

BERMUDA. Apr. '60 - Mar '61

BERMUDA-COLUMBIA UNIVERSITY
SEISMOGRAPH STATION

SIGNAL HILL
ST. GEORGES, BERMUDA

●
SEISMOLOGICAL BULLETIN

By
G. PIMENTEL

1 APRIL 1960 - 31 MARCH 1961

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LAMONT GEOLOGICAL OBSERVATORY
(COLUMBIA UNIVERSITY)

Contribution No. 988

MENTS & ABBREVIATIONS

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

INSTRUMENTS:

Three component short period Benioff Seismographs
 To = 1 sec., T_g = 0.2 sec. (N.E.Z.)

Three component long period Benioff Seismographs
 To = 1 sec., T_g = 75 sec. (N.E.Z.)

Three component Columbia University long period Seismographs
 To = 15 sec., T_g = 75 sec. (N.E.Z.)

Two Milne Shaw horizontal seismographs (N.E., N.W.)
 To = 12 sec., v = 250

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

Epicentral Data from U.S. Coast & Geodetic Survey
 Preliminary Determinations.

ABBREVIATIONS:

i = sudden beginning of the motion: (impetus)
 e = gradual beginning of the motion: (emersia)

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. It is requested that exchange bulletins and papers are mailed directly to Bermuda.

Bermuda				1				1960			
Date	Phase	h	m	s	Date	Phase	h	m	s		
Apr 1	e (P)	14	21	26	Apr 13	Continued					
	i S		28	16		e (PcP)		46	46		
	e SS		32	08		i		50	46		
	e LR		35	00		e		51	44		
	O = 14.12.05					e LR		53	40		
	49N. 129½W.					O = 12.37.43					
	Off coast of Vancouver Island.					15½N. 92W.					
	Dist. approx 51° Bda.					Guatemala-Mexico border					
3	e LR	12	06	00		1 killed, 14 injured in the San Marcos area.					
4	e P	00	01	52		Damage at Huchuatemango and San Marcos.					
	e S		04	52		h. about 50km.					
	e LR		05	00		Mag: 6					
	e T		18	34		Dist. approx 31° Bda.					
	O = 23.57.50					15	i P	03	37	27	
	15½N. 60½W.						i S		47	07	
	Lesser Antilles						e SS		51	49	
	Dist. approx 17.5° Bda.						e IQ		57	45	
4	e (PKS)	08	18	42			e LR	04	00	00	
	e (PPS)		29	38		O = 03.25.38					
	e		57	50		27S. 113W.					
	e LR	09	01	00		Easter Island Region					
	O = 07.56.15					Mag: 6½					
	10S. 161½E.					Dist. approx 76° Bda.					
	Solomon Islands					15	i PKP	22	24	20	
	h. about 100km.						e PP		26	32	
	Dist. approx 132° Bda.						i PKS		27	48	
5	e PP	07	35	32			e PPS		38	25	
	e SKS		42	10			e SS		44	00	
	e CS		44	32			e (IQ)		57	20	
	e SS		49	46			e LR	23	07	00	
	e SSS		53	20		O = 22.05.11					
	e IQ	08	00	00		13½S. 166E.					
	e LR		05	00		New Hebrides Islands					
	O = 07.17.45					h. about 4.5km.					
	61S. 26W.					Mag: 6½					
	Sandwich Islands					Dist. approx 130° Bda.					
	Dist. approx 98° Bda.					17	e	08	03	40	
5	e LR	13	22	00		17	e	16	06	56	
	Sandwich Islands						e LR		37	00	
8	e SKS	00	21	00		O = 15.40.02					
	e SKKS		22	28		21S. 175½W.					
	i PPS		26	30		Tonga Islands					
	e SS		32	00		Dist. approx 117.5° Bda.					
	O = 23.55.54					18	e LR	06	13	00	
	21S. 177W.					19	e	09	58	52	
	Tonga Islands						e	10	18	25	
	h. about 200km.						e LR		27	00	
	Mag: 6					21	i P	02	26	05	
	Dist. approx 119° Bda.						e PPP		29	28	
10	e LR	21	04	00			i S		33	48	
	Fox Islands, Aleutian Islands.						e SS		37	24	
12	e	23	27	36			e LR		42	30	
	e		42	00		O = 02.16.38					
13	e (L)	08	59	00		2½S. 109½W.					
13	i P	12	43	48		Pacific Ocean about 1200 miles west of Galapagos Islands.					
	i (pP)		44	33							

1960

Date	Phase	h	m	s	Date	Phase	h	m	s	
Apr 21	Continued				Apr 27	Continued				
	h. about 80km.					3½S. 146½E.				
	Mag: 5¼					Bismarck Sea.				
	Dist. approx 55° Bda.					Dist. approx 139° Bda.				
22	e (PKP)	20	45	53	28	e (PS)	02	36	28	
	e (PP)		46	52		e LR		55	00	
	e (PPP)		49	32		0 = 02.10.14				
	e (SKKS)		53	32		59½S. 26W.				
	e (SS)	21	01	41		Sandwich Islands.				
	e (SSS)		05	24		Dist. approx 96.5° Bda				
	e		09	00						
	Interpretation fair.				28	e LR ¹	06	13	00	
	0 = 20.26.28					e LR ²	07	07	00	
	17½S. 174½W.					0 = 05.08.07				
	Tonga Islands.					3½S. 144½E.				
	h. about 200km.					Near coast of New Guinea.				
	Dist. approx 115° Bda.					Dist. approx 140° Bda.				
24	i PKP ¹	03	41	09	29	i PKP	19	51	56	
	i PKP ²		41	30		e		54	20	
	i		43	26		e	20	11	00	
	e		44	49		e		14	40	
	e		48	14		e		23	30	
	e		51	40		e		34	00	
	e		52	40		e LR		41	00	
	e		55	48		0 = 19.32.18				
	e		58	10		0. 121½E.				
	e	04	00	08		Celebes.				
	0 = 03.22.28					Dist. approx 146.5° Bda.				
	6S. 113½E.				30	e LR	05	15	00	
	Java Sea.					0 = 04.01.34				
	h. about 650km.					0. 121½E.				
	Dist. approx 153½° Bda.					Celebes.				
24	e PS	12	40	44		Dist. approx 146.5° Bda.				
	e SSS		49	20	May 2	e (S)	02	30	05	
	e LR	13	00	00		e (LQ)		31	24	
	0 = 12.14.26					0 = 02.20.50				
	28N. 54½W.					17½N. 84W.				
	Southern Iran. 420 dead, 3000					South of Costa Rica.				
	injured & \$20,000,000 property					Dist. approx 23° Bda.				
	damage at Kourdeh & Lar. Damage				2	e	09	10	30	
	at Latifi, Khur, Berag & Gerash.					Mag: 6				
	Mag: 6					Dist. approx 96° Bda.				
25	e (LR)	15	28	00		2	e (PKP)	12	29	44
	0 = 14.53.53					e LR	13	23	00	
	56N. 155W.					0 = 12.10.11				
	Kodiak Island Region.					0. 121½E.				
	Dist. approx 65° Bda.					Celebes. Felt. Ung-Una.				
25	e LR	19	06	00		Dist. approx 146.5° Bda.				
	0 = 18.53.17				4	e LR	19	32	00	
	13½N. 88½W.					0 = 18.26.37				
	Near coast of El Salvador.					0. 122E.				
	Felt. Southwest El Salvador.					Celebes				
	Dist. approx 29° Bda.					Dist. approx 146° Bda.				
26	e LR	19	15	00	4	e LR	20	32	00	
	0 = 18.07.46					0 = 18.29.40				
	11½S. 166½E.					20S. 173E.				
	Santa Cruz Island.					Loyalty Island Region.				
	Dist. approx 128° Bda.					Dist. approx 127° Bda.				
27	e LR	18	16	00	9	e (T)	17	26	38	
	0 = 17.11.30					Atlantic Ocean.				

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1960

Date	Phase	h	m	s	Date	Phase	h	m	s
May 9	e S	20	30	25	May 13	Continued			
	e LR		38	00		e SSS		34	30
	0 = 20.13.29					e LR		39	00
	4½S. 106W.					0 = 16.07.14			
	Pacific Ocean about					55N. 161½W.			
	900 miles southwest of					Alaska Peninsula			
	Galapagos Island.					Felt at Cold Bay			
	h. about 60km.					Mag: 6¼			
	Dist. approx 54° Bda.					Dist. approx 68° Bda.			
10	e (SS)	23	29	48	13	e (PKP)	21	05	00
	e (LQ)		31	00		e (SKS)		11	20
	e LR		33	00		e		45	00
	0 = 23.16.17					Interpretation fair			
	15½N. 92½W.					0 = 20.46.35			
	Near coast of Chiapas,					32½S. 179W.			
	Mexico.					Kermadec Islands Region.			
	Dist. approx 31° Bda.					Dist. approx 125° Bda.			
11	i PKP	18	55	48	14	e	19	56	24
	e PcPKP	19	04	36		e	20	10	00
	e SKKS		06	06		e (L)		29	30
	e (SKKKS)		07	07					
	e SKSP		09	30	14	e LR	23	06	00
	e SS		18	20		0 = 22.19.55			
	e (SSS)		29	24		53½N. 159½E.			
	e LR		42	30		Kamchatka			
	Interpretation fair.					Dist. approx 87.5° Bda.			
	0 = 18.36.00								
	3S. 131E.				17	e	15	25	00
	Ceram Sea.								
	Mag: 6½								
	Dist. approx 146° Bda.								
12	i P	22	38	38	18	e PP	06	54	48
	i (PPP)		39	51		e PPP		57	32
	i S		43	32		e PS	07	04	36
	i SS		44	46		e PPS		05	20
	e LR		46	00		e SS		10	24
	0 = 22.32.32					e		12	15
	7½N. 81W.					e SSS		15	48
	Near south coast of					e LR		30	00
	Panama. Felt at					0 = 06.35.09			
	Balboa Heights.					29N. 130E.			
	Mag: 6½					Ryukyu Islands			
	Dist. approx 30° Bda.					Felt on Yaku Shima and			
13	e LR	00	44	00		at Kagoshima and Mivazaki,			
	0 = 00.30.40					Japan.			
	7½N. 81W.					Mag: 6¼			
	Near south coast of					Dist. approx 116° Bda.			
	Panama.								
	Dist. approx 30° Bda.								
13	e PcP	10	10	24	19	e (PKS)	10	34	42
	e S		14	56		e (SKKS)		40	42
	e LR		20	00		e SS		52	00
	0 = 10.00.40					e LR	11	15	00
	20N. 109W.					0 = 10.11.51			
	Revilla Gigedo Islands					17S. 66E.			
	Region.					Mascarene Islands Region.			
	Dist. approx 42° Bda.					Dist. approx 133° Bda.			
13	i P	16	18	10	20	e LR	00	22	00
	i S		27	02		0 = 22.12.06			
	i SS		31	20		9½S. 124E.			
						Timor Depth about 200km.			
						Dist. approx 155° Bda.			
20	e LR					0 = 00.23.22			
	0 = 00.23.22					3½S. 147½E.			

