UNIVERSITY OF QUEENSLAND

SEISMOLOGICAL STATION

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1953

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UNIVERSITY OF QUEENSLAND SEISMOLOGICAL STATION
BRISBANE, AUSTRALIA.

Lat. 27° 30' 02" S Long. 153° 00' 53" E.

Height above mean sea level = 24.2 metres

Foundation: Main Vault - welded tuff (ignimbrite)
Outstations - high level semi-consolidated river alluvium.

Instruments

Instrument	Component	Symbol	T_o sec.	T_g sec.	ϵ	V_m	D mm/min.
Benioff small model moving coil No 13.	Z	Z	1.5	0.25			120
Sprengnether Series H							
No. 1120	N-S	N	7.2	7.2			30
No. 1121	N-S	N	6.8	6.8			30
No. 1122	N-S	N	7.3	7.3			30
Milne Shaw							
No. 58	N-S	n	12.04		20:1	250	16
No. 60	E-W	e	12.02		20:1	250	16
Wood-Anderson	N-S	n′	1.0		20:1		30
Wood-Anderson	E-W	e′	1.0		20:1		30

Note: The Benioff vertical ceased operating 26 March, 1953. The Wood-Andersons were placed in continuous operation for the first time on 10 March, 1953. The three Sprengnether seismometers are housed in outstations close to the main vault, as components of a tripartite installation. All three instruments are oriented to record the N-S component, though only one instrument is normally in use at a time.

Time Service - Time marks are placed on the records each minute from either a Standard or Synchronome clock. The clocks are checked daily against radio time signals from either the Commonwealth Observatory, Mt. Stromlo or from station WWVH, Honolulu. Accuracy limits of readings are generally within ½ second. All times quoted are G. C.T.

Amplitude and Period Data - The amplitudes and periods given are read from Benioff and Sprengnether records, the amplitudes, designated A_z, A_n, A_e, are trace amplitudes (not true amplitudes of ground motion) expressed in millimetres.

Tables - Jeffreys and Bullen, 1948

The station is maintained and operated by the Department of Geology and Mineralogy, University of Queensland, assisted by a Commonwealth Government grant to the University for research purposes.

All communications should be addressed:-

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University of Queensland,
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Brisbane, Australia.

Date	Phase	Comp.	Time h. m. s.	Per. s	A_z	A_n	A_e	Remarks
Jan.								
1	i	Z	00 32 33	1.0	+2			
	e	Z	32 36					
	e	Z	32 47					
1	iP	Z	04 40 31	0.5	+2			
	i	Z	40 36	1.0	-7			
	i	Z	40 47	1.0	-3			
	iS	N	43 49	4.5		+4		
	eS	e	43 49					
	iS	n	43 51					
1	eL	ne	10 14.2					B.C.I.S:- Region of Macquarie Island. H = 10h. 02.3m.
1	e	Nn	18 10 59					
3	e	Z	14 37 31					
	e	Z	37 42					
	i	Z	37 57	1.0	+7			
	e	ZN	39 35					
	e	e	39 44					
3	eP	Z	17 52 07					B.C.I.S:- 3°S., 146°E. N.E. of New Guinea H = 17. 46. 42. Δ = 25.2°
	iP	ZNne	52 08	1.0	-5	+1		
	i	N	52 10	4.0		+2		
	eS	Ne	56 29					
	eS	n	56 31					
4	iPcP	Z	06 55 10	1.0	+2			U.S.C.G.S:- 48°N., 156°E. Kurile Islands H = 06. 43. 15. Δ = 75.6°

Date	Phase	Comp.	Time h. m. s.	Per. s	A_z	A_n	A_e	Remarks
Jan. 4	iP	Z	09 20 42	1.0	+5			U.S.C.G.S:- 7°S., 147°E. Near E. coast of New Guinea H = 09. 15. 52. Δ = 21.2°. Surface waves small
	eP	Nn	20 42					
	i(pP)	Z	21 12	1.0	+6			
	i	Z	21 15	2.0	+8			
	e	N	21 16					
	i	Z	21 59	1.0	-7			
	i	Z	22 23	2.0	-5			
	iS	ZN	24 28	2.0	+6	-3		
	iS	e	24 30					
	iPcS	Z	28 06	2.0	+5			
4	e	Z	11 17 55					
	e	Z	19 25					
4	iP	Z	11 22 31	2.0	-4			U.S.C.G.S:- About 200 miles N.E. of Fiji Islands H = 11. 16. 24. Δ = 30°
	e	Nne	23 21					
	eS	ne	27 35					
	iS	E	27 36	8.0	-3			
4	e	Z	12 00 01					
5	e	Z	05 09 47					
5	eP	N	08 00 45					U.S.C.G.S:- 54°N., 170°E. Komandorskie Islands H = 07. 48. 17. Δ = 82.2°
	e	Ze	00 49					
	i	Z	00 50	1.0	-3			
	iS	N	10 56					
	eS	e	10 56					
	eL_Q	e	22.2					
5	iP	Z	08 36 09	1.0	-4			U.S.C.G.S:- Komandorskie Islands after-shock. H = 08. 23. 46. Δ = 82.2°

Date	Phase	Comp.	Time h. m. s.	Per. s	A_z	A_n	A_e	Remarks
Jan. 5	i	Z	09 55 35					
5	iP	ZN	10 18 19	2.0	+5	-6		U.S.C.G.S:- 49°N., 156°E.
	eP	e	18 19					Kurile Islands
	ipP	ZN	18 3.0	1.0	+10	-9		H = 10. 06. 25
	i	N	19 09	6.0		+5		Δ = 76.4°
	iS	Ne	28 02	10.0		-14	-4	
	eS	Z	28 02					
	isS	e	28 29					
	isS	N	28 31	10.0		-6		
	i	N	29 16	10.0		+13		
	i	e	32 31					
5	iP	Z	15 57 07	1.0	+2			
	i	Z	57 15	1.0	+3			
	i	Z	57 26	1.0	-2			
5	iP	Z	15 58 48	1.0	+2			
5	eP	Z	16 31 44					Komandorskie Islands aftershock.
6	i	Z	11 02 31	1.0	+4			
	i	Z	03 41	1.0	+6			
7	i	Z	05 48 44	0.5	-4			
7	iP	ZN	14 13 21	1.0	-8	+6		U.S.C.G.S:- 5½°S., 150½°E.
	i	Nn	13 33	6.0		+7		New Britain
	i	Nn	15 00	6.0		-8		H = 14. 08. 20
	iS	ZNn	17 23	8.0		+12		Δ = 21.9°
	eL_R	N	18 44					
	iL_Q	N	18 49					

Date	Phase	Comp.	Time h. m. s.	Pere s	A_z	A_n	A_e	Remarks
Jan.								
7	iP	ZN	20 34 17	1.0	+7	-4		Deeper than normal.
	e	N	34 23					
	iS	Nn	38 15	8.0		+7		
8	iP	Z	23 38 25	1.0	+8			
	i	Z	38 28	1.0	+10			
	i	Z	38 32	1.5	-5			
8	iP	Z	23 46 33	1.0	+4			
	i	Z	46 37	1.5	+8			
	i	Z	46 47	1.5	+5			
10	iP	e	14 31 25					B.C.I.S.- New Hebrides region
	eP	Z	31 25					
	iP	N	31 26	4.0		-1		
	i	Z	31 26	1.0	-17			
	iPP	Z	31 39	1.5	-13			
	i	Z	32 00	1.5	-6			
	eS	Nn	34 40					
	i	N	34 50	4.0		-5		
	eL_R	n	35.5					
11	e	Z	04 49 03					
	e	Z	49 23					
	i	Z	49 42	1.5	+4			
	i	Z	49 50	1.0	-6			
	i	Z	49 59	1.5	+5			
11	iP	Z	15 49 16	1.0	+9			
11	i	N	17 47 28					B.C.I.S.- South Pacific
	e	n	50 50					

Date	Phase	Comp.	Time h. m. s.	Per s.	A_z	A_n	A_e	Remarks
Jan 12	iP	ZNne	17 35 32	1.5	+7	-1		U.S.C.G.S. - 49½°N., 156°E. Kurile Islands H = 17. 23. 39 h = 60 km. Δ = 76.9°
	i	Z	35 40	1.5	-6			
	i	Z	35 55	2.0	+8			
	iS	N	45 19	6.5		-2		
	eS	e	45 19					
14	e	n	01 53 30					B.C.I.S. - 38½°S., 177°E. North Island, New Zealand. H = 01 h. 44.1 m. Δ = 23.0°
	eL_Q	e	53 45					
	e	n	55 40					
	e	e	56 20					
14	iP	Z	20 58 30	1.0	+4			U.S.C.G.S. - Solomon Islands H = 20. 53. 28 Δ = 23.3° Deep?
	eP	N	58 30					
	i	Z	58 45	1.5	+7			
	i	Z	58 53	1.5	+9			
	iS	Nn	21 02 34	7.0		+8		
15	iP	Z	08 23 33	1.5	-5			U.S.C.G.S. - 53°N., 159°E. Near E. coast of Kamchatka H = 08. 11. 09 Δ = 80.5°
15	e(P)	Z	12 15 33					B.C.I.S. - 19°N., 156°W. Hawaii H = 12. 04. 33.
	i!	Z	15 44	2.0	-25			
	i	Z	15 49	2.0	-11			
15	iP	Z	17 07 03	1.0	-15			
	i	Z	07 06	1.0	+12			
	i	Z	07 46	1.5	-14			

Date	Phase	Comp.	Time h. m. s.	Per. s	A_z	A_n	A_e	Remarks
Jan. 16	iP	Z	12 34 59	1.5	+10			B.C.I.S:- 7°S., 130°E.
	i	Z	35 03	1.5	+9			Banda Sea
	i	Z	35 15	1.5	+6			H = 12 h. 28.8 m.
	e	e	39 40					Δ = 29.8°
	e	e	40 00					
	eL_Q	e	41 19					
16	iP	Z	12 41 19	2.0	±5			
	e	N	42 00					
16	eP_h	Z	21 22 08					Felt at Gunning,
	eS_h	Z	23 41					N.S.W.
	i	Z	24 05	0.3	+17			H = 21. 20. 10.
	i	Z	24 08	0.5	+22			(Riverview)
	i	Z	24 26	1.0	-15			
	i	Z	25 15	1.0	+11			
17	e	Z	08 03 42					B.C.I.S:- South Pacific
17	e	Z	12 12 31					
17	iP	Z	20 57 57	1.5	-13			B.C.I.S:- 32°N., 132°E.
	i (pP)	Z	58 10	1.5	+9			Near E. coast of Honshu
								Japan.
								H = 20. 47. 36.
								Δ = 62.6°
17	iP	Z	22 19 23	1.0	-9			
17	e	Z	23 00 02					
18	eP	Z	18 20 25					U.S.C.G.S:- 53½°N., 160½°E.
	i	Z	20 44	1.0	+11			E.coast of Kamchatka
								H = 18. 08. 10
								Δ = 81.1°

