



PERTH, WESTERN AUSTRALIA

SEISMOLOGICAL STATION - PERTH OBSERVATORY

Seismological Bulletin for January - March 1961

<u>Instrument</u>	<u>Symbol</u>	<u>Component</u>
Columbia-Lamont long	A	Vertical
period seismograph		
Milne-Shaw No.27	M	North - South

No.	Date	Inst.	Phase	Time			Amp.	Remarks
				G.M.T.				
				h.	m.	s.	cms	
<u>January 1961</u>								
1.	Jan.1st	A	iP	20	26	43	.14	South of Australia.
		A	eS	-	30	7	.04	
		A	M	-	31	48	.28	
2.	Jan.2nd	A	iP	10	20	44	1.33	Santa Cruz Islands Region.
		A	iPP	-	21	10	.80	
		A	iSP	-	21	25	.23	
		A	i	-	22	12	.11	
		A	ePPP	-	23	52	.21	
		M	iS	-	27	52	.40	
		A	iS	-	27	54	.38	
		A	iSS	-	31	55	.98	
		A	G	-	33	13	.48	
		A	iSSS	-	33	56	.28	
		M	i	-	34	21	.33	
		M	M	-	38	35	.70	
		A	i	-	39	54	1.70	
M	M	-	41	3	1.34			
A	M	-	43	58	3.68			
A	M	-	44	11	3.82			
3.	Jan.3rd	A	eS	11	50	50	.03	Banda Sea.
		A	e	-	53	7	.11	
		A	M	-	58	42	.26	
		A	M	12	0	32	.20	
4.	Jan.3rd	A	eP	20	10	50	.12	Banda Sea.
		A	i	-	11	20	.18	
		A	iS	-	15	15	.13	
		A	M	-	23	25	.22	
5.	Jan.4th	A	eP	11	35	20	.14	Flores Sea.
		A	eS	-	39	42	.13	
		A	e	-	40	10	.10	
		A	M	-	43	17	.18	
6.	Jan.9th	A	e	10	32	57	.06	Loyalty Islands.
		A	M	-	41	49	.28	
		A	M	-	42	50	.23	
7.	Jan.10th	A	iP	14	35	15	.38	Kurile Islands Region.
		A	i	-	35	20	.35	
		A	i	-	35	31	.30	
		A	ePP	-	38	53	.09	
		A	eS	-	45	55	.07	
		A	i	-	47	7	.33	
		A	M	15	8	25	.57	
		A	M	-	11	20	.88	
8.	Jan.15th	A	e	1	8	41	.05	South of Australia.
		A	e	-	13	43	.10	
		A	M	-	17	3	.54	
		A	M	-	17	42	.49	

No.	Date	Inst.	Phase	Time			Amp.	Remarks
				G.M.T.				
				h.	m.	s.	cms	
9.	Jan.15th	A	i	16	54	7	.12	South of Australia
		A	e	-	56	32	.08	
		A	eS	17	0	16	.12	
		A	e S	-	4	2	.14	
		A	i	-	5	15	.29	
		A	M	-	16	54	.64	
10.	Jan.16th	A	iP	7	31	34	.45	Near east coast of Honshu, Japan.
		A	i	-	31	38	.64	
		A	i	-	37	57	.28	
		A	iS	-	41	0	.46	
		A	i	-	41	52	.66	
		A	i	-	52	33	.58	
11.	Jan.16th	A	iP	12	23	56	.29	Near east coast of Honshu, Japan.
		A	iSSS	-	41	35	.18	
		A	e	-	44	45	.35	
12	Jan.16th	A	eP	15	52	41	.16	Near east coast of Honshu, Japan.
		A	eS	16	2	5	.18	
		A	e	-	10	7	.20	
13.	Jan.17th	A	eP	23	14	21	.09	Loyalty Islands Region.
		A	eSS	-	24	50	.12	
		M	i	-	32	40	.25	
		A	M	-	34	58	.69	
		M	M	-	36	31	.34	
		A	M	-	38	27	.59	
14.	Jan.19th	A	eP	4	30	19	.13	New Hebrides Islands Region.
		A	ePP	-	32	13	.12	
		A	eS	-	37	31	.13	
		A	e	-	40	56	.18	
		A	M	-	51	15	.56	
15.	Jan.19th	A	e	6	14	21	.17	
		A	i	-	21	51	.43	
		A	M	-	22	45	.69	
		A	M	-	23	25	.65	
16.	Jan.26th	A	iP	16	22	8	.50	Loyalty Islands.
		A	i	-	22	43	.29	
		A	i	-	25	22	.40	
		M	iS	-	29	10	.15	
		A	iS	-	29	13	.48	
		M	i	-	32	12	.24	
		A	iSS	-	32	43	.69	
		A	iSSS	-	34	20	.94	
		M	i	-	36	22	.31	
		M	i	-	41	20	.33	
		A	M	-	42	20	6.00	
		A	M	-	42	39	6.24	
		A	M	-	44	23	6.38	
		M	M	-	44	47	1.55	
M	M	-	46	21	1.02			
17.	Jan.28th	A	iS	14	50	50	.14	New Hebrides Islands Region.
		A	iSS	-	51	35	.25	
18.	Jan.28th	A	eP	19	51	46	.08	Loyalty Islands Region.
		A	iPP	-	53	41	.19	
		A	eS	-	58	46	.19	
		M	iS	-	58	48	.20	
		A	iSS	20	2	54	.57	
		A	i	-	8	17	.74	
		M	M	-	9	41	.54	
		A	M	-	13	25	1.70	

