

# BERMUDA-COLUMBIA UNIVERSITY SEISMOGRAPH STATION

SIGNAL HILL  
ST. GEORGES, BERMUDA



## SEISMOLOGICAL BULLETIN

By  
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LAMONT GEOLOGICAL OBSERVATORY  
(COLUMBIA UNIVERSITY)

*Contribution No. 296*

## STATION CONSTANTS, INSTRUMENTS AND ABBREVIATIONS

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

## INSTRUMENTS

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

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

Three component Columbia University Long Period Seismographs  
(N, E, Z) To = 10 sec., Tg = 75 sec.

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

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

Epicentral data from U. S. Coast and Geodetic Survey preliminary determinations.

## ABBREVIATIONS

i = sudden beginning of the motion (impetus)

e = gradual beginning of the motion (emersio)

All times are G. C. T.

The Bermuda-Columbia University seismograph station, formerly known as the Bermuda Seismograph Station, was initially sponsored by the Bermuda Government, the U. S. Coast and Geodetic Survey, the International Union of Geodesy and Geophysics and the Royal Society of London. Since 1951 new instruments have been added under the joint sponsorship of the Bermuda Government and Columbia University. It is requested that exchange bulletins and papers be mailed directly to Bermuda.

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Jan.					
2	iP (comp)	00	49	40	Fox Islands, Aleutians
	ePcP	00	50	16	USCGS 0 = 00 39 22
	ePP	00	52	22	53° N 168° 30' W
	ePPP	00	53	42	Mag 6 1/4 - 6 1/2
	ePcS	00	54	41	Dist 60.7°
	iS	00	58	00	
	iScS	00	59	36	
	eSS	01	01	57	
	eSSS	01	04	18	
	eLQ	01	06	45	
2	iP	02	27	55	Fox Islands, Aleutians
2	iP (comp)	03	23	11	Fox Islands, Aleutians
2	eP (comp)	03	40	50	Fox Islands, Aleutians
2	eP	03	51	25	Fox Islands, Aleutians
2	iP (comp)	03	59	04	Fox Islands, Aleutians
2	eP	04	13	48	Fox Islands, Aleutians
2	eP	10	59	48	Fox Islands, Aleutians
	ePP	11	02	20	USCGS 0 = 10 49 32
	ePPP	11	03	36	52 1/2° N 168° W
	iS	11	08	09	Mag 6 1/2
	eScS	11	09	41	Dist 60.7°
	eSS	11	12	10	
	eSSS	11	15	02	
	eLQ	11	15	40	
2	eP	12	57	24	Fox Islands aftershock
	eS	13	05	44	USCGS 0 = 12 47 07
	eL	13	17	42	
2	eL	18	22	30	Fox Islands aftershock
3	iP	00	51	18	Fox Islands aftershock
	iS	00	59	35	USCGS 0 = 00 41 02
	eLR	01	11	30	

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Jan.					
3	iP	13	00	40	Southern Manchuria
	ipP	13	02	47	USCGS 0 = 12 48 27
	iSKS	13	10	17	44° N 130° E
	iS	13	10	50	Depth 600 km
	e (SKKS)	13	13	17	Mag 7
	isS	13	14	36	Dist 92.2°
	I PKKP	13	17	30	
	e (SSS)	13	20	23	
	e (L)	13	23	20	
9	eL	02	16	07	Komandorskie Islands
9	iP	08	03	12	Fox Islands aftershock
	iS	08	11	27	USCGS 0 = 07 52 56
	eSS	08	15	45	53° N 167 1/2° W
	e (Sn)	08	18	17	Mag 6 1/2
	eLR	08	20	47	Dist 60.7
10	eL	05	26	38	Northern Sumatra
14	eL	06	10	15	Tarapaca Province, Chile
15	eL	04	32	00	Ecuador
15	eL	21	58	24	Nicaragua
21	iPn	22	21	00	
	e (Sn)	22	22	20	
	e (S)	22	22	35	
	e Sg	22	23	15	
22	eLR	06	34	58	
22	eLQ	12	03	14	Belgian Congo
	eLR	12	09	14	
22	eLQ	13	22	14	Santa Cruz Islands
	eLR	13	29	14	
23	eLR	19	39	11	

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Jan.					
24	ePcP	07	26	59	Near coast of Peru
	ePP	07	29	15	USCGS 0 = 07 16 29
	iS	07	33	23	12 1/2° S 78° W
	ePS	07	34	21	Mag 6 1/4
	eScS	07	35	51	Dist 59.5°
	eSS	07	37	51	
	eLQ	07	40	35	
	eLR	07	43	51	
24	eL	15	17	48	Southern Gulf of California
24	eLQ	16	47	15	Gulf of California aftershock
24	eLQ	17	16	31	Gulf of California aftershock
24	eLR	20	24	31	Tonga Islands
25	iP	03	47	38	Andreanof Islands, Aleutians
	ipP	03	48	10	USCGS 0 = 03 36 47
	iS	03	55	23	51 1/2° N 177° W
	e (pS)	03	55	43	Mag 6 1/2
	esS	03	56	15	Dist 65.9°
	eLR	04	08	15	
25	eL	21	51	30	
28	eLR	09	06	35	Samoa Islands Region
29	eP	00	06	13	Near coast of Nicaragua
	ePPP	00	07	26	USCGS 0 = 23 59 46 (Jan. 28)
	eS	00	11	26	12° N 86 1/2° W
	e	00	11	54	Dist 31.1°
	e (SS)	00	14	16	
	eLQ	00	14	26	
	eLR	00	15	46	
29	e	16	21	14	Georgia, USSR
	eLR	16	38	00	
29	eL	21	39	15	Near coast Southern California
30	eLR	10	34	15	Samoa Islands
30	eL	16	24	55	Tonga Islands

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Feb.					
2	e	12	02	26	Loyalty Islands
	ePP	12	06	22	USCGS 0 = 11 45 35
	eSKS	12	11	34	21 1/2° S 170° E
	eSKKS	12	13	08	Dist. 123.4°
	ePPS	12	17	34	
	eSS	12	23	24	
	e (SSS)	12	27	19	
	e	12	28	28	
	e (SSSS)	12	31	24	
	e	12	34	59	
	eLR	12	47	04	
3	eL	11	06	44	Kamchatka foreshock
3	iP	17	13	31	Kamchatka
	e (PPS)	17	24	54	USCGS 0 = 17 01 47
	eSS	17	28	24	53 1/2° N 159° E
	eSSS	17	31	39	Mag 6 1/2 - 6 3/4
	eLQ	17	34	44	Dist 75.1°
3	iP	17	36	34	Kamchatka
	iPcP	17	36	45	USCGS 0 = 17 24 50
	ePP	17	39	19	53 1/2° N 159° E
	ePPP	17	41	20	Mag 6 1/2 - 6 3/4
	e(PPPP)	17	42	50	Dist 75.1°
	eS	17	46	26	
	e (PPS)	17	47	53	
	e	17	48	56	
	e (SS)	17	51	54	
	e (SSS)	17	54	36	
	eLQ	17	56	38	
	eLR	17	59	44	
3	iP	21	23	37	Kamchatka aftershock
	eLQ	21	44	14	USCGS 0 = 21 11 53
	eLR	21	47	14	
3	iP	21	29	20	Kamchatka aftershock
					USCGS 0 = 21 17 35

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
Feb.					
3	iP	23	10	07	Kamchatka aftershock
	ePP	23	12	34	USCGS 0 = 22 58 24
	ePPP	23	14	44	53 1/2° N 159° E
	eS	23	19	42	Dist 75.1°
	eSS	23	24	34	
	eSSS	23	28	14	
	eLQ	23	31	44	
	eLR	23	35	24	
4	iP	09	08	23	Costa Rica
	eLQ	09	16	09	USCGS 0 = 09 01 52
	eLR	09	17	14	10° N 84° W
					Dist 32.2°
4	e	10	59	24	Off south coast, Kamchatka
	eL	11	09	30	
4	eL	16	53	13	
5	iP	04	57	18	Mid-Atlantic Ocean
	ipP	04	57	23	USCGS 0 = 04 51 20
	iPPP	04	58	33	25 1/2° N 45 1/2° W
	eS	05	02	05	Mag 6
	eLQ	05	03	13	Dist 28.2°
	eLR	05	04	13	
5	eL	16	57	56	New Hebrides Islands
6	eLQ	13	00	13	Galapagos foreshock
	eLR	13	03	49	
6	ePP	13	15	57	Galapagos Islands
	ePcS	13	20	01	USCGS 0 = 13 06 13
	iS	13	20	25	2° N 91° W
	e	13	21	38	Mag 6
	eSS	13	23	31	Dist 44.8°
	eLQ	13	24	28	
	eLR	13	26	24	
6	eP	20	47	53	Lake Baikal, USSR
	eLQ	21	13	45	USCGS 0 = 20 34 55
	eLR	21	20	33	50° N 105 1/2° E
					Dist 89°
7	eLR	03	56	57	

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957 Feb.					
7	eL	09	43	10	Cordoba Province, Argentina
7	eP	16	27	41	Andreanof Islands, Aleutians
	eS	16	36	24	USCGS 0 = 16 17 09
	e	16	48	57	52 1/2° N 175° W
	eLQ	16	49	45	Depth 60 km
	eLR	16	53	25	Dist 64.4°
7	eLQ	18	34	13	Off coast Vancouver Island,
	eLR	18	35	18	British Columbia
9	e	02	51	13	Near n. coast New Guinea
	eLQ	02	53	13	
	eLR	02	55	43	
9	eLR	07	12	55	Philippines
9	e	07	18	08	
	e	07	20	13	
	e	07	24	33	
	e	07	26	49	
	e	07	29	01	
	e	07	30	38	
	e	07	32	43	
	e	07	35	58	
9	eLQ	07	38	29	Off coast Panama
	eLR	07	40	13	
9	ePP	13	39	49	Off coast North Island, New Zealand
	e	13	51	06	USCGS 0 = 13 29 18
	ePKS	13	51	26	34° S 180
	eSKS	13	54	43	Depth 150 km
	eSKKS	13	56	18	Dist 122.7°
	ePS	13	59	33	
	iSS	14	06	15	
	iPKPPKP	14	07	03	
	i	14	09	09	
	e (SSS)	14	10	05	
	eLQ	14	20	13	
	eLR	14	26	28	

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957 Feb.					
9	iP	16	45	34	Near coast Northern California
	iPP	16	47	01	USCGS 0 = 16 38 10
	iS	16	51	37	41 1/2° N 126° W
	eSS	16	54	29	Mag 5.4
	eLQ	16	55	00	Dist 38.5°
	eLR	16	56	53	
9	eLR	17	58	00	Near coast Northern California
	e	17	59	17	Aftershock
9	eLR	18	51	00	Tonga Islands
10	eP	05	54	20	Azores Islands Region
	eS	05	59	29	USCGS 0 = 05 47 59
	eLR	06	02	08	35 1/2° N 35° W
					Mag 5 3/4
					Dist 30.7°
10	iPKP	22	51	22	Mindanao, Philippines foreshock
	ipPKP	22	51	36	USCGS 0 = 22 32 15
	iPP	22	53	11	10° N 126° E
	iPKS	22	55	15	Mag 6 1/2 - 6 3/4
	ePKKP	23	01	09	Dist. 125.8°
	ePS	23	03	23	
	ePPS	23	05	03	
	iSS	23	10	07	
	e	23	11	01	
	i (SSS)	23	17	01	
	e SSSS	23	18	38	
	eLG	23	25	43	
	eLR	23	36	03	
10	iPKP	23	09	59	Mindanao, Philippines
	iPP	23	11	39	USCGS 0 = 22 50 52
	iPKS	23	13	13	10 1/2° N 126 1/2° E
	ePS	23	22	03	Mag 6 3/4
	iSS	23	28	49	Dist 125.2°
	i	23	32	23	
	eLQ	23	44	33	

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Feb.					
11	ePKP	01	33	28	Mindanao, Philippines aftershock
	ipPKP	01	33	46	USCGS 0 = 01 14 44
	iPP	01	35	38	10° N 126° E
	ePKS	01	37	29	Mag 6 1/2
	iPS	01	45	47	Dist 125.8°
	ePPS	01	47	10	
	iSS	01	52	41	
	e	01	55	17	
	e	01	55	48	
	eSSS	01	57	33	
	eSSSS	01	59	53	
	e (SSSSS)	02	01	28	
	eLQ	02	06	53	
	eLR	02	20	13	
11	eL	15	42	00	Mindanao aftershock
12	eL	09	38	45	Northern Kurile Islands
13	eSS	01	07	40	Mindanao, Philippines aftershock
	e	01	22	12	USCGS 0 = 00 29 48
	eLQ	01	28	36	
	eLR	01	33	42	
16	eLR	03	48	25	New Britain (BCIS)
17	iP (comp)	15	53	08	Oaxaca, Mexico
	ePP	15	54	04	USCGS 0 = 15 46 45
	eS	15	58	07	16° N 96 1/2° W
	eSS	16	00	02	Depth 60 km
	eLQ	16	00	47	Mag 5 3/4 - 6
	eLR	16	01	45	Dist 31.7°
18	i(PKP)	02	50	35	
18	eLR	08	11	54	Samoa Islands
18	iP (comp)	14	55	28	Mid-Atlantic Ridge
	iPP	14	56	02	USCGS 0 = 14 49 30
	ePPP	14	56	43	25 1/2° N 45 1/2° W
	e	14	57	07	Mag 6 1/4 - 6 1/2
	eS	15	00	16	Dist 28.2°
	eLQ	15	01	37	
	eLR	15	02	22	

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
Feb.					
18	eP	23	58	57	Near coast of Peru
19	eS	00	06	15	Feb. 18
	eL	00	19	19	USCGS 0 = 23 49 52
					11 1/2° S 78° W
					Depth 100 km
					Mag 6 1/2 - 6 3/4
					Dist 52.6°
19	eP	07	55	16	Near south coast of Greece
	iS	08	04	39	USCGS 0 = 07 43 54
	eSS	08	09	11	36 1/2° N 22° E
	eSSS	08	12	33	Dist 70.9°
	eLQ	08	14	51	
	eLR	08	19	45	
19	iP	20	10	15	Near east coast of Kamchatka
	eLR	20	42	03	USCGS 0 = 19 58 55
					56° N 164° E
20	eLR	05	10	59	Northern Tunisia
20	eLQ	23	13	39	Near coast of Sumatra
	eLR	23	16	31	
21	eLR	01	40	12	
21	iP	14	40	23	Fox Islands, Aleutians
	epP	14	40	46	USCGS 0 = 14 30 06
	esP	14	41	01	53° N 171° W
	iS	14	48	39	Depth 100 Km
	isS	14	49	31	Mag 6 3/4
	iScS	14	50	03	Dist 62.1°
	isScS	14	50	55	
	e	14	57	07	
	eLR	15	00	35	
23	iP	00	39	54	
23	e	13	32	11	Off coast Vancouver Is., B. C.
	eLR	13	36	51	USCGS 0 = 13 16 51
	iLg	13	37	43	49° N 129° W
					Dist 32.8°

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Feb.					
23	ePKP	20	44	36	Formosa
	iPP	20	45	49	USCGS 0 = 20 26 12
	ePPP	20	48	21	24° N 122° E
	eSKS	20	52	06	Mag 7 - 7 1/4
	i SKKS	20	53	17	Dist 113.3°
	i (SKKKS)	20	53	52	
	iPS	20	55	09	
	iSS	21	01	35	
	iSSS	21	05	16	
	e	21	12	31	
	eLQ	21	14	11	
	i	21	14	41	
	eLR	21	17	41	
25	iPKP	02	23	49	Sumbawa Island
	i	02	24	00	USCGS 0 = 02 04 08 8 1/2° S 118° E
25	eLR	10	35	10	
26	eLR	04	08	46	
26	eLQ	06	49	30	Near east coast of Kamchatka
	eLR	07	01	06	
28	eLR	11	38	26	Andreanof Islands, Aleutians
29	eLR	00	38	10	Western Indian Ocean
Mar.					
2	iP	00	32	39	Jamaica, B. W. I.
	P (Z) 8 sec. 7 mic comp				USCGS 0 = 00 27 33
	i	00	32	46	18 1/2° N 78° W
	iS	00	36	47	Mag 6 3/4
	eLQ	00	37	25	Dist 22.7°
	eLR	00	38	53	
2	ePKP	08	29	33	Near coast of New Britain
	eLQ	09	03	01	USCGS 0 = 08 10 24
	eLR	09	12	09	6° S 151° E Dist. 126.7°

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
Mar.					
3	iP	03	26	17	Off coast of Mexico
	P (Z) 6 sec 1 mic dil				USCGS 0 = 03 18 23
	iPP	03	27	57	8° N 103° W
	iS	03	32	37	Mag 5 3/4
	i	03	35	03	Dist 41.7°
	iSS	03	35	57	
	eLR	03	37	19	
3	eLR	21	55	33	Off east coast of New Guinea
4	eLR	06	15	37	South Central Alaska
5	iP	12	30	34	Mid-Atlantic Ridge
	P (Z) 8 sec 1.5 mic comp				USCGS 0 = 12 24 35
	iPP	12	31	09	33° N 34 1/2° W
	iPPP	12	31	41	Mag 6 1/2 - 6 3/4
	iS	12	35	21	Dist 32.1°
	eLQ	12	36	41	
	eLR	12	37	33	
7	eL	18	37	40	
7	eL	22	18	56	Arctic Ocean
8	iP	12	25	29	Eastern Greece foreshock
	P (Z) 6 sec 2 mic comp				USCGS 0 = 12 14 12
	iS	12	34	36	39 1/2° N 23° E
	iSS	12	39	24	Dist 69.3°
	eLQ	12	42	40	
	eLR	12	45	44	
8	iP	12	32	25	Eastern Greece
	P (Z) 8 sec 4.5 mic comp				USCGS 0 = 12 21 08
	iS	12	41	36	39 1/2° N 23° E
	eSS	12	46	24	Mag 6 1/4
	eLQ	12	50	48	Dist 69.3°
9	eLR	00	10	28	Eastern Greece aftershock
9	eL	14	22	08	Central Alaska
9	iP	14	33	11	Andreanof Islands, Aleutians
	P (Z) 20 sec 7.5 mic comp				USCGS 0 = 14 22 27.5
	i	14	33	26	51.3° N 175.8° W
	i	14	39	41	Mag 7 3/4-8
	iS	14	42	06	Dist 65.3°
	eLR	14	59	18	



Date	Phase	h	m	s	Origin Time	Coordinates	Distance
1957							
Mar. The following are Aleutian earthquakes							
9	iP	14	47	54			
9	iP	15	21	17	0 = 15 10 12 (BCIS)		
9	iP	15	30	36			
9	iP	15	37	42			
9	iP	15	49	04	0 = 15 41 50 (USCGS)	50 1/2° N 177° W	66.9°
9	eP	16	15	55	0 = 16 06 12 (BCIS)		
9	iP	16	27	08	0 = 16 16 26 (BCIS)		
9	eP	16	29	41	0 = 16 21 08 (BCIS)		
9	iP	16	33	23			
9	iP	16	35	58			
9	eP	16	40	49			
9	iP	16	43	23	0 = 16 32 30 (USCGS)	51° N 176° W	65.4°
9	eP	17	20	44	0 = 17 10 13 (USCGS)	51 1/2° N 172 1/2° W	63.6°
	iP	17	20	49			
9	iP	17	53	59	0 = 17 43 04 (BCIS)		
9	iP	18	02	53	0 = 17 54 03 (BCIS)		
9	iP	18	04	54	0 = 17 57 25 (BCIS)	53 3/4° N 165° W	56.5°
9	iP	18	15	24			
9	iP	18	32	18	0 = 18 21 07 (BCIS)		
9	eP	18	41	44			
9	iP	18	56	52			
9	iP	19	09	18	0 = 18 58 07 (BCIS)		

Date	Phase	h	m	s	Origin Time	Coordinates	Distance
1957							
Mar.							
9	eP	19	45	23	0 = 19 34 54 (BCIS)	53°N 172 1/2° W	63.5°
9	iP	19	48	10	0 = 19 37 31 (USCGS)	51°N 173° W	64.2°
9	iP	19	55	30	0 = 19 44 09 (BCIS)		
9	iP	20	11	27	0 = 20 00 56 (USCGS)	51 1/2°N 170 1/2°W	62.6°
9	iP	20	17	31	0 = 20 07 01 (BCIS)	51 1/2°N 171°W	62.8°
9	iP	20	32	27	0 = 20 22 02 (USCGS)	52°N 169 1/2°W	61.8°
9	iP	20	44	07	0 = 20 33 12 (BCIS)	51 1/2°N 178 1/2°W	67°
9	eP	20	49	21	0 = 20 39 15 (USCGS)	52 1/2°N 169 1/2°W	62°
	iP	20	49	43			
	iS	20	59	01			Mag 7
9	iP	21	44	58			
9	iP	21	47	55			
9	iP	21	52	28	0 = 21 41 51 (BCIS)	52 1/2°N 174°W	64.3°
9	iP	22	06	39	0 = 21 56 24 (USCGS)	53°N 168°W	60.5°
9	iP	22	14	49			
9	iP	22	29	39	0 = 22 19 17 (BCIS)	19°S 64°W,	63° South of Bolivia
9	iP	22	53	20			
9	eP	23	10	01	0 = 22 59 26 (USCGS)	51 1/2°N 171°W	62.9°
9	iP	23	17	45			
9	iP	23	23	47			
9	iP	23	29	59	0 = 23 19 21 (BCIS)	52 1/2°N 174°W	64.3°
9	iP	23	31	30	0 = 23 20 58 (BCIS)	52 3/4°N 174 3/4°W	64.9°
9	iP	23	34	22			
9	iP	23	48	32	0 = 23 37 09 (BCIS)		
10	iP	00	22	06	0 = 00 11 29 (BCIS)	52 3/4°N 173 3/4°W	64.6°
10	iP	00	51	11	0 = 00 40 07 (BCIS)		

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Origin Time	Coordinates	Distance
1957 Mar. 10	eP	01	18	14			
10	eP	01	32	26	0 = 01 22 07 (BCIS)	53°N 168 1/2°W	60.8°
10	eP	01	38	49			
10	iP	01	54	18	0 = 01 43 05 (BCIS)		
10	iP	02	44	12			
10	iP	02	47	02			
10	iP	02	49	25			
10	iP	03	16	50	0 = 03 06 02 (USCGS)	52°N 176°W	65.1°
	iS	03	25	30			Mag 6 3/4
10	iP	03	19	40	0 = 03 08 55 (USCGS)	51 1/2°N 174°W	64.4°
	iS	03	28	19			
10	iP	04	46	01	0 = 04 37 02 (BCIS)		
10	iP	04	47	20			
10	iP	04	47	46			
10	iP	04	51	30	0 = 04 41 04 (USCGS)	52°N 170°W	62.1°
10	iP	05	44	06	0 = 05 33 27 (USCGS)	52°N 174°W	64.1°
10	iP	07	34	06	0 = 07 23 18 (USCGS)	52°N 176°W	65.1°
10	eP	07	41	46	0 = 07 31 36 (USCGS)	53°N 168°W	60.5°
10	eP	09	34	24	0 = 09 23 43 (BCIS)		
10	iP	11	31	14	0 = 11 20 45 (USCGS)	52°N 171°W	62.6°
10	iP	12	23	12	0 = 12 12 18 (USCGS)		
10	iP	12	46	36	0 = 12 36 04 (USCGS)	51°N 171°W	63.1°
10	iP	12	56	25	0 = 12 45 31 (USCGS)	51°N 177°W	66.2°
10	eP	13	21	16	0 = 13 10 13 (USCGS)	51 1/2°N 180°W	67.4°
10	iP	13	39	26	0 = 13 28 30 (USCGS)	51 1/2°N 179°W	66.9°

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Origin Time	Coordinates	Distance
1957 Mar. 10	iP	15	37	00	0 = 15 26 23 (USCGS)	52°N 173°W	63.6°
	iS	15	45	35			Mag 6 3/4
10	iP	16	42	15			
10	iP	16	48	24	0 = 16 37 45 (USCGS)	51 1/2°N 173 1/2°W	64.2°
10	iP	16	50	24	0 = 16 39 08 (BCIS)	51 1/2°N 173 1/2°W	64.2°
10	iP	17	56	30	0 = 17 45 08 (BCIS)		
10	iP	19	29	26	0 = 19 18 30 (USCGS)	51°N 177°W	66.2°
10	iP	19	51	34	0 = 19 40 55 (USCGS)	52°N 173°W	63.6°
10	iP	23	47	36	0 = 23 36 45 (BCIS)	51 1/2°N 176°W	65°
11	iP	00	07	06	0 = 23 56 50 (USCGS)	53°N 169°W	61°
11	iP	00	18	32	0 = 00 08 07 (USCGS)	52°N 169°W	61.5°
11	iP	01	39	01	0 = 01 28 24 (BCIS)	52 3/4°N 174 1/4°W	64.9°
11	iP	02	01	56	0 = 01 50 55 (USCGS)	50 1/2°N 170°W	61.3°
11	iP(comp)	03	23	34	0 = 03 12 41 (USCGS)	51°N 177°W	66.2°
	iS	03	32	28			
	iSS	03	37	00			
	eLQ	03	40	08			Mag 6 3/4-7
	eLR	03	44	08			
11	iP	03	32	48	0 = 03 21 56 (BCIS)	51°N 177°W	66.2°
11	iP	03	45	54	0 = 03 35 00 (USCGS)	51 1/2°N 177°W	65.9°
11	iP	04	06	17	0 = 03 55 27 (USCGS)	50 1/2°N 177°W	66°
11	iP	04	16	05	0 = 04 05 09 (USCGS)	51°N 177°W	66.2°
11	iP	07	02	21	0 = 06 51 56 (USCGS)	51 1/2°N 170 1/2°W	62.6°
11	iP	07	18	52	0 = 07 08 00 (USCGS)	51°N 177°W	66.2°
11	iP	07	50	01	0 = 07 39 05 (USCGS)	51 1/2°N 178 1/2°W	66.7°