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Jan. 18	iP	Z	19 49 10	0.5	+9			
19	eP	Z	05 08 39					U.S.C.G.S:- 42°N., 143°E.
	ePP	Z	11 18					S.E. coast of Hokkaido
								H = 04. 57. 22
								Δ = 69.9°
19	iP	Z	06 02 16	2.0	-3			B.C.I.S:- 38°S., 177°E.
	i	Z	02 18	2.0	-3			New Zealand
								H = 05 h. 57.8 m.
								Δ = 20.6°
19	e	Z	06 09 31					
	e	Z	12 30					
19	iP	Z	13 50 10	1.0	+4			
19	e	Z	14 35 04					
19	iP	Z	14 52 02	1.0	-6			B.C.I.S:- E. of New Guinea
	iPP	Z	52 29	1.0	+13			Deep?
	i	Z	54 18	1.5	+15			
	iS	ZNne	56 04					
20	iP	Zne	02 40 20	2.0	-4			U.S.C.G.S:- 19½°S., 169°E.
	iPP	Z	40 33	2.0	+20			Loyalty Islands
	eS	ne	43 35					H = 02. 36. 22.
	eL_R	ne	44 12					Δ = 16.6°
20	iP	ZN	06 51 42	1.0	-14			
20	iP	Z	10 15 52	1.5	+11			U.S.C.G.S:- 11½°S., 165°E.
	eS	N	19 03					Santa Cruz Islands
	eL_Q	ne	19 35					H = 10. 11. 23
								Δ = 19.4°
20	iP	Z	16 10 13	1.0	+9			

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Jan. 20	iP	ZN	17 40 33	0.5	-9			U.S.C.G.S:- 1½°N., 126°E.
	iP	ne	40 35					Molucca Passage
	ePP	n	42 09					H = 17. 33. 06
	iS	ZN	46 24	2.0	+7	-9		Δ = 38.8°
	iS	ne	46 25					
	iL_Q	ne	49 17					
	iL_Q	N	49 25	10.0		+14		
	eL_R	ne	51.4					
20	iP	Z	17 46 33	1.0	-11			
	i(S)	Nn	52 22	8.0		+7		
21	eP	Z	01 32 18					
	i	Z	32 40	1.0	+13			
	i	Z	33 04	1.0	+9			
	eS	Ne	35 42					
21	eP	Z	01 54 50					U.S.C.G.S:- 50°N., 156°E.
	eS	N	02 04 45					Kurile Islands
	eL_R	n	19 30					h = 60 km.
								H = 01. 43. 00
								Δ = 77.4°
21	iP	Z	05 23 46	0.5	-13			
21	iP	Z	13 16 34	1.0	+17			
23	iP	Z	09 33 01	1.0	-9			U.S.C.G.S:- 17½°S., 177½°E.
								Fiji Islands
								H = 09. 27. 40
								Δ = 24.6°
23	iP	Z	09 34 00	1.0	-11			
	i	Z	34 18	1.5	+9			
23	iP	Z	09 39 52	1.0	+7			
23	e	Z	09 43 22					

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Jan. 23	eP	Z	13 01 48					
	i	Z	01 54	1.0	-7			
25	e	Z	15 42 31					
26	e	N	01 33 06					
	i	N	34 13	6.0		+15		
26	eP	Z	01 47 37					
	eL	n	51.0					
26	iP	Z	08 57 09	1.0	+13			
26	iP	Z	09 17 53	0.5	-9			B.C.I.S:- 8°N., 126°E. S. of Philippine Islands H = 09. 09. 52 Δ = 43.9°
26	iP	Z	11 45 38	1.0	-11			
27	e	Z	00 07 39					
27	iP	ZN	03 30 08	1.0	+23			
	eP	e	30 10					
	ipP	Z	30 20	1.0	+27			
	iPP	N	30 28	4.5		-7		
	iPP	Ze	30 29	1.5	+17			
	iPPP	e	30 37					
	iS	N	33 51	8.0		+30		
	isS	N	34 13	8.5		-23		
	i	Nne	34 17	10.0		+11		
	iSS	N	34 38	10.0		+17		
	i	N	35 32	10.0		-12		
	eL_R	n	35 49					
	i(ScS)	N	41 20	12.0		+8		

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Jan. 27	iP	Z	03 37 36	1.0	+14			
27	i	N	03 49 16	6.0		-9		
27	iP	Z	16 55 44	1.0	-16			
27	iP	Z	17 16 38	1.0	-11			
28	iP	Z	12 30 30	0.5	-22			U.S.C.G.S:- 20°S., 169½°E.
	eP	N	30 30					Loyalty Islands
	i	ZNne	30 34	1.0	+14	+9		H = 12. 26. 29
	iPP	Z	30 45	1.0	-11			Δ = 16.8°
	i	N	30 48	4.0		+7		
	i	ZN	31 06	1.5	+17	+9		
	iS	N	33 51	8.0		+11		
	eSS	Nne	34 14					
	e	N	34 23					
29	iP	Z	00 08 04	1.0	-18			
	i	Z	08 17	1.0	-13			
30	iP	Z	02 53 33	1.5	+15			B.C.I.S:- 20°S., 175°W.
								Tonga Islands
								H = 02. 47. 25
								Δ = 30.1°
30	iP	Z	04 16 29	1.0	+12			
30	iP	Z	15 07 02	0.5	+11			
	iS	N	10 24	6.5		-13		
	eS	n	10 24					

Date	Phase	Comp.	Time h. m. s.	Per. sec.	A_z	A_n	A_e	Remarks
Jan. 30	iP	ZN	21 51 23	1.0	+27			U.S.C.G.S.- 12°S., 166½°E.
	eP	ne	51 23					Santa Cruz Islands
	ipP	Z	51 37	1.0	-14			h = 100 km.
	i	Z	52 20	1.0	-28			H = 21. 46. 50
	iS	Nn	54 55	8.5		+11		Δ = 19.9°
	eS	e	54 55					
	e	Zn	55 12					
	isS	N	55 31	10.0		+9		
	iSS	e	55 33					
	e	N	22 00 05					
31	e	Z	03 35 41					
	i	Z	35 43	1.0	+9			
31	e	Z	07 54 26					
31	e	Z	09 09 47					
31	e	Z	12 03 50					
Feb. 1	iP	Z	14 17 31	1.5	-11			B.C.I.S.- 21¼°S., 178¼°W.
	i	Z	17 33	1.5	-10			Fiji Islands
	i	Z	17 57	1.8	-7			h = 600 km.
	iS	N	21 17	4.5		-1		H = 14. 12. 42
	isS	N	24 21	6.0		-2		Δ = 26.7°
	iScS	N	27 14	4.5		-2		

Date	Phase	Comp.	Time h. m. s.	Per. sec.	A_z	A_n	A_e	Remarks
Feb. 2	iP	N	03 32 45	4.0		+3		Δ_{S-P} = 26.3°
	eP	n	32 45					h = 80 km.
	iP	Z	32 47	1.5	+6			
	i	Z	32 55	1.5	-5			
	i	Z	32 58	1.3	+6			
	ipP	N	33 03	5.5		+3		
	iPP	Z	33 33	1.5	-4			
	iS	Nn	37 07	8.0		-8		
	eS	e	37 07					
	isS	e	37 41	12.0		+2		
2	iP	Z	08 36 35	3.0	-3			Δ_{S-P} = 25.5°
	eP	N	36 35					Deep?
	i	Z	36 42	3.0	+4			
	iPP	N	37 12					
	iS	Nn	40 58					
2	iP	ZN	08 56 08	2.0	-5	+2		
	i	Z	56 11	2.0	+5			
	i	Z	56 19	2.0	-3			
2	eP	Z	10 19 20	2.0				B.C.I.S. - Northwest
	i	Z	19 50	1.8	-2			Pacific
	i	Z	19 59	1.0	-5			
	e	Z	25 14					
	e	N	25 31					
	e	Z	25 32					
2	i(P)	Z	10 25 50	2.0	+5			
	i	Z	27 15	1.0	-3			
	i	Z	28 25	1.5	-4			
	i	N	28 29	6.0		-2		

Date	Phase	Comp.	Time h. m. s.	Per. sec.	A_z	A_n	A_e	Remarks
Feb. 2	e	Z	18 42 30					
4	iP	Z	11 21 48	1.5	-4			
4	iP	Z	20 08 31	0.8	-5			
5	iP	ZN	04 24 33	1.0	+8	+2		
	i	Z	24 42	1.5	+6			
	eS	Nn	28 14					
5	iP	Z	11 51 48	1.0	-7			U.S.C.G.S:- 14°S., 176°W.
	i	Z	51 51	1.0	+5			Fiji Islands
	e	N	59 10					H = 11. 45. 23
	e	n	59 12					Δ = 31.8°
5	e	Z	14 03 37					
6	eP	Z	08 47 29					
6	eP	Z	13 24 17					U.S.C.G.S:- 42½°N., 143½°E.
	i	Z	24 30	1.2	+7			Near southeast coast
	iS	Nn	33 16	6.0		-5		of Hokkaido, Japan.
	iS	e	33 20					H = 13. 12. 59
	i	e	34 12					Δ = 70.4°
6	eP_n	Z	17 50 30					Local Shock. Felt
	iP*	Z	50 40.5					Monto and Thangool
	i	Z	50 46					$\Delta_{S_n-P_n} \doteq 3.7°$
	i	Z	50 49					
	i	Z	51 02.2					
	i	Z	51 12.8					
	iS_n	Z	51 14.6					
	i	Z	51 15.2					
	iS*	Z	51 24.0					

Date	Phase	Comp.	Time h. m. s.	Per. sec.	A_z	A_n	A_e	Remarks
Feb.								
7	eP	Z	04 19 01					
	i	Z	20 41	1.0	+7			
7	eP	Z	07 45 13					B.C.I.S:- Near Cape Providence, South Island, New Zealand H = 07 h. 40.5 m.
	eP	N	45 15					
	eS	n	49 20					
	eS	N	49 21					
7	iP	Z	16 15 50	1.0	+7			
7	iP	Z	16 43 26	1.2	+10			
7	iP	Z	18 35 05	1.5	-3			U.S.C.G.S:- 49°N., 156°E. Kurile Islands. H = 18. 23. 12 Δ = 76.4°
	i	Z	36 06	1.6	+7			
	eS	Nne	44 50					
8	eP	Z	09 24 06	1.5	+2			
	eS	Ne	28 15					
9	iP	Z	03 16 01	1.0	+4			U.S.C.G.S:- 30½°S., 177½°W. Kermadec Islands H = 03. 10. 28 Δ = 25.9°
	i	Z	16 32	1.0	-7			
	i	Z	16 51	1.2	+11			
	eS	N	20 26					
9	iP	Z	03 19 46	1.0	+2			
	i	Z	19 49	1.0	-5			
9	iP	Z	21 45 28	0.8	+2			U.S.C.G.S:- 52½°N., 169°W. Fox Islands, Aleutian Islands. H = 21. 32. 36 Δ = 86.4°