No.	Date	Inst.	Phase	Time			Amp.	Remarks
				G.M.T.				
				h.	m.	s.	cms	
19.	Jan.31st	A	e	1	18	24	.09	Near Kodiak Islands.
		A	M	-	50	9	.38	
		A	M	-	50	55	.40	
Tremors and undecipherable disturbances were recorded:-								
By instrument "A" on:- 2nd (1), 3rd (1), 7th (1), 11th (3), 12th (1), 13th (1), 14th (3), 20th (2), 22nd (2), 24th (2), 25th (1), 26th (1), 27th (2), 29th (1), and 31st (1).								
By instrument "M" on:- 2nd (1), 3rd (2), 9th (1), 15th (2), 16th (3), 19th (2), 20th (1), 27th (1), 28th (1), and 29th (1).								
<u>February</u>								
20.	Feb.5th	A	e	17	57	15	.10	N.E. of Kerguelen Island. (2 quakes overlapping)
		M	e	18	2	23	.10	
		A	e	-	2	35	.11	
		M	M	-	5	19	.33	
		A	M	-	6	4	1.19	
21.	Feb.6th	M	M	-	11	45	.53	Solomon Islands
		A	iP	21	53	25	.49	
		A	i	-	53	44	.80	
		A	i	-	54	58	.19	
		A	i	-	59	37	.29	
		M	iS	22	0	5	.47	
		A	iS	-	6	7	1.22	
		M	iSS	-	3	18	.95	
		M	M	-	8	32	.76	
22.	Feb.9th	M	M	-	10	34	.82	Off south coast of Java.
		A	M	-	12	20	8.24	
		A	iP	20	26	13	.69	
		M	iP	-	26	15	.23	
		A	eS	-	30	9	.10	
		M	M	-	48	35	1.22	
23.	Feb.11th	A	M	-	49	10	1.84	Kermadec Island.
		A	M	-	51	46	1.82	
		A	M	-	33	50	.85	
24.	Feb.12th	A	iP	21	10	50	.19	Tonga Island Region.
		A	M	-	29	32	.78	
		A	M	-	33	50	.85	
		A	iP	22	5	57	.68	
		A	iPP	-	9	15	.28	
25.	Feb.13th	A	eS	-	16	10	.44	Kurile Island.
		A	M	-	32	19	.70	
		A	M	-	40	45	.85	
		A	eP	6	56	20	.06	
		A	M	7	22	23	.78	
26.	Feb.15th	A	M	-	25	43	.98	Kurile Island.
		A	iP	10	57	30	.11	
		A	eS	11	7	41	.12	
		A	M	-	23	59	.24	
27.	Feb.22nd	A	M	-	31	23	.24	Kurile Island.
		A	iP	22	3	15	.12	
		A	M	-	26	33	.45	

No.	Date	Inst.	Phase	Time G.M.T.			Amp. cms	Remarks
				h.	m.	s.		
28.	Feb.26th	A	iP	18	21	29	1.37	Near coast of Kyushu, Japan.
		A	iPP	-	23	58	.62	
		A	iPPP	-	25	39	.50	
		A	iS	-	30	6	1.20	
		A	iSS	-	34	37	1.55	
		A	M	-	47	32	4.72	

Tremors and undecipherable disturbances were recorded:-

By instrument "A" on:- 2nd (1), 4th (2), 7th (1), 8th (2),  
10th (1), 14th (2), 18th (1), 20th (1),  
21st (1), 25th (1), and 26th (1).

By instrument "M" on:- 10th (1), 12th (1), 13th (1), and 15th (1).

No.	Date	Inst.	Phase	Time G.M.T.			Amp. cms	Remarks
				h.	m.	s.		
<u>March</u>								
29.	Mar.3rd	A	iP	6	34	34	.18	
		A	M	-	53	52	.40	
		A	M	-	57	49	.49	
30.	Mar.5th	A	e	1	45	20	.20	
		M	M	-	54	18	1.12	
31.	Mar.7th	A	iP	10	20	33	3.19	Kermadec Island Region.
		A	iS	-	28	38	3.86	
		A	iSS	-	32	59	3.48	
		A	M	-	44	36	8.08	
		A	M	-	49	21	9.00	
32.	Mar.7th	A	eP	19	15	59		Amp. in minute break. Indian Ocean.
		A	iPP	-	16	10	.19	
		A	iS	-	20	21	.26	
		A	M	-	23	48	2.40	
33.	Mar.15th	A	iP	10	23	5	.10	New Ireland Region.
		A	iSS	-	32	51	.85	
		A	M	-	42	17	1.30	
34.	Mar.16th	A	iP	13	50	48	2.24	Flores Island.
		A	iS	-	55	10	1.87	
		A	M	-	58	56	8.50	
35.	Mar.16th	A	iP	18	26	31	.36	Flores Island.
		A	iS	-	30	53	.84	
		A	M	-	34	30	.92	
		A	M	-	41	23	1.06	
36.	Mar.18th	A	iP	15	2	31	1.40	South of New Zealand.
		A	iPP	-	3	55	1.43	
		A	iS	-	8	33	.51	
		A	i	-	8	45	1.28	
		A	i	-	11	43	1.70	
		A	M	-	14	12	11.12	
		A	M	-	16	16	9.33	
37.	Mar.19th	A	iP	7	23	52	.19	New Hebrides Island.
		A	M	-	45	9	.92	
38.	Mar.20th	A	iP	16	3	26	1.64	Tonga Island.
		A	eS	-	12	45	.41	
		A	M	-	27	34	1.38	
		A	M	-	30	17	1.44	
39.	Mar.20th Mar.21st	A	iP	23	52	45	.30	
		A	i	0	1	5	.21	
		A	M	-	19	51	3.98	

No.	Date	Inst	Phase	Time			Amp.	Remarks	
				G.M.T.					
				h.	m.	s.	cms		
40.	Mar.28th	A	iP	9	42	26 <sup>27</sup>	1.10	Northern Celebes.	
		A	iS	-	47	36	2.85		
		A	M	-	52	7	10.50		
		A	M	-	55	21	10.25		

Tremors and undecipherable disturbances were recorded:-

By instrument "A" on:- 1st (1), 10th (1), 11th (2), 13th (1), 17th (3), 18th (1), 21st (1), 22nd (1), 25th (1), 26th (1), and 30th (1),

By instrument "M" on:-11th (1), 21st (2), 22nd (1), and 26th (1).

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PERTH, WESTERN AUSTRALIA  
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Seismological Bulletin for July - September 1961.

INSTRUMENTS

- 1 Columbia Lamont Seismometer (Vertical Component long-period) ... V
- 1 Sprengnether Horizontal Seismometer (N-S Component long-period) ... N
- 1 Sprengnether Horizontal Seismometer (E-W Component long-period) ... E

No.	Date	Phase	Component	Time			Remarks	
				h.	m.	s.		
<u>JULY 1961</u>								
41	22	i	V	18	24	59	South of Tasmania	
		M	V		26	29		
		M	V		27	10		
42	23	iP	V	14	12	35	New Hebrides Islands	
		e	V		12	54		
		iPP	V		14	30		
		iS	V		19	30		
		i	V		23	9		
		i	V		27	32		
		i	V		31	15		
		M	V		34	8		
M	V	34	25					
43	23	iP	V	15	38	2	Hawaii	
		i	V		40	34		
		i	V		50	1		
		i	V		54	26		
		M	V		16	0		25
		M	V		1	5		
		M	V					
44	23	iP	V	21	59	58	New Hebrides Islands	
		iS	V		22	6		59
		i	V		13	58		
		M	V		27	52		
45	28	i	V	6	31	10	New Hebrides Islands	
		i	V		36	50		
		M	V		44	5		
		M	V		44	54		
46	29	e	V	16	37	45	Tonga Islands Region	
		M	V		17	2		28
		M	V		-	3		23
<u>AUGUST 1961</u>								
47	1	iP	V	5	48	33	Solomon Islands Region	
		i	V		-	48		55
		iPP	V		-	50		22
		iPPP	V		-	51		8
		iS	V		-	55		23
		iSS	V		-	58		47
		i	V		6	2		17
		M	V		-	8		35
		M	V		-	9		37

