

# ADELAIDE OBSERVATORY, SOUTH AUSTRALIA.

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## SEISMOLOGICAL BULLETIN.

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Prepared under the direction of  
G. F. DODWELL, B.A., F.R.A.S.,  
GOVERNMENT ASTRONOMER.

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$\phi$ . 34°. 55'. 38 0". S.     $\lambda$ . 9<sup>h</sup>. 14<sup>m</sup>. 19.81<sup>s</sup>. E.    Height above Mean Sea Level—134 feet.

SITUATION.—5 miles West of Mount Lofty Ranges, 5 miles East of Sea Coast.

FOUNDATION.—Marly Limestone and Clay of Adelaide Plains, to depth of 40 feet. Miocene Sandstone probably below. Depth of bedrocks not known, probably 1,000 to 2,000 feet.

INSTRUMENTS.—Milne's Horizontal Pendulum, No. 50, 1904 Pattern. E.—W. Component Recorded.  
Milne-Shaw Seismograph, No. 35. N.—S. Component.

#### NOTATION.

- |                   |  |                       |
|-------------------|--|-----------------------|
| I. = perceptible. | II. = striking.                            | III. = very striking. |
|                   | d (domesticus) = local.                    |                       |
|                   | v (vicinus) = near (less than 1000km.).    |                       |
|                   | r (remotus) = distant (1000km.—5000km.).   |                       |
|                   | u (ultimus) = very distant (over 5000km.). |                       |

#### PHASES.

- |                                   |   |
|-----------------------------------|---|
| P (primae)                        | = 1st preliminary tremors (commencement).         |
| S (secundae)                      | = 2nd preliminary tremors (commencement).         |
| L (longae)                        | = <del>2nd</del> principal phase, Rayleigh waves. |
| M (maximae)                       | = maximum amplitude of L waves.                   |
| C (coda)                          | = a prominent wave among the "after tremors."     |
| F (finis)                         | = last perceptible movement (non-microseismic).   |
| PR <sub>1</sub> , PR <sub>2</sub> | = 1st and 2nd reflected waves of P.               |
| SR <sub>1</sub> , SR <sub>2</sub> | = 1st and 2nd reflected waves of S.               |
| i (impetus)                       | = abrupt commencement, clearly defined.           |
| e (emersio)                       | = gradual commencement, not clearly defined.      |
| E, N                              | = E-W or N-S component of earth oscillation.      |
| $\Delta$                          | = approximate distance from epicentre in km.      |
| E.Q.                              | = earthquake.                                     |

1907 unsplit

ADELAIDE OBSERVATORY,  
SOUTH AUSTRALIA.

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SEISMOGRAPH REGISTER

ADLAIDE  
January 1927

OBSERVATORY

Bulletin No. 1

No.	Date Jan.	Char.	Phase	Time (Green <sup>n</sup> ) H. M. S.	Recorded period of Waves N-S-	A <sub>N</sub>	A <sub>E</sub>	 in kms	REMARKS
1	12	I	P S L Me Mn	21 43 15? 49 27 51 35 54 45 55.00	13.3	2.6	0.6		strong tremor Jan. 12, 2h30m. I. indistinguish- able
2	24	IIIr	eP iS iL Mn1 Mn2 Me1 Mn3 Me2 Mn4 Me3	1 11 58 17 04 19 18 20 42 22 38 23 35 24 35 25 40 25 35 28 50	19.5 14.1	20.4 14.0 15.3	2.6 11.7 7.3	3340	A.T's strong on 14th & 15th
3	24	Iir	P iS iL Me1 Mn1 Me2 Mn2 Me3	6 48 58? 53 42 55 26 57 20 59 20 59 45 7 01 10 01 20	13.3	3.1 3.7	1.0 0.9 1.6	3000	Air tremors present
4	24	I	Mn3 Me	8 32 10 33 45		0.7	0.35		
5	25	Ir	P S L Me1 Mn Me2	7 59 04? 8 04 00 06 10 07 10 10 00 13 15		1.3	0.4 0.6	3200	
6	25	Iir	P iS L Mn1 Me1 Mn2 Me2 Mn3 Me3	23 16 13 21 58 23 53 27 50 29 40 30 15 32 35 33 55 33 20	13.1	2.8 3.5 6.8	1.2 1.9 1.8	4000	
7	26	I	S L Mn Me	11 16 00? 19 50? 24 35 27 40		1.5	0.6		Phases masked by air tremors
8	26	I	i L Mn Me F	15 47 50? 48 49 53 42 57 25 16 45 00 about		2.4	2.0		Tremors bad
9	29	I	L Mn Me	15 42 40? 46 40 49 20		0.8	0.3		