Date	Phase	Comp.	Time h. m. s.	Per. s	A_z	A_n	A_e	Remarks
Feb. 10	iP	Z	13 42 10	1.7	+8			U.S.C.G.S. - Loyalty Islands
	eP	N	42 12					H = 13. 38. 10
	i	Z	42 14	1.8	+10			
	i	Z	42 52	1.6	-9			
	eS	Nn	45 24					
10	iP	Z	13 56 09	1.5	-6			
	i	Z	56 20	1.0	+10			
	i	Z	56.27	1.2	+13			
	eS	Nn	59 27					
10	iP	Z	14 01 40	2.0	-9			B.C.I.S. - 20½°S., 171°E.
	eP	N	01 42					Loyalty Islands
	iPP	N	01 54	4.8	-6	-6		H = 13. 57. 45
	i	Z	02 24	1.5	+10			Δ = 17.8°
	iS	ZN	04 59	2.0	-10	+13		
	eS	n	04 59					
	iSS	N	05 20	6.0		+9		
	iSSS	N	05 31	6.5		+11		
	iL_R	N	05 53	8.0		-9		
12	ePP	e	08 34 45					U.S.C.G.S. - 35°N., 54½°E.
	iPP	Z	34 46	2.0	+3			Northern Iran
	e	N	34 54					H = 08. 15. 29
	e	Z	34 55					Δ = 111.8°
	ePS	Ne	44 19					

Date	Phase	Comp.	Time h. m. s.	Per. sec.	A_z	A_n	A_e	Remarks
Feb. 13	iP	ZN	10 45 24	1.5	+5			U.S.C.G.S.- New Hebrides Islands H = 10. 41. 43
	eS	Nn	48 36					
	i	N	48 37					
13	iP	Z	14 59 20	2.0	-4			
	iPP	Z	15 00 35	1.5	+7			
	eS	n	04 42					
	iL_Q	n	07 10					
	iL_Q	N	07 11					
13	i	Z	16 36 53	1.0	+2			
13	iP	Z	21 52 30	1.5	+4			B.C.I.S.- Kermadec Islands region H = 21 h. 47.1 m.
	i	Z	52 37					
	e(S)	e	57 18					
14	iP	Z	05 52 56	1.0	+2			
14	eP	n	21 56 38					U.S.C.G.S.- 18½°N., 146°E. Marianas Islands. h = 60 km. H = 21. 48. 12 Δ = 46.7°
	iP	ZNe	56 40	1.0	-9	-2		
	epP	Z	57 01					
	iPcS	Z	22 01 58	1.7	-8			
	iS	e	03 18					
	iS	Nn	03 20	5.0		+6		
	iS	Z	03 21					
	i	Z	04 01	1.2	+8	+8		
	iScS	Ne	06 25	6.0		+7		
	eL_Q	n	07 30					

Date	Phase	Comp.	Time h. m. s.	Per. sc	A_z	A_n	A_e	Remarks
Feb. 15	eP	Z	02 52 24					
	eS	Nne	56 22					
15	i(P)	Z	13 15 26	1.0	+3			
15	iP	Z	20 04 34	1.5	+3			U.S.C.G.S.- Solomon Islands
	eP	N	04 36					
	i	Z	04 39	1.5	+8			H = 19. 59. 40
	iS	Nn	08 37	6.0		-6		
	eS	e	08 37					
16	i	Z	04 35 23	0.8	-1			
17	iP	Z	22 45 24	1.0	+7	+7		
	i	Z	45 31	1.3	+6			
19	iP	Zn	13 11 11	1.0	-7			Wellington: 29½°S., 178¼°W.
	i	n	12 01					Kermadec Islands.
	iPP	Z	12 12	1.0	+11			h = 370 km.
	ipP	Z	12 17	1.0	-9			H = 13. 06. 06
	i	Zne	12 46	1.2	-14			Δ = 25.3°
	i	n	12 55					
	iS	N	15 06	5.0		-11		
	iS	ne	15 07					
	isS	ne	17 07					
	iScP	Z	17 44	1.2	+7			
	iScS	Nn	21 33	6.0		+9		
19	iPKP	Z	15 37 44	1.5	-6			U.S.C.G.S.- 0°, 18°W. Mid-Atlantic Ocean H = 15. 17. 40

Date	Phase	Comp.	Time h. m. s.	Per. sec.	A_z	A_n	A_e	Remarks
Feb. 19	i	Z	18 20 33	1.0	-4			
	e	Z	20 39					
20	iP	Z	10 15 41	1.3	+7			B.C.I.S:- South Pacific
	i	Z	15 58	1.2	+11			
20	iP	Z	23 28 19	0.8	+4			B.C.I.S:- 26°S., 178°W.
	i(PP)	Z	28 53	1.5	+7			North of Kermadec
	iL_Q	n	33 45					Islands.
								H = 23. 22. 24
23	iP	Z	10 09 22	1.0	-9			
	i	Z	09 36					
23	eL	n	23 40.2					
25	iP	Z	21 29 32	1.5	-4			U.S.C.G.S:- 56°N., 156½°W.
	i!	Z	29 33	1.6	+27			Off S.coast of
	i	Z	29 43	1.5	+14			Alaska Peninsula
	ePP	Z	33 16					h = 60 km.
	eSKS	e	39 48					H = 21. 16. 18
	eSKS	n	39 54					Δ = 93.7°
	eS	n	40 33					
	eS	e	40 36					
	ePS	ne	42 03					
	ePPS	e	42 42					
26	iPcP	Z	00 44 25	1.0	-15			U.S.C.G.S:- 51°N., 156½°E.
								Near S. coast of
								Kamchatka
								H = 00. 32. 07
								Δ = 78.4°

Date	Phase	Comp.	Time h. m. s.	Per. sec.	A_z	A_n	A_e	Remarks
Feb. 26	iP	Z	02 10 23	0.8	+4			
	i	Z	10 31	1.6	-2			
	i	Z	11 10	1.5	+6			
	i	Z	11 25	1.2	+6			
26	iP	ZNne	10 17 03	1.0	-4	+2		U.S.C.G.S:- 20°S., 169°E. Loyalty Islands. H = 10. 13. 07 Δ = 16.4°
	iPP	e	17 15					
	i	ZNn	17 18	1.2	-8			
	i	Z	18 31	1.5	-9			
	i	e	18 50					
	iL_Q	Ne	19 58	7.0		+9		
	iSS	Zne	20 20	1.0	+7			
	i	Z	20 25	1.5	+8			
	eL_R	n	20 52					
26	iP	ZNne	11 46 59	1.4	-7			U.S.C.G.S:- 11°S., 164½°E. Santa Cruz Islands region H = 11. 42. 26 Δ = 19.6°
	iL_Q	n	50 40					
	iL_Q	Z	50 42					
26	i	Z	11 55 28	2.0	-7			
26	eP	Z	12 20 26					
26	iP	Z	12 52 27	1.5	+6			
26	e	Z	13 48 29					
26	iP	Z	16 04 32	1.5	+3			
	i	Z	04 34	1.0	+2			
26	e	Z	16 43 16					

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Feb. 26	iP	Z	17 56 41	1.0	+4			
	eP	n	56 41					
	i	Z	56 47	1.0	-2			
27	e	Z	01 02 34					
27	iP	ZN	05 50 04	1.0	-5			B.C.I.S.- 5½°S., 152¼°E
	eP	n	50 04					New Britain
	i	Z	50 17					H = 05. 45. 11
	iPP	Z	50 30	0.8	+7			Δ = 21.8°
	e	Z	51 17					
	i	Z	51 38	2.0	-4			
	e	N	51 38					
	iS	n	54 04					
	iS	N	54 06	6.5		+15		
	iSS	N	54 42	8.0		-10		
	e	e	56 59					
27	e	Z	11 48 04					
27	iP	Z	17 06 33	1.8	+2			
	i	Z	06 38	1.8	+2			
	i	Z	06 45	2.0	-2			
27	iP	Z	17 29 38	1.0	-2			
27	iP	Z	20 02 03	1.0	-2			
28	iP	Z	04 32 54	1.0	+2			

Date	Phase	Comp.	Time h. m. s.	Per. sec.	A_z	A_n	A_e	Remarks
Feb. 28	e	Z	12 30 09					
	i	Z	30 20	1.8	-3			
28	iP	ZN	18 43 04	1.3	-3			B.C.I.S:- New Hebrides Islands
	i	Z	43 09	0.6	-3			H = 18. 39. 00
	iPP	Z	43 18	0.8	-1			Δ = 17.3°
	i	Z	43 32	0.8	-3			
	i	Z	44 03	1.5	+3			
	iS	N	46 13	8.0		+2		
	eS	n	46 13					
	eS	Ze	46 15					
	i	N	46 27	8.0		+5		
Mar. 1	iP	Z	06 22 31	1.3	+3			
1	iP	Z	20 06 09	1.0	-4			
1	iP	ZN	23 01 55	1.0	+11	-4		U.S.C.G.S:- 11PS., 166°E.
	i	N	02 26	5.0		+7		Santa Cruz Islands
	e	n	02 26					h = 100 km.
	i	N	03 13	6.0		+7		H ≐ 22. 57. 24
	iS	Nne	05 39	9.0		+11		Δ = 20.4°
	iS	Z	05 41	2.0		-9		
	i	N	06 16	8.0		-12		

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Mar. 2	iP	ZNne	02 17 29	0.5	+5			B.C.I.S:- 6¼°S., 155¼°E.
	iPP	n	17 50					Solomon Islands
	i	n	18 24					h = 60 km.
	iS	ne	21 15					H = 02. 12. 55
	iS	N	21 16	6.0		+7		Δ = 21.2°
	i	Z	21 22	1.0	-11			
	iL_Q	e	21 35					
	eL_R	n	22.4					
	iPcS	Z	25 09	1.3	+9			
3	iP	Nn	11 30 51	6.0		+16		U.S.C.G.S:- 20°S., 169°E.
	eP	Z	30 51	0.8	+1			Loyalty Islands.
	iP	Ze	30 52	1.0	-23			M = 7
	iPP	ne	31 04					H = 11. 26. 53
	eS	Z	33 47					Δ = 16.4°
	eSS	Z	34 10					
	iSS	N	34 11	6.0	+15			
	eL_R	e	34 43					
3	e	Z	12 03 18					
3	iP	Z	12 14 17	1.0	+4			
3	eP	Z	13 06 38					U.S.C.G.S:- Loyalty
	iP	N	06 38	4.5		-7		Islands region
	i	Z	06 39	1.0	+3			H = 13. 38. 58
	i	Z	07 58	1.0	+7			
	e(S)	Z	09 34					

