

Period 12.02 secs. Damping ratio 20:1 Tilt 1" = 41.4mm.
Universal

Date	Time	Phase	A	Period	Remarks
1951	h m s		μ	secs.	
Jan. 2	10 8 51	e			small
	10 14 15	e			
	10 18 25	i	13	20	
	10 25 0	e	11	20	
	10 42.0	L			
	10 47.6	H	39	21	
4	5 46 50	e			small
	5 49 20	i			
	5 51 55	L			
	5 52.7	H	3	13	
5	18 11 35	i			PR2?
	18 14 47	S?			
	18 21.6	L			
7	12 53 18	e			
	13 1.7	H	5	14	
8	1 23 15	e			
	1 25 30	L			
	1 25.6	H	5	15	
10	21 32 35	i			
	21 33 17?	L			
	21 35.5	H	2	10	
-12	20 58 30	i			
	21 17 to 22				
	21 31.5	H	3	20	L somewhere in this range; obscured by micros
13	5 25 40	e			
	5 29 25?	L			
	5 32.5	H	1	18	
14	16 32 35	L			train of small waves; obscured by micros
-15	2 11 5	P			
	2 12 50	i			
	2 20 14	i			
	2 21 25	i	140	25	
	2 23 13	i	461	35	
	2 32.0	i	357	35	
	2 35 15	e			
	2 42 10	e			
	2 43 20?	L			
	2 47.9	H1	517	35	
-15	22 50 12	e			
	22 50 31	i			
	22 55 36	e			
	22 58 5	e			
	23 1 35	L			
	23 4.0	H	240	14	

Seismological
Bulletin No. 13 contd.

MELBOURNE OBSERVATORY
SOUTH YARRA S.E. 1 VICTORIA

Date	Universal Time			Phase	A μ	Period secs.	Remarks
	h	m	s				
1951 Jan. 16	19	57	59	i			earlier phases too small to be identified.
	20	2	47	i			
	20	16.3		L			
17	3	20	0	i			small
	3	44	5	L			
	3	47.5		H	17	25	
18	13	27	43	i			
	13	37	0	L			
	13	43.0		H	13	20	
19	12	51	2	P			$\Delta = 32.8$
	12	36	23	S			
	12	40.7?		L			
	12	46.5		H	3	10	
19	16	0	1	P			$\Delta = 22.5$
	16	4	5	S			
	16	6	50	L			
	16	7.6		H	28	12	
20	23	59	5	e			
21	0	7	36	L			
	0	13.4		H	4	15	
24	13	50	33?	e			very small
	13	37	36	i			
	14	1	7	i			
	14	7.4?		L			
	14	10.2		H	8	15	
24	17	37	35	e			
	17	48	10	e		32	
	17	50	57	L			
	17	56.3		H	10	18	
25	13	7		L			very small
27	20	21	18	P			$\Delta = 78.7$
	20	31	35	S			
	20	31	34	i			
	20	36	15	eSR1			
	20	47	15?	L			
	20	56.6		H	272	24	
28	2	32	45	e			
	2	33	35	L			
	2	34.4		H	19	15	
28	21	33	7	P			$\Delta = 46.0$
	21	39	55	S			
	21	43	30				
	21	45	38?	L			
	21	51.6		M1	148	15	
	21	53.7		M2	76	11	

Seismological
Bulletin No. 15 contd.
Universal

MELBOURNE OBSERVATORY
SOUTH YARRA S.E.1 VICTORIA

Date	Time	Phase	A	Period	Remarks
1931	h m s		μ	secs.	
Feb. -2	22 52 5	eP			$\Delta = 25^{\circ}.1$ destructive at Napier N.Z.
	22 52 12	iP			
	22 56 31	S			
	23 0	L			trace off paper from 23h 0m to 3.5m
	23 5.3	M2	339	14	paper changed between 23h 11m and 16m
-3	8 45 15	eP			small
	8 50 38	S			
	8 53 15	L			
	8 56.6	M	7	10	
4	4 55	e			obscured by micros
	4 57.3	L			
	5 0	M	6	20	
4	14 10 19?	e			
	14 15 0.	S?			
	14 16.8	L			
	14 19.2	M	6	20	
-5	9 2 33	e			small and indistinct.
	9 6 56	eS			
	9 10 55	L			
	9 11.5	M	12	19	
-8	1 49 10	iP			$\Delta = 26^{\circ}.0$
	1 53 44	S			
	1 55 42	L			
	1 57.8	M	58	19	
8	10 20 11	e			very small
	10 22.6	L			
	10 24.5	M	2	18	
10	2 12.3	M	4	20	obscured by micros.
-10	6 45 31	iP			$\Delta = 49^{\circ}.3$
	6 50 39	S			
	7 0 10?	L			
	7 3.2	M	390	22	
-11	17 8 2	P			$\Delta = 26^{\circ}.3$
	17 12 39	S			
	17 14 35	L			
	17 16.6	M	39	20	
-12	5 53 12	P			$\Delta = 47^{\circ}.7$
	6 0 10	S			
	6 3 33	SR1			
	6 8 30	L			
	6 13.0	M	70	22	
13	1 32 40	P			$\Delta = 24^{\circ}.4$
	1 37 0	S			
	1 40 10	L			
	1 40.7 to	44.7			trace off paper
	5 30	F			