also tremor from 19<sup>m</sup>11s to 19<sup>m</sup>37s

Constants Milne-Shaw. Periods 12.0 Secs. Damping ratio 20:1  
Milne - Period- 12th, 16.7 secs., 24th-29th, 16.5 secs.. Sensibility .49


SEISMOGRAPH REGISTER

ADLAIDE

OBSERVATORY

February 1927

Bulletin No. 2

No.	Date	Char	Phase	Time (Greenwich) H. M. S.	Recorded period of Waves N-S	A <sub>N</sub>	A <sub>E</sub>	 in km	Remarks
10	1	11r	1P	18 03 00	20.0 in micros			8450	
		<del>11r</del>	1PR2	04 02					
			1S	08 09		4.2			
			L	10 53					
			Mn1	11 40		3.7			
			Mn2	14 55		5.0			
			Mc1	14 20			1.9		
			Mc2	14 50			1.3		
			Mc3	16 05			1.9		
			Mn3	16 20					
			F	19 15?					
11	4	1r	OP	2 53 06	in micros			8200	
			1PR2	27 03					
			1S	3 01 03					
			L	03 20					
			Mn	05 35		4.2			
			Mc	03 55			1.7		
			F						
12	6	1	o	6 49 55	0.7				
			Mc	53 30			0.3		
			Mn	53 30					
			<del>XXXXXXXXXX</del>						
13	9	1	F	7 15 00	1.2				
			L	5 57 58					
			Mc	58 35			0.35		
			Mn	59 20					
			F						Tremor Feb. 11 11h41 <sup>m</sup> to 11h 52m
14	15	1	e	7 35 23	0.6				
			Mn	41 25					
			Mc	43 40			0.25		
16	16	1u	OP	1 47 44	approx.			7800	
			S	57 00?					
			L	2 09 12					
			Mc1	13 20			0.9		
			Mc2	18 05			1.3		
			Mn1	19 30		1.5			
			Mc3	20 40			1.4		
			Mn2	23 00		1.8			
			F	5 00 00					
16	21	1r	1P	12 32 21	0.9			3950	
			1S	38 08					
			L	41 33?					
			Mn	45 15					
			Mc	47 20			0.7		
			F	13 28 00					
17	23	1r	e(P)	2 55 10	1.8			2450?	
			S	59 09?					
			L	3 00 35?					
			Mc	02 20					
			Mn	04 02			1.1		
			F	3 59					Phases badly defined




SEISMOGRAPH REGISTER

ADRIANOPLE

OBSERVATORY

February 1927 Continued

Bulletin No. 2

No	Date	Char	Phase	Time (Green <sup>n</sup> H. M. S.	Recorded period of Waves N-S	A <sub>N</sub>	A <sub>E</sub>	 In kms	Remarks
18	24	I	Mc Mn	22 03 50 05 58		0.9	0.3		
19	25	Ir	eP eS SR1 L Mn Mc1 Mc2 F	15 49 12? 54 04 55 21 56 23 58 40 16 00 40 04 10 16 30 00?		1.4	0.7 1.5	3200	P. masked by micros  F. in micros
20	26	I	eP e(s) L Mn1 Mn2 Mc Y	2 12 35 17 34 20 00 22 25 25 55 28 25 3 01		1.5 1.3	0.8		

Succession of small tremors Feb. 28th 14<sup>h</sup> 36<sup>m</sup> to 16<sup>h</sup>

Constants Milne-Shaw Period 12.0 secs. Damping ratio 20 : 1  
 Milne Period 16.3 secs. Sensibility 1st-.48; 4th-.41;  
 6th-.26th-.41.