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Mar. 3	eP	Z	13 42 46					U.S.C.G.S: Loyalty Islands region H = 13. 38. 58
	i	Z	42 47	0.8	-5			
	iP	Ne	42 50	4.5	+3			
	iPP	Z	42 59	1.0	+9			
	i	Z	43 36	1.2	-7			
3	iP	Z	13 45 07	1.0	+4			U.S.C.G.S:- 19½°S., 168½°E. Loyalty Islands region H = 13. 41. 20 Δ = 16.2°
	i	Z	45 09	1.2	-19			
	eP	ne	45 10					
	i	Z	46 07					
3	iP	Z	13 46 22					
3	eP	Z	14 12 50					
3	iP	Z	14 15 44	1.0	+5			
3	e	Z	16 22 36	2.0	+5			
3	e(P)	Z	16 42 46					
3	e	Z	18 22 13					
3	i	Z	21 06 16					
4	iP	Z	07 17 36	1.0	-5			U.S.C.G.S:- 19½°S., 168½°E. Loyalty Islands region H = 07. 13. 47 Δ = 16.2°
	i	Z	17 39	1.3	+8			
	iPP	Z	17 49	1.3	-19			
	iPPP	Z	18 09	1.2	+11			

Date	Phase	Comp.	Time h. m. s.	Per. s	A_z	A_n	A_e	Remarks
Mar. 4	eP	Z	14 55 51					U.S.C.G.S:- 24°N., 122°E. Near E.coast of Formosa. H = 14. 45. 48 Δ = 59.4°
5	iP	Z	06 00 15	2.0	-8			B.C.I.S:- 35°S., 113°W. Southwestoof Easter Island.
	e	N	04 06					
5	iP	Z	07 03 29	0.8	+2			H = 05. 48. 22 Δ = 77.7°
5	iP	ZN	07 33 10	0.7	-6			U.S.C.G.S:- Loyalty Islands region H = 07. 29. 20
	i	Z	33 12	1.0	-10			
	eS	N	36 21					
	eS	n	36 23					
	eL_R	N	37 31					
5	iP	Z	21 13 24	0.8	+5			U.S.C.G.S:- 51°N., 158°E. Near south coast of Kamchatka h = 60 km. M = 6¾ H = 21. 01. 23 Δ = 78.4°
	ipP	ZN	13 39	1.0	-6	-8		
	iS	Ne	23 20	9.0		-9		
5	eP	Z	21 33 35					U.S.C.G.S:- 49°N., 156°E. Near south coast of Kamchatka. H = 21. 21. 45 Δ = 76.4°
6	eP	ne	04 25 30					U.S.C.G.S:- 16°S., 177°E. Fiji Islands H = 04. 20. 10 Δ = 24.9°
	eS	Ne	29 54					
	iL_Q	N	30 39					

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Mar. 7	eL	n	14 30.5					
8	eP	N	18 15 39					
	iS	N	21 24	6.0		-5		
	eS	n	21 24					
9	iP	ZN	10 08 45	2.0	-9	+2		U.S.C.G.S.- 4½°S., 153½°E.
	iP	ne	08 46					New Britain region
	iPcP	ZN	12 34	1.6	+17	-9		H = 10. 03. 41
	eS	n	12 49					Δ = 22.8°
	iS	Ne	12 51	6.5	+9			
	iL_Q	n	13 12					
	i	e	13 40					
	iScP	Z	16 12	1.2	+6			
	iScP	n	16 14					
9	eP	Z	10 51 52					
10	iP	Nne	06 02 50	4.0		+5		U.S.C.G.S.- 18½°S., 168°E.
	iPP	N	03 10					New Hebrides Islands
	i	N	03 26					H = 05. 58. 55
	eS	N	05 51					Δ = 16.4°
	eS	ne	05 52					
	iSS	Nne	06 14					
	iL_R	n	06 38					
	eL_R	ne	06.7					
10	iP	Z	07 47 34	1.0	+2			

Date	Phase	Comp.	Time h. m. s.	Per. sec.	A_z	A_n	A_e	Remarks
Mar. 11	iP	Z	01 24 02	1.0	+10			U.S.C.G.S. - 6°S., 151½°E. New Britain region H = 01. 19. 10 Δ = 21.4°
12	iP	Z	00 53 39	0.8	+14			Δ = 67.5° h = 500 km.
	ipP	Z	55 22					
	iS	e	01 01 55					
	eS	N	01 55					
	e	e	14 07					
	e	e	14 45					
12	eP	Z	11 56 10					U.S.C.G.S. - Santa Cruz Islands region H = 11. 51. 42
	i	Z	56 17	1.0	+3			
12	iP	Z	13 36 04	1.0	-3			
14	eP	Z	17 08 31					
	eP	Nn	08 32					
	i	ZNn	08 36	0.8	+10	-4		
	iPP	Z	10 21	1.0	-8			
	iPcP	N	10 34	5.0		-2		
	iS	Nn	14 54	5.0		-3		
	iSS	N	18 00					
	eL_R	n	20.3					
15	e	ne	09 07 17					
	i	N	07 18	6.0		-7		
15	e	Z	22 16 29					

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Mar. 16	iP	ZNne	08 26 23	0.8	-1	+4		U.S.C.G.S. - 18°S., 168°E. New Hebrides Islands H = 08. 22. 26 Δ = 16.7°
	i	Z	26 25	1.0	+9			
	iPP	ZNne	26 36					
	iPPP	ZNe	26 43					
	i	E	27 20					
	iS	Nn	29 34					
	iL_R	N	30 18					
16	iP	Z	09 12 51	1.5	-5			
	i	Z	12 58					
	i	Z	13 04					
16	iP	Z	11 25 52	1.0	+2			U.S.C.G.S. - 48°N., 154°E. Kurile Islands H = 11. 13. 55 Δ = 75.3°
16	iP	Z	11 39 42	0.8	+2			
	i	Z	39 47	1.5	+5			
17	iP	Z	11 07 43	1.0	-7			
	eP	N	07 43					
	e(S)	N	14 40					
17	eP	ZN	11 17 41					B.C.I.S. - North Island, New Zealand H = 11. 12. 17 Δ = 26.5°
	iP	Z	17 42	1.0	-8			
	i	Z	17 50					
	eS	N	22 12					
	eL_R	N	23.9					

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Mar. 17	iP	Z	12 38 49	1.0	+3			U.S.C.G.S:- Near Paray
	i	Z	38 56	1.0	-7			Island, P.I.
	i	Z	39 09	1.2	+14			H = 12. 30. 00
17	iP	Z	13 16 33	1.2	+7			U.S.C.G.S:- 50½°N., 156½°E.
	iPcP	Z	16 51	1.3	-9			Kurile Islands
	i	Z	17 26	1.2	+7			H = 13. 04. 33
	iS	Ne	26 21	5.8		+7		Δ = 77.9°
	e	e	26 54					
	e	e	27 26					
18	$iPKP_1$	Z	19 25 33	2.0	-3			U.S.C.G.S:- 40°N., 27½°E.
	$ePKP_1$	N	25 36					Western Turkey
	i	Z	25 48	2.0	+4			H = 19. 06. 11
	iPP	Z	28 07	2.5	+5			Δ = 133.6°
	ePP	N	28 07					
	ePKS	Z	29 08					
	eSKS	Z	32 44					
	e	Nn	33 00					
	eSKKS	N	34 56					
	e	N	50 35					
19	$iPKP_1$	ZN	08 47 16	0.8	-67	-4		U.S.C.G.S:- 14°N., 61°W.
	eP	n	47 17					Windward Islands
	$iPKP_2$	Nne	47 20	4.0		+11		h = 200 km M = 7¾
	i	N	47 39					H = 08. 27. 57
	$ipPKP_1$	e	48 08					Δ = 145.7°
	iSKP	Z	50 25					
	iPP	e	50 40					
	iPP	Z	50 42	1.5	-24			
	i	Z	52 12	1.5	+18			

(continued overleaf)

Date	Phase	Comp.	Time h. m. s.	Per. s	A_z	A_n	A_e	Remarks
Mar. 19	iSKS	N	08 54 06	6.0		-9		
	i(sSKS)	N	55 42	7.0		+10		
	e	Nne	56 44					
	eSKKS	e	57 09					
	e	Nn	59 03					
	iSS	Nn	09 09 14	8.0		-9		
19	iP	ZN	10 25 41	1.0	-8	+4		U.S.C.G.S:- 28½°N., 127½°E. Ryukyu Islands H = 10. 15. 33 Δ = 60.9°
	i	Z	26 20	1.0	+10			
	i	Z	26 42	0.8	-7			
19	iP	Z	13 05 42	0.6	-5			
19	ePKP1	Z	13 13 11					U.S.C.G.S:- Western Turkey. Aftershock of above H = 12. 53. 40
	i	Z	13 29	1.0	+7			
	i	N	17 34	6.5		+6		
	i	N	19 21	7.0		-9		
	iSKS	N	19 48	7.0		-11		
	i(PPS)	N	29 50	7.0		+10		
19	eP	Z	13 36 48					
	i	Z	36 55	1.0	+6			
19	iP	Z	18 12 06	3.0	-8			B.C.I.S:- Kermadec Islands region.
	i	Z	12 17					
	e	e	17 25					

Date	Phase	Comp.	Time h. m. s.	Per. s	A_z	A_n	A_e	Remarks
Mar. 19	iP	Zn	18 57 50	1.0	+40			U.S.C.G.S:- 26°S., 178½°E South of Fiji Islands h = 600 km. H = 18. 53. 29 Δ = 22.8°
	e	N	57 55					
	e	n	58 20					
	i	e	19 00 20					
	e	Z	00 24					
	iS	n	01 15					
	eS	Z	01 17					
	iS	Ne	01 18	6.0		-5		
	iPcP	N	01 23	8.0		-6		
	iScS	N	07 40	8.0		-5		
19	iPZ		20 35 36	1.0	-5			U.S.C.G.S:- Fiji Islands region. H = 20. 29. 39
19	iP	Z	23 32 20	8.0	-10			B.C.I.S:- Northeast of North Island, New Zealand H = 23 h. 26.9 m.
	eSS	Nne	37 43					
19	iP	ZN	23 50 27	1.0	-15	+3		B.C.I.S:- 35°S., 179¼°W. Northeast of North Island, New Zealand H = 23. 45. 05 Δ = 24.9°
	eP	ne	50 27					
	i	Z	51 41	1.0	+10			
	eS	Ne	54 50					
	eSS	Nn	55 46					
	eL_R	N	56 47					
	i	N	59 43	8.0		+4		
20	iP	Z	00 02 37	2.0	-2			

Date	Phase	Comp.	Time h. m. s.	Per. s	A_z	A_n	A_e	Remarks
Mar. 20	iP	Z	05 43 03	1.0	-4			
20	iP	Z	05 59 07	1.0	-5			
20	iP	Z	09 45 32	1.5	+6			
	i	Z	45 37	1.5	+5			
20	eP	Z	10 41 00					
	iS	N	44 13	6.0		+2		
	eS	e	44 14					
20	iP	Z	20 23 55	1.5	+7			B.C.I.S:- Flores Sea
	i	Z	24 34	2.0	-9			H = 20 h. 16.3 m.
22	eP	Z	19 37 03					
25	iP	Z	10 25 15	1.0	+9			Deep?
	iP	e	25 16					
	i	Nn	25 48	6.0		+10		
	iS	N	28 48	8.0		+12		
	eS	ne	28 48					
28	eL	e	03 08.2					
28	i	Nn	20 10 14	6.8		+7		
	e	e	10 14					

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UNIVERSITY OF QUEENSLAND SEISMOLOGICAL STATION

BRISBANE, AUSTRALIA.

