

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

203 Collins Street,
MELBOURNE VIC.

PROVISIONAL SEISMOLOGICAL BULLETIN

MACQUARIE ISLAND

Latitude : $54^{\circ} 29' 55''$ S. Longitude : $158^{\circ} 57' 22''$ E. Height: 14m.
Foundation : Weathered Basaltic Lava.

Instruments : Wood-Anderson, two components

Period : 1 Sec.

Damping : 20:1

Magnification : 2900.

Grenet Vertical.

Period : Seismometer 1.3 Sec., galvanometer 0.8 Sec.

No.	Date 1957	Phase	Time (G.M.T.)	Remarks
1	Jan. 12	iP i	00 16 59 17 03	
2	" 12	iP i	02 31 50 31 54	
3	" 14	iP iS	10 54 07 54 38	
4	" 15	iP iS	05 16 34 16 50	
5	" 18	iP iS	01 05 08 05 47	
6	" 19	i	01 46 58	
7	" 19	iP iS	02 50 59 51 06	
8	" 19	iP eL	03 07 05 03 40	
9	" 25	i	09 04 57	
10	Feb. 18	iP	12 24 35	
11	" 18	iP iS	13 03 23 03 37	
12	" 18	iP	13 23 35	
13	" 18	iP iS	13 38 19 38 23	
14	" 22	iP e	06 57 06 57 46	
15	March 3	iS M	01 34 32 35 02	

No.	Date 1957	Phase	Time (G.M.T.)	Remarks
16	March 9	eP PP eSKS iP	14 40 47 44 15 52 10 15 02 06	
17	" 14			
18	" 23	iP iS	05 21 53 22 27	
19	" 24	iP iS	06 39 46 40 45	
20	" 24	iP iS	06 48 01 48 46	



(P. B. Nye),
D i r e c t o r.

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Galvanometer 0.8 sec.

No.	Date 1957	Phase	Time (G.M.T.)	Remarks
21	April 3rd	iP	h m s 06 06 02	
		iP	06 06	
		iS	06 10	
22	8th	iP	03 01 08	
		iS	01 29	
		iS	01 35	
23	12th	iP	22 10 03	
		i	10 05	
24	12th	iP	22 27 50	
		i	27 52	
25	14th	iP	19 26 15	
		PP	28 00	
		eS	33 03	
26	16th	iP	04 13 52	
		iS	21 52	
27	25th	iP	21 02 31	
		iS	02 40	
28	25th	iP	23 30 53	
		iS	31 08	
		iS	31 10	
30	27th	iP	13 29 05	

(P. B. NYE),
DIRECTOR.

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Galvanometer 0.8 sec.

No.	Date 1957	Phase	Time (G.M.T.)	Remarks
			h m s	
29	April 26th	L	04 24	
31	May 2nd	i	21 45 15	
32	4th	L	10 35	
33	26th	iPKP	06 53 09	
		iSKS	07 00 09	
34	June 12th	iP	19 28 42	
35	14th	i	01 10 19	
36	18th	L	18 08	
37	23rd	L	00 17	
38	27th	L	01 09	
39	27th	i	02 14 02	
40	27th	iP	23 54 40	
		iS	54 57	

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Period : Seismometer 1.3 Sec., galvanometer 0.8 Sec.

No.	Date 1957	Phase	Time (G.M.T.) h. m. s.	Remarks
41	July 6th	iP	05 25 19	
42	11th	iP	18 46 41	
		iP	46 51	
		iS	47 25	
43	13th	i	00 58 10	
44	18th	iP	14 09 57	
		i	10 00	
45	21st	iP	06 01 12	
		eS	02 40	
46	23rd	i	02 00 04	
47	24th	iP	02 11 59	
		iP	02 00	
		iS	12 09	
48	24th	iP	13 46 01	Felt locally, estimated strength 4. Stopped pendulum clock.
49	26th	iP	04 25 26	
		iS	25 31	
51	28th	iP	22 28 58	
		iS	27 01	

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Instruments : Wood-Anderson, two components
Period : 1 Sec.
Damping : 20.1
Magnification : 2900.

Grenet Vertical.
Period : Seismometer 1.3 sec., galvanometer 0.8 sec.