SEISMOGRAPH REGISTER

ADELAIDE

OBSERVATORY

March 1927

Bulletin No. 3

No	Date	Char.	Phase	Time (Greenh) H. M. S.	Recorded period of Waves N-S	A N	A E	 in kms.	Remarks
21	3	IIIr	P	1 11 35?				3900	P. masked by strong microseismic E-W record faint and unreadable
			iS	16 50					
			iL	20 36					
			Mn1	23 00		20.9			
			Mn2	24 25		22.2			
			Mn3	26 00	16.0	32.3			
			Mn4	27 30		23.3			
			F	2 55	in micros				
22	7	IIu	eP	9 38 59				7800	
			e	40 53					
			iS	48 12					
			L	59 54?					
			Mc1	10 04 25			2.7		
			Mn2	05 13		3.9			
			Mc2	08 10			3.3		
			Mn2	10 00		3.9			
			Mn3	11 55	18.3	4.8			
			Mc3	12 00			2.8		
			F	11 42 00					
23	12	Ir	eP	1 18 50?				2600	P. in micros
			eS	23 04					
			L	24 22					
			Mn	26 30		1.5			
			Mc	28 35			0.5		
24	21	I	i	15 24 23					
			Mn	36 35		0.7			
			Mc	34 30			0.3		
25	22	Ir	eS	7 43 36					P. in micros
			L	47 32					
			Mn1	52 00		1.6			
			Mn2	53 25		2.0			
			Mc	53 55			0.8		
			F	8 27 00					
26	23	I	e	9 27 50?					
			L	32 50					
			Mn	37 15		1.5			
			Mc	41 10			0.3		
			F	10 01 00					Small movement Mar. 30th 14 <sup>h</sup> 52 <sup>m</sup> to 15 <sup>h</sup> 05 <sup>m</sup>

Constants Milne Shaw. Period 12.0 secs. Damping ratio 20 : 1.  
 Milne. Period 3rd-12th, 16.2 secs; 21st-23rd, 15.8 secs.  
 Sensibility- 3rd & 7th, .52; 12th, .55; 21st-23rd, .52



SEISMOGRAPH REGISTER

ADELAIDE

OBSERVATORY

APRIL 1927

Bulletin No. 4

No.	Date	Char	Phase	Time (Greenh) H. M. S.	Recorded period of Waves N-S	A <sub>N</sub>	A <sub>E</sub>	△ in kms	Remarks
27	1	Ir	iP iS i(SR1) iL Mn1) Me1) Mn2 Me2 F	19 18 22 18 03 21 25 22 32 22 345 25 42 27 40 20 10 00		3.2 2.6	0.6 0.7	3900	
28	8	Iv	e Mn	9 59 20 59 35		0.7			A.T's strong Apl. 5th 12h30m to 23h. and Apl 6, 8h30m to 23h.
29	13	Ir	P iS L Mn Me	13 51 26? 53 28 14 02 30 12 28 12 40		0.6	0.25		Tremor Apl. 13, 23h27m to 23h 41m. Times uncer- tain-shutter hr. breaks failed.
30	14	Iv	PR1 S L	6 37 00 45 40 7 08 00					ditto.
Severe Tremors Apl. 16th from 8h37m to 10h 42m.									
31	17	Ir	P S L Mn F	9 12 32 17 42 21 54? 24 33? 9 39				4300?	
32	19	Ir	S L Me Mn F	17 46 23 53 20 53 08 18 01 20 18 20		1.0	0.3		P. in air tremors. Reported from Manila.
33	27	I	P S L Mn F	3 02 13 07 40 10 53 12 40 3 30		1.0			Slight tre- mors on 21 1. Max. at 1h15m35s 2. Max. at 3h32m08s. Light out E-W inst.