1960

Date	Phase	h	m	s
May 20	Continued			
	Near North Coast of New Guinea			
	Dist. approx 138° Bda.			
20	i PKP	11	31	53
	i PP		34	24
	i PKS		35	36
	i PPP		37	08
	i		45	52
	i PFS		46	33
	e		48	40
	i SS		53	00
	e		55	49
	e SSS		57	25
	e	12	06	00
	e LR		15	00
	O = 11.12.37			
	28½S. 167½E.			
	Norfolk Island			
	Depth about 60km.			
	Mag: 6½ - 6¾			
	Dist. approx 135° Bda.			
21	i P	10	14	04
	Comp. from the S.W.			
	i pP		15	11
	i PP		16	40
	i PPP		18	44
	i		20	34
	i		22	44
	i S		23	32
	i SS		27	37
	i SSS		31	08
	e (LQ)		34	30
	e LR		36	00
	O = 10.02.50			
	37½S. 73½W.			
	Near coast of Chile.			
	Several injured and moderate property damage at Concepcion and surrounding area.			
	Mag: 7½			
	Dist. approx 71° Bda.			
21	i P	13	11	10
	e (S)		19	30
	O = 12.59.58			
	Chile			
21	e (P)	14	10	38
	e (S)		19	00
	O = 13.59.17			
	Chile			
21	i P	19	17	36
	e LR		42	00
	O = 19.06.23			
	Chile			
21	e LR	22	42	00
22	e (L)	02	05	30
	O = 00.58.06			
May 22	Continued			
	28½S. 167½E.			
	Norfolk Island Region			
	Dist. approx 135° Bda.			
22	e		04	06 38
	e LR			20 00
	O = 03.46.22			
	Chile			
22	i P		06	12 52
	e PP			15 20
	e S			22 36
	e SS			26 48
	e (LQ)			31 36
	e LR			36 00
	O = 06.01.36			
	38S. 73½W.			
	Chile			
	Dist. approx 72° Bda.			
22	i P		08	22 08
	e S			31 20
	e LR			46 00
	O = 08.10.53			
	37½S. 73W.			
	Chile			
	Dist. approx 71° Bda.			
22	i P		10	41 56
	i PPP			46 24
	i S			54 09
	e (LQ)		11	01 00
	e LR			06 00
	O = 10.30.39			
	38S. 73½W.			
	Near coast of Chile			
	Mag: 6½			
	Dist. approx 72° Bda.			
22	i P		10	43 53
	i PPP			48 24
	i S			53 00
	i SS			57 32
	O = 10.32.43			
	37½S. 73W.			
	Near coast of Chile			
	Mag: 7¼ - 7½			
	Dist. approx 72° Bda.			
22	i P		19	07 14
	i PP			09 52
	i PPP			11 42
	i S			16 26
	O = 18.55.57			
	38S. 73½W.			
	Near coast of Chile			
	Mag: 6½			
	Dist. approx 72° Bda.			
22	i P		19	22 02
	Due to the very large trace amplitudes on this day there are numerous phase arrivals which are very difficult to read			
	O = 19.11.17			

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Date	Phase	h	m	s	Date	Phase	h	m	s
May 22	Continued				May 23	e (S)	10	59	36
	39½S. 74½W.					e L	11	20	00
	Near coast of Chile. More than 2000 killed, 3000 injured, 2 million homeless and \$550 million damage in southern Chile; seismic sea waves caused 61 deaths, \$75 million damage in Hawaii; 138 deaths and \$50 million damage to Japan; 32 dead and missing in the Philippines; \$500 thousand damage to West Coast of the United States.				23	e (P)	14	12	44
	Mag: 8½					e (S)		22	20
	Dist. approx 73° Bda.					e (LQ)		33	00
						e LR		39	00
						Interpretation fair			
						O = 14.00.29			
						45½S. 77W.			
						Chile			
						Dist. approx 79° Bda.			
23	i P		00	37 04	23	e		16	23 00
	e S			46 20					
	e SS			50 42	23	e		17	09 27
	O = 00.25.44					e		13	40
	38½S. 75W.								
	Chile								
	Dist. approx 73° Bda.				23	e LR		20	40 00
23	e (S)		01	02 00		O = 19.24.44			
	Chile					38½S. 74½W.			
						Chile			
						h. about 60km.			
						Dist. approx 72.5° Bda.			
23	e		01	05 10	24	e (S)		03	44 30
23	e		01	11 30		e			49 10
23	e		01	14 30		e LR			57 00
23	e P		02	58 10		O = 03.24.00			
	e S			03 08 00		38½S. 74W.			
	e (LR)			26 00		Chile			
	O = 02.46.30					Dist. approx 72.5° Bda.			
	41½S. 73½W.				24	e LR		08	31 00
	Chile								
	Dist. approx 75° Bda.				24	i PKP		15	06 05
23	i P		05	24 52		i PP			09 00
	i PP			27 11		i PPP			12 15
	i S			34 02		i SKKS			15 39
	e (SS)			38 25		i PS			19 10
	e (LR)			47 00		i (PPS)			22 12
	O = 05.13.41					e SS			27 40
	38S. 73W.					e SSS			32 00
	Chile					e LQ			43 00
	h. about 60km.					e LR			49 00
	Dist. approx 72° Bda.					O = 14.46.34			
23	e (S)		07	31 40		44½S. 167½W.			
	e (SS)			37 42		South Island, New Zealand,			
	e (SSS)			43 00		Felt on Milford Sound.			
	e (L)			54 00		Mag: 6¾ - 7			
	O = 07.09.17					Dist. approx 138° Bda.			
	48S. 77W.				24	i P		20	45 15
	Chile					i PP			48 28
	Dist. approx 82° Bda.					i S			55 20
23	e (S)		10	42 46		i PS			56 25
	O = 09.52.20					i SS		21	01 00
	37½S. 73W.					e SSS			05 00
	Chile					e LR			12 00
	Dist. approx 71° Bda.					O = 20.32.43			
						50½S. 74W.			
						Chile			
						Dist. approx 84° Bda.			

		1960							
Date	Phase	h	m	s	Date	Phase	h	m	s
May 25	e	01	01	00	May 27	Continued			
	e LR		14	00		i SS		43	20
	Chile					e (LR)		58	00
25	e LR	03	47	00		O = 03.17.21			
	Chile					41S. 76W.			
						Chile			
						Dist. approx 75° Bda.			
25	i S	05	06	29	27	e L	21	18	30
	e SS		11	18					
	e LR		22	00	27	e P	23	19	00
	O = 04.44.14					e PP		22	00
	47S. 75W.					i S		28	52
	Chile					i PS		29	52
	Dist. approx 81° Bda.					e SS		34	20
25	i P	08	46	39		e L		53	30
	i pP		47	43		O = 23.06.55			
	i PP		49	32		45S. 77W.			
	i PPP		51	57		Chile			
	i SKS		56	32		Dist. approx 75° Bda.			
	i S		57	00	28	e (P)	03	17	20
	i SS	09	01	35		e (S)		26	44
	e SSS		05	00		e (PS)		27	40
	e (LQ)		10	00		e L		46	00
	e LR		12	00		O = 03.05.53			
	O = 08.34.33					39S. 74W.			
	45S. 76W.					Chile			
	Off coast of Chile					Dist. approx 73° Bda.			
	Mag: 6 $\frac{1}{4}$				28	e P	11	17	02
	Dist. approx 79° Bda.					e PP		19	32
25	e LR	14	50	00		e PPP		21	32
	Halmahera					e S		26	08
25	e LR	20	11	00		e PS		27	15
						e L		30	00
26	e (P)	01	40	44		O = 11.05.40			
	e		55	00		38S. 73W.			
	e LR	02	02	00		Chile			
	O = 01.29.10					Dist. approx 72° Bda.			
	40S. 74W.				29	i P	07	50	46
	Chile					e PP		53	16
	Dist. approx 75° Bda.					i PPP		55	18
26	i P	05	21	09		i S	08	00	00
	e PP		23	34		i PS		01	02
	e PPP		24	56		e SS		04	02
	i S		30	00		e SSS		08	08
	i ScS		31	00		e (LQ)		13	00
	e SS		33	40		e LR		19	00
	e SSS		37	00		O = 07.39.29			
	e LR		40	00		38S. 72W.			
	O = 05.10.05					Chile			
	40N. 20E.					Mag: 6 $\frac{1}{4}$			
	Albania-Greece border.					Dist. approx 72° Bda.			
	8 killed, 100 injured and 20% of				29	e (S)	14	26	05
	the buildings destroyed in Korce.					e L		45	00
	Mag: 6 $\frac{1}{4}$					O = 14.05.25			
	Dist. approx 67° Bda.					37S. 73W.			
26	e	19	54	28		Chile			
	e		59	00		Dist. approx 71° Bda.			
27	e LR	01	20	00	29	e P	21	35	48
						e PP		38	40
27	i P	03	29	00		e S		45	28
	i S		38	36		e L	22	12	00

		7			1960							
Date	Phase	h	m	s	Date	Phase	h	m	s			
May 29	Continued				Jun 2	Continued						
	O = 21.23.54					46S. 74W						
	43S. 77W.					Southern Chile						
	Chile					Mag: 6 $\frac{1}{4}$						
	Dist. approx 77° Bda.					Dist. approx 80° Bda.						
31	i P		02	51	27	2	e PKP	08	06	20		
	i S		03	00	52		e PP		09	05		
	e SS		05	11			e PS		19	20		
	e LR		12	00			e (SS)		28	30		
	O = 02.40.00						e LR		50	00		
	39S. 75W.						O = 07.47.11					
	Chile						5S. 151E.					
	New Britain						Felt at Rabsul, Kariai, Ragarere,					
	Mag: 6 $\frac{1}{4}$						and Palmalal.					
	Dist. approx 73° Bda.						Mag: 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$					
31	i P		11	05	42		Dist. approx 137° Bda.					
	i S		08	10								
	e IQ		08	20		2	e P	18	11	22		
	e LR		09	10			e S		13	42		
	e T		20	00			e LR		14	40		
	e Tmax		21	00			e T		25	42		
	e T		29	00			e Tmax		26	24		
	O = 11.02.20						O = 18.07.51					
	18N. 62W						18N. 61W.					
	Leeward Islands						Leeward Islands Region					
	Felt at St. Kitts and Antigua.						Dist. approx. 14° Bda.					
	Mag: 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$											
	Dist. approx 14° Bda.											
31	e T		12	00	12	2	e		21	56	00	
	Leeward Islands Region						e LR		22	11	00	
	Chile											
31	e (T)		14	13	08	2	i		23	12	13	
	Leeward Islands Region						i			21	46	
							i				24	19
							i				31	50
31	e LR		14	15	00							
	Solomon Islands											
Jun 1	i P		05	14	09	3	e LR		08	46	00	
	i PP		16	40			New Britain					
	i S		23	25								
	e SS		27	48		3	e PP		16	36	04	
	e SSS		31	32			e S			43	40	
	e (LQ)		34	12			e SS			50	50	
	e LR		36	00			e SSS			55	00	
	e LR						e LR		17	07	00	
	O = 05.02.56						O = 16.18.04					
	38S. 73W.						41N. 141E.					
	Chile						Near South Coast of Hokkaido,					
	Dist. approx 72° Bda.						Japan.					
1	e (T)		13	48	00		Felt at Aomori, Miyako,					
							Hachinohe and Urakawa.					
							Dist. approx 102° Bda.					
1	e (LR)		21	54	00							
	Chile											
2	e LR		04	21	00							
2	i P		06	10	04							
	i (PP)			12	48							
	i PPP			15	00							
	i S			20	04							
	i PS			20	51							
	i SS			25	00							
	e SSS			29	00							
	e LR			36	00							
	O = 05.58.03											
3	e LR		21	57	00							
	O = 21.38.02											
	31N. 114W.											
	Gulf of California											
	Felt at San Diego											
	Mag: 4.8											
	Dist. approx 42° Bda.											
4	i (P)		02	34	18							
	i (PP)			35	41							
	e (PcS)			40	16							
	e (LQ)			43	00							

