR(SW)	05 38 12					
Aug. 9	eP eS eScS eSS eLQ eLR(SE)	06 20 26 06 28 48 06 30 22 06 33 12 06 35 02 06 40 42	off coast Chile USCGS 0 = 06 10 11 21.2°S 71.6°W Dist. 61.7°				

Palisades, New York				59.
Date	Phase	h m s	Remarks	
1960				
Aug. 9	eL	06 54 12		
Aug. 9	eLR(NW)	07 05 12		
Aug. 9	eLQ eLR(NW)	07 29 12 07 32 12	Kamchatka	
Aug. 9	eP ePP eS e eSS eLQ eScS eLR	07 46 59 07 48 34 07 53 04 07 53 44 07 55 28 07 56 32 07 57 12 07 58 12	off coast N. Calif USCGS 0 = 07 39 22.6 40.0°N 126.6°W Dist. 39.5° Mag. 6	
Aug. 9	eLR	14 54 12	Sokhalin Isl.	
Aug. 9	e(P) ePP epPP ePPP eSKS eSKKS ePS ePPS eSS eLQ eLR(WSW)	17 02 24 17 06 04 17 06 32 17 08 42 17 11 56 17 14 00 17 15 44 17 17 02 17 21 32 17 34 42 17 40 12	Tonga Isls. Reg. USCGS 0 = 16 46 37.7 24.5°S 177.1°W Dist. 115.1°	
Aug. 9	eP ePP ePKS	23 51 52 23 57 04 23 58 38	Santa Cruz Isls. USCGS 0 = 23 36 51.5 11.5°S 166.3°E	
Aug. 10	eSKKS eSKKKS ePS eSS eSSS eLQ eLR(WNW)	00 03 28 00 04 22 00 06 52 00 13 52 00 18 12 00 27 24 00 33 12	Dist. 120.0°	
Aug. 10	eLR	03 50 52		
Aug. 10	e e eLR	06 34 32 06 36 28 06 47 12		
Aug. 10	eLQ eLR	07 30 42 07 32 12		

60.		Palisades, New York			
Date	Phase	h	m	s	Remarks
1960					
Aug. 10	eLR	09	20	12	
Aug. 10	eLQ	10	54	42	Sumba
	eLR	10	55	42	
Aug. 10	eLQ	12	03	22	
	eLR(NE)	12	05	12	
Aug. 10	eS	12	50	44	Costa Rica USCGS 0 = 12 38 48.3 8.9°N 83.5°W Dist. 32.9°
	eLQ	12	53	12	
	eLR(SW)	12	54	42	
Aug. 10	eLR(NW)	16	53	11	
Aug. 10	eL	19	29	11	
Aug. 10	eL	19	36	37	
Aug. 10	eL	19	46	11	
	e	21	50	31	
Aug. 10	e	21	50	51	
	e	21	54	41	
	eLQ	21	57	23	
	eLR(SW)	22	01	11	
	e	01	56	31	
Aug. 11	eLQ	02	02	41	
	eLR	02	08	11	
	ePKS	03	16	11	
Aug. 11	eSS	03	33	11	Celebes USCGS 0 = 02 53 16.3 0.0° 121.6°E Dist. 130.8°
	eLQ	03	50	41	
	eLR(WNW)	03	58	41	
	ePP	05	11	31	
Aug. 11	eSS	05	28	31	Philippines USCGS 0 = 04 50 33.9 8.8°N 126.1°E Dist. 126.9°
	eLQ	05	44	41	
	eLR(NW)	05	53	01	
	e	19	17	55	
Aug. 11	eLR	19	19	11	
	eLR(NE)	21	32	11	
Aug. 11	eLQ	22	29	11	
	eLR(W)	22	35	21	

Palisades, New York		61.			
Date	Phase	h	m	s	Remarks
1960					
Aug. 11	e	23	48	11	
	eLQ	23	50	11	
	eLR(SW)	23	53	39	
Aug. 12	e	00	09	49	
	eLQ	00	12	11	
	eLR(SW)	00	15	19	
Aug. 12	eLQ	01	55	11	
	eLR(WSW)	02	03	41	
Aug. 12	eLR(W)	04	05	11	
Aug. 12	eL	06	21	11	
	eLR(NW)	06	53	41	
Aug. 12	e(SKS)	10	46	43	
	e(SKKS)	10	47	55	
	e(PS)	10	49	35	
	e(SS)	10	53	23	
	e(SSS)	10	57	51	
	e(LQ)	11	05	11	
	e(LR) (E)	11	10	11	
	(Interpretation Doubtful)				
Aug. 12	eSKS	13	37	16	Honshu, Japan USCGS 0 = 13 12 34.3 36.1°N 141.4°E Dist. 96.9°
	ePS	13	38	52	
	eSS	13	44	06	
	eSSS	13	49	54	
	eLQ	13	55	10	
	eLR(NW)	13	58	40	
Aug. 12	e(S)	16	39	40	
	eLQ	16	42	10	
	eLR(NNW)	16	45	10	
	Rg	16	49	10	
Aug. 12	eLQ	16	58	10	
	eLR	17	01	10	
Aug. 12	eL	19	02	10	
Aug. 12	eL	21	04	40	

62. Palisades, New York				
Date	Phase	h m s	Remarks	
1965				
Aug. 13	e(P)	04 40 30		
	e(PPP)	04 47 14		
	e(PKS)	04 48 26		
	e(SKS)	04 51 10		
	eSS	05 01 40		
	e(PKPPKP)	05 04 10		
	eLQ	05 12 50		
	eLR(WNW)	05 20 10		
Aug. 13	iP	07 24 14	near E. coast Honshu, Japan	
	ipP	07 24 28	USCGS 0 = 07 11 05.5	
	eSKS	07 34 44	40.6°N 142.0°E	
	iS	07 35 10	Dist. 92.5°	
	ePS	07 36 44		
	eSS	07 42 54		
	eLQ	07 51 20		
	eLR(NW)	07 56 10		
Aug. 13	iP	14 27 06	near coast S. Chile	
	P(Z) 10 sec. 8 mic.		USCGS 0 = 14 14 57.7	
	Dil.SSW		39.7°S 74.8°W	
	epP	14 27 18	Dist. 80.6°	
	ePP	14 30 02		
	iS	14 37 14		
	ePS	14 37 24		
	ePPS	14 37 58		
	eSS	14 42 18		
	eLQ	14 47 10		
	eLR(SSE)	14 53 10		
Aug. 13	eLR	23 23 10		
Aug. 14	eLR(SW)	00 24 10		
Aug. 14	eP	04 13 22	Ryukyu Isls	
	ePP	04 16 50	USCGS 0 = 04 00 52.3	
	eS	04 23 46	45.4°N 151.1°E	
	eSS	04 30 18	Dist. 85.4°	
	eLQ	04 37 10		
	eLR(NW)	04 42 40		
Aug. 14	e	07 43 06		
	e	07 48 20		
	e	07 51 30		
	eLQ	07 58 10		
	eLR(N)	08 02 10		

Palisades, New York				
Date	Phase	h m s	Remarks	
1960				
Aug. 14	e	15 54 10		
	eLQ	15 57 10		
	eLR(SE)	16 00 10		
Aug. 14	e	21 05 30		
	eLQ	21 22 10		
	eLR(SE)	21 28 40		
Aug. 14	eP	22 56 22	Jujuy Prov., Argentina	
	epP	22 57 26	USCGS 0 = 22 46 07.6	
	eS	23 04 50	23.5°S 66.4°W	
	eScS	23 06 20	Dist. 65°	
	eSS	23 09 10		
	eSSS	23 10 18		
	eLQ	23 13 30		
	eLR(SE)	23 14 50		
Aug. 15	ePPP	05 51 18	Komandorski Isl.	
	eS	05 55 50	USCGS 0 = 05 35 21	
	ePS	05 56 10	55.7°N 163.9°E	
	ePPS	05 56 50	Dist. 71.5°	
	eSS	06 00 46		
	eSSS	06 03 50		
	eLQ	06 05 10		
	eLR(NW)	06 09 40		
Aug. 15	eScSP	07 29 26	Indian Ocean	
	ePS	07 31 26	USCGS 0 = 06 58 56.4	
	ePPS	07 33 06	13.4°S 65.8°E	
	eSS	07 38 50	Dist. 135.2°	
	eSKKKS	07 39 06		
	e	07 54 20		
	eLQ	07 57 10		
	eLR(NE)	08 04 10		
Aug. 15	eLR(W)	11 10 10		
Aug. 15	eSS	15 13 40	Indian Ocean	
	eLQ	15 32 10	USCGS 0 = 14 33 38.4	
	eLR(NE)	15 39 40	13.5°S 67.0°E	
			Dist. 136.2°	
Aug. 15	eLR	23 21 10		

64.				Palisades, New York
Date	Phase	h m s	Remarks	
1960				
Aug. 16	eS	03 04 40	S. Peru	
	eLQ	03 07 40	USCGS 0 = 02 47 18.8	
	eLR(SE)	03 14 10	16.5°S 71.5°W Dist. 57.2°	
Aug. 16	e	03 56 20		
Aug. 16	eLR(NW)	09 59 10	New Guinea	
Aug. 16	eLR(SE)	15 20 10		
Aug. 16	e	23 04 10	Timor Isl. Reg.	
	eSS	23 08 30	USCGS 0 = 22 27 52.7	
	eSSS	23 14 40	7.6°S 128.8°E	
	eLQ	23 28 10	Dist. 141.5°	
	eLR(W)	23 35 10		
Aug. 17	eLR(SE)	00 12 10		
Aug. 17	eP	09 46 18	S. Atlantic	
	ePP	09 48 54	USCGS 0 = 09 33 49.1	
	eS	09 56 32	20.1°S 11.4°W	
	ePPS	09 57 18	Dist. 84.1°	
	eSS	10 01 58		
	eLQ	10 08 22		
	eLR(SSE)	10 12 10		
Aug. 17	eP	11 36 36	S. Atlantic Ocean	
	ePP	11 39 30	USCGS 0 = 11 24 07.2	
	eS	11 46 58	19.8°S 12.2°W	
	ePPS	11 47 50	Dist. 83.5°	
	eSS	11 52 26		
	eLQ	11 58 40		
	eLR(SSE)	12 02 10		
Aug. 17	eLQ	19 05 10	New Guinea	
	eLR(NW)	19 08 50		
Aug. 17	eLQ	21 17 10		
	eLR(NW)	21 19 10		
Aug. 17	eLQ	21 50 10		
	eLR	21 56 10		
Aug. 18	eLR	02 09 10		
Aug. 18	eLR(E)	04 03 10		
Aug. 18	eLR	04 45 10		

Palisades, New York				65.
Date	Phase	h m s	Remarks	
1960				
Aug. 18	eLR(SE)	11 21 10		
Aug. 18	eLR(S)	11 50 10		
Aug. 18	eLR	21 31 09	Kurile Isls.	
Aug. 18	ePS	23 14 05	Santa Cruz Isls.	
	eSS	23 21 09	USCGS 0 = 22 43 46.4	
	eLQ	23 34 09	11.4°S 166.2°E	
	eLR(WNW)	23 41 09	Dist. 120.0°	
Aug. 19	eS	04 20 55	off coast N. Calif.	
	eLQ	04 25 09	USCGS 0 = 04 07 07.5	
	eLR(NW)	04 27 39	40.7°N 127.2°W	
	Rg	04 31 25	Dist. 39.6°	
Aug. 19	eLR(NW)	17 41 49	Kamchatka	
Aug. 20	eP	00 26 09	Guatemala	
	eS	00 31 09	USCGS 0 = 00 19 34.4	
	eLR(SW)	00 34 09	14.3°N 91.4°W Dist. 30.7° Mag. 6	
Aug. 20	eLR(W)	11 09 09		
Aug. 20	eLQ	15 01 09		
	eLR(WNW)	15 03 09		
Aug. 20	eLR	16 30 09		
Aug. 20	eP	20 21 45	Tristan da Cunha	
	ePP	20 25 21	USCGS 0 = 20 08 39	
	eS	20 32 29	35.6°S 15.4°W	
	ePS	20 34 09	Dist. 93.3°	
	eSS	20 39 05		
	eLQ	20 46 29		
	eLR(SSE)	20 51 09		
Aug. 20	eLQ	23 17 09	N. Celebes	
	eLR	23 25 09		
Aug. 21	eLR	00 06 39		
Aug. 21	ePKP	00 37 12	New Guinea	
	epPKP	00 37 36	USCGS 0 = 00 18 01.5	
	ePKS	00 40 27	4.3°S 143.3°E	
	eScSPKP	00 52 49	Dist. 130.5°	
	eSS	00 57 29		
	eLR(NW)	01 09 09		

66.				Palisades, New York
Date	Phase	h m s	Remarks	
1960				
Aug. 21	eLR(NW)	02 06 09	New Britain	
Aug. 21	eLQ	04 10 09		
	eLR(SW)	04 12 09		
Aug. 21	eLR(NE)	04 31 09	Nepal-India Border	
Aug. 21	eLR(SE)	07 22 39		
Aug. 21	ePKP	13 08 29	S. coast Mindanao,	
	epPKP	13 09 18	Philippines	
	ePP	13 10 49	USCGS 0 = 12 49 37.6	
	ePKS	13 11 35	4.9°N 125.1°E	
	epPKS	13 11 59	Dist. 131.9°	
	eSKKS	13 17 23		
	eSS	13 28 01		
	esSS	13 29 23		
	eSKKKS	13 30 25		
	eSSS	13 32 49		
	eLQ	13 47 49		
	eLR(NW)	13 55 09		
Aug. 21	eLR	17 18 01		
Aug. 21	e(SKS)	17 44 09	Fiji Isls.	
	ePPS	17 49 29	USCGS 0 = 17 20 54.9	
	eSS	17 55 29	15.3°S 176.0°W	
	eLQ	18 05 55	Dist. 108.7°	
	eLR(WNW)	18 10 39		
Aug. 21	eLQ	19 26 09		
	eLR(SSE)	19 32 09		
Aug. 22	eLQ	02 29 39		
	eLR(W)	02 32 09		
Aug. 22	eLR(SW)	03 30 09		
Aug. 22	e	06 42 09		
	eLQ	06 49 09		
	eLR(SSE)	06 53 09		
Aug. 22	eLQ	08 00 09		
	eLR(SE)	08 01 39		
Aug. 23	eLR(SW)	08 10 39		

Palisades, New York				67.
Date	Phase	h m s	Remarks	
1960				
Aug. 23	ePS	09 24 41	S.E. Iran	
	eSS	09 30 09	USCGS 0 = 08 58 12.1	
	eSSS	09 38 01	29.0°N 59.9°E	
	eLR(NE)	09 43 49	Dist. 98.3°	
Aug. 23	eP	14 18 21	Atlantic Ocean	
	eS	14 26 25	USCGS 0 = 14 08 14.9	
	ePPS	14 27 09	0.9°N 26.0°W	
	eSS	14 30 09	Dist. 58.7°	
	eLQ	14 32 37		
	eLR(SE)	14 35 09		
Aug. 23	e	22 04 09		
	e	22 15 09		
	eLQ	22 17 09		
	eLR(NW)	22 22 09		
Aug. 23	ePP	23 03 29	Fiji Isls. Reg.	
	eSKS	23 09 57	USCGS 0 = 22 44 51.5	
	ePS	23 13 13	14.5°S 176.4°W	
	ePPS	23 14 15	Dist. 108.5°	
	eSS	23 19 17	Mag. 6	
	eSSS	23 23 29		
	e	23 28 43		
	eLQ	23 30 39		
	eLR(NW)	23 35 29		
Aug. 23	e	23 28 46		
Aug. 24	eLR(SE)	00 51 39		
Aug. 24	eP	01 55 45	E. of Kamchatka	
	ePP	01 58 09	USCGS 01 44 09.9	
	eS	02 04 39	56.3°N 163.8°E	
	eScS	02 05 45	Dist. 71.4°	
	eSS	02 09 29		
	eLQ	02 14 09		
	eLR(NW)	02 17 09		
Aug. 24	eLR	05 29 39		
Aug. 24	ePKP	06 07 33	Tonga Isls.	
	ePP	06 08 17	USCGS 0 = 05 49 01.1	
	ePPP	06 10 23	19.0°S 174.1°W	
	eSKS	06 14 15	Dist. 109.7°	
	eSKKKS	06 15 49		
	ePS	06 17 41		
	eSS	06 23 41		
	e(SSS)	06 27 39		
	eLQ	06 34 09		
	eLR(SW)	06 40 09		

