

ADELAIDE OBSERVATORY.
SEISMOGRAPH BULLETIN JANUARY 1930.

Bulletin No. 1

No	Date	Char.	Phase	Time (Greenwich) H. M. S.	Recorded period of Waves N-S	A _N	A _E	△ in kms.	Remarks
1	5	Iu	eP iS Me Mn F	1 32 45 42 16 58 .0 2 05 15 3 00 7	15.0	1.0 0.3	0.2		i's long -est move -ment
2	5	Iu	eP iS L Mn Me F	19 05 46 14 20 25.9 34.7 42.5 20 05	25.0 25.0	0.4 0.4	0.2 0.2		
3	7	I	e e L Mn Me F	0 03 57 08 40 18 40 21 20 23 25 1 00	20.5	1.6	1.3		
4	14	Ir	eP iS iSR ₁ i i(L) Mn ₁ Mn ₂ Mn ₃ F	22 10 07 18 40 19 50 21 00 22 10 23 35 25 10 26 20 23 40	15.0 19.5 15.2	1.3 1.7 2.1		4900	Phases in micros
5	16	I	i L Mn	12 06 40 23.8 27.5	19.0	0.3			
6	17	I	i Mn Me F	23 23 55 24 35 25 25 23 23	7.5	0.7	0.3		
7	18	IIR	iP i iS i i i iSR ₂ iL Mn ₁ Mn ₂ Me ₁ Mn ₃ Me ₂ F	7 10 38 11 10 15 48 15 58 16 21 16 49 17 59 18 29 21 55 22 45 24 58 25 40 8 20	12.5 12.5 13.0	4.5 5.7 4.2	5.7 2.1	3460	
8	20	Ir	eP iPR ₁ iS eSR ₁ iL Mn ₁ Mn ₂ Me F	17 18 18 19 08 23 34 25 11 26 39 30 55 31 40 31.7 18 15	19.5 17.0	2.4 2.7	1.3	3550	

ADELAIDE

OBSERVATORY

JANUARY 1930

Bulletin No. 1 Contd.

No	Date	Char.	Phase	Time (Green) H. M. S.	Recorded period of Waves N-S	A _N	A _E	Δ in kms.	Remarks
9	21	Ir	Ir eP iS eL Me Mn F	18 32 32 18 37 39 40 16 45.0 46 00 19 25	14.0	0.5	0.3	3400	
10	24	I	e i(S) e(L)	1 40 49 42 47 44 05					Very small No definite Maximum
11	25	I	S SR Me F	1 52 55 56 25 2 07.4 2 30			0.7		P.in air tremors. Milne-Shaw off level.
12	28	Ir	e(P) i i(S) L Mn ₁ Mn ₂ Me F	6 26 15 27 10 32 00 35 20 36 25 39 25 7 15	10.0 11.0	0.9 1.1	0.7	4000?	Only two waves.
13	29	I	e(S) LY Mn F	0 36 20 45 28 49 50 1 10	13.0	0.4			

Constants.

Milne Shaw(N-S) Period 15.5 seconds. Damping ratio 20:1
Magnification(nominal) 150

Milne Period 19.2 seconds . Sensitivity 0".35

ADELAIDE OBSERVATORY.

Seismological Bulletin FEBRUARY 1930.

Bulletin No. 2

No.	Date	Char.	Phase	Time (Green ⁿ) M.S.	Recorded period of Waves N-S	A N	A E	Δ in kms.	Remarks.
	Feb.								
14	1	I	e(P) iS iL Mn F	17 38 49 40 40 40 55 41 22 17 55	8.0	0.6			Rapid vibrations, micros also present
15	2	Iu	iS e L Me F	15 20 19 26 15 37 40 49 00 16 50			1.6		No time marks on Milne-Shaw during E.Q's 15 & 16.
16	3	I	i i Me F	2 37 00 47 11 47 20 3 30			1.0		
17	7	I	e e L Mn Me ₁ Me ₂ F	6 33.1 38 12 42 12 43 50 48.8 50.9 7 35	15.0	1.1	0.4 0.4		
18	7	I	eS eL Me Mn F	12 15 19 18 25 20 40 21 15 13 00	14.0	0.8	0.7		Phases in strong micros
19	12	Iir	eP iS iL Mn ₁ Mn ₂ Me ₁ Mn ₃ Me ₂ F	6 27 37 32 41 35 10 35 50 37 05 37 25 39 30 40 05 8 15	15.0 16.0 14.5	6.2 4.7 5.0	2.0 2.1 5.2	3300	Phases in micros, lines of record crowded
20	14	Ir	S L Mn F	20 55 20 21 00 40 05 05 22 15	9.5	3.2			Milne-Shaw lines run together at phases. Milne (Light burnt out. Beginning of No. 21 lost - Instrument off level.
21	18	I	F	3 55					
22	18	I	L Mn F	6 20.9 24.4 6 55	18.0	1.5			
23	28	I	e L Me	2 23.8 33.0 36.0			0.4		
24	28	I	e eS e(L) Me F	18 10 55 14 05 18 32 25 15 19 10			1.2		Milne-Shaw record undecipherable owing to level changes.

Constants. Milne-Shaw Period - rose from 16.2 secs. to 22.0 secs. during the month. Damping ratio 20:1. Magnification (nom) 150
Milne - Period 19.2 secs. Sensitivity 0".32.

Note - Sensitivity of Milne-Shaw to level changes throughout month due to great increase in period. Period adjusted March 3rd.