No.	Date 1957	Phase	Time (G.M.T.)	Remarks
			h. m. s.	
52	July 29th	iP iS	11 06 30 06 34	
53	" 31st	iP iS	10 37 44 37 46	
54	" 31st	iP iS	11 14 53 14 56	
55	Aug. 4th	iP iS	22 39 55 39 58	
57	" 11th	iP	05 17 15	
58	" 22nd	iP iS	06 29 32 29 34	

H. Temple Watts
(H. TEMPLE WATTS),
ACTING DIRECTOR.

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Foundation : Weathered Basaltic Lava.

Instruments : Wood-Anderson, two components

Period : 1 sec.

Damping : 20:1

Magnification : 2900

Grenet Vertical

Period : Seismometer 1.3 sec.,
Galvanometer 0.8 sec.

No.	Date 1957	Phase	Time (G.M.T.)	Remarks
<u>Additions</u>			h m s	
36	June 18th	i P e S	18 02 14 07 10	
37	23rd	e P e S	00 00 00 07 42	
38	27th	e PKP PP e SKS	00 28 15 29 26 35 14	
45	July 21st	i P P P e S e SS	06 01 12 01 21 02 40 02 53	
<u>Continued</u>				
62	Sept. 15th	i P i S	13 25 22 25 24	
63	15th	i P i S	13 30 18 30 20	
64	17th	i P i S	23 54 08 54 10	
65	19th	i P i S	23 28 00 28 21	
66	20th	i P i	00 17 11 21	
67	20th	i	04 33 08	



No.	Date 1957	Phase	Time (G.M.T.)	Remarks.
68	Sept. 24th	i P i P i S	h m s 08 32 02 32 10 32 50	
69	26th	i P	05 16 02 16 18	
70	26th	i P i S	06 15 57 16 13	
71	26th	i P i S	06 27 13 27 28	
72	28th	i P i S	14 26 35 31 48	

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Foundation : Weathered Basaltic Lava

Instruments : Wood-Anderson, two components

Period : 1 sec.

Damping : 20:1

Magnification : 2900

Grenet Vertical

Period : Seismometer 1.3 sec.

Galvanometer 0.8 sec.

No.	Date 1957	Phase	Time (G.M.T.)	Remarks
78	October 13th	iP iS	h m s 02 06 15 06 34	
79	October 13th	iP PP	20 34 52 35 03	
80	October 19th	i	03 53 26	
81	October 19th	iP iS	11 47 32 47 42	
82	October 19th	iP iS	19 18 47 18 55	
83	October 19th	iP iS	23 37 37 37 39	
84	October 20th	iP iS	00 08 20 08 22	
85	October 24th	L	00 41	
86	October 27th	iP iS	17 01 19 01 25	
87	October 28th	iP i	18 10 34 10 36	
88	October 31st	iP	15 31	
89	November 2nd	i	18 38 14	
90	November 8th	iP iS	15 42 28 42 31	



No.	Date 1957	Phase	Time (G.M.T.)	Remarks
91	November 10th	L	h m s 03 01	
92	November 13th	L	17 37	
93	November 14th	iP	07 46 51	
94	November 21st	iP iS	12 37 54 37 57	
95	November 22nd	iP iS	16 04 24 05 28	
96	November 24th	iP iS	04 07 38 07 40	
97	November 25th	iP iS	22 46 06 46 09	
98	November 26th	iP iS	00 56 51 56 55	
99	November 27th	iP iS	05 20 35 20 40	
100	November 28th	L	21 13	
101	November 29th	iP i	22 32 50 32 55	

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Foundation: Weathered Basaltic Lava.

Instruments: Wood-Anderson, two components

Period: 1 Sec.

Damping: > 1 until 26th November, 1958; 0.85 thereafter.

Static Magnification: 2200

Grenet Vertical.

Period: Seismometer 1.4 Sec., galvanometer 0.8 Sec.