68.				Palisades, New York	
Date	Phase	h m s	Remarks		
1960					
Aug. 24	eLR(NE)	07 58 09			
Aug. 24	eLQ	13 37 49			
	eLR	13 41 09			
Aug. 24	eLR	19 31 09			
Aug. 24	eSS	20 03 29	Burma-India Border		
	eLQ	20 14 09	USCGS 0 = 19 27 53.2		
	eLR(SE)	20 19 09	24.4°N 95.0°E Dist. 114.5°		
Aug. 24	e	22 52 49			
	e	22 56 59			
	eLQ	23 03 49			
	eLR(SW)	23 09 09			
Aug. 25	e	02 22 49			
	eLQ	02 33 29			
	eLR(NW)	02 40 45			
Aug. 25	eP	06 21 09			
	eS	06 30 57			
	ePPS	06 31 49			
	eSS	06 35 49			
	eLQ	06 44 09			
	eLR(SSE)	06 49 09			
Aug. 25	eLR(SE)	09 24 09			
Aug. 25	eLR(NW)	10 30 09			
Aug. 25	eLQ	15 34 09			
	eLR(SSE)	15 37 49			
Aug. 25	e	17 35 41			
	e	17 39 33			
	eLQ	17 40 39			
	eLR(SSE)	17 44 09			
Aug. 25	eP	17 52 17			
	ePP	17 54 49			
	eS	18 00 39			
	eSS	18 05 01			
	eLQ	18 09 29			
	eLR(NW)	18 14 09			
Aug. 25	eLR(NW)	21 19 09			

Palisades, New York				69.
Date	Phase	h m s	Remarks	
1960				
Aug. 25	eP	23 14 25	Near Coast Chile	
	eS	23 24 21	USCGS 0 = 23 02 26.5	
	ePS	23 24 41	37.8°S 73.5°W	
	eSS	23 29 05	Dist. 78.6°	
	eLQ	23 34 19		
	eLR(SSE)	23 38 59		
Aug. 26	eP	00 26 19		
	eS	00 36 09		
	eSS	00 40 49		
	eLQ	00 47 09		
	eLR(SSE)	00 51 09		
Aug. 26	eLR	02 48 09		
Aug. 26	eLQ	05 16 09		
	eLR(NW)	05 23 09		
Aug. 26	eLR(NE)	08 06 09	West Pakistan	
Aug. 26	eLR(W)	13 10 09		
Aug. 26	eLQ	16 02 48		
	eLR(SW)	16 09 38		
Aug. 26	eLQ	16 22 38		
	eLR(SW)	16 27 48		
Aug. 26	eLQ	18 31 08		
	eLR	18 33 38		
Aug. 26	ePS	18 57 28	New Hebrides	
	eSS	19 05 08	USCGS 0 = 18 27 18.2	
	eSKKS	19 08 08	13.5°S 165.9°E	
	eLQ	19 17 48	Dist. 121.3°	
	eLR(NW)	19 24 38		
	eLR ₂ (SE)	20 22 18		
Aug. 26	eLR(NW)	21 42 08		
Aug. 26	eLQ	22 40 08		
	eLR	22 46 08		
Aug. 26	eLR	23 52 08	near coast Chile	
Aug. 27	eLQ	06 06 08		
	eLR	06 09 08		

70.		Palisades, New York			
Date	Phase	h	m	s	Remarks
1960					
Aug. 27	e	10	47	34	Crete
	eLR(E)	10	53	08	USCGS 0 = 10 17 18.1 34.4°N 26.3°E Dist. 75.1°
Aug. 27	eLQ	14	30	08	
	eLR(SW)	14	33	08	
Aug. 27	eP	18	27	56	Kurile Isls.
	eS	18	37	52	USCGS 0 = 18 16 15.7
	ePPS	18	39	08	49.9°N 153.7°E
	eSS	18	43	08	Dist. 80.1°
	eLQ	18	46	08	
	eLR(NW)	18	48	28	
Aug. 27	e	22	20	00	
	e	22	24	58	
	e	22	28	28	
	eLQ	22	31	54	
	eLR(SW)	22	34	26	
Aug. 28	eP	06	12	41	S. of Panama
	ePP	06	14	00	USCGS 0 = 06 05 22.6
	eS	06	18	18	3.7°N 82.8°W
	eSS	06	20	08	Dist. 37.6°
	eLQ	06	21	08	
	eLR(SSW)	06	22	58	
Aug. 28	e	08	59	08	
Aug. 28	eLR	12	14	08	
Aug. 28	e	12	29	20	
	eLQ	12	30	08	
	eLR(SE)	12	32	08	
Aug. 28	e	15	53	28	
	eLQ	16	10	38	
	eLR(E)	16	17	08	
Aug. 28	e	19	15	32	
	e	19	18	46	
	eLQ	19	19	38	
	eLR(SW)	19	21	08	
Aug. 28	eLQ	21	05	08	
	eLR(NW)	21	10	08	

Palisades, New York		71.			
Date	Phase	h	m	s	Remarks
1960					
Aug. 28	e(S)	22	19	24	
	e(SS)	22	24	08	
	eLQ	22	31	08	
	eLR(SE)	22	35	08	
Aug. 29	e	00	02	38	
	eLQ	00	10	08	
	eLR(NE)	00	12	08	
Aug. 29	ePPP	05	02	56	Galapagos Isl.
	e	05	05	38	USCGS 0 = 04 53 18.8
	eS	05	07	20	1.0°N 85.3°W
	eSS	05	10	28	Dist. 41.0°
	eLQ	05	11	08	
	eLR(SW)	05	12	28	
Aug. 29	eLQ	07	55	08	
	eLR(E)	07	58	08	
Aug. 29	eLQ	12	47	08	
	eLR(NW)	12	49	08	
Aug. 29	eLR(SE)	17	17	37	
Aug. 29	e	18	29	27	
	eLQ	18	39	37	
	eLR(E)	18	42	07	
Aug. 30	eLR	00	49	51	
Aug. 30	eP	06	56	41	S. Pacific Ocean
	eS	07	06	01	USCGS 0 = 06 45 16.4
	eScS	07	06	35	20.9°S 113.7°W
	eSS	07	10	27	500 mi N.W. Easter Isls.
	eSSS	07	14	27	Dist. 71.8°
	eLQ	07	15	07	
	eLR(SW)	07	19	07	
Aug. 30	eLQ	11	14	07	New Guinea
	eLR(NW)	11	20	07	
Aug. 30	e	16	13	53	
	eLQ	16	26	57	
	eLR	16	31	07	
Aug. 30	eLQ	16	51	07	
	eLR(NW)	16	55	07	
Aug. 30	eLR(NE)	23	12	07	

72.		Palisades, New York			
Date	Phase	h	m	s	Remarks
1960					
Aug. 31	eLQ	03	59	07	
	eLR(W)	04	02	07	
Aug. 31	e	06	05	11	
	e	06	11	27	
	eLQ	06	21	07	
	eLR(SE)	06	27	07	
Aug. 31	eP	07	27	37	S. Pacific Ocean
	eS	07	36	59	USCGS 0 = 07 16 10.4
	eScS	07	37	31	20.9°S 114.1°W
	eSS	07	41	27	Dist. 72.0°
	eLQ	07	46	07	
	eLR(SW)	07	50	07	
Aug. 31	eLQ	11	46	27	
	eLR(SW)	11	48	07	
Aug. 31	eLQ	12	03	27	
	eLR(SE)	12	07	07	
Aug. 31	eLR(E)	13	27	07	
Aug. 31	eLR	15	19	08	
Aug. 31	eLR	15	57	38	
Aug. 31	ePS	17	52	38	near coast Mindanao,
	eSS	17	59	28	Philippines
	e	18	12	24	USCGS 0 = 17 21 55.1
	eLQ	18	16	08	13.7°N 120.1°E
	eLR(N)	18	21	08	Dist. 123.7°
Aug. 31	eSS	22	39	38	Turkey
	eLQ	22	49	38	USCGS 0 = 22 11 53.9
	eLR(E)	22	53	08	39.1°N 36.3°E
					Dist. 77.9°

LAMONT GEOLOGICAL OBSERVATORY
COLUMBIA UNIVERSITY

PALISADES, NEW YORK



SEISMOLOGICAL BULLETIN

By

RUTH B. SIMON



1 September 1960 - 31 December 1960

L.G.O. Contribution No. 476

STATION CONSTANTS

Latitude: 41° 00' 25" North
 Longitude: 73° 54' 31" West
 Elevation: 102.59 meters
 Bedrock: Palisades diabase Triassic Age

Abbreviations

i = sudden beginning of the motion (impetus)
 e = gradual beginning of the motion (emersio)
 Lg = short period continental surface shear wave
 Rg = continental Rayleigh wave
 Comp. = compression
 Dil. = dilatation

All times are G. C. T.

Time - I. B. M. Invar pendulum clock corrected by Naval Observatory time signals every six hours.

METHOD OF COMPUTING MAGNITUDES AT PALISADES

Magnitudes at Palisades are computed from Gutenberg's¹ formula:

$$M \text{ (magnitude)} = \log A - \log B + C + D$$

where

A = the maximum amplitude in microns for surface waves with periods of about 20 seconds. If the horizontal ground motion is used, A is obtained from the square root of the sum of the squares of the maximum ground amplitudes on the E-W and the N-S recordings.

In the rare cases where horizontal component instruments are not available, the vertical component alone is used. In general, records from the wide-band, long-period instruments with pendulum periods of 30 seconds and galvanometer periods of 100 seconds are used. In special cases where instruments of $T_o = 15$ sec, $T_g = 75$ sec are used, the readings are preceded by an asterisk.

$-\log B$ is determined from tables by Gutenberg of $-\log B$ for varying epicentral distances.

C and D are presently taken as 0 for Palisades. C is a station constant, D depends on depth of focus, radiation pattern, absorption, and irregularities.

At present magnitudes are computed only for shallow shocks.

1. Gutenberg, B. Amplitudes of surface waves and magnitudes of shallow earthquakes. Bulletin of Seismological Society of America, Vol. 35, No. 1, January 1945.

Instruments

Three component Columbia University seismographs.
 $T_o = 12$ sec., $T_g = 15$ sec.

Three component Benioff seismographs. Short-period, $T_o = 1$ sec., $T_g = 0.2$ sec. Long-period, $T_o = 1$ sec., $T_g = 75$ sec.

One Columbia University vertical seismograph. $T_o = .33$ sec., $T_g = 0.2$ sec.

Three component Columbia University visual recording seismographs, $T_o = 12$ sec.

One Columbia University vertical seismograph for visual recording, $T_o = 1$ sec.

Three component Columbia University long-period seismographs, $T_o = 15$ sec., $T_g = 75$ sec.

Three component Columbia University long-period seismographs, $T_o = 30$ sec., $T_g = 100$ sec.

Three component Columbia University long-period seismographs. (1)
 $T_o = 30$ sec., $T_g = 100$ sec. P_2 to 20 September, 1960.

Z component $T_o = 30$ sec., $T_g = 100$ sec. P_2 from 20 September, 1960 to 31 December, 1960.

Three component Columbia University long-period seismographs, (2)
 $T_o = 30$ sec., $T_g = 100$ sec. P_{2F} from 20 September, 1960 to 31 December, 1960.

Two Columbia University microbarographs, $T_o = 10$ sec., $T_g = 75$ sec.

- (1) Seismographs of High Magnification at Long Periods. G. Sutton and J. Oliver. Annales de Geophysique, Tome 15, No. 4, 1959, p. 423-433.
- (2) The Use of Galvanometers as Band-rejection Filters in Electromagnetic Seismographs. P. W. Pomeroy and G.H. Sutton. Seism. Soc. Amer. Bull., v. 50, p. 135-151.

PALISADES, NEW YORK 1

Date	Phase	h	m	s	Remarks
1960					
Sept. 1	eLR (SW)	05	11	08	
1	eLR (SW)	06	15	08	Panama-Colombian Border
1	ePP	07	55	02	Tonga Islands
	eSKS	08	00	12	USCGS 0 = 07 35 21.9
	eSKKS	08	02	16	27.6°S 179.1°W
	eScSP	08	04	20	Dist. 118.4°
	eSS	08	11	00	Depth 155 km
	e	08	22	08	Z = 4, E = 3, N = 1.2
	eLQ	08	26	28	Mag 5 1/2
	eLR (SW)	08	33	48	
1	ePP	09	48	44	New Hebrides
	ePKS	09	50	16	USCGS 0 = 09 28 19.5
	eSKS	09	54	14	16.8°S 167.6°E
	eSKKS	09	55	44	Dist. 122.0°
	ePS	09	58	40	Depth 63 km
	eSS	10	06	08	Z = 9, E = 5.5, N = 4.0
	eLQ	10	19	28	Mag 6.0
	eLR (NW)	10	24	58	
1	eLQ	11	26	08	New Hebrides
	eLR (NW)	11	32	38	USCGS 0 = 10 35 01.1 16.5°S 167.6°E Depth 27 km Z = 8, E = 4.5, N = 3.0
1	eLR (NW)	12	21	48	New Hebrides Z = 2.5, E = 1.5, N = 1.0
1	eP	15	46	25	Kodiak, Alaska
	epP	15	46	32	USCGS 0 = 15 37 14.4
	ePP	15	48	36	56.1°N 153.7°W
	eS	15	53	46	Dist. 52.1°
	ePPS	15	54	20	Depth 24 km
	eScS	15	56	08	Z = 70, E = 55, N = 63
	eSS	15	57	34	Mag 6 1/4
	eLQ	15	59	48	
	eLR (NW)	16	01	08	
1	eLR	19	08	28	

 PALISADES, NEW YORK 2

Date	Phase	h	m	s	Remarks
1960					
Sept. 1	eSS	19	16	24	Fiji Islands
	eLR (NW)	19	33	08	USCGS 0 = 18 41 16.2 15.8°S 179.2°E Dist. 111.6° Depth 33 km
1	ePS	20	30	44	Fiji Islands
	eSS	20	37	08	USCGS 0 = 20 02 12.8
	eLQ	20	49	08	16.1°S 179.6°W
	eLR (NW)	20	54	08	Dist. 112.3° Depth 183 km Z = 7, E = 4.5, N = 2.0 Mag 5 1/2
1	eLR (SE)	22	00	08	
2	e	07	59	24	
	eLR (SE)	08	10	08	
2	ePPP	11	14	58	New Hebrides
	ePS	11	22	18	USCGS 0 = 10 52 18.2
	eSS	11	30	18	15.2°S 167.4°E
	eLQ	11	42	08	Dist. 121.6°
	eLR (NW)	11	49	08	Depth 163 km Z = 1, E = 2.5, N = 2.0 Mag 5 1/4
2	eLR (NNW)	14	37	08	Tibet
2	eLR	18	53	08	Argentina
2	eP	22	13	16	Fox Islands, Aleutians
	epP	22	13	26	USCGS 0 = 22 02 48.9
	ePcP	22	13	46	52.0°N 171.4°W
	ePP	22	15	36	Dist. 62.9°
	ePPP	22	17	28	Depth 49 km
	eS	22	21	42	Z = 26, E = 29, N = 24
	ePS	22	21	48	Mag 6.0
	eScS	22	23	04	
	eSS	22	26	04	
	eSSS	22	28	48	
	eLQ	22	29	52	
	eLR (NW)	22	33	08	