ADSLAIDE OBSERVATORY.
Seismological Bulletin MARCH 1930

Bulletin No. 3

No	Date	Char.	Phase	Time (Greenh) H. M. S.	Recorded period of Waves N-S	A N	A E	Δ in kms.	Remarks.
25	1	I	e e(L) Me	1 28 55 38.5 44.1			0.5		Milne-Shaw off level.
26	6	Ir	eP iS iSR ₂ L Mn ₁ Mn ₂ Mn ₃ F	15 42 06 47 40 50 19 50 52.7 52 25 54 50 57 00 17 05	17.5 14.4 14.0	2.3 3.1 3.3		3860	P small.
27	10	Ir	eP L Mn Me	20 25 18.7 31 27.7 32 30 34.3	11.0	1.0	0.4		Phases very small S probably in hour break
28	12	Ir	eP eS L Me Mn F	5 36 14.7 41 02 42.7 43.1 45 40 6 10	9.0	0.7	0.5	3100	P. very small Very small movements Mar. 12th 16 ^{07m} to 17 ^h & 19 ^{46m} - 20 ^h 19 ^m . Mar. 14th small regu- lar sinu- soidal move- ment of abt. 25 ^s period almost con- tinuous from 14 ^h 50 ^m - 23 ^h 10 ^m .
29	15	I	i(S) L Mn ₁ Mn ₂ Me ₁ Me ₂ F	7 09 50 14 30 17 08 17 49 19.2 24.3 8 15	14.5 12.0	1.1 1.1	0.3 0.5		
30	18	I	e(L) Mn Me F	1 11 06 12 10 12.9 1 23					
31	20	I	e ₁ e Me ₁ Me ₂ Me ₃	12 46 00 52 50 13 05.9 08.0 09.8			0.4 0.5 0.5		Milne-Shaw lines crossed crossed just here, phases unrecognis- able.
32	25	I	e L Me Mn F	11 01 34 02 25.7 02.4 04 15 11 17	10.0	0.5	0.4		
33	25	I	e Mn ₁ Me Mn ₂ F	11 48.0 49.4 50.5 51.2 12 06		0.3 0.4	0.3		Very small

ADELAIDE OBSERVATORY

MARCH 1930

Bulletin No. 3 Contd.

No	Date	Char.	Phase	Time (GreenH.)			Recorded period of Waves N-S	A N	A E	△ in kms.	Remarks.					
				H.	M.	S.										
34	26	IIIr	iP	7	18	14				3330	Probably several shocks.					
			i		18	22										
			i		18	34										
			i		23	00										
			iS		23	16										
			i		23	24										
			i			31			12.6							
			i		23	36										
			i			38			14.6							
			iSR ₁		24	40										
			i(L)		25	44										
			i		26	00										
			Mn ₁		28	08	23.0	29.0								
			Me ₁		28	30			5.5							
			Mn ₂		30	05	12.0	56.6								
35	26	Ir	iP	11	38	11				3310)Large ir-regular waves.					
			iS		43	12										
			iL		45	29										
			Mn ₁)	50.1	18	5.0									
			Me ₁)					1.2							
			Me ₂		51.8				1.1							
			F		13	20										
			36	26	Ir	eP	20	21	50?						3300?	Phases very small amplitude, L may be in hour break.
						iS		26	51							
						L		30	28?							
						Me		33	45					0.5		
						Mn		33	55					1.3		
						F		21	20							
						37	30	I	e(S)			0	41	57		
			e(SR)		45				16							
L		44	05?													
Me		52	35						0.2							
Mn		54	30													
F		1	23													
38	30	Iu	iP	8	39				10				9900?			
			i		49	38										
			iS		49	59										
			eSR ₁		53	06										
			L		9	08	10?									
			Mn ₁		15	20	24.5	1.3								
			Mn ₂		18	05	17.0	1.1								
			Me		19.0				0.3							
39	30	Ir	F in No. 39							3600?	P.masked by Waves of No 38.					
			eP	9	22	58?										
			iS		27	45										
			i		28	04										
			i		29	17										
			i		30	25										
			L		31	14										
			Mn ₁		33	50	16.5	2.2								
			Me ₁		34.0				0.8							
			Me ₂		35.1				0.8							
			Mn ₂		35	25	20.0	2.8								
			Mn ₃		36	20	14.0	2.8								
F		10	25													

ADNALDE OBSERVATORY.

MARCH 1930

Bulletin No. 3 Contd.

No.	Date	Char.	Phase	Time (Green ⁿ)			Recorded period of Waves N-S	A N	A		△ in kms.	Remarks
				H.	M.	S.			E	F		
40	30	Iir	1P	15	25	29	10.0	5.3	1.7	3280		
			1S		30	28						
			1		31	31						
			iSR ₂		32	17						
			1L		33	11						
			Mn ₁)	37	00						
			Me ₁)								
			Mn ₂		37	32						
			Me ₂		38.4							
			Mn ₃		38	30						
Mn ₄		39	02									
F		17	03	12.2	6.1	2.2						
41	30	I	e?	17	03	55	0.4					
			e(L)		08	00						
			Mn		09.5							
			F		17	20						
42	30	I	e?	23	32.0	0.3					Movement of Milne very small for No's 41 & 42	
			e(S)		35							40
			eL		38							48
			Mn		38.5							
			F		23							46

Constants. Milne Shaw(N-S) Period Mar.1st, 22.0 secs., from March 3rd 16.0 seconds. Damping ratio 20:1 Magnification 150.

Milne (E-W) Period 19.1 seconds
Sensitivity 0".35.

ADELAIDE OBSERVATORY,
SOUTH AUSTRALIA.

SEISMOLOGICAL BULLETIN.

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

ϕ . 34°. 55'. 38 0". S. λ . 9^h. 14^m. 19.81^s. 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) = ~~2nd~~ 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).
PR₁, PR₂ = 1st and 2nd reflected waves of P.
SR₁, SR₂ = 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.
 Δ = approximate distance from epicentre in km.
E.Q. = earthquake.

ADELAIDE OBSERVATORY.
Seismological Bulletin APRIL 1930.