No.	Date	Phase	Component		Time			Remarks
					h.	m.	s.	
48	3	i	V		23	44	50	Marianna Islands Region
		e	V		-	54	22	
		e	V		-	58	36	
		M	V		0	7	2	
49	7	i	V		4	29	20	Celebes
		i	V		-	31	5	
		iS	V		-	34	53	
		i	V		-	38	17	
		M	V		-	43	7	
		M	V		-	43	55	
50	9	e	V		16	11	48	New Hebrides Islands Region
		e	V		-	13	49	
		iS		E	-	18	29	
		i		E	-	19	7	
		i	V		-	22	15	
		i		E	-	22	25	
		i			-	26	17	
		i		N	-	27	29	
		M		N	-	29	5	
		i	V		-	29	52	
		M	V		-	32	40	
		M		E	-	32	45	
		M	V		-	33	17	
51	11	iP	V	N	16	3	40	Eastern Hakkaido, Japan.
		i		N		3	48	
		i		N		4	16	
		i	V			4	30	
		i	V			6	38	
		iPP	V	N		6	53	
		e	V			8	40	
		iS		N		13	37	
		iS	V			13	41	
		iSS	V	N		18	37	
		i		N		22	56	
		M		N		30	39	
M	V			32	11			
M		N		32	57			
M	V			39	40			
52	11	e	V		22	44	19	Eastern Celebes
		e		N		44	36	
		i	V			45	57	
		e		N		46	13	
		e		N		49	36	
		e	V			49	43	
		e	V			53	3	
		M		N		58	5	
M	V		23	0	15			
53	14	e	V		19	20	17	Tonga Islands
		M	V			23	54	
		M	V			26	28	
54	14	i	V		23	37	46	New Hebrides Islands Region
		i	V			39	41	
		e	V			44	17	
		i		E		44	33	
		i		E		45	10	
		i		E		48	7	

No.	Date	Phase	Component		Time			Remarks
					h.	m.	s.	
54	14	i	V		23	48	16	New Hebrides Islands Region
		i		N		48	49	
		e		N		51	0	
		e	V			51	59	
		i	V			54	37	
		M		E		58	41	
		M		N		58	45	
		M	V			59	12	
		M	V		E	59	34	
		M	V	N	59	52		
55	17	iP	V		21	28	45	Kurile Islands
		i	V			29	26	
		iS		N	E	38	55	
		i	V			39	52	
		i			E	39	59	
		i		N		40	17	
		i		N		40	52	
		i			E	44	15	
		i		N	48	27		
56	19	e	V		5	27	48	Peru-Brazil Border
		iP	V			27	56	
		iSP	V			29	13	
		i	V			30	25	
		iPP'	V			30	43	
		i	V			33	7	
		i	V			40	5	
		i	V			42	11	
		i	V			45	19	
		e	V			48	30	
		i	V		58	8		
57	19	i	V		5	44	54	Off west coast of Honshu, Japan
		e	V			47	40	
		i	V			48	39	
		M	V		6	19	32	
58	20	e	V		1	50	13	New Hebrides Islands
		M	V		1	59	37	
		M	V		2	1	0	
59	22	e		E	9	15	46	New Hebrides Islands
		e		E		19	35	
		e	V			19	36	
		M	V			30	18	
		M		E		30	21	
		M	V			31	32	
60	31	i	V		2	18	16	Peru-Brazil Border
		i	V			20	35	
		i		E		21	30	
		i	V			27	31	
		i		E		35	53	
		i	V			36	28	
		i		E		41	12	

Tremors and undecipherable disturbances were recorded:-

By instrument V, N, E on:-  
 1st (1) 2nd (1) 7th (2) 11th (1) 14th (1)  
 21st (1) 22nd (1) 24th (1) 27th (2)



No.	Date	Phase	Component	Time			Remarks
				h.	m.	s.	
<u>SEPTEMBER 1961</u>							
61	8	iP	V N E	11	39	5	Sandwich Islands Region
		iPP	V		42	26	
		iPPP	V N		44	15	
		iS	V N E		49	34	
		iSS	E		55	15	
		M	E	12	2	47	
		M	V		7	57	
		M	N		8	10	
		M	V		12	44	
62	13	iP	V N	14	9	35	South of Java h about 93 Km USCGS
		eS	V N		14	5	
		M	V		17	46	
		M	N		18	5	
63	20	iP	N	19	12	7	New Britain
		iP	V N E		12	8	
		iS	N E		18	9	
		i	N E		21	17	
		i	V		21	26	
		M	E		32	34	
		M	N		32	41	
		M	V		32	43	

Tremors and undecipherable disturbances were recorded:-

By instrument V, N, E on:-

2nd (2) 11th (1) 12th (1) 17th (1) 18th (1) 19th (1)  
 27th (2) 28th (1) 29th (1)

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INSTRUMENTS

- 1 Columbia Lamont Seismometer (Vertical Component long-period) ... V
- 1 Sprengnether Horizontal Seismometer (N-S Component long-period) ... N
- 1 Sprengnether Horizontal Seismometer (E-W Component long-period) ... E

No.	Date	Phase	Component	Time			Remarks	
				h.	m.	s.		
<u>OCTOBER 1961</u>								
64	4	iSS	V	2	43	25	New Hebrides Islands Region	
		M	N		51	17		
		M	V		53	42		
65	10	i	N	17	37	34	New Guinea	
		i	V		40	0		
		i	N		41	42		
		i	E		41	45		
		M	N		43	55		
		M	N		44	25		
		M	V		46	33		
66	18	i	E	17	18	55	Near coast of Southern Chile	
		e	N		20	40		
		e	N		21	5		
		iSS	E		26	51		
		i	E		31	22		
		i	E		38	35		
		M	N		53	42		
		M	E		54	18		
		M	E		18	0		0
		M	N		2	5		
		M	E		2	31		
67	19	e	E	19	35	55	South of Australia	
		e	N		40	36		
		i	E		41	33		
		iS	V		41	37		
		M	V		42	34		
		M	N		42	58		
		M	V		43	10		
M	E	43	17					
68	23	M	N	0	51	23	Sandwich Islands Region	
		M	V		54	15		
		M	V		58	9		
69	23	iP	V	14	46	55		
		iPP	V		N	48		25
		i	E		48	28		
		iS	V		N	52		30
		i	N		55	35		
		iSS	V		55	48		
		i	E		56	15		
		M	E		15	1		27
		M	V		3	12		
		M	N		4	28		
M	V	5	57					