		1960		
Date	Phase	h	m	s
Jun 4	Continued			
	e LR	45	00	
	0 = 02.27.06			
	20N. 104½W.			
	Near Coast of Jalisco, Mexico.			
	Mag: 6 - 6½			
	Dist. approx 33° Bda.			
4	e LR	04	28	00
4	e LR	07	35	00
	0 = 07.22.06			
	Azores Region			
4	e LR	08	02	00
	0 = 07.48.08			
	Azores Island Region			
4	i (P)	08	16	00
	e LR	23	00	
	0 = 08.09.55			
	40½N. 29½W.			
	Azores Region			
	Dist. approx 30° Bda.			
4	e LR	08	34	00
	Azores Islands Region			
4	i P	11	11	16
	e LR	18	00	
	0 = 11.05.10			
	39½N. 30½W.			
	Azores Region			
	Dist. approx 30° Bda.			
5	e LR	20	29	00
	0 = 19.30.30			
	31½S. 177W.			
	Kermadec Islands			
	Dist. approx 123° Bda.			
6	i P	01	26	32
	e PcP	28	24	
	i S	33	33	
	e ScS	36	30	
	e LQ	39	00	
	e LR	40	00	
	0 = 01.17.48			
	40.49N. 124.53W.			
	West of Arcata, California.			
	Slight damage at Crannell and Eureka.			
	Mag: 5.7			
	Dist. approx 49° Bda.			
6	i P	06	07	40
	i (PPP)	12	00	
	i S	17	28	
	i (PPS)	19	00	
	i (SS)	24	00	
	e LR	33	00	
	0 = 05.55.50			
	45½S. 73½W.			
	Near Coast of Chile			
	h. about 60km.			
	Mag: 6½ - 7			
	Dist. approx 79° Bda.			
Jun 6	e (S)	17	37	40
	e (SS)	42	26	
	e LR	54	00	
	0 = 17.15.33			
	46S. 73½W.			
	Near Coast of Southern Chile			
	Dist. approx 79° Bda.			
7	e	05	43	40
	e	46	25	
	e	48	16	
	e	53	20	
	e	01	00	
	e LR	04	00	
7	i P	13	07	24
	i S	16	51	
	i SS	21	35	
	e LR	30	00	
	0 = 12.55.58			
	40½S. 77W.			
	Off Coast of Southern Chile.			
	Dist. approx 75° Bda.			
7	e IR	14	40	00
	Fiji Islands			
8	i P	16	25	15
	e S	29	35	
	e LQ	30	00	
	e LR	31	00	
	0 = 16.19.48			
	35N. 35W.			
	North Atlantic Ocean			
	Dist. approx 25° Bda.			
8	e IR	22	25	00
9	e PKP	11	43	10
	e PP	45	24	
	e PKS	46	39	
	e PPP	47	48	
	e SKKS	52	30	
	e PS	55	04	
	i PPS	57	04	
	e ScSPKP	58	39	
	e SS	12	03	20
	e LR	25	00	
	0 = 11.23.51			
	18S. 169E.			
	New Hebrides Islands			
	Felt at Port Villa			
	Mag: 5½ - 6			
	Dist. approx 129° Bda.			
9	iP	17	54	09
	e PP	55	05	
	e S	59	16	
	e (LQ)	18	01	00
	e LR	02	00	
	0 = 17.47.41			
	38N. 26W.			
	Azores Felt on Pico Islands, Sao Miquel, and Terceira.			
	Dist. approx 32° Bda.			
10	e (LR)	15	11	00

		9			1960				
Date	Phase	h	m	s	Date	Phase	h	m	s
Bermuda									
Jun 10	e (PP)	21	32	56	Jun 12	Continued			
	e SKS	38	40			South Pacific Ocean			
	e (PS)	42	08			Mag: 6½			
	e SS	47	48			Dist. approx 76° Bda.			
	e SSS	52	12						
	e LR	22	12	00	13	i P	05	59	29
	0 = 21.12.05					e S	06	09	00
	15½S. 174W.					e PPS	10	00	
	Samoa Islands Region					e SS	14	00	
	Mag: 5½					e LQ	19	45	
	Dist. approx 114° Bda.					e LR	23	00	
						0 = 05.47.05			
11	e P	00	43	46		44½S. 76½W.			
	i PPP	47	12			Off Coast of Southern Chile			
	i S	50	51			Dist. approx 78° Bda.			
	i ScS	52	52						
	e SS	54	40		14	e LR	00	13	00
	e (LQ)	56	00			Chile			
	e LR	58	00						
	0 = 00.34.48				14	e LR	03	34	00
	21S. 64½W.					Chile			
	Southern Bolivia								
	h. about 300km.								
	Mag: 6½				15	e LR	00	47	00
	Dist. approx 54° Bda.					D'entrecasteaux Islands			
11	i PKP	15	33	36	15	e	08	36	25
	e PP	36	36						
	e PPS	48	44		15	e (S)	10	02	28
	e	50	10			e	13	00	
	e	51	20			e (LR)	30	30	
	e SS	55	00			0 = 09.40.38			
	e SSS	59	07			45S. 76½W.			
	e	16	03	00		Off Coast of Chile			
	e	12	00			Dist. approx 79° Bda.			
	e LR ¹	17	00		15	e LR	12	01	00
	e LR ²	17	04	00		Chile			
	0 = 15.14.07								
	9S. 152½E.				15	e S	16	02	35
	D'entrecasteaux Islands					e SS	10	00	
	Mag: 6½ - 6¾					e LR	25	00	
	Dist. approx 140° Bda.					0 = 15.36.51			
11	e LR	17	40	00		41N. 142E.			
	0 = 16.37.40					Near North Coast of Honshu, Japan.			
	9½S. 152½E.					Felt at Aouori, Morioka,			
	D'entrecasteaux Islands					Hachinohe and Miyako,			
	Dist. approx 140° Bda.					Dist. approx 102° Bda.			
12	e S	00	23	09	15	e	23	22	12
	e PPS	24	12			e	27	16	
	e SS	27	26			i	28	00	
	e (LQ)	32	20			e	34	24	
	e (LR)	37	00			e (LR)	49	00	
	0 = 00.02.55				16	e LR	00	29	00
	37S. 75W.								
	Off Coast of Chile				16	e LR	04	13	00
	Dist. approx 70° Bda.								
12	i P	07	31	34	16	e LR	10	20	10
	i PPP	35	40						
	i S	41	09		16	e LR	11	22	00
	i SS	45	39						
	e SSS	48	00		17	i P	16	47	21
	e LR	54	00			i PP	50	13	
	0 = 07.19.43					i PPP	52	07	
	36S. 98W.					i S	57	00	
						e SS	17	01	40

		1960		
Date	Phase	h	m	s
Jun 17	Continued			
e SSS		05	48	
e		10	00	
e LR		14	00	
O = 16.35.32 52½N. 173½W. Andreanof Islands, Aleutian Islands. Felt on Adak Mag: 6 - 6½ Dist. approx 76° Bda.				
17 e LR		18	30	00
18 e		01	16	00
18 e		03	04	48
e			06	20
e			10	28
18 e LR		03	38	00
19 e LR		01	01	00
19 e LR		03	20	00
19 e LR		10	50	00
19 e S		22	03	00
e SS			07	00
e LR			19	00
O = 21.42.50 36½S. 76W. Off Coast of Chile Dist. approx 70° Bda.				
20 i P		02	12	25
i PP			14	56
i PPP			17	00
i S			21	43
i SS			25	44
e IQ			29	32
e LR			34	30
O = 02.01.08 38S. 73½W. Near Coast of Chile Mag: 7½ Dist. approx 71° Bda.				
20 i P		13	11	05
i PP			13	30
i PPP			15	30
i S			20	25
i SS			24	45
i SSS			28	24
e IQ			29	50
e LR			34	00
O = 12.59.40 39½S. 73W. Southern Chile Mag: 6½ - 7 Dist. approx 73° Bda.				
21 i P		08	44	08
e S			51	32
e SS			55	00
e IQ			57	12
Jun 21	Continued			
e LR			59	00
O = 08.34.39 4½S. 105W. Pacific Ocean Southwest of Galapagos Islands. Dist. approx 54° Bda.				
21 i PP		21	51	22
e PKS			55	16
e SKS			58	02
e PS		22	00	12
e SS			05	12
e LR			20	00
O = 21.33.45 61S. 21W. Sandwich Islands Region Dist. approx 99° Bda.				
22 e LR		01	26	00
22 e LR		04	08	00
22 e LR		04	22	00
22 e S		07	01	08
e SS			05	20
e LR			20	00
O = 06.40.15 39S. 74½W. Near Coast of Chile h. about 60km. Dist. approx 73° Bda.				
22 e (S)		09	17	28
e (SS)			21	44
e LR			32	00
O = 08.57.19 36½S. 72½W. Chile Dist. approx 70° Bda.				
22 e LR		13	05	00
22 e LR		17	11	00
22 e (P)		20	24	39
e (SS)			38	16
e LR			50	00
O = 20.13.18 38½S. 73½W. Near Coast of Chile Dist. approx 72.5° Bda.				
22 i P		23	40	35
i S			50	16
e SS			55	05
e LR		00	07	00
O = 23.28.50 52N. 173W. Andreanof Islands Aleutian Islands. Dist. approx 76° Bda.				
24 e LR		16	38	00
25 e LR		01	43	00