Bulletin No.4

No	Date	Char.	Phase	Time (Green ^d) H. M. S.	Recorded period of Waves N-S	A		△ in kms.	Remarks.			
						N	E					
43	4	Ir	e(P)	2 17 55								
			e(S)	23 55								
			L	26 50?								
			Me	28.8						0.3		
44	4	Ir	1P	9 31 41					3200			
			1S	36 36								
			1L	38 32								
			Mn ₁	43 15						16.0	2.0	
			Me ₁	43 15						14.0	2.3	0.8
			Mn ₂	43 50								1.2
			Me ₂	45 05								
			F	10 25								
45	4	I	e	20 33 40	10.0				Very small movement			
			Mn	39 30								
			F	20 47								
46	13	I	e	4 56 40?	15.0							
			Mn	5 00 35								
			Me	03.0						0.2		
			F	5 08								
47	15	I	e(P)	22 13 10	13.5							
			e(S)	19 00?								
			L	22 38?								
			Me	23 00						0.3		
			Mn	27 30						0.4		
48	15	I	F	22 40	20.0							
			S	10 43 10								
			Me	53.3						0.5		
			Mn	53 25						1.5		
49	20	Ir	1P	16 29 05?					3200			
			1S	33 58								
			L	36.1								
			Me	38.2						0.3		
			F	17 15								
50	21	Iu	1	12 14 17								
			e	20 00								
			e	27 00								
			L	33 55?								
			Me	42.1						1.4		
			F	in micros.								
51	25	Ir	1P	11 36 13	8.5				2360			
			1S	40 03								
			L	40 48								
			Me	41 00						1.1		
			Mn	41 28						1.7		
			F	12 30								
52	26	Iu	1S	16 42 25								
			e(SR ₁)	48 40								
			e(SR ₂)	53 00								
			1	55 27								
			L	17 01 15?								
			Mn ₁	07 45						21.5	1.7	
			Me ₁	09 50						20.0	1.4	0.6
			Mn ₂	10 50						20.0	1.0	0.7
			Me ₂	13 30								
			Mn ₃	17 30								
			e(W ₂)	18 37 00								
			Mn	43 35						20.0	0.5	
			Me	44.5								0.2
F	19 15											

-2-

ADELAIDE OBSERVATORY.
Seismological Bulletin No 4 Continued.

APRIL 1930.

No	date	Char.	Phase	Time (Greenh) H. M. S.	Recorded period of Waves N-S	A N	A E	Δ in kms.	Remarks.
53	27	Iu	eP iS L Mn Me F	14 37 23? 45 48 56.6 15 00 40 01 20 16 10	14.0	0.5	0.4		
54	27	Ir	eP i i(PR) iS i i(SR ₁) L Me Mn F	21 43 24 43 50 44 04 48 00 48 34 49 00 49 44? 55 50 56 00 22 40	14.0	1.6	0.3	2940	L waves have short period vibration superposed.
55	28	Iu	e eL Mn Me F	18 50 10 19 06 35? 17 25 18 45 20 10? in micros.	18.0	0.8	0.3		
56	30	I	i(S) i i L Mn F	16 20 07 23 44 24 50 26 28 28 00 17 20?	18.0	1.2			Air tremors strong, masking phases. No definite Me.

CONSTANTS. Milne-Shaw(N-S) period 14.5 seconds- Damping ratio 20 : 1. Magnification(Nominal) 150.

Milne(E-W) Period 19.0 seconds.
Sensitivity. 0".35.

ADELAIDE OBSERVATORY.

MAY 1930

Bulletin No. 5 Contd.

No	Date	Char.	Phase	Time (Greenh) H. M. S.	Recorded period of Waves N-S	Δ N	Δ E	Δ in kms.	Remarks.
66	7	Ir	oP iS oL Mn F	3 12 32 16 19 17 34 18 45 3 45	5.5	0.8		2330	
67	8	Ir	oP oS L Mc Mn F	12 55 12? 13 01 24? 05 29 08.5 09 03 in No. 68	11.5	1.5	0.2	4500?	Obscured by micros.
68	8	Ir	o i(S) i(L) Mn ₁ Mc ₁ Mn ₂ Mn ₃ Mc ₂ F	13 42 20 47 00 49 17 52 45 55.4 55 35 56 40 56.9 15 13	16.0 12.5 12.0	2.3 3.9 3.8	1.7 1.2		
69	8	I	o? o e Mc Mn F	16 20 37 30 50 36 46 35.2 36.4 17 30	19.0	0.5	0.5		
70	10	I	o i F	0 04 34 07 50 0 25					Very small
71	10	I	i(S) iL Mn F	12 35 21 35 48 35 54 12 39	7.0	0.7			
72	12	I	L Mn	2 52 20? 57 30					Phases un- recognis- able in
73	18	I	oP i(PR ₂) iS i iL Mc ₁ Mn ₁ Mn ₂ Mn ₃ F	0 07 46? 08 53 13 00 14 18 16 31 18 50 19 05 21 42 23 05 1 05	12.0 12.0 10.5	2.4 3.4 3.1	0.7	3550	air tremors
74	19	Iu	oL Mn ₁ Mc Mn ₂ Mn ₃ F	3 55 35 4 02.4 02.7 06.5 09 35 4 50	18.0 18.0 14.5	0.9 0.8 1.1	0.3		

ADELAIDE OBSERVATORY.

MAY 1930

Bulletin No. 5 Continued.

No	Date	Char.	Phase	Time (Greenh) H. M. S.	Recorded period of	Δ N	Δ E	△ in kms.	Remarks.
75	May 19	I	1(S)	15 21 32					Record confused.
76	20	Ir	eP	7 49 38				3650	
			iS	54 49					
			eL	57 45					
			Mc ₁	8 01 40			1.0		
			Mn ₁	03 11	12.0	2.5			
			Mc ₂	03 40			1.0		
			Mn ₂	03 50	12.5	3.2			
			Mn ₃	04 25	12.0	2.6			
			F	8 40					
77	20	Iu	iS	11 39 21					
			iSR ₁	45 39					
			eL ₁	58.5					
			Mn ₁	12 02 20	21.5	1.1			
			Mn ₂	07 25	18.0	0.8			
			Mc ₂	12.0			1.1		
			F	12 50					
78	21	I	e	12 12 25?					Record con- fused just here. E-W movement very small for both 78 & 79
			Mn	19 05	15.5	0.7			
			F	12 36					
79	23	I	e(L)	0 31 05					
			Mn	41 00	14.0	0.6			
			F	0 59					

CONSTANTS. Milne-Shaw(N-S) Period 16.2 seconds. Damping ratio 20 : 1
 Magnification (nominal) 150
 Milne(E-W) Period 19.0 seconds. Sensitivity 0".35.

ADELAIDE OBSERVATORY.