Lat. 27° 30' 02" S. Long. 153° 00' 53" E

Height above mean sea level = 24·2 metres.

Foundation: Main Vault - welded tuff (ignimbrite)
Outstations - high level semi-consolidated river alluvium.

Instruments

Instrument	Component	Symbol	To sec.	Tg sec.	ε	V_m	D mm./min.
Sprengnether Series H							
No. 1120	N-S	N	7·2	7·2			30
No. 1121	N-S	N	6·8	6·8			30
No. 1122	N-S	N	7·3	7·3			30
Milne Shaw							
No. 58	N-S	n	12·04		20:1	250	16
No. 60	E-W	e	12·02		20:1	250	16
Wood-Anderson	N-S	n′	1·0		20:1		30
Wood-Anderson	E-W	e′	1·0		20:1		30

Note: No vertical component instrument was operated during the quarter. The small model moving coil Benioff seismometers have been sent to Rabaul, New Britain for installation in the Vulcanological Observatory. No Wood-Anderson records were obtained for the period June 17 - June 30, 1953. The three Sprengnether seismometers are housed in outstations close to the main vault, as components of a tripartite installation. All three instruments are oriented to record the N-S component, though only one instrument is normally in use at a time.

Time Service - Time marks are placed on the records each minute from either a Standard or Synchronome clock. The clocks are checked daily against radio time signals from either the Commonwealth Observatory, Mt. Stromlo or from station WWVH, Honolulu. Accuracy limits of readings are generally within ½ second. All times quoted are G.C.T.

Amplitude and Period Data - The amplitudes and periods given are read from Benioff and Sprengnether records. The amplitudes, designated A_z, A_n, A_e, are trace amplitudes (not true amplitudes of ground motion) expressed in millimetres.

Tables - Jeffreys and Bullen, 1948.

The station is maintained and operated by the Department of Geology and Mineralogy, University of Queensland, assisted by a Commonwealth Government grant to the University for research purposes.

All communications should be addressed:-

Seismological Station,
University of Queensland,
St. Lucia, S.W. 6.,
Brisbane, Australia.

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Apr.								
1	iS	N	07 58 12					
	eS	ne	58 14					
1	e	e	11 53.5					
1	e	e	12 25.3					
2	iP	Nnn′	04 01 01					
	i	ne	01 04					U.S.C.G.S. - 5°S., 151½°E., New Britain
	i	n′	01 05					H = 03-56-06
	ipP	n	01 12					h = about 60 km.
	isP	Nn	01 20					Δ = 22.4°
	iPP	n	01 33					
	iS	Nn	05 02					
	iS	n′e	05 04					
	isS	n	05 30					
	isS	N	05 32					
	i	E	05 59					
3	e(P)	Ne	04 25 04					U.S.C.G.S. - 15½°S., 172°W., Samoa Islands region,
	i	N	25 02					H = 04-18-15
	eS	Ne	29 14					Δ = 33.6°
	eL_R	n	30 50					
	e	N	30 55					
4	e(S)	Nne	06 11 22					U.S.C.G.S. - 36½°N., 141°E., Japan.
								H = 05-52-15
								Δ = 64.8°
5	eP	Ne	08 59 55					Wellington - 32½°S., 179°W.,
	eS	e	09 04 07					H = 08-54-29
								M = 6
								Δ = 25.9°

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Apr.								
6	iP	N	01 42 12					Shillong - 8°S., 131°E.,
	iP	n	42 13					H = 00-36-25
	iP	e	42 14					
	ipP	ne	42 27					
	i	e	42 34					
	iPP	Nne	43 07					h = about 60 km.
	i	e	43 14					
	i	N	43 26					Δ = 28.4°
	eP_cP	e	45 48					
	iS	Nne	46 55					
	i	e	47 18					
	isS	n	47 21					
	isS	N	47 23					
	iL_Q	n	48 36					
	iL_R	e	49 59					
	i	ne	50 58					
	i	n	53 00					
6	iP	Nn	03 59 48					
	eP	e	59 48					
	iPP	Nne	04 00 36					
	iS	Nne	04 27					
	i	e	05 29					
	i	Nn	05 38					
	e	ne	08 05					
	i	N	08 05					
6	iP	Nn	15 35 13					
	i	Nn	35 25					Surface waves
	i	N	35 30					small.
	e	e	35 32					
	i	n	35 32					
	i	N	35 54					
	iS	Nne	39 12					
	i	N	39 27					
7	e	e	17 35 37					B.C.I.S.- 24°S., 17⅝°E.,
	iS	Nn	36 39					H = 17-28.0
	e	n	38 37					h = about 570 km.
	i	N	38 37					Δ = 24.1°
	$i(S_cS)$	N	43 00					Surface waves small.

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Apr.								
8	iP	N	00 05 35					B.C.I.S. - 3°N., 126½°E.,
	iPP	N	07 10					Mindanao.
	ePP	NE	07 10					H = 23-58-13
	i	N	07 13					M = 5½
	eP_cP	Nn	07 47					Δ = 39.5°.
	iS	N	11 31					
	eS	ne	11 33					
	i	N	12 17					
	e	ne	12 17					
	iSS	N	14 24					
	eSS	n	14 25					
10	eP	N	17 05 05					B.C.I.S.- New Britain
	e	N	05 10					region.
	ipP	Nn	05 29					H = 17-00.4
	iS	Ne	09 06					Brisbane h = 60 km.
	eS	n	09 06					
11	eS	ne	10 36 48					B.C.I.S.- Bay of Waikawa,
	e	e	37 28					New Zealand. H = 10-28.0
								M = 5.
14	iSKS	N	13 53 24					U.S.C.G.S.- 7½°S., 71½°W.,
	eSKS	e	53 25					Western Brazil
	iSKKS	Ne	55 07					H = 13-29-26
	iSKKS	n	55 08					h = about 650 km.
	eSP	ne	58 03					Δ = 124.6°
	i	N	58 20					
	i	N	14 00 31					
15	eS	e	08 58 04					
16	eS	Nne	05 41 36					B.C.I.S.- Probably region
	i	Ne	41 47					of the north Island of
								new Zealand.
17	iP	n	11 15 21					
	iP	N	15 22					Wellington - 3½°S.,
	eP	n′e	15 22					151½°E., New Britain
	e	n′e′	15 24					H = 11-10-15
	ipP	Nne	15 42					h = about 90 km.
	isP	N	15 51					Δ = 23.9°

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Apr.								
17	i	Nn	16 11					
	iS	n	19 31					
	iS	N	19 32					
	i	ne	19 37					
	i	Nn′	19 38					
	i	e	20 34					
18	eP_cS	ne	03 24 51					B.C.I.S.- Kerguellen Is.
	eS	n	28 23					H = 03-09.5
	eSS	N	32 28					
18	i(P)	Nn	03 35 51					
	i(P)	e	35 52					
	i	N	38 18					
19	iP	Nnn′	12 17 52					U.S.C.G.S.- New Hebrides
	iPP	N	18 10					region,
	eS	N	21 33					H = 12-13-12.
	eL_Q	Ne	21 43					Δ_{S-P} = 20.3°
	i	N	21 59					
	e	e	22.5					
20	e(S)	Ne′	11 09 54					U.S.C.G.S.- Kermadec
	$e(L_R)$	Nn	12 25					Islands region
	e	Nn	16 08					H = 11-00-31
21	eS	Nn	17 40 30					B.C.I.S.- Admiralty Is.
	i	N	44 42					H = 17-29.5
	e	n	44 42					
	i	e	47 58					
22	eP	Ne	10 08 15					B.C.I.S.- Kermadec
	i	Nn	08 34					Islands
	e	e	09 10					H = 10-02.7
	iS	N	12 30					
	eS	n	12 30					
	i	N	14 08					
	e	n	14 08					

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Apr.								
23	iP	N	16 29 26					U.S.C.G.S. - 4°S., 154°E., New Britain, H = 16-24-17 M = 7½ - 7¾ Δ = 23.3°.
	eP	n′	29 26					
	iP	n	29 27					
	e	e	29 32					
	i	e	29 42					
	i	e	29 50					
	i(PP)	n′	29 54					
	i(S)	n′	33 54					
	i	n′	34 14					
	i	n′	34 51					
	i	n′	36 08					
26	iP	Nnen′	01 39 34					U.S.C.G.S. - Solomon Islands region. H = 01-35-12 h = 60 km.
	eP	e′	39 35					
	ePP	ee′	40 06					
	eS	ne	43 15					
	iS	N	43 16					
	eL_Q	Ne	43 27					
26	e	e	12 34 25					
	e	n	34 30					
	e	N	34 40					
	i	N	38 03					
	i	N	39 03					
	e	n	39 03					
29	iP	n′	03 35 38					B.C.I.S. - 10°S., 159°E., H = 03-31-20 Δ = 18.2°.
	iP	Ne′	35 39					
	iP	ne	35 40					
	iPP	n	35 48					
	iPP	e	35 50					
	iPPP	n	36 01					
	iS	Ne	39 15					
	eS	n′e′	39 15					
	i	Nn′	39 25					
	i	ne′	39 26					
	i	e	39 45					
	i	n	40 07					