		11			1960				
Date	Phase	h	m	s	Date	Phase	h	m	s
Bermuda									
Jun 25	e SKS	02	28	36	Jun 29	Continued			
i PPS			35	12	e PS		05	00	00
e SS			40	28	e SS			07	00
e LR		03	00	00	e LR			26	00
O = 02.02.35 30½S. 177W. Kermadec Islands Dist. approx 123° Bda.					O = 04.29.12 30S. 177½W. Kermadec Islands Dist. approx 123° Bda.				
25 e P		13	59	19	29 e P		09	56	33
e (S)		14	03	48	e S		10	06	16
e IQ			04	50	e SS			11	07
O = 13.53.37 6½N. 72½W. Colombia, Felt in Antioquia and Santander. Dist. approx 28° Bda.					O = 09.44.53 36½S. 98W. South Pacific Ocean Dist. approx 7° Bda.				
25 e PP		15	02	29	29 i P		10	29	31
e SKS			07	44	e LR			37	30
e SKKS			09	30	e T		11	02	42
e PS			12	16	O = 10.23.02 47½N. 27W. Atlantic Ocean Dist. approx 32° Bda.				
e PPS			14	09	29 e IQ		16	22	30
e SS			19	40	O = 17.07.00 53N. 168.5W. Fox Islands, Aleutian Islands Dist. approx 73° Bda.				
e LR			39	00	29 i P		17	18	24
O = 14.41.42 30½S. 177W. Kermadec Islands Felt on Raoul Island Mag: 6½ - 6¾ Dist. approx 123° Bda.					e S 27 48 e SS 32 30 e LR 45 00				
25 e P		19	45	54	O = 19.35.27 28S. 68W. Catamarca, Province, Argentina. h. about 100km. Dist. approx 62° Bda.				
e PcP			46	44	27 e		17	14	04
e PP			48	18	e			19	28
i S			53	36	e			23	16
e ScS			55	14	e			28	24
e SS			57	35	e LR			49	00
O = 16.50.24 32½S. 178W. Kermadec Islands Dist. approx 124° Bda.					O = 16.50.24 32½S. 178W. Kermadec Islands Dist. approx 124° Bda.				
29 e P		02	09	02	27 e		17	14	04
e PP			11	28	e			19	28
i S			18	40	e			23	16
e SS			23	28	e			28	24
e SSS			27	00	e LR			49	00
e LR			32	40	O = 19.58.33 60N. 151W. Kenai Peninsula Alaska Felt at Anchorage, Kasilof, Seward and Sterling. Dist. approx 62° Bda.				
O = 01.57.16 43S. 74W. Near Coast of Chile Dist. approx 76° Bda.					O = 19.58.33 60N. 151W. Kenai Peninsula Alaska Felt at Anchorage, Kasilof, Seward and Sterling. Dist. approx 62° Bda.				
29 e (PP)		04	50	22	Jly 1 e S		08	21	36
e SKS			55	12	e LR			45	00
O = 04.29.30 51.5N. 173.5W. Andreanof Islands Aleutian Islands. Dist. approx 77° Bda.					O = 07.58.58 56N. 165E. Komandorskie Islands Dist. approx 83° Bda.				
2 e (P)		09	10	06	2 e (P)		04	41	20
e (S)			20	13	e (S)			51	00
O = 05.12.00					e LR 05 12 00				

		1960					1960		
Date	Phase	h	m	s	Date	Phase	h	m	s
Jly 2	Continued e (LR) 0 = 08.58.01 45.5S. 75W. Southern Chile. Dist. approx 79° Bda.	40	00		Jly 4	Continued Queen Charlotte Islands			
2	e (P) e PP i SKS i S i PS e (SS) 0 = 11.55.41 56S. 27W. Sandwich Islands Dist. approx 93° Bda.	12	09	24	4	e LR Queen Charlotte Islands	11	38	00
2	e LR	22	34	00	4	i P i PP e S e SS e LQ e IR 0 = 13.10.05 52N. 131W. Queen Charlotte Islands Mag: 6 Dist. approx 53° Bda.	13	19	24
3	e (P) e (S) e (SS) e LR 0 = 03.19.19 52N. 174W. Andreanof Islands, Aleutian Islands. Dist. approx 77° Bda.	03	30	52	4	e (P) e (S) e LR 0 = 21.29.25 43S. 74W. Southern Chile h. about 60km. Dist. approx 76° Bda.	21	41	18
3	e (S) e LR 0 = 07.16.14 52N. 173.5W. Aleutian Islands Andreanof Islands. Dist. approx 77° Bda.	07	37	41	5	e LR 0 = 05.45.30 43.5S. 73.5W. Near Coast of Chile Dist. approx 77° Bda.	05	47	00
3	i P i PP i S i PPS i SS e LQ e LR 0 = 20.20.46 50.5N. 177W. Andreanof Islands Felt on Adak Mag: 6 $\frac{1}{2}$ - 7 Dist. approx 79° Bda.	20	32	46	6	e 0 = 05.45.30 43.5S. 73.5W. Near Coast of Chile Dist. approx 77° Bda.	05	41	22
4	i P i PP i S e ScS i SS e LQ e LR 0 = 04.28.33 52N. 131.5W. Queen Charlotte Islands Mag: 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$ Dist. approx 52° Bda.	04	37	40	6	e 0 = 05.45.30 43.5S. 73.5W. Near Coast of Chile Dist. approx 77° Bda.	07	58	00
4	e LR	09	15	00	6	e LR 0 = 05.45.30 43.5S. 73.5W. Near Coast of Chile Dist. approx 77° Bda.	08	03	00
					7	e IR Solomon Islands	00	52	00
					7	e LR Chile	02	31	20
					7	e LR Chile	16	36	00
					7	e LR South of Easter Island	17	26	00
					7	e LR Near Coast of Chile	18	18	00
					7	e (SS) e LR Chile	22	06	12
					8	i (P) e (S)	10	21	15
							30	48	

		1960					1960		
Date	Phase	h	m	s	Date	Phase	h	m	s
Bermuda					Jly 8	Continued e LR 0 = 10.09.11 52N. 174.5W. Andreanof Islands, Aleutians. Dist. approx 77° Bda.			
					8	e LR Japan.	13	47	00
					8	e LR	19	32	00
					8	e LR	21	02	00
					9	e LR	01	40	00
					9	e e LR	18	29	20
					10	i PKP i PP i PPP e SKKS e SKSP e PPS i SS i SKSSKS e (SSS) e LR 0 = 00.05.38 1N. 98.5E. Off west coast of Sumatra. h. about 150km. Dist. approx 143° Bda.	00	24	56
					10	i P e S e LR 0 = 13.39.55 12.5N. 86W. Near coast of Nicaragua. Felt. Managua. h. about 150km. Dist. approx 29° Bda.	13	45	44
					11	e e e e LR 0 = 07.33.32 54S. 140.5W, South of Australia. Dist. approx 107° Bda.	08	27	04
					11	e PP e PS e SS e LR 0 = 11.55.10 16S. 172W. Tonga Island Region. Mag: 6 Dist. approx 113° Bda.	12	14	39
					11	e LR	17	33	00
					Jly 13	e LR Gulf of California.	07	48	00
					13	e (PP) e (SKS) e (PS) e (PPS) e SS e LQ e LR Interpretation fair. 0 = 07.55.58 54S. 1E. Bouvet Island Region. Dist. approx 102° Bda.	08	13	36
					13	e LR Greece. Minor damage on Chalcidice Peninsula.	13	40	00
					13	e LR	14	12	00
					13	e (P) e LR 0 = 16.23.56 17N. 94.5W. Oaxaca, Mexico. Felt. h. about 150km. Dist. approx 32.5° Bda.	16	30	52
					14	e LR Ethiopia.	19	27	00
					15	e LR Madagascar.	06	00	00
					15	e e e LR	23	37	40
					16	e Alaska.	21	53	00
					16	e Alaska.	22	36	00
					17	e (SS) e L Hindu Kush.	05	46	30
					17	i P e S e SSS e (LQ) 0 = 19.42.38 10S. 13W. Ascension Island Region. Dist. approx 66° Bda.	06	06	00
					18	i PKP i PP e PKS e PS e e e SS e LR 0 = 01.43.29	02	02	42
							05	12	
							06	17	
							15	28	
							18	16	
							19	36	
							23	17	
							49	00	

		1960		
Date	Phase	h	m	s
Aug 2	Continued			
	e PPS	03	22	
	e SS	07	48	
	e LR	26	00	
	O = 09.30.36.5 28.5S. 177.0W. Kermadec Islands h. about 124km. Dist. approx 122° Bda.			
2	i P	13	51	44
	i S		59	15
	e LR	14	07	00
	O = 13.42.25.5 4.4S. 105.1W. Southwest of Galapagos Islands h. about 64km. Dist. approx 54° Bda.			
2	e LR	21	16	00
	North Polar Region			
3	e	01	35	10
	e LR		54	00
	Southern Chile			
3	e (S)	19	29	20
	e LR		58	00
	Off coast of Chile			
4	i P	07	46	57
	i S		56	57
	i SS	08	02	14
	e SSS		07	00
	e LQ		08	30
	e LR		12	00
	O = 07.34.48.5 51.2N. 179.0E. Rat Islands, Aleutian Islands Felt on Adak h. about 20km. Mag: 6 - 6½ Dist. approx 81° Bda.			
4	e (LQ)	14	46	00
	e LR		53	00
	Aleutians			
5	e (LQ)	09	09	00
	e LR		13	00
	Queen Charlotte Island Region			
5	i P	22	39	50
	e PP		42	40
	e S		49	48
	e PPS		51	20
	e SS		55	00
	e (LQ)	23	00	00
	e LR		08	00
	O = 22.27.39.7 51.2N. 178.7E. Rat Islands, Aleutian Islands.			
Aug 5	Continued			
	h. about 46km. Dist. approx 82° Bda.			
6	e P	15	01	32
	e PP		04	55
	e S		11	12
	e (LR)		28	00
	O = 14.49.52.8 42.6S. 75.7W. Off coast of Chile h. about 78km. Dist. approx 77° Bda.			
7	e LQ	23	27	00
8	e LQ	07	23	00
8	e	12	35	28
	e		38	16
	e		43	12
	e		47	00
	e		48	16
	e		51	10
	e LR	13	15	00
	O = 12.28.08.5 12.1N. 44.6E. Gulf of Aden h. about 15km. Dist. approx 99° Bda.			
8	e L	16	01	00
	North of Ascension Island			
9	i P	07	48	16
	i PP		50	20
	i S		55	28
	e ScS		58	12
	i SS		59	00
	e LQ	08	01	00
	e LR		02	00
	O = 07.39.18 40.19N. 127.04W. Off coast of Northern California Felt in northwest California and southwest Oregon. Mag: 6.2 Dist. approx 50° Bda.			
9	e PP	17	06	46
	e SKS		12	15
	e PS		16	26
	e		22	02
	e SS		23	10
	e (SSS)		26	21
	e (LQ)		37	30
	e (LR)		43	00
	O = 16.46.33.5 24.6S. 177W. Tonga Island Region h. about 121km. Mag: 6 - 6½ Dist. approx 120° Bda.			
9	e (PKS)	23	59	12