Constants.

Milne-Shaw.  
Milne

Period 12.2 secs.  
Period 15.9 "

Damping ratio, 20:1  
Sensibility .50.

SEISMOGRAPH REGISTER




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ADELAIDE

OBSERVATORY

MAY 1920

Bulletin No 5.

No.	Date	Char.	Phase	Time (Greenh) H. M. S.	Recorded period of Waves N-S	A <sub>N</sub>	A <sub>E</sub>	 in kms.	Remarks
34	2	I	IP 1(PR) S L Mn F	12 40 57 46 35 50 09 51 40 53 20 13 19		0.7			
35	3	Ir	P iS L Mn1 Mn1 Mn2 Mn2 F	13 47 12 52 13 54 26? 59 15 14 00 30 01 30 03 55 14 26		1.0 1.2	0.5 0.6	3300	
36	11	Iir	oP iS L Me Mn1 Mn2 Mn3 F	1 31 20? 34 56 35 23 36 26 38 00 38 12 40 15 2 25		3.7 3.3 3.9	1.5	2400?	P. masked in micros
37	13	Iir	oP iPR1 iS L Mn1 Mn1 Mn2) Mn2) F	23 15 45 16 20 20 06 21 34 22 15 23 55 30 00 00 02 00		1.8 3.5	0.6 0.9	2700	Probably more than 1 shock.
38	22	IIIn	iP iS iSR1 1 1(SR3) L Mn1 Mn1 Mn2 Mn3 Mn3 Mn4 Mn5 Mn2 Mn3 F	22 44 51 55 05 23 01 11 03 28 06 00 09 50 12 50 15 55 20 12 22 12 23 22 25 50 26 40 27 45 1 35 ?		8.5 14.5 17.6 11.9 13.0	1.9 4.5 5.0	9000	Tremor on May 2 17 <sup>h</sup> 11 <sup>m</sup> to 17 <sup>h</sup> 23 <sup>m</sup> Preceded by micr
39	23	I	1 L Mn	23 16 29 17 27 18 50		1.0			micros present

Constants. Milne-Shaw Period 12.0 Secs. Damping ratio 20: 1.  
 Milne. Period. 2nd & 3rd, 15.9 secs., 11th & 13th, 15.8 secs,  
 22nd & 23rd, 15.9 sec. Sensibility 2nd-13th, .52;  
 22nd & 23rd, .49 .



SEISMOGRAPH REGISTER

ADLAIDE

OBSERVATORY

JUNE 1927

Bulletin No.6

No	Date	Char.	Phase	Time (Green <sup>h</sup> ) H. M. S.	Recorded period of Waves N-S	A <sub>N</sub>	A <sub>E</sub>	△ in kms.	Remarks
40	3	IIIr	IP	7 17 59	15.0	45.5	16.0		Ae's approx.
			IPR1	18 33					
			IS	22 50					
			ISR1	24 04					
			ISR2	24 28					
			iL	25 10					
			Mn1	27 05					
			Me1	28 00					
			Mn2						
			Me2	29 20					
			Mn3						
			Me3	31 30					
			Mn4	30 40					
			Me4	32 25					
			Mn5	33 40					
			Me5						
			Mn6	33 40					
			Me6	33 40					
			F	3 56	33.7	16.0			
					15.5				
41	6	Ir	CP	18 34 187	0.8	0.8	0.7	3600	Micros present
			S	39 34					
			L	42 28					
			Mn	44 00					
			Me1	45 00					
			Me2	49 10					
			F	in micros					
42	11	Ir	CP	2 39 05	1.3	0.9	0.8	3800	
			CS	44 40					
			eL	47 50					
			Me1	53 25					
			Mn	54 40					
			Me2	55 45					
			F	3 367 in micros					
43	14	IIIr	IP	17 20 36	9.0	13.8	9.8	1750	
			IS	23 35					
			L	24 00					
			Me1	24 25					
			Mn1	24 55					
			Me2	25 22					
			Mn2	25 51					
			Mn3	25 55					
			F	18 45					

Constants.