PALISADES, NEW YORK

3

Date	Phase	h	m	s	Remarks
1960					
Sept. 3	eLR	01	37	38	
3	ePP	06	01	20	Tonga Islands
	eSKS	06	07	00	USCGS 0 = 05 41 39.9
	ePS	06	10	28	20.9°S 174.4°W
	eSS	06	16	38	Dist. 110.9°
	eLQ	06	29	08	Depth 61 km
	eLR (WSW)	06	33	08	Z = 1, E = 3.5, N = 2.5
	eLR ₂	07	05	08	Mag 5 1/2
3	eP	12	56	32	Solomon Islands
	e	12	58	48	USCGS 0 = 12 41 34.9
	ePKP	12	59	46	6.1°S 154.5°E
	e	12	59	49	Dist. 124.2°
	ePP	13	01	34	Depth 457 km
	ePKS	13	03	44	Mag 6 1/2 Pasadena
	ePPP	13	05	18	
	eSKS	13	06	18	
	eSKKS	13	09	08	
	e (ScSP)	13	10	52	
	ePPS	13	13	08	
	eSS	13	20	28	
	eSSS	13	25	08	
	e	13	32	08	
	e (LR)(NW)	13	35	08	
3	eLR(SE)	14	31	38	
3	eLR (SW)	16	39	28	Kermadec Islands
					USCGS 0 = 15 47 12.3
					34.7°S 179.7°W
					Dist. 121.6°
					Depth 79 km
3	e	20	11	34	
3	i	20	15	49	
	i	20	16	08	
3	eLQ	21	59	08	South of Australia
	eLR	22	02	08	
3	eLQ	23	05	08	
	eLR	23	07	08	

4

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Sept. 3	eP (comp.)	23	59	09	Kurile Islands
	ePcP	23	59	18	USCGS 0 = 23 46 23.9
4	e	00	00	56	44.6°N 149.1°E
	ePP	00	02	48	Dist. 86.1°
	eS	00	09	36	Depth 27 km
	ePS	00	10	32	Z = 11, E = 7.5, N = 8.0
	eSS	00	16	08	Mag 5 3/4
	eSSS	00	20	08	
	eLQ	00	24	08	
	eLR (NW)	00	28	24	
4	eP	05	30	42	Kodiak Island, Alaska
	ePP	05	32	48	USCGS 0 = 05 21 22.1
	eS	05	38	04	56.3°N 153.1°W
	eScS	05	40	30	Dist. 51.6°
	eSS	05	42	08	Depth 48 km
	eLQ	05	44	38	Z = 3, E = 2.5, N = 3.0
	eLR (NW)	05	49	08	Mag 4 3/4 - 5
4	eLR	16	59	08	
4	eLR (SW)	22	06	08	
5	eLQ	06	40	08	
	eLR (SW)	06	48	08	
5	e	10	34	16	
	e	10	39	52	
	e	10	52	04	
	eLQ	11	01	28	
	eLR (W)	11	06	08	
5	e	12	44	28	
	eLQ	12	59	08	
	eLR (W)	13	02	08	
5	eLR	14	50	08	
5	eLR	17	27	08	
5	eLQ	10	50	48	Kermadec Islands
	eLR (SW)	10	56	48	

PALISADES, NEW YORK

5

Date	Phase	h	m	s	Remarks
1960					
Sept. 6	eSKKKS	14	36	08	Loyalty Islands
	ePKKS	14	41	08	USCGS 0 = 14 03 01.8
	eSS	14	44	40	20.4°S 169.4°E
	eSSS	14	49	08	Dist. 123.1°
	e	14	54	38	Depth 35 km
	eLQ	14	58	08	Z = 2, E = 1, N = 1
	eLR (NW)	15	05	28	Mag 5 1/4
6	eLR	16	05	08	Japan
6	eP	17	46	08	
	eS	17	51	36	
	eLQ	17	53	08	
	eLR (SE)	17	55	34	
6	eLR	18	30	08	
6	e	21	37	11	
	e	21	37	33	
	e	21	41	47	
7	e	01	07	28	
	eLR (SW)	01	11	08	
7	eP	01	30	58	Tristan da Cunha region
	ePP	01	34	48	USCGS 0 = 01 17 39.1
	eS	01	42	12	37.2°S 16.1°W
	ePS	01	43	28	Dist. 94.0
	eSS	01	48	28	Depth 25 km
	eLQ	01	56	08	Z = 4, E = 1.5, N = 3.0
	eLR (SE)	02	01	20	Mag 5 1/4
7	eLQ	04	56	28	Northern Celebes
	eLR (NW)	05	04	08	
7	eLR (SE)	05	35	48	
7	eS	12	08	08	Kurile Islands
	eLQ	12	23	08	USCGS 0 = 11 44 56.6
	eLR (NW)	12	28	08	44.3°N 149.1°E
					Dist. 86.9°
					Depth 89 km
					Z = 1.5, E = 1.0, N = 1.0
					Mag. 5

6

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Sept. 7	eLQ	16	33	38	
	eLR (SE)	16	35	20	
8	eLR (NW)	06	46	28	
8	eLQ	08	42	08	
	eLR (NW)	08	45	08	
8	eLR (SE)	11	03	28	
8	ePKP	11	26	49	Mindanao, Philippines
	ePP	11	29	24	USCGS 0 = 11 07 40.8
	ePKS ₁	11	29	59	6.2°N 126.2°E
	ePKS ₂	11	30	48	Dist. 129.7°
	eSKKS	11	35	48	Depth 47 km
	eSS	11	46	08	Z = 2, E = 0.5, N = 1.0
	e	11	49	18	Mag 5 1/2
	eLQ	12	01	48	
	eLR (NW)	12	08	38	
	eLQ ₂	12	55	08	
8	eP	14	43	48	Kamchatka
	e	14	44	14	USCGS 0 = 14 32 00.3
	e (SS)	14	59	48	52.5°N 158.8°E
	eLQ	15	05	36	Dist. 76.2°
	eLR (NW)	15	10	08	Depth 29 km
8	i	16	20	02	
8	eLR	21	15	08	
8	eLR (NW)	23	59	38	Kurile Islands
9	e	04	29	38	
	eLQ	04	51	08	
	eLR (SE)	04	59	08	
9	eLR (W)	09	32	08	
9	eLR	10	24	48	Hindu Kush
9	eLQ	11	14	08	
	eLR (NW)	11	19	28	

PALISADES, NEW YORK

7

Date	Phase	h	m	s	Remarks
1960					
Sept. 9	eLR	14	11	48	
9	eP	16	27	48	Jan Mayan Island
	ePP	16	29	44	USCGS 0 = 16 19 15.9
	eS	16	34	36	71.5°N 2.4°W
	ePS	16	34	48	Dist. 46.0°
	eSS	16	38	12	Depth 23 km
	eLQ	16	39	28	Z = 3, E = 2, N = 2
	eLR (NE)	16	41	08	Mag 4 3/4
9	e	17	13	08	Z = 3, E = 3, N = 3
	e	17	17	40	
	eLQ	17	20	08	
	eLR (SW)	17	22	28	
9	e	19	52	18	
	eLQ	19	55	28	
	eLR (E)	19	58	48	
9	ePPP	20	15	08	Jan Mayan Island
	eS	20	19	56	USCGS 0 = 20 04 32.7
	ePS	20	20	12	71.7°N 1.3°W
	eSS	20	23	28	Dist. 46.1°
	eLQ	20	24	48	Depth 23 km
	eLR (NE)	20	28	08	Z = 2.5, E = 1.5, N = 1.5
10	eLQ	00	51	38	Mag. 4 3/4
	eLR (E)	00	54	48	Crete
10	eLR (E)	05	11	08	
10	e	10	08	40	
	eLR (SE)	10	11	08	
10	ePKP	11	03	03	Celebes Sea
	iPP	11	05	36	USCGS 0 = 10 44 51.2
	ePKS	11	06	34	4.0°N 122.6°E
	epPP	11	07	32	Dist. 132.6°
	ePPP	11	08	42	Depth 629 km
	ePKKP	11	12	58	
	eSPP	11	16	38	
	eSS	11	22	08	
	ePKPPKS	11	24	08	
	eL(NW)	11	46	38	

8

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Sept. 10	ePS	14	35	08	Solomon Islands
	eSS	14	42	08	USCGS 0 = 14 04 31.9
	eLQ	14	55	08	11.2°S 163.1°E
	eLR	15	01	38	Dist. 121.9°
					Depth 48 km
10	e	16	43	08	Nicobar Islands
	eLQ	16	46	38	USCGS 0 = 15 45 22.6
	eLR	16	54	08	6.6°N 93.8°E
					Dist. 130.9°
					Depth 29 km
11	eLQ	23	43	08	
	eLR	23	47	48	
11	eLR	02	35	08	
11	eLR	11	53	08	Kermadec Islands
11	eLR (E)	15	33	08	
11	eLR (SE)	22	49	08	
11	eLR (W)	23	45	38	
12	eLR (NW)	03	05	08	S. Alaska
12	ePS	12	45	38	Ryukyu Islands
	eSS	12	51	38	USCGS 0 = 12 17 08
	eSSS	12	55	48	27.3°N 128.4°E
	e	13	07	08	Dist. 109.3°
	eLR (NW)	13	10	08	Depth 48 km
					Z = 4, E = 1.5, N = 2.5
					Mag 5 1/4 - 5 1/2
13	e	16	42	28	
	eL	16	46	40	
13	ePP	17	58	12	Guatemala
	eS	18	02	38	USCGS 0 = 17 51 10.8
	eLR (SW)	18	06	20	13.8°N 90.3°W
					Dist. 30.3°
					Depth 122 km
					Z = 1.5, E = 1.0, N = 1.0
					Mag 4 1/4
13	eLR	22	26	08	Peru

PALISADES, NEW YORK

9

Date	Phase	h	m	s	Remarks
1960					
Sept. 14	e	00	31	28	
	eLQ	00	32	08	
	eLR	00	34	28	
14	eSS	01	11	22	Luzon, Philippines
	e	01	14	36	USCGS 0 = 00 34 25.3
	eLQ	01	29	08	16.9°N 122.3°E
	eLR (W)	01	34	08	Dist. 120.4° Depth 50 km
14	eP (dil fromS)	01	58	17	Dominican Republic
	e	02	01	32	USCGS 0 = 01 53 32.1
	eS	02	02	04	19.6°N 70.3°W
	eLQ	02	02	38	Dist. 21.2°
	eLR (SSE)	02	03	28	Depth 103 km
	T	02	17	31	Z = 6.5, E = 3.5, N = 5.5
	T (max)	02	18	43	Mag 4 1/2
14	eP	05	09	32	S. Pacific Ocean
	eS	05	19	42	USCGS 0 = 04 57 12.5
	ePS	05	20	26	35.1°S 106.0°W
	eSS	05	24	44	Dist. 81.2°
	eLQ	05	31	18	Depth 40 km
	eLR (SSW)	05	36	40	Z = 8.0, E = 3.0, N = 5.5 Mag 5 1/2
14	eLQ	16	58	08	Fiji
	eLR (NW)	17	01	28	
14	eLR (W)	18	13	08	
14	ePP	23	38	00	Tonga Islands
	eSKS	23	44	00	USCGS 0 = 23 18 35.1
	e (SKKKS)	23	45	34	20.9°S 174.1°W
	ePS	23	47	32	Dist. 110.9°
	eSS	23	53	28	Depth 25 km
	ePKPPKP	23	56	14	Z = 3.5, E = 2.5, N = 1.5
15	e	00	02	08	Mag 5 1/4
	eLQ	00	04	38	
	eLR (SW)	00	12	28	
15	eLR	01	29	08	

10

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Sept. 15	eSS	04	08	48	New Hebrides
	eLQ	04	22	08	USCGS 0 = 03 31 17.5
	eLR (NW)	04	28	08	16.5°S 167.3°E Dist. 122.5° Depth 69 km Z = 1.0, E = 1.0, N = 0.5 Mag 5 1/4
15	eLQ	06	03	08	
	eLR (SE)	06	09	38	
15	e	06	28	16	
	eLQ	06	34	28	
	eLR (NW)	06	37	16	
15	eLR (SW)	12	36	48	
15	eLR (NW)	12	58	08	
15	ePPS	18	26	12	Volcano Island Region
	e	18	36	28	USCGS 0 = 17 57 42.7
	e	18	42	18	21.4°N 142.9°E
	eLR (SE)	18	50	08	Dist. 109.4° Depth 361 km
15	eLR (NW)	19	02	04	
16	eLR (NE)	02	08	08	Tadzhik, SSR
16	e	17	34	59	
16	eLR	20	06	07	Santa Cruz Islands
17	e	06	59	47	
	eLQ	07	00	07	
	eLR	07	02	07	
17	eP	08	04	59	Kurile Islands
	ePP	08	08	19	USCGS 0 = 07 52 50.8
	eSKS	08	14	59	49.3°N 155.4°E
	eS	08	15	25	Dist. 80.5°
	eSS	08	20	43	Depth 35 km
	eLR (NW)	08	33	47	

PALISADES, NEW YORK 11

Date	Phase	h	m	s	Remarks
1960					
Sept. 17	eP	08	17	40	Kurile Islands
	eSKS	08	27	39	USCGS 0 = 08 05 29.5
	eS	08	27	57	49.4°N 155.2°E
	eSS	08	34	27	Dist. 80.5°
	eLR (NW)	08	47	07	Depth 28 km Z = 11.5, E = 9.0, N = 7.0 Mag 5 3/4
17	eLR (SE)	10	25	07	
17	eLR	12	33	07	
17	ePKP	13	17	44	Solomon Islands
	ePPS	13	31	17	USCGS 0 = 12 58 56.4
	eSS	13	37	19	6.3°S 154.4°E
	eLQ	13	55	07	Dist. 125°
	eLR (NW)	13	58	07	Depth 134 km Z = 1.5, E = 1.0 N = 1.0 Mag 5 1/4
17	eLQ	14	54	07	
	eLR	14	59	07	
17	e	16	04	07	
	eLQ	16	06	37	
	eLR (NW)	16	13	27	
17	eLQ	16	49	37	
	eLR (NW)	16	55	47	
17	eP	20	11	13	Tonga Islands
	ePP	20	15	33	USCGS 0 = 19 56 11.1
	eSKS	20	21	23	20.9°S 174.5°W
	eSKKS	20	23	07	Dist. 111.6°
	ePS	20	24	53	Depth 28 km
	eSS	20	30	55	Z = 9.5, E = 6.0, N = 3.0
	eSSS	20	35	27	Mag 5 3/4
	eLQ	20	42	07	
	eLR (SW)	20	48	07	
18	eLR	02	43	07	
18	eLQ	04	46	07	
	eLR	04	48	07	

 12 PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Sept. 18	e	08	35	40	
	e	08	35	44	
18	eLQ	09	28	19	
	eLR	09	30	07	
18	ePKP	09	59	44	Banda Sea
	epPKP	10	00	36	USCGS 0 = 09 40 28.3
	ePP	10	03	11	6.8°S 129.2°E
	ePKS	10	03	31	Dist. 140.4°
	epPKS	10	04	27	Depth 83 km
	eSKKS	10	09	23	Z = 1.5, E = 1.5, N = 1.0
	ePS	10	12	13	Mag 5 1/4
	ePPS	10	15	07	
	eSS	10	21	53	
	e	10	26	31	
	eLQ	10	37	23	
	eLR (NW)	10	46	27	
18	eLQ	19	56	07	Fox Islands, Aleutians
	eLR	20	02	07	
19	eLR	01	03	27	
19	eP	02	12	05	S. Bolivia
	epP	02	12	13	USCGS 0 = 02 01 53.0
					20.5°S 65.4°W
					Dist. 62.3°
					Depth 118 km
19	ePP	04	00	13	Luzon, Philippines
	ePKS	04	02	11	USCGS 0 = 03 39 40.9
	eSKS	04	04	47	15.6°N 120.0°E
	ePKKP	04	08	03	Dist. 121.8°
	ePKKS	04	12	19	Depth 97 km
	eSS	04	16	07	Z = 4.5, E = 2.0, N = 4.0
	eSSS	04	20	47	Mag 5 1/2
	eLQ	04	35	07	
	eLR (N)	04	42	07	
19	eS	08	26	37	
	eSS	08	32	27	
	eLQ	08	39	07	
	eLR (SW)	08	43	07	