No.	Date	Phase	Component		Time			Remarks	
					h.	m.	s.		
70	26	e	V		0	47	54	Bismark Sea	
		i	N	-	52	31			
		M	N	1	2	8			
		M	V	-	4	18			
		M	N	-	6	7			
71	26	iP	V		15	34	10	Off west coast of Sumatra.	
		i	N	-	39	42			
		e	V	-	40	7			
		M	V	-	44	33			
		M	N	-	44	52			
72	28	e	N		23	0	27	New Hebrides Islands	
		e	V		-	0	30		
		i	V		-	4	15		
		M	N		-	11	53		
		M	V		-	13	54		
73	6	i		E	5	44	23	-	
		i		E	-	44	47		
		i		E	-	48	13		
		i	V		-	48	15		
		M	N		-	56	32		
74	15	iP	V	N	E	7	29	17	-
		iS			E	-	39	15	
		eS	V			-	39	16	
		iS		N		-	39	17	
		iSS		N	E	-	44	16	
75	19	M			E	-	56	10	Northern Celebes
		M		N		-	58	34	
		M	V			8	5	14	
		iP	V			23	28	22	
		i	V			-	29	49	
76	27	iS		N	E	-	33	30	-
		i	V			-	33	32	
		M				-	37	10	
		iP	V	N		17	17	16	
		i			E	-	17	18	
77	27	iPP	V		E	-	18	21	-
		iS	V	N	E	-	22	47	
		M	V			-	30	35	
		M		N		-	30	36	
		M	V			-	32	45	

Tremors and undecipherable disturbances were recorded:-

By instrument V, N, E on:-

2nd (1) 8th (1) 11th (1) 12th (1) 13th (1) 14th (1) 17th (1)  
 19th (1) 22nd (1) 25th (1) 28th (1) 29th (1) 30th (1)

NOVEMBER 1961

73	6	i		E	5	44	23	-
		i		E	-	44	47	
		i		E	-	48	13	
		i	V		-	48	15	
		M	N		-	56	32	
		M	V		-	59	13	
		M		E	-	59	17	
74	15	iP	V	N	E	7	29	17
		iS			E	-	39	15
		eS	V			-	39	16
		iS		N		-	39	17
		iSS		N	E	-	44	16
		M			E	-	56	10
		M		N		-	58	34
		M	V			8	5	14
75	19	iP	V			23	28	22
		i	V			-	29	49
		iS		N	E	-	33	30
		i	V			-	33	32
		M				-	37	10
76	27	iP	V	N		17	17	16
		i			E	-	17	18
		iPP	V		E	-	18	21
		iS	V	N	E	-	22	47
		M	V			-	30	35
		M		N		-	30	36
		M	V			-	32	45



Tremors and undecipherable disturbances were recorded

By instrument V, N, E on:-

November 7th (1) 9th (1) 10th (1) 12th (1) 13th (1) 16th (1)  
 17th (2) 21st (2) 22nd (3) 24th (1) 25th (1) 28th (1)  
 29th (1) 30th (1)

No.	Date	Phase	Component	Time			Remarks				
				h.	m.	s.					
DECEMBER 1961											
77	1	iP	V	21	22	43	East China Sea				
		i	V					23	58		
		i	V					30	31		
		iS	N					E	30	32	
		e						E	34	23	
		E	N						34	47	
		iSSS	V						37	38	
M	V		42	22							
78	3	eP	V	16	23	40	Santa Cruz Islands				
		i						E	30	38	
		i						E	30	51	
		M						E	44	9	
		M	V						44	22	
79	5	i		13	6	29	South West of Tasmania				
		iP	V					6	35		
		eP	N					6	35		
		e						E	7	2	
		iS	V						11	3	
		iS						E	11	4	
		iS	N						11	5	
		i	V						11	23	
		i	N						12	15	
		i	V						12	27	
		M						E	12	39	
		M	V						13	43	
		M	N					E	13	54	
M	V		14	12							
M	N		14	37							
80	6	e	V	13	45	56	Tonga Islands Region				
		e						E	49	42	
		i						E	56	50	
		e						E	58	40	
		e	N						14	2	13
		e						E	5	47	
		M	N						8	45	
		M						E	11	10	
		M	V						11	22	
		M	N						12	20	
81	6	eP	V	16	52	30	Kurile Islands				
		e	V					17	4	27	
		i	V						13	0	
		M	V						27	30	
82	8	e		9	49	32	Near north coast of New Guinea.				
		eS	N					E	49	36	
		e	N						54	42	
		M	N						59	23	
		M	V						10	0	2
		M	V						0	37	
		M						E	1	53	

No.	Date	Phase	Component	Time			Remarks	
				h.	m.	s.		
83	9	iP	V	11	36	30	-	
		i	V		38	45		
		i		E	44	4		
		i	V		46	40		
		e		E	56	2		
		i	V		12	7		48
		i	V		9	32		
		M		E	14	57		
		M		E	17	48		
		M	V		18	17		
M	V		22	44				
M	V		24	50				
84	14	iP	V	7	17	34	Near north coast of New Guinea	
		iPP	V		18	52		
		iS		E	23	27		
		iS	V		23	28		
		eS		N	23	28		
		i		N	25	55		
		i	V		26	8		
		i		E	26	25		
		i		E	26	50		
		M		E	30	41		
		M		E	33	40		
		M		N	33	55		
		M	V		33	58		
		M	V	N	34	46		
M	V		35	24				
85	17	i	V	22	23	48	South of Tasmania	
		e	V		25	18		
		i		N	26	4		
		M	V		27	27		
		M		N	27	35		
		M	V		35	25		
86	20	iP'	V	13	45	7	West Central Columbia	
		e			E	47		53
		i	V		48	22		
		i	V		49	26		
		i	V		49	52		
		i		E	51	16		
		e		N	14	5		9
		i		E	8	0		
		i		N	8	2		
87	24	e		2	53	1	New Guinea	
		e			N	54		37
		i	V		55	26		
		i		N	56	3		
		i	V		56	57		
		e		E	57	46		
		i		N	58	7		
		i		N	3	0		2
		i		E	1	5		
		i	V		2	53		
		M		N	3	0		
		M	V		3	6		
M		E	3	8				

No.	Date	Phase	Component	Time			Remarks			
				h.	m.	s.				
88	26	e	V	4	32	23	Java Sea			
		iS	N					33	52	
		e	E					34	6	
		i	V					34	18	
		i	V					34	40	
		e	N					34	47	
		i	E					36	20	
		M	N					36	42	
M	V	39	37							
89	27	eP	V	23	56	42	Near coast of North Island, New Zealand.			
		eP	E					56	43	
		i	V					56	52	
		i	V					56	55	
		ePP	E					58	40	
		i	V					58	50	
		iS	N E					0	3	45
		iSS	E					7	20	
		iSS	V					7	31	
		M	N					11	41	
		M	N					13	0	
		M	V					13	11	
		M	E					13	20	
		90	30					e	V	0
e	V			1	0	2				
i	N			6	13					
i	V			6	17					
i	E			6	28					
i	V			7	18					
e	N			8	6					
iSS	E			11	43					
iSS	N			11	48					
M	E			26	50					
M	N			27	8					
M	V			27	20					
M	N			30	37					
M	V			37	30					