JUNE 1930

Seismological Bulletin No.6

No.	Date	Char.	Phase	Time (Green ^d)			Recorded period of Waves N-S	A		△ in kms.	Remarks.
				H.	M.	S.		N mm.	E mm.		
80	1	Iu	P	13	14	11?				6300?	Obscured by micros.
			iS	22	03						
			i	27	12						
			L	30	11						
			Mn ₁	37	35	16.5	3.5				
			Mn ₂	39	10	15.5	4.0				
			Ma	XXXXXXX	XXXX						
			Me	XXXX							
			Me ₁	39	10				3.5		
			Me ₂	40	30				2.5		
			Mn ₃	41	50	10.0	3.9				
F	14	29?	in micros.								
81	4	Ir	iP	9	56	06				4900	all very short period vibrations.
			i	57	13						
			i	10	00	35					
			iS	02	39						
			iSR ₁	05	51						
			L	07	42?						
			Me	09	10				0.6		
			Mn	11	20	10.0	2.1				
F	11	05									
82	5	Ir	eP	11	49	57?				4000?	P. masked by micros.
			iPR	51	14						
			iS	55	32						
			L	59	34						
			Mn ₁	12	02	40	17.6	3.7			
			Me ₁	03	50				1.4		
			Mn ₂	03	55	12.5	4.0				
			Me ₂	04	45				1.4		
			Mn ₃	04	45	11.5	4.8				
			Me ₃	14	50				1.3		
F	13	10									
83	8	I	S	17	57	25?				Time approx. No time marks from 14 ^h 17 ^m to 19 th 0 ^h 18 ^m	
			L	59	25?						
			Mn	18	01	50?	18.0	1.0			
84	11	IIr	iP	0	55	54				3230	
			i	56	11						
			iPR ₁	56	43						
			iS	1	00	50					
			i	01	08				14.8		
			iSR ₂	02	41						
			iL	03	52						
			Me ₁	06	55				4.0		
			Mn ₁	07	50	18.5	23.5				
			Me ₂	08	50				7.8		
			Mn ₂	09	30	17.5	16.7				
			Me ₃	09	40				7.3		
			Mn ₃	11	20	15.0	11.0				
			Me ₄	12	10				2.4		
eW ₂	3	40	10								
F	3	55									
85	11	I	e	8	42.9						
			e(L)	48.0							
			Mn	49.5			0.3				
			Me	49.5				0.2			
			F	8	55						
847	15	I	e	11	53	12					
			e	57	10						
			Mn	12	00	00	12.5	0.5			
			Me	01.5					very small.		

ADELAIDE OBSERVATORY.

JUNE 1930

Bulletin No. 6 Continued.

No.	Date	Char.	Phase	Time (Green ^d) H. M. S.	Recorded period of Waves N-S	A N mm.	A E mm.	Δ in kms.	Remarks.
86	15	I	c cL Mn Mc F	7 50 42 57 40 8 00.5 01.5 8 26	17.0	0.3	0.2		
88	15	Iu	cS L Mn Mc	21 29.37 39.87 45.57 48?	17.0	1.5	0.9		Times approx. No time marks from 14 ⁿ 55 ^m
89	19	Iu	cP cS iL Mn ₁ Mn ₂ Mc i(S) iL Mn ₁ Mc ₁ Mc ₂ F	13 17 55 24 41 29 20 30 15 32 25 35 40 45 00 48 43 49 45 51 30 52 40 55 55 14 25	24.0 20.0 23.5 19.0	1.7 1.8 2.0 1.8	0.8 0.6 0.9	51007	Two shocks, records over- lap.
90	21	I	iS? L Mc Mn	20 33 42 40 18 43.8 44 30	13.0	0.7	0.3		Strong Air Tremors. pre- sent.
91	23	Ir	cP iS iL Mn ₁ Mn ₂ Mc F	19 40 37 45 44 48 10 53 30 54 05 54 25 20 25	17.0 14.5	2.0 2.6	0.7	3410	
92	25	Iu	c c(S) i c(L) Mn ₁ Mc Mn ₂ F	10 38 04 47 55 54 32 11 08 35 20.0 20.5 21.5 13 05	17.0 17.0	0.5 0.5	0.2		
93	25	Iu	cP c i s c cL Mn Mc F	21 36 37? 47 32 51 57 59 10 22 01 20 14 38? 22 20 24.9 24 08	19.0	0.8	0.3		
94	26	I	c(S) Mc L Mn F	14 40 58 41.3 41 48? 42 20 14 55	6.5	0.3	0.2		
95	30	I	c cL Mn ₁ Mc Mn ₂ F	13 06 14 12 15? 18.6 20.5 22.5 13 44	12.5 11.5	0.3 0.4	0.2		

CONSTANTS. Milne-Shaw(N-S) Period 16.5 Secs:Damping Ratio 20:1.
 Magnification (Nominal) 150.- Milne (E-W) Period 19.4 Secs.
 sensitivity .33

ADELAIDE OBSERVATORY.
 SEISMOLOGICAL BULLETIN JULY 1930.

No.	Date	Char.	Phase	Time		Recorded period of Waves N-S	A N mm	A E mm	△ in kms.	Remarks		
				(Greenh)	H. M. S.							
96	3	IIu	P	21	15 30?				8400	P = 5 secs. lines of rcd. crossed		
			is		25 13							
			isR ₁		30 36							
			L		37 30							
			Mn ₁		43 45						27.0	5.0
			Me ₁		45 25							1.3
			Mn ₂		46 20						24.5	4.5
			Mn ₃		50 00						21.0	4.1
			Me ₂		51 25							1.4
			Mn ₄		51 35						21.5	4.0
			Me ₃		53 50							1.1
			Me ₄		56 40							1.2
			Me ₅		22 00 35							1.4
F		23 40										
97	5	Ir	ep	18	04 18				4300	No Milne- Shaw rcd.		
			es		10 21							
			e(SR ₁)		13 03							
			L		14 15							
			Me ₁		15 45							
			Me ₂		18 10							
			F		in micros.							
98	12	I	e	12	31.1	20.0	0.4	very small				
			e		35 42							
			L		38.5							
			Mn		40 20							
			Me		40.5							
99	12	I	F	12	51	12.5	0.3	0.2				
			e	14	10 30							
			L		13 28?							
			Mn		15 25							
			Me		15 25							
100	13	I	F	14	30	16.0	0.4			Phases very obscure, Milne movement very small		
			e?	1	43 13							
			e		51 14							
			L		56 45?							
			Mn	2	07.9							
101	13	I	F	2	45	11.0	0.5	0.15				
			e	8	49 10							
			i(s)		53 29							
			L		54 34?							
			Me		55.3							
102	13	Iu	Mn		55 25	26.0	0.6					
			e(s)	19	49 49							
			L	20	04 28?							
			F	20	50							

-2-

 Adelaide Observatory Seismological Bulletin.
 Bulletin No. 7 Continued.

