

COMMONWEALTH OF AUSTRALIA
DEPARTMENT OF NATIONAL DEVELOPMENT
BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS
203 Collins Street,
MELBOURNE, VIC.



PROVISIONAL SEISMOLOGICAL BULLETIN

M E L B O U R N E

Latitude: $37^{\circ}49'53''$ S. Longitude: $144^{\circ}58'24''$ E. Height: 28m

Foundation: Silurian sand and mudstone

Instruments: Benioff Seismograph Variable Reluctance Type
three component long and short period recorders
galvanometer periods 14 sec. and 0.25 sec.
respectively.
Milne Shaw seismograph EW component
Period 12 seconds
Damping coefficient 0.7
Magnification 250

No.	Date 1958	Phase	Time (G.M.T.)			Remarks
			h	m	s	
1	January 1st	iP NEZ	00	08	24	Compression $\Delta 7^{\circ}$ H 00 06.41 Epicentre in S.E. Tasmania. Felt in Hobart
		i NEZ		08	25	
		iPP Z		08	34	
		iPPP NZ		08	43	
		i E		09	29	
		iS E		09	43	
2	2nd	eP Z	00	28	03	
		eSSS E		36	03	
		i E		37	57	
3	3rd	iP Z	17	58	23	
4	4th	iP Z	13	12	11	
5	4th	e E	18	19	23	
6	5th	iP NEZ	08	12	38	Compression $\Delta 46^{\circ}.2$ H 08 05 04 h 0.09
		iP e P Z		14	10	
		ipP Z		14	27	
		i N		15	39	
		iS NE		18	42	
		i E		20	46	
		iSS EZ		22	18	
7	5th	iP NZ	12	34	51	
8	6th	iP EZ	08	27	44	Compression
9	9th	iP Z	11	20	16	
10	11th	iP NEZ	13	25	47	Rarefaction $\Delta 36^{\circ}.0$ H 13 18.47
		iPP EZ		27	07	
		iPPP E		27	24	
		i E		27	41	
		iP e P E		28	20	
		i NEZ		31	01	
		iS EZ		31	22	
		isS Z		31	40	
		i N		32	21	
		iSS N		33	47	
		i E		33	58	
		eSSS E		34	16	
		iScS E		35	55	

No.	Date 1958	Phase	Time (G.M.T.)			Remarks
			h	m	s	
11	January 13th	eP Z ipP EZ iS E	03	01	07	$\triangle 33^{\circ}.5$ H 02 54 35 h 0.01
				01	23	
				06	21	
12	13th	iP EZ	07	17	53	Rarefaction
13	13th	iP Z	09	01	34	Rarefaction
14	13th	eP Z	20	25	37	
15	14th	iP EZ	07	26	17	Rarefaction
16	15th	iPP EZ i Z i N iPPP NE iSKS NE iPS NEZ i NE	19	34	05	
				34	28	
				35	33	
				36	37	
				39	47	
				43	49	
				46	19	
17	15th	iP NEZ i Z iPP E i E i E iS NEZ iSSS E	22	22	11	$\triangle 30^{\circ}.9$ H 22 15 55
				23	03	
				23	13	
				23	53	
				24	19	
				27	11	
				29	33	
18	16th	iP EZ	04	24	13	Rarefaction
19	17th	iP NEZ iS NE	04	21	45	Compression $\triangle 40^{\circ}.5$ H 04 14 08
				27	51	
20	17th	iP NZ iPP Z i Z i NE iS E iSS N iSSS E eL NE	07	19	01	Compression $\triangle 14^{\circ}.9$ H 07 15 31
				19	10	
				20	24	
				20	40	
				21	46	
				21	59	
				22	20	
				23.0		
21	18th	iP NZ	19	30	56	
22	19th	(e) Z eL NEZ	14	28	26	Masked by microseisms. Long waves for 2½ hours.
				33.5		
23	20th	iP NEZ	06	37	09	Masked by microseisms.
24	22nd	i Z	18	39	35	
25	23rd	e Z	08	59	09	
26	23rd	iP Z	16	29	15	
27	25th	iP NEZ	00	00	02	Masked by microseisms
28	26th	iP Z	07	41	23	
29	27th	iP NEZ i NZ e Z e Z e N e E e NE	07	52	01	Compression
				53	47	
				54	40	
				55	40	
				57	57	
				58	20	
			08	02	00	
30	27th	eP Z e(S) E	08	59	00	
			09	08	10	
31	30th	iP Z i Z	05	05	50	
				06	00	

No.	Date 1958	Phase	Time (G.M.T.)	Remarks
			h m s	
32	January 30th	eP NZ	06 19 54	Δ 27°.5 H 06 14 09
		i NZ	19 57	
		i Z	20 25	
		ePP Z	20 46	
		ePPP N	20 56	
		i N	22 14	
		e E	23 44	
		eS EZ	24 30	
		esS N	24 44	
		eSSS E	26 07	
		e E	27 07	
		i E	28 14	
		eL E	29 00	
		iScS E	30 44	
33	30th	iP EZ	22 47 25	Rarefaction
34	31st	iP Z	05 13 16	Compression
35	31st	iP EZ	06 38 00	Rarefaction
		i EZ	38 10	
		i EZ	38 33	
		i(S) E	42 24	
		eL EZ	44.5	
36	31st	eL NEZ	21 16.5	



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(P.B. NYE)
Director.

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respectively.