		1960		
Date	Phase	h	m	s
Bermuda				
Aug 9	Continued			
	e (PPS)	00	10	11
	e (ScSPKP)		11	16
	e (SS)		16	16
	e LR		37	00
	O = 23.36.50.3 11.6S. 166.1E. Santa Cruz Islands Region h. about 35km. Dist. approx 129° Bda.			
10	e	12	51	16
	e		53	09
	e		54	16
	Costa Rica			
10	e (L)	22	00	00
11	e	03	13	00
	e (LR)		04	06
11	e PP	05	12	40
	e PKS		13	28
	e PPP		15	40
	e SKS		17	12
	e SKKS		19	37
	e PS		22	32
	e SKSSKS		32	00
	e LR		58	00
	O = 04.50.33.0 9.0N. 126.3E. Near coast of Mindanao. Philippine Islands h. about 66km. Dist. approx 137° Bda.			
11	e L	11	36	00
11	e	23	49	40
	e (LR)		00	11
12	e (L)	11	05	00
12	e L	13	48	30
	e (LR)		14	04
12	e (L)	18	09	00
13	e	05	23	00
	e L		28	00
13	e (S)	07	36	49
	e (SS)		44	13
	e L		52	00
	O = 07.11.05.9 40.4N. 142.4E. Near east coast of Honshu Japan. Felt. h. about 54km. Mag: 6 Dist. approx. 103° Bda.			
13	i P	14	26	24
	i PP		29	00
	i S		35	49
Aug 13	Continued			
	e PS		36	27
	i SS		40	10
	e LR		50	00
	O = 14.14.56.6 40.0S. 74.9W. Near coast of Chile Slight damage at Valdivia h. about 56km. Mag: 6½ - 7 Dist. approx 74° Bda.			
13	e (LR)	23	18	00
14	e SS	04	32	00
	e LR		55	00
	O = 04.00.56.0 45.9N. 151.0E. Kurile Islands h. about 67km. Dist. approx 95.5° Bda.			
14	e	21	02	08
	e		18	06
	e		22	06
	e LR		35	00
14	e (S)	23	03	00
	e		04	06
	e (SS)		06	20
	e (LQ)		09	00
	O = 22.46.08.3 23.7S. 66.6W. Juyuy Province Argentina h. about 226km. Dist. approx 57° Bda.			
15	e	06	05	40
	e		08	32
	e L		17	00
	Kormadorskie Islands			
15	e (PP)	07	20	16
	e (SS)		38	30
	e L		08	01
	O = 06.58.56.4 13.5S. 65.8E. Indian Ocean h. about 15km. Dist. approx 131° Bda.			
15	e (SS)	15	13	10
	e		29	36
	e L		34	00
	O = 14.33.38.4 13.4S. 66.7E. Indian Ocean h. about 25km. Dist. approx 132° Bda.			
16	e L	10	15	00
16	e (L)	19	04	00
16	e (L)	22	06	00

				1960				
Date	Phase	h	m	s				
Aug 16 e		23	02	04	Aug 21 e (LQ)	04	08	00
e (SSS)		17	20		e LR		10	00
Timor Island Region					21 e (L)	13	11	30
17 i (PPP)		09	49	36	21 e (L)	18	22	00
e (S)			55	02	23 e (LR)	08	12	00
e L		10	03	00	23 e P	14	17	08
Interpretation fair					e (PP)	19	32	
O = 09.33.47.0					e S	24	08	
19.9S. 11.8W.					e (LQ)	28	00	
South Atlantic Ocean					e LR	29	00	
h. about 64km.					e T	15	08	00
Dist. approx 74° Bda.					e Tmax		08	28
17 e P		11	35	38	O = 14.08.15.5			
e pP			36	12	O.9N. 25.9W.			
e S			45	03	Atlantic Ocean			
e sS			45	31	h. about 24km.			
e (SS)			48	30	Dist. approx 49.5° Bda.			
e LQ			54	28	23 e SKS	23	10	32
e LR			58	00	e SKKS		11	46
O = 11.24.04.7					e PS		14	19
19.5S. 11.5W.					e PPS		15	40
South Atlantic Ocean					e SS		20	48
h. about 22km.					e		30	44
Dist. approx 74° Bda.					e LR		38	00
17 e (LR)		20	41	00	O = 22.44.51.5			
17 e (LR)		22	18	00	14.6S. 176.4W.			
18 e		00	43	00	Fiji Islands Region			
e			46	32	h. about 56km.			
e (L)			49	20	Mag: 6			
					Dist. approx 115° Bda.			
18 e		23	41	13	24 e (P)	01	56	45
e (LR)			48	00	e (S)	02	07	00
Santa Cruz Islands					e (LQ)		17	00
19 e (L)		04	37	00	e (LR)		24	00
20 e P		00	26	20	O = 01.44.12.5			
e S			30	29	56.2N. 164.1E.			
e LR			34	00	Off East coast of Kamchatka			
O = 00.19.35.2					h. about 45km.			
14.5N. 91.5W.					Dist. approx 84° Bda.			
Guatemala. Felt in					24 e	06	18	24
El Salvador					e		25	12
h. about 115km.					e L		45	00
Mag: 6					e LR		55	00
Dist. approx 30° Bda.					O = 05.49.01.1			
20 e (P)		20	21	40	19.1S. 174.1W.			
e (S)			31	00	Tonga Islands			
e (SS)			36	20	h. about 42km.			
e (SSS)			39	36	Dist. approx 116° Bda.			
e LQ			42	30	25 e P	17	53	38
e LR			46	00	e PP		56	16
O = 20.08.41.2					i S	18	02	57
35.7S. 15.4W.					e SS		07	28
Tristan da Cunha Region					e LR		18	00
h. about 45km.					O = 17.41.56.8			
Mag: 6					52.5N. 169.2W.			
Dist. approx 84° Bda.					Fox Islands, Aleutian Islands.			

				19			1960		
Date	Phase	h	m	s	Date	Phase	h	m	s
Aug 25	Continued				Aug 30	e (S)	07	36	38
	h. about 22km.					e (L)		45	00
	Dist. approx 75° Bda.					O = 07.16.10.4			
						21.0S. 114.1W.			
25 e P		23	13	32		South Pacific Ocean			
e (PP)			16	12		h. about 25km.			
e S			23	00		Dist. approx 72° Bda.			
e L			35	00	Sep 1 e		08	00	30
O = 23.02.18.0					e			01	48
38.3S. 74.1W.					e			05	00
Near coast of Chile					e			12	00
h. about 20km.					e LR			35	00
Dist. approx 72° Bda.					O = 07.35.21.9				
26 e (P)		00	25	28		27.8S. 176.9W.			
e S			34	40		Tonga Islands Region			
e SS			39	00		Dist. approx 121° Bda.			
e LR			49	00	1 e PP		09	49	16
O = 00.14.05.8					i PKS			50	52
38.0S. 74.3W.					e PPP			52	08
Near coast of Chile					e SKS			54	26
h. about 25km.					e SKKS			56	40
Dist. approx 72° Bda.					e PPS		10	01	38
26 e (PKS)		18	50	00	e ScSPKP			02	44
e PPP			52	24	e (SS)			07	32
e SKKS			55	22	e			09	24
e ScSP			58	00	e LR			32	00
e LR ¹		19	35	00	O = 09.28.16.0				
e LR ²		20	35	00	16.6S. 167.5E.				
O = 18.27.19.6					New Hebrides Islands				
13.5S. 165.7E.					Felt on Santo				
New Hebrides Islands Region					h. about 28km.				
h. about 53km.					Dist. approx 130° Bda.				
Dist. approx 130° Bda.					1 e L		11	24	00
28 e P		06	11	52	1 i P		15	47	42
e (S)			17	37	i PcP			48	40
e LR			21	00	i PP			50	43
O = 06.05.17.4					e PPP			51	48
4.2N. 82.5W.					i S			56	12
South of Panama					e ScS			57	36
h. about 33km.					e SS		16	00	12
Dist. approx 32.5° Bda.					e SSS			03	16
28 e L		17	14	40	e			06	00
29 e (PP)		05	02	00	e LR			10	00
e S			06	16	O = 15.37.14.4				
e LR			11	00	56.3N. 153.7W.				
O = 04.53.23.2					h. about 24km.				
1N. 85.2W.					Kodiak Island Alaska				
Galapagos Islands Region					Mag: 6 - 6½				
h. about 48km.					Dist. approx 63° Bda.				
Dist. approx 37.5° Bda.					1 e SKKS		20	29	10
30 e (P)		06	56	30	e PS			31	44
e (S)			07	05	e PPS			33	32
O = 06.45.16.4					e SS			38	30
21.0S. 113.7W.					e LR			57	00
South Pacific Ocean					O = 20.01.57.2				
about 500 miles northwest					15.9S. 178.9W.				
of Easter Island.					Fiji Islands				
Dist. approx 71° Bda.					Mag: 5½				
					h. about 25km.				
					Dist. approx 118° Bda.				

					1960				
Date	Phase	n	m	s	Date	Phase	h	m	s
Oct 8	Continued				Oct 14	Continued			
	e (ScSPKP)	15	20			e SS	13	30	
	e LR	47	00			e SSS	17	00	
	Interpretation poor.					e LR	21	00	
	O = 20.40.06.6					O = 17.48.27.7			
	8.ON. 92.9E.					38.9S. 73.5W.			
	Nicobar Islands					Off coast of Chile			
	h. about 84km.					h. about 19km.			
	Dist. approx 133° Bda.					Mag: 5 $\frac{1}{4}$ - 5 $\frac{1}{2}$ (Pal)			
						Dist. approx 71° Bda.			
9	e (PP)	09	19	20					
	e (SKS)	25	00		14	i P	21	30	51
	e (SKKS)	25	50			e PP	33	31	
	e (S)	26	10			i S	40	25	
	e (PS)	27	44			e SS ₁	45	00	
	e (PPS)	29	00			e LR ₁	55	00	
	e (SS)	33	40			e LR ₂	23	07	00
	e (SSS)	37	10			O = 21.19.11.4			
	e IQ	43	00			51.9N. 172.1W.			
	e LR	46	00			Fox Islands, Aleutian Islands			
	Interpretation fair.					h. about 50km.			
	O = 09.00.42.0					Mag: 6 $\frac{1}{2}$			
	40.8N. 141.2E.					Dist. approx 75° Bda.			
	Honshu, Japan				15	e LR	02	08	00
	h. about 155km.								
	Mag: 5 $\frac{1}{4}$ - 6				15	e LR	04	04	00
	Dist. approx 103° Bda.								
11	e (S)	08	18	00	16	e (P)	09	40	52
	e LR	22	30			e (PPP)	42	05	
	O = 08.05.30.5					e	46	30	
	38.3N. 107.6W.					e LR	49	00	
	Western Colorado					O = 09.34.44.7			
	Slight damage					14.ON. 91.2W.			
	Mag: 5 $\frac{1}{2}$ (Brk)					h. about 135km.			
	h. about 49km.					Off coast of Nicaragua			
	Dist. approx 35° Bda.					Mag: 5 (Pal)			
						Dist. approx 30° Bda.			
11	e LR	19	35	00	17	i P	15	51	44
12	e	09	40	25		i PPP	52	56	
						i S	56	48	
12	e L	10	03	30		e LR	59	00	
	e LR	08	00			O = 15.45.36.9			
						4.9N. 78.4W.			
13	i P	15	05	08		h. about 83km.			
	i PP	08	24			Off west coast of Columbia			
	i S	15	35			Mag: 4 $\frac{1}{2}$ (Pal)			
	i SS	21	05			Dist. approx 31° Bda.			
	e SSS	24	30						
	e IQ	27	00		17	i P	18	10	04
	e LR	31	00			e LR	14	00	
	O = 14.52.34.7					e T	30	20	
	55.ON. 161.2E.					e Tmax	30	30	
	Kamchatka					O = 18.05.34.2			
	h. about 35km.					31.4N. 40.9W.			
	Mag: 6 $\frac{1}{2}$					North Atlantic Ocean			
	Dist. approx 85° Bda.					h. about 25km.			
						Dist. approx 20° Bda.			
13	e LR	20	32	00	17	i P	19	06	48
14	e LR	13	52	00		e LR	11	00	
						e T	27	10	
14	i P	17	59	48		e Tmax	27	20	
	i S	18	09	00		O = 19.02.15.7			