Tremors and undecipherable disturbances were recorded:-

By instrument V, N, E on:-

3rd (1) 4th (2) 6th (2) 8th (1) 9th (2) 12th (1) 13th (1)  
 16th (1) 23rd (1) 24th (2) 25th (4) 26th (1) 27th (1) 29th (1)  
 30th (1)

*Apr - Jun*  
**PERTH**  
*W. Coast.*  
**PERTH, WESTERN AUSTRALIA**

*Jan - Mar, Copied*  
 20.7.65

**SEISMOLOGICAL STATION - PERTH OBSERVATORY**

**Seismological Bulletin for January - March 1961**

*Jan - Mar.*  
*July - Sept.*  
 1961

Instrument                      Symbol                      Component  
 Columbia-Lamont long              A                      Vertical  
 period seismograph  
 Milne-Shaw No.27                      M                      North - South

No.	Date	Inst.	Phase	Time			Amp.	Remarks
				G.M.T.				
				h.	m.	s.	cms	
<b>January 1961</b>								
1.	Jan.1st	A	iP	20	26	43	.14	South of Australia.
		A	eS	-	30	7	.04	
		A	M	-	31	48	.28	
2.	Jan.2nd	A	iP	10	20	44	1.33	Santa Cruz Islands Region.
		A	iPP	-	21	10	.80	
		A	iSP	-	21	25	.23	
		A	i	-	22	12	.11	
		A	ePPP	-	23	52	.21	
		M	iS	-	27	52	.40	
		A	iS	-	27	54	.38	
		A	iSS	-	31	55	.98	
		A	G	-	33	13	.48	
		A	iSSS	-	33	56	.28	
		M	i	-	34	21	.33	
		M	M	-	38	35	.70	
		A	i	-	39	54	1.70	
		M	M	-	41	3	1.34	
A	M	-	43	58	3.68			
A	M	-	44	11	3.82			
3.	Jan.3rd	A	eS	11	50	50	.03	Banda Sea.
		A	e	-	53	7	.11	
		A	M	-	58	42	.26	
		A	M	12	0	32	.20	
4.	Jan.3rd	A	eP	20	10	50	.12	Banda Sea.
		A	i	-	11	20	.18	
		A	iS	-	15	15	.13	
		A	M	-	23	25	.22	
5.	Jan.4th	A	eP	11	35	20	.14	Flores Sea.
		A	eS	-	39	42	.13	
		A	e	-	40	10	.10	
		A	M	-	43	17	.18	
6.	Jan.9th	A	e	10	32	57	.06	Loyalty Islands.
		A	M	-	41	49	.28	
		A	M	-	42	50	.23	
7.	Jan.10th	A	iP	14	35	15	.38	Kurile Islands Region.
		A	i	-	35	20	.35	
		A	i	-	35	31	.30	
		A	ePP	-	38	53	.09	
		A	eS	-	45	55	.07	
		A	i	-	47	7	.33	
		A	M	15	8	25	.57	
		A	M	-	11	20	.88	
8.	Jan.15th	A	e	1	8	41	.05	South of Australia.
		A	e	-	13	43	.10	
		A	M	-	17	3	.54	
		A	M	-	17	42	.49	

No.	Date	Inst.	Phase	Time			Amp.	Remarks
				G.M.T.				
				h.	m.	s.	cms	
9.	Jan.15th	A	i	16	54	7	.12	South of Australia
		A	e	-	56	32	.08	
		A	eS	17	0	16	.12	
		A	e S	-	4	2	.14	
		A	i	-	5	15	.29	
		A	M	-	16	54	.64	
10.	Jan.16th	A	iP	7	31	34	.45	Near east coast of Honshu, Japan.
		A	i	-	31	38	.64	
		A	i	-	37	57	.28	
		A	iS	-	41	0	.46	
		A	i	-	41	52	.66	
		A	i	-	52	33	.58	
11.	Jan.16th	A	iP	12	23	56	.29	Near east coast of Honshu, Japan.
		A	iSSS	-	41	35	.18	
		A	e	-	44	45	.35	
12.	Jan.16th	A	eP	15	52	41	.16	Near east coast of Honshu, Japan.
		A	eS	16	2	5	.18	
		A	e	-	10	7	.20	
13.	Jan.17th	A	eP	23	14	21	.09	Loyalty Islands Region.
		A	eSS	-	24	50	.12	
		M	i	-	32	40	.25	
		A	M	-	34	58	.69	
		M	M	-	36	31	.34	
		A	M	-	38	27	.59	
14.	Jan.19th	A	eP	4	30	19	.13	New Hebrides Islands Region.
		A	ePP	-	32	13	.12	
		A	eS	-	37	31	.13	
		A	e	-	40	56	.18	
		A	M	-	51	15	.56	
15.	Jan.19th	A	e	6	14	21	.17	
		A	i	-	21	51	.43	
		A	M	-	22	45	.69	
		A	M	-	23	25	.65	
16.	Jan.26th	A	iP	16	22	8	.50	Loyalty Islands.
		A	i	-	22	43	.29	
		A	i	-	25	22	.40	
		M	iS	-	29	10	.15	
		A	iS	-	29	13	.48	
		M	i	-	32	12	.24	
		A	iSS	-	32	43	.69	
		A	iSSS	-	34	20	.94	
		M	i	-	36	22	.31	
		M	i	-	41	20	.33	
		A	M	-	42	20	6.00	
		A	M	-	42	39	6.24	
		A	M	-	44	23	6.38	
		M	M	-	44	47	1.55	
M	M	-	46	21	1.02			
17.	Jan.28th	A	iS	14	50	50	.14	New Hebrides Islands Region.
		A	iSS	-	51	35	.25	
18.	Jan.28th	A	eP	19	51	46	.08	Loyalty Islands Region.
		A	iPP	-	53	41	.19	
		A	eS	-	58	46	.19	
		M	iS	-	58	48	.20	
		A	iSS	20	2	54	.57	
		A	i	-	8	17	.74	
		M	M	-	9	41	.54	
		A	M	-	13	25	1.70	



No.	Date	Inst.	Phase	Time			Amp.	Remarks
				G.M.T.				
				h.	m.	s.	cms	
19.	Jan.31st	A	e	1	18	24	.09	Near Kodiak Islands.
		A	M	-	50	9	.38	
		A	M	-	50	55	.40	

Tremors and undecipherable disturbances were recorded:-

By instrument "A" on:- 2nd (1), 3rd (1), 7th (1), 11th (3), 12th (1), 13th (1), 14th (3), 20th (2), 22nd (2), 24th (2), 25th (1), 26th (1), 27th (2), 29th (1), and 31st (1).

By instrument "M" on:- 2nd (1), 3rd (2), 9th (1), 15th (2), 16th (3), 19th (2), 20th (1), 27th (1), 28th (1), and 29th (1).