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Damping coefficient 0.7

Magnification 250

No.	Date 1958	Phase	Time (G.M.T.)	Remarks
			h m s	
37	February 1st	eL NEZ	16 47.5	
38	February 1st	iP NZ	22 06 44	Rarefaction. Masked by microseisms.
39	February 4th	iP NEZ	02 22 46	
		i Z	23 02	
		i Z	23 50	
		i Z	23 59	
		i NEZ	29 32	
		i E	30 33	
40	February 6th	iP EZ	16 06 25	Compression
		i EZ	06 38	
41	February 7th	iP EZ	01 16 44	Rarefaction
		iPP EZ	17 45	
42	February 7th	iP NZ	09 31 39.2	Δ 134 Km Weak
		i Z	31 42.7	local shock.
		i NZ	31 52.9	
		iS NEZ	31 54.2	
43	February 7th	iP NEZ	23 35 38	Rarefaction
		iPcP Z	35 58	
		i Z	37 03	
44	February 9th	i Z	09 43 19	
		i Z	43 30	
45	February 11th	i Z	00 54 20	
		eL NEZ	01 07.6	
46	February 11th	i NEZ	02 17 32	
		i NEZ	17 35	
47	February 15th	e Z	01 59 21	

No.	Date 1958	Phase		Time (G.M.T.)	Remarks
				h m s	
48	February 18th	iP	NEZ	05 47 54	Compression
49	February 18th	e	Z	07 41 40	
50	February 18th	i(P)	Z	13 27 41	Compression
		i	EZ	28 42	
		i	E	29 10	
		i	E	30 50	
		i	E	33 00	
51	February 18th	iP	Z	19 18 40	Rarefaction
52	February 18th	iP	NZ	19 59 10	Rarefaction
53	February 18th	iP	Z	20 15 36	Rarefaction
		iS	NE	21 03	
		i	N	23 42	
		eL	NEZ	26.7	
		i	E	29 11	
54	February 19th	iP	EZ	19 33 42	Compression
		i	Z	33 57	
		i	Z	34 05	
		i	Z	34 46	
		i	E	35 10	
		i	Z	35 47	
		e	E	36 32	
		iS	NE	40 22	
		i	NE	43 32	
		i	E	44 34	
55	February 21st	eP	NZ	12 12 23	Weak local shock
		i	E	12 57	△ 342 Km
		iS	NE	13 01	
56	February 21st	eP	NE	12 17 14	Weak local shock
		i	Z	17 38	△ 369 Km
		eS	NEZ	17 55	
57	February 23rd	iP	Z	09 22 21	Rarefaction
58	February 23rd	iP	Z	10 16 50	Rarefaction
59	February 23rd	e	Z	10 58 10	
		e	Z	58 26	
60	February 24th	e	Z	12 40 09	
61	February 24th	iP	Z	17 16 08	
62	February 25th	iP	Z	15 08 39	
63	February 26th	iP	Z	17 02 35	Compression
64	February 26th	iP	Z	17 31 05	
65	February 26th	iP	Z	17 50 07	



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No.	Date 1958	Phase	Time (G.M.T.)	Remarks
			h m s	
66	February 27th	iP NEZ	23 38 21	Rarefaction
		i Z	38 40	Δ 65°.7 H 23 27 37
		iPcP Z	38 56	
		iPP Z	40 42	
		iS NE	47 03	
		i NE	48 23	

(J.M. RAYNER),
ACTING DIRECTOR.

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67	March 3rd	iP Z	04 12 29	
68	" 3rd	eP Z	16 41 29	Weak local shock approx. 270 km. from Melbourne.
		i Z	41 34	
		i Z	41 51	
		iS NZ	41 59	
		i EZ	42 10	
		iM NZ	42 15	
69	March 4th	i Z	04 44 41	
70	March 6th	iP EZ	02 13 08	
71	March 6th	iP Z	12 05 35	
72	March 7th	iP NEZ	08 30 26	Compression
		i Z	30 45	
		i Z	30 55	
73	March 8th	iP NEZ	05 16 58	Compression
74	March 9th	eP EZ	10 28 42	$\Delta = 29^{\circ}.7$ $h = 0.005$
		ipP Z	28 55	H 10 22 40
		e Z	29 20	
		iPP Z	29 34	
		iPPP Z	29 46	
		iS NE	33 22	
		iSS N	33 46	
		iSS N	35 05	
		i N	36 12	
		eL NEZ	36.9	
75	March 9th	iP Z	11 31 16	Rarefaction
76	March 11th	iP Z	00 36 38	Rarefaction H 00 25 47
		ipP Z	36 55	$\Delta = 67^{\circ}.5$ $h = 0.005$
		iP _e P Z	37 09	



No.	Date 1958	Phase	Time (G.M.T)	Remarks
76 contd.	March 11th	i Z i Z i NZ iS NE i(S _c S) NE	37 41 40 09 41 49 45 27 46 25	
77	March 13th	iP NEZ iS NEZ	18 23 14 23 21	Weak local shock 67.5km from Melbourne. 158° E of N.
78	March 15th	iP Z	00 34 37	Compression
79	March 22nd	iP Z i Z	01 07 28 07 39	Compression
80	March 22nd	iP Z	06 25 27	Compression
81	March 22nd	iP EZ iS N	10 23 26 33 11	Compression H 10 11 35 △ 77°
82	March 23rd	iP Z	10 24 57	Compression
83	March 24th	e Z e E i E i E	01 02 04 10 40 11 06 11 46	
84	March 24th	e Z	22 15 45	
85	March 25th	iP EZ	08 32 11	Rarefaction
86	March 25th	e Z	19 02 14	
87	March 26th	iP NEZ i Z	00 34 49 35 10	Compression
88	March 27th	iP NZ iS NEZ iL Z	17 51 17.3 51 31.3 51 38.8	Weak local shock 126 km from Melbourne.
89	March 30th	iP Z	17 38 53	Compression