					1960				
Date	Phase	h	m	s	Date	Phase	h	m	s
Bermuda					25				
Oct 17	Continued				Oct 23	Continued			
	31.5N. 40.8W.					31.5N. 40.7W.			
	North Atlantic Ocean					North Atlantic Ocean			
	h. about 19km.					h. about 18km.			
	Dist. approx 20° Bda.					Dist. approx 20° Bda.			
17	i P	22	21	48	24	e LR	18	19	00
	e S	26	48						
	e PeS	28	24		27	i PP	05	34	14
	e LR	30	00			i S	38	42	
	O = 22.15.32.0					e SS	41	36	
	14.7N. 92.8W.					e LR	43	00	
	Mexico-Guatemala border					O = 05.25.04.9			
	h. about 128km.					1.5N. 90.8W.			
	Mag: 5 $\frac{3}{4}$ - 6					Galapagos Islands Region			
	Dist. approx 31° Bda.					h. about 25km.			
						Mag: 4 $\frac{1}{2}$ (Pal)			
						Dist. approx 40° Bda.			
18	e S	00	42	48	28	i P	04	27	26
	e SS	47	00			e PP	29	42	
	e LR	57	00			i S	34	35	
	O = 00.21.52.8					e SS	38	00	
	52.5N. 170.0W.					e IQ	40	00	
	Fox Islands, Aleutian Islands					e LR	42	00	
	h. about 80km.					O = 04.18.41.9			
	Mag: 4 $\frac{3}{4}$ - 5 (Pal)					71.4N. 8.6W.			
	Dist. approx 74° Bda.					Jan Mayen Island. Felt.			
						Mag: 6 $\frac{1}{2}$			
18	e LR	06	49	00		h. about 48km.			
						Dist. approx 49° Bda.			
20	i PKS	11	28	34	28	i P	13	31	00
	e PPP	30	16			e PP	34	15	
	e PPS	39	00			i S	41	31	
	e	43	40			i (PS)	42	10	
	e LR	12	18	00		i SS	47	24	
	O = 11.05.57.6					e SSS	50	42	
	11.1S. 164.9E.					e IQ	53	40	
	Santa Cruz Islands Region					e LR	59	00	
	h. about 37km.					O = 13.18.14.3			
	Mag: 6 $\frac{1}{4}$					52.2N. 157.4E.			
	Dist. approx 131° Bda.					Kamchatka			
						h. about 96km.			
22	i PKP	08	41	32		Mag: 7			
	i PP	43	30			Dist. approx 88° Bda.			
	i PKS	44	30						
	i PKS	45	00						
	e SKKS	50	20						
	i PPS	55	28						
	e ScSPKP	56	48						
	e SS	09	01	00	28	e (SKS)	22	55	40
	e (SKSSKS)	03	25			e	23	03	00
	e LR	20	00			e	07	00	
	O = 08.22.00.9					e	11	00	
	10.4S. 161.2E.					e LR	21	00	
	Solomon Islands Region					O = 22.29.26.6			
	Felt at Honiara					34.6N. 141.1E.			
	h. about 93km.					Near east coast of Honshu Japan.			
	Mag: 6 $\frac{1}{2}$ - 7					Felt.			
	Dist. approx 132° Bda.					h. about 96km.			
						Dist. approx 108° Bda.			
23	i P	06	37	00	29	i P	04	22	12
	e S	40	28			e S	26	00	
	e (IQ)	41	10			e (IQ)	26	56	
	e LR	41	30			e LR	27	30	
	e T	57	13			e T	46	04	
	O = 06.32.20.0					e Tmax	46	30	

			1960		
Date	Phase		h	m	s
Oct 29	Continued				
	O = 04.17.02.1				
	15.5N. 46.4W.				
	North Atlantic Ocean				
	h. about 38km.				
	Mag: 4 $\frac{3}{4}$ (Pal)				
	Dist. approx 23 $^{\circ}$ Bda.				
29	e (L)	08 23 00			
29	e (PP)	09 57 40			
	e (SKKS)	10 04 12			
	e (PS)	06 32			
	e SS	13 00			
	e LR	30 00			
	O = 09.37.41.6				
	15.9S. 172.9W.				
	Samoa Island Region				
	Felt at Apia				
	h. about 99km.				
	Mag: 5 $\frac{1}{2}$ - 5 $\frac{3}{4}$ (Pal)				
	Dist. approx 113 $^{\circ}$ Bda.				
29	e LR	13 40 00			
30	e LR	08 46 00			
	North Atlantic Ocean				
30	i P	12 24 06			
	e PcS	29 30			
	i S	31 52			
	i ScS	33 57			
	i SS	35 26			
	e (SSS)	37 30			
	e (L)	42 00			
	e LR	46 00			
	O = 12.14.36.1				
	23.4S. 70.3W.				
	Near coast of Chile				
	Felt at Antofagasta and				
	Mejillones				
	h. about 76km.				
	Mag: 6 $\frac{1}{4}$				
	Dist. approx 55 $^{\circ}$ Bda.				
30	e PKP	16 10 44			
	e SS	33 00			
	e (LQ)	45 00			
	e LR	17 08 00			
	O = 15.50.50.4				
	1.1S. 127.0E.				
	Spice Islands				
	h. about 32km.				
	Dist. approx 146 $^{\circ}$ Bda.				
30	i P	21 42 14			
	i S	49 49			
	e (LQ)	55 30			
	O = 21.32.47.7				
	22.9S. 68.0W.				
	Chile-Bolivia border. Felt.				
	Mag: 6 $\frac{1}{4}$				
	h. about 60km.				
	Dist. approx 55 $^{\circ}$ Bda.				
Nov 1	e S	06 35 16			
	e SS	39 14			
	e (SSS)	42 30			
	e (LQ)	43 32			
	e LR	45 00			
	O = 06.15.29.4				
	11.2S. 12.7W.				
	Ascension Island Region				
	h. about 35km.				
	Mag: 5 (Pal)				
	Dist. approx 66 $^{\circ}$ Bda.				
1	i P	08 57 12			
	i	58 12			
	e PP	59 32			
	e PPP	02 00			
	i S	06 32			
	i PPS	07 28			
	i SS	10 50			
	e SSS	14 30			
	e LQ	16 30			
	e LR	22 00			
	O = 08.45.59.3				
	38.5S. 75.1W.				
	h. about 55km.				
	Near coast of Chile				
	Slight damage at Concepcion,				
	Lebu, and Valdivia.				
	Mag: 7 $\frac{1}{4}$ - 7 $\frac{3}{4}$				
	Dist. approx 72 $^{\circ}$ Bda.				
1	i S	12 50 00			
	e SS	54 34			
	e LR	58 00			
	O = 12.29.31.6				
	38.7S. 75.0W.				
	Near coast of Chile				
	Felt.				
	h. about 64km.				
	Mag: 5 - 5 $\frac{1}{4}$ (Pal)				
	Dist. approx 72 $^{\circ}$ Bda.				
2	e T	16 33 30			
	e Tmax	33 56			
2	i PKP	17 33 57			
	i PP	36 27			
	i PKS	37 19			
	i PPS	48 00			
	e SS	53 40			
	i (SKSSKS)	56 00			
	e LQ	18 09 00			
	e LR	15 00			
	O = 17.14.54.0				
	11.2S. 164.8E.				
	Santa Cruz Islands				
	h. about 80km.				
	Mag: 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$				
	Dist. approx 130 $^{\circ}$ Bda.				
3	e LR	03 46 00			
5	i P	20 31 41			
	e S	40 45			
	e LR	55 00			

			1960		
Date	Phase		h	m	s
Bermuda					
27					
Nov 5	Continued				
	O = 20.20.53.7				
	39.4N. 20.5E.				
	Northern Greece				
	Damage in Epirus Region				
	h. about 49km.				
	Mag: 5.0 (Pal)				
	Dist. approx 66 $^{\circ}$ Bda.				
6	i P	04 50 56			
	i S	05 01 30			
	e SS	07 00			
	e LQ	13 00			
	e LR	22 00			
	O = 04.38.16.7				
	53.2N. 159.8E.				
	Near east coast of Kamchatka				
	h. about 32km.				
	Mag: 6 $\frac{1}{4}$				
	Dist. approx 88 $^{\circ}$ Bda.				
6	e LR	07 40 00			
6	e PP	06 35 28			
	e SKS	40 50			
	e PS	45 30			
	e SS	52 40			
	e LR	07 12 00			
	O = 06.14.53.4				
	31.1S. 177.7W.				
	Kermadec Islands				
	h. about 69km.				
	Mag: 6 $\frac{1}{2}$				
	Dist. approx 124 $^{\circ}$ Bda.				
6	i P	22 21 30			
	e PPP	26 10			
	i S	30 47			
	e SS	55 26			
	e (SSS)	39 00			
	e LR	47 00			
	O = 22.10.06.4				
	52.9N. 168.0W.				
	Fox Islands, Aleutian Islands				
	h. about 43km.				
	Mag: 5 - 5 $\frac{1}{4}$ (Brk)				
	Dist. approx 72 $^{\circ}$ Bda.				
7	e	17 36 00			
7	e (LQ)	20 39 30			
8	i (P)	02 50 52			
	e S	54 05			
	e LR	55 00			
	e T	03 09 04			
	e Tmax	09 31			
	North Atlantic Ocean				
	Dist. approx 18 $^{\circ}$ Bda.				
8	i P	04 32 30			
	e S	35 50			
	e LR	36 30			
	e T	50 40			
	e Tmax	51 00			
Nov 8	Continued				
	e T	56 06			
	e Tmax	56 24			
	O = 04.28.08.7				
	27.4N. 44.9W.				
	North Atlantic Ocean				
	h. about 25km.				
	Mag: 4 $\frac{1}{2}$ (Pal)				
	Dist. approx 17 $^{\circ}$ Bda.				
8	e (LR)	12 00 00			
9	i P	03 31 48			
	i PP	35 45			
	i SKS	42 20			
	i PS	44 31			
	e PPS	45 16			
	i SS	50 00			
	e (LQ)	58 00			
	e LR	04 03 00			
	O = 03.17.58.5				
	60.9S. 24.8W.				
	Sandwich Islands				
	Mag: 6 $\frac{1}{4}$ - 6 $\frac{3}{4}$ (Pal)				
	h. about 37km.				
	Dist. approx 99 $^{\circ}$ Bda.				
9	e (SKKS)	11 10 20			
	e (PS)	13 00			
	e (SS)	19 00			
	e (SSS)	23 00			
	e LR	43 00			
	Interpretation poor				
	O = 10.43.40.8				
	32.8N. 103.4E.				
	Szechwan Province China				
	Mag: 6 $\frac{1}{4}$ - 6 $\frac{3}{4}$ (Pal)				
	h. about 31km.				
	Dist. approx 114 $^{\circ}$ Bda.				
9	i P	20 15 55			
	i S	23 37			
	i ScS	25 45			
	e (SS)	27 00			
	e LQ	29 00			
	e LR	33 30			
	O = 20.06.16.2				
	23.4S. 70.6W.				
	Near coast of Chile				
	Felt at Antofagasta				
	Mag: 5 $\frac{1}{2}$ - 5 $\frac{3}{4}$ (Pal)				
	h. about 52km.				
	Dist. approx 56 $^{\circ}$ Bda.				
10	i P	05 36 20			
	e (S)	39 32			
	e (SS)	40 12			
	e LR	41 00			
	e T	56 34			
	e Tmax	57 02			
	O = 05.31.30.1				
	30.4N. 40.4W.				
	North Atlantic Ocean				
	h. about 28km.				
	Mag: 5 (Pal)				