PALISADES, NEW YORK

13

Date	Phase	h	m	s	Remarks
1960					
Sept. 19	eP	19	08	10	Colombia-Panama Border
	P (Z) 6 sec 2 u comp from S				USCGS 0 = 19 01 25.4
	epP	19	08	13	6.9°N 77.5°W
	ePP	19	09	19	Dist. 34°
	ePPP	19	09	51	Depth 66 km
	e (PcP)	19	11	09	Z = 46.0, E = 73.0, N = 45.5
	eS	19	13	23	Mag 6.0
	eSS	19	14	27	
	ePcS	19	14	43	
	eLQ	19	15	07	
	eLR (S)	19	16	17	
20	eLQ	01	39	07	
	eLR (NW)	01	44	07	
20	eSS	04	11	55	Kermadec Island
	eLQ	04	24	43	USCGS 0 = 03 35 34.6
	eLR (SW)	04	31	07	28.2°S 177.9°W
					Dist. 117.9°
					Depth 47 km
					Z = 2.0, E = 1.5, N = 1.0
					Mag 5 1/4
20	eLQ	09	36	17	Z = 2.5, E = 1.0, N = 2.0
	eLR (SW)	09	40	37	
20	eL	11	30	07	
20	e	14	26	13	
	eLQ	14	27	47	
	eLR (SW)	14	30	07	
20	eL	19	52	37	
21	eLQ	00	31	07	
	eLR	00	33	27	
21	eP	03	51	07	El Salvador
	ePcP	03	53	07	USCGS 0 = 03 44 25
					10.7°N 88.9°W
					Dist. 32.7°
					Depth 60 km
21	eLQ	08	14	07	Kermadec Island
	eLR (SW)	08	21	07	

14

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Sept. 21	eLQ	08	42	27	
	eLR (SW)	08	51	07	
21	eS	10	56	39	Fox Islands
	eSS	11	00	55	USCGS 0 = 10 38 31.0
	eLQ	11	05	07	53.4°N 166.1°W
	eLR (NW)	11	08	07	Dist. 59.7°
					Depth 38 km
21	eLR	13	05	07	
21	eLQ	23	48	07	Iran
	eLR	23	55	07	
22	eLR	00	19	27	
22	eSKS ₁	06	02	47	Belgian Congo
	eSKS ₂	06	04	07	USCGS 0 = 05 38 14.4
	ePS	06	05	27	3.4°S 29.1°E
	eSS	06	11	07	Dist. 101.7°
	eSSS	06	15	07	Depth 29 km
	eLQ	06	20	37	Z = 8.0, E = 5.5, N = 4.0
	eLR (SE)	06	25	07	Mag 5 1/2-5 3/4
22	eP	09	19	55	Belgian Congo
	ePP	09	23	07	USCGS 0 = 09 05 36.8
	ePKS	09	27	23	3.3°S 29.3°E
	eSKS	09	30	15	Dist. 101.5°
	ePS	09	32	51	Depth 28 km
	eSS	09	38	27	Z = 47.5, E = 30.5, N = 23
	eLQ	09	49	19	Mag 6 1/4- 6 1/2
	eLR (SE)	09	55	07	
22	eP	09	28	55	Belgian Congo
	ePP	09	33	11	USCGS 0 = 09 14 58
	eSKS	09	39	39	2.8°S 29.8°E
	ePS	09	42	07	Dist. 102.0°
	ePKKS	09	48	21	Depth 20 km
22	eLR (S)	15	26	07	Colombia
22	eLQ	23	05	07	Aleutians
	eLR (NW)	23	11	07	

PALISADES, NEW YORK 15

Date	Phase	h	m	s	Remarks
1960					
Sept. 23	eS	00	30	47	Atlantic Ocean
	eLR (SE)	00	32	27	USCGS 0 = 00 20 33.6 20.2°N 56.7°W Dist. 25.6° Depth 17 km Z = 1, E = 1, N = 1 Mag 4
23	eLQ	02	09	07	New Hebrides
	eLR (NW)	02	16	07	
23	e	17	02	07	
	eLQ	17	04	37	
	eLR (SW)	17	08	07	
23	eLR	17	37	27	
23	ePP	23	22	19	Tonga Islands
	eSKS ₁	23	27	43	USCGS 0 = 23 02 24.5
	eSKS ₂	23	28	17	22.2°S 174.8°W
	eSKKKS	23	29	35	Dist. 112.2°
	eSS	23	37	27	Depth 39 km
	e	23	41	17	
	e	23	48	27	
	eLR (NW)	23	48	27	
23	eLQ	23	50	27	Argentina
	eLR (SW)	23	56	17	USCGS 0 = 23 17 11.5 30.5°S 67.2°W Dist. 71.9° Depth 298 km
24	eLR	04	25	07	
24	e	05	16	47	
	eLR	05	18	07	
24	eLR (NW)	10	21	07	Solomon Islands
24	eSS	11	44	55	North Isl., New Zealand
	eLQ	11	58	17	USCGS 0 = 11 06 39.2
	eLR	12	05	47	41.6°S 179.3°W Dist. 125.2° Depth 43 km

16 PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Sept. 24	eLQ	14	48	37	Santa Cruz Islands
	eLR (W)	14	52	47	
24	eLQ	15	05	07	Tonga Islands
	eLR (NW)	15	07	37	
24	eL	19	09	07	
25	eLR (NW)	03	31	47	
25	eLQ	08	31	07	Ryukyu Islands
	eLR (NW)	08	37	37	
25	eSS	16	13	47	Tonga Islands
	eLQ	16	24	27	USCGS 0 = 15 39 27.4
	eLR (W)	16	32	23	17.3°S 173.4°W Dist. 107.7° Depth 132 km
25	eL	23	55	27	
26	eP	00	43	23	Catamarca Prov., Argentina
	eS	00	52	07	USCGS 0 = 00 32 05.0
	eLR (SW)	01	04	07	27.4°S 68.2°W Dist. 67.8° Depth 25 km
26	eLQ	09	27	37	Kamchatka
	eLR (NW)	09	34	07	
26	eLQ	12	23	07	Japan
	eLR (NW)	12	29	07	
26	eP	15	23	57	Fox Islands, Aleutians
	eS	15	32	35	USCGS 0 = 15 13 25.8
	ePPS	15	33	07	51.6°N 172.2°W
	eScS	15	33	43	Dist. 63.4°
	eSS	15	36	55	Depth 44 km
	eLQ	15	39	47	Z = 3.0, E = 3.0, N = 2.5
	eLR (NW)	15	42	27	Mag 5.0

PALISADES, NEW YORK

17

Date	Phase	h	m	s	Remarks
1960					
Sept. 26	eP	17	08	17	Southern Peru
	epP	17	08	31	USCGS 0 = 16 58 13.9
	ePPP	17	11	19	15.9°S 72.9°W
	eS	17	15	39	Dist. 56.7°
	ePS	17	16	17	Depth 115 km
	eSS	17	19	27	Z = 1.5, E = 1.0, N = 1.0
	eLQ	17	21	07	Mag 4 3/4
	eLR (SSE)	17	25	07	
26	eLQ	21	57	07	Samoa
	eLR (W)	22	03	47	
27	eP	02	26	27	Southern Chile Coast
	ePS	02	37	07	USCGS 0 = 02 13 50.6
	eLQ	02	49	47	44.6°S 73.6°W
	eLR	02	53	27	Dist. 84.6° Depth 59 km
27	eL	04	07	57	
27	eLR	04	46	07	
27	eS	06	11	27	Aleutians
	e	06	19	27	USCGS 0 = 05 51 26.9
	eLQ	06	21	47	51.5°N 177.8°E
	eLR (NW)	06	24	57	Dist. 66.4° Depth 102 km
27	ePS	07	49	47	Western New Guinea
	ePPS	07	51	27	USCGS 0 = 07 17 55.1
	eSS	07	57	07	00.9°S 134.5°E
	eLQ	08	12	27	Dist. 132.5°
	eLR (NW)	08	20	37	Depth 107 km
27	eLR (SE)	09	07	27	
27	eLR	17	04	06	
27	e	17	18	18	
	e	17	21	50	
	eLR (SW)	17	23	26	
27	eLQ	19	25	06	Mariana Islands
	eLR (NW)	19	30	36	

18

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Sept. 28	eLQ	00	29	06	Near coast Southern Peru
	eLR (SE)	00	35	26	
28	e	02	40	20	
	e	02	51	56	
	eLQ	03	00	36	
	eLR (SE)	03	04	06	
28	eLQ	06	13	16	Western China
	eLR (NNE)	06	17	26	USCGS 0 = 05 29 32.7 32.4°N 95.8°E Dist. 106.7° Depth 25 km Z = 1.0, E = 1.5, N = 1.0 Mag 5
28	eLQ	08	40	06	Southern Chile
	eLR (SE)	08	46	06	
28	eLQ	09	54	06	
	eLR (SE)	09	58	06	
28	eLR	20	27	06	
28	eLR	21	02	06	
28	eLR	22	23	06	
28	eLQ	22	59	26	
	eLR	23	04	06	
28	eLR	23	16	06	
29	eLQ	01	08	06	
	eLR	01	11	06	
29	eP	06	37	44	Peru-Bolivia border
	eS	06	45	32	USCGS 0 = 06 27 56.3
	ePPS	06	45	52	17.3°S 68.5°W
	eScS	06	47	22	Dist. 57.8°
	eSS	06	50	26	Depth 115 km
	eLQ	06	53	14	Z = 3.0, E = 1.0, N = 1.0
	eLR (SE)	06	55	46	Mag 5.0

PALISADES, NEW YORK					19
Date	Phase	h	m	s	Remarks
1960					
Sept. 29	eP	11	32	38	Mariana Islands
	epP	11	34	10	USCGS 0 = 11 18 52.9
	ePKP	11	36	40	18.9°N 144.7°E
	ePP	11	37	22	Dist. 110.2°
	eSKP	11	39	26	Depth 469 km
	eSKKS	11	43	32	Mag 6.0 Pasadena
	esSKS	11	44	14	
	eSP	11	46	06	
	eSPP	11	47	10	
	esPS	11	48	38	
	eSS	11	52	18	
	esPSS	11	55	06	
	eSSS	12	02	06	
	eLQ	12	05	06	
	eLR (NW)	12	10	06	
29	eP	19	00	26	Guatemala
	ePP	19	01	12	USCGS 0 = 18 54 23.0
	eS	19	05	18	14.9°N 90.3°W
	eLQ	19	07	20	Dist. 29.4°
	eLR (SW)	19	08	46	Depth 56 km Z = 9.0, E = 6.0, N = 6.0 Mag 4 3/4-5
29	eLQ	22	14	06	
	eLR (SE)	22	19	06	
30	eLQ	02	24	26	
	eLR (SW)	02	29	06	
30	eLQ	03	39	56	Off coast Vancouver, B. C.
	eLR	03	43	06	Depth 79 km
30	e (P)	06	42	36	Vancouver, B. C.
	ePP	06	44	18	USCGS 0 = 06 35 08.9
	e	06	47	26	49.2°N 129.7°W
	eS	06	48	50	Dist. 39.3°
	eLQ	06	52	16	Depth 55 km
	eLR (NW)	06	54	06	Z = 11, E = 8, N = 9 Mag 5 1/4
30	eLR (SE)	08	16	06	Southern Chile
30	eLR (SW)	13	25	20	
30	eLR (SW)	13	41	06	
30	eLR	15	37	06	

PALISADES, NEW YORK					20
Date	Phase	h	m	s	Remarks
1960					
Sept. 30	eLR	17	26	06	
30	eLR	22	11	06	Solomon Islands
Oct. 1	eLR	09	20	06	
1	eLR	12	39	06	New Ireland Island
1	eLR	13	38	06	
1	iP	16	21	28	Fox Islands, Aleutians
	P (Z) 7 sec 2 mic dil from NW				USCGS 0 = 16 10 56.9
	epP	16	21	40	52.2°N 172.6°W
	eS	16	30	02	Dist. 63.9°
	eSS	16	34	38	Depth 41 km
	eLQ	16	37	06	Z = 24, E = 16.5, N = 21.0
	eLR	16	40	36	Mag 6.0
Oct. 1	e	21	04	25	
	e	21	04	38	
	e	21	04	59	
2	e	02	58	06	Japan
2	eSKS	05	02	54	S. Sandwich Islands
	ePS	05	06	02	USCGS 0 = 04 37 49.7
	ePPS	05	06	36	61.0°S 23.3°W
	eSS	05	12	22	Dist. 109.7°
	eSSS	05	20	06	Depth 77 km
	eLQ	05	22	46	Z = 2.0, E = 1.5, N = 2.0
	eLR (SE)	05	28	06	Mag 5 1/4
2	eS	07	30	34	S. E. Easter Island
	ePS	07	31	20	USCSG 0 = 07 08 15.9
	eSS	07	36	06	39.0°S 91.6°W
	eSSS	07	40	06	Dist. 81.2°
	eLQ	07	42	06	Depth 107 km
	eLR (S)	07	45	06	Z = 1.5, E = 1.5, N = 1.5 Mag 5
2	eS	12	16	00	Pacific Ocean
	ePS	12	16	46	S. E. Easter Islands
	eSS	12	21	22	USCGS 0 = 11 53 44.1
	ePKKP	12	24	06	38.7°S 91.5°W
	eLR (SW)	12	31	36	Dist. 81.4° Depth 84 km

PALISADES, NEW YORK						21
Date	Phase	h	m	s	Remarks	
1960						
Oct. 2	eLQ	19	03	06	Burma	
	eLR (NE)	19	12	06		
2	eLQ	21	02	06		
	eLR (W)	21	09	06		
3	eLQ	01	34	06	W. Pakistan	
	eLR	01	39	26		
3	eLQ	02	33	06		
	eLR (SE)	02	35	46		
3	eS	05	32	54	Near coast of Southern Chile	
	eLQ	05	44	06	USCGS 0 = 05 10 37,3	
	eLR (SE)	05	49	06	38.7°S 75.3°W	
					Dist. 79.6°	
					Depth 43 km	
					Z = 2.0, E = 1.0, N = 1.5	
					Mag 5	
3	eLR	11	27	06	W. New Guinea	
3	e	17	22	51		
3	ePKP	20	10	22	Off coast Sumatra	
					USCGS 0 = 19 50 48,8	
					5.7°S 103.0°E	
					Dist. 144.0°	
					Depth 51 km	
3	eLQ	21	04	06		
	eLR (NE)	21	11	36		
3	eLR	23	14	06	Loyalty Islands	
4	ePP	10	12	06	Solomon Islands	
	eSKS	10	17	18	USCGS 0 = 09 51 16,1	
	ePPS	10	23	42	7.5°S 155.3°E	
	eSS	10	29	26	Dist. 124.4°	
	e	10	33	46	Depth 134 km	
	e	10	41	26	Z = 3.0, E = 1.5, N = 2.0	
	e	10	46	06	Mag 5 1/4-5 1/2	
	eLR (NW)	10	49	36		
	eLQ ₂	11	43	06		
	eLR ₂ (SE)	11	48	06		
4	eLR	22	53	56		