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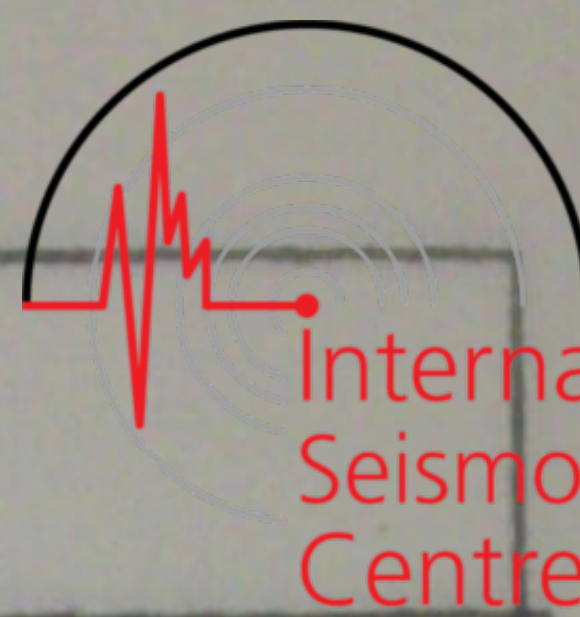
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90	April 3rd	iP	Z	02	14	48	
91	4th	iP	Z	02	01	37	
92	4th	iP	Z	07	23	33	
93	4th	iP	Z	07	36	33	
94	4th	iP	Z	15	44	40	H 15 38 06 Δ 33°
		iS	N		49	55	
		i	Z		56	23	
		i	Z		57	09	
95	6th	iP	Z	19	02	50	Compression
96	7th	iP	Z	07	15	35	Rarefaction
97	7th	ePP	Z	15	50	13	
		i	Z		50	59	
		i	Z		51	27	
		i	Z		54	25	
		e(SS)	N	16	05	40	
		e(SSS)	N		09	59	
98	8th	iP	Z	13	28	39	Rarefaction
	9th	eP	Z	09	43	44	Small local quake approxi- mately 333 Km from Melbourne.
		i	Z		44	08	
		iS	NEZ		44	21	
		i	Z		44	23	
100	10th	iP	Z	19	17	33	Compression
101	11th	iP	NZ	23	23	58	Rarefaction
		i	Z		24	34	
102	11th	iP	NEZ	23	32	13	Rarefaction
		ePP	Z		34	23	



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103	April 12th	eP Z isP NEZ	13 36 04 36 19	
104	13th	eP Z is NE	12 42 17 53 17	H 12 29 05 Δ 93°
105	14th	iPS Z eL E	22 03 34 10.7	
106	17th	eL NEZ	11 21.3	
107	18th	i Z	07 38 27	
108	19th	iP NEZ	06 26 47	Compression
109	20th	iP NZ	21 27 23	Compression
110	21st	eP Z i Z i EZ i E	20 22 40 23 19 24 36 25 36	
111	21st	eP Z i NZ i NZ e Z is NEZ e N i E i Z e N i NE	22 46 16 46 56 47 16 48 48 53 16 54 13 55 46 55 58 56 48 57 06	
112	22nd	iP NEZ i N is NE e NEZ e NE i N i Z	00 03 48 05 42 09 08 09 36 10 32 11 12 14 10	Compression
113	23rd	e Z	03 10 26	
114	23rd	e Z	15 19 24	
115	23rd	e Z	19 19 24	
116	24th	e(P) Z i NEZ i Z is N i N i NE eL NEZ	13 15 28 15 37 15 46 20 03 20 26 21 28 23.4	
117	26th	iP Z	09 32 02	
118	27th	eP Z	11 01 30	



No.	Date 1958	Phase	Time (G.M.T.)	Remarks
119	April 28th	iP eL NEZ NE	06 15 14 21.4	Compression

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			h m s	
120	May 1st	iP NEZ ipP Z iPP Z iPcP Z iS NEZ i N eL NE iSSS Z	00 35 20 36 03 36 26 38 09 40 09 41 12 41.6 42 44	Compression $\Delta = 31^{\circ}.3$ H 00 29 21 h = 0.03
121	2nd	iP NEZ e Z iS E	16 13 47.5 13 50 14 05.5	Local shock, epicentre approx. 162Km. from Melbourne
122	8th	ePP Z	12 59 42	
123	10th	iP NEZ	01 36 20	Compression
124	11th	iP Z	00 44 02	Rarefaction
125	12th	iP Z iPcP Z	17 01 02 01 17	
126	12th	eP Z	18 39 09	
127	12th	iP Z	18 42 50	
128	14th	eP Z	04 04 56	
129	17th	eL NEZ	07 19.6	Day masked by microseisms.
130	17th	eP NEZ eS NEZ	11 49 45 50 21	Weak local shock approx. 324 Km from Melbourne
131	18th	iP NZ	02 39 16	Compression. Day masked by microseisms.
132	18th	eP Z	03 37 45	
133	18th	iP Z	12 27 41	Rarefaction.
134	22nd	eL E	15 24.6	
135	27th	iP Z eL N	23 39 32 49.6	Rarefaction.
136	30th	iP Z	16 22 20	Rarefaction.