1960

Date	Phase	h	m	s
Nov 10	Continued Dist. approx 20° Bda.			
10	i PKP	15	04	16
	e PP		07	29
	e PPS		19	38
	e		21	40
	e SS		26	40
	e LR		51	00
	O = 14.44.48.8 2.7S. 139.3E. Near North coast of New Guinea h. about 39km. Mag: 6½			
	Dist. approx 142° Bda.			
11	e LR	03	11	00
11	e LR	06	08	00
13	i (PKP)	06	57	10
	e PKS	07	01	00
	e LR		54	00
	O = 06.37.06.2 1.4N. 127.3E. Molucca Passage h. about 60km. Mag: 5½ (Pal)			
	Dist. approx 142° Bda.			
13	i P	09	32	07
	e PPP		36	40
	i S		41	33
	i PS		42	07
	i SS		46	17
	i SSS		50	15
	e LR		54	30
	O = 09.20.32.3 51.4N. 168.8W. Fox Islands, Aleutian Islands h. about 32km. Mag: 7			
	Dist. approx 73° Bda.			
13	e LR	20	59	00
	Azores			
14	e (S)	20	10	48
	e (IQ)		12	55
	e LR		15	00
	O = 19.59.35.2 14.9N. 92.8W. Near coast of Chiapas, Mexico. h. about 114km. Mag: 5 - 5½ (Pal)			
	Dist. approx 31° Bda.			
15	e	06	59	50
	e LR		07	01
			23	00
	O = 06.23.27.5 62.7S. 161.7W. h. about 46km. Antarctic Ocean, Southeast of New Zealand.			
Nov 15	Continued.			
	Mag: 5½ - 5½ (Pal)			
	Dist. approx 121° Bda.			
17	e S	20	07	53
	e LR		25	00
	O = 19.46.50.6 52.6N. 170.1W. Fox Islands, Aleutian Islands h. about 46km. Dist. approx 74° Bda.			
17	e LR	22	13	00
20	i P	22	09	48
	i (PP)		10	54
	e (PPP)		11	48
	e		12	36
	e PcS		15	35
	i S		16	00
	e SS		19	00
	e LR		22	00
	O = 22.01.56.4 6.8S. 81.0W. Near coast of Peru 11 killed and extensive property damage from seismic sea wave at Pimentel, Eten and Santa Rosa. h. about 55km. Mag: 6½			
	Dist. approx 42° Bda.			
22	e SS	03	17	32
	e		18	30
	e T		55	22
	e Tmax		55	48
	O = 03.03.02.7 8.3N. 38.4W. Atlantic Ocean h. about 33km. Dist. approx 34° Bda.			
22	e LR	04	32	00
22	e LR	07	21	00
22	i P	12	40	22
	i S		49	56
	e SS		54	20
	e (IQ)	13	04	00
	e LR		09	00
	O = 12.28.54.8 40.3S. 73.9W. Near coast of Chile Felt at Valdivia h. about 49km. Mag: 6½			
	Dist. approx 74° Bda.			
23	i PP	14	32	41
	e SKS		38	21
	e PS		42	49
	e SS		49	16
	e LR	15	08	00
	O = 14.12.21.1			

Date	Phase	h	m	s
Bermuda				
29				
1960				
Nov 23	Continued			
	24.4S. 176.1W. South of Tonga Islands. h. about 28km. Mag: 6½			
	Dist. approx 120° Bda.			
24	i PKS	05	12	58
	e SS		30	00
	e LR		54	00
	O = 04.50.15.8 4.6S. 153.0E. New Britain region. Felt. h. about 87km. Mag: 6 - 6½			
	Dist. approx 135° Bda.			
24	i PKP	07	11	34
	i PP		12	59
	e SKS		18	35
	i PS		22	42
	e (PPS)		25	08
	e SS		29	30
	e LQ		41	00
	e LR		48	00
	O = 06.52.41.1 24.4S. 176.1W. South of Tonga Islands. h. about 23km. Mag: 7			
	Dist. approx 120° Bda.			
27	e P	21	35	46
	e S		44	48
	e SS		49	15
	e SSS		52	40
	e LR	22	01	00
	O = 21.24.30.7 37.2S. 73.4W. Near coast of Chile. h. about 61km. Mag: 5½ - 5½ (Pal)			
	Dist. approx 70° Bda.			
28	e LR	20	02	00
	Azores.			
29	e P	09	43	52
	e S		53	47
	e LR	10	09	00
	O = 09.31.59.5 44.1S. 76.0W. Near coast of southern Chile. h. about 63km. Mag: 5½ (Pal)			
	Dist. approx 78° Bda.			
Dec 1	e LR	11	40	00
1	i P	20	58	49
	i PP	21	00	40
	i S		05	57
	i (SS)		09	35
	e LR		13	00
	O = 20.49.45.5			
Dec 1	Continued			
	49.0N. 129.3W. Near coast of Vancouver Island, BC. h. about 15km. Mag: 6 (Brk)			
	Dist. approx 50° Bda.			
2	i P	09	20	26
	i PP		22	50
	i PPP		24	08
	i S		28	20
	i (ScS)		29	48
	e SS		32	30
	e LQ		35	00
	e LR		39	00
	O = 09.10.39.1 24.6S. 69.7W. Near coast of Chile. Felt. Antofagasta. h. about 19km. Mag: 6½			
	Dist. approx 57° Bda.			
2	i P	09	47	20
	O = 09.37.36.1 24.4S. 69.5W. Near coast of Chile. h. about 46km. Mag: 6½			
	Dist. approx 57° Bda.			
3	i PP	04	42	36
	e PPP		45	04
	e SKS		49	08
	e PPS		52	40
	e SS		57	00
	e (LQ)	05	07	00
	e LR		13	00
	O = 04.24.18.9 42.9N. 104.4E. h. about 60km. Outer Mongolia. Mag: 7			
	Dist. approx 105° Bda.			
4	e (LQ)	21	53	00
6	e LR	09	10	00
	Near coast of Panama.			
6	i P	09	05	32
	i (PcP)		06	27
	i (PcS)		10	30
	i S		13	00
	e LR		23	00
	O = 08.56.09.4 21.4S. 69.2W. h. about 28km. Northern Chile. Felt. Antofagasta. Mag: 5½ - 5½ (Pal)			
	Dist. approx 54° Bda.			
11	e (PP)	19	14	20
	e PKS		15	33
	e (PPP)		18	00
	e		23	20

1960

Date	Phase	h	m	s	Date	Phase	h	m	s
Dec 11	Continued				Dec 27	Continued			
e PPS		26	14		O = 10.35.26				
e		28	04		41.31N. 125.03W.				
e		32	10		Northwest of Arcata, California.				
e LR		20	01	00	Felt. Del Norte, and Humboldt Counties.				
Interpretation fair.					Mag: 5.4 (Brk)				
O = 18.53.03.2					Dist. approx 47° Bda.				
15.7S. 167.0E.									
New Hebrides Island Region.					29 i P		10	48	42
h. about 57km.					e S			58	34
Mag: 6 $\frac{1}{4}$ - 6 $\frac{1}{2}$					e LQ		11	09	30
Dist. approx 130° Bda.					e LR			14	00
12 e (LR)		05	24	00	O = 10.36.38.1				
13 e (PKP)		07	56	28	45.0S. 75.0W.				
e (PKS)			59	24	Near coast of southern Chile.				
e (SKKS)		08	05	20	h. about 17km.				
e (SKKKS)			13	15	Mag: 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$				
e (SSS)			36	10	Dist. approx 78° Bda.				
e LR			47	00	31 i P		18	20	01
Interpretation poor.					e S			29	50
O = 07.36.16.4					e (SS)			33	30
52.7S. 159.1E.					e LR			45	00
Macquarie Islands.					O = 18.08.07.9				
h. about 25km.					44.1S. 75.4W.				
Mag: 7 $\frac{1}{4}$					Near coast of southern Chile.				
Dist. approx 143° Bda.					h. about 25km.				
14 e LR		02	02	00	Mag: 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$				
15 i PKP		00	11	18	Dist. approx 77° Bda.				
e PKS			15	00	Jan 2 e (L)		03	55	00
e PPP			17	20	2 i PKP		10	30	50
e PcPPKP			19	20	i			32	57
e PcSPKP			23	00	e PP			33	16
e SS			32	30	e PKS			34	13
e SSS			38	00	e PPS			45	12
e (LQ)		01	00	00	e ScSPKP			46	32
O = 23.51.31.5					e SS			50	10
3.ON. 126.3E.					e (L)		11	05	00
Molucca Passage.					e LR			11	00
h. about 78km.					O = 10.11.56.9				
Mag: 6 $\frac{1}{4}$					12.4S. 166.4E.				
Dist. approx 143° Bda.					Santa Cruz Islands Region.				
16 e LR		19	01	30	h. about 161km.				
Atlantic Ocean.					Mag: 6 $\frac{1}{4}$ (Pas) 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$				
16 i SHOT		20	30	14	Dist. approx 130° Bda.				
In local waters.					3 e		06	56	04
18 i		07	55	40	3 e		08	30	20
Japan.					4 e T		01	55	36
18 e		18	53	10	e Tmax			55	50
e (LR)		19	28	00	7 e (S)		18	41	32
19 e		10	15	00	e (PS)			42	50
Atlantic Ocean.					e (SS)			48	00
27 i P		10	44	10	e LR		19	01	00
e (S)			51	28	Interpretation poor.				
e LR			59	00	O = 18.16.51.2				
					57.2S. 25.3W.				
					Sandwich Islands.				
					h. about 94km.				