JULY 1930

No	Date	Char.	Phase	Time			Recorded period of Waves N-S	A		△ in kms.	Remarks					
				(Green ⁿ)				N	E							
				H.	M.	S.	mm.									
103	14	Iu	e(P)	23	00	10					Milne (E-W Component) off level.					
			i		03	17										
			e(S)		13	30										
			i		17	00										
			i		21	45										
			L		41.97											
			Mn ₁		47.5	20.0										
Mn ₂	0	07	25	18.0	0.8	1.1										
		F	1	30												
104	22	Iu	eP	19	38	07				8280	P. masked by micros.					
			iS		47	42										
			L		59	05										
			Mn		06	35										
			Me		06	35										
			F	20	50							15.0	0.5	0.2		
105	25	Ir	eP	9	15	28				3400	P. & S. very small move- ments.					
			eS		20	34										
			L		22	40										
			Mn		23	15										
			Me		25.5	14.5						0.7	0.2			
			F	9	50											
106	26	I	e	13	07	18					very small movement					
			e		13	10										
			Mn		16.7	0.3										
			F	13	24											
107	27	I	e	2	12	25					Heavy micros on 28th, 29th 29th & 30th.					
			e		18	22										
			Me		19.9	0.3										
			Mn		21	45										
			F	2	35							11.5	0.5			

CONSTANTS.

 Milne-Shaw(N-S) Period 15.5 seconds. Damping ratio 20 : 1.
 Magnification(nominal) 150.

Milne(E-W) Period 19.8 seconds Sensitivity 0".32.

ADELAIDE OBSERVATORY
SEISMOLOGICAL BULLETIN AUGUST 1930
Bulletin No. 8.

No.	Date	Char.	Phase	Time (Green ^d) H. M. S.	Recorded period of Waves N-S	A M mm.	A E mm.	△ in kms.	Remarks
108	2	Iu	e iS e e L Me F	16 18 48 24 45 28 32 22 05 25 35 29 45 17 45			1.5		Milne-Shaw rec. undecipherable, lines run together.
109	2	I	e Mn Me F	22 12 25 15 50 16.4 22 20	10.0	0.4	0.3		
110	10	I	e Mn Me F	0 04 27 09 40 12.0 0 25	19.5	0.4	0.4		
111	18	IIu	iP iPR ₁ iS i i SR ₁ eL Mn Me ₁ Me ₂ F	10 06 32 10 02 16 58 17 31 17 51 22 53 24.0 42 42 43 15 44 50 12 35	22.2	6.3	1.1 1.2	9350	
112	19	I	e L Mn Me F	1 21 50? 25 07 27 15 28.5 1 43	13.0	0.8	0.2		
113	20	Iu	eP iS i L Me ₁ Me ₂ Mn F	21 04 21 12 33 13 00 22 25 26.0 30.2 31 20 22 20	17.0	1.1	0.7 0.6	6670	
113	24	Ir	iS L Mn ₁ Me Mn ₂ F	9 20 10 23 27? 25 20 25 35 28 33 10 28	17.0 13.5	1.9 2.1	1.2		
115	27	Ir	eP e(PR ₁) iS L Mn F	14 50 17? 51 34 56 29 15 00 38 04 55 15 35? in micros.	12.5	2.0		4500?	

CONSTANTS. Milne-Shaw (N-S Component) Period 14.5 seconds. Damping Ratio 20 : 1. Magnification (nominal) 150.
Milne (E-W Component) Period 19.2 seconds. Sensitivity 0".32.

No.	Date	Char.	Phase	Time (Green ⁿ) H. M. S.	Recorded period of Waves N-S	A		△ in kms.	Remarks
						N mm	E mm		
116	1	I	e eL Mn Me	17 09.1 20 05 21 10 22.3	13.5	0.5	0.2	Poor recd.	
117	6	I	e e Me Mn F	6 55 04 7 00 15 02 35 02 45 7 10	10.5	0.4	0.3	Persistent micros.	
118	6	I	e i F	17 17 05 23 31 23 36 in micros.		0.6		Greatest movement.No def.max. P.in micros	
119	13	Ir	iS iL Mn ₁ Me ₁ Mn ₂ Mn ₃ Me ₂ Mn ₄ F	23 28 33 21 08 32 20 34 20 35 40 36 25 37 00 37 18 00 15	12.0 14.5 10.5 10.5	1.3 2.9 2.7 2.8	0.5 0.7		
120	14	Ir	iP i iS i iL i Mn ₁ Mn ₂ Mn ₃ F	3 06 36 07 09 11 15 11 41 13 00 13 13 14 40 17 10 18 00 4 40	10.0 10.5 9.5	2.9 4.1 3.1		2960 (26°.9) E-W greatest movement 3" 12 ^m .9, gradu- ally decreas- ing after- wards.	
121	14	Ir	iP iS iL Mn Me F	17 19 33 24 40 27 40 29 10 32 10 18 00	10.0	3.4	0.8	3410 (30°.7)	
122	16	I	iP L Mn F	10 20 30 24 22 28 15 10 45	12.5	0.8			
123	21	I	e(S) Mn Me F	8 43 23 52 20 53 30 9 15	13.5	1.2	0.2	Milne-Shaw recd.almost indecipher- able, lines run together.	
124	21	Iu	eP iS iSR ₁ L Mn ₁ Mn ₂ Me ₁ Me ₂ Me ₃ F	23 15 36 21 57 33 14 37 42 45 00 47 15 48 30 50 25 52 35 lost in No.125	16.0 16.5	1.7 2.2	2.0 2.7 2.4	8000	
125	23	I	eP i L Mn ₁ Me Mn ₂ F	0 36 30 39 45 43 04 44 35 45 10 45 40 in No.126	10.0 10.0	1.4 1.3	0.6		

ADLAIDE OBSERVATORY.

