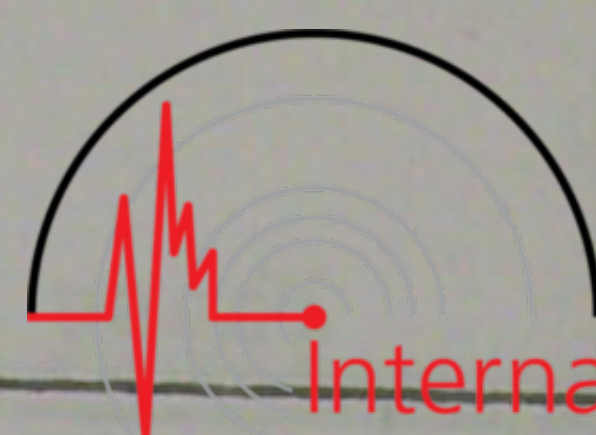


Date	Phase		Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A _N	A _E	A _Z		
NOVEMBER (continued)			h. m. s.	s.				km	
7	iP	Z	16 12 30	$\frac{3}{4}$			+		USCGS: 7.8S 119.8E h = 156km
11	iP	Z	16 17 43	$1\frac{1}{2}$			+		USCGS: 12.9S 166.5E h = 77km
14	eP	Z	22 09 44						USCGS: 0.3S 123.0E h = 92km
15	eP	Z	16 33 50						USCGS: 6.9S 146.7E h = 40km
16	T max.	NEZ	08 39.4						USCGS: 32.3S 111.1W h = 43km
16	eP	Z	21 22 50						USCGS: 13.5S 93.2E h = 33km
17	iP	Z	14 31 14				-		USCGS: 2.8N 121.7E h = 609km
19	eP	Z	14 00 31						USCGS: 60.7S 152.9E h = 33km
24	eP	Z	17 32 16						USCGS: 2.5S 148.9E h = 32km
Recording ceased at end of 25th November for seismograph modification, and recommenced on 16th December, with vertical component only recording at reduced speed of 30 mm/min.									
DECEMBER 1962									
17	iP	Z	11 10 09						USCGS: 2.1N 122.9E h = 393km
19	iP	Z	13 05 03						USCGS: 4.7S 154.0E h = 98km
20	iP	Z	18 22 35						USCGS: 61.8S 161.2E h = 29km
22	iP	Z	23 36 42						USCGS: 5.1S 151.2E h = 105km
30	eP	Z	18 25 06						USCGS: 4.7S 153.7E h = 116km
JANUARY 1963									
3	e(pP)	Z	09 48 46						USCGS: 5.3S 151.5E h = 74km
3	iP	Z	12 43 48						Approximately $55\frac{1}{2}$ S $158\frac{1}{2}$ E
	eS	Z	44 04						
4	iP	Z	12 25 25						USCGS: 4.7S 154.0E h = 69km
5	eP	Z	13 25 54						USCGS: 10.0S 124.0E h = 33km
7	eP	Z	11 58 36						USCGS: 0.6N 126.7E h = 42km
13	iP	Z	16 22 31						USCGS: 49.7S 163.7E h = 33km
	eS	Z	23 31						
	T max.	Z	28.2						
15	iP	Z	19 33 13						USCGS: 20.5S 177.9W h = 496km
28	iP	Z	10 03 54						USCGS: 52.4S 159.6E h = 33km
	eS	Z	04 31						
30	eP	Z	10 21 15						USCGS: 55.6S 28.3W h = 33km
	epP	Z	21 25						
31	eP	Z	05 19 24						USCGS: 27.9N 126.3E h = 33km
FEBRUARY 1963									
	eiP	Z	03 31 23						USCGS: 59.6S 147.9E h = 33km
3	iP	Z	09 02 37						USCGS: 24.5N 121.8E h = 33km
	epP	Z	02 51						
	ePP	Z	05 57						



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Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
				A _N	A _E	A _Z		
FEBRUARY (continued)		h. m. s.	s.				km	
13	eP	Z	18 22(15)					USCGS: 9.9S 160.8E h = 29km
14	eP	Z	07 13 42					USCGS: 7.2S 128.2E h = 197km
14	iP	Z	22 16 48					USCGS: 5.0S 144.6E h = 80km
Interpreted by R.J.S. Cooke.								