No.	Date 1958	Phase	Time (G.M.T.)	Remarks
137	May 31st	iP Z ipP EZ i Z iPP E i E iPcP E eS N i N iSS N iL N	h m s 19 38 46 38 56 39 04 39 49 40 55 41 23 44 02 44 22 45 02 45 43	Δ 33 ⁰ .1 H 19 32 11

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			h m s	
138	June 2nd	iP EZ i Z	06 07 39 07 41	Rarefaction
139	3rd	iP NEZ i Z iPP NEZ i N i N i E iS N isS NZ i(SS) N iSSS E	19 38 05 38 11 39 05 40 43 41 23 42 06 43 03 43 28 44 29 45 07	Compression H 19 31 53 Δ $30^{\circ}.5$
140	June 6th	eL NEZ	11 10.7	
141	7th	iP NEZ iS NE	03 46 31 46 47	Small local shock approx. 153 Km. from Melbourne
142	7th	iP NEZ iS E eL NZ	12 58 41 13 01 41 02.7	Rarefaction
143	10th	iP EZ	04 06 31	Compression
144	11th	iP EZ	03 49 42	Rarefaction
145	13th	iP NEZ i Z i(S) E	11 02 57 03 22 07 54	Rarefaction
146	15th	iP Z	02 47 33	Compression
147	15th	iP EZ	07 24 27	
148	15th	eP Z eL E	11 38 42 47.3	



No.	Date 1958	Phase	Time (G.M.T.)	Remarks
			h m s	
149	June 15th	iP NEZ i Z i Z iSS E	15 01 07 01 42 01 49 09 46	
150	15th	e Z eL E	17 26 56 33.8	
151	17th	iP NZ	19 17 01	Rarefaction
152	18th	i NZ i NZ	16 19 34 19 40	
153	19th	iP Z	05 30 53	Rarefaction
154	19th	iP NZ	13 37 23	Rarefaction
155	19th	iP NZ iPPP Z iS E eL NE	18 05 51 06 00 08 48 09.4	Rarefaction H 18 02 06 Δ 16°.1
156	20th	e Z	06 45 31	Probably a phase from a weak local shock.
157	20th	iP Z	17 38 49	Rarefaction
158	22nd	eP Z eS Z	16 59 54 17 00 29	Weak local shock approximately 315 Km from Melbourne
159	23rd	iP NEZ	18 59 50	Rarefaction
160	23rd	iP NEZ	19 24 11	
161	25th	iP Z	09 34 43	Compression
162	25th	iP NEZ i Z isP NZ i E i NZ iS NE isS N i N eSS E	09 43 19 43 23 43 35 43 55 47 05 48 51 49 11 50 35 51 03	Compression H 09 36 22 Δ 35°.7
163	26th	eP Z iS NZ e(SKKS) N	04 51 55 05 02 19 03 05	H 04 38 19 Δ 99°
164	26th	iP Z	11 47 55	Rarefaction
165	28th	e Z	08 38 53	
166	28th	iP Z	19 39 10	Compression
167	29th	e Z	09 22 38	
168	29th	e Z	12 48 42	



No.	Date 1958	Phase	Time (G.M.T.)	Remarks
			h m s	
169	June 30th	iP Z	09 05 01	
170	30th	iP NZ iS NE	18 37 25 46 31	

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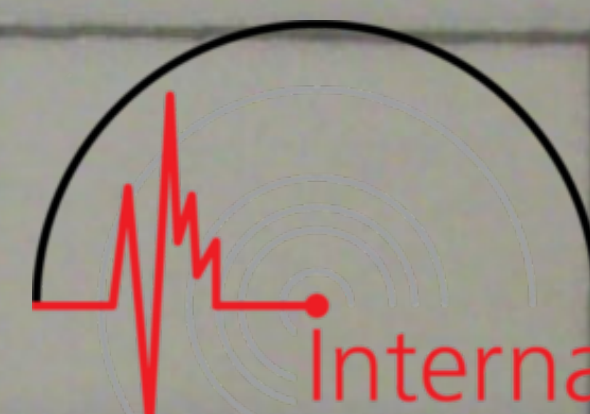
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			h m s	
171	July 2nd	1(P) NEZ	02 10 46	No long period records
172	2nd	1P NEZ	04 54 53	Compression
173	2nd	1P Z	22 50 58	Compression
174	3rd	1P Z	06 33 28	
		1 EZ	33 31	
		1 Z	34 02	
		1(P) Z	35 04	
		1S NEZ	38 03	
175	3rd	1P Z	07 46 50	
176	4th	1P NEZ	18 42 43	Rarefaction $\Delta 47.04$
		1 NZ	43 01	H 18 34 10
		1S NE	49 35	
177	4th	1P Z	22 20 48	Small local shock approx.
		1S NEZ	21 09	180 km. from Melbourne
178	5th	1 Z	06 21 23	
		1 Z	21 32	
179	5th	1P Z	13 58 42	
180	8th	1P Z	05 22 07	Compression
181	8th	1P NEZ	06 37 38	Rarefaction
182	8th	1 Z	19 41 12	
183	9th	1P Z	14 00 43	