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
Apr.								
30	iP	Nn′e′	06 30 36					U.S.C.G.S. - 20½°S., 170°E., Loyalty Islands. H= 06-26-40 h = about 60 km. M = 6½ - 6¾. Δ = 16.9°.
	iP	ne	30 37					
	iPP	n	30 47					
	iPPP	n	30 55					
	i	n	33 16					
	iS	N	33 24					
	iS	ne	33 25					
	iS	n′e′	33 26					
	iL_Q	n′e′	33 46					
	i	n	33 51					
	i	n′e′	34 00					
		ne						
	eL_R	n′e′	34.5					
May								
6	iP	N	17 30 55					U.S.C.G.S. - 36½°S., 73°W., Central Chile. Several killed, minor damage. H = 17-16-48 h = about 100 km. M = 7½ - 7¾. Δ = 102.6°.
	eP	nn′	30 55					
	ePP	Nn	34 54					
	i	N	37 39					
	e	n	37 39					
	iSKS	Nn′	41 15					
	i(S)	ne	42 24					
	ePS	N	43 53					
	ePS	ne	43 57					
	iSS	N	49 28					
	iSSP	Nne	49 53					
	eSSS	Ne	53 23					
	eL_Q	ne	59.9					
	eL_R	ne	18 04.6					
9	iP	N	17 43 48					Surface waves small. Interpretation doubtful.
	eP	nn′	43 48					
	iPP	N	44 10					
	ePP	n	44 10					
	i	N	44 28					
	e	n	44 28					
	i	N	47 02					
	iS	N	47 34					
	eS	n	47 34					
	eLQ	ne	47 41					
	i	N	47 47					
	i	N	48 53					
	i	N	18 06 08					

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
May								
10	iP	Nne	05 14 41					
	eP	n′e′	14 41					B.C.I.S.- 18°S., 168°E.,
	ePP	ne	14 57					New Hebrides Is.
	iPP	N	14 57					H = 05-10-46
	i	N	15 10					Δ = 16.7°
	iS	N	17 49					
	eS	n	17 50					
	e	e	18 00					
	iSS	N	18 09					
11	iP	e	10 20 22					
	eP	n′e′	20 22					U.S.C.G.S.- 21½°S.,
	iP	Nn	20 23					169°E., Loyalty Is.,
	iPP	nen′	20 32					H = 10-16-36
	iPP	N	20 33					M = 6¾ - 7
	eS	ee′	23 21					Δ = 15.7°
	iS	Nn	23 23					
	i	Nn	23 36					
	iSS	e	23 47					
	iL_R	e	24 07					
	i	ne′	25 10					
13	eP	e	11 58 48					B.C.I.S.- 30°S.,
	i	e	59 27					175¼°W., Kermadec
	e	e	12 02 54					Is.
	eS	e	03 27					H = 11-53-04
	e	e	05 23					Δ = 27.5°
	iL_R	n	06 00					
17	ePP	N	13 23 18					B.C.I.S.- 3.6°S., 102.2°E.,
	iS	Nn	28 15					Sumatra,
	eS	e	28 15					H = 13-12-12
								h = about 600 km.
								Δ = 53.9°.
18	iP	N	07 56 55					
	eP	nn′	56 56					U.S.C.G.S.- 10°S., 161°E.,
	iPP	Nn	57 13					Solomon Islands.
	i	N	57 49					H = 07-52-36
	i	n	57 50					h = 60 km.
	iS	ne	08 00 32					Δ = 18.9°.
	es	N	00 32					
	eL_R	ne	01.5					

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
May								
18	iS	Nn	08 32 02					
	eS	e	32 05					
	eL	e	36.1					
19	eS	Nne	03 33 17					U.S.C.G.S.- 51°N., 159°E., Off South Coast of Kamchatka. H = 03-11-06 M = 6½ Δ = 78½°.
20	iP	N	07 55 23					U.S.C.G.S.- 53°S., 134°W., South Pacific Ocean. H = 07-45-26. M = 7¼. Δ = 58°.
	eS	Nne	08 03 23					
20	e	Ne	10 52 13					B.C.I.S.- 0°., 125°E., Celebes region. H = 10-43.9 h = 150-200 km. Δ = 38.7°.
	iS	N	56 57					
	i	N	57 15					
	i	N	57 43					
	i	Ne	59 59					
22	eL	Ne	11 17.2					B.C.I.S.- 9½°S., 119°E., South West of Flores Is. H = 10-56.2 Δ = 36.7°.
22	iP	ee′	20 19 32					U.S.C.G.S.- 18°S., 178½°W., Fiji Islands. H = 20-14-26 h = 600 km. Δ = 27.9°.
	eP	Nn	19 34					
	iS	ne	23 37					
	iS	N	23 38					
	i(sS)	Nn	26 37					
24	eL_Q	e	02 01.5					U.S.C.G.S.- 51°S., 28°W., Sandwich Is. region. H = 01-19-55. Δ = 101.7°.

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
May								
27	iP	e′	18 22 26					Wellington - 30°S., 177°W., Kermadec Is. U.S.C.G.S. - H = 18-16-54. Δ = 25.5°.
	iP	N	22 28					
	i	Nn′	22 48					
	eS	N	26 55					
	eL_Q	Nn	27.7					
	eL_R	e	28.8					
28	iP	Nnn′	18 06 40					U.S.C.G.S.- 4½°S., 152°E., New Britain. H = 18-01-41 h = 100 km. Δ = 22.8°.
	iPP	n′	07 12					
	iS	N	10 42					
	i	N	10 51					
	isS	Nn	11 12					
31	iP	N	05 07 25					U.S.C.G.S.- 9°S., 118°E., Flores Sea. H = 05-00-15. h = about 100 km. Δ = 37.3°.
	eP	nn′e	07 25					
	ipP	N	07 50					
	iPP	Nn′ ne	08 52					
	iS	Nn	13 11					
	iS	e	13 14					
June								
8	eP	e	02 55 45					Wellington - 35°S., 177½°W., Kermadec Islands. H = 02-50-20 M = 5¾. Δ = 26.25°.
	iS	N	03 00 20					
	eS	e	00 20					
9	e(P)	N	08 00 03					B.C.I.S.- South of Kermadec Islands. H = 07 - 54.9
	eS	Ne	04 53					
	eS	n	04 54					
10	eP	e	03 37 24					B.C.I.S.- 33½°S., 179°W., H = 03-31-58. Δ = 24.8°.
	i	e	37 33					
	e(S)	e	41 51					
10	iP	Nn	18 30 24					U.S.C.G.S.- 4°S., 128°E., near the South Coast of the island of Ceram. H = 18-23-43 Δ = 33.5°.
	eP	e	30 24					
	e	N	30 47					
	i	Nne	31 24					
	e	Nne	31 44					
	eS	e	35 37					
	eL_Q	ne	37 30					
	eL_R	e	39 14					

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
June								
13	iP	Nne′	22 52 44					B.C.I.S.- 18¾°S., 169°E.,
	iP	e	52 45					New Hebrides Islands.
	i(pP)	Nn	52 56					H = 22-48-51
		e′						h = about 150 km.
	i(pP)	e	52 57					Δ = 17°.
	i	N	53 26					
	iS	Nne	55 55					
	eS	e′	55 55					
	i(sS)	Nn	56 10					
15	eSKS	Nn	18 11 30					U.S.C.G.S.- 56½°N., 154°W.
	iSKKS	e	11 54					near south coast of
	i	e	12 12					Kodiak.
								H = 17-47-14
								Δ = 95°.
16	eS	n	10 11 13					B.C.I.S.- 31°N., 141°E.,
	iS	N	11 14					south of Honshu, Japan.
	eS	e	11 14					H = 09-53-06.
								M = 5¾ - 6
								Δ = 59.5°.
16	eP	e	16 07 28					U.S.C.G.S.- about 250 M.
	iPP	N	08 07					south of Tonga Is.,
	eS	n	11 47					H = 16-01-57
	e	e	12 07					h = about 100 km.
	e	N	12 59					
18	iP	N	10 09 32					U.S.C.G.S.- 6½°S.,
	iP	n	09 32					155°E., Solomon Is.
	eP	e	09 33					H = 10-04-48
	iPP	n	09 55					M = 6¼.
	iPPP	n	10 05					Δ = 20.9°.
	i	Nn	10 58					
	iS	Nne	13 22					
	iL_R	e	14 51					

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
June								
23	i	N	14 05 48					U.S.C.G.S. - 51°N., 157½°E., near the south coast of Kamchatka. H = 13-53-28. M = 6½ Δ = 78.4°.
	e	n	05 48					
	iS	N	15 28					
	eS	ne	15 28					
	iSKS	Nn	15 44					
	i	e	15 56					
23	iP	Nn	21 11 54					B.C.I.S. - 6½°S., 155°E., Solomon Islands. H = 21-07-10. Δ = 20.9°.
	i	N	12 28					
	eS	e	15 43					
	iS	N	15 44					
	eS	n	15 45					
	iL_Q	Nn	15 55					
	i	N	16 09					
	i	N	18 12					
25	e	N	06 05 38					B.C.I.S. - about 8°S., 123°E., off east coast of Flores Is. H = 05-58.5. Δ = 34.3°.
	iS	N	10 23					
	eS	ne	10 23					
	i	N	11 40					
	eL_Q	n	12.5					
	eL_R	n	14.0					
25	iP	Nn	07 12 01					U.S.C.G.S. - 7°S., 155°E., Solomon Islands. H = 07-07-19. Δ = 20.5°.
	iPP	N	12 21					
	eS	n	15 46					
	eS	N	15 47					
	eS	e	15 49					
	iL_Q	N	15 52					
25	iP	e	08 25 23					Δ_{S-P} = 17.5° (B.C.I.S. - 21½°S., 171¾°E., New Hebrides. H = 08-20-33 Δ = 18°. U.S.C.G.S. - H = 08-20-42.)
	iP	N	25 26					
	i(pP)	N	25 37					
	iS	e	28 35					
	eS	n	28 35					
	eL_R	e	29 35					
25	iP	N	10 50 40					U.S.C.G.S. - 8½°S., 123½°E., fore-shock of the following H = 10-43-56
	iPP	e	51 50					
	eS	e	56 05					
	i	n	56 19					

Date	Phase	Comp.	Time h. m. s.	Per. s.	A_z	A_n	A_e	Remarks
June								
25	iP	Nn	10 51 38					U.S.C.G.S. - 8½°S., 123½°E., off east coast of Flores Is., H = 10-44-57. M = 6¾ - 7. Δ = 33.6°.
	eP	e	51 39					
	iS	ne	57 00					
25	e	N	15 28 10					
	e	N	29 02					
	e	N	29 58					
26	e	Nn	03 55 22					B.C.I.S. - Celebes Sea. H = 03-43.7. "data conflicting".
	e	Nn	58 23					
	e	Ne	04 00 25					
	e	n	02 06					
26	iP	Nne	05 49 33					U.S.C.G.S. - 8°S., 124°E., Flores Is. region. H = 05-42-50. M = 6¾ - 7. Δ = 33.5°.
	i	Nne	50 28					
	i	n	50 40					
	i	n	50 51					
	i	e	54 17					
	iS	n	54 49					
	iL_R	n	58.5					
	eL	N	23 48.5					
27	p(P)	n	07 51 16					
	i(P)	N	51 18					
	e (S)	N	54 06					
27	iP	Nn	09 53 01					U.S.C.G.S. - 4½°S., 153°E., Solomon Is. H = 09-47-58. Δ = 22.8°.
	i	Nn	53 17					
	iPP	Nn	53 28					
	i	N	53 44					
	iS	N	57 01					
	i!	N	57 10					
	i!	N	57 30					No surface waves.
	i	N	57 34					

O.A. JONES
J.P. WEBB.