February								
No.	Date	Inst.	Phase	h.	m.	s.	Amp.	Remarks
20.	Feb.5th	A	e	17	57	15	.10	N.E. of Kerguelen Island. (2 quakes overlapping)
		M	e	18	2	23	.10	
		A	e	-	2	35	.11	
		M	M	-	5	19	.33	
		A	M	-	6	4	1.19	
M	M	-	11	45	.53			
21.	Feb.6th	A	iP	21	53	25	.49	Solomon Islands
		A	i	-	53	44	.80	
		A	i	-	54	58	.19	
		A	i	-	59	37	.29	
		M	iS	22	0	5	.47	
		A	iS	-	0	7	1.22	
		M	iSS	-	3	18	.95	
		M	M	-	8	32	.76	
M	M	-	10	34	.82			
A	M	-	12	20	8.24			
22.	Feb.9th	A	iP	20	26	13	.69	Off south coast of Java.
		M	iP	-	26	15	.23	
		A	eS	-	30	9	.10	
		M	M	-	48	35	1.22	
		A	M	-	49	10	1.84	
A	M	-	51	46	1.82			
23.	Feb.11th	A	iP	21	10	50	.19	Kermadec Island.
		A	M	-	29	32	.78	
		A	M	-	33	50	.85	
24.	Feb.12th	A	iP	22	5	57	.68	
		A	iPP	-	9	15	.28	
		A	eS	-	16	10	.44	
		A	M	-	32	19	.70	
		A	M	-	40	45	.85	
25.	Feb.13th	A	eP	6	56	20	.06	Tonga Island Region.
		A	M	7	22	23	.78	
		A	M	-	25	43	.98	
26.	Feb.15th	A	iP	10	57	30	.11	Kurile Island.
		A	eS	11	7	41	.12	
		A	M	-	23	59	.24	
		A	M	-	31	23	.24	
27.	Feb.22nd	A	iP	22	3	15	.12	
		A	M	-	26	33	.45	

No.	Date	Inst.	Phase	Time			Amp.	Remarks	
				G.M.T.					
				h.	m.	s.	cms		
28.	Feb.26th	A	iP	18	21	29	1.37	Near coast of Kyushu, Japan.	
		A	iPP	-	23	58	.62		
		A	iPPP	-	25	39	.50		
		A	iS	-	30	6	1.20		
		A	iSS	-	34	37	1.55		
		A	M	-	47	32	4.72		

Tremors and undecipherable disturbances were recorded:-

By instrument "A" on:- 2nd (1), 4th (2), 7th (1), 8th (2), 10th (1), 14th (2), 18th (1), 20th (1), 21st (1), 25th (1), and 26th (1).

By instrument "M" on:-10th (1), 12th (1), 13th (1), and 15th (1).

March									
No.	Date	Inst.	Phase	Time			Amp.	Remarks	
				G.M.T.					
				h.	m.	s.	cms		
29.	Mar.3rd	A	iP	6	34	34	.18		
		A	M	-	53	52	.40		
		A	M	-	57	49	.49		
30.	Mar.5th	A	e	1	45	20	.20		
		M	M	-	54	18	1.12		
31.	Mar.7th	A	iP	10	20	38	3.19	Kermadec Island Region.	
		A	iS	-	28	38	3.86		
		A	iSS	-	32	59	3.48		
		A	M	-	44	36	8.08		
		A	M	-	49	21	9.00		
32.	Mar.7th	A	eP	19	19	59		Amp. in minute break. Indian Ocean.	
		A	iPP	-	16	10	.19		
		A	iS	-	20	21	.26		
		A	M	-	23	48	2.40		
33.	Mar.15th	A	iP	10	23	5	.10	New Ireland Region.	
		A	iSS	-	32	51	.85		
		A	M	-	42	17	1.30		
34.	Mar.16th	A	iP	13	50	48	2.24	Flores Island.	
		A	iS	-	55	10	1.87		
		A	M	-	58	56	8.50		
35.	Mar.16th	A	iP	18	26	31	.36	Flores Island.	
		A	iS	-	30	53	.84		
		A	M	-	34	30	.92		
		A	M	-	41	23	1.06		
36.	Mar.18th	A	iP	15	2	31	1.40	South of New Zealand.	
		A	iPP	-	3	55	1.43		
		A	iS	-	8	33	.51		
		A	i	-	8	45	1.28		
		A	i	-	11	43	1.70		
		A	M	-	14	12	11.12		
37.	Mar.19th	A	iP	7	23	52	.19	New Hebrides Island.	
		A	M	-	45	9	.92		
38.	Mar.20th	A	iP	16	3	26	1.64	Tonga Island.	
		A	eS	-	12	45	.41		
		A	M	-	27	34	1.38		
		A	M	-	30	17	1.44		
39.	Mar.20th Mar.21st	A	iP	23	52	45	.30		
		A	i	0	1	5	.21		
		A	M	-	19	51	3.98		

No.	Date	Inst	Phase	Time			Amp.	Remarks	
				G.M.T.					
				h.	m.	s.	cms		
40.	Mar. 28th	A	iP	9	42	<del>26</del> <sup>27</sup>	1.10	Northern Celebes.	
		A	iS	-	47	36	2.85		
		A	M	-	52	7	10.50		
		A	M	-	55	21	10.25		

Tremors and undecipherable disturbances were recorded:-

By instrument "A" on:- 1st (1), 10th (1), 11th (2), 13th (1),  
 17th (3), 18th (1), 21st (1), 22nd (1),  
 25th (1), 26th (1), and 30th (1),

By instrument "M" on:- 11th (1), 21st (2), 22nd (1), and 26th (1).

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PERTH, WESTERN AUSTRALIA

SEISMOLOGICAL STATION - PERTH OBSERVATORY

Seismological Bulletin for July - September 1961.

INSTRUMENTS

- 1 Columbia Lamont Seismometer (Vertical Component long-period) ... V
- 1 Sprengnether Horizontal Seismometer (N-S Component long-period) ... N
- 1 Sprengnether Horizontal Seismometer (E-W Component long-period) ... E

No.	Date	Phase	Component	Time			Remarks
				h.	m.	s.	
<u>JULY 1961</u>							
41	22	i	V	18	24	59	South of Tasmania
		M	V		26	29	
		M	V		27	10	
42	23	iP	V	14	12	35	New Hebrides Islands
		e	V		12	54	
		iPP	V		14	30	
		iS	V		19	30	
		i	V		23	9	
		i	V		27	32	
		i	V		31	15	
		M	V		34	8	
43	23	iP	V	15	38	2	Hawaii
		i	V		40	34	
		i	V		50	1	
		i	V		54	26	
		M	V	16	0	25	
		M	V		1	5	
		44	23	iP	V	21	
iS	V			22	6	59	
i	V				13	58	
M	V				27	52	
45	28	i	V	6	31	10	New Hebrides Islands
		i	V		36	50	
		M	V		44	5	
		M	V		44	54	
46	29	e	V	16	37	45	Tonga Islands Region
		M	V	17	2	28	
		M	V	-	3	23	
<u>AUGUST 1961</u>							
47	1	iP	V	5	48	33	Solomon Islands Region
		i	V	-	48	55	
		iPP	V		50	22	
		iPPP	V	-	51	8	
		iS	V	-	55	23	
		iSS	V	-	58	47	
		i	V	6	2	17	
		M	V	-	8	35	
		M	V	-	9	37	