No.	Date 1958	Phase	Time (G.M.T.)	Remarks
			h m s	
184	July 9th	e Z i Z iPS E i N iPKKS E iPcPPKP E i E iSKKS E i E	06 35 30 36 48 45 49 46 37 48 17 49 10 49 56 52 20 56 00	These phases were calculated using $\Delta = 117^\circ$ and 243°
185	11th	iP Z	00 28 51	Compression
186	11th	e NZ eL E	18 36 20 40.0	
187	12th	iP Z	03 39 17	Compression
188	12th	iP Z	12 10 10	Compression
189	14th	e(P) EZ i N i E i Z	10 27 08 27 34 28 02 30 40	
190	14th	iP Z	13 26 52	
191	19th	iP NEZ ipP Z iPP E i E iS NE i E i Z	06 36 53 37 21 38 04 41 18 42 00 43 50 49 42	Compression $\Delta = 33.^\circ 1$ h = 0.02 H 06 30 31
192	19th	iP NZ i Z ipP NEZ iSP E iS NE iSPP E i N isS N iSS N	18 24 26 24 44 25 56 26 33 30 28 30 48 31 06 33 18 33 46	Compression $\Delta = 44.^\circ 9$ h = 0.07 H 18 16 54
193	19th	iP Z	19 45 03	Rarefaction
194	19th	eP Z	22 21 37	
195	21st	iP Z iPcP Z	07 37 18 37 32	
196	22nd	iP NEZ	15 00 00	Rarefaction
197	22nd	eP Z	10 38 30	
198	24th	iP Z	02 20 41	



No.	Date 1958	Phase		Time (G.M.T.)			Remarks
				h	m	s	
199	July 26th	iPKP	Z	17	54	55	Compression
		i	Z		55	04	
		i	EZ		56	26	
		iPP	Z		56	38	
		i	Z		57	04	
		i	Z		57	37	
		i	Z		57	56	
		iSKS	NE	18	00	59	
		iSKKS	E		02	26	
		iSP	Z		05	08	
200	27th	eP	Z	17	30	07	
201	28th	iP	NEZ	17	31	08	Rarefaction
		i	Z		32	42	
202	28th	iP	Z	21	29	38	Rarefaction
203	29th	iP	NZ	21	57	05	Compression
		i	Z		57	13	
204	30th	iP	Z	02	59	55	
205	30th	iP	NZ	04	51	51	Compression
		i	N		55	43	
		iS	NE		57	24	
		e	E	05	01	36	
		i	E		04	30	
		i	E		05	44	

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203 Collins Street,
MELBOURNE, Vic.



PROVISIONAL SEISMOLOGICAL BULLETIN

M E L B O U R N E

Latitude : $37^{\circ}49'53''$ S. Longitude : $144^{\circ}58'24''$ E. Height : 28m

Foundation : Silurian sand and mudstone

Instruments : Benioff Seismograph Variable Reluctance Type
three component long and short period recorders
galvanometer periods 14 sec. and 0.25 sec.
respectively.
Milne Shaw seismograph EW component
Period 12 seconds
Damping coefficient 0.7
Magnification 250

No	Date 1958	Phase	Time (G.M.T.)	Remarks.
206	August 1st	iP Z	05 44 47	Rarefaction
207	2nd	iP NEZ	14 51 33	Compression local shock. 108 km. 18 $^{\circ}$.5E of N from Melb.
		iS NE	51 44	
208	✓ 3rd	iP NEZ	01 12 33	Rarefaction $\Delta = 34.5$ H 01 06 31 h 0.09
		iS NE	17 21	
		iP S N	18 40	
		eSS E	20 27	
		i N	20 49	
		iScS NE	21 47	
209	4th	iP NEZ	04 19 58	Rarefaction $\Delta = 34^{\circ}.8$ h - 0.02 H 04 13 21
		ipP Z	20 31	
		i Z	21 10	
		iS NE	25 15	
		isS E	26 16	
		i Z	26 53	
		i N	27 12	
		iSS N	27 33	
210	✓ 6th	eP Z	21 17 06	
		e E	23 18	
		eL NEZ	30.0	
211	10th	eL E	18 22.0	
212	11th	e Z	07 59 11	
		i Z	59 40	
		i Z	59 57	
213	12th	e Z	17 01 08	
214	12th	e Z	19 11 10	
		i E	20 24	
		i E	21 36	
		i E	22 08	
		i E	22 30	
		i E	22 39	

No.	Date 1958	Phase	Time (G.M.T.)	Remarks
215	August 12th	iP Z i NZ i Z iPcP Z iS NE i E iSS N	19 33 01 33 19 33 50 34 55 39 20 39 55 42 12	Rarefaction $\Delta = 42^{\circ}$ H 19 25 07
216	13th	iP NZ	04 58 29	Compression
217	13th	iP NZ	22 03 04	Rarefaction
218	15th	iP Z iS N	20 08 47 19 50	Rarefaction $\Delta 94^{\circ}$ H=20 55 35
219	✓ 15th	iP . NEZ ipP Z i Z iPP Z iS NE iSS N i N iSS NZ	22 37 07 37 58 38 26 38 48 43 21 44 38 45 06 46 38	Rarefaction $\Delta 44^{\circ}$ H= 22 29 19 h - 0.03 Day marked by micro- seisms
220	16th	e Z	11 20 48	
221	16th	eP Z	13 30 12	
222	17th	eP NZ eS E	15 25 07 25 42	Small local tremor 31 ⁴ km from Melbourne.
✓ 223	17th	eP Z i Z i(S) E	18 08 02 08 23 13 30	Day marked by micro- seismic storm.
224	17th	iP Z	19 25 16	Compression
225	17th	iP Z i Z	21 17 05 17 18	
226	19th	iP NZ i Z i Z	21 55 20 55 29 55 56	Rarefaction long period marked by microseisms.
✓ 227	20th	i NE e E i N i E	03 51 22 52 50 53 13 53 50	
228	21st	e Z	01 16 04	
229	21st	iP NEZ i Z i Z i(S) E i N e E i E	21 06 22 07 55 09 14 12 08 13 34 15 44 16 08	
230	22nd	i Z e E i N	00 06 34 14 50 15 30	