UNIVERSITY OF QUEENSLAND

SEISMOLOGICAL STATION

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UNIVERSITY OF QUEENSLAND SEISMOLOGICAL STATION
BRISBANE, AUSTRALIA.

Lat. 27° 30' 02" S. Long. 153° 00' 53" E.

Height above mean sea level = 24·2 metres.

Foundation: Main Vault - welded tuff (ignimbrite)
Outstations - high level semi-consolidated river alluvium.

Instruments

Instrument	Component	Symbol	To sec.	Tg sec.	ϵ	V_m	D mm./min.
Sprengnether Series H							
No. 1120	N-S	N	7·2	7·2			30
No. 1121	N-S	N	6·8	6·8			30
No. 1122	N-S	N	7·3	7·3			30
Milne Shaw							
No. 58	N-S	n	12·04		20:1	250	16
No. 60	E-W	e	12·02		20:1	250	16
Kew type	vertical	z	1·0		20:1		30

Note: The three Sprengnether seismometers are housed in outstations close to the main vault, as components of a tripartite installation. All three instruments are oriented to record the N-S component, though only one instrument is normally in use at a time.

Time Service - Time marks are placed on the records each minute from either a Standard or Synchronome clock. The clocks are checked daily against radio time signals from either the Commonwealth Observatory, Mt. Stromlo or from station WWVH, Honolulu. Accuracy limits of readings are generally within ½ second. All times quoted are G.C.T.

Amplitude and Period Data - The amplitudes and periods given are read from Benioff and Sprengnether records. The amplitudes, designated A_z, A_n, A_e, are trace amplitudes (not true amplitudes of ground motion) expressed in millimetres.

Tables - Jeffreys and Bullen, 1948.

The station is maintained and operated by the Department of Geology and Mineralogy, University of Queensland, assisted by a Commonwealth Government grant to the University for research purposes.

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Brisbane, Australia.

Date	Phase	Comp.	Time h. m. s.	Per s.	A_z	A_n	A_e	Remarks
July								
1	iS	Nn	03 21 22					U.S.C.G.S. - 5½°N., 157°E., south of Kamchatka. H = 02-59-34. h = about 60 km. M = 6¾. Δ = 78.9°.
	eS	e	21 24					
2	iP	ne	07 00 47					U.S.C.G.S. - 18½°S., 169°E., New Hebrides Islands. H = 06-56-51. h = about 200 km. Δ = 17.2°.
	iP	N	00 48					
	i(S)	ne	03 51					
	$i(L_R)$	n	04 45					
5	eL	Nne	08 13.4					
6	iP	Nn	22 00 25					B.C.I.S. - 6.4°S., 147.3°E. H = 21-55-37. Δ = 21.6°.
	i	Nn	00 30					
	iPP	e	00 46					
	iPP	n	00 47					
	iS	Nn	04 16					
	eS	e	04 16					
	i	e	04 22					
	i	n	05 05					
	i	N	05 06					
	eL_R	Nn	05 40					
	e	n	06 50					
	i	N	07 13					
7	iP	Ne	04 17 21					B.C.I.S. - 1°N., 100°E., Sumatra. H = 04-07-48. h = about 250 km. Δ = 58.2°.
	ipP	N	18 17					
	e	n	20 16					
	iS	Ne	25 00					
	eS	n	25 01					
	iS_cS		26 43					
7	iS	N	17 46 25					C.M.O. (Japan) - 31.2°N., 142.1°E., South of Japan. H = 17-28-30. h = 60 km. Δ = 59.6°.
	eS	n	46 25					
	eS	e	46 27					
	$e(S_cS)$	e	48 16					

Date	Phase	Comp.	Time h. m. s.	Per s.	A_z	A_n	A_e	Remarks
July								
10	eP	N	08 11 30					Deep
	iS	Nn	15 20					B.C.I.S.- South
	i	Nn	15 42					Pacific.
								Data insufficient.
10	i(S)	Nn	15 23 50					
	e	e	23 50					
	i	N	26 52					
	e	ne	26 52					
12	iP	N	06 49 04					U.S.C.G.S.- 2°S.,
	eP	n	49 04					139½°E., near
	iPP	N	49 58					north coast of
	i	e	50 14					New Guinea
	iS	N	53 50					H = 06-43-05.
	i	ne	54 36					Δ = 28.4°.
	eSS	e	55 14					
12	e	N	09 07 01					
	e	N	09 55					
	e	N	22 36					
13	iP	Nne	21 32 47					U.S.C.G.S.- 18°S.,
	i	Nne	32 54					169½°E., New
	iPP	n	33 03					Hebrides Islands
	iPP	Ne	33 04					H = 21-28-35.
	iS	Nne	35 56					Δ = 17.8°.
	iL_Q	Nne	36 03					
	i	Nne	36 14					
	iSS	N	36 18					
	iL_R	Nn	36 53					
20	iP	e	08 14 10					U.S.C.G.S.- 21°S.,
	i	Nne	14 15					177°W., Tonga
	i	N	14 17					Islands region.
	ipP	N	14 30					H = 08-08-20.
	i	N	15 17					h = about 100 km.
	iS	ne	18 22					Δ = 27.2°.
	isS	Nn	19 00					
	i	n	19 29					
	i	N	19 38					
	i	n	19 49					
	i	n	20 10					
	i	N	20 51					

Date	Phase	Comp.	Time h. m. s.	Per s.	A_z	A_n	A_e	Remarks
July								
22	eS	Nn	05 32 58					U.S.C.G.S. - 51°N., 157°E., near south coast of Kamchatka. H = 05-11-15. h = about 60 km. Δ = 78.4°. M = 6¾-7.
	i	e	33 02					
	isS		33 30					
24	iP	N	10 56 16					S is in hour break, may be 2ˢ earlier. U.S.C.G.S. - 11°S., 166°E., Santa Cruz Islands. H = 10-51-34. Δ = 20.4°.
	eP	ne	56 16					
	i	N	57 20					
	e	n	57 20					
	iS	Nne	11 00 02					
	i	Nn	00 27					
25	eP	e	17 34 19					B.C.I.S. - Tonga Islands. H = 17-27.2
	i	N	40 50					
	e	n	40 50					
	i	N	41 54					
26	iP	Nn	17 01 21					B.C.I.S. - 17.8°N., 145.2°E., Marianas Islands. H = 16-53-18. h = about 200 km. Δ = 45.5°.
	iP	z	01 22					
	i	z	01 41					
	i	N	01 47					
	i(sP)	Nn	02 24					
	i(P_cP)	Nn	03 10					
	i(P_cP)	z	03 12					
	iS	ne	07 47					
	eS	z	07 48					
	isS	n	08 55					
	i	e	09 01					
	i	e	10 11					
	iSS	e	11 01					
	i	e	11 29					
30	iP	z	23 52 58					U.S.C.G.S. - 19°N., 145°E., Marianas Islands. H = 23-44-44. h = about 200 km. Δ = 47°.
	epP	N	53 44					
	iPP	z	54 52					
	iPP	Nn	54 53					

Date	Phase	Comp.	Time h. m. s.	Per s.	A_z	A_n	A_e	Remarks
Aug.								
1	eP	z	00 36 33					U.S.C.G.S.- 18½°S., 174°W., Tonga Islands. H = 00-30-07. Δ = 30.7°.
	e	e	45 37					
1	eP	z	18 15 28					
	e	N	15 44					
	eS	Nne	25 00					
	i	N	25 47					
2	iP	N	08 48 43			+		U.S.C.G.S.- 21°S., 170°E., Loyalty Islands. H = 08-44-51. Δ = 16.7°.
	iP	zne	48 44		-	+	-	
	eS	N	51 51					
	i	Nne	52 05					
	eL_R	ne	52.6					
2	iP	zNne	17 23 55		-	+	+	U.S.C.G.S.- Loyalty Islands region. H = 17-19-59. Δ_{S-P} = 17.3°.
	iS	Nn	27 05					
	iL_Q	N	27 09					
	eL_R	Nn	27.8					
4	iP	z	13 57 16					U.S.C.G.S.- New Hebrides region. H = 13-53-16. h = about 200 km. Δ_{S-P} = about 18.6°.
	iP	N	57 17					
	iS	Nne	14 00 31					
	eS	z	00 33					
	isS	Nn	01 20					
9	eP	z	00 26 50					U.S.C.G.S.- Fiji Islands region. H = 00-22-05 Δ_{S-P} = 23.1°.
	i	z	26 54					
	iS	n	30 55					
9	e(P)	z	00 32 59					
10	iP	z	10 43 16					U.S.C.G.S.- Solomon Islands region H = 10-38-48. Δ_{S-P} = 20.3°.
	iPP	zN	43 33					
	iPPP	z	43 43					
	i	zN	44 04					
	iS	N	46 57					
	eS	ne	46 57					
10	e	Ne	10 52 04					

Date	Phase	Comp.	Time h. m. s.	Per s.	A_z	A_n	A_e	Remarks
Aug.								
11	ePKP	z	03 51 56					U.S.C.G.S.- 38½°N., 21°E., Greece. H = 03-32-24. Δ = 139.5°. M = 6¾.
	ePP	z	54 46					
	iPKS	N	55 28					
	ePKS	ze	55 28					
12	iP	zN	06 45 21					U.S.C.G.S.- Fiji Is. region. H = 06-40-19. h = 600 km.
12	ePKP	z	09 43 24					U.S.C.G.S.- 38½°N., 21°E., near west coast of Greece. H = 09-23-55.
	i	N	49 06					
12	eP	N	16 59 49					U.S.C.G.S.- 22°S., 175°W., Tonga Islands. H = 16-53-42. Δ = 28.6°. M = 6¼ - 6½.
	e	n	59 51					
	e	z	59 52					
	ePP	N	17 00 36					
	i	Nne	00 52					
	i	N	02 42					
	eS	Nne	04 23					
	eL_R	ne	07.3					
13	iS	N	01 25 43					
	iS	ne	25 45					
	eS	z	25 45					
	i	N	25 58					
13	iP	zNe	09 27 16		-	+	+	U.S.C.G.S.- 21½°S., 170°E., Loyalty Islands. H = 09-23-23. h = about 150 km. Δ = 16.5°. M = 6¾ - 7.
	eP	n	27 16					
	i	n	27 20					
	i	e	27 21					
	ipP	z	27 31					
	i	ne	27 49					
	i	ne	28 35					
	i	e	29 15					
	i	n	29 25					
	iS	n	30 27					
	iS	z	30 31					
	iS	e	30 33					
	i	n	31 19					
	iPcP	n	32 12					
	iS_cS	n	39 03					