Milne-Shaw Period 12.0 secs. Damping ratio 20 : 1  
 Milne Period 3rd, 15.6 secs; 6th-14th 15.8 secs.  
 Sensibility- 3rd & 6th, .55; 11th-14th, .58.


SEISMOGRAPH REGISTER

ADELAIDE

OBSERVATORY

JULY 1927

Bulletin. No. 7

No.	Date	Char.	Phase	Time (Greenh) H. M. S.	Recorded period of Waves N-S	A <sub>N</sub>	A <sub>E</sub>	 in kms.	Remarks
44	3	I	eP eS L In Me F	10 50 00? 56 18 57 36 59 30 11 05 20 11 22		1.1	0.6		
45	14	Ir	eP is L In Me1 Me2 F	23 23 15 28 13 29 54 31 30 33 30 34 50 in micros		1.4	0.7 1.2	2700?	
46	18	Ir	eP is L In1 In2 Me1 Me2 F	11 27 05? 32 10 34 44 38 55 39 35 39 40 44 15 12 24?		2.2 2.3	0.6 1.2	3400	in micros
47	28	I	S L In Me	4 16 22 28 47 30 03 30 15		1.3	0.4		Phases un- certain owing to micros. Tremor on 28th, 17 <sup>h</sup> 12 <sup>m</sup> -17 <sup>h</sup> 23 <sup>m</sup> .

Constants. Milne-Shaw Period 12.0 secs. Damping ratio 20 : 1.

Milne. Period 16.0 secs. Sensibility 3rd & 14th, .52;  
18th & 28th, .55.




SEISMOGRAPH REGISTER

ADELAIDE

OBSERVATORY

AUGUST 1927

Bulletin No. 8

No	Date	Char.	Phase	Time (Green <sup>h</sup> ) H. M. S.	Recorded period of Waves N-S	A <sub>N</sub>	A <sub>E</sub>	 in kms.	Remarks.
48	4	I	iP iS i(L) In Me	15 55 36? 58 55 59 29 16 00 43 01 00		2.6	0.3		phases masked by micros.  In very definite
49	5	Iu	P iS iSR2 L Me In F	21 24 18 33 37 41 56 46 05 48 30 50 50 22 32?		1.9	0.8	8000	Seconds uncer- tain in times of S. & L.as some minute breaks missed on record.
50	8	Ir	iPR? S L In Me F	18 49 19 53 32 55 34 56 50 57 50? in micros		2.2	0.2	3200?	
51	10	IIIr	iP PR1 iS SR1 L Me1 In1 ) Me2 ) In2 ) Me3 ) Me4 In3 In4 F	11 43 00 44 02 48 31 50 10 51 30 53 35 56 55 59 30 12 00 38 00 59 02 15 13 43	12.0 12.0 15.0	11.5 27.8 16.8 18.8	4.2 ? 15.5 14.4		Tremor on Aug 10, 2 <sup>h</sup> 40 <sup>m</sup> mostly lost in changing paper.  against stop
52	18	Iu	eP eL Me1 Me2 In1 Me3 In2	19 46 11? 20 02 30? 03 00 06 00 08 20 08 30 10 50		1.5 1.8	0.6 0.6 0.6		difficult record: micros strong
53	21	I	eL In F	00 56 25? 01 02 20 1 55		1.0			light burnt out in E-W instrument
54	22	Ir	iP eS eL In Me	18 19 00 22 29 23 44 25 05		1.2	0.4	2200	Times approx. no time marks on record.