Seismological
Bulletin No. 15 contd.

MELBOURNE OBSERVATORY
SOUTH YARRA S.E. 1 VICTORIA.

Date	Time	Phase	A	Period			
Feb 14	14 8 4	P	M		$\Delta = 49^{\circ}3$		
	14 13 12	S					
	14 23 40	L	64	20			
	14 27.8	H					
16	19 21.6	e			small		
17	2 7 0	L	4	17			
	2 13.0	H					
19	11 52 0	L	4	14	small		
	12 0.8	H					
19	17 49 33	P			$\Delta = 49^{\circ}3$		
	17 56 41	S					
	18 6 5	L					
	18 9.2	H1				120	17
	18 13.0	H2				99	19
20	5 45 15	eP			$\Delta = 77^{\circ}4$		
	5 50 12	PR2					
	5 55 3	S					
	6 0 30	SR1					
	6 13.6?	L					
22	21 33 35?	e	15	15			
	21 34 20	e					
	21 40 25	S					
	21 47 27	L					
	21 52.6	H					
24	17 41 10	S	24	20			
	17 47 40	L					
	17 51.9	H					
26	18 55 28	i	4	15	small; obscured by micros. small.		
	18 58 45	L					
	19 0.3	H					
27	1 45 13	e	6	12			
	1 46 33	i					
	1 51 45	S?					
	1 55 20	L					
	1 57.5	H					
27	9 45 42	P	68	20	$\Delta = 42^{\circ}2$ amplitude of trace larger than S		
	9 52 7	S					
	9 55 15	e					
	10 0 5	L					
	10 5.4	H					
Mar. -2	2 24 12	eP	93	15	largest amplitude of train.		
	2 24 55	iPR1				50	13
	2 28 40	S					
	2 29 55	SR					
	2 31 15	L					
2 35.2	H						

Seismological
Bulletin No. 13 contd.

MELBOURNE OBSERVATORY
SOUTH YARRA S.E.1 VICTORIA.

Date	Universal Time			Phase	A	Period secs.	Remarks.
	h	m	s				
1951 Mar. 5	19	14	40	e	μ		uncertain owing to micros.
	19	19	5	L			
	19	21.0		H	7	20	
7	10	6	7	e			
	10	7	7	e			
	10	12	32	S			
	10	16	3	L			
	10	18.5		H	42	15	
7	10	29	35	e			
	10	32	25	L			
	18	36.0		H	5	11	
7	23	31		eL			
	23	33.5		H	14	17	
8	2	15	18	e			very small
	2	24	35	i			
	2	53		L			
	3	0.0		H	8	22	
8	6	0	19	iS?			
	6	12	30	L			
	6	14.		H	7	12	
8	11	55	50	iP			
	12	0	25	i			
	12	0	34	S?			
	12	3	30	L			
	12	4.3		H1	29	16	
	12	5.3		H2	25	15	
9	4	1	30	e			very small
	4	10	46	S			
	4	21	10?	?			
	4	32.0		H	35	25	
	7	30		F			
11	6	11	0	P			$\Delta = 17.2$
	6	14	15	S			
	6	15	57	L			
	6	17.5		H	82	12	
11	12	55	40?	e			very small
	12	45	10	S?			
	12	51	50	e			
	13	0.5		H	26	21	
Mar. 13	21	11	4	e			origin probably in Bass Straits.
	21	11	22	L	48		
	21	11	52	H	46mm on traces	period very short.	
14	14	7	15	i			very small
	14	15 to 16		H	2	12	