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(L.S. PRIOR)
A/CHIEF GEOPHYSICIST

6. 5. 63

Mar-Dec

COMMONWEALTH OF AUSTRALIA
DEPARTMENT OF NATIONAL DEVELOPMENT
BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

203 Collins Street,
MELBOURNE. VIC.

FINAL SEISMOLOGICAL BULLETIN 1963

MACQUARIE ISLAND

MARCH 1963 - DECEMBER 1963

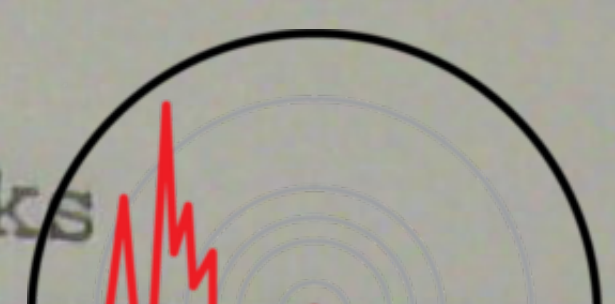


Latitude: 54° 29' 55" S. Longitude: 158° 57' 22" E. Height: 14 m.
Foundation: Weathered Basaltic Lava.
Instruments: Benioff Variable Reluctance Seismometer, Vertical Component only.
Seismometer Period: 1 sec.
Galvanometer Period: 0.2 sec.
Photographic Recording: 30 mm/min.

Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
				A _N	A _E	A _Z		
h. m. s.			s.				km	
The following shocks are additions to those reported in the last bulletin.								
<u>DECEMBER 1962</u>								
27	eP	Z	06 53 20				5511	USCGS: 5.1S 152.2E h = 66km
29	eP	Z	04 22 25				6955	USCGS: 2.4N 127.1E h = 33km
<u>JANUARY 1963</u>								
6	iP	Z	15 33 27			-	5555	USCGS: 4.9S 153.8E h = 131km
28	eP	Z	12 21 34				5822	USCGS: 2.6S 149.9E h = 33km
30	eP	Z	21 47 53					
<u>MARCH 1963</u>								
2	iP	Z	01 43 19			+	5888	USCGS: 6.5S 131.4E h = 33km Banda Sea.
10	iP	Z	01 26 32			+	4422	USCGS: 15.2S 167.2E h = 142km New Hebrides region.
15	iP	Z	00 26 50			+	7622	USCGS: 8.4N 126.4E h = 117km Mindanao, Philippine Is. Region
24	iP	Z	02 16 37			-	5788	USCGS: 9.7S 120.4E h = 33km
	ipP	Z	16 47					Sumba Is.
25	eP	Z	20 18 23				415	USCGS: 56.3S 149.8E h = 38km
	T Max.	Z	25 46					Macquarie Is. Region.
26	eP	Z	09 54 24				3333	USCGS: 29.7S 177.8W h = 45km Kermadec Is.
30	iP	Z	02 00 18			-	3955	USCGS: 19.1S 169.1E h = 160km New Hebrides.
31	eP	Z	05 36 34				3322	USCGS: 29.9S 177.7W h = 48km Kermadec Is.
31	eP	Z	07 16 16				5433	USCGS: 6.1S 149.0E h = 60km.
	epP	Z	16 30					New Britain.
P.T.O.								

P.T.O.