Constants. Milne-Shaw. Period 11.6 secs. Damping ration 20 : 1.  
 Milne. Period 4 & 5th, 15.9 secs: 8th & 10th, 15.8 secs: 18th  
 to 22nd, 16.1 secs.  
 Sensibility- 4th-10th, .55 : 18th-22nd, .52 .

## SEISMOGRAPH REGISTER

OBSERVATORY

ADMIRALTY

Bulletin No. 9

SEPTEMBER 1937

No.	Date	Char.	Phase	Time (Green <sup>h</sup> ) H. M. S.	Recorded period of Waves N-S	A <sub>N</sub>	A <sub>E</sub>	△ in kms.	Remarks
55	Sep. 4	I	e (an (Me F	19 59 49 20 03 53 20 16		0.8	0.4		Very quick vibrations, phases masked by micros.
56	5	I	e eL Mn Me F	1 01 42 03 25 03 33 16 50 in micros		1.0	0.4		
57	7	IIr	1P 1S <del>XXXXXXXX</del> 1L Me1 Mn1 Mn2 Me3 Mn3 F	20 01 51 05 32  07 03 07 35 07 50 08 23 08 23 10 45 21 10?	9.5 9.0	4.2 4.5 4.6	2.6 1.4	3400	
58	8	I	e(S) e(L) Mn Me F	17 21 57 26 12 31 25 34 35 17 43		1.2	0.6		
59	8	I	e eS eL Mn Me	23 26 00 38 50 <del>XXXXXXXX</del> 40 44 45 30 48 35		0.3	0.2		
60	11	Iu	eP PR1 eS eL Mn Me1 Me2 F	22 41 46 46 36 54 45 23 15 30? 23 10 23 30 52 30 0 20		1.2	0.3 0.5	13000	
61	13	Ir	eP eS L Me1 Me2	10 22 13 27 13 29 00 35 25 39 10			0.4 0.5	3200	light out N-S instrument
62	17	Ir	eP S SR1 L Me1 Mn1 Me2 Mn2	0 56 01 1 00 12 01 35 02 15 04 20 05 40 05 50 08 05		3.7 2.3	2.0 2.0		P & F in micros



SEISMOGRAPH REGISTER  
ADELAIDE OBSERVATORY

OCTOBER 1927

Bulletin No. 10

No.	Date	Char.	Phase	Time (Greenh) H. M. S.	Recorded period of Waves N-S	A N	A E	$\Delta$ in kms.	Remarks
65	1	I	S	0 02 15					
			L	06 40					
			Mn	09 10		0.9			
			Me	12 50			0.9		
66	13	I	e	4 28 30					
			eL	38 42					
			Mn	43 53		1.0			
			Me	43 10			0.6		
			F	5 01					
67	19	Ir	eP	22 02 57				2100	
			iS	06 25					
			L	07 34					
			Mn	08 25		2.0			
			Me	12 30			0.8		
			F	23 00? in micros					
68	24	Ilu	eP	18 13 37				9800	
			eS	31 00					
			i	31 25					
			L	47 48					
			Mn1	50 35		3.5			
			Mn2	54 05	19.0	3.7			
			Me1	54 10			1.2		
			Me2	57 20			2.7		
			F	18 36?					micros present
69	25	Ir	eP	15 44 40				1600	
			eS	47 14					
			L	47 34.6					
			Mn	48 14		0.7			
70	31	Ir	eP	17 47 28				3300	
			iS	52 28					
			L	55 10					
			Me1	59 05			0.8		
			Mn	18 01 25	13.5	1.9			
			Me2	18 01 25			0.9		
			F	18 27					