PALISADES, NEW YORK						22
Date	Phase	h	m	s	Remarks	
1960						
Oct. 5	eLQ	01	15	06		
	eLR	01	19	06		
5	eLQ	02	41	06		
	eLR	02	48	26		
5	eLR	08	50	06		
5	eLQ	10	42	06		
	eLR (SE)	10	44	06		
5	e	16	23	08		
5	eLR	18	31	06		
5	eLR	20	11	06		
6	eLQ	03	10	06		
	eLR	03	17	06		
6	eLR (NW)	06	13	06		
6	eLR	14	38	46		
6	eLR	16	51	06	Southern Chile	
6	eP	20	02	06	North Atlantic Ocean	
	ePP	20	03	08	USCGS 0 = 19 55 42,2	
	e	20	06	26	58.2°N 31.6°W	
	eS	20	07	16	Dist. 31.6°	
	eSS	20	08	26	Depth 63 km	
	eLQ	20	09	06	Z = 12.5, E = 8.0, N = 14.0	
	eLR (NE)	20	10	06	Mag 5-5 1/4	
6	eLR	22	50	06		
7	eP	03	21	54	North Atlantic Ocean	
	ePP	03	22	58	USCGS 0 = 03 15 34,9	
	eS	03	27	10	58.1°N 31.9°W	
	eLQ	03	28	06	Dist. 31.4°	
	eLR (NE)	03	30	46	Depth 71 km	
					Z = 4.5, E = 2.0, N = 3.5	
					Mag 4 1/2-4 3/4	
7	eLR	09	47	06		

PALISADES, NEW YORK

23

Date	Phase	h	m	s	Remarks
1960					
Oct. 7	eP	15	35	20	Banda Sea
	ePKP	15	37	51	USCGS 0 = 15 18 30.8
	ePKP	15	37	55	7.4°S 130.7°E
	e	15	38	22	Dist. 139.5°
	ePP	15	40	54	Depth 45 km
	ePKS	15	41	30	Z = 68, E = 70, N = 64
	eSKKS	15	47	46	Mag 6 3/4-7.0
	ePKKS	15	50	46	
	ePPS	15	53	06	
	eSKKS	15	54	36	
	eSS	15	59	50	
	eSSS	16	04	42	
	eLQ	16	15	06	
	eLR (NW)	16	23	06	
7	e	16	19	50	
7	eS	20	21	54	Easter Island
	ePS	20	22	30	USCGS 0 = 20 01 32.6
	eSS	20	26	26	20.4°S 113.7°W
	eSSS	20	30	06	Dist. 71.2°
	eLQ	20	32	06	Depth 203 km
	eLR (SW)	20	36	06	Z = 5, E = 3, N = 4 Mag 5 1/4-5 1/2
8	eP	01	58	15	Oaxaca, Mexico
	epP	01	58	23	USCGS 0 = 01 51 51.2
	eS	02	03	34	16.7°N 97.9°W
	eSS	02	06	38	Dist. 31.6°
	eLQ	02	07	26	Depth 74 km
	eLR (SW)	02	09	14	Z = 9, E = 6, N = 4.5 Mag 4 3/4-5
8	eP (comp.)	06	05	31	Sea of Japan
	epP	06	07	52	USCGS 0 = 05 53 01.1
	ePP	06	09	46	40.0°N 129.7°E
	eSKS	06	15	12	Dist. 96.4°
	eS	06	15	56	Depth 608 km
	eSP	06	17	22	Mag 6 1/2-6 3/4 Pas.
	esS	06	19	54	
	eSS	06	22	58	
	esSS	06	26	06	
	eSKKS	06	28	06	
	eSKKKS	06	32	06	
	eLR (N)	06	44	06	

24

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Oct. 8	e	07	01	26	
	e	07	05	46	
8	eLR	16	55	06	
8	eSS	18	11	32	North Island, New Zealand
	e	18	12	12	USCGS 0 = 17 34 00.7
	eLQ	18	25	36	35.9°S 176.9°E
	eLR (SW)	18	31	36	Dist. 125.6° Depth 176 km Z = 2, E = 1.5, N = 1.0 Mag 5 1/4
8	eLR	20	20	06	
8	ePP	21	01	26	Nicobar Islands
	eSSS	21	24	14	USCGS 0 = 20 40 06.6
	eLQ	21	35	06	7.9°N 92.9°E
	eLR (N)	21	43	06	Dist. 129.7° Depth 84 km Z = 6, E = 3, N = 4 Mag 5 3/4
9	eLR	02	28	06	
9	eLR	05	44	26	
9	eLQ	06	13	06	
	eLR (WSW)	06	15	36	
9	eP	09	13	42	Honshu, Japan
	epP	09	14	17	USCGS 0 = 09 00 42.0
	ePP	09	17	18	40.8°N 141.2°E
	ePPP	09	19	42	Dist. 92.4°
	eS	09	24	32	Depth 155 km
	esS	09	25	10	Z = 9.5, E = 9.5, N = 7.5
	ePS	09	25	46	Mag 5 3/4-6
	e(pPS)	09	26	14	
	ePPS	09	26	38	
	eSS	09	31	22	
	eSSS	09	38	06	
	eLQ	09	40	06	
	eLR (NNW)	09	46	06	
9	eLQ	10	22	26	Z = 8, E = 6, N = 5.5
	eLR (WSW)	10	25	46	Mag 4 3/4-5

PALISADES, NEW YORK					25
Date	Phase	h	m	s	Remarks
1960					
Oct. 9	eLR	14	31	06	Sea of Japan Depth 510 km
9	eLR	18	44	06	Honshu, Japan
9	eLQ	20	54	06	
	eLR (NW)	20	55	46	
10	eLR	02	20	06	
10	eLR (SW)	13	24	36	
10	eLR	16	08	26	
10	eLR	16	59	06	Ryukyu Islands
10	eLR	21	18	06	
11	eLR (NW)	00	14	46	
11	eLR	04	44	26	
11	eLR(NW)	05	44	46	Santa Cruz Islands
11	eP	08	11	08	Western Colorado
	eS	08	15	34	USCGS 0 = 08 05 30.5
	eLQ	08	17	06	38.1°N 107.6°W
	eLR (WNW)	08	18	06	Dist. 25.9°
	Rg	08	21	14	Depth 49 km Z = 9.5, E = 9.0, N = 4.5 Mag 4 3/4-5
11	eLR	10	15	26	
11	eLR	11	51	36	
11	eLR	18	51	46	
11	eLR	19	40	06	Mascarene Islands
11	eLR	21	06	06	
12	eLR	02	10	06	

PALISADES, NEW YORK					26
Date	Phase	h	m	s	Remarks
1960					
Oct. 12	ePP	03	30	14	
	eSKS	03	36	20	
	ePS	03	39	26	
	eSS	03	45	16	
	eSSS	03	49	36	
	eLQ	03	55	26	
	eLR (NW)	04	01	26	
12	eLR	19	30	06	New Britain
12	eLR	23	53	36	
13	eP	15	04	08	Kamchatka
	6 sec 2 mic comp from NW				USCGS 0 = 14 52 34.7
	ePP	15	06	54	54.8°N 161.2°E
	ePPP	15	08	42	Dist. 73.5°
	eS	15	13	32	Depth 35 km
	ePPS	15	14	50	Z = -, E = 36, N = 28
	eSS	15	18	06	Mag 6 1/4
	eLQ	15	23	06	
	eLR	15	27	06	
13	eLR	20	32	06	
14	eLR	01	35	06	Philippines
14	eLR	02	01	06	
14	eS	13	26	36	Southeast Alaska
	eLQ	13	31	06	USCGS 0 = 13 12 07.9
	eLR (WNW)	13	33	06	59.8°N 136.4°W Dist. 42° Depth 32 km
14	eP	18	00	50	Off coast Chile
	eS	18	10	34	USCGS 0 = 17 48 28.5
	ePPS	18	11	24	37.9°S 74.7°W
	eSS	18	15	14	Dist. 78.6°
	eLQ	18	22	06	Depth 25 km
	eLR	18	26	06	Z = 2.5, E = 2.5, N = 2.5 Mag 5 1/4-5 1/2

PALISADES, NEW YORK

27

Date	Phase	h	m	s	Remarks
1960					
Oct. 14	iP	21	29	42	Aleutians
					8 sec 4 mic dil from NW
	epP	21	29	54	USCGS 0 = 21 19 11.4
	ePPP	21	33	42	51.7°N 172.1°W
	iS	21	38	10	Dist. 63.4°
	ePS	21	38	54	Depth 50 km
	ePPS	21	39	20	Z = 117, E = 45, N = 68
	eScS	21	39	46	Mag 6 1/2
	eSS	21	42	36	
	eSSS	21	45	38	
	eLQ	21	46	36	
	eLR (NW)	21	49	38	
15	eLQ	02	05	06	North Atlantic Ocean
	eLR (NE)	02	07	06	Z = 4.5, E = 3, N = 3.5
15	eLR (NE)	06	50	06	
16	eP	09	40	54	Nicaragua
	eS	09	46	36	USCGS 0 = 09 34 00.9
	eLQ	09	48	06	9.4°N 90.6°W
	eLR (SW)	09	50	06	Dist. 35.1
					Depth 25 km
					Z = 13.5, E = 5.0, N = 9.0
					Mag 5.0
16	eLR (SW)	11	28	06	
16	eLR	14	28	06	New Zealand
16	eLR	18	33	06	Central Alaska
17	eLR	01	06	36	
17	eLR (SE)	02	07	26	
17	eLR	02	52	06	
17	eLR	06	26	36	
17	eLR	06	49	06	
17	eLR	08	32	26	

28

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Oct. 17	eP	15	52	36	Colombia
					Dil from S
	ePcS	15	58	14	USCGS 0 = 15 45 36.9
	eS	15	58	46	4.8°N 78.4°W
	eSS	16	01	06	Dist. 36°
	eLR (S)	16	03	56	Depth 83 km
					Z = 2.5, E = 2.5, N = 2.5
					Mag 4 3/4
17	eS	18	16	18	Atlantic Ocean
	eLR (SE)	18	18	06	USCGS 0 = 18 05 32.7
					30.7°N 40.4°W
					Dist. 29.0°
					Depth 65 km
					Z = 3, E = 2.5, N = 1.5
					Mag 4 1/4-4 1/2
17	eS	19	12	58	Atlantic Ocean
	eLR (SE)	19	14	46	USCGS 0 = 19 02 20.9
					31.7°N 40.7°W
					Dist. 27.8°
					Depth 47 km
					Z = 4.0, E = 3.0, N = 1.5
					Mag 4 1/2
17	eLR (SW)	20	41	06	
17	eP	22	21	41	Mexico-Guatemala Border
	ePPP	22	23	14	USCGS 0 = 22 15 32.0
	e (S)	22	27	12	14.6°N 92.8°W
	eSS	22	28	52	Dist. 31.2°
	eLQ	22	29	22	Depth 128 km
	eLR (SW)	22	31	06	Z = 23, E = 11, N = 19
					Mag 5 3/4-6
18	eP	00	32	10	Fox Islands, Aleutians
	epP	00	32	24	USCGS 0 = 00 21 47.2
	eS	00	40	30	52.5°N 170.2°W
	eScS	00	41	54	Dist. 61.8°
	eSS	00	44	50	Depth 33 km
	eLQ	00	48	06	Z = 2.5, E = 2.5, N = 2.0
	eLR (NW)	00	51	58	Mag 4 3/4-5
18	eLR (SW)	04	28	06	
18	eLR (SW)	05	16	06	

PALISADES, NEW YORK					29
Date	Phase	h	m	s	Remarks
1960					
Oct. 18	eS	06	46	06	Mexico-Guatemala Border
	eLR (SW)	06	49	36	USCGS 0 = 06 34 11 14.5°N 92.6°W Dist. 30.5° Depth 112 km Z = 2.5, E = 1.5, N = 1.5 Mag 4 1/4-4 1/2
18	eLR (N)	11	22	06	Kirghiz, SSR
18	eLR (W)	11	48	06	Tonga Islands
18	eLR (SW)	12	11	06	
19	eLR	05	36	06	
19	eLR	07	12	06	
19	eL	09	36	06	
19	eLR	10	26	46	
19	eSS	11	06	06	South Pacific Ocean
	eLQ	11	17	06	USCGS 0 = 10 32 02.3
	eLR	11	24	36	55.1°S 129.9°W Dist. 106.9° Depth 100 km
19	eLQ	11	59	18	
	eLR	12	02	06	
20	eLQ	04	39	06	
	eLR (WNW)	04	41	58	
20	ePS	11	36	06	Santa Cruz Islands
	eSS	11	43	20	USCGS 0 = 11 05 58.3
	ePKPPKS	11	47	14	11.0°S 164.9°E
	eLQ	11	55	36	Dist. 120.5°
	eLR (NW)	12	02	06	Depth 40 km Z = 5, E = 4, N = 3.5 Mag 5 1/2-5 3/4
21	eLR	05	54	36	
21	eLR	23	41	07	

PALISADES, NEW YORK					30
Date	Phase	h	m	s	Remarks
1960					
Oct. 22	eLR	01	05	07	
22	eLR	04	13	07	
22	ePKP	08	40	50	Solomon Islands
	epPKP	08	41	09	USCGS 0 = 08 22 00.9
	ePP	08	42	17	10.3°S 161.2°E
	epPP	08	42	47	Dist. 122.7°
	ePKS	08	43	51	Depth 93 km
	eSKS	08	47	47	Z = 15.5, E = 10, N = 8.5
	eSKKS	08	49	19	Mag 6-6 1/4
	ePS	08	52	23	
	ePPS	08	53	51	
	eSS	08	59	27	
	eSSS	09	04	07	
	eLQ	09	13	07	
	eLR (NW)	09	19	07	
22	eLR	19	49	07	
23	eP	06	38	23	Atlantic Ocean
	eS	06	42	27	USCGS 0 = 06 32 24.9
	eLQ	06	44	07	31.2°N 40.7°W
	eLR (SE)	06	45	35	Dist. 28.6° Depth 61 km Z = -, E = 8, N = 4.5 Mag 5 1/4-5 1/2
23	eLR	16	27	07	
23	eLR	22	02	07	
24	eLQ	04	41	19	
	eLR (E)	04	46	07	
24	eSS	05	49	07	New Hebrides
	e	05	57	07	USCGS 0 = 05 12 04.4
	eLQ	06	03	07	15.0°S 167.4°E
	eLR (NW)	06	08	55	Dist. 121.6° Depth 145 km Z = 1.5, E = 1.0, N = 1.0 Mag 5 1/4-5 1/2
24	eLR	07	07	07	

PALISADES, NEW YORK					31
Date	Phase	h	m	s	Remarks
1960					
Oct. 24	ePPS	17	41	47	New Britain
	eSS	17	48	23	USCGS 0 = 17 09 14.4
	eSSS	17	56	31	6.0°S 150.0°E
	eLQ	18	03	07	Dist. 127.6°
	eLR (NW)	18	10	07	Depth 122 km Z = 4, E = 2, N = 2 Mag 5 1/2
25	eLR	13	05	07	Chile
25	eLR	19	26	07	New Hebrides
26	eLR	02	27	07	Kamchatka
26	eLR	12	09	07	Flores Sea
26	eLR	17	13	06	Chile
27	eLR	00	49	36	Near coast Chile
27	eLR	04	20	06	Solomon Islands
27	eLR	05	26	36	Bonin Islands
27	eS	05	39	22	Galapagos Islands
	eSS	05	42	32	USCGS 0 = 05 25 03.6
	eLQ	05	43	06	1.4°N 90.0°W
	eLR (SW)	05	45	26	Dist. 42.7° Depth 46 km *Z = 2, E = 3, N = 3.5 Mag 4 3/4-5
27	eLR	11	35	06	Philippines
27	eLR	11	51	06	
27	eS	13	00	26	Jan Mayen Island
	eLR	13	03	06	USCGS 0 = 12 45 40.1 71.6°N 8.3°W Dist. 44.1° Depth 70 km
27	eS	15	54	07	Jan Mayen Island
	eSS	15	57	07	USCGS 0 = 15 39 20.3
	eLQ	15	58	27	71.3°N 8.6°W
	eLR	16	00	07	Dist. 43.7° Depth 43 km