No.	Date 1958	Phase		Time (G.M.T.)			Remarks
231	August 22nd	iP	Z	22	23	08	
		i	Z		23	20	
232	28th	iP	Z	07	32	25	
233	29th	e	Z	12	30	41	
		i	NE		35	41	
		i	E		37	51	
		i	E		39	26	
234	30th	iP	EZ	12	36	19	
235	30th	iP	Z	14	38	01	Compression
				(J.M.RAYNER)			
				<u>D i r e c t o r .</u>			

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 International
 Seismological
 Centre

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 Magnification 250

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236	Sept 1st	iP Z iS NEZ	11 19 33 20 28	Weak local shock. Felt at Cooma.
237	2nd	iP Z	02 34 14	Rock Flat, Bega. Compression
238	2nd	eP Z eL NEZ	03 03 00 13.0	
239	2nd	iP Z	05 35 01	
240	2nd	eP Z i Z i Z	14 32 08 32 34 32 46	
241	3rd	iP Z	08 22 25	
242	8th	iP Z ipP Z i Z	05 38 43 38 53 39 02	Compression Long period records masked by microseismic storm.
243	8th	iP Z	13 41 06	Rarefaction.
244	8th	iP NEZ ePPP Z	14 05 23 07 09	Compression
245	8th	iP Z	15 04 37	
246	9th	iP Z	11 44 37	
247	11th	iP NZ	18 10 30	Compression.
248	15th	iP NEZ i Z i E iPcP Z iPP Z iS NE i Z i E i NE ISS E	19 53 17 53 35 54 01 54 38 55 13 59 13 20 00 08 00 50 01 50 02 40	Compression

No.	Date 1958	Phase	Time (G.M.T.)	Remarks.
249	Sept. 18th	i(P) Z	06 58 06	
	No records on 20th			
250	21st	iP Z	13 36 51	Rarefaction
251	22nd	iP Z	19 11 58	Compression $\Delta = 33^{\circ}.0$ H 19 05 42
		i EZ	12 06	h -0.03 Mag. 6.4
		ipP EZ	12 40	
		i EZ	13 01	
		iPP Z	13 20	
		i E	14 24	
		i Z	14 57	
		iS NE	16 58	
		i E	18 00	
		iSS E	19 20	
252	25th	eP Z	07 39 51	
253	25th	eP Z	15 21 50	
254	25th	e Z	20 37 24	
255	25th	e Z	21 02 06	
256	26th	e(P) Z	11 41 17	Activity lasts 15 min. on short period records.
257	27th	i(P) Z	07 44 30	
258	27th	iP NEZ	14 02 50	Rarefaction
259	29th	e Z	10 00.5	Weak: activity lasts about 15 min. on short period records
		e NEZ	07 40	
260	30th	i(P) Z	07 16 46	
261	30th	i Z	09 05 05	

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galvanometer periods 14 sec. and 0.25 sec. respectively.
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Short period horizontals 30,000 at 1 c.p.s.
Milne Shaw seismograph EW component
Period 12 seconds
Damping coefficient 0.7
Magnification 250



No.	Date 1958	Phase	Time (G.M.T.)	Per	Amplitude			Remarks
					A _n	A _e	A _z	
			H. m. s.	S	μ	μ	μ	
262	Oct. 1st	iP NEZ	09 34 10	2.5	31		33	Compression
		iPPP E	34 36	3		6.7		H = 09 29 45 Δ = 2144 Km.
		e Z	35 04					USCGS : 57S 147E
		i E	35 30	4.5		5.3		
		iS E	37 40	5		4.3		
		iSS NEZ	38 06	10	9.4	39	17.2	
		i N	38 44	7	16			
		iL NEZ	39 38	8	25	26.4	12.5	
263	2nd	eP Z	04 37 47					USCGS : 58½S 10W
		eL N	05 09.0					
264	2nd	iP Z	15 09 43	1			0.04	USCGS : 7½N 127E
		i Z	09 55	1			0.04	
265	4th	eP Z	00 56 12					USCGS : 4½S 143½E
		e E	01 05 29					
		iScS EZ	06 33	6			2.1	
		i E	08 02	5		2.9		
266	4th	iP Z	03 31 46	0.9				
267	4th	eP Z	04 31 11					
268	4th	iP Z	14 29 19	0.8				Rarefaction
269	4th	iP Z	23 45 47	0.9				Rarefaction
270	6th	iP NEZ	00 53 07	1	0.05	0.13	0.20	USCGS : 32S 179W
271	7th	eP Z	12 39 18					H = 12 32 45 Δ = 3655 Km.
		iS NE	44 32	4	1.8			USCGS : 5S 151½E
		i Z	48 46	7			4.0	
272	8th	iP Z	14 07 19	1.2				Compression
		i Z	07 32	1			0.02	USCGS : 7S 155½E