SEPTEMBER 1930

Bulletin No. 9 Contd.

No.	Date Sept. 1930	Char.	Phase	Time Recorded		A N mm	A E mm	Δ in kms.	Remarks.
				(Green ⁿ) H. M. S.	period of Waves N-S				
126	22	IIr	eP	1 37	55.7			3880	
			iS	43	30				
			iL	46	12				
			Mn ₁	47	30	14.5	3.7		
			Mn ₂	51	15	13.0	6.7		
			Me ₁	51	40		5.4		
			Mn ₃	53	10	10.5	7.4		
			Me ₂	53	20		5.0		
			Mn ₄	55	15	14.5	7.3		
			Me ₃	54	20		2.6		
			Me ₄	55	25		2.3		
			Mn ₅	58	50	12.5	6.2		
			F	4 45.7 in air tremors.					
127	23	I	e	5 41	19				
			L	45	05				
			Mn	48	40	14.0	0.7		
			Me	49	4		0.23		
128	24	I	1(S)	12 22	00				
			L	37	18				
			Me	34	50		0.7		
			Mn	37	45	18.0	0.8		
			F	12	55				
129	25	Ir	eP	18 13	00.7			3750.7	
			iS	18	26				
			i	21	10				
			iL	21	48				
			Mn ₁	22	35	14.0	1.5		
			Me ₁	22	45		0.3		
			Mn ₂	26	40	12.5	3.7		
			Me ₂	27	10		1.3		
			Mn ₃	30	25	12.5	3.7		
			F	19	47				
130	26	I	e	19 56.0					Milne-Shaw recs. faint on 26th & 27th.
			eL	20 00.17					
			Me	03.0		0.3			
			F	20 15					
131	26	I	eS	21 34.9					
			eL	37.17					
			Me	40.6		0.3			
			F	22 05					
132	27	I	e	17 57.8					
			eL	18 00.6					
			Me	02.7		0.2			
			F	18 15					
133	30	IIIr	eP	21 27.17	Micros present			3700	Milne-Shaw off off level on 30th from 20 ^h 30 ^m to 23 ^h 40 ^m
			iS	32	30				
			i	34	08				
			iL	35	30				
			Me ₁	36	00		0.7		
			Me ₂	39	05		21.5		
			Me ₃	43	00		6.0		
			F	23	25				

CONSTANTS. Milne-Shaw (N-S Component) Period 1st-24th 13.0 seconds
 25th-30th 16.1 secs. Damping ration 20 : 1. Magnification
 150.
 Milne- (E-W Component) Period 20.5 secs. Sensitivity 0".32.

ADLAIDE OBSERVATORY
Seismological Bulletin, October 1930 Continued.

No	Date	Char.	Phase	Time ⁿ (Green ⁿ) H. M. S.	Recorded period of Waves N-S	A N mm.	A E mm.	△ in kms.	Remarks.
143	22	Ir	eP	18 12 20	17.5 15.0	1.4 1.2	0.5	3460	L.very in- definite.
			iS	17 30					
			SR ₂	19 32					
			i	21 15					
			Me	23.4					
			Mn ₁	25 10					
			Mn ₂	28 00					
144	23	Ir	S	9 10 10	16.0 13.5	3.2 3.4	0.8 1.0 1.4	4400?	S. may be a few secs. earlier, recd. con- fused.
			i	13 22					
			L	14 40?					
			Mn ₁	17 20					
			Me ₁	19 00					
			Mn ₂	19 30					
			Me ₂	21 05					
			Me ₃	27 20					
			F	11 00?					
			145	24					
i	27 00								
iS	32 01								
i	32 05								
i	34 20								
iSR ₂	38 06								
iSR ₃	38 35								
i	39 12								
iL	40 15								
Me ₁	42 00								
Me ₂	44 15								
Mn ₁	44 25								
Me ₃	45 55								
Me ₄	47 05								
Mn ₂	47 15								
Mn ₃	49 00								
Me ₅	49 00								
Mn ₄	51 20								
Mn ₅	53 10								
eW ₂	22 50.4								
Mn ₁	56.1								
Mn ₂	23 02.0								
F	23 41								
146	27	I	e	12 42.9			MX2 0.2		Milne-Shaw recd. undeciph- erable, lines run together.
			Me	47.5					
			F	12 57					
147	27	I	e	14 26 05		0.3	0.3		
			eL	38.7					
			Mn	30.5					
			Me	31.5					
			F	14 47					
148	28	Iu	P	21 19 38?	20.0 16.0 17.0	2.0 2.6 2.2	2.0 1.1	6000?	Red. indis- tinct at P.
			iS	27 18					
			i	27 22					
			e	32 22					
			L	35 07?					
			Me ₁	39.5					
			Me ₂	41.6					
			Mn ₁	43.4					
			Me ₃	43.9					
			Mn ₂	44.9					
Mn ₃	47.0								
F	22 40								