Constants Milne Period 16.0 Sensitivity, 1st, 53; 13th-19th, 48  
 24th-31st .54  
 Milne-Shaw Period 12.0 Damping ratio, 20:1


## SEISMOGRAPH REGISTER

ADELAIDE

OBSERVATORY

NOVEMBER 1927

Bulletin No.11

No.	Date	Char	Phase	Time (Green <sup>n</sup> ) H. M. S.	Recorded period of Waves N-S	A <sub>N</sub>	A <sub>E</sub>	 in kms.	Remarks
71	Nov. 2	Ir	ep S eL Mn Me	21 30 36 26 39 28 05 30 30 33 40		0.8	0.3	3300	Tremor Nov.1- 21 <sup>h</sup> 04 <sup>m</sup> -21 <sup>h</sup> 27 <sup>m</sup> Air Tremors strong Nov.1 12 <sup>h</sup> 20 <sup>m</sup> - Nov.2 2 <sup>h</sup> 45 <sup>m</sup>
72	4	Iu	ep es eL Mn1 Me1 Mn2 Me2 Mn3 Me3 Me4 Me5	14 08 43? 20 37 45 10 52 12 55 25 59 08 15 02 40 05 20 08 35 13 40 20 20	20.0 17.8 17.1	1.8 1.4 1.5	0.4 0.6 0.5 0.6 0.9		F in micros
73	6	Ir	iP PR1 iS iSR2 iL Mn Me1 Me2	15 40 18 41 20 45 46 48 06 48 39 50 40 50 40 53 10		2.8	0.7 0.8	3700	
74	7	Ir	iS SR L Mn Me	0 16 05 19 39 21 18? 22 40 30 10		1.0	0.6		Micros pre- cede
75	8	Iy	ep es L Mn Me1 Me2 F	3 21 05 29 42 41 00 44 25 51 15 54 20 4 35?		1.1	0.7 0.7	7400?	
76	9	Ir	ep es L Mn1 Me1 Mn2 Me2	01 11 40 16 20 18 34 24 25 23 41 25 30 26 10		1.3 2.5	0.6 0.8	3100	
77	10	Ir	ep is L Mn Me F	3 14 28 19 15 21 30 22 12 24 25 3 40? in micros		2.4	0.9	3150	



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Bulletin No.11

No.	Date	Char.	Phase	Time (Greenh) H. M. S.	Recorded period of Waves N-S	A <sub>N</sub>	A <sub>E</sub>	△ in kms.	Remarks
78	Nov. 14	Iu	eP iS L Mn Me F	7 33 00? 44 20 8 03 25 12 00 20 00 9 11		0.9	0.2	10500	Air tremors strong Nov. 11th & 12th
79	14	I	iS Mn F	15 27 03 54 50 16 10		0.7			
80	15	I	e(S) L Mn Me F	6 13 35 15 12 16 55 17 35 6 32 in micros		1.6	0.3		
81	16	I Ir	iP iPR2 iS iSR2 L Me1 Mn1 Me2 Me3 Mn2 Me4 F	21 18 05 20 06 24 24 27 45 29 00 32 50 37 45 38 25 41 15 41 55 45 00 22 46		10.7 4.7	2.3 2.8 1.9 2.3	4550	
82	17	I	eP iS iL Mn Me	13 53 32 14 03 41 06 00 07 10 07 10		1.7	0.7		Micros very strong, phases difficult to distinguish
83	17	I	Mn Me	14 55 50 56 55		1.2	0.8		
84	19	Ir	eP eS eL Mn Me F	7 43 05 49 31 54 30 56 10 56 45 8 25		0.6	0.5	4700	