Date	Phase	Comp.	Time h. m. s.	Per s.	Az	An	Ae	Remarks
Aug.								
15	eP	z	05 32 22					
17	iP	z	03 22 24		+			U.S.C.G.S. - 7½°S., 115°E., Java Sea. H = 03-14-33. Δ = 41.1°.
	i	z	22 30					
	i	z	22 45					
	i	z	22 54					
	iPP	zN	24 03					
	ePPP	z	24 33					
	iS	e	28 35					
	eS	N	28 35					
	iSS	Nne	31 30					
	iL_Q	N	31 50					
	eL_Q	ne	31 50					
	i	Nn	37 00					
22	iP	zN	00 26 01					U.S.C.G.S. - 6°S., 147°E., near east coast of New Guinea. H = 00-21-06. Δ = 22.1°.
	eP	e	26 01					
	i	zN	26 18					
	iPP	n	26 24					
	iPP	z	26 25					
	iPP	N	26 26					
	ePPP	n	26 36					
	i	z	27 22					
	iS	Ne	29 56					
	eS	z	29 56					
	iS	n	29 57					
	iL_Q	e	30 21					
25	eP	z	02 09 13					U.S.C.G.S. - 5°S., 152°E., New Britain. H = 02-04-13. Δ = 22.3°.
	iP	Nn	09 13					
	i(pP)	zN	09 26					
	iPP	N	09 41					
	i	z	09 45					
	iS	Nne	13 16					
	iL_Q	n	13 48					
	M	e	13.3					
27	eP	z	20 56 18					
	iS	N	21 04 36					
	eS	n	04 37					

Date	Phase	Comp.	Time h. m. s.	Per s.	A_z	A_n	A_e	Remarks
Aug.								
28	eL	ne	00 22.0					
29	eL	ne	16 21.7					
31	iP	N	06 50 12					U.S.C.G.S.- Off north-east coast of New Guinea. H = 06-45-37.
	eS	e	54 00					
	eL_Q	e	54 22					
Sept.								
1	iP	Nz	14 51 16					
1	iP	zNE	17 41 30		+?	-	-	
	eP	n	41 30					Δ_{S-P} = 17.8°.
	i	zne	41 32					
	iPP	zNne	41 45					
	iS	Nne	44 45					
	M	N	44.9					
2	eP	z	07 44 48					
	e(S)	Nn	54 44					
	eL	n	08 00.5					
4	iP	zNn	07 35 02					U.S.C.G.S.- 50°N., 156½°E., Kurile Islands. H = 07-23-05. h = about 60 km. M = 6¾ - 7. Δ = 77.4°.
	ipP	N	35 19					
	i	N	36 35					
	iS	Nn	44 51					
	eS	e	44 51					
	i	e	44 55					
	isS	Nn	45 16					
	i	N	46 17					
	i	N	08 05 34					
4	eP	zN	12 31 49					
	eP	e	31 51					
	iS	N	41 31					
	eS	N	41 31					

Date	Phase	Comp.	Time h. m. s.	Per s.	A_z	A_n	A_e	Remarks
Sept.								
4	ePP	N	14 25 56					U.S.C.G.S.- 32°S., 71°W., near coast of Central Chile. H = 14-07-13. M = 6¾ - 7. Δ = 107.6°.
	iPS	N	35 17					
6	iP	z	07 42 22					U.S.C.G.S.- 5½°S., 149°E., New Britain Islands region. H = 07-37-24. Δ = 22.1°.
	iP	N	42 23					
	iPP	N	42 48					
	iS	e	46 20					
	iS	N	46 21					
	iSS	Ne	47 00					
	i	N	47 35					
	i	n	47 36					
7	e	e	05 11 28					U.S.C.G.S.- Marianas Islands region. H = 04-58-40.
	i	e	12 51					
9	eP	z	16 01 27					U.S.C.G.S.- North Central Sumatra. H = 15-51-17.
12	eP	zN	15 06 06					U.S.C.G.S.- New Britain. H = 15-01-09. Δ_{S-P} = 22°.
	eS	e	10 05					
	eS	n	10 07					
14	iP	zN	00 31 58		+	-	-	U.S.C.G.S.- 18½°S., 178½°E., Fiji Is. H = 00-26-36. h = about 60 km. M = 6¾. Δ = 25°.
	iP	e	31 59					
	i	zN	32 04					
	i	ne	32 05					
	iPP	zNn	32 46					
	iPP	e	32 47					
	eS	e	36 15					
	isS	e	36 33					
	iSS	n	37 16					
	i	n	37 36					

Date	Phase	Comp.	Time h. m. s.	Per s.	A_z	A_n	A_e	Remarks
Sept.								
14	iP	z	09 46 01					U.S.C.G.S.- Fiji Is. region. H = 09-41.17. h = about 500 km.
	e(S)	Nn	50 20					
	i	Nn	51 06					
	i(SS)	N	51 38					
14	i(S)	N	10 37 30					
	i(S)	n	37 31					
	i	Nn	38 28					
14	iP	z	11 24 53					U.S.C.G.S.- 52½°S., 26°E. Indian Ocean. H = 11-12-06. Δ = 88.2°.
	iSKS	N	35 20					
	eSKS	n	35 20					
	iS	N	35 35					
	iS	ne	35 37					
	eSS	N	41 20					
	eL_Q	N	49.2					
15	iP	zNn	11 05 54		-	+	+	U.S.C.G.S.- 9°S., 156½°E., Solomon Islands. H = 11-01-34. Δ = 18.6°.
	eP	e	05 54					
	e	Ne	09 13					
	eS	e	09 20					
	iL_Q	N	09 22					
	iL_R	N	10 15					
16	eP	z	01 55 16					U.S.C.G.S.- 15°S., 174½°W., Samoa Islands region. H = 01-48-42. M = 6¼. Δ = 32.6°.
	eS	e	02 00 32					
	eS	N	00 33					
	i	Nn	00 52					
	e	n	02 45					
	e	e	02 54					
	iL_R	N	03 52					
	eL_R	n	03 54					
17	eP	z	18 24 56					
	eS	N	28 34					

Date	Phase	Comp.	Time h. m. s.	Per s.	A_z	A_n	A_e	Remarks
Sept.								
17	iP	ze	21 18 01					U.S.C.G.S. - 20½°S., 174°W., Tonga Islands H = 21-11-48. h = about 100 km. M = 6¾ - 7. Δ = 30°.
	eP	N	18 04					
	i	z	18 38					
	iPP	Ne	19 06					
	i	n	19 15					
	iS	ne	23 03					
	iS	N	23 04					
	eL_Q	n	24 45					
18	eL	Nne	15 24.0					
18	eL	n	22 35.2					
	e	e	37.9					
19	eP	zN	03 49 22					
	e	z	55 18					
	e	N	56 35					
	i	N	57 50					
	i	N	58 50					
	i	N	04 00 28					
19	eL	e	18 39 25					
23	iP	N	02 26 27					U.S.C.G.S. - 50½°N., 156°E., Northern Kurile Islands. H = 02-14-36. h = about 60 km. M = 7. Δ = 77.9°.
	eP	z	26 27					
	iS	Nn	36 07					
	i	e	36 15					
	i	N	36 16					
	i	n	36 42					
	i	e	36 44					
	i	N	36 47					
	i	e	40 45					
23	iP	zN	04 51 22		-			Δ_{S-P} = 29°.
	iS	Nn	56 10					
23	iP	zN	06 45 24					
	eP	n	45 25					
	i	z	45 38					
	i	z	46 05					
	i	Nn	46 39					
	i	Nn	47 19					

Date	Phase	Comp.	Time h. m. s.	Per s.	A_z	A_n	A_e	Remarks
Sept.								
23	iP	z	09 11 34		+			
	i	z	12 04					
25	i(P)	N	02 23 06					
	i(S)	N	28 18					
25	eS	N	03 06 52					
25	i	N	03 57 14					
	i	N	58 19					
26	iP	zNn	19 40 21		+	+		U.S.C.G.S. - 3°S., 148½°E., Bismarck Sea. H = 19-35-00. Δ = 24.9°.
	i	z	40 32					
	i	N	40 37					
	i	zn	40 39					
	ePP	n	41 02					
	iPP	N	41 05					
	iS	Ne	44 39					
	eS	n	44 40					
	i	e	44 45					
	i	N	44 48					
	eL_Q	Ne	45 29					
	i	N	46 11					
	iL_R	e	46 39					
28	e(P)	N	04 52 16					
	e(S)	Nn	57 04					
	e	N	05 00 15					
	i	N	01 09					
28	iS	N	23 45 49					
	eS	n	45 49					

Date	Phase	Comp.	Time h. m. s.	Per s.	A_z	A_n	A_e	Remarks
Sept.								
29	iP	e	01 41 18		-	+	-	U.S.C.G.S. - 36½°S., 177°E., off north coast of the north island of New Zealand. H = 01-36-45. h = about 300 km. M = 7¼. Δ = 22.3°.
	iP	zN	41 20					
	iP	n	41 22					
	ipP	ne	42 13					
	ipP	z	42 14					
	isP	z	42 47					
	isP	n	42 48					
	isP	e	42 49					
	iS	n	45 03					
	eS	e	45 03					
	i(PcP)	z	45 06					
	i	n	45 56					
	i(sS)	n	46 13					
	i	e	46 54					
	i	e	52 03					
30	i(P)	z	05 03 45					U.S.C.G.S. - 6°S., 100½°E., off the south-west coast of Sumatra. H = 04-54-15. Δ = 54.1°.
	eP	e	03 47					
	i	z	04 04					
	e	e	04 05					
	e	z	06 09					
	e	z	06 19					
	iS	N	11 13					
	eS	ne	11 13					
	i	N	11 44					
30	eSKS	N	23 29 12					U.S.C.G.S. - 22°N., 107½°W. Off coast of Sinaloa, Mexico. H = 23-04-08. M = 6¾ - 7. Δ = 107.1°.
	e	n	38 36					
	e	e	38 40					
	eL_Q	n	49.1					
	eL_R	e	54.3					

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