ADELAIDE OBSERVATORY

Seismological Bulletin OCTOBER 1936

Bulletin No 10

No	Date	Char.	Phase	Time (Green ⁿ) H. M. S.	Recorded period of Waves N-S	A N mm.	A E mm.	△ in kms.	Remarks.
	Oct.								
134	1	I	i Mn F	1 05 30 12 05 1 30	15.0	0.8			Obscured by air tremors. No definite Me.
135	2	I	e e Me Mn F	7 01 00? 07.0? 10.6 12.0 7 35	13.0	0.5	0.3		
136	3	Ir	eP iS L Me F	18 18.1 23 58 27 22 30.0 19 00				4000?	Milne-Shaw off level.
137	5	I	e Me F	2 31.6 41.4 3 05			0.3		No Milne- Shaw recd.
138	5	I	S L	18 48.5 approx. 51.3)					Time marks failed at 18 ^h 33 ^m .
139	8	IIIr	iP iPR ₂ iS i i(SR ₁) i(SR ₂) iL Me ₁ Mn ₁ Mn ₂ Me ₂ Mn ₃ Me ₃ Mn ₄ Me ₄ Mn ₅ Me ₅ Mn ₆ F	10 26 08 27 22 31 32 46 31 52 33 38 34 10 34 37 38 00 38 20 39 15 39 55 40 35 40 35 41 30 41 40 42 05 42 25 42 45 12 50		5.3		3700	
140	8	I	e Mn F	19 23 14 28 10 19 45	17.0	0.7			
141	16	I	e i Mn Me F	20 49 58? 59 20 21 07 20 08 20 21 35	17.0	0.6	0.7		
142	17	I	e? e e Mn Me ₁ Me ₂ F	8 59.4 9 06.2 11 05 15.2 15.7 22.2 9 55	10.0	0.6	0.2 0.3		

ADELAIDE OBSERVATORY.
Seismological Bulletin October 1930 Continued.

No.	Date	Char.	Phase	Time (Green ⁿ) H. M. S.	Recorded period of Waves N-S	A N	A E	△ in kms.	Remarks.
149	31	Ir	1P	10 30 31				3540	
			i	31 51					
			iS	35 46					
			i	38 10					
			L ₁	38 48					
			iL ₂	39 32					
			Mn ₁	41 25	17.0	4.7			
			Me ₁	41 25			2.0		
			Mn ₂	42 05	17.0	4.4			
			Mn ₃	42 55	18.0	4.8			
			Me ₂	43 35			4.1		
			F	12 15					
150	31	Ir	eP	16 07.17				4500?	
			iS	13 23					
			eSR ₁	16 21					
			L	17 20					
			Mn ₁	18 45	18.0	0.7			
			Me ₁	18 55			0.4		
			Mn ₂	21 15	13.0	1.4			
			Me ₂	21 25			0.5		
			Mn ₃	21 45	10.5	1.2			
			F	17 05					
151	31	I	e	18 20 39					
			L	24 05					
			Mn	26 40	14.0	0.4			
			Me	27.5					Me very small.
			F	in No 152					
152	31	I	eP	18 34 55?					
			iS	41 25					
			L	45 40					
			Me	49.3			0.5		
			Mn ₁	49 25	11.0	1.4			
			Mn ₂	49 55	10.5	1.3			
			F	19 40					
153	31	I	e	22 09.0					
			Mn	16.4	13.0	0.3			
			Me	17.0			0.2		
			F	22 35					

Constants. Milne-Shaw(N-S Component) Period- 16.5 seconds on 1st to 18.0 seconds on 28th. Adjusted to 16.1 seconds on 28th. Damping ratio 20 : 1. Magnification(nominal) 150
Milne-(E-W Component) Period 20.7 seconds.
Sensitivity 0".29.


ADELAIDE OBSERVATORY.

Seismological Bulletin NOVEMBER 1930

Bulletin No. 11

No.	Date	Phase	Time (Green ⁿ) H. M. S.	Recorded Period of Waves N-S	A		Remarks.
					N mm	E mm	
154	1	1S L Me F	12 43 57 47 30 51 35 13 30			0.8	Milne-Shaw rcd. faulty.
155	1	e Mn Me F	17 31 50 33.3 33.35 17 55	13.0	0.2	very small	
156	8	1S i Mn iL Mn Me F	3 35 05 38 22 38 35 40 12 45 55 46 25 4 10	10.0 17.0	1.6 1.0	0.5	P. small, comes where lines of rcd. run to- gether.
157	9	1P i 1S i i i iL Mn ₁ Me ₁ Mn ₂ Me ₂ Me ₃ Mn ₃ Me ₄ Mn ₄ Me ₅ Mn ₅ Me ₆ Me ₇ F	19 15 31 16 43 20 52 21 26 22 35 23 42 24 04 26.5 28.0 30.05 30.10 31 20 31 50 32 15 32 55 33 25 34 45 35 00 37 25	12.0	8.1 13.8	5.7 17.5 13.0	3650 Complex long waves 30140 secs. period with smaller per- iod vibra- tions super- imposed.
			lost in No. 158			6.0 6.0 4.2 5.5	
158	9	1? e(L) Me Mn F	21 28 59 32 00 33 40 36 10 21 55	12.0	0.6	0.6	
159	10	e Me Mn F	8 48 10 50 50 52 50 9 00	13.0	0.8	0.5	
160	10	eP i 1S i(L) Me ₁ Me ₂ Mn ₁ Me ₃ Mn ₂ Me ₄ Mn ₃ Mn ₄ Me ₅ Me ₆ F	13 50 30 50 45 55 55 59 07 14 02 50 04 20 05 10 05 25 06 10 07 05 07 15 08 50 09 20 10.15 15 50	13.5 9.0	20.1 22.3	8.7 8.6 8.8 3.7	3710
				8.5 11.0	12.0 11.6	6.0 6.0	

ADELAIDE OBSERVATORY
 Seismological Bulletin November 1920 Continued.

No	Date Nov.	Phase	Time Recorded		Period of Waves N-S	A		 in kms.	Remarks.
			(Greenwich)	H. M. S.		N mm	E mm		
161	11	P	20	04 15?				3800?	
		1S		09 43					
		L		13 20					
		Mn ₁		14 25	11.0	1.2			
		Me		18 40			1.0		
		Mn ₂		20 15	14.0	0.9			
		F	20	37					
162	13	i(S)	23	19 09					Phases obscured by heavy micros.
		L		24 20					
		Me		25 15			1.4		
		Mn		27 20	12.0	3.0			
		F	23	55					
163	17	i	12	14 55	26				Long period waves.
		iL		19 16					
		Mn		22 20	20	1.2			
		Me		23 35			0.6		
		F	13	00					
164	20	i	3	25 57					Phases lost in changing record.
		Mn		29.3	16	0.5			
		F	3	46					
165	21	eP	3	10 07					Obscured by micros.
		eS?		15 10					
		Me		22.3			0.5		
		Mn		25 30	15	0.7			
		F lost in micros.							
166	22	eP	14	04 36				3900?	Phases obscured by micros.
		eS		10 11					
		L		13 55					
		Mn ₁		16 50	16	1.4			
		Mn ₂		18 25	11	1.2			
		Me ₁		18 45			2.2		
		Me ₂		20 40			1.7		
		Mn ₃		23 30	11	1.6			
		F	15	30					
167	23	e	1	40.07					
		e		43 15					
		Mn		46 20	18	0.4			
		Me		48 50			0.5		
		F	2	30					
168	24	e	2	58 10					Early phases obscured by micros. L. lost in changing recd.
		Mn ₁		3 09 00	18	1.0			
		Me		10 45			0.8		
		Mn ₂		15 05	14	1.0			
		F	3	30					

ADELAIDE OBSERVATORY.