ADELAIDE OBSERVATORY

SEISMOGRAPH REGISTER

NOVEMBER 1927 Continued

Bulletin No.11

No.	Date	Char.	Phase	Time (Grrem <sup>h</sup> ) H. M. S.	Recorded period of Waves N-S	A <sub>N</sub>	A <sub>E</sub>	△ in kms.	Remarks
85	<del>21</del>	III	eP	23 25 52?	18.6 16.5	1.5 1.8 1.7 XXX 1.7	1.7  1.3 1.7	9500	Also tremor of small amplitude Nov.21 18 <sup>h</sup> 22 <sup>m</sup> . 19 <sup>h</sup> 27 <sup>m</sup>
	<del>21</del>		iS	36 22					
	<del>21</del>		L	52 40					
	23		Mn1	0 01 40					
			Mn2	03 25					
			Mn3	06 10					
			Me1	07 05					
			Mn4	09 35					
			Me2	11 10					
			Me3	14 40					
	F	1 50							
86	23	I	e(S)	10 34 18	0.8	0.4		P in micros	
			eL	37 58					
			Mn	40 50					
			Me	45 35					

Constants Milne-Shaw Period 11.5 seconds. Damping ratio 20 : 1

Milne. Period 16.0 seconds. Sensibility .49



## SEISMOGRAPH REGISTER

ADELAIDE

OBSERVATORY

DECEMBER 1927

Bulletin No. 12

No.	Date	Char	Phase	Time (Green <sup>n</sup> ) H. M. S.	Recorded period of Waves N-S	A <sub>N</sub>	A <sub>E</sub>	△ in kms.	Remarks
87	1	Ir	eP S L Mn Me	4 44 00 49 53 53 48 5 01 20 02 25	22.0	2.8	1.2	4100	E.Q's 87 & 88- Times uncertain no minute breaks. Also tremors from 15 <sup>h</sup> 46 <sup>m</sup> 17 <sup>h</sup> 31 <sup>m</sup> on 11th xx with max. at 16 <sup>h</sup>
88	11	Ir	iP iPR iS L Mn	17 33 14 34 26 38 47 41 25 46 00				3700?	Tremor Dec.5th Max 18 <sup>h</sup> 10 <sup>m</sup> approx no minute breaks
89	12	I	e e(L) Mn Me F	19 05 35 11 07 14 40 18 40 19 43		1.4	1.0		
90	125	Ir	eP eS L Me1 Mn Me2 F	16 18 29 24 09 28 00 31 30 32 55 36 30 in micros		2.0	0.7 0.8	3900	
91	20	Ir	eP eS L Mn Me F	8 05 36? 09 59 11 20 13 50 16 30 8 36		1.3	0.4	2700	
92	21	I	L Mn Me	4 45 55 53 00 53 20		0.6	0.4		
93	22	Ir	iP S L Mn Me F	14 02 18 05 36? 06 35? 08 55 08 50 14 37	13.3	2.5	1.2	2100?	

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ADELAIDE OBSERVATORY

DECEMBER 1937 Continued.

Bulletin No. 12

No.	Date	Char.	Phase	Time (Greenh) H. M. S.	Recorded period of Waves N-S	A <sub>N</sub>	A <sub>E</sub>	△ in kms.	Remarks
94	Dec. 28	Iu	iP	18 33 37	20.6	1.9	0.8	9300	
			iS	44 02					
			i(SR1)	51 05					
			eSR2	54 00					
			iL	59 48					
			Mn1	19 10 04					
			Me	11 35					
			Mn2	15 04					
			F	20 21					
95	31	Iir	iP	23 17 14	8.0	10.7		1800	E.W.drum jammed at 21 <sup>h</sup> 6 <sup>m</sup> on 31st.
			iS	20 22					
			iL	20 46					
			Mn1	22 05					
			Mn2	23 25					
			Mn3	24 15					
			F	24 22? in micros					

Constants Milne-Shaw Period- 1st-12th, 11.0 ; 15th-31st, 12.1 secs.  
Damping ratio 20 : 1

Milne- Period 1st, 15.9; 11th-15th, 15.5 ; 20th-31st, 15.7

Sensibility. 1st-15th, .53 ; 20th-31st, .57.