No.	Date 1958	Phase	Time (G.M.T.)	Per	Amplitude			Remarks
					A _n	A _e	A _z	
			h. m. s	s	μ	μ	μ	
273	Oct. 9th	e Z	01 06 34					
274	9th	e Z eL E	11 33 05 12 00.0					
275	9th	iP EZ iS NZ	19 49 09 49 28	0.5 0.7				Compression $\Delta = 171$ Km. Small local shock east of Melbourne
276	10th	iP NEZ	07 27 37	1	0.05	0.09	0.06	Rarefaction
277	10th	iP Z i Z	08 43 30 43 45	1 1.3			0.03	Rarefaction USCGS : 53N 160E
278	10th	iP Z	11 43 53	1			0.02	Compression
279	12th	iP Z	09 52 09	0.9				Rarefaction USCGS : 17S 175 $\frac{1}{2}$ W Long period records masked by microseisms.
✓ 280	12th	iP NEZ epP Z	15 29 20 30 29	1.2				Rarefaction USCGS : 27 $\frac{1}{2}$ N 125 $\frac{1}{2}$ E
281	13th	eP Z	05 33 50					USCGS : 14S 173 $\frac{1}{2}$ E
282	15th	eP Z	11 37 48					USCGS : 31S 178 $\frac{1}{2}$ W
283	15th	iP Z	18 54 47	1			0.03	
284	17th	iP NEZ	10 30 35	1	0.03	0.05	0.07	Compression USCGS : 19 $\frac{1}{2}$ S 177 $\frac{1}{2}$ W
285	19th	eP Z i NEZ eS E eL NE	11 48 51 48 54 53 50 57.0	 1 4 17		0.06	0.06	H = 11 42 37 $\Delta = 3411$ Km. USCGS : 34 $\frac{1}{2}$ S 178W
✓ 286	20th	eP Z iPP Z e E i(PS) E i E e(SS) Z	01 20 19 20 38 26 19 26 52 28 48 29 50	 1 9 5 14		14.9 3.4	0.12	USCGS : 9 $\frac{1}{2}$ S 112 $\frac{1}{2}$ E
287	21st	iP NZ e Z i E iS E	06 21 26 22 34 23 41 26 29	1 4 4	0.01		0.07	Compression H = 06 15 07 $\Delta = 3477$ Km. USCGS : 5 $\frac{1}{2}$ S 147E
288	21st	iP Z	15 48 30	1.4				Rarefaction USCGS : 11S 111E
289	21st	eP Z	17 39 13					
290	22nd	iP Z	19 23 05	1			0.03	
✓ 291	22nd	eP Z i E eSS E e Z	23 49 04 54 25 56 04 56 54	 5		2.5		USCGS : 14 $\frac{1}{2}$ S 168E

No.	Date 1958	Phase	Time (G.M.T.)	Per	Amplitude			Remarks
					A _n	A _e	A _z	
292	Oct. 24th	e Z	h. m. s 21 21 01	s	μ	μ	μ	
293	28th	iP Z i Z e N	10 59 24 59 30 11 10 06	1.5 1			0.05	Rarefaction
294	29th	eP Z iS NE e(L) N	07 57 32 08 08 42 15 16	9 24	6.1	11.5		H = 07 44 11 Δ = 10,577 Km. USCGS : 51 $\frac{1}{2}$ N 179 $\frac{1}{2}$ E
295	31st	eL NEZ	19 21.0					
296	31st	e Z i Z	23 50 05 50 28	1.8 1.2				

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Period 12 seconds.
Damping coefficient 0.7
Magnification 250.

No.	Date 1958	Phase	Time (G.M.T.)	Per	Amplitude			Remarks
					An	Ae	Az	
			h m s	s				
297	✓ Nov. 1st	eP NEZ	03 45 33					Δ=3888km H=03 38 42
		i Z	45 46	3			2.3	USCGS : 30 150E
		iPF NZ	46 42	4		2.3	2.6	
		i Z	48 26	5			3.6	
		iS NE	51 02	8	8.0	5.1		
		eSSS E	53 45	12				
		e E	54 45	10				
		e E	56 26	5				
298	1st	eL NEZ	06 26.0					Off north coast of New Guinea
299	1st	eP Z	12 22 37					Δ=3166km H=12 16 43
		i E	23 14	4		1.2		USCGS : 17½S 168E
		i Z	24 00	6			5.0	
		eS E	27 20	12				
		e E	28 28					
300	1st	eS NE	16 01 00					USCGS : 17½S 168E
301	3rd	eP Z	04 07 03					USCGS : 31S 177½W
302	3rd	i Z	14 44 30	1.2				USCGS : 30N 84½E
		i Z	44 33	1.5				
303	4th	eP Z	08 41 44					
304	6th	iP NEZ	15 36 42	1	0.10	0.07	0.12	Δ=3777km H=15 30 18
		ipP Z	37 18	0.8				
		eS E	41 50					