PALISADES, NEW YORK					32
Date	Phase	h	m	s	Remarks
1960					
Oct. 27	eSKS	22	52	11	Samoa
	ePS	22	55	47	USCGS 0 = 22 27 55.1
	eSS	23	01	07	15.2°S 175.0°W
	eSKKS	23	05	07	Dist. 107.9° Depth 253 km
27	eLQ	23	12	07	
	eLR	23	18	07	
28	eLR	03	23	07	
28	eP	04	26	57	Jan Mayen Island
	ePP	04	28	37	USCGS 0 = 04 18 41.9
	eS	04	33	23	71.3°N 8.6°W
	eSS	04	36	45	Dist. 44°
	e	04	38	47	Depth 48 km
	e (LR) (NE)	04	40	07	Z = -, E = 12, N = 17 Mag 5 1/2
28	eS	08	01	27	Jan Mayen Island
	eSS	08	04	51	USCGS 0 = 07 46 38.5
	eLQ	08	06	07	71.3°N 8.4°W
	eLR (NE)	08	09	07	Dist. 43.8° Depth 61 km
28	eLR	12	27	07	Celebes Sea
28	iP	13	30	03	Kamchatka
	ipP	13	30	25	USCGS 0 = 13 18 14.3
	ePPP	13	34	37	52.0°N 157.4°E
	eS	13	39	37	Dist. 77.3°
	esS	13	40	05	Depth 96 km
	eSS	13	44	39	
	eSSS	13	48	07	
	eLQ	13	49	43	
	eLR (NW)	13	54	07	
28	eSKS	22	53	35	Honshu, Japan
	eSKKS	22	54	15	USCGS 0 = 22 29 26.6
	ePS	22	56	11	34.4°N 141.1°E
	ePPS	22	56	57	Dist. 98.7°
	eSS	23	01	07	Depth 96 km
	eLQ	23	10	37	Z = 12, E = 13, N = 10.5
	eLR (N)	23	15	37	Mag 6.0

PALISADES, NEW YORK

33

Date	Phase	h	m	s	Remarks
1960					
Oct. 29	eLQ	02	13	07	West Pakistan
	eLR (NE)	02	18	07	
29	eP	04	23	54	North Atlantic Ocean
	eS	04	29	35	USCGS 0 = 04 17 02.1
	eLQ	04	31	07	15.4°N 46.4°W
	eLR (SE)	04	32	37	Dist. 35.4° Depth 38 km Z = 4, E = 2, N = 3 Mag 4 3/4
29	eLR (E)	08	21	37	
29	eSKS	10	02	35	Samoa Islands
	ePS	10	05	41	USCGS 0 = 09 37 41.6
	ePPS	10	06	47	15.8°S 172.9°W
	eSS	10	11	27	Dist. 107.1°
	eSSS	10	15	27	Depth 99 km
	eLQ	10	22	27	Z = 5, E = 6, N = 2.5
	eLR (W)	10	27	07	Mag 5 1/2-5 3/4
29	eLR (NE)	12	07	07	
29	e	13	38	07	
	eLR (E)	13	42	07	
29	eLR	16	30	07	
29	eLR	19	29	37	
29	eLR	20	28	07	
29	eLR	22	30	07	Marianas
29	eLR	22	45	07	
30	eLR	02	25	07	
30	eLR (NE)	08	47	47	North Atlantic Ocean USCGS 0 = 08 32 39.1 47.5°N 28.7°W Dist. 32.4° Depth 25 km Z = 4, E = 2.5, N = 1.5 Mag 4 1/2-4 3/4

34

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Oct. 30	eLQ	09	41	07	
	eLR (SW)	09	46	07	
30	eP	12	25	07	Near coast of Chile
	ePcP	12	25	55	USCGS 0 = 12 14 36.1
	ePPP	12	29	23	23.3°S 70.3°W
	eS	12	33	43	Dist. 63.7
	ePPS	12	34	47	Depth 76 km
	eScS	12	35	01	Z = 20, E = 10, N = 17
	eSS	12	37	39	Mag 5 3/4
	eLQ	12	41	07	
	eLR (SSE)	12	45	07	
30	eSS	16	30	47	Spice Islands
	e	16	33	23	USCGS 0 = 15 50 50.4
	e	16	36	27	1.0°S 127.0°E
	eLQ	16	48	47	Dist. 135.9°
	eLR (NW)	16	56	37	Depth 32 km Z = 3.5, E = 1.5, N = 2.0 Mag 5 1/2
30	eP	21	43	19	Chile-Bolivia Border
	ePcP	21	43	41	USCGS 0 = 21 32 47.7
	ePcS	21	47	47	22.8°S 68.0°W
	eS	21	51	47	Dist. 63.9°
	ePPS	21	52	31	Depth 60 km
	eScS	21	52	59	Z = 3, E = 2, N = 2
	eSS	21	56	27	Mag 5.0
	eSSS	21	59	15	
	eLQ	22	00	07	
	eLR (SSE)	22	03	41	
31	eLQ	07	20	27	Gulf of California
	eLR (W)	07	22	07	USCGS 0 = 07 03 43.7
	Rg	07	24	15	30.3°N 113.5°W Dist. 34.2° Depth 25 km Z = 5, E = 2.5, N = 4 Mag 4 3/4
31	eLR	11	36	07	

PALISADES, NEW YORK

35

Date	Phase	h	m	s	Remarks
1960					
Nov. 1	eS	06	37	15	Ascension Island
	ePS	06	37	55	USCGS 0 = 06 15 29.4
	eSS	06	42	07	11.1°S 12.7°W
	eLQ	06	47	17	Dist. 76.3°
	eLR (SSE)	06	50	07	Depth 35 km *Z = 2, E = 1.5, N = 2 Mag 5
1	iP	08	58	02	Near coast of Chile
	8 sec 6 mic dī from S				USCGS 0 = 08 46 01.9
	epP	08	58	09	38.4°S 74.4°W
	ePP	09	01	11	Dist. 78.6°
	eS	09	08	03	Depth 97 km
	ePS	09	08	39	*Z = 34, E = 21, N = 58
	ePPS	09	09	07	Mag 6 1/2-6 3/4
	eSS	09	13	07	
	eSSS	09	16	07	
	eLQ	09	19	07	
	eLR	09	24	07	
1	eP	12	41	35	Near coast of Chile
	eS	12	51	29	USCGS 0 = 12 29 31.6
	eSS	12	56	37	38.5°S 75.0°W
	eLQ	13	02	37	Dist. 79.6°
	eLR (SSE)	13	06	37	Depth 64 km *Z = 2, E = 1.5, N = 2.5 Mag 5-5 1/4
1	eLR	18	35	07	
2	eLR	00	56	07	Kermadec Islands
2	eLR	05	29	07	
2	eLR	13	14	37	
2	e	17	20	06	
	e	17	20	09	
	e	17	20	30	
	e	17	20	33	
2	eP	17	30	14	
(to be continued)	ePKP	17	33	41	
	ePP	17	35	10	
	eSKS	17	40	38	

36

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Nov. 2	eSKKS	17	42	06	Santa Cruz Island
(continued)	eSKKKS	17	43	04	USCGS 0 = 17 14 49.3
	ePS	17	44	50	10.9°S 164.9°E
	ePPS	17	46	20	Dist. 120.5°
	ePKKS	17	47	32	Depth 25 km
	eSS	17	51	42	Z = 19, E = 17, N = 20
	ePKPPKP	17	52	14	Mag 6 1/4-6 1/2
	e (SKKKS)	17	56	06	
	eLQ	18	05	06	
	eLR (WNW)	18	11	06	
2	e	17	42	23	
	e	17	42	48	
3	e	02	23	21	
3	ePP	03	02	22	Tonga Island
	ePS	03	12	06	USCGS 0 = 02 42 54.5
	eSS	03	18	10	22.1°S 175.1°W
	eSSS	03	23	06	Dist. 112.2°
	eLQ	03	30	06	Depth 25 km
	eLR (SW)	03	35	06	Z = 4, E = 3, N = 2 Mag 5 1/2
3	eLQ	07	09	06	
	eLR (W)	07	13	06	
3	eLR	16	30	06	
3	eLR	21	57	06	
4	eLR	14	15	06	
5	eP	20	31	55	Greece
	eS	20	40	58	USCGS 0 = 20 20 53.7
	e	20	42	20	39.2°N 20.5°E
	e	20	48	42	Dist. 68.9°
	eLQ	20	51	16	Depth 49 km
	eLR (ENE)	20	53	36	Z = 2.5, E = 1.5, N = 4 Mag 5.0

PALISADES, NEW YORK					37
Date	Phase	h	m	s	Remarks
1960					
Nov. 6	eP	04	49	59	Near east coast Kamchatka
	epP	04	50	08	USCGS 0 = 04 38 16.7
	eS	04	59	32	53.0°N 159.8°E
	ePS	04	59	58	Dist. 75.4°
	eSS	05	04	40	Depth 32 km
	e	05	05	30	Z = 7, E = 8, N = 9
	e	05	08	06	Mag 5 1/2-5 3/4
	eLQ	05	10	38	
	eLR (NW)	05	14	46	
6	eSKS	06	40	36	Kermadec Island
	ePS	06	44	54	USCGS 0 = 06 15 05.7
	eSS	06	51	26	31.0°S 177.7°W
	eSKKKS	06	54	46	Dist. 119.5°
	eLQ	07	04	46	Depth 184 km
	eLR (SW)	07	10	26	Z = 11, E = 9, N = 10 Mag 6
6	eLR	11	17	06	
6	eLR (W)	16	07	06	
6	eP	22	20	18	Fox Islands, Aleutians
	epP	22	20	28	USCGS 0 = 22 10 06.4
	eS	22	28	34	52.7°N 168.0°W
	eScS	22	30	06	Dist. 60.7°
	eSS	22	32	36	Depth 42 km
	eLQ	22	35	26	Z = 7, E = 11, N = 10
	eLR (NW)	22	38	06	Mag 5 1/2
7	eLQ	14	10	06	Japan
	eLR (N)	14	14	06	
7	eLQ	17	22	06	Solomon Islands
	eLR (NW)	17	27	46	
7	e	20	39	26	
	eLR	20	40	06	
8	eLR (SW)	00	55	06	Kermadec Islands
8	eLR	01	37	06	China-Mongolia

PALISADES, NEW YORK					38
Date	Phase	h	m	s	Remarks
1960					
Nov. 8	eLQ	02	57	06	Kermadec Islands
	eLR	02	59	06	
8	eLQ	04	38	06	North Atlantic Ocean
	eLR (SE)	04	40	06	USCGS 0 = 04 28 11.4 27.8°N 44.3°W Dist. 27.7° Depth 25 km Z = 3.5, E = 3, N = 4 Mag 4 1/2
8	eSKS	05	45	14	Kurile Islands
	eLQ	05	58	56	USCGS 0 = 05 22 09.4
	eLR (NW)	06	05	06	45.2°N 149.8°E Dist. 85.7° Depth 25 km Z = 1.5, E = 1.5, N = 2.5 Mag 5.0
8	eSKS	05	50	34	Kurile Islands USCGS 0 = 05 27 21.7 same coordinates as above
8	eS	11	49	30	Near coast of Oregon
	eLQ	11	52	06	USCGS 0 = 11 36 27.2
	eLR (NW)	11	55	46	44.9°N 125.2°W Dist. 37.1° Depth 44 km Z = 4, E = 4.5, N = 10 Mag 4 3/4-5
8	eLR	20	52	07	New Hebrides
8	e	22	58	37	
	eLR	23	15	27	
9	eLR	01	15	07	

PALISADES, NEW YORK

39

Date	Phase	h	m	s	Remarks
1960					
Nov. 9	eS	01	36	07	Chile-Bolivia Border
	e (LQ)	01	43	27	USCGS 0 = 01 17 36.8
	eLR	01	47	07	21.5°S 67.5°W Dist. 62.9° Depth 131 km
9	eLR	02	11	07	
9	eP	03	32	27	Sandwich Islands
	e (PKP)	03	35	47	USCGS 0 = 03 17 58.5
	ePP	03	36	57	60.7°S 24.8°W
	ePPP	03	39	17	Dist. 109.2°
	eSKS	03	42	59	Depth 37 km
	e (SKKKS)	03	44	31	Z = 17.5, E = 15.0, N = 20.0
	ePS	03	46	15	Mag 6 1/4-6 1/2
	ePPS	03	46	57	
	eSS	03	52	23	
	ePKPPKP	03	56	07	
	e	04	00	15	
	eLQ	04	02	07	
	eLR (SSE)	04	08	27	
9	ePP	11	02	41	Szechwan Prov., China
	eSKS	11	08	39	USCGS 0 = 10 43 43.1
	ePS	11	11	41	32.7°N 103.4°E
	ePPS	11	12	47	Dist. 106.3
	eSS	11	17	37	Depth 47 km
	eSSS	11	21	47	Z = 9, E = 13, N = 13
	eSKKKS	11	24	59	Mag 6 1/4-6 1/2
	eLQ	11	29	47	
	eLR (N)	11	34	07	

40

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Nov. 9	eP	20	16	47	Near coast of Chile
	ePcP	20	17	19	USCGS 0 = 20 06 16.2
	ePPP	20	20	59	23.2°S 70.6°W
	eS	20	25	25	Dist. 63.7°
	eScS	20	26	39	Depth 52 km
	eSS	20	29	21	Z = 6.0, E = 5.5, N = 11
	eLQ	20	32	47	Mag 5 1/2-5 3/4
	eLR (SSE)	20	36	37	
10	eLQ	01	42	07	
	eLR	01	44	07	
10	eLR	02	13	07	Gulf of Mexico
10	eLR	04	02	07	
10	eP	05	37	31	North Atlantic Ocean
	ePP	05	38	11	USCGS 0 = 05 31 30.1
	e	05	41	27	30.2°N 40.4°W
	eS	05	42	19	Dist. 29.5°
	eSS	05	43	23	Depth 28 km
	ePcS	05	44	07	Z = 9.0, E = 8.5, N = 6.0
	eLR (SE)	05	44	27	Mag 5
10	eLR	08	25	07	
10	ePKP	15	03	59	Near coast of New Guinea
	ePKP	15	04	23	USCGS 0 = 14 44 47.3
	ePP	15	06	15	2.6°S 139.4°E
	ePKS	15	06	47	Dist. 131.9°
	ePKS	15	07	29	Depth 25 km
	ePPS	15	18	19	Z = 10, E = 9, N = 10
	eScSPKP	15	19	43	Mag 6-6 1/4
	eSS	15	24	11	
	e (PKPSKS)	15	29	07	
	eSSS	15	38	47	
	eLQ	15	40	47	
	eLR (NW)	15	45	47	
	eLQ ₂	16	20	07	
	eLR ₂ (SE)	16	30	07	
11	eLQ	03	10	07	Southern Mexico
	eLR (SW)	03	12	07	

PALISADES, NEW YORK					41
Date	Phase	h	m	s	Remarks
1960					
Nov. 11	eS	05	51	39	Greece-Albania
	eSSS	05	59	07	USCGS 0 = 05 31 34.1
	eLQ	06	01	27	39.5°N 21.1°E
	eLR (NE)	06	05	07	Dist. 68.4° Depth 39 km
11	eLR	22	55	07	Chile
11	eLR	09	11	07	
12	eLR	20	05	07	
13	eLR	04	18	07	
13	ePKP	06	56	18	Molucca Passage
	ePKS	06	59	30	USCGS 0 = 06 37 05.7
	ePKS	06	59	50	1.4°N 127.2°E
	e	07	00	19	Dist. 134°
	e	07	06	59	Depth 59 km
	ePPS	07	11	13	Z = 2.5, E = 3.0, N = 3.5
	eSS	07	16	19	Mag 5 1/2
	e	07	16	57	
	eLQ	07	32	27	
	e (LR) (NNW)	07	41	07	
	G ₂	08	11	07	
13	eP (dil NW)	09	30	53	Fox Islands, Aleutians
	ePP	09	33	11	USCGS 0 = 09 20 36.8
	ePPP	09	34	51	51.1°N 168.8°W
	ePcS	09	35	17	Dist. 62.3°
	eS	09	39	17	Depth 65 km
	eScS	09	40	43	Z = 72, E = 132, N = 120
	eSS	09	43	49	Mag 6 3/4
	eLQ	09	46	27	
	eLR	09	49	27	
13	eLR	17	51	07	Aleutians
13	eLR	20	26	07	
13	eLR	21	01	07	North Atlantic Ocean
13	eLR	22	25	07	
14	eLQ	03	20	07	
	eLR	03	22	07	