No.	Date	Phase	Component		Time		Remarks	
					h.	m.		s.
48	3	i	V		23	44	50	Marianna Islands Region
		e	V		-	54	22	
		e	V		-	58	36	
		M	V		0	7	2	
49	7	i	V		4	29	20	Celebes
		i	V		-	31	5	
		iS	V		-	34	53	
		i	V		-	38	17	
		M	V		-	43	7	
		M	V		-	43	55	
50	9	e	V		16	11	48	New Hebrides Islands Region
		e	V		-	13	49	
		iS		E	-	18	29	
		i		E	-	19	7	
		i	V		-	22	15	
		i		E	-	22	25	
		i			-	26	17	
		i		N	-	27	29	
		M		N	-	29	5	
		M	V		-	29	52	
		M	V		-	32	40	
		M		E	-	32	45	
		M	V		-	33	17	
51	11	iP	V	N	16	3	40	Eastern Hakkaido, Japan.
		i		N		3	48	
		i		N		4	16	
		i	V			4	30	
		i	V			6	38	
		iPP	V	N		6	53	
		e	V			8	40	
		iS		N		13	37	
		iS	V			13	41	
		iSS	V	N		18	37	
		i		N		22	56	
		M		N		30	39	
		M	V			32	11	
M		N		32	57			
M	V			39	40			
52	11	e	V		22	44	19	Eastern Celebes
		e		N		44	36	
		i	V			45	57	
		e		N		46	13	
		i		N		49	36	
		e	V			49	43	
		e	V			53	3	
		M		N		58	5	
M	V		23	0	15			
53	14	e	V		19	20	17	Tonga Islands
		M	V			23	54	
		M	V			26	28	
54	14	i	V		23	37	46	New Hebrides Islands Region
		i	V			39	41	
		e	V			44	17	
		i		E		44	33	
		i		E		45	10	
		i		E		48	7	

No.	Date	Phase	Component		Time			Remarks
					h.	m.	s.	
54	14	i	V		23	48	16	New Hebrides Islands Region
		i		N		48	49	
		e		N		51	0	
		e	V			51	59	
		i	V			54	37	
		M			E	58	41	
		M		N		58	45	
		M	V			59	12	
		M			E	59	34	
M	V	N		59	52			
55	17	iP	V		21	28	45	Kurile Islands
		i	V			29	26	
		iS		N	E	38	55	
		i	V			39	52	
		i			E	39	59	
		i		N		40	17	
		i		N		40	52	
		i			E	44	15	
		i		N		48	27	
56	19	e	V		5	27	48	Peru-Brazil Border
		iP	V			27	56	
		iSP	V			29	13	
		i	V			30	25	
		iPPX	V			30	43	
		i	V			33	7	
		i	V			40	5	
		i	V			42	11	
		i	V			45	19	
		e	V			48	30	
i	V			58	8			
57	19	i	V		5	44	54	Off west coast of Honshu, Japan
		e	V			47	40	
		i	V			48	39	
		M	V		6	19	32	
58	20	e	V		1	50	13	New Hebrides Islands
		M	V		1	59	37	
		M	V		2	1	0	
59	22	e		E	9	15	46	New Hebrides Islands
		e		E		19	35	
		e	V			19	36	
		M	V			30	18	
		M		E		30	21	
		M	V			31	32	
60	31	i	V		2	18	16	Peru-Brazil Border
		i	V			20	35	
		i		E		21	30	
		i	V			27	31	
		i		E		35	53	
		i	V			36	28	
		i		E		41	12	

Tremors and undecipherable disturbances were recorded:-

By instrument V, N, E on:-  
 1st (1) 2nd (1) 7th (2) 11th (1) 14th (1)  
 21st (1) 22nd (1) 24th (1) 27th (2)

No.	Date	Phase	Component	Time			Remarks
				h.	m.	s.	
<u>SEPTEMBER 1961</u>							
61	8	iP	V N E	11	39	5	Sandwich Islands Region
		iPP	V		42	26	
		iPPP	V N	44	15		
		iS	V N E	49	34		
		iSS	E	55	15		
		M	E	12	2	47	
		M	V		7	57	
		M	N		8	10	
M	V	12	44				
62	13	iP	V N	14	9	35	South of Java h about 93 Km USCGS
		eS	V N		14	5	
		M	V	17	46		
		M	N	18	5		
63	20	iP	N	19	12	7	New Britain
		iP	V N E		12	8	
		iS	N E	18	9		
		i	N E	21	17		
		i	V	21	26		
		M	E	32	34		
		M	N	32	41		
		M	V	32	43		

Tremors and undecipherable disturbances were recorded:-

By instrument V, N, E on:-

2nd (2) 11th (1) 12th (1) 17th (1) 18th (1) 19th (1)  
 27th (2) 28th (1) 29th (1)

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PERTH, WESTERN AUSTRALIA  
SEISMOLOGICAL STATION - PERTH OBSERVATORY  
Seismological Bulletin for October - December 1961.  
INSTRUMENTS

- 1 Columbia Lamont Seismometer (Vertical Component long-period) ... V
- 1 Sprengnether Horizontal Seismometer (N-S Component long-period) ... N
- 1 Sprengnether Horizontal Seismometer (E-W Component long-period) ... E

No.	Date	Phase	Component	Time			Remarks
				h.	m.	s.	
<u>OCTOBER 1961</u>							
64	4	iSS M M	V N V	2	43 51 53	25 17 42	New Hebrides Islands Region
65	10	i i i i M M M M	V N N N N V E	17	37 40 41 41 43 44 46 46	34 0 42 45 55 25 33 35	New Guinea
66	18	i e e iSS i i M M M M	N N E E E N E E N E	17	18 20 21 26 31 38 53 54 18 0 2 2	55 40 5 51 22 35 42 18 0 5 31	Near coast of Southern Chile
67	19	e e i iS M M M M	N N V V N V E	19	35 40 41 41 42 42 43 43	55 36 33 37 34 58 10 17	South of Australia
68	23	M M M	N V V	0	51 54 58	23 15 9	Sandwich Islands Region
69	23	iP iPP i iS i iSS i M M M M	V V N V N N V E E V N V	14	46 48 48 52 55 55 56 15 1 3 4 5	55 25 28 30 35 48 15 27 12 28 57	