## PALISADES, NEW YORK

Date	Phase	h	m	s	Origin Time	Coordinates	Distance
1957							
Mar.							
11	iP	08	09	21	0 = 07 58 40 (BCIS)	52 3/4°N 174°W	64.9°
11	iP	08	38	20			
11	iP	08	53	47	0 = 08 42 48 (USCGS)	50 1/2°N 178°W	66.5°
11	iP	08	57	46			
11	iP(comp)	10	09	04	0 = 09 58 42 (USCGS)	53°N 164 1/2°W	58.7°
	iPP	10	11	16			
	iS	10	17	20			
	iScS	10	18	52			Mag 6 3/4-7
	iSS	10	21	24			
	eLQ	10	25	38			
	eLR	10	28	08			
11	iP	10	30	47			
11	iP	13	13	27			
11	iP	14	24	01			
11	iP	15	06	15	0 = 14 55 19(USCGS)	51 1/2°N 178 1/2°W	66.7°
	P (z)	8	sec	12	mic (comp)		
	ePP	15	08	34			Mag 6 3/4
	iS	15	15	08			
	eScS	15	16	38			
	e	15	17	42			
	iSS	15	20	13			
	eLQ	15	26	08			
	eLR	15	29	08			
11	iP	15	46	52	0 = 15 35 50 (USCGS)	51°N 179°W	67.2°
							Mag 6 1/2
11	iP	15	59	58			
11	iP	21	28	01	0 = 21 17 03 (BCIS)		
11	iP	23	43	18	0 = 23 32 03 (USCGS)	52°N 173°W	63.6°
12	iP	01	13	17	0 = 01 02 33 (USCGS)	52°N 174 1/2°W	64.4°
12	iP	01	15	02	0 = 01 04 24 (BCIS)	51°N 172° W	63.5°
	eL	01	28	08			

## PALISADES, NEW YORK

Date	Phase	h	m	s	Origin Time	Coordinates	Distance
1957							
Mar.							
12	iP	01	57	12	0 = 01 46 35 (USCGS)	52°N 173°W	63.6°
12	iP	02	33	23	0 = 02 22 57 (USCGS)	53°N 170 1/2°W	61.8°
12	eP	03	59	02			
12	iP	05	22	26	0 = 05 12 08 (USCGS)	52 1/2°N 169°W	61.3°
	eL	05	44	08			
12	iP	06	11	21	0 = 06 02.47 (USCGS)		
12	eP	07	33	42			
12	iP	07	39	25	0 = 07 28 46 (USCGS)	51 1/2°N 173 1/2°W	64.1°
							Mag 6 1/4 - 6 1/2
	P (Z)	8	sec	3	mic (comp)		
	iS	07	48	02			
	eLQ	07	55	08			
	eLR	07	59	48			
12	iP	07	50	13	0 = 07 39 17 (USCGS)	52°N 178°W	66.1°
12	iP	08	14	08	0 = 08 03 11 (USCGS)	51°N 178°W	66.7°
12	eP	08	19	41			
12	eP	08	28	25			
12	eP	08	38	11			
12	eP	08	40	09			
12	iP	08	52	23			
12	eP	09	16	43			
12	iP	09	32	10			
12	eP	10	06	02			
12	iP	10	49	12	0 = 10 38 30 (USCGS)	51 1/2°N 174 1/2°W	

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Origin Time	Coordinates	Distance
1957							
Mar.							
12	iP	10	50	49			
12	iP	11	11	35			
12	iP	11	20	45			
12	iP	11	55	42	0 = 11 44 50 (USCGS)	51°N 177°W	66.2°
					P(Z) 8 sec 3 mic (comp)		
	iS	12	04	50			
	iSS	12	09	40			
	eL	12	15	52			Mag 7-7 1/4
12	iP	12	13	54	0 = 12 03 01 (BCIS)	51°N 177°W	66.2°
12	eP	12	24	17			
12	iP	12	37	47			
12	iP	12	56	28	0 = 12 46 12 (USCGS)	53°N 168 1/2°W	60.8°
12	iP	13	15	34			
12	iP	14	43	08	0 = 14 32 16 (BCIS)	52 1/2°N 178 1/2°W	66.8°
12	iP	14	46	53	0 = 14 36 00 (BCIS)		
12	iP	15	31	18			
12	iP	15	41	11	0 = 15 30 02 (BCIS)		
12	iP	15	55	00	0 = 15 44 02 (BCIS)		
12	iP	16	13	33	0 = 16 03 00 (BCIS)		
12	iP	16	59	44	0 = 16 48 09 (BCIS)		
12	iP	17	11	05	0 = 17 00 21 (USCGS)	51 1/2°N 175°W	64.9°
	eLR	17	36	19			
12	iP	18	36	13	0 = 18 25 18 (USCGS)	57°N 178°W	66.7°
	eLR	19	03	43			
12	iP	20	10	28	0 = 20 00 30 (USCGS)	54°N 165°W	58.5°
	eLR	20	31	27			

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Origin Time	Coordinates	Distance
1957							
Mar.							
12	iP	21	30	49	0 = 21 23 04 (USCGS)	11 1/2°S 79 1/2°W	42.8°
	eS	21	37	07		Ecuador	Depth 150 km
	eLR	21	41	07			
12	iP	22	37	58	0 = 22 27 23 (BCIS)	52 3/4°N 172 3/4°W	63.6°
12	iP	23	56	02	0 = 23 45 25 (USCGS)	52°N 174°W	64.2°
13	e	00	04	45			
	eLQ	00	10	07			
	eLR	00	20	07			
13	iP	02	02	32			
13	iP	02	58	49	0 = 02 48 20 (USCGS)	52°N 171 1/2°W	62.3°
	iS	03	07	19			
	eSS	03	11	31			
	eSSSS	03	14	47			
	eLQ	03	16	47			
	eLR	03	20	43			
13	iP	03	43	39	0 = 03 32 58 (USCGS)	52°N 175°W	64.6°
13	iP	06	47	25			
13	iP	07	32	46	0 = 07 21 54 (USCGS)	52°N 178°W	66.1°
13	iP	09	00	49			
13	iP	09	19	58	0 = 09 09 34 (USCGS)	52 1/2°N 170°W	61.8°
	iS	09	28	19			
	eLR	09	39	47			
13	iPKP	09	29	58	0 = 09 11 15 (USCGS)	38.7°S 175.6°E	Depth 270 km New Zealand
13	eP	10	34	48			
13	iP	10	39	21			
13	iP	11	48	41	0 = 11 37 49 (USCGS)	51°N 177°W	66.2°
13	eP	12	08	33	0 = 11 57 58 (USCGS)	52°N 173°W	63.6°
	eS	12	16	51			
	eSS	12	19	27			
	eLR	12	33	47			
13	eP	12	25	26			

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Origin Time	Coordinates	Distance
1957							
Mar.							
13	iP	12	38	24			
13	eLR	13	24	07	0 = 13 00 04 (BCIS)		
13	iP	15	53	02	0 = 15 42 05 (USCGS)	51 1/2°N 179°W	66.9°
	P(Z)	6 sec	1 mic				Mag 6 3/4
	iS	16	01	51			
	iPS	16	02	27			
	iPPS	16	02	55			
	iSS	16	06	19			
	eLQ	16	10	39			
13	iP	17	54	27	0 = 17 43 40 (USCGS)	51°N 175°W	65.2°
13	iP	20	09	25	0 = 19 59 23 (USCGS)	54°N 166°W	59°
	P(Z)	8 sec	2 mic				
	iS	20	17	31			
	iPS	20	17	47			
	eSS	20	21	42			
	eLR	20	27	07			
14	eP	00	46	27	0 = 00 35 38 (USCGS)	51° 178°W	66.7°
	eLR	01	13	07			
14	eP	02	02	36	0 = 01 52 16 (USCGS)	52 1/2°N 169°W	61.8°
	P(Z)	6 sec	1 mic				
	eS	02	10	55			
	eLR	02	23	22			
14	iP	02	20	01			
14	iP	02	56	51	0 = 02 46 55 (USCGS)	53 1/2°N 163 1/2°W	57.9°
14	iP	04	12	09			
14	eLQ	08	36	39	0 = 08 17 06 (BCIS)	Region of Revilla Gigedo Islands	
	eLR	08	38	15			
14	iP	10	44	54	0 = 10 34 33 (USCGS)		
	eLR	11	07	27			
14	iP	12	39	38	0 = 12 29 32 (USCGS)	53°N 166 1/2°W	58.7°

## BERMUDA-COLUMBIA UNIVERSITY

21

Date	Phase	h	m	s	Remarks
1957					
March					
29	iP	23	01	28	0 = 22 49 51
	i		02	50	53°N 169°W
	iS		10	32	Dist. 74°
	eSS		15	14	Fox Islands, Aleutian
	e (SSS)		19	20	Islands
	eLR		27	00	Mag. 6 - 6 1/4 (Pas.)
30	eLR	01	23	00	0 = 00 42 00
					51 1/2°N 179 1/2°W
					Dist. 79°
					Andreanof Islands,
					Aleutian Islands
30	eLR	02	29	00	0 = 01 50 39
					51 1/2°N 178°W
					Dist. 78°
					Andreanof Islands,
					Aleutian Islands
30	eLR	07	15	00	0 = 06 37 00
					51°N 180°W
					Dist. 79°
					Andreanof Islands,
					Aleutian Islands
30	iP	09	28	53	0 = 09 17 00
	eS		38	32	52°N 175°W
	eLR		53	00	Dist. 77°
					Andreanof Islands,
					Aleutian Islands

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Origin Time	Coordinates	Distance
1957							
Mar.							
15	iP	11	53	07			
	eLR	12	30	08			
15	iP	16	25	40			
	eL	16	55	07			
15	iP	18	29	07			
15	iP	19	20	50			
15	iP	22	09	17			
	eLR	22	46	47			
16	iP	02	24	07	0 = 02 13 23 (USCGS)	51 1/2°N 175°W	64.9°
	i	02	24	20			
	eS	02	32	47			
16	iP	02	45	06	0 = 02 34 12 (USCGS)	52°N 179°W	66.6°
	P (Z)	10	sec	3 mic (comp)			
	iS	02	54	03			
	iPS	02	54	59			
	iSS	02	59	07			
	eLQ	03	01	43			
	eLR	03	05	07			Mag 6 3/4
16	iP	03	44	35	0 = 03 33 57 (USCGS)	52°N 174°W	64.2°
16	iP	09	41	24	0 = 09 30 36 (USCGS)	51°N 177°W	66.3°
16	eL	11	36	23			
16	eP	12	50	53	0 = 12 46 09 (BCIS)	20°N 75°W Near coast of Cuba	20.3°
	eS	12	54	55			
16	eSS	12	55	57			
	eLR	12	56	11			
16	eLR	14	46	47			
16	iP	15	40	56	0 = 15 30 12 (BCIS)	53°N 177°W	67.3°
16	eLR	20	34	35			
16	eLR	21	15	51	0 = 20 35 05 (BCIS)		
17	eLR	00	52	07	0 = 23 55 08 (BCIS)	27°N 127 1/2°E	Japan
17	eLR	02	21	31	0 = 01 46 56 (USCGS)		
17	iP	02	59	47	0 = 02 48 36 (USCGS)	51°N 178 1/2°W	66.5°
	eLR	03	24	07			

## PALISADES, NEW YORK

23

Date	Phase	h	m	s	Origin Time	Coordinates	Distance
1957							
Mar.							
17	iP	07	14	58	0 = 07 04 40 (USCGS)	52 1/2°N 169°W	61.3°
	eS	07	23	31			
	eLQ	07	37	07			
	eLR	07	39	30			
17	iP	08	04	49	0 = 07 53 51 (USCGS)	51°N 179°W	67.3°
	P (Z)	6	sec	1 mic			
	iS	08	13	51			
	iScS	08	14	47			
	eSS	08	18	07			
	eSSS	08	21	23			
	eLQ	08	23	27			
	eLR	08	26	27			
17	iP	11	40	42	0 = 11 30 33 (USCGS)	53 1/2°N 167°W	59.8°
	eLR	12	01	37			
17	eP	15	21	52	0 = 15 11 42 (USCGS)	53°N 167 1/2°W	60.3°
17	eLR	15	29	55			
17	iP	16	27	22	0 = 16 17 13 (USCGS)	52 1/2°N 166°W	59.7°
	P (Z)	6	sec	2 mic			
17	iP	22	54	45	0 = 22 44 44 (USCGS)	54°N 166°W	59°
	P (Z)	16	sec	2.5 mic (comp)			
	iPP	22	56	39			
	iS	23	02	47			
	iPS	23	03	07			
	ePPS	23	03	35			
	eSS	23	06	47			
	eSSS	23	09	27			
	eLQ	23	10	07			
	eLR	23	13	07			
18	iP	00	23	12	0 = 00 12 10 (USCGS)	51°N 179 1/2°W	67.5°
18	iP	02	35	04	0 = 02 24 39 (USCGS)	52 1/2°N 171°W	62.4°
18	iP	02	35	52	0 = 02 25 56 (USCGS)	52 1/2°N 171°W	62.4°
	iS	02	44	19			
	ePS	02	44	35			
	eScS	02	45	43			
	eSS	02	49	07			
	eLQ	02	55	59			
	eLR	02	58	19			

## PALISADES, NEW YORK

Date	Phase	h	m	s	Origin Time	Coordinates	Distance
1957							
Mar.							
18	iP	05	19	32	0 = 05 08 34 (USCGS)	51 1/2°N 179°W	66.9°
	eS	05	28	23			
	eScS	05	29	23			
	eSS	05	33	19			
	eLQ	05	39	07			
	eLR	05	41	17			
18	iP	08	01	01	0 = 07 50 50 (BCIS)	54°N 167°W	60°
	eLR	08	25	07			
18	iP	16	45	11			
18	eLR	19	15	07		Near coast of S. California	
18	iP	20	01	09			
	eLR	20	26	23			
18	i(PKP)	21	33	20	0 = 21 14 12 (USCGS)	6°S 152°E	New Britain 126.2°
	iPP	21	35	07			
	ePKS	21	36	39			
	eSKS	21	40	54			
	eSKKS	21	41	51			
	ePS	21	45	07			
	ePPS	21	46	44			
	eSS	21	52	23			
	eSSS	21	56	32			
	eLQ	22	06	07			
	eLR	22	11	37			
19	iP	03	50	18	0 = 03 39 35 (USCGS)	52°N 175 1/2°W	64.9°
19	eLQ	03	56	07			
19	e	04	13	27			
19	iP	08	24	25	0 = 08 14 10 (USCGS)	53°N 168°W	60.5°
	eS	08	33	07			
	eLQ	08	44	07			
	eLR	08	48	19			
19	iP	11	39	39	0 = 11 28 50 (USCGS)	51 1/2°N 176 1/2°W	65.7°
	P (Z)	4	sec	1.5 mic (comp)			
	eS	11	48	23			
	ePS	11	48	43			
	ePPS	11	48	59			
	eScS	11	49	31			

## PALISADES, NEW YORK

Date	Phase	h	m	s	Origin Time	Coordinates	Distance
1957							
Mar. (continued)							
19	eSS	11	53	07	0 = 11 28 50 (USCGS)	51 1/2°N 176 1/2°W	65.7°
	eLQ	11	57	07			
	eLR	12	01	19			
19	iP (comp)	13	01	35	0 = 12 50 51 (USCGS)	51 1/2°N 175°W	64.9° Mag 6 3/4
	iS	13	10	23			
	iPS	13	10	59			
	iPPS	13	11	23			
	iSS	13	15	23			
	eLQ	13	24	07			
	eLR	13	26	07			
19	iP	13	06	28			
19	iP	13	31	20			
19	iP	15	57	59	0 = 15 47 24 (USCGS)	52°N 172 1/2°W	63.4°
	e	16	06	28			
	eLR	16	18	25			
19	iP	17	14	54	0 = 17 04 25 (USCGS)	52 1/2°N 171°W	62.3°
	iS	17	23	19			
	eLR	17	38	07			
19	eLR	20	59	22	0 = 20 24 07 (BCIS)		
19	i	23	56	03			
20	e	00	01	39			
	eLR	00	13	22			
20	iP	00	11	28	0 = 00 00 51	52°N 173°W	63.6°
	iS	00	20	07			
	eLR	00	35	10			
20	iP	00	32	41	0 = 00 22 25 (USCGS)	53°N 169°W	61°
20	iP	03	35	46	0 = 03 25 00 (USCGS)	51 1/2°N 175 1/2°W	65.2°
	eS	03	44	51			
	eLQ	03	55	07			
	eLR	03	59	19			
20	iP	11	12	16	0 = 11 01 42 (USCGS)	52°N 172°W	63.1°
	iS	11	20	51			
	eLR	11	35	20			
20	iP	13	11	48			



Date	Phase	h m s	Origin Time	Coordinates	Distance
1957					
Mar.					
20	iP	20 38 46	0 = 20 28 03 (USCGS)	51 1/2°N 174 1/2°W	64.7°
	eLQ	21 02 07			
	eLR	21 05 43			
21	iP	04 39 39	0 = 04 29 02 (USCGS)	52°N 173°W	63.6°
	eLR	05 03 07			
21	iP	08 51 08	0 = 08 44 46 (USCGS)	14 1/2°N 93°W	31.3° Near
	iS	08 56 11			coast of Chiapas, Mexico
	i	08 59 39			
	eLR	09 01 07			
21	iP	12 42 01	0 = 12 31 30 (USCGS)	52°N 171°W	62.6°
21	eLR	13 06 15			
21	iP	13 40 41			
21	iP	15 57 03	0 = 15 46 16 (USCGS)	51°N 175°W	65.4°
21	eLR	17 34 31			
21	iP	17 50 04	0 = 17 39 12	51 1/2°N 177°W	65.9°
21	eLR	18 13 57			
22	eLR	02 10 07		Tonga Islands Region	
22	iP	09 46 57	0 = 09 36 04 (BCIS)	52°N 173°W	63.6°
	eS	09 55 31			
	eLR	10 07 07			
22	iP	14 31 10	0 = 14 21 06 (USCGS)	54°N 166°W	59° Mag 7
	P (z)	12 sec 9 mic (comp)			
	i	14 31 55			
	iPP	14 33 07			
	iPcS	14 36 07			
	iS	14 39 07			
	iPS	14 39 39			
	i(PPS)	14 10 13			
	iScS	14 40 39			
	iSS	14 43 07			
	eLR	14 48 07			

Date	Phase	h m s	Origin Time	Coordinates	Distance
1957					
Mar.					
22	iP	14 43 15	0 = 14 33 13 (USCGS)	54°N 165 1/2°W	58.5°
22	iP	17 20 18	0 = 17 09 51 (USCGS)	52 1/2°N 171°W	62.3°
	e	17 20 54			
	iS	17 28 39			
	e	17 30 23			
	eSS	17 34 07			
	eLR	17 41 07			
22	eP	19 51 33	0 = 19 44 22 (USCGS)	37.9°N 122.6°W	37.3°
	P (Z)	8 sec 2 mic dil.			Northern
	ePP	19 52 59			California
	eS	19 57 31			Mag 5 1/4 -
	eSS	20 00 07			5 1/2
	eLR	20 03 47			
23	iP	01 02 44	0 = 00 52 00 (BCIS)	52°N 175°W	64.6°
	eS	01 11 39			
	eLQ	01 21 07			
	eLR	01 29 07			
23	iPKP	05 31 40	0 = 05 12 31 (USCGS)	5 1/2°S 131°E	138.1°
	ipPKP	05 32 35			Banda Sea
	iPP	05 34 31			Depth 100 km
	iPKS	05 35 14			Mag 7
	ipPKS	05 36 07			
	iPPP	05 37 19			
	iSKKS	05 41 19			
	ePS	05 45 27			
	iPPS	05 46 47			
	e	05 48 07			
	eSS	05 51 31			
	isSS	05 53 27			
	eLR	06 16 47			
23	eP	10 39 13	0 = 10 29 10 (BCIS)	54 1/2°N 165 1/2°W	58.5°
23	iP	13 35 24	0 = 13 24 33 (USCGS)	51 1/2°N 179°W	66.9°
	e(S)	13 44 26			
	e(IQ)	13 58 37			
	e(LR)	14 05 59			
23	iP	13 50 48	0 = 13 39 53 (USCGS)	51°N 179 1/2°W	67.5°

## PALISADES, NEW YORK

Date	Phase	h	m	s	Origin Time	Coordinates	Distance
1957							
Mar.							
23	iP	19	01	54			
	iS	19	02	05			
23	i(P)	19	58	18			
24	eLR	02	14	47		Mid-Atlantic Ridge	
24	eLQ	05	12	43	0 = 04 36 22 (USCGS)		
	eLR	05	17	27			
24	eSS	07	18	53	0 = 06 37 07 (BCIS)	63°S 165°E	Balleny Islands Antarctica
	e	07	23	27			
	eLQ	07	36	37			
	eLR	07	45	37			
24	iP	07	40	16	0 = 07 29 15 (USCGS)	51°N 179 1/2°W	67.5°
24	eP	08	29	56	0 = 08 22 23 (USCGS)	51°N 130°W	39.2° Near n. Coast Vancouver Island, B. C. Mag 6 3/4 - 7
	eS	08	36	03			
	eSS	08	38	31			
	eLQ	08	39	27			
	eLR	08	40	15			
24	iP	11	16	32	0 = 11 06 10 (USCGS)	52 1/2°N 169 1/2°W	61.6°
	iS	11	24	55			
	eSS	11	29	47			
	eLQ	11	31	57			
	eLR	11	38	57			
24	i (P)	11	47	19	0 = 11 36 50 (USCGS)	52 1/2°N 171 1/2°W	62.6°
	i	11	47	56			
24	iP	16	42	52	0 = 16 32 28 (USCGS)	52 1/2°N 169 1/2°W	61.6°
	eS	16	51	17			
	eLQ	17	04	07			
	eLR	17	10	07			
24	eLQ	20	26	37			
	eLR	20	29	07			
25	iP	00	49	38	0 = 00 39 29 (USCGS)	53°N 167°W	59°
	ePP	00	52	15			
	eS	00	57	55			
	eLR	01	08	37			

## PALISADES, NEW YORK

Date	Phase	h	m	s	Origin Time	Coordinates	Distance
1957							
Mar.							
25	iP	01	14	44	0 = 01 03 59 (USCGS)	52°N 176°W	65.1°
25	e (P)	02	35	47	0 = 02 28 36 (USCGS)	13 1/2°N 91°W	34.6° Near Coast of Guatemala
	e (S)	02	40	07			
	eLR	02	43	37			
25	eS	05	55	23	0 = 05 37 25 (USCGS)	54°N 163 1/2°W	57.7° Unimak, Alaska
	eSS	05	59	27			
	eLQ	06	04	37			
	eLR	06	08	37			
25	eLR	07	40	07			
25	eL	10	56	37			
25	iP	14	23	36	0 = 14 13 33 (USCGS)	54°N 163 1/2°W	57.7°
	eS	14	31	45			
	eSS	14	36	33			
	eLQ	14	40	51			
	eLR	14	43	07			
25	e	18	11	03			
	eLR	18	32	39			
25	eLQ	18	44	12			Reville Gigedo
25	ePP	21	25	15	0 = 21 06 12 (BCIS)	60°S 27 3/4°W	South Sandwich Islands 107.9°
	eSKS	21	31	07			
	ePS	21	34	23			
	eSS	21	40	27			
	eLR	21	55	37			
26	eS	01	43	47	0 = 01 30 09 (BCIS)	20°N 109 3/4°W	Revilla Gigedo 36.9°
	eSS	01	46	31			
	eLQ	01	49	22			
26	iP	02	20	17	0 = 02 10 15 (USCGS)	54°N 165 1/2°W	58.7°
	eS	02	28	23			
	eLR	02	40	43			

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## PALISADES, NEW YORK

Date	Phase	h m s	Origin Time	Coordinates	Distance
1957					
Mar.					
26	iP e(S)	02 58 44 03 08 23	0 = 02 47 50 (USCGS)	51°N 177 1/2°W	66.4°
26	eP e(S) eLR	03 05 31 03 13 59 03 26 07	0 = 02 54 08 (BCIS)		
26	iP eS eLR	03 15 25 03 23 51 03 38 37	0 = 03 04 55 (USCGS)	51 1/2°N 170°W	62.3°
26	iP eLR	16 12 57 16 36 19	0 = 16 01 53 (USCGS)	50 1/2°N 180°W	68°
26	eLR	18 50 47	0 = 18 25 48 (USCGS)	Revilla Gigedo	
27	iP eLR	04 24 15 04 44 43	0 = 04 13 52 (USCGS)	52 1/2°N 170°W	61.8°
27	eLR	07 19 27			
27	eLR	14 00 39		New Britain	
28	iP	01 26 00	0 = 01 15 20 (USCGS)	51 1/2°N 174 1/2°W	64.7°
28	eLR	13 27 07	0 = 12 51 45 (BCIS)	55°N 166 1/4°W	60°
28	iP	14 32 19	0 = 14 21 05 (BCIS)		
28	eP	17 43 03			
28	iS iPS eSS eLQ eLR	20 27 27 20 27 39 20 31 39 20 41 11 20 43 51	0 = 20 08 20 (USCGS)	51°N 171 1/2°W	63.4°

## PALISADES, NEW YORK

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Date	Phase	h m s	Origin Time	Coordinates	Distance
1957					
Mar.					
29	iP p (Z) ePP ePcS eS iPS iPPS iScS iSS eLQ eLR	05 20 37 10 sec 4 mic (comp) 05 22 55 05 25 27 05 28 35 05 29 03 05 29 27 05 30 39 05 33 07 05 34 19 05 38 25	0 = 05 10 28 (USCGS)	53 1/2°N 167°W	59.8° Mag 6.7
29	iP i iS eScS eSS eSSS eLQ eLR	23 00 08 23 01 49 23 08 27 23 09 52 23 12 25 23 14 41 23 17 52 23 22 22	0 = 22 49 51 (USCGS)	53°N 169°W	61° Mag 6-6 1/4
30	iP iS e (PPS) eSS eLR	00 53 39 01 03 12 01 04 31 01 07 37 01 15 47	0 = 00 42 40 (USCGS)	51 1/2°N 179 1/2°W	66.5°
30	iP eLR	01 41 13 02 22 22			
30	iP eS eSS eLR	06 48 02 06 56 55 07 01 23 07 09 07	0 = 06 37 00 (USCGS)	51°N 180°W	67°
30	iP eS eSS eLR	09 27 43 09 36 23 09 41 03 09 48 52	0 = 09 17 00 (USCGS)	52°N 175°W	64.6°
31	eLR	02 44 37	0 = 02 23 05 (USCGS)	43 1/2°N 127 1/2°W	Off coast Oregon
31	iP eS ePS iScS eLQ eLR	10 19 33 10 28 11 10 28 31 10 29 19 10 36 07 10 40 43	0 = 10 08 28 (USCGS)	51 1/2°N 178°W	66.5°