Date	Phase		Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A _N	A _E	A _Z		
APRIL 1963			h. m. s.	s.				km	
4	eP	Z	18 30 48					3289	USCGS: 30.2S 177.6W h = 20km
	epP	Z	30 58						Kermadec Is.
7	iP	Z	22 45 50				+	7410	USCGS: 4.9S 103.2E h = 72km
									Near S.W. Coast of Sumatra.
12	iP	Z	08 46 23				-	2477	USCGS: 39.0S 176.7E h = 106km
									North Island, New Zealand.
16	iP	Z	01 39 14				-	6577	USCGS: 0.8S 128.0E h = 33km
									Halmahera.
16	eP	Z	01 46 57					6510	USCGS: 1.2S 128.4E h = 33km
									Halmahera.
16	iP	Z	02 05 11				+	6577	USCGS: 0.7S 128.0E h = 32km
	ipP	Z	05 20						Halmahera.
16	eP	Z	02 15 51					6577	USCGS: 1.3S 126.9E h = 33km
									Halmahera.
16	eP	Z	05 39 07					4466	USCGS: 18.4S 177.7W l = 557km
									Fiji Is. Region.
MAY 1963									
1	iP	Z	10 10 12				+	4000	USCGS: 19.0S 169.0E h = 140km
									New Hebrides.
12	iP	Z	09 43 51				-	333	USCGS: 57.5S 159.4E h = 44km
									Macquarie Is. Region.
20	iP	Z	11 43 57				+	3178	USCGS: 30.7S 178.3W h = 34km
	iPcP	Z	47 07						Kermadec Is.
23	eP	Z	03 44 38					4866	USCGS: 10.9S 163.3E h = 33km
									Solomon Is. Region.
27	iP	Z	00 39 23				-	4866	USCGS: 10.6S 162.9E h = 129km
									Solomon Is. Region.
30	iP	Z	06 57 36				-	710	USCGS: 54.2S 143.7E h = 33km
	iX	Z	58 14						South of Australia.
	T	Z	07 07 01						
	T Max.	Z	07 10						
JUNE 1963									
4	iP	Z	21 14 45				+	6466	USCGS: 1.2S 127.3E h = 31km
									Halmahera Region.
6	iPcP	Z	05 31 05				-	9058	USCGS: 19.9N 120.2E h = 33km
									Philippine Is. Region.
10	iP	Z	04 18 19				-	553	USCGS: 55.4S 146.4E h = 33km
	iS	Z	19 43						800 km west Macquarie Is.
	L Max.	Z	20 38						
	T	Z	25 29						
	T Max.	Z	25 42						
10	iP	Z	05 15 58				-	561	USCGS: 55.2S 146.3E h = 33km
	T	Z	23 15						800 km west Macquarie Is.
10	iP	Z	06 40 45				-	572	USCGS: 55.3S 146.1E h = 18km
	iS	Z	42 22						800 km west of Macquarie Is.
	L Max.	Z	43 08						
	T	Z	47 56						
	T Max.	Z	48 08						



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Date	Phase		Time (G.M.T.)	Per.	Amplitude			Remarks
					A _N	A _E	A _Z	
<u>JUNE (continued)</u>			h. m. s.	s.				km.
17	eP	Z	18 34 41					1689 USCGS: 65.8S 179.5W h = 33km Scott Is. Region
18	iP	Z	09 38 02			+	4400	USCGS: 15.7S 168.0E h = 176km New Hebrides Region.
27	eP	Z	00 15 51				4422	USCGS: 18.5S 177.7W h = 397km Fiji Is. Region.
<u>JULY 1963</u>								
14	iP	Z	17 10 40			-	2055	USCGS: 39.4S 174.9E h = 180km North Is. New Zealand.
20	iP	Z	06 37 47			-	499	USCGS: 57.6S 148.5E h = 33km Macquarie Is. Region.
	eS	Z	39 17					
	L Max.	Z	39 49					
	T	Z	44 19					
	T Max.	Z	44 39					
26	eP	Z	05 36 34					
29	eP	Z	20 22 44				3355	USCGS: 29.9S 177.0W h = 33km Kermadec Is. Region.
<u>AUGUST 1963</u>								
4	iP	Z	21 50 32			+	5599	USCGS: 5.2S 145.9E h = 59km Near North coast, New Guinea.
25	iP	Z	12 25 06			+	4511	USCGS: 17.5S 178.8W h = 565km Fiji Is. Region.
28	eP	Z	12 50 09				874	USCGS: 61.9S 164.5E h = 33km Balleny Is. Region.
<u>SEPTEMBER 1963</u>								
3	eP	Z	03 51 26					USCGS: 50.3S 152.0E h = 33km Balleny Is. Region.
8	iP	Z	19 56 36			+	3822	USCGS: 23.6S 179.8E h = 550km Fiji Is. Region.
9	iP	Z	02 54 40			-	5599	USCGS: 4.4S 152.7E h = 34km New Britain Region.
17	iP	Z	19 28 28			-	4933	USCGS: 10.1S 165.3E h = 17km Santa Cruz Is.
22	iP	Z	22 23 30			-		Macquarie Island Region.
<u>OCTOBER 1963</u>								
27	iP	Z	23 11 16			-		Macquarie Island Region.
28	iP	Z	11 29 53			-	506	USCGS: 57.1S 147.1E h = 33km South of Australia. P.T.O.