No.	Date	Phase	Component		Time			Remarks
					h.	m.	s.	
70	26	e	V		0	47	54	Bismark Sea
		i	N	-	52	31		
		M	N	1	2	8		
		M	V	-	4	18		
		M	N	-	6	7		
		M	V	✓	6	18		
71	26	iP	V		15	34	10	Off west coast of Sumatra.
		i	N	-	39	42		
		e	V	-	40	7		
		M	V	-	44	33		
		M	N	-	44	52		
		M	V	✓	47	58		
72	28	e		N	23	0	27	New Hebrides Islands
		e	V		-	0	30	
		i	V		-	4	15	
		M	N	-	11	53		
		M	V	-	13	54		
		M	V	✓	14	47		

Tremors and undecipherable disturbances were recorded:-

By instrument V, N, E on:-

2nd (1) 8th (1) 11th (1) 12th (1) 13th (1) 14th (1) 17th (1)  
 19th (1) 22nd (1) 25th (1) 28th (1) 29th (1) 30th (1)

NOVEMBER 1961

73	6	i		E	5	44	23	-	
		i		E	-	44	47		
		i		E	-	48	13		
		i	V		-	48	15		
		M	N	-	56	32			
		M	V	-	59	13			
		M		E	✓	59	17		
74	15	iP	V	N	E	7	29	17	-
		iS			E	-	39	15	
		eS	V		-	39	16		
		iS		N	-	39	17		
		iSS		N	E	-	44	16	
		M		E	-	56	10		
		M	N	-	58	34			
		M	V	✓	8	5	14		
75	19	iP	V			23	28	22	Northern Celebes
		i	V		-	29	49		
		iS		N	E	-	33	30	
		i	V		-	33	32		
		M	✓	37	10				
76	27	iP	V	N		17	17	16	-
		i		E	-	17	18		
		iPP	V		E	-	18	21	
		iS	V	N	E	-	22	47	
		M	V		-	30	35		
		M	N	-	30	36			
		M	V	✓	32	45			

Tremors and undecipherable disturbances were recorded:-

By instrument V, N, E on:-

November 7th (1) 9th (1) 10th (1) 12th (1) 13th (1) 16th (1)  
 17th (2) 21st (2) 22nd (3) 24th (1) 25th (1) 28th (1)  
 29th (1) 30th (1)

No.	Date	Phase	Component	Time			Remarks
				h.	m.	s.	
<u>DECEMBER 1961</u>							
77	1	iP	V	21	22	43	East China Sea
		i	V		23	58	
		i	V		30	31	
		iS	N	E	30	32	
		e		E	34	23	
		E	N		34	47	
		iSSS	V		37	38	
M	V		42	22			
78	3	eP	V	16	23	40	Santa Cruz Islands
		i			30	38	
		i		E	30	51	
		M		E	44	9	
		M	V		44	22	
79	5	i		E	13	6	South West of Tasmania
		iP	V		6	35	
		eP	N		6	35	
		e		E	7	2	
		iS	V		11	3	
		iS		E	11	4	
		iS	N		11	5	
		i	V		11	23	
		i	N		12	15	
		i	V		12	27	
		M		E	12	39	
		M	V		13	43	
		M	N	E	13	54	
M	V		14	12			
M	N		14	37			
80	6	e	V	13	45	56	Tonga Islands Region
		e		E	49	42	
		i		E	56	50	
		e		E	58	40	
		e	N		14	2	
		e		E	5	47	
		M	N		8	45	
		M		E	11	10	
		M	V		11	22	
		M	N		12	20	
81	6	eP	V	16	52	30	Kurile Islands
		e	V	17	4	27	
		i	V		13	0	
		M	V		27	30	
82	8	e		E	9	49	Near north coast of New Guinea.
		eS	N		49	36	
		e	N		54	42	
		M	N		59	23	
		M	V		10	0	
		M	V		0	37	
M		E	1	53			

No.	Date	Phase	Component	Time			Remarks		
				h.	m.	s.			
83	9	iP	V	11	36	30			
		i	V		38	45			
		i	V		E	44		4	
		i	V		E	46		40	
		e	V		E	56		2	
		i	V			12		7	48
		i	V			9		32	
		M	V		E	14		57	
		M	V		E	17		48	
		M	V			18		17	
M	V		22	44					
M	V		24	50					
84	14	iP	V	7	17	34	Near north coast of New Guinea		
		iPP	V		18	52			
		iS	V		E	23		27	
		iS	V			23		28	
		eS	V		N	23		28	
		i	V		N	25		55	
		i	V			26		8	
		i	V		E	26		25	
		i	V		E	26		50	
		M	V		E	30		41	
		M	V		E	33		40	
		M	V		N	33		55	
		M	V		N	33		58	
M	V	N	34	46					
M	V		35	24					
85	17	i	V	22	23	48	South of Tasmania		
		e	V		25	18			
		i	V		N	26		4	
		M	V			27		27	
		M	V		N	27		35	
M	V		35	25					
86	20	iP'	V	13	45	7	West Central Columbia		
		e	V		E	47		53	
		i	V			48		22	
		i	V			49		26	
		i	V			49		52	
		i	V		E	51		16	
		e	V		N	14		5	9
		i	V		E	8		0	
i	V	N	8	2					
87	24	e	V	2	53	1	New Guinea		
		e	V		N	54		37	
		i	V		N	55		26	
		i	V		N	56		3	
		i	V			56		57	
		e	V		E	57		46	
		i	V		N	58		7	
		i	V		N	3		0	2
		i	V		E	1		5	
		M	V			2		53	
		M	V		N	3		0	
M	V		3	6					
M	V	E	3	8					

No.	Date	Phase	Component	Time			Remarks			
				h.	m.	s.				
88	26	e	V	4	32	23	Java Sea			
		iS	N					33	52	
		e	E					34	6	
		i	V					34	18	
		i	V					34	40	
		e	N					34	47	
		i	E					36	20	
		M	N					36	42	
M	V	39	37							
89	27	eP	V	23	56	42	Near coast of North Island, New Zealand.			
		eP	E					56	43	
		i	V					56	52	
		i	V					56	55	
		ePP	E					58	40	
		i	V					58	50	
		iS	N E					0	3	45
		iSS	E					7	20	
		iSS	V					7	31	
		M	N					11	41	
		M	N					13	0	
		M	V					13	11	
		M	E					13	20	
90	30	e	V	0	57	25	Rat Islands			
		e	V					1	0	2
		i	N					6	13	
		i	V					6	17	
		i	E					6	28	
		i	V					7	18	
		e	N					8	6	
		iSS	E					11	43	
		iSS	N					11	48	
		M	E					26	50	
		M	N					27	8	
		M	V					27	20	
		M	N					30	37	
M	V	37	30							

Tremors and undecipherable disturbances were recorded:-

By instrument V, N, E on:-

3rd (1) 4th (2) 6th (2) 8th (1) 9th (2) 12th (1) 13th (1)  
 16th (1) 23rd (1) 24th (2) 25th (4) 26th (1) 27th (1) 29th (1)  
 30th (1)