Date	Phase	h	m	s	Remarks
1957					
Apr.					
1	iP	11	46	09	Andreanof Islands, Aleutians
	P (Z)	12	sec	2.5	USCGS 0 6 11 35 30
	es	11	54	43	51°N 173°W
	ePPS	11	55	07	Dist. 64.2°
	eSS	11	59	11	
	eLQ	12	05	37	
	eLR	12	07	07	
2	iP	00	50	21	Andreanof Islands, Aleutians
	ipP	00	50	35	USCGS 0 = 00 39 42
	iS	00	59	11	51°N 173°W
	ePS	00	59	43	Dist. 64.2°
	eScS	01	00	27	
	eSS	01	04	07	
	eLQ	01	10	47	
	eLR	01	13	07	
2	iP	20	27	38	Andreanof Islands, Aleutians
	e (PcP)	20	28	07	USCGS 0 = 20 16 57
	eS	20	36	25	51 1/2°N 173°W
	e (PS)	20	36	40	Dist. 64.4
	e (ScS)	20	37	35	
	e	20	43	35	
	eLQ	20	50	15	
	eLR	20	55	05	
2	iP	21	38	34	Andreanof Islands, Aleutians
	e (S)	21	45	55	USCGS 0 = 21 27 54
	i (PPS)	21	47	15	51°N 173°W
	e (SeS)	21	47	51	Dist. 64.2°
	e	21	54	59	
	eLR	22	02	55	
4	iP	00	22	06	Near coast Alaska Peninsula
	P (Z) 6 sec 2 mic				USCGS 0 = 00 13 08
	ipP	00	22	14	58°N 155 1/2°W
	iS	00	29	19	Dist. 52°
	iPS	00	29	27	
	ePPS	00	29	59	
	iScS	00	31	47	
	eSS	00	33	31	
	eLQ	00	34	07	
	eLR	00	37	19	

Date	Phase	h	m	s	Remarks
1957					
Apr.					
4	eLQ	07	33	35	Northern Kurile Islands
	eLR	07	36	07	
4	e	11	12	24	Southern Mendoza Province, Argentina
	i	11	22	03	No coordinates obtained
	e	11	22	39	
4	eLR	12	31	39	Hindu Kush
5	iP	03	00	11	Fox Islands, Aleutians
	ePcS	03	04	43	USCGS 0 = 02 49 39
	iS	03	08	43	52°N 172 1/2°W
	iSS	03	13	23	Mag 6 1/2
	eLQ	03	15	07	Dist. 63.4°
	eLR	03	16	59	
5	eSKS	07	55	39	Kermadec Island Region
	ePS	07	59	51	USCGS 0 = 07 30 22
	eSS	08	05	55	26 1/2°S 177°W
	e	08	14	55	Depth 100 km
	eLQ	08	23	03	Mag 6 3/4
	eLR	08	26	37	Dist. 116.5°
5	iP	16	18	32	Near coast Nicaragua
	ipP	16	18	48	USCGS 0 = 16 12 20
	eS	16	23	31	12 1/2°N 88°W
	eLR	16	26	37	Depth 100 km Dist. 32.5°
7	ePP	10	35	41	North coast of New Guinea
	iPKS	10	36	46	USCGS 0 = 10 14 08
	eSKS	10	40	16	1°S 137 1/2°E
	iSKKS	10	42	34	Mag 6 - 6 1/4
	iPS	10	45	50	Dist. 130.9°
	ePPS	10	47	22	
	e (PKPPKP)	10	50	46	
	eSS	10	53	10	
	iSKSSKS	10	55	26	
	e	10	56	38	
	eSSS	10	58	14	
	eLQ	11	10	06	
	eLR	11	16	46	

Date	Phase	h	m	s	Remarks
1957					
Apr.					
7	eLR	15	58	06	Mid Atlantic Ridge
8	i (P)	00	17	20	Andreanof Islands, Aleutians
	eLR	00	43	06	USCGS 0 = 00 06 37
8	e (P)	01	02	16	Andreanof Islands, Aleutians
	eLR	01	29	06	
8	eLQ	17	06	43	Fox Islands, Aleutians
	eLR	17	08	31	
8	eP	20	24	52	Panama-Costa Rica border
	P (Z)	10	sec	0.7 mic	USCGS 0 = 20 18 09
	iPP	20	26	03	8 1/2°N 83°W
	iS	20	30	19	Mag 6 1/2
	e(S)	20	30	35	Dist. 33.5°
	eLR	20	34	07	
9	eP	00	37	53	Off south coast of Honshu, Japan
	epP	00	39	31	USCGS 0 = 00 24 39
	esP	00	40	20	30 1/2°N 138 1/2°E
	iPKP	00	42	10	Depth 450 km
	i PPP	00	44	27	Mag 6 3/4
	ePKS	00	46	01	Dist. 102.4°
	iSKS	00	47	43	
	iSP	00	50	55	
	iPPS	00	51	35	
	eSSS	00	59	39	
	ePKPPKP	01	02	55	
	e	01	06	19	
	eLR	01	10	07	
9	eLR	03	07	07	Marianas Islands Region
9	iP	11	13	09	Andreanof Islands, Aleutians
	P (Z)	6	sec	1.5 mic comp from N	USCGS 0 = 11 02 09
	iS	11	22	07	51 1/2°N 178 1/2°W
	iPPS	11	22	31	Dist. 67°
	eSS	11	26	55	
	eLQ	11	30	07	
	eLR	11	33	37	

Date	Phase	h	m	s	Remarks
1957					
Apr.					
9	eP	20	34	25	Fox Islands, Aleutians
	eLQ	20	54	47	USCGS 0 = 20 23 56
	eLR	20	57	37	52 1/2°N 169°W
10	eLR	03	54	37	Aleutians
10	iP	05	18	40	Near coast of Oaxaca, Mexico
	P (Z)	10	sec	3.5 mic comp from SW	USCGS 0 = 05 12 08
	iPP	05	19	59	15 1/2°N 98°W
	iS	05	24	03	Mag 6 3/4 - 7
	eLR	05	27	05	Dist. 32.9°
10	eLR	07	40	07	Guatemala
10	iP	09	20	13	Andreanof Islands, Aleutians
	iS	09	29	11	USCGS 0 = 09 09 18
	eLR	09	43	07	51°N 177°W
10	iP	11	39	13	Kodiak Island Region
	P (H)	13	sec	3 mi	USCGS 0 = 11 29 58
	iS	11	46	35	56°N 154°W
	iSS	11	49	59	Mag 7
	eLQ	11	51	55	Dist. 51.9°
	eLR	11	55	00	
10	iP	13	31	02	Aleutians
10	eLR	23	24	07	Near coast of Guatemala
11	e	01	44	15	S. W. of Samoa
	eLR	02	00	47	BCIS 0 = 01 10 03
11	e	07	18	39	Samoa Islands
	eLR	07	25	07	
11	eLR	11	07	27	Fox Islands, Aleutians
11	eP	17	51	55	Fox Islands, Aleutians
	eL	18	07	06	
12	iP	04	28	40	Andreanof Islands, Aleutians
	eLR	04	52	05	

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Apr.					
12	iP	13	14	17	Andreanof Islands, Aleutians
	eLR	14	04	25	USCGS 0 = 13 03 45
13	eP	03	51	27	Off coast of Vancouver Island,
	iPP	03	52	46	British Columbia
	eS	03	57	30	USCGS 0 = 03 44 00
	eSS	04	00	10	48 1/2°N 128°W
	eLR	04	02	36	Dist. 38.3°
13	eLR	05	46	00	Fox Islands, Aleutians
13	ePKP	10	30	10	Near S. coast Mindanao, Philippine
	eLR	11	14	14	Islands
13	i (P)	15	49	39	Northern Chile
14	eLR	01	21	27	Gulf of California
					BCIS 0 = 01 03 08
14	ePP	07	30	35	Southern Tibet
	eSKS	07	36	47	USCGS 0 = 07 11 50
	ePS	07	39	43	31°N 84 1/2°E
	ePPS	07	40	51	Mag 6 1/4
	eSS	07	45	23	Dist 105.3°
	eLQ	07	57	43	
	eLR	08	00	51	
14	iP	08	29	39	Windward Passage
14	eP	19	32	27	Samoa Islands
	e(PKP)	19	35	47	USCGS 0 = 19 17 57
	ePP	19	36	43	15 1/2°S 173°W
	ePKS	19	39	59	Mag 8
	iSKS	19	43	07	Dist. 106.8°
	eSKKS	19	44	15	
	iPS	19	45	59	
	iPPS	19	47	07	
	iSS	19	51	55	
	eLQ	20	02	59	
	eLR	20	07	19	
14	iP	21	10	01	Andreanof Islands, Aleutians

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Apr.					
15	iP	10	49	34	Andreanof Islands, Aleutians
	eS	10	58	23	USCGS 0 = 10 38 37
	eSS	11	03	19	51 1/2°N 179°W
	eLQ	11	08	37	Dist. 66.9°
	eLR	11	10	31	
15	iP	21	43	18	Fox Islands, Aleutians
	P (Z) 12 sec 3 mic				USCGS 0 = 21 33 05
	eS	21	51	35	52 1/2°N 167°W
	eSS	21	56	07	Dist. 60.5°
	eLQ	22	04	51	
	eLR	22	06	07	
16	iPKP	04	22	36	Western Java Sea
	PKP (Z) 12 sec 28 mic				USCGS 0 = 04 04 04
	dil from NE				4 1/2°S 107 1/2°E
	ipPKP	04	24	41	Depth 600 km
	i(pPKP <sub>2</sub> )	04	24	52	Mag 7 1/2
	iPP	04	25	47	Dist. 143.5°
	iPKS	04	26	19	
	iSKS	04	28	27	
	ipPKS	04	28	55	
	isPP	04	30	07	
	iSKKS	04	32	03	
	iSKKP	04	33	23	
	isPS	04	40	15	
	eSS	04	43	19	
	eSSS	04	49	31	
	eLQ	04	57	31	
	eLR	05	01	07	
17	eLQ	05	02	37	Kodiak Island
	eLR	05	07	37	USCGS 0 = 04 35 47
					56°N 154°W
17	iP	09	38	21	Fox Islands, Aleutians
	ePP	09	40	37	USCGS 0 = 09 27 54
	ePPP	09	41	47	52 1/2°N 171°W
	eS	09	46	47	Dist. 62.3°
	ePPS	09	47	17	
	eSS	09	51	37	
	eLR	09	57	17	

Date	Phase	h	m	s	Remarks
1957					
Apr.					
17	iP	13	35	16	Fox Islands, Aleutians
	eS	13	43	35	USCGS 0 = 13 24 58
	eScS	13	44	59	52 1/2°N 169°W
	eSS	13	48	21	Dist. 61.3°
	eLQ	13	51	07	
	eLR	13	53	27	
17	eLR	15	40	07	South of Unimak Island
17	iP	18	15	45	Mexico-Guatemala Border
	ePP	18	16	44	USCGS 0 = 18 09 26
	ePPP	18	17	16	14 1/2°N 92°W
	ePcP	18	18	12	Dist. 30.8°
	eS	18	20	52	
	eLQ	18	22	08	
	eLR	18	24	38	
18	iP	00	26	41	Fox Islands, Aleutians
	eS	00	35	16	USCGS 0 = 00 16 17
	ePS	00	35	24	52°N 171°W
	eLR	00	48	08	Dist. 62.1°
18	iP	07	10	50	Andreanof Islands, Aleutians
	ePcP	07	10	59	USCGS 0 = 07 00 03
	eS	07	19	32	52°N 176 1/2°W
	eLR	07	31	48	Dist. 65.7°
18	eLR	23	16	28	South of Honshu, Japan
19	eLR	06	01	08	
19	eLR	07	37	08	Aleutians
19	eLR	09	23	04	Solomon Islands
19	eLR	09	41	20	Solomon Islands ?
19	iP	15	55	13	Fox Islands, Aleutians
	ePcP	15	55	52	USCGS 0 = 15 44 53
	iS	16	03	36	51 1/2°N 168 1/2°W
	eSS	16	08	12	Dist. 61.4°
	eL	16	15	08	

Date	Phase	h	m	s	Remarks
1957					
Apr.					
19	iP	22	29	38	Fox Islands, Aleutians
	P (Z) 12 sec	15	micdil		USCGS 0 = 22 19 26
	iPP	22	31	52	52°N 166 1/2°W
	iPPP	22	33	16	Mag 7 - 7 1/4
	iS	22	37	52	Dist. 59.5°
	iPPS	22	38	56	
	iSS	22	42	40	
	eLQ	22	47	38	
	eLR	22	50	08	
20	ePS	07	16	12	South Pacific Ocean
	eSS	07	22	08	USCGS 0 = 06 48 04
	eLQ	07	32	56	54 1/2°S 131 1/2°W
	eLR	07	39	08	Dist. 107.4°
20	iPKP	12	49	51	Near coast of New Guinea
	ePP	12	51	52	USCGS - 0 = 12 30 37
	ePKS	12	53	08	6°S 147 1/2°E
	ePKKP	13	00	08	Dist. 129.2°
	ePKKS	13	02	56	
	e(ScSPKP)	13	04	40	
	eSKKS	13	06	36	
	eSS	13	08	56	
	e	13	10	04	
	eSSSS	13	16	56	
	eLQ	13	24	08	
	eLR	13	30	23	
20	iP	14	22	19	Andreanof Islands, Aleutians
					BCIS 0 = 14 11 45
21	iP	21	19	11	Colombia - Venezuela Border
	P (Z) 10 sec	4	mic		USCGS 0 = 21 12 26
					7°N 72°W
	iPP	21	20	41	Mag 6 1/2-6 3/4
	iS	21	24	29	Dist. 34.0°
	eLQ	21	26	09	
	eLR	21	27	13	
23	eP	09	26	36	Northern Alabama
	eS	09	28	53	USCGS 0 = 09 23 39
	e	09	29	52	34 1/2°N 86 3/4°W
					Dist. 12.0°

Date	Phase	h	m	s	Remarks
1957					
Apr.					
23	eLR	12	14	21	
23	eP	22	09	38	Northern Chile-Argentine Border
	eS	22	18	37	USCGS 0 = 21 58 35
	eSS	22	22	53	27°S 68°W
	eSSS	22	26	17	
	e(LQ)	22	27	33	Dist. 68.2°
	eLR	22	39	53	
24	iPKP	16	54	42	Java Sea BCIS 0 = 16 35 03 4 1/2°S 112°E Dist. 145.4°
24	iP	19	21	53	Turkey Foreshock
	P (Z) 10 sec 3 mic comp from N. E-				USCGS 0 = 19 10 05
	ipP	19	22	00	36°N 28 1/2°E
	i	19	22	13	Mag 6 3/4-7
	iPcP	19	22	18	Dist. 75.2°
	ePP	19	24	46	
	ePPP	19	26	18	
	iS	19	31	26	
	iPS	19	31	54	
	iPPS	19	32	22	
	iSS	19	36	10	
	eLQ	19	41	58	
	eLR	19	45	10	
25	iP	02	37	19	Near south coast of Turkey
	P (Z) 8 sec 7.5 mic comp from N. E.				USCGS 0 = 02 25 36 36 1/2°N 29°E Mag 7 - 7 1/4 Dist. 75.2°
	ipP	02	37	29	
	i	02	37	42	
	iPcP	02	37	46	
	ePP	02	40	06	
	ePPP	02	41	38	
	iS	02	46	58	
	iPS	02	47	30	
	iPPS	02	48	06	
	eSS	02	51	34	
	e(Sn)	02	55	34	
	eLQ	02	57	10	
	eLR	03	00	10	

Date	Phase	h	m	s	Remarks
1957					
Apr.					
25	iP	07	25	54	Andreanof Islands, Aleutians
	P (Z) 6 sec 2 mic				USCGS 0 = 07 15 15
	i	07	26	00	52°N 173 1/2°W
	ipP	07	26	06	Mag. 5.9
	iS	07	34	30	Dist. 64.8°
	iPS	07	34	50	
	eLQ	07	41	40	
	eLR	07	47	06	
25	iP	08	25	39	Aleutians BCIS 0 = 08 14 09
25	eLR	11	16	40	Off coast of New Guinea
25	iPKP	11	25	26	Molucca Passage
	eLR	12	09	40	
25	iP	14	16	28	Near south coast of Alaska
	e(S)	14	23	02	USCGS 0 = 14 07 58
	eLQ	14	31	10	60 1/2°N 145°W
	eRg	14	35	46	Dist. 46.2°
25	iP	17	56	14	Andreanof Islands, Aleutians
	e (S)	18	05	14	USCGS 0 = 17 45 14
	eLQ	18	14	10	51 1/2°N 180°W
	eLR	18	17	30	Dist. 66.5°
25	eS	22	09	50	Imperial County, California
	eSS	22	12	50	USCGS 0 = 21 57 36
	eLQ	22	13	40	33°N 115 1/2°W
	eLR	22	15	34	Mag. 5.4 Dist. 33.8°
25	eLQ	22	40	22	Imperial County, California
	eLR	22	41	58	USCGS 0 = 22 24 11 Mag. 5.3 Dist. 33.8°
26	iP	04	43	11	Aleutians
	eLR	05	10	40	BCIS 0 = 04 32 28



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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Apr.					
26	iP	06	45	28	Turkey Aftershock
	eS	06	54	54	USCGS 0 = 06 33 32
	ePS	06	55	58	36 1/2°N 29°E
	eSS	06	59	34	Dist. 75.2°
	eLQ	07	04	10	
	eLR	07	10	22	
26	iP	10	31	54	Near south coast Alaska
	iPP	10	33	50	USCGS 0 = 10 23 17
	eS	10	38	54	60°N 147°W
	eSS	10	42	10	Dist. 47.3°
	eLQ	10	42	30	
	eLg	10	48	40	
26	iPn	11	41	05.8	200 km north of Boston, U. S. A.
	i (P)	11	41	15	BCIS 0 = 11 40 01
	iSn	11	41	42	
	iSg	11	41	58	
26	iP	15	21	10	Kurile Islands
	eLQ	15	46	41	USCGS 0 = 15 08 22
	eLR	15	52	41	45°N 148°E
					Dist. 86.1°
27	eLR	01	04	41	Near coast of Celebes
27	eLR	03	09	11	Hindu Kush
27	eLR	05	03	11	Near coast of Central Chile
27	e	12	13	27	Loyalty Islands
	e	12	16	03	USCGS 0 = 11 30 33
	eLR	12	33	23	20°S 170°E
					Depth 100 km
					Dist. 122.4°
27	eP	12	59	43	Andreanof Islands, Aleutians
	eLR	13	23	23	USCGS 0 = 12 48 25
27	iP	22	02	32	Aleutians
	eLR	22	31	59	BCIS 0 = 21 51 50

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
Apr.					
28	iPKP	01	42	52	Off coast Mindanao, Philippine
	iPP	01	44	57	Islands, USCGS 0 = 01 23 40
	iPKS	01	46	11	7°N 127°E
	ePPP	01	47	35	Mag. 5 3/4 - 6
	eSKKS	01	52	07	Dist. 128.3°
	ePS	01	54	55	
	e (PPS)	01	57	47	
	eSS	02	01	55	
	e	02	02	51	
	e	02	03	31	
	eSSS	02	07	27	
	eLQ	02	16	41	
	eLR	02	24	11	
28	ePP	10	57	25	Solomon Islands
	ePPS	11	08	27	USCGS 0 = 10 36 41
	ePKPPKP	11	14	31	6°S 155°E
	eLR	11	32	41	Depth 60 km
					Dist. 118.9°
28	iP	14	59	13	Fox Islands, Aleutians
	P (Z) 12 sec	1.5	mic	dil.	USCGS 0 = 14 48 52
	ePPP	15	02	55	52 1/2°N 168 1/2°W
	iS	15	07	33	Dist. 60.5°
	eScS	15	08	47	
	eSS	15	11	19	
	e	15	12	19	
	eLQ	15	14	27	
	eLR	15	21	59	
28	iP	20	14	37	Andreanof Islands, Aleutians
	eLQ	20	36	11	USCGS 0 = 20 03 42
	eLR	20	41	11	50 1/2°N 178°W
					Dist. 66.5°
29	iP	04	40	23	Fox Islands, Aleutians
	ePP	04	42	19	USCGS 0 = 04 30 04
	eS	04	48	43	52 1/2°N 169°W
	ePS	04	48	51	Dist. 61.3°
	eSS	04	53	23	
	eLQ	04	55	19	
	eLR	05	01	19	

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Apr.					
29	iP	10	22	03	Argentine-Bolivia border
	eS	10	30	11	USCGS 0 = 10 11 53
	eLR	10	36	41	22°S 66°W Depth 200 km Dist. 63.4°
29	e	19	09	27	
	eLR	19	12	41	
29	iPKP	21	15	46	Off south coast of Java
	e(PP)	21	18	19	USCGS 0 = 20 55 57
	ePKS	21	19	19	9°S 107°E
	ePKKP	21	24	41	Dist. 146.0°
	eSKKKS	21	26	19	
	eSKKKS	21	33	39	
	eSS	21	37	23	
	eLR	22	08	00	
30	eL	10	04	31	



LAMONT GEOLOGICAL OBSERVATORY  
COLUMBIA UNIVERSITY  
PALISADES, NEW YORK

●  
SEISMOLOGICAL BULLETIN

By  
RUTH B. SIMON

1 May 1957 - 31 August 1957

LAMONT GEOLOGICAL OBSERVATORY  
Contribution No. 316

## STATION CONSTANTS, 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.  
 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.

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 6 hours.

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks	
1957						
May 1	iP	23	38	37	Fox Islands, Aleutians	
	eLR	25	58	23	USCGS 0 = 23 28 09 52 1/2°N 171°W Dist. 62.3°	
	2	iP	02	32	21	Fox Islands, Aleutians
	eLR	02	50	51	USCGS 0 = 02 22 18 54°N 166°W Dist. 59°	
	2	iP (comp)	04	01	54	Baffin Bay
	iPP	04	02	39	USCGS 0 = 03 55 34	
	iPPP	04	02	51	72°N 67 1/2°W	
	iS	04	06	59	Mag 6 1/4-6 1/2	
	eLQ	04	08	27	Dist. 31.2°	
	eLR	04	10	47		
	2	ePS	11	01	59	South Pacific Ocean
	eSS	11	07	59	USCGS 0 = 10 34 14	
	eLQ	11	18	11	56 1/2°S 123°W	
	eLR	11	24	51	Dist. 105.8°	
	2	iP	11	39	32	Fox Islands, Aleutians
	i (S)	11	47	51	USCGS 0 = 11 29 13	
	eLQ	12	01	21	52 1/2°N 169°W Dist. 61.3°	
	2	iP	11	49	13	Fox Islands, Aleutians
	i (S)	11	57	33	USCGS 0 = 11 38 52 52 1/2°N 169°W Dist. 61.3°	
	2	iPKP	21	54	59	Flores Sea
	ipPKP	21	57	43	USCGS 0 = 21 36 25	
	e(sPKP)	21	59	23	7 1/2°S 120°E	
	e (SKS)	22	00	21	600 km deep	
	i SKKS	22	04	11	Dist. 144.6°	
	eSKKKS	22	04	43		
	eSP	22	07	29		
	eSPP	22	09	07		
	e	22	10	11		
	eSS	22	16	15		
	eSSS	22	20	41		
	eSSSS	22	25	23		

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
May 3	eLQ	02	40	23	
	eLR	02	47	41	
3	eLQ	07	43	41	Andreanof Islands,
	eLR	07	49	11	Aleutians
3	eLR	10	36	41	Aleutians
3	eLR	12	55	11	Easter Islands
3	eLR	16	57	11	Aleutians
4	eScSPKP	10	40	39	Western New Guinea
	eSS	10	45	36	USCGS 0 = 10 05 45
	eLQ	11	07	11	3 1/2°S 137°E
	eLR	11	13	41	Dist. 133.5°
4	e	23	43	16	Fox Islands, Aleutians
5	eLQ	00	08	41	BCIS 0 = 23 31 07
	eLR	00	13	11	
6	i (P)	11	28	51	Aleutians
6	iP	11	30	25	Andreanof Islands,
	P (Z) 4 sec 1miccomp				Aleutians
	eS	11	37	27	USCGS 0 = 11 19 47
	e	11	39	03	52°N 173°W
	eLR	11	43	41	Dist. 66.6°
6	eLQ	15	56	11	Northern Iran
	eLR	15	58	11	
7	e (S)	01	32	27	Off coast Ecuador
	eSS	01	35	27	USCGS 9 = 01 18 28
	eLQ	01	36	11	10°N 85 1/2°W
	eLR	01	37	43	Dist. 41.2°
7	iP	05	47	34	Andreanof Islands,
	eS	05	56	31	Aleutians
	eScS	05	57	25	USCGS 0 = 05 36 32
	eLQ	06	04	47	51 1/2°N 179 1/2°E
	eLR	06	08	11	Dist. 67°

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
May 7	iP	09	20	20	Fox Islands, Aleutians
	eLR	09	43	59	
7	eLR	22	13	31	Guatemala
8	eLR	10	39	11	
8	e	20	16	19	Japan
8	eLQ	20	55	11	Fiji Islands
	eLR	21	04	19	
10	e	16	11	01	
	e	16	17	19	
	e	16	20	31	
	eLR	16	34	11	
11	eS	07	50	43	Andreanof Islands,
	eLQ	08	02	19	Aleutians
	eLR	08	04	23	USCGS 0 = 07 30 22
					51 1/2°N 178 1/2°W
					Dist. 66.3°
12	eP	05	02	11	South Sandwich Islands
	ePKP	05	06	11	USCGS 0 = 04 47 44
	ePP	05	06	55	60 1/2°S 26°W
	ePPP	05	08	53	Dist. 108.6°
	eSKS	05	12	55	
	eS	05	14	23	
	ePS	05	16	03	
	eSS	05	22	27	
	e	05	30	11	
	eLQ	05	34	41	
	eLR	05	38	11	
12	eLR	07	31	47	Northern Sakhalin

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
May 12	ePKP	11	48	51	Near south coast of Java
	iPKP	11	48	53	USCGS 0 = 11 29 07
	iPKP	11	49	19	8 1/2°S 107 1/2°E
	ePP	11	51	59	Dist. 147.2°
	iPKS	11	52	35	
	ePPP	11	55	26	
	eSKKS	11	59	27	
	ePPS	12	04	59	
	eSS	12	11	23	
	eSSS	12	17	19	
	eLQ	12	34	55	
	eLR	12	40	35	
13	eLR	00	24	35	Samoa
13	e	14	27	46	Western North Carolina
	e	14	28	42	USCGS 0 = 14 24 58
	e	14	29	03	
14	eL	05	55	31	Aleutians
14	i (P)	18	54	08	Andreanof Islands,
	e	19	05	20	Aleutians
	eLR	19	20	10	
15	i	02	17	29	Chiapas, Mexico
	eL	02	19	10	
17	e (SS)	20	55	33	Revilla Gigedo Islands
	eLQ	20	58	01	
	eLR	21	00	22	
18	iP	05	34	34	Fox Islands, Aleutians
	P (Z) 10 sec 2.5mic dil				USCGS 0 = 05 24 01
	iPcP	05	35	05	51°N 171°W
	iPP	05	36	57	Dist. 63.2°
	iS	05	43	09	
	iPS	05	43	49	
	eSS	05	48	05	
	e	05	50	17	
	eLQ	05	54	49	
	eLR	05	56	09	