Bermuda

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1961

Date	Phase	h	m	s	Date	Phase	h	m	s
Jan 7	Continued				Jan 11	i P	12	11	30
Dist. approx 95° Bda.					i S			21	02
8 e		03	41	00	e (SS)			25	44
8 e LR		04	16	00	e LR			38	00
8 e		08	55	00	O = 11.59.55.0				
9 i P		03	13	17	51.8N. 171.0W.				
e S			17	20	h. about 47km.				
e LR			17	50	Fox Islands, Algeutian Islands.				
e T			33	32	Dist. approx 75° Bda.				
e Tmax			33	42	14 e P		16	50	10
O = 03.08.37.7					i S			59	01
31.2N. 41.0W.					e SS		17	03	20
h. about 49km.					e (SSS)			06	50
North Atlantic Ocean.					e LR			12	00
Dist. approx 20° Bda.					O = 16.38.55.6				
9 e T		04	57	40	53.9N. 163.7W.				
9 e S		11	13	12	h. about 41km.				
e LR			14	00	Unimak Island Region.				
e T			25	30	Mag: 5 $\frac{1}{2}$ (Pal)				
e Tmax			25	48	Dist. approx 69° Bda.				
e T			29	20	15 e LQ		06	03	00
e Tmax			30	01	e T			14	40
O = 11.06.56.9					e LR			15	04
17.7N. 61.1W.					Leeward Islands.				
h. about 25km.					15 i PKS		17	07	01
Leeward Islands.					i PKS			07	29
Dist. approx 15° Bda.					O = 16.44.44.8				
9 i P		19	25	43	h. about 182km.				
i S			28	00	Loyalty Islands region.				
e LQ			28	20	20.4S. 169.5E.				
e LR			29	00	Dist. approx 131° Bda.				
e T			40	14	16 e		04	17	50
e Tmax			41	08	16 i PP		07	39	08
e T			43	16	i S			46	27
e Tmax			43	52	e PS			48	00
O = 19.22.05.6					e PPS			49	16
17.8N. 61.0W.					i SS			54	00
h. about 31km.					e (SSS)			57	00
Leeward Islands					e (LQ)		08	05	30
Dist. approx 15° Bda.					e LR			11	00
9 e (S)		19	31	06	O = 07.20.18.6				
e (LR)			32	00	36.ON. 141.1E.				
10 i		12	35	18	h. about 131km.				
10 i P		14	35	16	Near east coast of Honshu, Japan.				
i S			46	10	Felt. Central & northeast Honshu.				
e SS			52	17	Mag: 6 $\frac{1}{4}$ - 7 (Pag)				
e LR		15	03	00	Dist. approx 107° Bda.				
O = 14.22.18.2					16 e S		11	45	56
49.9N. 156.2E.					e SS			53	30
h. about 29km.					e SSS			57	20
Kurile Islands Region.					e LR		12	11	00
Mag: 6 $\frac{1}{4}$ (Pas) 6 $\frac{1}{4}$ (Brk)					O = 11.19.46.5				
6 $\frac{1}{4}$ - 6 $\frac{1}{2}$ (Pal)					35.7N. 140.6E.				
Dist. approx 90° Bda.					h. about 157km.				
					Near east coast of Honshu, Japan.				
					Dist. approx 107° Bda.				
					16 e S		12	38	13
					e (SS)			46	10

		1961		
Date	Phase	h	m	s
Feb 22	Continued			
	e LR ₂	50	00	
	e LR ₂	23	55	00
	O = 21.53.34.5			
	28.4S. 177.2W.			
	Kermadec Islands Region			
	h. about 78km.			
	Mag: 5 $\frac{1}{2}$ (Brk) 5 $\frac{1}{2}$ - 5 $\frac{1}{2}$ (Pal)			
	Dist. approx 123° Bda.			
23	e S	04	42	16
	e SS		48	20
	e LQ		59	00
	e LR	05	10	00
	O = 04.16.25.0			
	38.2N. 142.7E.			
	Off east coast of Honshu, Japan.			
	Felt.			
	h. about 119km.			
	Dist. approx 104° Bda.			
25	e LR	16	02	00
26	e P	06	00	48
	e S		10	48
	e SS		14	24
	e LQ		21	30
	e LR		26	00
	O = 05.48.46.3			
	32.7S. 111.2W.			
	Easter Island Region			
	h. about 29km.			
	Mag: 6 (Brk) 5 $\frac{1}{2}$ - 5 $\frac{1}{2}$ (Pal)			
	Dist. approx 78° Bda.			
26	e P	18	25	35
	e PP		30	00
	i PP		30	19
	i PPP		32	42
	i SKKS		38	02
	i PS		39	57
	e SS		46	00
	e SSS		50	00
	e		54	20
	e (LQ)		56	00
	e LR	19	01	00
	O = 18.10.48.7			
	31.4N. 131.2E.			
	Near Kyushu, Japan.			
	h. about 54km.			
	Mag: 7 $\frac{1}{2}$			
	Dist. approx 114° Bda.			
Mar 1	e (PS)	23	59	35
	e (LQ)	00	05	00
	e LR		08	00
	O = 23.42.43.8			
	2.8S. 105.7W.			
	About 1500km.			
	West of Galapagos Islands			
	h. about 59km.			
	Dist. approx 52° Bda.			
2	e T	14	24	44
	e Tmax		25	12
Mar 2	Continued			
	e T		31	40
	e Tmax		31	52
2	e (PS)	15	36	08
	e LR		44	00
	O = 15.18.54.3			
	4.7S. 106.3W.			
	Pacific Ocean, west of Galapagos Islands.			
	h. about 25km.			
	Dist. approx 53° Bda.			
3	e (PKS)	06	48	40
	e		07	07
	e (LR)		37	00
	O = 06.25.37.9			
	22.9S. 171.4E.			
	Loyalty Island Region			
	h. about 27km.			
	Dist. approx 130° Bda.			
3	e LR	23	40	00
4	e (LR)	21	21	00
5	e PKS	01	49	14
	e PPS	02	00	12
	e ScSPKP		01	16
	e SS		06	36
	e LR		29	00
	O = 01.26.26.1			
	10.7S. 161.6E.			
	Solomon Islands Region			
	h. about 99km.			
	Mag: 6 $\frac{1}{2}$ (Pas)			
	Dist. approx 132° Bda.			
7	i P	06	55	08
	e (S)		07	05
	e SS		09	12
	e (LQ)		15	00
	e LR		17	00
	O = 06.43.10.6			
	43.3S. 80.4W.			
	Off coast of Chile			
	h. about 60km.			
	Dist. approx 77° Bda.			
7	e P	10	26	00
	i PKP		29	29
	i PP		31	00
	i PKS		32	56
	i SKS		36	40
	i SKKS		38	00
	i PS		40	50
	i PPS		42	28
	i SS		47	40
	e SSS		50	40
	e (LQ)		58	00
	e LR	11	06	00
	O = 10.10.38.9			
	28.2S. 175.7W.			
	Kermadec Islands Region			
	h. about 43km.			

		1961		
Date	Phase	h	m	s
Bermuda				
Mar 7	Continued			
	Mag: 7 $\frac{1}{4}$ - 7 $\frac{1}{2}$ (Pas) (Brk)			
	Dist. approx 121° Bda.			
7	e PKP	19	28	28
	e		30	04
	e LR		52	30
	e LR	20	15	00
	O = 19.08.36.1			
	38.2S. 78.1E.			
	Indian Ocean			
	h. about 30km.			
	Mag: 6 (Pas)			
	Dist. approx 150° Bda.			
8	e LR	00	15	00
9	i P	04	05	21
	i PP		06	16
	e S		10	24
	e LQ		11	34
	e LR		12	35
	e T		36	30
	e T		48	40
	e T		50	05
	O = 03.59.08.7			
	10.9N. 41.7W.			
	Atlantic Ocean			
	h. about 27km.			
	Dist. approx 30° Bda.			
9	e LR	22	13	00
11	i S	01	55	48
	e LR	02	18	00
	O = 01.31.34.4			
	48.7N. 154.6E.			
	Kurile Islands			
	h. about 26km.			
	Mag: 6 $\frac{1}{2}$ (Brk)			
	Dist. approx 91° Bda.			
11	e LR	09	25	00
12	e PS	23	52	00
	e SS		59	00
	e LR	00	17	00
	O = 23.21.42.5			
	28.4S. 176.0W.			
	Tonga Islands Region			
	h. about 113km.			
	Mag: 6 $\frac{1}{4}$ - 6 $\frac{1}{2}$ (Brk)			
	Dist. approx 122° Bda.			
13	i P	06	11	16
	i PP		12	44
	e S		17	33
	e LQ		20	15
	e LR		22	00
	O = 08.03.43.9			
	19.2N. 107.3W.			
	Off west coast of Mexico			
	h. about 49km.			
	Mag: 6 $\frac{1}{4}$ - 6 $\frac{1}{2}$ (Pas)			
	Dist. approx 39° Bda.			
13	e LR	21	19	00
Mar 14	e LR	02	11	00
15	e (PPP)	10	39	28
	e (SS)		55	04
	e (L)		10	00
	e LR		21	00
	O = 10.14.55.5			
	3.3S. 150.7E.			
	New Ireland Region			
	Felt, Karlai and Rabaul			
	h. about 21km.			
	Mag: 6 (Pas)			
	Dist. approx 135° Bda.			
16	i PKP ¹	14	05	32
	i PKP ²		05	56
	i PP		09	30
	e SKS		12	49
	e SKKS		16	28
	e		24	00
	e SS		29	15
	e		31	00
	e		33	00
	e (L)		42	00
	e LR		57	00
	O = 13.45.35.6			
	8.2S. 122.0E.			
	Flores Island.			
	Some casualties and major property damage at Ende.			
	h. about 74km.			
	Mag: 6 $\frac{1}{4}$ (Pas) 6 $\frac{1}{4}$ - 6 $\frac{1}{2}$ (Pal)			
	Dist. approx 155° Bda.			
16	i PKP	18	41	36
	i PP		45	13
	e LR	19	52	00
	O = 18.21.12.2			
	8.1S. 122.0E.			
	Flores Islands			
	h. about 43km.			
	Dist. approx 155° Bda.			
17	e LR	15	08	00
	Tonga Islands			
17	e SKS	20	36	36
	e PS		40	48
	e SS		47	48
	e LR	21	10	00
	O = 20.10.36.4			
	24.3S. 175.6W.			
	Tonga Islands Region			
	h. about 79km.			
	Mag: 6 (Pas)			
	Dist. approx 120° Bda.			
18	i PKP	15	14	41
	e PP		17	41
	i PKS		18	17
	e SKKS		24	28
	i PS		28	00
	e PPS		30	00
	e SS		36	00
	e SSS		40	00

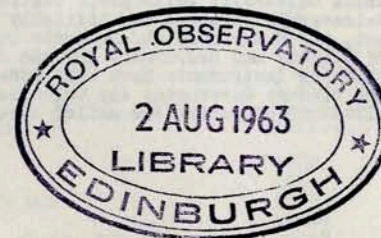
BERMUDA-COLUMBIA UNIVERSITY
SEISMOGRAPH STATION

SIGNAL HILL
ST. GEORGES, BERMUDA

SEISMOLOGICAL BULLETIN

By
G. PIMENTEL

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LAMONT GEOLOGICAL OBSERVATORY
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Contribution No. 634