International
Seismological
Centre

No.	Date 1957	Phase	Time (G.M.T.)	Per.	Amplitude			Remarks
					A _N	A _E	A _Z	
1	Dec. 4	iPP Z	h.m.s. 03 57 19	s. 			-	USCGS: $45\frac{1}{2}^{\circ}$ N $99\frac{1}{2}^{\circ}$ E. L waves lasted 3/4 hour.
		(i) Z	(25)					
		(i) Z	(37)	(2)				
		(i) Z	58 (38)	(3)				
		(i) Z	(44)	(3)				
		i(SKP) Z	59 52	3			+	
		e(SKS) NE	04 03.2	(12)				
		e(PPS) NE	07.9	(12)				
		e(SS) NE	12.6	(20)				
		e(SSS) NE	17.2	(20)				
		eL E	18.9	18-28				
		eL N	20.6	18-28				
2	13	iP EZ	03 52 21					
		iS NEZ	35					
3	13	iP NEZ	15 12 14					
		iS NEZ	16					
4	17	iP NEZ	13 58 06	1.2	e	e	(-)	USCGS: 12S 167E. Vertical unreadable for first minute. H = 13 50 14 $\Delta = 4690$ Km. L waves lasted 25 mins.
		i NE	12	2.6	-	+		
		i E	18	4.0		(+)		
		i E	37	4		-		
		iPP Z	59 43	2			(-)	
		iPcP Z	55	2			(-)	
		i Z	14 00 03	2			+	
		iPPP Z	21	(3.6)			(-)	
		i Z	01 24	4			(-)	
		ePcS N	03 47	6.4				
		iS NZ	14 04 24	9	+		e	
		i E	05 12	7		-		
		i EZ	06 04	4.6			e	
		eSS E	07 17	7.6				
		eL NE	08.0	7-12				
5	31	iP EZ	07 17 23					
		iS NEZ	28					
6	31	iP Z	14 30 (51)	(2)			(-)	USCGS: 45S $165\frac{1}{2}^{\circ}$ E. H = (14 28 11) $\Delta = (1210)$ Km.
		i NZ	55	(2)	+		(-)	
		i Z	31 03	(1.8)			(+)	
		i NZ	08	1.8	(+)		(-)	
		i NZ	20	1.5	(-)		(+)	
		i Z	32	2			(+)	

No.	Date 1957	Phase	Time (G.M.T.)	Per.	Amplitude			Remarks
					A _N	A _E	A _Z	
6	Dec. 31 continued	iS NE eL NE	h.m.s. 32 53 34.0	s 5	(+)	-		
7	1958 Jan. 2	eP NZ iS NEZ	07 32 44 53					
8	12	iP NEZ iS NEZ	08 49 06 17					
9	15	iP Z i Z	22 23 38 54	1.8 1.8			(-) (-)	USCGS: 13 $\frac{1}{2}$ S 167E.
10	17	eL NEZ	07 21.2					USCGS: 52S 139 $\frac{1}{2}$ E. L waves lasted $\frac{1}{2}$ hour.
11	30	eL E	06 37.5					USCGS: 7 $\frac{1}{2}$ S 155 $\frac{1}{2}$ E. L waves lasted 6 mins.
12	31	i Z	06 37 16	2			(+)	USCGS: 44 $\frac{1}{2}$ N 153E.
13	Feb. 1	iP NEZ iS NEZ	02 31 31 44					
14	4	iP NE iS NE	15 33 06 16					Z not operating.
15	6	i(P) NE iS NE	12 42 57 58					Z not operating.
16	8	i(P) NE iS NE	16 26 49 50					Z not operating.
17	10	iP E iS NE	14 56 51 57 08					Z not operating.
18	20	eL E	12 00.4					
19	20	i(S) NEZ	14 28 41					Local tremor.
20	25	iP E iS NEZ	01 59 51 57					
21	Mar. 2	iP NEZ	16 27 02					Local tremor. Very disturbed.
22	3	iP NEZ iS NEZ	14 26 54 27 00					
23	3	iP NEZ iS NEZ	16 09 01 07					
24	11	iP Z ipP NEZ isP Z i EZ i E i NZ i Z i Z i Z iPP Z i Z i Z iS NEZ e NE	00 38 30 44 53 39 01 10 30 36 48 40 16 42 00 08 50 48 58 49.8	2 1.4 (2.4) 1.5 1.5 2.0 (1.2) 2.5 (2.0) 1.8 1.8 1.5 9.5	e e -	e + - e	+ - + (+) (+) (+) + + - + - + e	USCGS: 25 $\frac{1}{2}$ N 125E. H = 00 25 55 Δ = 9530Km. h = 50Km.
25	11	iP Z i Z i Z i Z	14 06 52 57 07 06 16	(1.2) (1.2) (1.4) (1.4)			- + + -	USCGS: 13S 167E.
26	12	iP NEZ iS NEZ	21 18 30 39					