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
May 19	iP	05	28	57	Central Peru
					BCIS 0 = 05 19 32
					13 3/4°S 76 3/4°W
19	iP	07	26	34	West of Galapagos Isls.
	eS	07	34	05	USCGS 0 = 07 17 20
	eSS	07	37	45	(no coordinates obtained)
	eLQ	07	41	37	
	eLR	07	42	49	
19	iP	21	06	50	Near coast of Nicaragua
	P (Z) 6 sec. 1.5mic comp.				USCGS 0 = 21 00 36
	ePP	21	07	49	12°N 87°W
	eS	21	12	01	Depth 100 km
	esS	21	12	33	Dist. 31.2°
	eLQ	21	14	01	
	eLR	21	15	33	
20	iP	02	01	55	Andreanof Islands,
	P (Z) 6 sec 1.5mic				Aleutians
	ePP	02	04	41	51°N 180°
	e (PcS)	02	07	17	Mag 6
	iS	02	10	57	Dist. 67.8°
	eSS	02	15	29	
	eSSS	02	19	29	
	eLR	02	23	57	
20	eLR	06	56	09	Costa Rica
20	e	21	44	09	
	eL	21	46	09	
21	eP	01	26	33	Marianas Islands
	iPP	01	30	41	USCGS 0 = 01 11 58
	ipPP	01	31	09	21 1/2°N 144°E
	iSKS	01	36	39	Depth 100 km
	iSKKS	01	37	25	Mag 7-7 1/4
	iS	01	38	09	Dist. 108.4°
	iPS	01	39	41	
	iSPP	01	40	25	
	i	01	42	39	
	iss	01	45	49	
	eSSSS	01	53	17	
	eLQ	01	57	09	
	eLR	02	01	49	

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
May 21	eLR	12	39	25	
22	iP	13	40	39	Andreanof Islands, Aleutians
	P (Z) 12 sec 4 mic				
	iPcP	13	41	14	USCGS 0 = 13 29 44
	ePP	13	42	46	50°N 177°W
	iS	13	49	36	Mag 6 1/2
	iPS	13	50	04	Dist. 66.5°
	eScS	13	50	52	
	eSS	13	54	16	
	eLQ	13	57	08	
	eLR	13	59	34	
22	eS	18	48	32	Svalbard Islands
	eLR	18	55	12	USCGS 0 = 18 32 35 77°N 5°E Dist. 47.9°
23	eLR	05	18	00	
24	iP	02	44	56	Colombia
	P (Z) 8 sec 3miccomp				USCGS 0 = 02 37 37
	ipP	02	45	10	3°N 76 1/2°W
	iPP	02	46	31	Mag 6 3/4
	iS	02	50	37	Dist. 38.1°
	eSS	02	53	11	
	iScS	02	54	55	
	eLR	02	55	07	
24	iP	03	46	42	Fox Islands, Aleutians
	epP	03	46	50	USCGS 0 = 03 36 33
	ePP	03	48	55	53°N 167 1/2°W
	iS	03	54	55	Mag 6 1/4
	eSS	03	58	55	Dist. 60.3°
	eLQ	04	02	37	
	eLR	04	04	37	
24	eLR	13	41	07	Samoa Islands Region
25	eLR	06	07	37	Southwest of Spitzbergen
25	eLR	08	53	37	Aleutian Islands

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
May 25	eLR	19	29	37	South Sandwich Islands
25	eLR	19	43	23	
26	eLR	04	51	47	Fox Islands, Aleutians
26	iP	06	45	09	Bolu Province, Turkey
	P (Z) 8 sec 2mic dil from NE				USCGS 0 = 06 33 31
	iPcP	06	45	20	41°N 31°E
	ePP	06	48	07	Mag 7
	iPPP	06	49	40	Dist. 73.5°
	iS	06	54	43	
	iPPS	06	55	52	
	e	06	58	43	
	iSS	06	59	32	
	eSSS	07	02	55	
	eLQ	07	04	37	
	eLR	07	08	17	
26	eL	16	17	39	
26	eLR	16	59	07	Imperial County, California
27	eLR	11	14	19	
27	eP	11	13	07	Turkey aftershock
	ePP	11	15	53	USCGS 0 = 11 01 26
	eS	11	22	39	40 1/2°N 31°E
	eSS	11	27	19	Dist. 73.1°
	eLQ	11	32	47	
	eLR	11	35	07	
27	eLR	20	31	07	Fox Islands, Aleutians
28	e	00	46	49	Samoa Islands
	e	00	55	19	USCGS 0 = 00 19 10
	eLR	01	11	07	(no coordinates ob- tained)
28	eLR	01	55	39	Fox Islands, Aleutians

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
May 28	ePS	06	20	19	Pakistan-Burma border
	ePPS	06	21	03	USCGS 0 = 05 51 30
	eSS	06	26	43	25 1/2°N 95°E
	eSSS	06	30	47	Dist. 112.7°
	eLR	06	38	15	
29	eP	07	36	47	Pacific, north of Easter Islands
	iS	07	45	31	
	eScS	07	46	47	BCIS 0 = 07 26 07
	eSS	07	49	39	14°S 112°W
	eSSS	07	53	15	Dist. 66°
	eLQ	07	55	31	
	eLR	07	57	59	
29	iPKP	08	10	32	Near Celebes
	ipPKP	08	10	55	BCIS 0 = 07 51 22 4 1/2°S 121°E Dist. 141.5°
29	eLR	10	57	07	Japan
30	eP	00	33	54	Tonga Islands
	ePP	00	38	30	USCGS 0 = 00 18 52
	eSKS	00	44	12	20°S 175°W
	eSKS <sub>2</sub>	00	44	50	Dist. 111.1°
	eSKKS	00	45	14	
	ePS	00	47	26	
	ePKKS	00	52	26	
	eSS	00	53	14	
	ePKPPKP	00	56	46	
	eLQ	01	07	06	
	eLR	01	12	58	
30	eLR	09	37	36	
30	eL	17	43	22	Mexico
30	e	20	08	02	South of Hokkaido, Japan
	e	20	21	42	
	eLQ	20	29	54	USCGS 0 = 19 49 25
	eLR	20	36	18	41 1/2°N 143°E Dist. 91.1°

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
May 30	eLQ	23	48	06	Tonga Islands aftershock
	eLR	23	52	26	
31	iP	02	26	39	Santiago Province, Argentina
	P (Z) 8 sec 4mic dil from SW				
	iPcP	02	26	45	USCGS 0 = 02 16 27
	epP	02	28	34	27 1/2°S 63°W
	ePP	02	29	14	Depth 600 km
	iS	02	34	58	Mag 6 1/2
	eScS	02	35	30	Dist. 69°
	esS	02	38	14	
	esPS	02	39	30	
	eSS	02	40	42	
	eSSS	02	43	26	
	e	02	44	30	
	eLR	02	46	06	
31	eS	03	28	10	Unimak Island region
	eSS	03	32	06	USCGS 0 = 03 10 18
	eLR	03	38	36	54°N 163 1/2°W Dist. 57.7°
31	eLQ	08	07	06	Near coast Colima, Mexico
	eLR	08	08	50	BCIS 0 = 07 47 09
31	eLR	20	59	26	
31	iP	22	04	54	Colombia
	P (Z) 6 sec 1.5mic dil from S.				
	ePP	22	06	16	USCGS 0 = 21 57 46
	ePPP	22	06	33	3 1/2°N 77°W
	eS	22	10	20	Depth 100 km
	ePcS	22	10	38	Dist. 37.5°
	e	22	11	22	
	eSS	22	13	06	
	eLR	22	15	06	
31	iP	22	28	09	Andreanof Islands, Aleutians
	e (S)	22	37	06	
	eLR	22	51	46	USCGS 0 = 22 17 10 51°N 179 1/2°W Dist. 68°



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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
June 1	e	01	41	10	Near south coast of
	cLQ	01	44	14	Alaska
	eLR	01	46	06	BCIS 0 = 01 23 31 57 1/2°N 137 1/2°W
1	eLQ	06	00	36	Northern Turkey after-
	eLR	06	05	36	shock
1	eP	12	11	51	
	i	12	12	01	
	e	12	16	03	
1	e	12	56	37	
1	iP	16	12	41	Alaska Peninsula
	eLQ	16	24	36	USCGS 0 = 16 03 52
	eLR	16	27	50	59 1/2°N 150 1/2°W Dist. 47.5°
1	eP	19	43	08	Galapagos Islands
	ePcS	19	49	06	USCGS 0 = 19 35 08
	eS	19	49	30	1°N 91°W
	eScS	19	52	58	Dist. 42.8°
	eLQ	19	54	06	
	eLR	19	55	36	
1	eLQ	23	02	58	Aleutians
	eLR	23	07	06	
2	eL	18	32	06	
2	eLQ	21	59	02	Kamchatka
	eLR	22	04	06	USCGS 0 = 21 21 45 52 1/2°N 160°E
2	iPKP	23	20	27	East of Java
3	eLQ	00	14	02	Gulf of California
	eLR	00	15	18	BCIS 0 = 23 56 51 29°N 112°W

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
June 4	eLQ	01	07	06	Unimak Island, Aleutians
	eLR	01	11	06	
4	ePS	11	44	54	Santa Cruz Islands
	e (PPS)	11	45	26	USCGS 0 = 11 14 50
	e (SS)	11	52	06	10 1/2°S 166 1/2°E
	eLQ	12	05	15	Dist. 119.1°
	eLR	12	12	30	
4	epP	17	21	02	Fiji Islands
	ePP	17	23	28	USCGS 0 = 17 05 02
	iSKS	17	28	34	17 1/2°S 178°W
	iSKKS	17	29	41	Depth 550 km
	eS	17	30	31	Mag 6 1/4-6 1/2
	iSP	17	32	30	Dist. 111.9°
	eSPP	17	33	20	
	ePPS	17	34	18	
	e	17	35	14	
	eSS	17	38	32	
4	e	20	37	06	Tonga Islands
	eL	21	29	06	Depth 250 km
4	eS	23	15	06	Probably Aleutian
	eSS	23	19	06	Islands
	eLQ	23	21	56	
	eLR	23	27	06	
5	iP	07	22	15	North Atlantic Ocean
	P (Z) 4 sec 0.25 mic comp				USCGS 0 = 07 16 17
	ePP	07	22	46	52 1/2°N 35°W
	eS	07	27	06	Mag 5.6 (Uppsala)
	eLQ	07	27	36	Dist. 28.8°
	eLR	07	29	24	
5	e	08	46	10	South of Alaska
	eL	08	50	26	
5	e	10	08	54	
	eL	10	14	14	

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
June 5	iP	14	09	21	Kamchatka
	P (Z) 6 sec 0,5 mic dil				USCGS 0 = 13 57 42
	e	14	09	54	53°N 162 1/2°E
	ePP	14	12	14	Mag 5,8 (Uppsala)
	ePPP	14	13	38	Dist. 74,3°
	eS	14	18	58	
	e (SS)	14	23	06	
	e	14	24	22	
	eLQ	14	27	18	
	eLR	14	30	46	
5	e	22	22	00	
5	eP	22	26	14	Northwest of Isle of
	ePP	22	30	06	Tristan da Cunha
	eSKS	22	36	42	BCIS 0 = 22 12 55
	eS	22	37	22	36°S 16°W
	ePS	22	38	26	Dist. 93,9°
	eSS	22	43	30	
	eLQ	22	51	06	
	eLR	22	55	36	
6	iP	03	41	14	Andreanof Islands,
	eS	03	50	06	Aleutians
	eScS	03	51	06	USCGS 0 = 03 30 22
	eSS	03	55	06	52°N 178°W
	eLQ	04	01	36	Dist. 67°
	eLR	04	05	58	
6	iP	05	48	56	Fox Islands, Aleutians
	P (Z) 4 sec 0,5 mic comp				USCGS 0 = 05 38 27
	iS	05	57	23	52°N 171 1/2°W
	eScS	05	58	42	Dist. 62,5°
	eSS	06	01	30	
	e	06	02	34	
	eLR	06	07	36	

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
June 6	ePKS	20	12	27	Molucca Passage
	eSKS	20	16	11	USCGS 0 = 19 49 47
	e	20	16	31	3°N 125 1/2°E
	eSKKS	20	18	15	Dist. 132,2°
	ePS	20	21	32	
	ePPS	20	23	20	
	ePPP	20	24	15	
	eSS	20	28	55	
	eSKSSKS	20	31	11	
	eSSSS	20	37	35	
	eLQ	20	41	47	
	eLR	20	49	07	
7	eLQ	00	50	17	Sinkiang, China
	eLR	00	52	47	
7	eLQ	03	17	27	Aleutian Islands
	eLR	03	20	07	
8	eLR	04	21	46	
8	eLR	04	56	43	
8	eLQ	06	57	47	New Ireland
	eLR	07	09	47	
8	eLR	18	03	17	Tonga Islands
8	iPKP	21	39	36	South of Sumatra
8	eLR	23	16	10	Loyalty Islands
9	eLQ	12	07	47	Loyalty Islands
	eLR	12	09	15	
9	eLR	21	21	08	Fox Islands, Aleutians

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
June 10	iPKP	01	19	40	Sumbawa
	PKP (Z) 8 sec 8 mic comp.				USCGS 0 = 00 59 54
	ipPKP	01	20	10	9°S 117°E
	i	01	20	56	Mag 6 3/4
	i	01	21	56	Deeper than normal
	iPKS	01	23	06	Dist. 146.5°
	iPKS	01	23	32	
	ePPP	01	26	18	
	iSKKS	01	29	40	
	iPS	01	33	44	
	ePPS	01	35	08	
	eSS	01	41	44	
	esSS	01	42	36	
	eSSS	01	47	18	
	e (SSSS)	01	50	48	
	e (LR)	02	00	00	
10	iP	02	41	49	Andreanof Islands, Aleutians
10	eLR	04	06	48	Marianas Islands
11	eP	04	14	38	Unimak Island Region
	eS	04	22	48	USCGS 0 = 04 04 33
	eSS	04	26	55	54°N 165°W
	eLQ	04	30	08	Dist. 58.6°
	eLR	04	32	08	
11	iP	15	05	04	Kermadec Islands
	iPKP	15	08	31	USCGS 0 = 14 49 47
	iPP	15	09	52	30°S 178°W
	iSKS	15	15	24	Mag 6 3/4-7
	iSKKS	15	16	44	Depth 100 km
	ePS	15	19	38	Dist. 118.8°
	iSS	15	26	08	
	eSSS	15	30	16	
	eSSSS	15	34	08	
	eLQ	15	39	48	
	eLR <sub>1</sub>	15	44	28	
	eLR <sub>2</sub>	16	49	08	

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
June 11	e (P)	19	04	48	Luzon, Philippine Islands
	iPKP	19	08	17	USCGS 0 = 18 49 24
	iPP	19	09	44	18°N 120 1/2°E
	ePPP	19	12	40	Mag 6.8 (Uppsala)
	e (SKS)	19	14	20	Dist. 119.7°
	eSKKS	19	16	32	
	eSKKKS	19	17	08	
	ePS	19	19	28	
	eSS	19	26	08	
	e (SSS)	19	31	40	
	e	19	36	56	
	eLQ	19	42	20	
	eLR	19	44	38	
12	iP	00	04	44	Andreanof Islands, Aleutians
	P (Z) 6 sec 2 mic comp from NW				
	ePP	00	07	12	USCGS 0 = 23 53 57
	iS	00	13	32	51°N 177°W
	iPS	00	14	16	Dist. 66.9°
	eSS	00	18	32	
	eLQ	00	24	44	
	eLR	00	28	18	
12	iP	00	09	58	Andreanof Islands, Aleutians
12	eLR	08	10	18	Andreanof Islands, Aleutians
12	iP (comp)	08	41	40	Hokkaido, Japan
	eSKS	08	51	18	USCGS 0 = 08 28 34
	ePS	08	53	44	41 1/2°N 142 1/2°E
	eSS	08	59	38	Dist. 91.2°
	eLR	09	12	48	

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
June 13	iP	10	51	23	Andreanof Islands,
	P (Z) 10 sec 7.5 mic comp from NNW				Aleutians
	i	10	51	25	USCGS 0 = 10 40 38
	iPcP	10	52	08	51 1/2°N 175°W
	iPP	10	53	48	Mag 7
	iPPP	10	55	52	Dist. 65.5°
	iS	11	00	08	
	iPS	11	00	38	
	iScS	11	02	00	
	i	11	03	04	
	eSS	11	04	16	
	i	11	05	20	
	eSSS	11	07	38	
	eLQ	11	08	08	
	eLR	11	10	08	
13	iP	11	15	47	Andreanof Islands, Aleutians
14	iP	06	35	06	Andreanof Islands, Aleutians
	P (Z) 8 sec 2 mic comp from N				
	ipP	06	35	16	USCGS 0 = 06 24 20
	e (PP)	06	38	00	52°N 175 1/2°W
	iS	06	43	48	Mag 6 1/4
	ePPS	06	44	08	Dist. 65.6°
	iScS	06	44	50	
	e	06	46	14	
	eSS	06	48	36	
	eLQ	06	51	08	
	eL	06	53	16	
	eLR	06	56	00	
15	ePKP	01	03	48	Indian Ocean
	ePP	01	06	44	USCGS 0 = 00 44 15
	e	01	08	28	34 1/2°S 56 1/2°E
	ePcPPKP	01	11	54	Mag 6 - 6 1/4
	eSKKS	01	13	50	Dist. 141.3
	ePcSPKP	01	15	48	
	ePPS	01	19	10	
	eSS	01	25	16	
	e	01	25	58	
	e	01	36	48	
	eLQ	01	40	32	
	eLR	01	49	00	

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
June 15	iP	18	28	47	Fox Islands, Aleutians
	P (Z) 8 sec 1.5 mic comp				USCGS 0 = 18 18 20
	i (PcP)	18	29	04	52°N 171°W
	ePP	18	31	16	Mag 6 1/4
	eS	18	37	16	Dist. 63.3°
	ePS	18	37	32	
	eScS	18	38	32	
	e (SS)	18	42	36	
	eLQ	18	45	08	
	eLR	18	48	38	
16	e	08	48	50	
	eL	08	52	12	
16	e	11	22	08	
	e	11	52	38	
	e	11	56	08	
17	eSKS	06	41	38	Region of Islands of Samoa
	ePS	06	44	44	
	ePPS	06	45	44	USCGS 0 = 06 16 44
	eSS	06	50	38	15°S 173 1/2°W
	eSSSS	06	57	09	Mag 5 3/4
	eLQ	07	01	24	Dist. 106.9°
	eLR	07	06	24	
17	iP	07	43	07	
18	i (PKP)	02	31	15	Burma
	i	02	31	20	USCGS 0 = 02 12 12
	i (PP)	02	33	00	14 1/2°N 96°E
	e	02	33	38	Mag 6.4
	e (PPP)	02	35	32	Dist. 123.7°
	e (PS)	02	43	28	
	e (PPS)	02	44	20	
	e (SS)	02	49	56	
	e	02	50	22	
	e (SSS)	02	55	16	
	eLR	03	09	42	

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
June 18	ePP	15	09	04	Burma Aftershock
	ePKKP	15	17	12	USCGS 0 = 14 48 17
	ePS	15	18	40	14°N 96°E
	e{PKPPKP}	15	25	20	Mag 6.7 (Uppsala)
	eSS	15	26	04	Dist. 124.7°
	e	15	29	20	
	eSSS	15	30	32	
	e	15	34	38	
	eLQ	15	42	16	
	eLR	15	48	08	
18	iPKP	18	15	14	Loyalty Islands Region
	ePP	18	17	16	USCGS 0 = 17 56 03
	ePKS	18	19	08	25°S 170°E
	e (SKS)	18	23	12	Mag 6
	eSKKS	18	23	56	Dist. 125.2°
	ePS	18	27	16	
	ePPS	18	28	38	
	eSS	18	34	08	
	eSSS	18	38	08	
	eSSSS	18	42	08	
	eLQ	18	50	08	
	eLR	18	54	08	
19	eSKS	01	55	14	Tonga Islands
	eSKKKS	01	57	08	USCGS 0 = 01 29 48
	ePS	01	59	08	24°S 175 1/2°W
	eSS	02	05	08	Mag 6 1/4
	eSKKS	02	05	38	Dist. 113.9°
	eSKKKS	02	08	52	
	eLQ	02	18	16	
	eLR	02	23	08	
19	eLR	03	31	38	Fiji Islands
19	eLR	06	02	08	Aleutian Islands

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
June 19	ePP	08	21	12	Fiji Islands
	ePPP	08	23	12	USCGS 0 = 08 01 30
	e (SKS)	08	26	24	16 1/2°S 176 1/2°E
	e (SKKKS)	08	29	16	Mag 6 1/2
	ePS	08	30	38	Dist. 116.4°
	iScSP	08	31	04	
	e (PKKS)	08	33	56	
	eSS	08	37	08	
	e (PKPPKP)	08	40	08	
	eSSS	08	41	08	
	eSSSS	08	45	24	
	e	08	47	22	
	eLQ	08	50	38	
	eLR <sub>1</sub>	08	55	08	
	eLR <sub>2</sub>	09	57	48	
19	eLR	22	39	38	
20	ePP	01	25	28	Marianas Islands
	eSKS	01	31	20	USCGS 0 = 01 06 25
	eSKKS	01	32	16	20°N 145 1/2°E
	ePS	01	34	52	Dist. 108.9°
	ePPS	01	35	30	
	ePKKP	01	36	44	
	eSS	01	41	08	
	eLQ	01	53	08	
	eLR	01	58	08	
21	eL	14	57	20	
21	iP	18	48	04	Northern Kurile Islands
21	eP	18	59	33	
21	e	19	00	24	
	e	19	00	40	
21	e	19	05	12	
	eL	19	08	48	
21	i (P)	21	33	06	

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
June 21	eLR	21	46	16	
	eL	22	48	34	
	eLR	23	00	52	
	eL	00	17	56	
	e	00	27	00	Pamir, USSR
	eLR	00	34	00	BCIS 0 = 23 24
	iP	06	25	20	Chiapas, Mexico
	P (Z) 10 sec 2,3 comp from SW				USCGS 0 = 06 19 06
	ipP	06	25	36	16°N 94°W
	iPP	06	26	08	Depth 80 km
	ipPP	06	26	44	Mag 6 1/2
	iPPP	06	27	20	Dist. 30.5°
	iPcP	06	28	00	
	iS	06	30	04	
	iSS	06	31	56	
	iPcS	06	32	10	
	eLR	06	33	08	
	eP	19	29	19	Mid-Atlantic Ridge
	ePP	19	30	08	USCGS 0 = 19 22 22
	eS	19	34	56	16°N 45 1/2°W
	eLQ	19	37	28	Dist. 35°
	eLR	19	38	52	
	eL	21	15	08	
	ePKP	00	09	44	New Guinea
	ePP	00	12	06	USCGS 0 = 23 50 23
	ePKS	00	12	40	(22 June)
	ePKS	00	13	12	1 1/2°S 137°E
	e	00	13	48	Mag 7 1/4
	ePPP	00	14	50	Dist. 131.7°
	e	00	15	30	
	ePcPPKP	00	17	40	
	eSKKKS	00	19	18	
	ePS	00	22	20	
	ePKKS	00	23	18	

(continued)

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
June 23	eScSPKP	00	25	08	
(cont'd)	eSS	00	29	28	
	eSSS	00	34	48	
	eSSSS	00	38	16	
	eLQ	00	45	08	
	eLR	00	52	08	
	eL <sub>2</sub>	02	11	08	
	eL <sub>3</sub>	03	14	38	
	eP	03	35	03	Southeast Alaska
	ePP	03	36	51	USCGS 0 = 03 27 02
	eS	03	41	40	58 1/2°N 137°W
	eSS	03	44	04	Mag 5 3/4
	eLQ	03	44	38	Dist. 42.6
	eLR	03	46	38	
	eLR	04	28	08	Samoan Islands
	iP	06	37	05	Tennessee, U.S.A.
	e (S)	06	38	56	USCGS 0 = 06 34 18
	i	06	39	08	
	e (Lg)	06	39	46	
	eLR	20	38	52	
	eP	09	56	00	Chiapas, Mexico
	ePP	09	56	30	aftershock
	ePPP	09	56	48	USCGS 0 = 09 49 47
	e (PcP)	09	58	06	16°N 94°W
	eS	10	00	44	Dist. 30.5°
	eLQ	10	02	08	
	eLR	10	04	52	
	ePKP	11	41	01	Southeast of Java
	e	11	42	08	USCGS 0 = 11 21 11
	ePKS	11	45	08	10°S 116°E
	eSKKS	11	51	16	Dist. 147.8°
	ePKKS	11	53	38	
	eLR	12	31	08	

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
June 25	ePP	10	32	30	Andaman Island
	ePKS	10	34	08	USCGS 0 = 10 11 17
	ePPP	10	34	48	10°N 94°E
	eSS	10	49	56	Dist. 127.8°
	eSSS	10	54	20	
	eSSSS	10	58	46	
	eLR	11	12	08	
26	eLR	03	57	38	Indian Ocean
27	iP	00	21	54	Northeast of Lake
	P (Z) 8 sec 3 dil from NE				Baikal, USSR
	e	00	24	52	USCGS 0 = 00 09 28
	ePP	00	25	14	56 1/2°N 116°E
	ePPP	00	27	04	Mag 7 3/4
	iS	00	32	12	Dist. 82.2°
	iPS	00	32	34	
	ePPS	00	33	15	
	e	00	36	26	
	eSS	00	37	50	
	e	00	41	50	
	eSSSS	00	43	26	
	eLQ	00	44	38	
	eLR	00	47	46	
27	eLR	07	43	16	Aleutian Islands
28	eLR	01	35	38	Loyalty Islands
28	e	05	17	08	Fox Islands, Aleutians
	eLQ	05	29	16	
	eLR	05	32	48	
28	eLR	19	54	48	Loyalty Islands

## PALISADES, NEW YORK

23

Date	Phase	h	m	s	Remarks
1957					
June 29	iP	07	58	30	Fox Islands, Aleutians
	P (Z) 8 sec 2 mic dil				USCGS 0 = 07 48 18
	ePP	08	00	20	51 1/2°N 166°W
	eS	08	06	50	Dist. 60.3°
	ePPS	08	07	08	
	eScS	08	08	18	
	eSS	08	10	38	
	eLR	08	16	00	
29	eLR	11	25	23	Andreanof Islands, Aleutians
29	eLR	23	13	08	
July 1	e	13	31	08	Near Ascension Island
	e	13	35	13	Mid Atlantic Ridge
	eLR	13	38	24	USCGS 0 = 13 17 45 8° S 12°W Dist. 83.8°
1	ePKP	19	49	01	India-Burma Border
	ePP	19	50	11	USCGS 0 = 19 30 16
	eSKKS	19	57	03	25°N 94°E
	eSKKKS	19	57	17	Depth 100 km
	ePS	20	00	11	Dist. 113.1°
	eSS	20	05	37	
	eL	20	17	21	
2	iP	00	55	17	Iran
	P (Z) 8 sec 11 mic comp from NE				USCGS 0 = 00 42 23
	i	00	55	43	36°N 53°E
	e	00	57	23	Mag 7 1/4-7 1/2
	iPP	00	58	47	Dist. 89.4°
	ePPP	01	00	51	
	e	01	02	07	
	eSKS	01	05	23	
	eSKKS	01	05	47	
	iS	01	06	07	
	ePPS	01	07	07	
	eSS	01	11	37	
	e	01	14	11	
	eSSS	01	16	41	
	eLR	01	20	07	