Date	Phase		Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A _N	A _E	A _Z		
			h. m. s.	s.				km.	
<u>OCTOBER (continued)</u>									
31	eP	Z	03 18 23						
31	eP	Z	03 24 58						USCGS: 21.8S 175.0W h = 33km
<u>NOVEMBER 1963</u>									
4	iP	Z	01 21 56					+	4422 USCGS: 15.1S 167.3E h = 50km New Hebrides.
4	iP	Z	01 26 21					+	6022 USCGS: 6.8S 129.6E h = 80km
	eS	Z	33 38						Banda Sea.
	Lq	Z	49 00						
4	iP	Z	02 23 18					-	5910 USCGS: 6.9S 129.5E h = 76km Banda Sea.
4	iP	Z	02 45 49					-	5888 USCGS: 7.0S 129.5E h = 129km Banda Sea.
4	eP	Z	22 26 39					5910	USCGS: 6.8S 129.8E h = 122km Banda Sea.
11	iP	Z	00 26 08					-	5888 USCGS: 7.0S 129.5E h = 132km Banda Sea.
<u>DECEMBER 1963</u>									
10	iP	Z	03 41 12					-	5999 USCGS: 6.2S 128.1E h = 366km Banda Sea.
11	iP	Z	04 03 44					+	6044 USCGS: 7.2S 125.5E h = 145km Banda Sea.
15	iP	Z	19 44 21					-	7210 USCGS: 4.8S 108.0E h = 650km
	iPcP	Z	44 44						Java Sea.
	iP	Z	46 27						
	iPP	Z	46 50						
16	iP	Z	02 02 03					7533	USCGS: 6.1S 104.9E h = 36km Near West coast of Sumatra.
16	iP	Z	14 22 43					-	1441 USCGS: 49.1S 127.1E h = 33km South of Australia.
18	iP	Z	00 36 50					+	3466 USCGS: 24.8S 176.6W h = 46km
	iPP		37 44						Tonga Islands.
	iPcP		38 46						
	eS		42 19						
20	eP	Z	04 06 26					5888	USCGS: 7.0S 129.3E h = 103km Banda Sea.
21	eP	Z	04 34 07						
24	eP	Z	01 15 15						
24	iP	Z	11 26 01						
24	iP	Z	21 06 16					178	USCGS: 53.0S 159.5E h = 33km Macquarie Is. Region.
28	iP	Z	04 54 08						



Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
				A _N	A _E	A _Z		
DECEMBER 1963 (continued)		h. m. s.	s.				km	
30	iP	Z	15 15 14				7733	USCGS: 9.4N 126.0E h = 102km Mindanao.
31	eP	Z	17 48 39				6910	USCGS: 56.5S 26.0E h = 30km Sandwich Island.
								Interpreted by P.J. Gregson



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L. S. Prior

(L.S. PRIOR)

ASSISTANT DIRECTOR (GEOPHYSICS)