Seismological
Bulletin No. 45 contd.
Universal

MELBOURNE OBSERVATORY
SOUTH YARRA S.E.1 VICTORIA

Date	Time	Phase	A	Period	Remarks
1931	h m s		μ	secs.	
Mar-48	8 20 25	e			
	8 26 48	S?			
	8 27 35	i			
	8 48 40	L?			
	8 51.5	M	34	20	
	11 15	F			
\rightarrow 18	20 22 8	iP			$\Delta = 45.0$
	20 28 50	S	77	10	
	20 31 52	SR1	490	22	beginning of L not recognised.
\leftarrow 19	6 35 12	P			$\Delta = 59.2$
	6 45 19	S			
	6 45 45	i			
	7 0.2	M	24	20	
\times 28	12 45 15	P			$\Delta = 29.6$
	12 45 47	i			
	12 50 18	S			
	12 51 30	i			
	12 52 15	SR1			
	12 55	L			
	12 57.2	M	400?	10?	

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Period 11.91 secs. Damping ratio 20:1 Tilt 1" = 42.5mm.
Universal

Date	Time	Phase	A	Period	Remarks.
1931	h m s		μ	secs.	
Apr. 1	13 11 20	L			
	13 13.2	M	3	19	
2	12 34 48	i			amplitudes msmall
	12 38 5	i			
	12 38 48	i			
	12 44.8	L?			
3	2 52	L?			amplitudes small
	3 13	L			
3	19 26 27	e			amplitudes small
	19 29 2	i			
	19 32 7	i			
3	22 5 23	e			beginning of train of very shallow waves
	22 15.3	L			
3	23 25 28	iP			$\Delta = 27.1$
	23 25 31	i			
	23 27 10	e			
	23 29 23	e			
	23 30 12	iS			largest wave of train
	23 33.3	L?			marks increase of period
5	21 39 5	e			very small
	21 41 32	e			
	21 41 47	i	2	10	well marked
	21 44 52	i			
6	6 56 13	P			$\Delta = 31.5$
	6 57 42	i			
	7 1 30	S			
	7 4 8	SR1			
	77 5.1	L			
	7 7.7	M	80	15	
8	19 12 15	e			very small
	19 16 20	iS			
	19 19 36	i			
	19 24 53	L			
	19 26.8	M	44	11	
11	15 14 57	e			
	15 16 57	e			
	15 21 0	L			
	15 23.3	M	8	15	
12	2 6 15	P			$\Delta = 25.9$
	2 10 35	e			
	2 10 48	S			
	2 13 11	L			
	2 15.2	M	101	12	

Date	Universal Time			Phase	A μ	Period secs.	Remarks.
	h	m	s				
1931 Apr. 16	12	4	55	e			apparently from distant source
	12	9	30	i			
	12	12	3	i			
	12	14	10	i			
	12	19	5	i			
	12	20		L			
	12	22.7		M	6	14	
-16	21	46	52	eS			
	21	49	6	SR1			
	21	50	55	L			
	21	54.7		M	14	10	
-17	5	38	13	e			
	5	39	15	e			
	5	42	21	i			
	5	44	37	L			
	5	48.4		M	9	18	
17	9	21	7	i			
	9	25.3		M	2	10	
20	16	50	8	i			very small small
	16	51	40	i			
	16	53.4		M	6	15	
-21	23	45	38	eP			$\Delta = 25^{\circ}.0$
	23	50	3	S			
	23	52	29	L			
	23	54.7		M1	40	16	
	23	56.0		M2	39	15	
-24	17	28	48	P			$\Delta = 31^{\circ}.6$
	17	34	6	S			
	17	36	30	SR1			
	17	37.6		L			
	17	38.0		M	149	16	
-24	6	7	20	i			
	6	21.0		M	5	11	
-25	22	20	10	L			
	22	22.3		M	8	15	
-27	17	16.5	can e				beginning of train of waves of very small amplitude
	18	2		M	5	20	
28	7	34	35	L			
	7	35.5		M	3	12	
May 3	2	40	25	iS?			
	2	41	0	L			
	2	43.0		M	9	10	
-4	17	37	25	i			amplitudes small
	17	40	11	i			
	17	43	48	i			
	17	48.6		M	3	9	

Seismological
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MELBOURNE OBSERVATORY
SOUTH YARRA S.E.1 VICTORIA