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
July 2	eLR	21	56	37	
3	eLQ	02	24	27	Kamchatka
	eLR	02	30	43	
3	e	09	23	47	Southeast Alaska
	e	09	29	27	
	eL	09	31	39	
3	iP	12	35	38	Andreanof Islands,
	P (Z) 8 sec 2.5 mic comp NW				Aleutians
	i	12	35	41	USCGS 0 = 12 24 37
	ePcP	12	36	11	50 1/2°N 179°W
	ePcS	12	40	07	Mag 6 1/4
	eS	12	44	37	Dist. 67.8
	eScS	12	45	11	
	eSS	12	49	27	
	eLQ	12	52	47	
	eLR	12	56	27	
3	eLR	17	33	37	Fox Islands, Aleutians
4	iPKP	08	48	16	South of Sumatra
	ePP	08	51	35	USCGS 0 = 08 29 01
	eLQ	09	22	27	4°S 102°E
	eLR	09	26	07	Depth 100 km
					Dist. 144.5°
4	iP	08	55	12	Kamchatka
4	eLR	10	44	07	Kermadec
4	eS	22	37	19	Arizona-Mexico Border
	eSS	22	39	47	USCGS 0 = 22 25 13
	e	22	41	27	32°N 113°W
	eLQ	22	42	43	Dist. 32.4°
	eLg	22	42	51	
	eLR	22	43	55	

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957	ePPP	23	35	35	
July 4	eS	23	39	27	Arizona-Mexico Border
	eLQ	23	42	41	USCGS 0 = 23 27 12
	eLR	23	43	51	31°N 114°W
	eLg	23	44	59	Dist. 33.6°
5	eS	01	09	55	Arizona-Mexico Border
	eLQ	01	12	55	USCGS 0 = 00 58 00
	eLR	01	15	07	32°N 114°W
	eLg	01	15	29	Dist. 33.2°
5	e	11	59	58	
5	eLR	13	30	19	Kermadec Islands
5	e (LQ)	16	17	08	Belgian Congo
	eLR	16	21	08	
6	eL	03	42	08	Belgian Congo
7	eLQ	01	47	48	Gulf of California
	e	01	52	14	
7	eS	06	21	08	Turkey
	eLQ	06	32	10	USCGS 0 = 05 58 48
	eLR	06	38	38	38 1/2°N 40°E
					Dist. 81°
7	eLR	16	36	48	
7	iPKP	16	30	16	Solomon Islands
	iPKP	16	30	28	USCGS 0 = 16 11 15
	ePP	16	32	00	6 1/2°S 156°E
	ePKS	16	33	26	Mag 6 3/4
	ePPP	16	34	38	Dist. 123.9°
	eSKKS	16	37	58	
	e (SS)	16	49	38	
	eSSS	16	53	48	
	eLR	17	10	08	
8	eLR	10	43	16	Marianas Islands



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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
July 8	iP	15	36	38	Guatemala
	P (Z) 6 sec 1 mic comp from SSW				USCGS 0 = 15 30 33
	ipP	15	37	08	14 1/2°N 91°W
	ePPP	15	38	00	Depth 150 km
	iS	15	41	32	Mag. 6
	esS	15	42	42	Dist. 29.9°
	ePcS	15	42	52	
	eLQ	15	43	08	
	eLR	15	44	38	
9	iPKP	10	17	43	South of Sumatra
	PKP (Z) 6 sec 1,2 mic comp from N				USCGS 0 = 09 58 09
	ipPKP	10	17	57	6°S 104°E
	e	10	19	56	Depth 60 km
	iPP	10	21	04	Mag 6 1/4
	ePPP	10	24	34	Dist. 146.3°
	ePKKP	10	27	16	
	ePS	10	31	16	
	ePPS	10	33	40	
	eSKKKS	10	36	16	
	eSS	10	40	08	
	e	10	54	42	
	eL	10	57	08	
9	e	20	44	16	300 km North of Iceland
	eLR	20	52	16	USCGS 0 = 20 35 06 68°N 20°W
9	eLR	21	41	22	Aftershock, Iceland
9	eLR	23	19	18	Aftershock, Iceland
10	iP	04	53	12	Fox Islands, Aleutians
	eS	05	01	38	USCGS 0 = 04 42 48
	eScS	05	03	00	52 1/2°N 170°W
	eSS	05	06	18	Dist. 63°
	eLQ	05	11	28	
	eLR	05	14	38	

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
July 10	iP	09	10	56	Near coast of Panama
	P (Z) 8 sec 4 mic dil				USCGS 0 = 09 04 08
	iPP	09	12	08	8°N 82 1/2°W
	eS	09	16	14	Mag 6 3/4-7
	e	09	19	08	Dist. 33.7°
	eLR	09	20	16	
12	eLR	03	03	09	
12	eLR	04	52	09	
12	eLR	09	18	09	Fox Islands, Aleutians
12	eLQ	11	47	55	
	eLR	11	51	25	
12	eLR	15	22	46	
12	eLR	16	26	30	
12	eLR	21	56	10	Bismarck Sea
12	eLR	22	56	10	Bismarck Sea
13	eP	01	09	52	Fox Islands, Aleutians
	i (PcP)	01	09	59	USCGS 0 = 00 59 28
	iS	01	18	15	52°N 169 1/2°W
	eSS	01	22	51	Dist. 62.0°
	eLR	01	32	10	
13	ePP	09	51	19	Samoa Islands
	eSKS	09	57	09	USCGS 0 = 09 32 05
	ePS	10	00	09	15°S 173°W
	ePPS	10	01	09	Dist. 106.5°
	eSS	10	06	04	
	eSSS	10	09	59	
	eLR	10	19	10	
13	e	14	32	47	Samoa aftershock
	eLR	14	48	39	

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
July 14	iP	02	39	27	Kurile Islands
	e (S)	02	49	43	USCGS 0 = 02 26 54
	eLR	03	05	50	46°N 151 1/2°E Dist. 84.3°
14	eP	06	38	42	Kermadec Island Region
	iPKP	06	42	23	USCGS 0 = 06 23 52
	iPP	06	43	35	27°S 178°W
	ipPP	06	44	41	Depth 150 km
	iSKS	06	48	54	Mag 7 - 7 1/4
	iSKKS	06	50	15	Dist. 117.5°
	isSKS	06	51	12	
	iPKKP	06	53	10	
	iSPP	06	54	14	
	iSS	06	59	39	
	iPKPPKP	07	01	16	
	eSSS	07	03	01	
	eLQ	07	10	40	
	eLR	07	20	10	
	eLQ <sub>2</sub>	08	01	55	
14	iPKP	08	29	37	Kermadec Islands
	ePP	08	31	12	USCGS 0 = 08 10 45
	eSKS	08	36	24	30°S 177°W
	eSKKS	08	37	53	Mag. 6 3/4
	eSP	08	40	39	Dist. 118.3°
	eSPP	08	42	07	
	eSS	08	47	09	
	eLQ	08	58	50	
	eLR	09	06	40	
15	eLR	10	01	30	Atlantic Ocean, west of Gibraltar
16	eLR	19	54	10	Unimak Island, Aleutians
17	eLR	05	48	20	Northern Chile
17	eLR	06	04	35	Northern Chile
17	eLR	09	30	10	Fox Islands, Aleutians

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
July 17	eP	11	25	21	Santa Cruz Islands
	epP	11	25	54	USCGS 0 = 11 10 10
	iPKP	11	28	59	11°S 167°E
	iPP	11	30	21	Mag. 6 1/4 - 6 1/2
	ipPP	11	30	54	Dist. 119.0°
	iPS	11	39	54	
	ePPS	11	40	52	
	iSS	11	46	58	
	isSS	11	47	40	
	eSSS	11	55	00	
	eLQ	12	00	25	
	eLR	12	06	30	
17	e	19	00	08	Mid-Atlantic Ridge
	eLR	19	08	10	USCGS 0 = 18 39 57 1°S 13°W
18	eLR	01	47	50	
18	eLR	12	12	20	Near New Guinea
19	e (P)	16	39	10	Siberia
19	eLR	21	27	32	North of New Guinea
19	e	22	27	23	North of New Guinea
	e	22	34	53	USCGS 0 = 21 36 46
	eLR	22	37	48	3 1/2°S 142°E Dist. 130.6°
20	eLR	10	51	33	Southern Alaska
20	eLR	14	45	38	Hokkaido, Japan
20	eLR	16	30	08	Tonga Islands
20	eLR	17	52	38	South of Lesser Antilles
20	eLR	20	10	28	Fox Islands, Aleutians
20	eLR	21	48	58	South Pacific
21	eLR	00	57	58	Chile-Argentine Border

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
July 21	iP	06	10	23	Near coast of Guatemala
	P (Z) comp from SW	6	sec 0.5		USCGS 0 = 06 04 11
	epP	06	10	39	14 1/2°N 92°W
	iPP	06	11	21	Depth 100 km
	ePcP	06	13	20	Mag 5 3/4-6
	eS	06	15	27	Dist. 30.8°
	eLQ	06	17	37	
	eLR	06	18	17	
21	eSS	20	13	07	Kermadec Islands
	e	20	23	37	USCGS 0 = 19 37 10
	eLQ	20	28	57	28° S 175°W
	eLR	20	37	57	Depth 150 km
					Mag 6 1/2
					Dist. 115.7°
22	ePKP	06	35	41	Kermadec Islands
	ePP	06	37	23	USCGS 0 = 06 16 52
	eSKS	06	42	47	33 1/2°S 178°W
	eSKKS	06	44	17	Dist. 120.9°
	ePS	06	47	07	
	ePPS	06	49	07	
	eSS	06	54	15	
	e	07	02	47	
	eLR	07	14	27	
23	iP	00	56	02	Andreanof Islands,
	P (Z) 8 sec 2 mic comp from NNW				Aleutians
	i	00	56	29	USCGS 0 = 00 45 12
	iPcP	00	56	47	52°N 177°W
	ePP	00	58	28	Mag 6 1/2
	iPcS	01	00	59	Dist. 65.9°
	iS	01	04	52	
	ePPS	01	05	44	
	iScS	01	06	05	
	eSS	01	09	44	
	eLQ	01	12	20	
	eLR	01	20	40	
23	eLR	07	22	30	Loyalty Islands

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
July 24	eP	02	08	46	Chile-Argentine Border
	iP	02	08	48	USCGS 0 = 01 57 25
	P (Z) 5 sec 1 mic Comp from S				30°S 70 1/2°W
	iPcP	02	09	01	Deeper than normal
	iS	02	17	58	Mag 6 1/2
	iScS	02	18	34	Dist. 70.7°
	ePPS	02	19	23	
	eSS	02	22	32	
	e	02	27	59	
	eLR	02	31	05	
24	eLR	07	13	40	North of New Zealand
24	eLR	10	54	30	New Hebrides
24	iP	10	58	33	Catamarca Province,
	iPcP	10	59	18	Argentina
	iS	11	07	20	USCGS 0 = 10 47 44
	iScS	11	08	14	27°S 66°W
					Depth 150 km
					Dist. 68°
24	ePP	11	22	54	New Hebrides
	eSS	11	39	31	USCGS 0 = 11 02 30
	eLR	11	59	05	20°S 169°E
					Dist. 123.1°
					Mag. 6 1/2
25	iP	07	53	17	Andreanof Islands,
	Comp from NNW				Aleutians
	iS	08	02	07	USCGS 0 = 07 42 25
	eScS	08	03	21	51°N 177°W
	eSS	08	07	01	Mag 6 1/4
	eLQ	08	09	20	Dist. 66.5°
	eLR	08	16	35	
26	eSS	07	27	12	Off coast of North
	e	07	46	05	Islands, New Zealand
	eLR	07	48	35	USCGS 0 = 06 49 42
					35°S 180°
					Dist. 123°

Date	Phase	h	m	s	Remarks
1957					
July 27	eLR	04	53	20	
27	iP	06	55	13	Guatemala
	e	07	00	12	USCGS 0 = 06 49 00
	eLR	07	04	06	14 1/2°N 91 1/2°W Dist. 30.2°
27	eLR	15	39	05	Tonga Islands
27	eLR	18	42	53	
27	eLR	19	47	17	New Britain region
27	eLQ	21	33	33	Andreanof Islands,
	eLR	21	34	37	Aleutians
28	eLR	02	34	11	South Pacific
28	eLR	03	53	17	
28	eLQ	06	28	17	
	eLR	06	29	05	
28	iP	08	46	38	Guerrero, Mexico
	P'(Z)	8 sec 10 mic comp from SW			USCGS 0 = 08 40 04
	epP	08	46	43	17°N 99°W
	iS	08	52	13	Mag. 7 1/4
	eLQ	08	54	49	Dist. 32.0°
	eLR	08	55	27	
28	iP	10	04	57	Guerrero, Mexico aftershock
28	iP	13	40	51	Guerrero, Mexico aftershock
	eLR	13	52	57	
29	eP	00	17	53	Guerrero, Mexico
	ePP	00	19	09	aftershock
	eS	00	23	13	USCGS 0 = 00 11 20
	eLR	00	27	35	
29	eLR	10	12	05	

Date	Phase	h	m	s	Remarks
1957					
July 29	eLR	11	02	45	
29	iP	17	25	52	Near coast of Chile
	P (Z)	10 sec 4.5 mic comp from S			USCGS 0 = 17 15 14
	iPcP	17	26	21	23 1/2°S 71 1/2°W
	ePPP	17	29	57	Mag 7 - 7 1/4
	iS	17	34	19	Dist. 63.9°
	iPPS	17	35	13	
	eScS	17	35	37	
	e	17	38	17	
	eSS	17	38	45	
	eSSS	17	41	29	
	eSSSS	17	42	25	
	e	17	44	21	
	eLR	17	47	29	
31	iPKP	07	52	13	Sunda Strait
	eLQ	08	35	25	USCGS 0 = 07 32 39
	eLR	08	44	35	6 1/2°S 105°E Depth 100 km Dist. 145.5°
Aug. 1	iP	16	29	14	Fox Islands, Aleutians
	eS	16	37	40	USCGS 0 = 16 18 48
	eLQ	16	49	56	52°N 170°W
	eLR	16	52	04	Dist. 62.3
1	e	22	25	22	Near coast of Mexico
	eLQ	22	28	12	USCGS 0 = 22 13 40
	eLR	22	30	04	16°N 97°W Dist. 31.9°
2	eLR	03	12	20	New Zealand
2	iP	12	32	19	Andreanof Islands, Aleutians
	eLQ	13	00	18	USCGS 0 = 12 21 37
	eLR	13	02	04	52°N 175°W Dist. 64.9°
3	iPKP	07	03	21	Off south coast of Sumatra
	e (LR)	08	04	34	USCGS 0 = 06 43 40 7°S 103°E Dist. 146.0°

Date	Phase	h	m	s	Remarks
1957					
Aug. 3	e	08	45	34	Kermadec Islands Region
	e	08	52	04	USCGS 0 = 08 15 45
	eLR	09	12	04	28° S 176 1/2° W Dist. 116.7°
4	ePP	01	00	24	Near north coast of
	ePKS	01	01	46	New Guinea
	eSKS	01	05	08	USCGS 0 = 00 39 12
	ePS	01	10	24	3 1/2° S 145° E
	ePPS	01	12	12	Dist. 128.9°
	eSS	01	17	40	
	eLQ	01	32	16	
	eLR	01	39	04	
4	iP	06	13	13	Mexico aftershock
	P (Z) 6 sec 2 mic comp from SW				USCGS 0 = 06 06 36
	ePP	06	13	58	17° N 100° W
	iS	06	18	32	Mag 6 1/4
	eSS	06	21	08	Dist. 32.8°
	eLQ	06	22	52	
	eLR	06	22	04	
4	iP	11	35	00	Mexico aftershock
	ePP	11	36	12	USCGS 0 = 11 28 24
	eS	11	40	24	17° N 99 1/2° W
	eLQ	11	43	04	Dist. 32.5°
	eLR	11	44	04	
4	eP	12	44	40	Mexico
4	iP	14	22	52	Mexico aftershock
	P (Z) 8 sec 2 mic comp from SW				USCGS 0 = 14 16 18
	ePP	14	24	04	17° N 99 1/2° W
	iS	14	28	12	Mag 6 1/4
	eSS	14	30	38	Dist. 32.5°
	eLQ	14	31	04	
	eLR	14	31	52	
4	eLR	20	12	20	

Date	Phase	h	m	s	Remarks
1957					
Aug. 4	e	21	29	24	Prince Edward Islands
	ePP	21	30	22	region
	ePKS	21	31	36	USCGS 0 = 21 08 51
	e	21	32	36	45° S 35° E
	ePPP	21	33	14	Dist. 129.4°
	e	21	38	32	
	ePS	21	40	34	
	eSS	21	47	30	
	eLQ	22	02	04	
	eLR	22	07	34	
5	eSS	05	05	12	Tonga Islands
	eLQ	05	23	28	BCIS 0 = 04 29 47
	eLR	05	26	30	24 1/2° S 176° W Dist. 114.4°
5	eL	13	55	44	Kamchatka
5	eLR	17	44	34	Oaxaca, Mexico
5	e	22	01	52	Kermadec Islands region
	e	22	13	04	
	e	22	20	34	
	eLR	22	28	24	
6	iP	23	54	00	Andreanof Islands, Aleutians
7	eLR	00	25	35	
7	eLR	04	27	35	Guatemala
7	eLR	05	35	05	
7	e	06	11	05	Kamchatka
	eLR	06	29	05	
7	eLR	09	11	35	Northern Peru
7	eLR	10	58	25	
7	eLR	11	30	05	
7	eLR	19	59	45	

Date	Phase	h	m	s	Remarks
1957					
Aug. 7	eLR	22	35	05	Mexico
8	eLR	01	31	05	Egypt
8	eP	04	51	25	Revilla Gigedo Islands
	ePP	04	52	53	USCGS 0 = 04 44 20
	eS	04	57	11	19°N 109°W
	eSS	04	59	35	Dist. 37.1°
	eLQ	05	00	05	
	eLR	05	02	11	
8	eLR	15	51	06	Aleutians
8	eP	22	44	30	Ascension Island Region
	ePP	22	50	06	USCGS 0 = 22 33 02
	eS	22	54	12	7 1/2°S 13°W
	eSS	22	59	14	Dist. 73.7°
	eLQ	23	01	36	
	eLR	23	04	16	
9	iPKP	02	48	39	New Guinea
	ePP	02	50	58	USCGS 0 = 02 29 20
	e	02	51	32	2°S 137°E
	ePKS	02	52	06	Dist. 132.2
	ePS	03	01	10	
	eSS	03	08	36	
	e	03	09	22	
	eLQ	03	24	06	
	eLR	03	31	18	
9	eLQ	08	19	06	Andreasof Islands,
	eLR	08	21	46	Aleutians
9	eLR	11	45	50	Kuriles
9	eLQ	19	05	06	Kermadec Islands
	eLR	19	08	06	
9	eLR	23	09	06	
10	e (P)	03	39	00	Probably Lesser Antilles

Date	Phase	h	m	s	Remarks
1957					
Aug. 10	ePPS	04	24	24	Tonga Islands
	eSS	04	29	56	USCGS 0 = 03 55 46
	eSSS	04	34	36	17°S 172°W
	e	04	40	36	Dist. 106.9°
	eLQ	04	43	30	
	eLR	04	49	36	
10	eLR	21	59	06	
11	iPKP	05	31	45	North Island, New Zealand
	ePP	05	34	06	USCGS 0 = 05 12 40
	ePKS	05	35	52	38 1/2°S 177°E
	eLR	06	12	54	Dist. 126.8°
11	e	14	35	47	Kermadec Islands
	eLR	14	39	27	
11	ePP	21	58	31	New Hebrides
	ePPP	22	01	27	USCGS 0 = 21 38 05
	e (PKKP)	22	06	31	17 1/2°S 169°E
	ePS	22	08	31	Mag 6 3/4
	eSS	22	15	07	Dist. 121.5°
	ePKPPKP	22	15	37	
	eSSS	22	19	47	
	e	22	20	19	
	eLQ	22	27	23	
	eLR	22	35	07	
12	eLR	08	23	37	Kurile Islands
12	eLR	20	23	08	
12	e	21	13	12	Kermadec Islands
	eLR	21	22	38	
12	eLR	22	48	20	
13	eLR	01	26	38	Mid-Atlantic Ridge
13	eLR	04	11	20	Mexico

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Aug. 13	iP	12	08	38	Southern Alaska
	eS	12	15	32	USCGS 0 = 12 00 03
	eSS	12	19	20	61°N 148°W
	eLQ	12	20	08	Dist. 47.8°
	eLR	12	23	44	
15	eP	08	39	36	Near north coast of Panama
	eS	08	44	22	USCGS 0 = 08 32 56
	eLQ	08	45	10	10°N 80°W
	eLR	08	46	40	Dist. 30.6°
15	eLR	18	03	52	
15	ePKS	21	06	48	Solomon Islands Region
	eSKS	21	09	34	USCGS 0 = 20 45 20
	eSKKS	21	11	20	4 1/2°S 155°E
	ePKKP	21	12	54	Depth 500 km
	eScSP	21	14	30	Dist. 123.1°
	e (PS)	21	15	34	
	ePPS	21	16	42	
	eSS	21	20	58	
	eLQ	21	24	30	
	eLR	21	32	46	
16	ePP	03	47	10	Region of New Britain
	eSKS	03	51	54	USCGS 0 = 03 26 05
	eSKKS	03	53	40	5°S 154°E
	ePPS	03	58	18	Dist. 124.7°
	eSS	04	03	38	
	e	04	07	26	
	e	04	18	14	
	eLR	04	22	30	
16	eLR	12	51	26	Solomon Islands
16	eL	18	57	41	South Pacific near Easter Island
16	iP	23	39	34	Pacific Ocean
	P (Z) 7 sec 4 mic dil from SW				USCGS 0 = 23 31 55
	iPP	23	41	07	10 1/2°N 104°W
	iPPP	23	42	03	Mag 6 1/2-6 3/4
	iS	23	45	39	Dist. 40.2°
	iSS	23	48	43	
	iLR	23	51	01	

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Aug. 17	eLR	19	25	11	Philippine Islands
18	eSS	07	09	11	South Pacific aftershock
	eLQ	07	20	03	USCGS 0 = 06 34 16
	eLR	07	22	19	57°S 142 1/2°W Dist. 113.3°
18	ePKP	08	55	59	Philippine Islands
	ePP	08	57	45	USCGS 0 = 08 36 57
	eSKKS	09	04	49	12°N 124°E
	ePKKP	09	05	51	Mag 6 1/4
	ePS	09	07	47	Dist. 124.7°
	ePPS	09	09	11	
	ePKKS	09	10	11	
	eSS	09	14	35	
	e	09	15	19	
	e	09	19	29	
	e (SN)	09	28	55	
	eLQ <sub>1</sub>	09	30	11	
	eLR <sub>1</sub>	09	36	11	
	eLQ <sub>2</sub>	10	15	47	
	eLR <sub>2</sub>	10	28	21	
18	eP	10	53	13	Hawaiian Islands
	e	11	15	29	USCGS 0 = 10 41 54
	eLR	11	16	55	21°N 156°W Dist. 71.1°
18	eP	21	17	15	Guerrero, Mexico
	ePP	21	18	07	aftershock
	eS	21	22	39	USCGS 0 = 21 10 42 16 1/2°N 99°W Dist. 32.4°
18	iP	21	17	50	Mexico aftershock
	ePP	21	18	59	Tacubaya 0 = 21 12 38
	eS	21	23	21	16°45'N 94° 23'W
	eLQ	21	24	41	Dist. 29.5°
	e	21	25	23	
	eLR	21	28	11	

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Aug. 18	iP	21	54	35	Northern Kurile Islands
	P (Z) 8 sec 2.5 mic comp				USCGS 0 = 21 42 30
	ePPP	21	59	17	50°N 157°E
	eSKS	22	04	23	Mag 6 1/2
	eS	22	04	43	Dist. 78.9°
	ePS	22	05	11	
	ePPS	22	05	31	
	eSS	22	09	27	
	ePKKP	22	13	15	
	e (SSS)	22	13	59	
	eLQ	22	15	39	
	eLR	22	18	11	
19	ePP	11	55	11	Solomon Islands
	ePKS	11	56	41	USCGS 0 = 11 34 36
	ePS	12	05	11	10°S 161°E
	ePKKS	12	07	41	Mag 6 1/2
	eSS	12	12	35	Dist. 122.7°
	eSSSS	12	20	15	
	eLQ	12	31	51	
	eLR	12	36	11	
19	iP	21	42	25	Fox Islands, Aleutians
	P (Z) 6 sec 0.7 mic comp				USCGS 0 = 21 31 55
	ePcP	21	42	48	51 1/2°N 171°W
	eS	21	50	54	Dist. 63.6°
	ePS	21	51	24	
	eScS	21	51	56	
	eSS	21	55	28	
	eSSS	21	57	56	
	e	22	02	32	
	e (LQ)	22	05	12	
	eLR	22	07	32	
20	e	05	21	52	South Pacific
	eLQ	05	33	12	
	eLR	05	40	42	

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Aug. 20	ePP	06	47	40	Solomon Islands
	ePKS	06	48	56	USCGS 0 = 06 27 07
	eSKS	06	53	12	10°S 161°E
	eSKKS	06	54	42	Mag 6 - 6 1/4
	ePS	06	57	44	Dist. 122.7°
	ePPS	07	00	08	
	eSS	07	04	30	
	ePKPPKP	07	05	12	
	eLQ	07	21	42	
	eLR	07	24	42	
20	ePP	12	22	26	Solomon Islands
	e (PKS)	12	23	12	USCGS 0 = 12 01 54
	eSKS	12	27	42	10°S 161°E
	eSKKS	12	29	30	Mag 6 1/2
	ePKKP	12	30	40	Dist. 122.7°
	ePS	12	32	34	
	e (PPS)	12	33	12	
	e	12	34	56	
	e	12	37	12	
	eSS	12	39	12	
	e	12	42	18	
	e	12	44	26	
	eLR	12	59	24	
20	eLQ	21	28	52	
	eLR	21	30	12	
20	iP	22	29	39	Andreanof Islands,
	eLR	22	48	12	Aleutians
					USCGS 0 = 22 17 05
					52°N 173°W
					Dist. 63.9°
20	eLR	23	20	22	Outer Mongolia
21	eLR	06	50	24	North Island, New Zealand
21	eLR	11	16	12	
21	eLR	12	24	20	Fox Islands, Aleutians