PALISADES, NEW YORK					42
Date	Phase	h	m	s	Remarks
1960					
Nov. 14	eLR	10	34	07	
14	eLR	13	58	07	
14	eLQ	16	51	08	Burma
	eLR	16	58	08	USCGS 0 = 15 55 57.2 24.3°N 96.2°E Dist. 114.6° Depth 58 km
14	eLR	19	15	08	
14	eLR	19	50	38	
14	eP	20	05	48	Chiapas, Mexico
	ePPP	20	07	28	USCGS 0 = 19 59 31.8
	eS	20	11	08	14.5°N 92.8°W
	eLR (SW)	20	14	28	Dist. 31.6° Depth 100 km Z = 11.5, E = 6, N = 15 Mag 5-5 1/4
15	eLR	02	03	08	
15	eLR	02	19	08	
15	e	02	23	45	
	e	02	27	22	
15	eLR	03	26	08	Santa Cruz Islands
15	ePP	06	44	20	Antarctic Ocean, southeast
	ePS	06	54	20	of New Zealand
	ePPS	06	56	18	USCGS 0 = 06 23 27.5
	eSS	07	01	28	62.5°S 161.7°W
	eSSS	07	06	08	Dist. 124.7°
	eLQ	07	15	28	Depth 46 km
	eLR (SW)	07	22	08	Z = 3.5, E = 2.5, N = 5.0 Mag 5 1/2-5 3/4
15	eLR	10	04	08	Burma-India Border Depth 103 km

PALISADES, NEW YORK

43

Date	Phase	h	m	s	Remarks
1960					
Nov. 15	eSSP	22	18	04	North Island, New Zealand
	eLQ	22	32	38	USCGS 0 = 21 40 14.4
	eLR (SW)	22	37	38	35.0°S 178.4°E Dist. 124.4° Depth 84 km
16	eLR	07	40	08	
16	eLR	14	05	08	
16	eS	15	49	36	Colombia
	eLQ	15	50	48	USCGS 0 = 15 38 26.5
	eLR (SE)	15	53	08	10.4°N 74.2°W Dist. 30.8° Depth 83 km Z = 1, E = 1.5, N = 1.5 Mag 4 1/2-4 3/4
16	eSS	23	32	20	Sinkiang, China
	eLQ	23	48	08	USCGS 0 = 22 59 47.6
	eLR (NE)	23	52	08	38.0°N 89.5°E Dist. 100° Depth 24 km
17	eS	01	50	52	Near coast of Chile
	ePS	01	51	42	USCGS 0 = 01 28 39.6
	eLQ	02	04	38	38.5°S 73.6°W
	eLR	02	11	08	Dist. 79.6° Depth 25 km
17	eLR (SW)	05	07	16	Kermadec Islands
17	eLR (SE)	06	01	08	Chile
17	eLR (SW)	16	00	08	
17	eS	20	05	40	Aleutian Islands
	eLQ	20	13	48	USCGS 0 = 19 46 46.2
	eLR (NW)	20	17	08	52.3°N 170.3°W Dist. 62.3° Depth 16 km
17	eSS	21	56	18	South Pacific Ocean
	eSKKS	22	00	08	USCGS 0 = 21 22 45.6
	eLQ	22	07	08	56.2° S 122.6°W
	eLR (SW)	22	13	08	Dist. 105.2° Depth 38 km

44

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Nov. 19	eLQ	13	24	38	
	eLR	13	26	48	
19	eLR	14	03	08	
20	eLR	05	10	08	
20	eLR	06	42	28	
20	eP	22	10	32	Peru
	comp from SSW				USCGS 0 = 22 01 59.9
	epP	22	10	58	6.8°S 80.7°W
	ePP	22	12	28	Dist. 48.2°
	eS	22	17	28	Depth 93 km
	eSS	22	21	48	*Z = 102, E = 90, N = 85
	eLR	22	24	08	Mag 6 1/2
21	eS	04	37	20	Near coast of Peru
	eScS	04	39	48	USCGS 0 = 04 21 42.1
	eLR (SE)	04	43	32	6.2°S 80.8°W Dist. 48.2° Depth 25 km
21	e	08	30	48	
	eLR	08	46	08	
21	eLR	12	42	08	
21	eLR	19	12	08	Kamchatka
22	eLR	00	10	08	
22	e (S)	02	48	56	Near coast of Peru
	e cS	02	50	38	USCGS 0 = 02 32 15.2
					7.0°S 80.8°W
					Dist. 48.2°
					Depth 19 km
	eS	03	18	04	Atlantic Ocean
	eSS	03	21	38	USCGS 0 = 03 03 02.7
	e (LR) (SE)	03	24	08	8.2°N 38.4°W Dist. 45.7° Depth 33 km

PALISADES, NEW YORK 45

Date	Phase	h	m	s	Remarks
1960					
Nov. 22	eSKS	03	57	08	Tonga Islands
	ePS	04	00	28	USCGS 0 = 03 31 54.3
	e	04	03	08	19.2°S 173.1°W
	eSS	04	06	08	Dist. 108.9°
	eLQ	04	17	08	Depth 25 km
	eLR (SW)	04	25	08	Z = 10, E = 3.5, N = 3.0 Mag 5 1/2-5 3/4
22	eLR	05	45	08	
22	ePS	06	54	08	Indian Ocean
	ePPS	06	56	20	USCGS 0 = 06 21 45.0
	e	07	01	18	35.9°S 52.3°E
	eSS	07	02	28	Dist. 137.9°
	e	07	06	48	Depth 21 km
	eLQ	07	17	08	Z = 2, E = 2, N = 3
	eLR (SE)	07	25	08	Mag 5 1/4-5 1/2
	G ₂	07	54	48	
22	eLR (NW)	08	08	08	Kamchatka
22	eP	12	41	04	Southern Chile
	ePP	12	44	18	USCGS 0 = 12 28 58.4
	eS	12	51	16	40.0°S 74.3°W
	ePS	12	51	58	Dist. 80.6°
	ePPS	12	52	08	Depth 107 km
	eSS	12	56	20	Z = 7.5, E = 8.5, N = 10
	eLQ	13	02	08	Mag 5 1/2-5 3/4
	eLR (SSE)	13	06	08	
22	e	18	00	52	
	e	18	01	27	
	e	18	01	42	
22	i	19	15	51	
23	eLR	02	26	38	
23	eLR	05	01	08	New Britain
23 (to be con- tinued)	eP	14	27	28	South of Tonga Islands
	ePP	14	32	08	USCGS 0 = 14 12 21.1
	eSKKS	14	39	56	24.2°S 176.1°W
	ePS	14	41	36	Dist. 114.1°
	ePKKS	14	46	40	Depth 28 km
	eSS	14	47	48	Z = 95, E = 80, N = 58 Mag 6 3/4-7

46 PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Nov. 23 (cont'd)	eSSS	14	52	28	
	eLQ	14	59	08	
	eLR (WSW)	15	05	38	
23	eLQ	18	52	08	South of Tonga Islands
	eLR (SW)	18	55	08	USCGS 0 = 17 56 38.0
24	ePPS	05	22	18	New Britain
	eSS	05	27	58	USCGS 0 = 04 50 15.8
	eSKKKS	05	29	08	4.6°S 153.0°E
	e	05	32	08	Dist. 124.8°
	eLQ	05	41	38	Depth 87 km
	eLR (NW)	05	48	08	Z = 24, E = 18, N = 22 Mag 6 1/4
24	eP	07	07	28	South of Tonga Islands
	ePKP	07	11	26	USCGS 0 = 06 52 41.1
	epPKP	07	11	37	24.2°S 176.1°W
	ePP	07	12	21	Dist. 114.2°
	ePPP	07	13	42	Depth 23 km
	eSKS	07	18	08	*Z = 120, E = 115, N = 89
	ePS	07	20	12	Mag 7-7 1/4
	ePPS	07	21	56	
	eSS	07	28	16	
	eSSS	07	32	08	
	eLQ	07	38	08	
	eLR (WNW)	07	43	08	
25	eLR	00	56	08	
25	eLR	10	01	38	
25	eP	22	07	34	Honshu, Japan
	ePP	22	11	28	USCGS 0 = 21 54 13.8
	eSKS	22	17	52	38.0°N 140.5°E
	ePS	22	19	48	Dist. 95.1°
	ePPS	22	20	52	Depth 157 km
	eSS	22	25	04	
	eSSS	22	29	28	
	eLQ	22	35	38	
	eLR (NW)	22	39	38	
26	eLR	04	17	38	
26	eLR	05	16	48	

PALISADES, NEW YORK

47

Date	Phase	h	m	s	Remarks
1960					
Nov. 26	eLR	05	45	08	
26	eLR	07	17	08	
26	e	08	16	48	Honshu, Japan
	eLR	08	27	08	
26	eLR	12	41	08	Solomon Islands
26	eLR (SW)	15	33	08	
26	eLR	19	33	09	Antarctic Ocean, south of Australia
26	eLR	22	33	09	South of Tonga Islands
27	eLR	00	50	09	
27	eLR	02	05	29	Peru
27	eLR	08	03	09	Fiji Islands
27	eLR	11	09	09	
27	eLR	12	27	09	Alaska
27	eP	15	30	06	Hokkaido, Japan
	eSKS	15	40	29	USCGS 0 = 15 17 15.2
	ePS	15	42	09	42.8°N 143.3°E
	eLR	16	00	49	Dist. 89.9° Depth 122 km
27	eLR	20	12	09	
27	eL	21	21	09	Belgian Congo
27	eS	21	46	17	Near coast of Chile
	eSS	21	51	09	USCGS 0 = 21 24 32.8
	eLQ	21	56	49	37.3°S 72.5°W
	eLR (SSE)	22	02	09	Dist. 77.6° Depth 100 km Z = 1.5, E = 1.0, N = 2.5 Mag 5 1/4-5 1/2
28	e	04	59	15	
	eLQ	05	03	19	
	eLR	05	04	49	

48

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Nov. 28	e	05	38	13	Near coast of Turkey
	e	05	41	59	USCGS 0 = 05 12 50.1
	eLR	05	43	09	36.2°N 31.1°E Dist. 77° Depth 71 km
28	eLR (NE)	20	03	09	Azores
28	eLR (W)	21	23	39	
28	eLR (W)	21	43	09	
29	eP	09	44	35	Southern Chile
	ePP	09	47	55	USCGS 0 = 09 32 01.5
	eS	09	55	09	44.0°S 74.9°W
	ePS	09	56	23	Dist. 84.6°
	eSS	10	00	29	Depth 86 km
	eLQ	10	06	39	Z = 3, E = 2.5, N = 3
	eLR (SE)	10	11	29	Mag 5 1/4
29	eLR	11	59	09	
29	eLR	14	00	09	
29	eLR (NW)	15	45	49	Ryukyu Islands
30	eLR (SE)	04	57	09	
Dec. 1	eSS	04	29	29	Western Turkey
	eLR	04	41	39	USCGS 0 = 04 02 37.2 38.1°N 30.6°E Dist. 75.7° Depth 137 km
1	eLR (SE)	09	23	09	
1	eLR	09	46	09	
1	e (PS)	11	09	59	Z = 2.5, E = 2, N = 2.5
	e (SS)	11	16	29	Mag 5 1/4-5 1/2
	eLQ	11	28	09	Dist. 115° ?
	eLR (SW)	11	36	49	
1	eLR	13	51	09	

PALISADES, NEW YORK

49

Date	Phase	h	m	s	Remarks	
1960						
Dec.	1	eP	20	57	08	Off coast of Vancouver Island
		ePP	20	58	20	USCGS 0 = 20 49 45.5
		eS	21	03	12	48.8°N 129.3°W
		eLR (NW)	21	08	00	Dist. 39° Depth 15 km
	1	eS	22	03	24	Vancouver Island
		eLR (NW)	22	08	12	USCGS 0 = 21 49 37.2 49.0°N 129.3°W Dist. 39° Depth 60 km
	2	eLR	05	39	09	New Britain region
	2	eP	09	21	35	Near coast of Chile
		Comp from S				USCGS 0 = 09 10 41.0
		ePcP	09	22	21	24.5°S 69.9°W
		ePP	09	23	49	Dist. 65.7°
		ePPP	09	25	25	Depth 37 km
		iS	09	30	09	Z = 115, E = 110, N = 145
		eSS	09	34	49	Mag 6 3/4-7
		eLR	09	39	09	
	2	eP	09	48	18	Near coast of Chile
		eLQ	10	04	29	USCGS 0 = 09 37 38.6
		eLR	10	09	29	24.3°S 69.8°W Dist. 64.7° Depth 64 km
	2	eLR	18	46	09	Ryukyu Islands
	2	eLR	21	05	39	
	2	e	22	49	35	Northern Chile
		eLR	23	00	39	USCGS 0 = 22 29 59.8 24.2°S 69.6°W Dist. 64.7° Depth 45 km
	3	eLR	03	30	49	
	3	eP	04	37	45	Outer Mongolia
		ePP	04	41	37	USCGS 0 = 04 24 17.5
		ePPP	04	43	49	42.8°N 104.5°E
		eSKS	04	48	25	Dist. 96.4°

 (to be
continued)

50

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks	
1960						
Dec.	3	eS	04	49	03	Depth 45 km
	(continued)	ePS	04	50	27	Z = -, E = 66, N = 70
		ePPS	04	50	59	Mag 6 1/2-6 3/4
		eSS	04	55	45	
		eSSS	04	59	25	
		eLQ	05	05	09	
		eLR (N)	05	10	09	
	3	eP	07	18	27	Aleutian Islands
		ePcP	07	19	06	USCGS 0 = 07 07 42.7 52.5°N 177.3°W Dist. 65.3° Depth 79 km
	3	eLR	10	15	09	Formosa
	3	eLR	18	47	09	Outer Mongolia
	3	ePPS	20	40	29	Laptev Sea
		e (SS)	20	44	21	USCGS 0 = 20 21 01.3
		eSSS	20	46	53	76.7°N 131.1°E
		eLR (N)	20	49	49	Dist. 61.2° Depth 28 km *Z = 2, E = 1.5, N = 2.5 Mag 4 3/4-5
	4	eLR	01	20	09	
	4	eLR	04	19	09	Northern Chile
	4	eLR	06	21	09	
	4	eLR	15	11	39	
	4	ePKS	16	10	17	Northern Celebes
		ePPS	16	22	29	USCGS 0 = 15 47 23.0
		eSS	16	27	57	1.1°N 120.6°E
		e	16	33	09	Dist. 136°
		eSSS	16	35	09	Depth 46 km
		eLQ	16	45	01	
		eLR (SW)	16	54	33	
	4	eP	18	36	29	El Salvador
		eS	18	41	49	USCGS 0 = 18 30 20.4
		eLR (SW)	18	44	49	12.8°N 88.6°W Dist. 30.8° Depth 56 km