Seismological Bulletin November 1930 Continued.

No.	Date	Phase	Time (Green ^h) H. M. S.	Recorded Period of Waves N-S	A		△ in kms.	Remarks.
					N mm	E mm		
169	25	iP	19 14 06				7670	Japan. 0. 19 03 03
		iS	23 10					
		i	23 40					
		iL	35 11					
		Me ₁	27 05			2.4		
		Me ₂	28 40			3.3		
		Mn ₁	41 55	20	6.6			
		Me ₃	42 40			3.3		
		Mn ₂	42 55	20	7.2			
		Me ₄	44 25			3.2		
		Mn ₃	44 45	20	6.4			
		Me ₅	46 00			2.0		
		Mn ₄	46 10	15	4.6			
		Mn ₅	47 45	16	3.4			
Me ₆	47 45			1.7				
Mn ₆	49 10	15	3.7					
F	21 20?	in micros.						
170	26	e	5 06 42					
		e(S)	09 23					
		L	11 39					
		Mn	13 30	16	1.8			
		Me	13 40			0.9		
F	5 40							
171	28	e	8 26 25					N-S record very shallow waves, no definite max.
		eL	33 26?					
		Me	18 40					
		Me	39.0			0.5		
F	9 15							
172	30	e	21 10 09					
		e?	14 43					
		L	15 19					
		Me	18.6			0.5		
		Mn	18.6	19	0.6			
F	21 50							

CONSTANTS. N-S

 Milne-Shaw (N. Component) Period 16^s.0 Damping ratio 20 : 1.
 Magnification (nominal) 150.

 Milne. (E-W Component) Period 20^s.4 Sensitivity 0".28

ADELAIDE OBSERVATORY.
 SEISMOLOGICAL BULLETIN DECEMBER 1930. Bulletin No. 13

No.	Date	Phase	Time (Green ⁿ) H. M. S.	Recorded Period of Waves N-S	A		△ in kms.	Remarks.
					N mm	E mm		
173	2	e eL Mn	7 26 05? 39 14? 44.9	22	0.4			Red. slightly fogged-difficult to read. No definite xxxxx.
174	3	eP iS i i i(L) Mn ₁ Mn ₂ Mn ₃ Mn ₄ F	19 02 37 11 30 16 10 18 54 21 41 24 30 27 55 31 10 34 10 22 20	27 20 20 16	4.8 7.7 8.7 7.5		7440	0. 18 51 47 No E-W. red.-Drum stuck.
175	8	e(P) iS L Mn ₁ Mn ₂ Me ₁ Mn ₃ Me ₂ F	17 39 21 34 41 37 20? 42 15 44 00 44 10 46 15 47 55 18 55	15 12 12	2.0 2.0 2.0	2.0 1.5	3650?	Phases masked by micros.
176	9	e L Mn Me F	0 35 33 42 40? 45.4 47.4 0 53	14	0.3	0.2		
177	12	e Mn Me F	9 24 39 26 50 28.5 9 40	18	0.2	0.3		
178	12	eL Mn F	20 28 58? 32 30 20 50	13	0.4			Phases obscured, very small indefinite movement on Milne red.
179	13	eP iPR1 iS iL Mn ₁ Mn ₂ F	2 41 08 41 44 45 39 47 32 50 40 51 30 3 35	10 10	1.0 1.0		2870	E-W, largest movement. 2 47.5
180	16	e? e L Mn Me F	10 35 15 41 14 43 30 45.3 48.3 11 15	16	0.5	0.6		
181	21	eP iS i L Me Mn F	15 00 58 08 34 09 48 16 30 22.8 23.4 15 55	17	0.6	0.7	6020	0. 14 51 34

ADELAIDE OBSERVATORY.

Seismological Bulletin December 1930 Continued.

No.	Date	Phase	Time		Recorded Period of Waves N-S	A		Δ in kms.	Remarks.
			(Green ⁿ)			N	E		
	Dec.		H.	M.	S.	mm	mm		
182	23	eP	21	42	09?			3800?	P.in micros.
		iS		47	39				
		L		51	40				
		Me ₁		55	40		1.5		
		Mn ₁		56	15	12	2.5		
		Mn ₂		57	30	10	3.8		
		Me ₂		57	40		1.2		
		Mn ₃		58	20	10	3.1		
F	23	00							
183	23	e	23	02	50				E-W dis- placement very small.
		i(S)		05	32				
		L		09	23				
		Mn		11	20	16	0.7		
		F	23	25					
<p>Movement of amplitude 2.5mm. on 25th shown shown on Milne-Shaw record, impossible to find time as lines run together. Nothing definite distinguishable on Milne record-in heavy microseisms.</p>									
184	31	eP	20	21	34			3550	L.probably in hour break-approx 29 ^m 50 ^s .
		iS		26	40				
		i		28	18				
		(L ₂)		31	33				
		Me ₁		35	20		0.9		
		Mn ₁		35	40	10	1.5		
		Mn ₂		37	40	10	1.6		
		Mn ₃		39	45	12	1.1		
F	21	15							

~~XXX~~ CONSTANTS.

Milne-Shaw (N-S Component) Period 15 seconds.
 Damping ratio 20 : 1. Magnification 150
 Milne (E-W Component) Period 20.1 seconds.
 Sensitivity 0".43