Date	Phase	h	m	s	Remarks
1957					
Aug. 21	eLR	18	23	13	Samoa Islands Region
21	iP	19	41	37	Fox Islands, Aleutians
	e (PcP)	19	42	23	USCGS 0 = 19 31 08
	ePP	19	44	29	51 1/2°N 171°W
	eS	19	50	17	Dist. 63.1°
	e	19	57	53	
	eLR	20	02	13	
22	eLR	02	03	43	Marianas Islands
22	eLR	04	23	31	Hokkaido, Japan
22	eLR	07	15	29	Japan
22	ePKS	08	17	43	Molucca Passage
	ePPS	08	28	49	USCGS 0 = 07 55 06
	eSSS	08	40	13	1°N 126°E
	eLR	08	52	43	Dist. 134.4°
22	ePKP	17	02	18	New Hebrides
	ePP	17	04	00	USCGS 0 = 16 43 35
	ePKKP	17	12	44	15°S 168°E
	ePS	17	14	26	Dist. 121.1°
	eSS	17	21	14	
	eLQ	17	37	14	
	eLR	17	40	44	
23	eP	02	16	04	Solomon Islands
	ePKP	02	18	58	USCGS 0 = 02 00 09
	iPP	02	21	14	6°S 154 1/2°E
	ePKS <sub>1</sub>	02	22	34	Depth 60 km
	ePKS <sub>2</sub>	02	22	46	Mag 6 1/2
	ePPP	02	23	54	Dist. 124.7°
	eSKS	02	25	54	
	eSKKS	02	26	44	
	ePKKP	02	27	44	
	ePS	02	30	14	
	ePPS	02	32	14	
	(continued)				

Date	Phase	h	m	s	Remarks
1957					
Aug. 23	eSKKS	02	36	14	
(cont'd)	eSS	02	38	14	
	eSSS	02	42	14	
	e	02	49	14	
	e	02	52	14	
	eLQ	02	53	44	
	eLR	02	57	58	
23	ePP	12	02	02	East of Formosa
	ePS	12	11	14	USCGS 0 = 11 42 34
	eLQ	12	33	14	24°N 122°E
	eLR	12	39	14	Dist. 113.7°
23	ePP	15	21	00	Revilla Gigedo Islands
	eS	15	25	24	USCGS 0 = 15 12 24
	eSS	15	28	02	No coordinates obtained
	eLQ	15	31	52	
	eLR	15	33	46	
23	i	15	55	49	
23	eLR	17	28	46	Molucca Passage
23	eL	18	03	30	Kamchatka
23	e	21	06	40	
	e	21	11	02	
	eLR	21	13	04	
23	iPKP	23	10	37	Java
	ipPKP	23	10	48	USCGS 0 = 22 51 10
	ePKS	23	13	58	7°S 112°E
	ePPS	23	26	32	Depth 100 km
	eSS	23	31	36	Dist. 145.7°
	eSSS)	23	35	20	
	e (SSSS)	23	39	46	
	eLR	23	51	24	
24	eLQ	01	49	32	Tonga Islands
	eLR	01	53	46	

Date	Phase	h	m	s	Remarks
1957					
Aug. 25	eLQ	10	39	46	Aleutian Islands
	eLR	10	46	16	
26	iP	07	04	36	Andreanof Islands,
	ipP	07	04	50	Aleutians
	eS	07	13	28	USCGS 0 = 06 53 43
	ePS	07	13	48	51°N 177°W
	eSS	07	18	16	Dist. 66.9°
	eLR	07	25	46	
26	iP	11	38	57	Southern Bolivia
	P (Z) 8 sec 13 mic comp from S				USCGS 0 = 11 28 50
	i	11	39	07	19°S 63°W
	i	11	39	16	Mag 6 1/4 - 6 1/2
	iPcP	11	39	52	Dist. 60.1°
	ePP	11	41	06	
	ePPP	11	42	56	
	ePcS	11	43	40	
	iS	11	47	12	
	iPS	11	47	32	
	iPPS	11	48	12	
	iScS	11	48	24	
	eSS	11	50	04	
	e (SSS)	11	51	16	
	eLR	11	55	36	
26	iP	14	06	49	Near coast of Ecuador
	P (Z) 12 sec 5 mic comp from SSE				USCGS 0 = 13 58 48
	iPP	14	08	31	2°S 81°W
	iS	14	13	09	Mag 6
	i	14	13	25	Dist. 43.0°
	i	14	14	05	
	iSS	14	16	33	
	iScS	14	17	21	
	eLR	14	19	47	
26	eSKKS	20	21	01	Solomon Islands
	ePPS	20	24	53	USCGS 0 = 19 53 33
	eSS	20	31	01	5 1/2°S 154°E
	eSSS	20	35	47	Depth 100 km
	e	20	39	53	Dist. 12 4.5°
	eLQ	20	44	47	
	eLR	20	53	17	

Date	Phase	h	m	s	Remarks
1957					
Aug. 27	eLR	18	11	35	Vancouver Island (BCIS)
27	eLR	21	06	17	Off coast of Oregon (BCIS)
28	eLQ	09	16	51	Kermadec Islands
	eLR	09	18	05	
29	e	00	06	54	Marianas Islands
	ePPP	00	11	48	USCGS 0 = 28 Aug.
	eSS	00	24	38	23 50 15
					21°N 145°E
					Dist. 108.5°
30	eLR	17	07	20	Japan
30	eLR	21	01	50	Marianas Islands
31	eLR	12	40	50	Outer Mongolia

IGY MICROSEISM DATA

Palisades, New York

Date	Type	oh		06h		12h		18h		Remarks
		K	u sec	u sec	u sec	u sec	u sec	u sec	u sec	
Vertical component To=12 sec Tg=15 sec										
1957										
July 1	b	.7	2	.7	4	.7	3	.7	3	
2	b	.7	3	.5	3	.5	3	.5	3	
3	b	.5	4	.5	4	.2	3	.2	3	
4	b	.2	3	.2	3	.2	3	.5	4	See Internatl. Day data
5	b	-	-	.5	4	.5	5	.5	4	Earthquake interference
6	b	.5	4	.5	4	.5	3	.5	4	
7	b	.5	3	.2	2	.2	2	-	-	Earthquake interference
8	b	.2	2	.2	2	.2	2	.2	2	
9	b	.2	2	.2	2	-	-	.2	1	Earthquake interference
10	b	.2	1	.3	1	.3	2	.5	3	
11	b	.3	2	.3	2	.3	2	.3	2	
12	b	.3	3	.3	3	.2	3	.2	3	
13	b	.3	2	.3	2	.3	3	.3	3	
14	b	.3	3	.3	3	.2	2	.3	2	
15	b	.3	2	.3	2	.3	2	.3	2	
16	b	.3	2	.3	2	.3	1	.3	2	
17	b	.3	3	.4	3	-	-	.4	2	Earthquake interference
18	b	.4	2	.5	3	.5	3	.5	4	
19	b	.5	4	.5	4	.5	4	.5	3	
20	b	.4	4	.3	3	.4	3	.3	3	
21	b	.4	3	-	-	.3	2	.3	2	Earthquake interference
22	b	.4	2	.3	3	.3	2	.2	2	
23	b	.2	2	.3	2	.5	2	.5	2	
24	b	.3	2	.3	2	.5	1	.5	2	
25	b	.5	2	.5	2	.5	2	.5	2	
26	b	.5	2	.4	2	.4	2	.4	3	See Internatl. Day Data
27	b	.4	2	.3	3	.3	3	.3	2	" " " "
28	b	.3	2	.3	2	-	-	.3	2	Earthquake interference
29	b	.2	2	.2	2	.2	3	-	-	Earthquake interference
30	b	.3	2	.3	2	.4	2	.3	2	
31	b	.3	2	.3	3	.3	3	.4	3	
Aug.										
1	b	.3	4	.3	3	.4	3	.4	2	
2	b	.3	2	.3	2	.3	2	.3	2	
3	b	.3	2	.3	3	.3	3	.3	2	
4	b	.3	2	-	-	-	-	.3	3	
5	b	.3	2	-	-	.3	3	-	-	Earthquake interference



Date	Type	oh		06h		12h		18h		Remarks
		K	u sec	u sec	u sec	u sec	u sec	u sec		
IGY Microseism Data Palisades, New York										
Vertical component To = 12 sec Tg = 15 sec										
1957										
Aug. 6	b	.3	2	.4	2	.3	2	.3	2	
7	b	.4	2	.4	2	.3	2	.3	2	
8	b	.3	2	.3	2	.3	2	.2	3	
9	b	-	-	.3	2	.3	2	.3	2	Earthquake interference
10	b	.3	2	.3	3	.2	3	.2	2	
11	b	.3	2	.2	2	.2	2	.2	2	
12	b	-	-	.2	2	.2	2	.2	2	Earthquake interference
13	b	.2	2	.3	1	-	-	.3	2	See Internatl. Day Data
14	b	.3	2	.3	2	.2	2	.2	2	Earthquake interference
15	b	.2	2	.3	2	.3	2	.2	2	
16	b	.2	2	.2	2	-	-	.2	3	Earthquake interference
17	b	-	-	.3	3	.3	2	.3	4	Earthquake interference
18	b	.4	4	.3	4	-	-	.4	4	
19	b	-	-	.4	2	-	-	.4	3	
20	b	.4	3	.5	3	.5	3	.6	3	
21	b	.6	3	.6	3	.6	3	.5	3	
22	b	-	-	.5	4	.5	3	-	-	Earthquake interference
23	b	.5	3	.5	3	.5	3	.5	3	
24	b	.5	4	.5	3	.5	4	.5	3	
25	b	.5	3	.5	3	.5	3	.5	3	See Internatl. Day Data
26	b	.5	3	.5	3	-	-	.5	3	See Internatl. Day Data
27	b	.8	4	.8	4	.7	4	.5	3	
28	b	.5	4	.5	2	.5	2	.5	3	
29	b	-	-	1.0	5	1.0	5	1.5	5	Earthquake interference
30	b	1.5	5	1.5	5	1.5	5	1.0	5	
31	b	.7	4	.7	4	.5	3	.5	3	



LAMONT GEOLOGICAL OBSERVATORY  
COLUMBIA UNIVERSITY

PALISADES, NEW YORK



SEISMOLOGICAL BULLETIN

By

RUTH B. SIMON



1 September 1957 - 31 December 1957

L.G.O. Contribution No. 373

## STATION CONSTANTS, INSTRUMENTS AND ABBREVIATIONS

Latitude: 41° 00' 25" North

Longitude: 73° 54' 3" 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.

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

All times are G.C.T.

 Time - I.B.M. Invar pendulum clock corrected by Naval Observatory  
 time signals every 6 hours.

Comp. = compression

Dil. = dilatation

## PALISADES, NEW YORK

1

Date	Phase	h	m	s	Remarks
1957					
Sept.					
2	eSKS	00	25	06	Marianas Islands -Sept. 1
	eSKKKS	00	26	40	USCGS 0 = 23 59 54
	ePS	00	28	26	18° N 147 1/2° E
	ePPS	00	29	30	Dist. 109.9°
	e	00	32	36	
	eSS	00	34	20	
	eSKKS	00	36	40	
	eSSS	00	38	40	
	e	00	44	12	
	eLR	00	56	50	
2	eLQ	06	34	30	New Hebrides
	eLR	06	37	24	
2	ePP	10	05	08	Samoa Islands
	eSKS	10	11	28	USCGS 0 = 09 46 30
	eSKKKS	10	12	52	15° S 173 1/2° W
	ePS	10	14	28	Mag 6-6 1/4
	ePPS	10	15	30	Dist. 106.8°
	eSS	10	20	28	
	eSKKS	10	23	32	
	e	10	26	42	
	eLQ	10	30	20	
	eLR	10	36	50	
2	iP	14	30	30	Fox Islands, Aleutians
	P (Z) 6 sec 1.3 mic dil from NW				USCGS 0 = 14 20 13
	ePP	14	32	44	51 1/2° N 168° W
	eS	14	38	50	Dist. 62.2°
	eScS	14	40	00	
	e	14	41	44	
	eSS	14	43	04	
	eLQ	14	45	20	
	eLR	14	47	50	
2	e	18	37	34	Northern Kurile Islands
	e	18	59	50	BCIS 0 = 18 23 05
	eL	19	06	20	

2		PALISADES, NEW YORK			
Date	Phase	h	m	s	Remarks
1957					
Sept.					
2	e(PPP)	21	45	48	Hindu Kush
	epPPP	21	47	44	USCGS 0 = 21 27 36
	eSKS	21	52	28	37°N 71°E
	ePS	21	53	30	Depth 200 km
	epPS	21	54	16	Dist. 95.9°
	ePPS	21	54	40	
	eSS	21	59	08	
	eSSS	22	05	50	
	eL	22	07	50	
3	eLR	00	16	30	
3	eLQ	07	03	20	Santa Cruz Islands
	eLR	07	04	20	
3	eL	15	54	31	Fiji Islands Region
3	eLQ	16	58	03	Off coast Oregon, U.S.A.
	eLR	17	00	43	
3	eSS	20	35	19	Mid-Atlantic Ridge
	eLR	20	40	11	BCIS 0 = 20 23 03 58°N 35°W Dist 29.9°
4	eLR	01	19	19	
4	e	02	08	19	Santa Cruz Islands
	eLQ	02	27	39	
	eLR	02	29	19	
4	eSS	05	19	19	Southern Indian Ocean
	eSSSS	05	31	59	USCGS 0 = 04 33 51
	eLQ	05	41	19	42 1/2°S 88 1/2°E
	eLR	05	49	19	Dist. 166.4°
4	eLQ	20	34	48	Fox Islands, Aleutians
	eLR	20	40	22	
4	eLQ	22	59	56	
	eLR	23	07	26	

3		PALISADES, NEW YORK			
Date	Phase	h	m	s	Remarks
1957					
Sept.					
4	eLQ	23	26	18	
	eLR	23	31	02	
5	eLQ	04	14	34	Alaska Peninsula
	eLR	04	17	48	USCGS 0 = 04 01 09 55 1/2°N 159°W Dist. 54.9°
5	eLR	08	29	48	Kamchatka
5	iP	08	41	07	
	e	08	50	22	
5	eLQ	12	21	18	South of Iran
	eLR	12	26	28	
6	eP	00	28	01	Chile-Bolivia Border
	ePcP	00	28	32	USCGS 0 = 00 17 55
	ePPP	00	31	48	20°S 68°W
	eS	00	36	06	Depth 100 km
	ePPS	00	36	48	Dist. 60.9°
	eScS	00	37	38	
	e	00	38	22	
	eSS	00	40	48	
	eLQ	00	43	18	
	eLR	00	46	28	
6	iP	05	05	31	Andreanof Islands,
	P (Z) 7 sec 1.5 mic.				Aleutians
	ePcP	05	05	58	USCGS 0 = 04 54 37
	ePP	05	08	18	51°N 177°W
	ePcS	05	10	06	Dist. 66.9°
	iS	05	14	24	
	ePPS	05	14	44	
	eScS	05	15	06	
	eSS	05	18	48	
	eLQ	05	21	22	
	eLR	05	25	58	

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Sept.					
7	iP	07	00	41	Northern Kurile Islands
	P (Z)	6 sec 1.5 mic. Comp. from NW			
	ePP	07	03	34	USCGS 0 = 06 48 36
	eSKS	07	10	30	50°N 156° E
	eS	07	10	54	Dist. 79.4°
	ePPS	07	11	18	
	eSS	07	15	38	
	eLQ	07	19	18	
	eLR	07	22	02	
7	iP	10	17	41	Andreanof Islands,
	ePP	10	20	34	Aleutians
	ePPP	10	21	42	USCGS 0 = 10 06 47
	eS	10	26	24	51 1/2°N 178 1/2°W
	ePS	10	27	02	Dist. 66.9°
	eScS	10	27	26	
	eSS	10	30	58	
	eLQ	10	33	38	
	eLR	10	37	48	
8	eLQ	01	52	18	Arctic Ocean
	eLR	01	55	34	
8	e	10	38	38	Fox Islands, Aleutians
	eLQ	10	50	18	
	eLR	10	53	56	
9	ePKP	00	33	33	South Indian Ocean
	ePKS	00	36	35	USCGS 0 = 00 13 30
	ePP	00	38	25	48°S 100°E
	ePKKP	00	41	17	Dist. 171.7°
	ePPP	00	42	05	
	e	00	42	59	
	ePKKS	00	44	17	
	eSKKKS	00	46	45	
	eScSPKP	00	49	35	
	e	00	55	05	
	eSS	01	00	01	
	e	01	02	21	
	e	01	03	41	
	e	01	04	49	
	eSSS	01	06	17	
	eSSSS	01	10	03	
	eLQ	01	24	17	
	eLR	01	29	17	

## PALISADES, NEW YORK

5

Date	Phase	h	m	s	Remarks
1957					
Sept.					
9	ePP	09	19	21	Fiji Islands region
	eSKS	09	25	47	USCGS 0 = 09 00 33
	ePS	09	28	57	15°S 176 1/2°W
	ePPS	09	29	55	Dist. 109.1°
	eSS	09	35	05	
	eSSS	09	39	17	
	e	09	45	35	
	eLQ	09	46	41	
	eLR	09	50	17	
9	eLQ	17	52	17	Near coast of southern
	eLR	17	55	27	Mexico
10	eLQ	00	47	25	Atlantic Ocean ,
	eLR	00	48	17	Ascension Island
					region
10	eL	07	17	47	India-Burma border
10	e	14	56	43	Near coast of Ecuador
	e	14	59	57	USCGS 0 = 14 43 05
	eL	15	03	09	10 1/2°S 80°W
					Depth 400 km
					Dist. 51.5°
10	eLQ	20	18	17	Mid-Atlantic Ridge
	eLR	20	20	33	
11	e	14	46	28	New Ireland region
	eL	15	19	16	
11	ePP	23	41	00	Samoa Islands region
	ePKS	23	44	50	USCGS 0 = 23 22 09
	ePS	23	50	04	16°S 172°W
	ePPS	23	51	08	Dist. 106.4°
	eSS	23	55	56	
	eSSS	23	59	52	
12	e	00	06	28	
	eLR	00	11	04	



6

## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Sept.					
12	iP	00	33	37	Gulf of Honduras
	P (Z)	10	sec	4.3	mic dil from SW
	USCGS	0 = 00	28	02	
	ipP	00	33	48	17 1/2°N 85°W
	iFP	00	34	32	Mag. 6 (Uppsala)
	e	00	35	34	Dist. 24.7
	iS	00	38	04	
	isS	00	38	20	
	e (LQ)	00	39	36	
	eLR	00	40	16	
12	iP	04	08	01	Guerrero, Mexico
	ePPP	04	09	20	USCGS 0 = 04 01 24
	eS	04	13	20	15 1/2°N 98 1/2°W
	eL	04	18	32	Depth 60 km Dist. 33.1°
12	eLR	10	07	16	Guerrero, Mexico
13	eLR	08	38	46	
13	eLR	09	54	46	
14	eLR	13	45	36	Macquarie Island
14	eP	17	14	48	Near coast of Ecuador
	e	17	21	08	USCGS 0 = 17 06 49
	eS	17	21	16	1 1/2°S 80 1/2°W
	e	17	21	48	Dist. 42.7°
	eSS	17	24	32	
	e	17	27	49	
	e (L)	17	31	16	
15	iPKP	04	41	38	Near coast of Java
	iPKP	04	41	41	USCGS 0 = 04 22 34
	epPKP	04	42	46	5 1/2°S 108°E
	ipPKP	04	42	50	Depth 300 km
	esPKP	04	43	16	Dist. 144.6°
	ePP	04	44	52	
	epPKS	04	46	32	
	ePcPPKP	04	49	46	
	eSPP	04	57	16	
	ePSS	05	04	48	
	esSSS	05	10	30	
	eLR	05	22	00	

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
Sept.					
15	eLR	19	40	04	Solomon Islands
15	eLR	19	59	22	
15	iP	22	18	07	Andreanof Islands,
	ipP	22	18	15	Aleutians
	e (S)	22	26	30	USCGS 0 = 22 07 21
	eLQ	22	40	00	51°N 174 1/2°W
	eLR	22	42	16	Dist. 65.2°
16	eLR	02	01	02	Arctic Ocean
16	eLR	09	50	28	Kamchatka
16	eLR	23	39	02	
18	eLQ	01	38	45	Kamchatka
	eLR	01	43	33	
18	eLR	11	40	45	Guerrero, Mexico
18	eLQ	18	47	45	Fox Islands, Aleutians
	eLR	18	52	09	
19	eLQ	17	52	45	Spitzbergen Region
	eLR	17	55	15	
20	eLR	06	54	15	North of Tonga Islands
20	iP	19	46	53	Guerrero, Mexico
	e (L)	19	48	25	
20	iP	23	17	50	Fox Islands, Aleutians
	eS	23	26	15	USCGS 0 = 23 07 22
	eLQ	23	38	53	52°N 170 1/2°W
	eLR	23	40	15	Dist. 62.5°
21	eLR	20	52	15	Northern Turkey
23	eLR	19	37	14	Samoa Islands Region
24	eLR	02	34	30	Samoa Aftershock

8		PALISADES, NEW YORK			
Date	Phase	h	m	s	Remarks
1957					
Sept.					
24	eP	08	37	14	Near south coast of
	iPKP	08	40	18	Mindanao, Philippines
	ipPKP	08	40	26	USCGS 0 = 08 21 05
	iPP	08	42	34	5 1/2°N 127 1/2°E
	ePKS	08	43	40	Mag 7 3/4
	eSKS	08	47	22	Dist. 129.7°
	eSKKS	08	49	16	
	eScSP	08	51	02	
	ePS	08	52	40	
	iPPS	08	54	14	
	eSS	08	59	36	
	e	09	06	14	
	eLQ	09	13	54	
	eLR <sub>1</sub>	09	20	14	
	eLR <sub>2</sub>	09	42	30	
25	eP	05	56	51	Azores
	ePP	05	57	29	USCGS 0 = 05 50 56
	ePPP	05	58	01	34°N 38 1/2°W
	eS	06	01	45	Mag 6 1/4-6 1/2
	eLQ	06	03	01	Dist. 28.7°
	eLR	06	04	43	
25	eLQ	10	31	13	Region of New Hanover
	eLR	10	37	13	
25	e(LR)	16	57	53	Philippines aftershock
25	iPKP	16	55	58	Aftershock near SE coast
	iPKS	16	59	13	Mindanao, Philippines
	ePKS	16	59	17	USCGS 0 = 16 36 37
	eSS	17	15	13	6°N 127 1/2°E
	e	17	23	01	Dist. 129.2°
	eLQ	17	31	09	
	eLR	17	35	53	
25	eLQ	23	16	23	Philippines aftershock
	eLR	23	21	13	
26	eLR	00	42	31	Philippines aftershock
26	eLR	06	02	37	Philippines aftershock

PALISADES, NEW YORK		9			
Date	Phase	h	m	s	Remarks
1957					
Sept.					
26	eLQ	08	15	45	Chiapas, Mexico
	eLR	08	19	13	
26	iPKP	12	25	04	North Island, New Zealand
	eLR	13	51	13	
26	iP	16	40	07	
26	eL	19	45	13	Philippines aftershock
26	eLQ	21	52	13	Chiapas, Mexico
	eLR	21	53	43	
27	ePKP	04	27	53	Spice Islands, Molucca Sea
	e	04	31	50	USCGS 0 = 04 08 23
	i	04	32	17	1° S 127°E
	eSKKKS	04	37	45	Dist. 135.9°
	eSS	04	47	43	
27	eLQ	05	04	53	
27	iP	05	09	05	Eastern Siberia
27	iP	05	58	30	Fox Islands, Aleutians
	eL	07	05	13	
27	e	11	35	31	
	eL	11	48	17	
28	iPP	00	44	47	Off south coast of Honshu,
	ePPP	00	47	17	Japan
	iSKS	00	50	13	USCGS 0 = 00 27 31
	eSKS	00	51	33	30 1/2°N 137 1/2°E
	eSP	00	53	37	Depth 500 km
	esPP	00	54	45	Mag 103.1°
	ePKKP	00	56	17	Dist. 103.1°
	e	01	06	45	
	eL	01	13	43	
28	eL	05	20	43	Near north coast of New Guinea

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PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Sept.					
28	eP	14	33	47	Fiji Islands
	ipP	14	35	53	USCGS 0 = 14 20 00
	iPKP	14	37	36	20 1/2°S 178°W
	iPP	14	38	37	Depth 650 km
	e	14	39	21	Mag 7 1/2
	epPP	14	40	33	Dist. 113.6°
	iPKS	14	41	27	
	iSKS	14	43	25	
	iSKKS	14	44	37	
	iS	14	45	33	
	iSP	14	47	13	
	iSPP	14	48	13	
	iSKKP	14	50	53	
	ePKKS	14	52	27	
	iSS	14	53	57	
	esSS	14	57	04	
	eLR	15	08	50	
28	i (PKP)	14	48	45	
28	e	21	24	47	Marianas Islands
29	eLR	00	34	43	
29	eLR	03	10	13	South Pacific
29	iPKP	06	56	37	Celebes
29	iPKP	08	31	10	South of Fiji Islands
	ipPKP	08	33	50	USCGS 0 = 08 13 22
	eSKS	08	37	07	25°S 178 1/2°E
	eS	08	38	33	Depth 600 km
	e	08	39	45	Mag 6 1/4
	ePPS	08	43	23	Dist. 116.5°
	ePKKS	08	45	13	
	eSS	08	48	07	
	esSS	08	51	43	
	e	08	54	13	
	eL	09	04	01	
30	eL	15	32	31	
30	eL	21	21	21	Volcano Islands

PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
Oct.					
2	eP	12	34	22	Near coast Venezuela
	i	12	34	40	USCGS 0 = 12 27 55
	ePP	12	35	44	11°N 63°W
	eS	12	39	24	Mag 6 1/2-6 3/4
	e	12	40	00	Dist. 31.4°
	eLQ	12	41	08	
	eLR	12	42	40	
2	e	21	37	22	Chagos Islands
	eL	21	40	12	USCGS 0 = 20 58 39
					6 1/2°S 69 1/2°E
					Dist. 131.6°
3	ePP	06	46	32	Near coast of Venezuela
	eS	06	50	52	USCGS 0 = 06 39 08
	eLQ	06	52	24	10 1/2°N 62 1/2°W
	eLR	06	53	12	Dist. 31.2°
3	eLR	14	40	12	
4	eS	00	31	42	Mid-Atlantic Ridge
	eLQ	00	32	22	USCGS 0 = 00 21 07
	eLR	00	33	32	30 1/2°N 42°W
					Dist. 27.9°
4	iP	05	32	28	Near coast of Venezuela
	P (Z) 10 sec 7.5 mic comp from SSE				
	ipP	05	32	42	USCGS 0 = 05 26 09
	iPP	05	33	30	11°N 63°W
	iPPP	05	34	12	Depth 60 km
	iS	05	37	32	Mag 7
	eLQ	05	38	42	Dist. 31.4°
	eLR	05	40	44	
4	eL	17	52	00	Venezuela aftershock
4	eL	19	54	22	
5	iP	00	06	47	Rat Islands, Aleutians
	eS	00	15	26	USCGS 0 = 23 55 45
	eScS	00	16	24	53°N 178°W
	e	00	23	12	Dist. 65.8°
	eLR	00	28	25	