PALISADES, NEW YORK

51

Date	Phase	h	m	s	Remarks
1960					
Dec. 4	eLQ	21	56	39	
	eLR (NE)	21	58	09	
5	eSKS	09	02	17	Outer Mongolia
	eSS	09	10	49	USCGS 0 = 08 38 49.5
	e (PKPPKP)	09	18	19	43.0°N 104.3°E
	eLQ	09	19	09	Dist. 96.3°
	eLR (NE)	09	26	09	Depth 59 km
5	eLR	18	53	09	Kamchatka
5	eS	21	38	09	Straits of Gibraltar
	eLQ	21	42	49	USCGS 0 = 21 21 51.7
	eLR	21	46	09	35.7°N 6.5°W Dist. 51.4° Depth 66 km
6	eLR	04	27	09	Outer Mongolia
6	eP	09	02	48	Near coast of Panama
	epP	09	02	58	USCGS 0 = 08 56 16.5
	eS	09	07	29	8.5°N 82.7°W
	esS	09	08	13	Dist. 32.8°
	eSS	09	10	49	Depth 116 km
	eLQ	09	11	37	*Z = 6, E = 13, N = 27
	eLR (S)	09	12	21	Mag 5 1/2
6	iP	09	06	31	Northern Chile
	epP	09	06	45	USCGS 0 = 08 56 07.6
	ePcP	09	06	51	21.4°S 69.0°W
	ePPP	09	10	37	Dist. 62.3°
	eLQ	09	22	39	Depth 25 km
	eLR (SSE)	09	27	29	*Z = 13, E = 5, N = 21 Mag 6
6	eLR	11	30	09	
6	eLR	18	49	09	Philippines
6	eLR	19	22	09	
6	eSS	22	15	19	Sumatra
	eLQ	22	40	09	USCGS 0 = 21 34 09.3
	eLR	22	48	09	2.6°S 101.5°E Dist. 141.9° Depth 54km

52

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Dec. 7	eSS	03	37	39	North Island, New Zealand
	eLQ	03	49	09	USCGS 0 = 02 59 29.5
	eLR	03	57	29	35.7°S 179.6°W Dist. 123.5° Depth 25 km
7	eLR	13	50	09	
7	eLR	17	25	10	Celebes Sea
7	eLR	18	15	10	
8	eLR	00	05	10	
8	eLR	02	00	10	Fiji Islands
8	eLR (W)	09	36	30	Boja, California USCGS 0 = 09 21 32.2 31.2°N 112.8°W Dist. 32.9° Depth 83 km Z = 3.5, E = 4.5, N = 6.5 Mag 4 3/4-5
9	eLQ	01	44	34	
	eLR	01	45	50	
9	eL	04	17	20	
9	eLQ	06	18	20	Boja, California
	eLR (W)	06	20	10	
9	eLQ	21	45	50	Jan Mayen Island
	eLR	21	48	29	
10	eLR	06	11	49	
10	eLR	07	06	09	Luzon, Philippine Islands
10	eLR	07	45	39	
10	eSS	14	06	19	Samoa Islands
	eSSS	14	12	09	USCGS 0 = 13 32 18.3
	eLR	14	22	09	15.0°S 172.3°W Dist. 105.7° Depth 25 km

PALISADES, NEW YORK

53

Date	Phase	h	m	s	Remarks
1960					
Dec. 10	eLQ	22	58	29	
	eLR	23	00	09	
11	ePS	00	32	09	Loyalty Islands
	eSS	00	38	49	USCGS 0 = 00 01 10.4
	eLQ	00	52	09	22.1°S 171.4°E
	eLR	00	58	29	Dist. 122.7
	eLQ ₂	01	54	09	Depth 144 km
	eLR ₂	01	58	09	
11	eSS	03	58	39	Molucca Passage
	eLQ	04	16	09	USCGS 0 = 03 18 10.9
	eLR (NW)	04	23	09	1.6°N 126.4°E Dist. 133.5° Depth 52 km
11	eS	19	12	09	Vancouver Island
	eSS	19	13	49	USCGS 0 = 18 58 40.5
	eLR (NW)	19	16	49	48.9°N 129.7°W
	Rg	19	22	25	Dist. 39.6° Depth 93 km
11	ePPS	19	24	59	New Hebrides
	eSS	19	30	49	USCGS 0 = 18 53 09.2
	eLQ	19	44	09	15.7°S 166.9°E
	eLR (SW)	19	49	09	Dist. 122.2° Depth 292 km
12	eL	02	22	09	
12	eSS	04	55	39	Santa Cruz Islands
	e	05	05	09	USCGS 0 = 04 18 40.5
	eLR (SW)	05	16	09	10.7°S 164.8°E Dist. 120.5° Depth 198 km
12	eL	07	56	25	
12	eLR	11	05	39	

54

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Dec. 13	ePKS	07	59	49	Macquarie Islands
	ePPP	08	02	09	USCGS 0 = 07 36 13.8
	ePKKP	08	04	49	52.1°S 160.9°E
	eSKSP	08	09	23	Dist. 141.5°
	ePKPPKP	08	13	09	Depth 29 km
	eSS	08	17	51	Z = 75, E = 100, N = 70
	e	08	22	09	Mag 7
	eSSS	08	26	29	
	eLQ	08	36	09	
	eLR (WSW)	08	42	09	
14	eLR	01	27	48	Santa Cruz Islands
14	eSS	01	34	36	Santa Cruz Islands
	e (SKKKS)	01	35	48	USCGS 0 = 00 57 25.0
	e	01	48	04	10.8°S 165.4°E
	eLR (W)	01	54	08	Dist. 120.5° Depth 65 km Z = 8 Mag 5 3/4-6
15	ePKP	00	10	41	Molucca Passage
	epPKP	00	11	12	USCGS 0 = 23 51 28.6
	ePP	00	13	01	2.9°N 126.5°E
	ePKS	00	13	56	Dist. 132.5°
	eSKKS	00	19	49	Depth 77 km
	eSKKKS	00	20	13	Z = 7, E = 13, N = 9
	ePKKP	00	21	03	Mag 6 1/4
	ePS	00	23	35	
	eSS	00	30	33	
	eSKKKS	00	32	09	
	e	00	35	29	
	e (LQ)	00	45	53	
	eLR (WNW)	00	55	09	
	eLR	13	11	09	Philippine Islands
15	eS	23	36	33	Nicaragua
	eLR (SW)	23	38	09	USCGS 0 = 23 24 35.8 12.2°N 87.8°W Dist. 31.4° Depth 39 km
16	eLQ	01	52	29	
	eLR	01	55	29	Fox Islands, Aleutians

PALISADES, NEW YORK 55

Date	Phase	h	m	s	Remarks
1960					
Dec. 16	eLR	06	15	09	New Guinea
16	eLQ	09	39	09	Fiji Islands
	eLR (NW)	09	46	09	
16	eLR	10	55	09	
16	eLQ	13	16	39	
	eLR (NE)	13	20	09	
16	eP	18	28	11	North Atlantic Ocean
	eS	18	33	31	USCGS 0 = 18 21 31.7
	eLR (NE)	18	36	39	43.8°N 28.9°W Dist. 32.9° Depth 21 km Z = 2.5, E = 2.5, N = 3.0 Mag 4 1/2
17	eLR	06	40	29	
17	eLR	07	27	09	
17	eLR	08	02	49	Southern Peru
17	eLR	08	34	09	
17	eLR	08	46	09	
17	eLR	09	27	09	
17	eLR	09	34	09	
17	eLR	10	34	09	
17	iPKP	10	56	25	Java Sea
	epPKP	10	57	30	USCGS 0 = 10 37 14.1
	ePKS	10	59	39	6.4°S 109.3°E
	e	11	24	17	Dist. 145°
	eLR	11	33	29	Depth 295 km
17	eLR	13	29	09	North of Azores
17	eLR	16	20	08	New Hebrides
17	eLR	17	09	48	Kurile Islands

56

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Dec. 17	eLR	18	19	48	Azores
17	eLR	19	34	08	
17	eLR	21	39	48	
17	eLR	23	12	24	
18	eLR	06	07	08	New Hebrides
18	eLR	07	51	08	Japan
18	eLR	10	34	08	
18	eSS	19	00	02	Philippine Islands
	eLR (N)	19	19	44	USCGS 0 = 18 20 43.3 8.5°N 125.9°E Dist. 126.9° Depth 36 km Z = 1.5, E = 2.5, N = 2.0 Mag 5 1/4-5 1/2
18	eLR	20	15	08	Chile
18	eLR	21	57	08	New Britain
19	eLR	00	03	08	
19	eLR	06	41	38	
19	eLR (W)	07	59	08	Loyalty Islands
19	eLR	10	21	38	Atlantic Ocean
19	eLR (NW)	13	51	08	Santa Cruz Islands
19	eLR	16	50	08	
19	ePS	19	29	38	Marianas Islands
	eSKKKS	19	41	16	USCGS 0 = 18 59 40.8
	eLQ	19	52	08	11.3°N 141.2°E
	eLR (NW)	19	58	08	Dist. 119° Depth 77 km

PALISADES, NEW YORK

57

Date	Phase	h	m	s	Remarks
1960					
Dec. 19	ePS	22	44	18	Santa Cruz Islands
	eSS	22	51	28	USCGS 0 = 22 13 58.8
	eSSS	23	00	44	12.6°S 166.8°E
	eLQ	23	04	38	Dist. 120.3°
	eLR	23	10	28	Depth 66 km Z = 2.0, E = 2.5, N = 2.0 Mag 5 1/4
19	eLR (NW)	23	46	08	
20	eLQ	18	09	07	
	eLR (W)	18	13	37	
20	eLR	21	45	07	
20	eLR	23	15	07	New Ireland region
21	eLR	01	15	07	
21	eLR (NW)	05	48	07	
21	eLR	14	59	07	Alaska Depth 169 km
21	e	19	46	11	
21	e	20	51	20	
	e	20	51	40	
21	eLQ	21	44	07	Marianas Islands
	eLR (NW)	21	50	07	
21	eSS	23	10	47	North of Balleny Islands
	eSSS	23	16	07	USCGS 0 = 22 29 54.9
	eLQ	23	29	07	62.5°S 167.1°E
	eLR (SW)	23	36	37	Dist. 138.5° Depth 29 km
22	eLQ	03	59	27	Nicobar Islands
	eLR (NE)	04	06	07	
22	eLR (SW)	07	26	37	Kermadec Islands
22	eLR (NW)	12	00	07	Northern California
22	eLR	12	53	37	

58

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Dec. 22	eLR (SW)	15	07	17	Kermadec Islands Z = 3.5, E = 3.0, N = -
22	ePP	21	22	45	Solomon Islands
	ePKS	21	25	07	USCGS 0 = 21 02 41.1
	ePS	21	34	27	6.8°S 155.3°E
	eSS	21	41	39	Dist. 124.9°
	e	21	46	37	Depth 469 km
	e	21	50	27	
	e	21	53	55	
	eLQ	21	56	07	
	eLR (NW)	22	03	07	
23	eS	06	18	47	Guatemala-Mexico border
	eLR (SW)	06	22	47	USCGS 0 = 06 07 01.1 14.3°N 92.2°W Dist. 31.2° Depth 48 km
23	e	10	30	07	Sumatra
	eLQ	10	47	07	USCGS 0 = 09 41 48.4
	eLR	10	50	07	3.3°S 101.9°E Dist. 141.9° Depth 135 km
23	e	11	28	07	Philippine Islands
	eLQ	11	45	07	USCGS 0 = 10 47 57.9
	eLR (N)	11	49	47	8.2°N 125.7°E Dist. 127.9° Depth 67 km
23	eLR (NW)	12	40	27	
23	eLR	13	19	07	
23	eLR	14	27	07	
23	eLQ	17	07	07	Santa Cruz Islands
	eLR	17	11	07	
23	eLQ	20	03	07	Philippine Islands
	eLR (W)	20	07	07	
23	eLR	20	35	37	

PALISADES, NEW YORK

59

Date	Phase	h	m	s	Remarks
1960					
Dec. 24	e	04	55	47	Indian Ocean
	eLR	05	01	37	
24	e	12	37	27	
	eLR (SW)	12	41	27	
24	eLR (W)	21	55	37	
24	eS	23	33	27	Peru-Ecuador border
	eSS	23	37	23	USCGS 0 = 23 18 29.2
	eLR	23	40	47	3.6°S 77.8°W Dist. 44.9 Depth 25 km
25	eLQ	06	11	07	Bonin Islands
	eLR	06	14	27	
25	eLR	09	05	07	
25	eLQ	21	00	07	Kamchatka
	eLR	21	04	47	
26	ePS	01	25	37	Tonga Islands region
	eSS	01	32	19	USCGS 0 = 00 56 16.6
	eSSS	01	38	17	23.7°S 176.9°W
	eLQ	01	42	47	Dist. 114.9°
	eLR (W)	01	50	07	Depth 59 km Z = 4.5, E = 6.0, N = 2.5 Mag 5 1/2-5 3/4
26	e	02	17	07	
	eLQ	02	30	07	
	eLR (NE)	02	34	07	Z = 1.5, E = 2.0, N = 2.5
26	ePP	04	51	15	Sandwich Islands
	eSKS	04	57	19	USCGS 0 = 04 32 30.1
	eSKKS	04	58	27	57.4°S 26.2°W
	ePS	05	00	23	Dist. 105.6°
	eSS	05	06	07	Depth 25 km
	eLQ	05	16	07	Z = 2.0, E = 1.5, N = 2.0
	eLR (SSE)	05	22	07	Mag 5 1/4
26	e	07	36	27	
	eLR	07	40	47	

60

PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1960					
Dec. 27	eP	10	42	46	Near coast northern California
	ePP	10	44	09	USCGS 0 = 10 35 28.0
	ePcS	10	48	43	41.3°N 124.9°W
	eS	10	49	07	Dist. 38.1°
	eSS	10	51	23	Depth 30 km
	eLQ	10	52	07	Z = 33, E = 38, N = 40
	eLR (WNW)	10	53	51	Mag 5 3/4
	Rg	10	58	47	
27	eLQ	11	27	23	Northern California
	eLR (WNW)	11	28	07	USCGS 0 = 11 08 46.0 41.4°N 125.2°W Dist. 38.1° Depth 61 km Z = 8.5, E = 11, N = 8.5 Mag 5-5 1/4
27	eS	18	26	27	Near coast of Peru
	eSS	18	29	31	USCGS 0 = 18 09 41.6
	eLQ	18	31	19	13.7°S 74.3°W
	eLR (S)	18	34	27	Dist. 54.7° Depth 82 km
28	eL	02	56	07	
28	eL	06	17	07	Greece
28	e	10	08	07	
	eLQ	10	09	37	
	eLR	10	17	07	
28	eLR	22	56	07	
29	eLR	03	12	07	
29	ePS	06	30	39	Tonga Islands
	eSS	06	36	47	USCGS 0 = 06 02 13.9
	eSSS	06	40	41	18.4°S 174.7°W
	eLQ	06	49	47	Dist. 109.8°
	eLR (NW)	06	53	07	Depth 104 km Z = 3.0, E = 4.0, N = 2.5 Mag 5 1/4-5 1/2

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Date	Phase	h	m	s	Remarks
1960					
Dec. 29	eP	10	49	19	Southern Chile
	ePP	10	52	41	USCGS 0 = 10 36 40.0
	e (PPP)	10	55	27	44.8°S 75.6°W
	eS	10	59	55	Dist. 85.6°
	ePS	11	00	47	Depth 30 km
	eSS	11	05	21	Z = 8.5, E = 9.0, N = 10.0
	e	11	05	47	Mag 5 3/4-6
	eLQ	11	12	07	
	eLR (SSE)	11	18	07	
29	eLR	14	43	07	New Guinea
29	eLR	15	40	06	
29	eLQ	18	55	36	Near Crete
	eLR	19	02	06	
29	e	19	19	52	Northern Chile
	eLQ	19	26	36	USCGS 0 = 19 01 38.1
	eLR	19	31	26	18.8°S 69.4°W
					Dist. 59.8°
29	e	21	01	56	Depth 39 km
	e	21	09	06	
	eLR	21	28	56	
29	eLR	22	50	46	
29	eLR	23	35	06	
30	eLQ	01	58	06	
	eLR	02	06	06	
30	eLR	05	55	06	
30	eLR	06	27	06	Sawoe Sea
30	eLR	08	52	36	
31	eLR	15	07	06	
31	eP	18	20	42	Southern Chile
	epP	18	21	16	USCGS 0 = 18 08 12.3
	eSKS	18	31	12	43.9°S 75.0°W
	ePS	18	32	06	Dist. 84.6°
	eSS	18	36	54	Depth 92 km
	eLQ	18	42	50	Z = 3.0, E = 4.0, N = 3.5
	eLR (SSE)	18	48	06	Mag 5 1/4- 5 1/2