No.	Date 1958	Phase	Time (G.M.T.)	Per	Amplitude			Remarks
					A _n	A _e	A _z	
			h m s	s				
305	Nov. 6th	iP NEZ	23 10 26	1.2				Compression $\Delta = 9221\text{km}$ $H = 22\ 58\ 10$ $h = 0.01$ USCGS : $44\frac{1}{2}^{\circ}\text{N}$ $148\frac{1}{2}^{\circ}\text{E}$ Amplitudes very large - in many cases off the record. Max. amplitude on L.P. Z record was approx. $1400\ \mu$ with period 18 sec.
		ipP NEZ	10 47	1	0.35	0.33		
		i Z	13 18	2.5			5.9	
		iPP Z	13 34					
		i Z	14 37	4.5			15.3	
		iPPP Z	15 38	6.0			19.6	
		i Z	17 55	5			7.4	
		e Z	18 50					
		iS NEZ	20 36	4		35.0		
		iSKKS NE	21 00	5	60.9	15.5		
		e Z	23 24	10				
		i N	22 35	8	22.6			
		i NE	23 44	12.6	94.0	12.5		
		i E	25 32	10		23.4		
		iSS NE	26 04	10.16	67.2	-		
		isSS N	26 40	20	476.0			
		iPKKP E	28 42	14		106.0		
		i E	29 05	12		-		
		iL E	30 00	12				
		iL Z	36 27	22		244.0		
		eT Z	37 00					
306	7th	eP Z	05 12 16					USCGS : $44\frac{1}{2}^{\circ}\text{N}$ 149°E
307	7th	eP Z	07 53 01					USCGS : $44\frac{1}{2}^{\circ}\text{N}$ 149°E
308	7th	iP NEZ	07 53 37	1.2				Rarefaction
309	7th	eP Z	11 37 03					USCGS : $44\frac{1}{2}^{\circ}\text{N}$ $149\frac{1}{2}^{\circ}\text{E}$
310	7th	eP Z	17 45 03					USCGS : 44°N $148\frac{1}{2}^{\circ}\text{E}$
311	7th	eP Z	19 26 56					USCGS : $44\frac{1}{2}^{\circ}\text{N}$ $149\frac{1}{2}^{\circ}\text{E}$
312	8th	iP Z	09 35 56	1.2				Compression
		iPcP Z	36 08	1.2				USCGS : 52°N $159\frac{1}{2}^{\circ}\text{E}$
313	12th	eP Z	10 46 11					USCGS : 7°S 156°E
314	12th	iP Z	20 35 50	1.0		0.025		Compression
		iPcP Z	35 58					USCGS : $44\frac{1}{2}^{\circ}\text{N}$ 149°E
		i Z	36 03					
		e Z	37 01					
		e E	45 45					
		e E	50 40					
315	14th	iP Z	05 47 16					USCGS : 44°N 149°E
316	14th	eP Z	13 55 06					$\Delta = 3722\text{km}$ $H = 13\ 48\ 28$
		i EZ	55 29					USCGS : 6°S 131°E
		ePP EZ	56 12	1.3				
		i Z	58 04	1			2.5	
		eS NE	14 00 24					
		e NEZ	02 00					
		i(ScS) E	05 09					
		i E	05 55					
		i E	07 15					
317	15th	e Z	09 13 07					USCGS : 44°N 149°E

No.	Date 1958	Phase	Time (M.T.)	Per	Amplitude			Remarks
					A _n	A _e	A _z	
			h m s	s				
318	Nov. 16th	iP e iS	Z Z E	17 52 57 53 15 59 26	1.5 7	 2.5		Compression $\Delta=4888\text{km}$ H=17 44 51 USCGS : 16S 172W
319	16th	e	Z	18 08 20				
320	17th	e eL	Z NE	09 52 55 10 01.0				
321	19th	eP	Z	04 00 09				
322	19th	eP	Z	09 36 09				
323	19th	iP	Z	19 37 44	0.8			Rarefaction
324	19th	eP	Z	21 40 24				
325	20th	iP e	NEZ E	06 15 03 18 34	1	0.03	0.02	0.05
326	20th	i i	Z Z	15 30 26 30 40	1.5 1.5		0.02 0.02	
327	22nd	iP i i(S) e e i eL	NEZ Z E N N N NE	00 11 57 12 02 18 06 21 06 22 28 22 50 24.8	1.4 1 9 4 4 5	 6.1 4.2	0.03	Compression
328	22nd	iP e i	Z E E	02 03 57 13 46 14 06	1.5 4 5	 4.2		Rarefaction
329	25th	iP iS	EZ NEZ	01 31 52 32 08	0.4 0.8			$\Delta=144\text{km}$ West of Melbourne
330	27th	eL	NEZ	13 55.4	14			
331	30th	iP i e(S)	Z Z NE	01 43 56 44 19 53 04	1.5 1.6			Rarefaction
332	30th	iP	Z	17 33 57	0.6			Compression

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D I R E C T O R

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					A _n	A _e	A _z	
			h. m. s.	s				
333	Dec. 7th	iP Z	02 54 10	0.9				Compression USCGS: 4N 127E
334	7th	eL E	07 42.7					
335	8th	eP Z i Z	12 20 49 21 03	1.5				USCGS: 44N 149½ E
336	9th	eP Z	08 08 03					USCGS: 8S 118E
337	10th	iP NEZ e Z ipP EZ e E i Z iS NE i E i E iL N	07 08 07 08 27 09 07 09 31 09 40 12 16 12 40 13 03 14 37	0.8 9.0 4.0 3.0 4.5			50.4	Compression H 07 02 58 h = 0.04 Δ = 2889 Km. USCGS: 37S 176½ E
338	10th	iP NZ	14 47 08	1.0	0.05		0.08	Compression USCGS: 5N 126 E
339	14th	eP Z	09 12 42					
340	14th	e Z	09 20 15					
341	15th	iP NEZ	12 46 53	0.7				Compression USCGS: 31S 177½W
342	18th	eP Z eL EZ	19 31 52 46.0					USCGS: 16S 173W

No.	Date 1958	Phase	Time (G.M.T.)	Per	Amplitude			Remarks
					A _n	A _e	A _z	
			h. m. s.	s	<i>u</i>	<i>u</i>	<i>u</i>	
✓ 343	Dec. 25th	iP	Z	08 12 10	1.2			Rarefaction: USCGS: 5 $\frac{1}{2}$ S 151 $\frac{1}{2}$ E
		ipP	Z	12 19	1.5			
		ePP	Z	13 15				
		e	E	15 16				
		e	N	17 15				
344	29th	iP	Z	22 48 24	1.1			
345	31st	iP	Z	01 52 21	0.6			
		i	Z	53 08	1.0		0.04	
		i	NE	57 09	4.0	2.8	2.0	



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