12		PALISADES, NEW YORK			
Date	Phase	h	m	s	Remarks
1957					
Oct.					
5	eLQ	12	21	56	Isl. Crete, Mediterranean
	eLR	12	22	42	
5	i	14	32	36	
	i	14	33	01	
	i	14	33	21	
5	eL	16	16	22	Mexico
5	iPKP	16	25	21	Isl. of Timor
5	eLR	23	36	42	Tadzhikistan-Afghanistan border
6	iP	01	00	38	Venezuela aftershock
	eS	01	05	46	USCGS 0 = 00 54 05
	eLQ	01	07	22	11°N 62.5°W
	eLR	01	08	12	Dist. 31.5°
6	eLQ	09	29	48	New Zemlya, USSR
	eLR	09	31	26	
6	iP	23	37	39	Andreanof Islands,
	eLR	23	58	12	Aleutians
7	eLR	04	50	12	Tonga Islands
7	eLR	05	42	42	Unimak Island Region
7	iP	13	31	40	Southeast of Kamchatka
	eS	13	41	24	USCGS 0 = 13 19 45
	eSSS	13	49	56	51°N 159°E
	eL	13	53	20	Dist. 77.4°
7	eL	15	01	12	
8	e	12	16	16	
	eLQ	12	22	12	
	eLR	12	24	12	
9	e	04	41	32	
	e	04	44	38	
	e	04	48	12	

PALISADES, NEW YORK		13			
Date	Phase	h	m	s	Remarks
1957					
Oct.					
9	eLR	05	34	42	
9	eLR	11	27	30	
9	e	22	06	29	
	eLR	22	40	11	
10	iP	01	53	31	Fox Islands, Aleutians
	eS	02	01	23	USCGS 0 = 01 43 00
	e	02	06	41	52 1/2°N 169 1/2°W
	eLQ	02	11	16	Dist. 61.7°
	eLR	02	15	19	
10	iP	05	55	14	Andreanof Islands,
	eS	06	03	51	Aleutians
	eLR	06	18	29	USCGS 0 = 05 44 32
					52°N 174 1/2°W
					Dist. 65°
10	iP	07	48	58	Andreanof Islands,
	eS	07	57	33	Aleutians
	eLQ	08	08	41	USCGS 0 = 07 38 18
	eLR	08	11	41	52°N 174°W
					Dist. 65°
10	eLR	10	05	11	
10	e	11	21	01	
	eLR	11	58	23	
10	eLQ	15	19	12	New Guinea
	eLR	15	21	12	
10	eLR	17	53	32	
10	iP (comp)	19	04	01	Fox Islands, Aleutians
	ePP	19	06	22	USCGS 0 = 18 53 59
	eS	19	12	04	54°N 166°W
	eSS	19	16	16	Mag 5 3/4
	eLQ	19	18	51	Dist. 59.9°
	eLR	19	22	12	

## 14 PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Oct.					
11	eLR	00	59	12	Fox Islands, Aleutians
11	eLR	08	12	12	Northwestern Turkey
11	iP	19	29	54	
11	eLQ	23	30	27	
	eLR	23	31	51	
12	ePS	17	15	03	Sandwich Islands region
	eSS	17	20	59	USCGS 0 = 16 46 30
	eLQ	17	34	27	59°S 16°W
	eLR	17	37	21	Dist. 110.5°
12	iPKP <sub>1</sub>	19	16	47	Near south coast of Japan
	iPKP <sub>2</sub>	19	17	02	USCGS 0 = 18 57 02
	ePKS	19	20	11	8°S 111°E
	ePPP	19	23	35	Dist. 146.8°
	eSKKKS	19	27	19	
	eSKSP	19	30	19	
	e	19	36	11	
	eSS	19	39	01	
	e	19	40	41	
	eSSS	19	44	21	
	eLR	20	06	41	
12	eLQ	22	58	11	Northeast of New Guinea
	eLR	23	02	25	
13	eP	04	31	04	Southeast of Kamchatka
	ePP	04	33	59	USCGS 0 = 04 19 17
	eS	04	40	39	52 1/2°N 160°E
	ePPS	04	41	45	Dist. 75.8°
	eSS	04	45	31	
	eSSS	04	48	47	
	eLQ	04	53	31	
	eLR	04	56	43	

## PALISADES, NEW YORK

15

Date	Phase	h	m	s	Remarks
1957					
Oct.					
13	iPKP	20	52	44	Antarctic Ocean south-
	eSKS	20	59	49	west of Macquarie Isls.
	eSKKS	21	02	41	USCGS 0 = 20 33 01
	eSKSP	21	06	15	60°S 151°E
	ePKPPKP	21	10	11	Dist. 146.5°
	eSS	21	15	41	
	eSSS	21	20	47	
	eSSSS	21	25	41	
	eLQ	21	34	19	
	eLR	21	44	11	
14	eLR	03	16	27	South of Australia
14	eLR	04	30	11	
14	eLR	08	31	11	
14	eLR	14	07	59	Andranof Islands, Aleutians
14	e	17	51	11	Guerrero, Mexico
	eLQ	17	59	11	
	eLR	18	02	11	
15	eP	04	08	50	Near south coast of
	eLQ	04	16	11	Costa Rica
	eLR	04	17	51	USCGS 0 = 04 02 07
					9°N 84°W
					Dist. 33.1°
16	i	19	18	47	
	i	19	19	06	
	i	19	19	19	
17	eLR	13	01	12	Lesser Antilles
17	eLR	13	26	42	North Atlantic Ocean
17	eLR	14	06	12	
17	eLR	14	44	42	North Atlantic Ocean

16		PALISADES, NEW YORK			
Date	Phase	h	m	s	Remarks
1957					
Oct.					
17	eLR	14	45	00	North Atlantic Ocean
17	eLR	14	53	00	
17	e(P)	16	36	13	Hindu Kush
17	eLQ	17	51	12	North Atlantic Ocean
	eLR	17	52	32	
18	eLR	00	43	00	
18	eLR	04	58	42	Chiapas-Guatemala Border
18	eLR	09	46	28	
18	eLR	11	47	12	
18	eLR	20	10	52	Loyalty Islands
18	iP	20	37	22	
19	eLR	18	30	12	
19	eP	18	43	28	Near east coast of
	ePP	18	48	16	Formosa
	ePPP	18	51	24	USCGS 0 = 18 28 50
	eSKS	18	54	32	23 1/2°N 122°E
	eSKKS	18	55	20	Mag 6 1/2-6 3/4
	eSKKKS	18	55	42	Dist. 114.1°
	ePS	18	57	52	
	ePPS	18	59	12	
	e (PKKS)	19	00	52	
	eSS	19	03	52	
	eSSS	19	07	34	
	eSSSS	19	11	22	
	eLQ	19	16	12	
	eLR	19	21	12	

PALISADES, NEW YORK					17
Date	Phase	h	m	s	Remarks
1957					
Oct.					
19	iP (comp)	21	54	34	Northeast of Hokkaido,
	ipP	21	55	20	Japan
	iSKS	22	04	44	USCGS 0 = 21 41 59
	iS	22	05	04	44 1/2°N 146°E
	isS	22	05	52	Depth 150 km
	iPS	22	07	02	Mag 6 1/2 - 6 3/4
	e (SS)	22	12	32	Dist. 87.6°
	eLQ	22	20	12	
	eLR	22	23	12	
20	iP	12	12	09	Mid-Atlantic Ridge
	ePP	12	13	48	USCGS 0 = 12 04 22
	ePPP	12	14	36	11 1/2°N 42°W
	iS	12	18	24	Dist. 40.6°
	e	12	19	52	
	eSS	12	21	08	
	eLR	12	22	30	
20	eLR	17	31	20	Indian Ocean
20	eLR	18	31	24	
20	eLR	19	30	56	
20	eLR	19	49	52	
20	eLR	21	17	20	
20	eLR	21	47	12	
21	eLR	01	12	42	Santa Cruz Islands
21	eLR	14	39	02	Mid-Atlantic Ridge
21	eLR	16	06	12	
21	eLR	23	01	12	
22	eLR	06	31	12	
22	eLR	07	32	42	

## 18 PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Oct.					
22	iP	20	57	33	Northeast of Hokkaido,
	ePPP	21	03	42	Japan
	eS	21	08	24	USCGS 0 = 20 44 38
	ePKKS	21	18	42	43 1/2°N 146°E
	eLQ	21	21	12	Depth 40 km
	eLR	21	24	52	Dist. 88.5°
22	eLR	23	08	02	Kermadec Islands
23	eP	04	43	45	Puerto Rico
	iPP	04	44	05	USCGS 0 = 04 38 30
	iS	04	48	00	19°N 64° 08'W
	eLQ	04	48	28	Dist. 23.5°
	eLR	04	49	42	
	T max	05	07	05	
23	iP	06	07	11	Fox Islands, Aleutians
	P (Z) 8 sec 1.5 mic comp from NW				USCGS 0 = 05 56 52
					52 1/2°N 169 1/2° W
	ePcP	06	07	36	Mag 6 1/4
	ePP	06	09	16	Dist. 61.7°
	ePPP	06	11	00	
	ePcS	06	12	20	
	iS	06	15	34	
	iScS	06	16	56	
	eSS	06	19	22	
	eSSS	06	22	28	
	eLQ	06	23	22	
	eLR	06	26	12	
23	eLR	11	12	12	Kermadec Islands
23	eLR	13	13	12	
23	e	14	55	12	
	eLQ	15	11	22	
	eLR	15	17	36	

## PALISADES, NEW YORK

19

Date	Phase	h	m	s	Remarks
1957					
Oct.					
24	ePP	00	38	02	New Hebrides
	eSKS	00	43	24	USCGS 0 = 00 17 37
	eSKKS	00	44	36	14 1/2°S 168°E
	ePS	00	47	52	Mag 6 1/2
	ePPS	00	49	20	Dist. 120.5°
	eSS	00	54	42	
	eSSS	00	58	36	
	eSSSS	01	02	44	
	e	01	03	36	
	e	01	04	32	
	eLQ	01	08	12	
	eLR <sub>1</sub>	01	13	32	
	eLR <sub>2</sub>	01	57	28	
24	ePP	09	26	12	Fiji Islands
	ePPP	09	28	42	USCGS 0 = 09 07 30
	eSKS	09	31	04	20 1/2°S 179°W
	eSKKS	09	32	16	Depth 550 km
	eScSP	09	35	04	Dist. 114.3°
	ePS	09	35	52	
	eSPP	09	36	42	
	eSS	09	41	16	
	e	09	54	28	
	e (L)	09	58	12	
24	eP	20	18	24	Province of Rioja,
	eS	20	27	28	Argentina
	e	20	30	06	USCGS 0 = 20 07 15
	eLQ	20	35	28	29°S 68°W
	eLR	20	39	12	Dist. 69.8°
24	eP	21	51	09	Gulf of California
	ePP	21	52	20	USCGS 0 = 21 44 28
	ePcP	21	54	16	25°N 109 1/2°W
	eS	21	56	24	Mag 6
	e (PcS)	21	57	02	Dist. 33.5°
	eLQ	21	58	24	
	eLR	21	59	08	
	iLg	22	02	12	
	M <sub>2</sub>	22	05	22	

## 20 PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Oct.					
25	e	01	36	36	Gulf of California
	eLQ	01	37	46	aftershock
	eLR	01	41	12	
25	eLQ	02	42	12	Northeastern Greece
	eLR	02	44	52	
25	iP	04	47	56	Fox Islands, Aleutians
	ePcP	04	48	08	USCGS 0 = 04 37 35
	ePP	04	50	16	52 1/2°N 169 1/2°W
	eS	04	56	20	Dist. 62.1
	eScS	04	57	56	
	eSS	05	00	52	
	eLQ	05	05	32	
	eLR	05	07	32	
25	eLR	07	20	12	
25	iP	10	15	34	Kamchatka
	P (Z) 10 sec 2.5 mic comp				USCGS 0 = 10 03 32
	from NW				50 1/2°N 156 1/2°E
	iPcP	10	15	46	Mag 6 3/4
	iPP	10	18	36	Dist. 78.7°
	ePPP	10	20	12	
	iS	10	25	20	
	iSKS	10	25	44	
	iPPS	10	26	20	
	eSS	10	30	20	
	e	10	31	48	
	e (SSS)	10	34	52	
	eLQ	10	37	42	
	eLR	10	41	12	
26	eLR	05	45	42	Molucca Passage
26	e	08	53	46	Fiji Islands
	eLR	08	54	56	

## PALISADES, NEW YORK

21

Date	Phase	h	m	s	Remarks
1957					
Oct.					
26	ePKP	14	36	20	Borneo
	ePP	14	39	12	USCGS 0 = 14 16 57
	ePKS	14	40	04	2°S 116°E
	ePPP	14	42	20	Mag 6.3 (Uppsala)
	ePcPPKP	14	44	16	Dist. 140.4°
	e	14	47	42	
	ePS	14	49	12	
	ePPS	14	51	12	
	eSS	14	57	42	
	e	14	58	52	
	eSSS	15	02	32	
	eLQ	15	11	32	
	eLR	15	18	42	
26	eLR	19	05	52	
27	eLQ	18	43	12	
	eLR	18	44	12	
27	iP (comp)	22	43	53	Kamchatka
	ipP	22	44	29	USCGS 0 = 22 32 25
	ipPcP	22	44	42	55.5°N 162°E
	e (PPPP)	22	49	04	Mag 6 1/2 - 6 3/4
	e (pPPPP)	22	50	12	Depth 150 km
	eS	22	53	00	Dist. 73.4
	eSKS	22	53	28	
	esS	22	54	24	
	eSS	22	57	38	
	eSSS	23	00	48	
	e (sSSS)	23	01	26	
	e (SSSS)	23	01	57	
	eLR	23	06	42	
29	iPKP	02	41	04	Borneo aftershock
	eLR	03	35	12	
30	i	01	52	40	Dodecanese
	eS	02	04	24	USCGS 0 = 01 43 01
	eSS	02	10	12	Dist. 75.2
					35.3°N 27.2°E



22		PALISADES, NEW YORK			
Date	Phase	h	m	s	Remarks
1957					
Oct.					
30	iP	02	23	24	Fox Islands, Aleutians
	eS	02	31	20	USCGS 0 = 02 13 08
	e	02	39	26	53°N 167°W
	eLQ	02	43	32	Dist. 60.6
	eLR	02	47	42	
30	eP	07	42	05	Dodecanese aftershock
	eS	07	51	38	USCGS 0 = 07 30 20
	eLQ	08	01	12	36°N 27 1/2°E
	eLR	08	04	12	Dist. 74.8°
31	eLQ	03	07	52	Hondo, Japan
	eLR	03	09	12	
31	eLR	05	30	04	Solomon Islands
31	iP	10	14	51	Near coast of Panama
	P (Z) 6 sec 5 mic from SW				USCGS 0 = 10 07 54
	iPP	10	16	08	6 1/2°N 83°W
	iS	10	20	20	Mag 6 3/4
	ePcS	10	20	56	Dist. 34.7
	eLQ	10	23	00	
	eLR	10	24	32	
31	eP	16	32	04	Galapagos Islands
	iS	16	38	08	USCGS 0 = 16 24 17
	eSS	16	41	08	1 1/2°N 86°W
	eLQ	16	41	40	Dist. 40.2
	eLR	16	42	38	
Nov.					
1	eLR	15	08	42	Guatemala
1	eLR	15	25	42	
2	eLR	01	54	12	Fox Islands, Aleutians
2	iP	07	27	09	Ciapas, Mexico
	ePP	07	28	18	USCGS 0 = 07 20 58
	eS	07	32	22	15°N 93 1/2°W
	eLQ	07	34	12	Depth 100 km
	eLR	07	35	12	Dist. 31.0°

PALISADES, NEW YORK		23			
Date	Phase	h	m	s	Remarks
1957					
Nov.					
2	ePP	18	50	42	New Hebrides
	ePKS	18	52	16	USCGS 0 = 18 30 24
	eSKS	18	56	16	13°S 166 1/2°E
	ePS	19	00	22	Dist. 120.6°
	ePKKS	19	03	12	
	eSS	19	07	24	
	eSSS	19	11	52	
	eSSSS	19	15	28	
	eLQ	19	21	12	
	eLR	19	27	12	
3	eLR	00	42	12	Northern Italy
3	e (PP)	10	45	18	Northeast of New Guinea
	ePKS	10	47	22	USCGS 0 = 10 24 51
	eSKS	10	51	12	6°S 147°E
	e (PPS)	10	57	12	Dist. 129.6°
	eSS	11	02	56	
	eLR	11	25	42	
3	eLR	12	12	12	New Guinea aftershock
4	iP	02	41	34	Andreanof Islands,
	eLR	03	08	12	Aleutians
5	eLR	20	24	12	Andreanof Islands,
					Aleutians
6	eLR	01	39	42	
6	eLR	05	34	32	Argentina
6	eLR	13	49	42	Kurile Islands
7	eLR	03	33	28	Easter Islands
7	e	06	50	42	South Pacific
	e	06	57	12	
	eLQ	07	04	12	
	eLR	07	08	12	
	eLQ <sub>2</sub>	08	01	12	
8	eLR	03	43	12	Solomon Islands

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Nov.					
8	eLR	09	52	12	Hokkaido, Japan
8	eLR	18	32	12	
9	eLR	22	36	42	Jan Mayen
10	ePP	02	57	12	Solomon Islands
	eSKS	03	02	30	USCGS 0 = 02 36 21
	eSKKS	03	04	20	7°S 155 1/2° E
	ePS	03	06	56	Dist. 124.5°
	ePPS	03	08	34	
	eSS	03	14	12	
	eSSS	03	18	52	
	e	03	22	52	
	e	03	25	12	
	eLQ	03	28	24	
	eLR	03	32	52	
10	eLR	04	42	12	Solomon Islands
10	ePP	06	10	20	Northeast of New Guinea
	ePKS	06	11	32	USCGS 0 = 05 48 57
	e (SKS)	06	14	12	6 1/2°S 147°E
	ePPS	06	21	42	Dist. 129.9°
	e	06	26	52	
	eSS	06	27	52	
	e (SSS)	06	31	08	
	eLQ	06	43	28	
	eLR	06	48	52	
10	eLR	09	13	24	Solomon Islands
10	eS	10	33	02	Northern Colombia
	eLQ	10	34	52	USCGS 0 = 10 21 14
	eLR	10	36	52	8°N 74 1/2°W
					Dist. 32.8°
10	eSKS	19	44	12	Hondo, Japan
	ePS	10	46	42	USCGS 0 = 19 20 05
	e	19	48	56	34°N 139 1/2°E
	eSS	19	52	12	Dist. 99.2°
	eLQ	19	59	42	
	eLR	20	05	22	

## PALISADES, NEW YORK

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Date	Phase	h	m	s	Remarks
1957					
Nov.					
11	eLQ	13	14	20	Gulf of California
	eLR	13	15	28	
11	eP	18	27	20	Near coast of Guerrero,
	eS	18	32	50	Mexico
	eL	18	36	12	USCGS 0 = 18 20 38
					16° 33'N 100°09'W
					Dist. 32.8°
11	eL	20	14	12	
12	eP	00	08	06	Caymen Islands, Antilles
	eS	00	12	20	USCGS 0 = 00 03 02
	eLQ	00	13	12	19°N 81 1/2°W
	eLR	00	13	52	Dist. 22.8°
12	eLQ	02	24	12	
	eLR	02	30	12	
12	eLR	06	09	42	Andreanof Islands,
					Aleutians
12	eLR	10	40	12	Banda Sea
12	eLR	11	16	28	
13	eLR	02	03	24	Solomon Islands
13	iP	10	56	42	Gulf of Honduras
	eLR	11	03	30	BCIS 0 = 10 51 05
					16 3/4°N 86 1/2°W
					Dist. 26.2°
13	iPKP	17	41	36	Kermadec Island Region
	ePP	17	43	05	USCGS 0 = 17 22 41
	eSKS	17	48	27	33°S 179°W
	eSKKS	17	49	53	Mag 6 3/4
	ePKKP	17	52	21	Dist. 122.7°
	ePS	17	52	53	
	ePPS	17	54	33	
	ePKKS	17	56	05	
	eSS	17	59	49	
	e (SKKS)	18	02	49	

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## PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Nov.					
13	(continued)				
	e (SSS)	18	03	23	
	e	18	09	05	
	eLQ	18	12	13	
	eLR	18	19	21	
	eLQ <sub>2</sub>	19	03	33	
14	iP	04	45	40	Andreanof Islands,
	eL	05	15	13	Aleutians USCGS 0 = 04 34 41 51°N 179°W Dist. 67.5°
14	eP	05	31	00	Andreanof Islands, Aleutians
15	eLQ	06	38	45	Fox Islands, Aleutians
	eLR	06	41	41	
15	eSS	08	30	53	Mindanao, Philippines
	eLQ	08	45	01	USCGS 0 = 07 52 25
	eLR	08	52	49	8 1/2°N 124°E
	eLQ <sub>2</sub>	09	28	43	Dist. 128.0°
15	eLR	13	10	13	
15	iP	16	42	25	Kamchatka
	P (Z) 6 sec 1.2 mic comp				USCGS 0 = 16 30 29
	iPcP	16	42	37	51 1/2°N 158°E
	eS	16	52	05	Dist. 77.4°
	eScS	16	52	33	
	eSS	16	57	01	
	eSSS	17	00	43	
	eLQ	17	03	13	
	eLR	17	07	45	
15	iP	17	25	12	
16	iP	01	59	38	Andreanof Islands,
	eS	02	08	17	Aleutians
	eSS	02	13	21	USCGS 0 = 01 48 48
	eLQ	02	15	43	51 1/2°N 177°W
	eLR	02	17	13	Dist. 66.4°

## PALISADES, NEW YORK

27

Date	Phase	h	m	s	Remarks
1957					
Nov.					
16	eLQ	05	18	13	North of Honduras
	eLR	05	20	43	
16	eLR	22	42	21	
17	eLQ	00	01	59	Sonora, Mexico
	eLR	00	02	31	
17	eP	01	01	45	
	eLR	01	28	13	
17	eLQ	05	03	37	
	eLR	05	04	13	
17	iP	06	09	38	
	e	06	11	02	
	e	06	19	25	
	e	06	21	57	
	e (L)	06	32	13	
17	e	06	55	41	Lower California
	eLQ	06	59	13	USCGS 0 = 06 43 00
	eLR	06	59	53	
	Rg	07	04	19	
17	eS	16	04	32	Southern Chile-Argentine
	ePPS	16	05	34	border
	eSS	16	09	48	USCGS 0 = 15 41 22
	eSSS	16	15	12	
	eLR	16	21	12	
18	eP	10	22	58	Andreanof Islands,
	eS	10	31	46	Aleutians
	ePS	10	31	56	USCGS 0 = 10 12 00
	eScS	10	32	46	51 1/2°N 179 1/2°W
	eSS	10	36	42	Dist. 67.4°
	eLQ	10	39	12	
	eLR	10	43	12	
18	eL	15	36	12	Kurile Islands
19	eLR	02	48	12	Ryukyu Islands

28		PALISADES, NEW YORK			
Date	Phase	h	m	s	Remarks
1957					
Nov.					
19	eLR	03	43	40	An tarctic Ocean
20	eLQ	01	13	52	Hondo, Japan
	eLR	01	15	42	
20	eLR	03	31	42	Volcano Islands
20	iP	12	50	27	Unimak Islands
	P (Z) 9 sec 2,5 mic comp from NW				USCGS 0 = 12 40 23
					54°N 165°W
					Mag 6 1/4
					Dist. 58,7°
	ePP	12	52	36	
	ePPP	12	54	28	
	iS	12	58	24	
	ePPS	12	59	30	
	eScS	13	00	04	
	eSS	13	02	16	
eLQ	13	05	40		
eLR	13	08	04		
20	eLR	19	46	42	Mexico
21	eLR	06	16	12	Halmañera
22	eLQ	16	58	12	Loyalty Islands Region
	eLR	17	04	12	
23	iP	01	08	50	Fox Islands, Aleutians
	iS	01	17	02	USCGS 0 = 00 58 36
	eScS	01	18	36	53°N 167 1/2°W
	eSS	01	21	22	Dist. 60,5°
	eLQ	01	24	42	
	eLR	01	28	08	
23	eLR	19	15	42	Rat Islands, Aleutians
23	eLR	23	07	42	Loyalty Islands Region
24	eL	02	03	12	Andreanof Islands, Aleutians
24	eL	10	07	12	Northeast of Greenland

PALISADES, NEW YORK		29			
Date	Phase	h	m	s	Remarks
1957					
Nov.					
25	eL	09	30	12	Guatemala
25	ePP	19	04	13	Off coast of Oregon, U.S.A. USCGS 0 = 18 55 12 44°N 130°W Dist. 40,7
	eS	19	09	03	
	eSSS	19	12	09	
	eLR	19	13	41	
25	eLR	19	54	33	Oregon, U.S.A.
25	ePP	20	41	39	Oregon U.S.A. aftershock USCGS 0 = 20 32 25 44 1/2°N 129 1/2°W Dist. 40,2°
	eS	20	46	17	
	eSS	20	49	31	
	eLR	20	51	33	
25	ePP	22	26	21	Oregon, U.S.A. aftershock USCGS 0 = 22 16 44 45°N 130°W Dist. 40,5°
	eS	22	30	41	
	eLR	22	35	33	
25	ePKP	22	54	26	Near east coast of Borneo USCGS 0 = 22 35 00 1 1/2°S 116,5°E Dist. 139,5°
	ePP	22	57	17	
	ePKS	22	58	13	
	eSKS	23	01	39	
	e (SKKKS)	23	05	21	
	ePS	23	07	39	
	eSS	23	14	23	
	e	23	19	31	
	e	23	23	01	
	e	23	29	21	
	eLQ	23	31	13	
eLR	23	38	13		
26	ePKP	05	29	36	Borneo aftershock USCGS 0 = 05 10 00 2°S 116°E Dist. 140,1°
	ePP	05	32	23	
	ePKS	05	33	13	
	ePPS	05	44	29	
	eSS	05	50	53	
	eSSS	05	55	43	
	eLQ	06	09	23	
	eLR	06	16	29	
26	iP	11	46	34	Andreanof Islands, Aleutians USCGS 0 = 11 35 44 51 1/2°N 176°W Dist. 65,7°
	ePP	11	48	01	
	eS	11	55	19	
	eScS	11	56	25	
	eSS	11	59	33	
	eLQ	12	03	23	
	eLR	12	06	29	

30		PALISADES, NEW YORK			
Date	Phase	h	m	s	Remarks
1957					
Nov.					
26	eLR	23	38	13	Near coast of Nicaragua
28	ePKP	21	10	51	New Hebrides
	eSKS	21	17	29	USCGS 0 = 20 50 10
	eSKKS	21	19	57	15°S 168 1/2°E
	ePPS	21	23	15	Dist. 120.4°
	eSS	21	27	19	
	eSSS	21	31	05	
	eSSSS	21	36	13	
	eLQ	21	40	53	
	eLR	21	46	13	
	eLQ <sub>2</sub>	22	31	25	
	eLR <sub>2</sub>	22	41	25	
29	eLR	08	05	43	
29	iP	22	29	40	Southern Bolivia
	P(Z) 12 sec 15 mic dil from S				USCGS 0 = 22 19 38
	ipP	22	29	45	21°S 66°W
	iPcP	22	30	33	Depth 200 km
	iPcS	22	34	45	Mag 7-3/4-8
	iS	22	37	47	Dist. 62.1°
	iScS	22	39	13	
	eSS	22	41	43	
	eLR	22	44	13	
	ePKPPKP	22	58	36	
30	eP	22	06	31	Kurile Islands
	e	22	08	13	USCGS 0 = 21 54 10
	e	22	12	57	47°N 154°E
	eSKS	22	16	43	Dist. 82.6°
	eSS	22	21	37	
	ePKKP	22	25	13	
	eLR	22	36	41	
Dec.					
1	e	01	21	23	Kurile Islands
	e	01	31	33	
	eLR	01	40	13	

PALISADES, NEW YORK		31			
Date	Phase	h	m	s	Remarks
1957					
Dec.					
1	eLQ	07	44	39	West of Mexico
	eLR	07	47	13	
1	eLR	19	42	13	Fox Islands, Aleutians
3	iP	01	57	00	Andreanof Islands,
	eLR	02	14	59	Aleutians
3	iP	21	56	38	Fox Islands, Aleutians
	e	21	09	53	USCGS 0 = 21 46 18
	eLR	22	17	33	52°N 169°W
					Dist. 61.8°
4	eP	03	51	03	Outer Mongolia
	iP	03	51	09	USCGS 0 = 03 37 45
	i (PcP)	03	51	33	45 1/2°N 99 1/2°E
	iPP	03	55	01	Mag 8
	iPPP	03	57	21	Dist. 93.8°
	iSKS	04	01	05	
	iS	04	01	53	
	iPS	04	03	33	
	iPPS	04	04	25	
	iSS	04	08	53	
	iSSS	04	12	13	
	eLQ	04	15	13	
	eLR	04	22	53	
4	eLR	14	03	13	Outer Mongolia aftershock
6	eLR	04	35	13	Kurile Islands
6	eLR	09	18	13	Kurile Islands
7	iPKP	03	35	15	Flores Sea
7	eP	08	30	15	Guatemala
	eLQ	08	36	44	USCGS 0 = 08 24 03
	eLR	08	37	44	15 1/2°N 92°W
7	eLQ	22	29	14	East of Nicaragua
	eLR	22	32	14	

32		PALISADES, NEW YORK			
Date	Phase	h	m	s	Remarks
1957					
Dec.					
8	eLR	16	12	44	Outer Mongolia aftershock
8	eLR	17	05	14	Outer Mongolia aftershock
9	eLR	08	20	14	Iceland
9	eLR	16	29	13	
9	iP	22	15	25	Yukon
	ePP	22	16	53	USCGS 0 = 22 07 43
	eS	22	21	33	65 1/2°N 134°W
	eSS	22	24	49	Dist. 41.2°
	eLR	22	26	13	
	iLg	22	28	57	
	Rg	22	31	35	
10	eP	14	51	37	Solomon Islands
	ePKP	14	54	53	USCGS 0 = 14 35 57
	ePP	14	56	35	6°S 154 1/2°E
	ePKS	14	58	33	Mag 6 3/4
	ePPP	14	59	29	Dist. 124.5°
	ePPS	15	08	23	
	eSS	15	13	57	
	eSSS	15	18	25	
	eSSSS	15	22	01	
	e (L)	15	29	13	
	eLR	15	34	00	
11	eLR	00	38	01	
11	eLR	03	59	43	Solomon Islands aftershock
11	eLR	18	58	43	South of Honshu, Japan
12	eLR	10	45	13	New Hebrides
12	eLQ	19	32	13	
	eLR	19	35	01	

PALISADES, NEW YORK		33			
Date	Phase	h	m	s	Remarks
1957					
Dec.					
13	iP	01	38	38	Colombia
	P (Z) 6 sec 2.5 mic comp				USCGS 0 = 01 31 57
	ePP	01	39	41	7°N 76°W
	ePPP	01	40	21	Depth 100 km
	eS	01	44	09	Mag 6 3/4
	eSS	01	46	29	Dist. 33.9°
	eLR	01	47	43	
13	iP	01	57	53	Iran
	P (Z) 6 sec 3.5 mic comp				USCGS 0 = 01 44 59
	ePPP	02	04	13	34 1/2°N 48°E
	eSKS	02	08	13	Mag 7 1/4
	eS	02	08	33	Dist. 87.6°
	ePS	02	09	37	
	ePPS	02	10	17	
	eSS	02	14	29	
	eSSS	02	20	47	
	eLQ	02	23	43	
	eLR	02	26	29	
	eLQ <sub>2</sub>	03	13	13	
13	eP	20	36	42	Fox Islands, Aleutians
	eS	20	45	07	USCGS 0 = 20 26 22
	eSS	20	49	17	52 1/2°N 170°W
	eSSS	20	52	03	Dist. 62.0°
	eLQ	20	55	33	
	eLR	21	00	13	
14	eLR	23	26	13	Colombia aftershock
16	eLR	03	47	14	
16	iP	17	35	04	Vancouver Islands
	ePP	17	36	28	USCGS 0 = 17 27 47
	eS	17	40	44	50°N 127°W
	eSS	17	42	50	Dist. 37.8°
	eLQ	17	44	34	
	eLR	17	45	54	
	Rg	17	50	32	
16	eLR	23	51	14	Iran aftershock

## 34 PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Dec.					
17	eP	05	21	45	East of Kamchatka
	ePPP	05	26	42	USCGS 0 = 05 10 11
	eS	05	31	14	53 1/2°N 162° E
	ePS	05	31	56	Mag 6 3/4
	ePPS	05	32	28	Dist. 73°
	eSS	05	36	14	
	eSSS	05	39	44	
	eLQ	05	42	14	
	eLR	05	45	32	
17	iP	14	05	22	Santa Cruz Islands
	ipP	14	05	52	USCGS 0 = 13 50 12
	ePKP	14	08	54	12 1/2°S 166 1/2°E
	iPP	14	09	32	Depth 100 km
	ipPP	14	10	22	Mag 7 3/4
	e (sPP)	14	10	52	Dist. 120.6°
	iPPP	14	11	54	
	eSKS	14	15	40	
	iPS	14	19	54	
	eSSS	14	27	04	
	eLQ	14	39	54	
	eLR	14	46	38	
18	eLR	02	26	14	Venezuela
18	eLQ	03	13	44	
	eLR	03	17	14	
18	eLR	12	14	14	
18	eLR	21	34	44	Sandwich Islands
19	eLR	04	29	44	Nicaragua
20	eP	11	30	00	Central Chile
	eS	11	39	20	USCGS 0 = 11 18 42
	eSS	11	44	02	30 1/2°S 71°W
	eLQ	11	47	14	Dist. 70.2°
	eLR	11	50	44	
21	eLR	19	30	14	Guatemala

## PALISADES, NEW YORK 35

Date	Phase	h	m	s	Remarks
1957					
Dec.					
23	eP	12	40	18	Mid-Atlantic Ridge
	ePP	12	41	05	USCGS 0 = 12 34 03
	e	12	44	35	35°N 36 1/2°W
	eS	12	45	15	Dist. 29.9°
	eLQ	12	45	59	
	eLR	12	46	31	
23	iP	13	25	35	Nicaragua
	eLR	13	32	15	
23	eLR	20	41	35	Luzon, Philippines
24	eLR	16	58	15	
25	eLR	02	54	15	Kamchatka
25	eLR	10	32	35	
25	eP	16	32	29	Venezuela
	ePP	16	33	21	USCGS 0 = 16 26 01
	e	16	34	15	10 1/2°N 62 1/2°W
	eS	16	37	37	Dist. 32.1°
	eLQ	16	38	45	
	eLR	16	41	15	
26	eLR	01	43	15	Venezuela
26	eLR	07	25	45	Kamchatka
26	eP	12	28	06	Off coast of California
	ePP	12	29	43	USCGS 0 = 12 20 35
	eS	12	33	45	41 1/2°N 127°W
	eLR	12	39	45	Dist. 39.4°
26	eLR	13	08	15	
26	eL	19	34	15	Kamchatka
27	eLR	08	01	26	North Atlantic Ocean
27	eLR	09	13	14	

36 PALISADES, NEW YORK

Date	Phase	h	m	s	Remarks
1957					
Dec.					
28	iP	14	46	45	Bolivia
	P (Z) 6 sec 1.5 mic comp				USCGS 0 = 14 36 40
	ePP	14	48	51	18°S 64 1/2°W
	ePPP	14	50	37	Dist. 58.5°
	eS	14	54	45	
	ePPS	14	55	09	
	eSS	14	59	05	
	eLQ	14	59	35	
	eLR	14	03	55	
28	eLR	03	18	15	Solomon Islands
28	eLR	05	17	15	
28	eLQ	19	46	14	Tonga Islands Region
	eLR	19	51	22	
30	eLR	06	42	44	
30	eLR	13	16	14	Fox Islands, Aleutians
30	eLR	17	57	22	
30	eLR	19	10	54	Unimak Islands
31	eLR	00	45	38	
31	eLR	06	41	02	
31	eP	10	28	01	North Atlantic Ocean
	eS	10	33	14	USCGS 0 = 10 21 35
	eSS	10	34	14	58°N 32°W
	eLR	10	35	54	Dist. 31.1°
31	eP	13	08	14	North Atlantic Ocean
	eS	13	13	06	USCGS 0 = 13 02 20
	eLQ	13	14	22	25°N 46°W
	eLR	13	15	14	Dist. 29.3°

PALISADES, NEW YORK 37

Date	Phase	h	m	s	Remarks
1957					
Dec.					
31	ePKP	14	47	38	South Island, New Zealand
	ePKP	14	47	55	USCGS 0 = 14 28 15
	ePP	14	50	23	45°S 165 1/2°E
	ePKS	14	51	13	Dist. 137.2°
	eSKKS	14	57	13	
	e	14	58	18	
	ePS	15	00	21	
	ePPS	15	02	31	
	eSS	15	08	49	
	e	15	25	43	
	eLR	15	34	43	
	eLR <sub>2</sub>	16	21	13	
31	eLR	17	33	43	
31	eLR	19	17	13	
31	e	21	01	20	
	eLR	22	03	43	



## IGY MICROSEISM DATA

PALISADES, NEW YORK							1			
Date	Type	0h		06h		12h		18h		Remarks
	K	u	sec	u	sec	u	sec	u	sec	Vert. Comp. To = 12 sec Tg = 15 sec
1957 Sept.										
1	b	0.5	2	0.5	3	0.5	3	0.2	2	
2	b	-	-	0.5	2	-	-	0.5	3	Earthq. Interf.
3	b	0.5	2	-	-	0.5	3	0.5	3	" "
4	b	0.5	3	-	-	0.5	3	0.5	3	" "
5	b	0.5	3	0.5	3	0.5	3	0.5	3	
6	b	0.5	3	0.5	3	0.5	3	0.5	3	
7	b	0.5	4	0.5	4	-	-	0.5	4	Earthq. Interf.
8	b	0.5	4	0.5	4	0.5	3	0.5	3	
9	b	0.5	3	0.5	4	0.5	4	-	-	Earthq. Interf.
10	b	0.7	5	0.7	4	0.7	4	0.7	2	
11	b	0.7	3	0.7	4	0.5	4	0.5	3	
12	b	-	-	0.3	3	0.3	3	0.3	3	Earthq. Interf.
13	b	0.3	3	0.5	3	0.5	3	0.5	3	
14	b	0.5	3	0.7	3	0.7	3	-	-	Earthq. Interf.
15	b	1.0	4	1.0	5	1.5	5	1.0	5	
16	b	1.5	5	2.0	6	2.0	6	2.5	6	
17	b	2.5	6	2.5	6	2.3	6	2.0	6	
18	b	2.0	6	2.0	6	2.0	6	1.5	6	
19	b	1.5	5	1.5	5	1.5	5	-	-	Earthq. Interf.
20	b	1.2	4	1.2	4	1.2	4	1.5	6	
21	b	-	-	1.5	6	1.3	5	1.5	5	
22	b	1.3	5	1.5	6	1.3	5	1.3	5	
23	b	1.3	5	1.3	5	1.5	5	1.5	5	See Inter. Day Data
24	b	1.2	4	1.0	3	1.0	3	0.7	4	" " " "
25	b	0.5	3	-	-	1.0	4	-	-	Earthq. Interf.
26	b	-	-	1.0	4	0.6	3	0.5	3	
27	b	0.7	3	-	-	1.3	4	1.5	4	
28	b	1.5	3	1.0	3	1.0	3	1.3	4	
29	b	1.7	4	2.0	5	1.7	5	1.5	5	
30	b	1.0	4	1.0	4	0.7	2	0.5	3	See Inter. Day Data
Oct.										
1	b	0.7	3	0.5	4	0.7	3	0.7	3	
2	b	0.7	3	0.7	4	0.7	3	0.7	3	
3	b	0.5	2	0.5	3	0.7	3	0.7	3	
4	b	0.7	4	-	-	1.0	4	1.5	4	
5	b	1.5	4	1.5	4	1.5	4	1.5	4	
6	b	1.5	4	1.5	4	2.0	5	3.0	5	

## IGY MICROSEISM DATA

PALISADES, NEW YORK							2			
Date	Type	0h		06h		12h		18h		Remarks
	K	u	sec	u	sec	u	sec	u	sec	Vert. Comp. To = 12 sec Tg = 15 sec
1957 Oct.										
7	b	3.0	5	2.5	4	1.5	4	1.0	3	
8	b	1.0	3	1.0	3	0.7	4	0.7	4	
9	b	0.5	4	0.3	4	0.3	4	0.3	3	
10	b	0.3	3	0.3	3	0.3	3	0.5	4	
11	b	0.3	3	0.3	3	0.3	3	0.3	3	
12	b	0.3	2	0.3	2	0.3	2	0.3	2	
13	b	0.3	2	-	-	0.5	3	0.5	3	
14	b	0.5	4	0.5	3	0.5	4	0.7	4	
15	b	1.0	5	1.0	5	1.3	5	1.5	6	
16	b	1.5	6	1.5	6	1.3	6	1.0	5	
17	b	1.0	4	0.7	3	0.7	3	-	-	
18	b	0.3	3	0.3	3	0.5	4	0.7	4	
19	b	0.7	4	0.7	4	1.0	2	1.0	2	
20	b	1.0	2	1.0	2	-	-	0.5	3	
21	b	0.7	4	1.0	4	1.5	4	1.3	4	
22	b	1.0	4	0.7	3	0.5	3	0.5	3	See Inter. Day Data
23	b	0.5	3	-	-	0.3	3	0.3	2	" "
24	b	0.3	2	0.5	2	0.5	3	0.5	3	" "
25	b	0.5	2	0.5	3	-	-	0.5	2	
26	b	0.5	2	1.0	2	0.7	3	0.7	3	
27	b	0.7	4	0.7	4	1.0	4	1.0	4	
28	b	-	-	1.0	4	1.0	4	1.2	3	
29	b	1.2	3	1.3	3	1.0	3	1.0	3	
30	b	1.0	3	1.0	3	1.0	3	1.2	4	
31	b	1.2	5	1.2	4	-	-	-	-	
Nov.										
1	b	1.0	4	1.0	5	1.0	4	1.0	4	
2	b	1.0	4	0.7	3	1.0	5	1.0	4	
3	b	1.2	5	1.2	4	1.2	4	1.0	4	
4	b	1.0	4	1.0	4	1.0	4	1.0	3	
5	b	1.0	4	1.0	4	1.0	4	1.0	3	
6	b	1.0	4	1.0	4	1.0	3	0.7	3	
7	b	0.7	3	0.7	4	0.7	4	0.7	3	
8	b	0.7	3	0.7	3	1.5	7	1.5	7	
9	b	1.5	7	1.2	4	1.2	3	1.0	2	
10	b	1.5	3	1.5	3	1.3	3	1.3	3	
11	b	1.3	4	1.3	4	1.0	3	1.0	4	

IGY MICROSEISM DATA

PALISADES, NEW YORK							3			
Date	Type	0h		06h		12h		18h		Remarks
	K	u	sec	u	sec	u	sec	u	sec	Vert. Comp. To = 12 sec Tg = 15 sec
1957										
Nov.										
12	b	-	-	0.5	4	0.5	4	0.5	4	
13	b	1.0	5	2.0	8	2.0	8	-	-	
14	b	1.7	7	1.7	6	1.7	6	1.7	6	See Inter. Day Data
15	b	1.3	6	1.0	5	0.7	5	-	-	
16	b	0.7	4	0.5	4	0.5	4	0.3	4	
17	b	0.3	4	0.4	4	0.7	5	0.7	5	
18	b	0.5	6	0.7	6	1.0	6	1.0	6	
19	b	1.3	6	1.3	6	1.3	6	1.2	6	
20	b	0.7	4	1.0	4	1.0	4	1.5	3	
21	b	1.5	4	1.5	4	1.5	4	1.3	4	See Inter. Day Data
22	b	1.5	5	1.5	5	1.5	5	1.0	4	" "
23	b	0.9	4	0.9	5	0.9	4	0.8	4	
24	b	0.8	4	1.5	4	1.2	4	0.8	4	
25	b	1.1	4	1.6	4	1.2	4	1.3	5	
26	b	-	-	-	-	-	-	2.0	5	
27	b	2.7	5	2.8	5	3.3	5	3.2	5	
28	b	3.2	5	3.8	5	4.0	5	2.5	5	
29	b	2.8	5	2.0	5	1.7	4	1.5	5	
30	b	-	-	1.5	4	1.5	4	1.5	4	
Dec.										
1	b	2.5	3	2.2	4	3.2	4	3.5	4	
2	b	3.7	5	3.5	5	3.5	5	3.8	5	
3	b	3.8	5	3.7	5	2.5	4	2.5	4	
4	b	2.8	4	-	-	2.0	4	3.4	4	
5	b	-	-	-	-	-	-	-	-	
6	b	-	-	6.0	4	4.3	4	4.0	5	
7	b	4.0	5	3.1	5	4.3	5	3.0	5	
8	b	2.7	6	2.0	5	2.0	4	-	-	
9	b	-	-	-	-	-	-	-	-	
10	b	-	-	-	-	-	-	1.5	3	
11	b	1.4	3	1.7	3	2.0	4	2.3	4	
12	b	2.3	4	3.0	4	3.0	5	3.4	5	
13	b	3.6	5	3.5	5	3.9	5	3.2	5	See Inter. Day Data
14	b	2.5	4	3.3	5	3.7	5	3.6	5	
15	b	2.6	4	2.8	6	2.0	4	2.2	4	
16	b	1.5	6	1.2	4	0.9	3	-	-	See Inter. Day Data

IGY MICROSEISM DATA

PALISADES, NEW YORK							4			
Date	Type	0h		06h		12h		18h		Remarks
	K	u	sec	u	sec	u	sec	u	sec	Vert. Comp. To = 12 sec Tg = 15 sec
1957										
Dec.										
17	b	-	-	-	-	-	-	0.8	3	
18	b	0.7	3	0.9	3	0.8	3	0.8	3	
19	b	0.8	4	0.7	3	0.6	3	0.7	3	
20	b	0.8	4	1.0	5	1.0	4	1.0	4	
21	b	1.0	4	1.0	4	1.1	3	1.2	4	See Inter. Day Data
22	b	1.2	4	1.5	4	1.2	4	1.2	4	" "
23	b	1.2	4	1.2	4	1.5	4	2.5	5	
24	b	2.5	5	2.6	5	1.5	5	1.2	5	
25	b	1.0	5	0.9	4	1.1	5	1.2	4	
26	b	1.2	4	1.3	4	1.0	4	0.6	3	
27	b	1.2	3	4.0	4	4.2	4	1.3	5	
28	b	1.2	5	1.3	5	1.8	6	4.1	5	
29	b	3.2	5	2.6	4	1.8	4	2.0	6	
30	b	1.5	4	1.3	4	1.2	4	1.2	4	
31	b	1.0	4	1.1	4	1.2	4	1.3	4	

## INTERNATIONAL DAYS - MICROSEISM DATA

PALISADES, NEW YORK												1	
Hour		00	01	02	03	04	05	06	07	08	09	10	11
1957													
Sept. 1	mic	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	kb	2	3	3	3	2	2	3	3	3	3	3	3
Sept. 23	mic	1.3	1.3	1.2	1.2	1.3	1.4	1.3	1.5	1.5	1.5	1.3	1.4
	kb	5	5	5	5	5	6	5	6	6	6	5	5
Sept. 24	mic	1.2	1.0	1.0	1.0	1.0	0.7	1.0	0.7	0.7	-	-	-
	kb	4	4	4	4	4	3	3	3	4	-	-	-
Sept. 30	mic	1.0	1.0	0.7	1.0	1.0	1.0	1.0	0.7	1.0	0.7	1.0	0.7
	kb	4	4	4	4	3	4	4	4	4	4	4	3
Oct. 22	mic	1.0	1.0	1.3	1.0	1.0	1.0	0.7	0.7	0.7	0.7	0.7	0.5
	kb	4	3	3	3	3	3	3	2	2	4	3	3
Oct. 23	mic	0.5	0.5	0.5	0.5	0.5	-	-	-	-	0.5	0.5	0.3
	kb	3	2	3	3	3	-	-	-	-	2	2	2
Oct. 24	mic	0.3	-	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	kb	2	-	-	4	3	2	2	2	2	2	2	3
Nov. 14	mic	1.7	1.5	1.5	1.5	1.5	1.6	1.7	1.6	1.7	1.7	1.7	1.7
	kb	7	7	7	6	6	6	6	6	6	7	6	6
Nov. 21	mic	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.3	1.3	1.3	1.3
	kb	4	5	5	4	4	3	4	3	3	4	4	4
Nov. 22	mic	1.5	1.5	1.3	1.3	1.3	1.5	1.5	1.0	1.4	1.6	1.2	1.2
	kb	5	5	5	4	5	5	5	6	5	5	5	5
Dec. 13	mic	3.6	3.9	-	-	3.9	4.0	3.5	3.8	4.0	4.0	4.4	4.2
	kb	5	5	-	-	5	5	5	5	5	5	4	5
Dec. 16	mic	1.5	1.2	1.5	1.0	1.0	0.9	1.2	0.9	1.0	0.9	0.9	0.9
	kb	6	4	5	5	4	4	4	4	4	4	4	4
Dec. 21	mic	1.0	1.0	0.9	1.0	0.9	0.9	1.0	1.0	1.2	1.2	1.2	1.1
	kb	4	4	4	4	4	4	4	3	3	4	4	4
Dec. 22	mic	1.2	1.0	1.2	1.2	1.0	1.3	1.5	1.2	1.3	1.5	1.4	1.3
	kb	4	4	4	4	4	4	4	4	4	3	4	4

## INTERNATIONAL DAYS - MICROSEISM DATA

PALISADES, NEW YORK												2	
Hour		12	13	14	15	16	17	18	19	20	21	22	23
1957													
Sept. 1	mic	0.5	0.3	0.3	0.5	0.5	0.3	0.2	0.2	0.2	0.2	0.3	0.3
	kb	3	2	3	3	3	3	2	2	2	2	2	3
Sept. 23	mic	1.5	1.3	1.2	1.2	1.2	1.3	1.5	1.3	1.3	1.3	1.3	1.0
	kb	5	5	5	5	4	4	5	5	5	5	4	4
Sept. 24	mic	1.0	1.0	0.7	0.7	0.7	0.7	0.7	1.0	1.0	0.7	0.7	0.7
	kb	3	3	3	3	3	4	4	3	3	3	3	3
Sept. 30	mic	0.7	0.7	1.0	0.7	0.7	0.6	0.5	0.5	0.5	0.5	0.7	1.0
	kb	2	3	3	3	3	3	3	3	3	3	4	4
Oct. 22	mic	0.5	0.5	0.5	0.3	0.3	0.3	0.5	0.5	0.5	-	0.6	0.6
	kb	3	2	2	2	2	2	3	3	3	-	3	2
Oct. 23	mic	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	kb	3	3	2	3	3	2	2	3	2	2	2	2
Oct. 24	mic	0.5	0.5	-	0.5	0.5	0.5	0.5	0.5	-	-	-	-
	kb	3	3	-	3	4	3	3	3	-	-	-	-
Nov. 14	mic	1.7	1.5	1.3	1.5	1.5	1.6	1.7	1.5	1.5	1.5	1.5	1.3
	kb	6	6	6	6	6	6	6	6	6	6	6	6
Nov. 21	mic	1.5	1.5	1.3	1.3	1.3	1.3	1.0	1.3	1.3	1.4	1.5	1.5
	kb	4	4	5	4	4	4	4	4	5	5	4	4
Nov. 22	mic	1.5	1.1	1.4	1.3	1.1	1.2	1.0	0.9	1.0	1.0	0.9	0.9
	kb	5	4	5	4	5	4	4	4	4	5	4	4
Dec. 13	mic	3.9	3.5	3.2	3.5	3.5	3.8	3.2	3.2	3.5	-	-	2.5
	kb	5	4	4	4	4	4	5	5	5	-	-	5
Dec. 16	mic	0.9	0.8	0.8	1.0	-	-	-	-	-	-	-	-
	kb	3	3	3	4	-	-	-	-	-	-	-	-
Dec. 21	mic	1.1	1.1	1.2	1.3	1.2	1.2	1.2	1.3	1.3	1.2	1.4	1.3
	kb	3	4	4	4	4	4	4	4	4	4	4	4
Dec. 22	mic	1.2	1.2	1.4	1.0	1.1	1.2	1.2	1.3	1.0	1.1	1.0	1.1
	kb	4	3	4	4	4	4	4	4	3	4	4	4



LAMONT GEOLOGICAL OBSERVATORY

Columbia University

Palisades, New York

ERRATUM:

The two extra cover sheets enclosed are to replace those on the Seismological Bulletins previously sent you.

The inside cover of Contribution No. 298, Palisades, January-April, 1955, was reversed with the inside cover of Contribution No. 296, Bermuda, January-March, 1957, making this correction necessary.