Date	Universal Time			Phase	A μ	Period secs.	Remarks
	h	m	s				
1931 May-6	15	1	36	eP			$\Delta = 24.3$
	15	5	55	eS			
	15	8	20	L			
	15	10.5		M1	26	15	
	15	12.3		M2	28	15	
7	5	2	11	e			
	5	8	32?	L			
	5	10.3		M	5	18	
10	20	2.2		L			very shallow
11	4	43ca					train of irregular waves of small amplitude
15	7	47	49	i			obscured by micros
	7	49	18	i			
	7	52	18	i			
	7	55	19	i	8	15	largest amplitude of trace
	8	2.3		L?			
16	21	19	25	e			
	21	25	30	L			
	21	27.7		M	32	15	
17	12	10	20	e			obscured by micros
	12	12	50	i			
	12	17	58?	L			
	12	20.8		M	7	15	
20	2	44	35	i			all phases small and obscured by micros
	2	48	30	i			
	2	54	8	e			
	2	56		e			
	3	10	15	i			
	3	15	48	i			
	3	40		L			
24	21	28.5		e			
	21	34	5	i			
	21	39	10	i			
	21	42	48	L			
	21	45.5		M	7	10	
24	0	29	38	i			irregular waves of small amplitude
	0	40.7		L			
	0	44.2		M	2	15	
30	18	54	38	iP			micros obscure all phases; waves sharp and irregular.
	18	56	33	i			
	18	57	31	iL?			
	18	57.9		M	17	10	
June 1	0	59	55	i			obscured by micros
	1	1	42	e			
	1	3	40	L?			
	1	5.7		M	10	11	

Seismological
Bulletin No.14 contd

MELBOURNE OBSERVATORY
SOUTH YARRA S.E.1 VICTORIA

Date 1931	Universal Time			Phase	A μ	Period seca.	Remarks
	h	m	s				
June 1	12	5	5	e			
	12	6	0	eS?			
	12	10.8		L			
4	9	56	54	i			small but distinct
	9	58	3	i			
	10	2	15	i			
	10	3	39	i			
	10	9.3		M	14	9	no L waves
9	14	6	5	i		20	signs of earlier phases amongst micros
	14	9	45	e			
	14	12	0	L			
	14	17.2		M	18	15	
9	16	5	47	eP			
	16	7	24	e			
	16	10	55	e			
	16	11	40	i			
	16	16	10?	L			
	16	21.8		M	28	12	
13	15	42	32	e			
	15	47	3	e			
	15	52	20	L			
	15	54.2		M	6	15	
17	17	12	50	i			
	17	15	18	i			
	17	17	25	L			
	17	21.0		M	17	10	
22	15	41	28	i			
	15	43	40	i			
	15	45.9		M	18	15	
23	6	36	0	i			
	6	52.5		L			
27	18	12	50	e			
	18	13	52	i			
	18	16	25	i			
	18	17	5	i			
	18	17	40	L?			
	18	23.6		M	16	13	

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Seismological
Bulletin No.15

MELBOURNE OBSERVATORY
SOUTH YARRA S.E. 1 VICTORIA
MILNE-SHAW SEISMOGRAPH No.41 E-W COMPONENT.

Period 12.05 secs. Damping ratio 20:1 Tilt 1" = 43.1mm.
Universal

Date	Time	Phase	A	Period	Remarks.
1931	h m s		μ	secs.	
Jul. 6	19 5 47	iP			micros strong and irregular; identification uncertain.
	19 9 38	S			
	19 10 38	L			
	19 12.9	M	8	16	
8	19 23 27?	e			obscured by micros
	19 25.5	L			
	19 26.5	M	5	18	
12	16 55 27?	e			very small $\Delta = 56.5$ roughly.
	17 2 18	S			
	17 2 37	PS			
	17 6 25	SR1			
	17 11 38	L			
	17 16.4	M	24	18	
14	15 46 47?	eP			very small and obscured by micros.
	15 50 36	S			
	15 52 50?	L			
	15 58.9	M	6	12	
18	11 48 2	i			followed by train of very small waves/
20	8 38 14	e			very small
	8 49 25	i			
	8 45 10	e			
	8 51 18	L			
	8 53.8	M	10	20	
21	3 42 0	iP			$\Delta = 25.2$
	3 42 55	PR1			
	3 46 27	S			
	3 47 28	SR1			
	3 48 13?	L			
	3 51.9	M	30	15	
23	14 27 2	e			very small
	14 28 30	i			
	14 31 38	iS	42	7	
	14 34 5	L	62	13	
28	3 50 23	e			
	3 58 12	L			
	4 1.7	M	12	18	
Aug. 1	19 44 12?	e			very small; may be PR1
	19 18 2	S			
	19 20 28	iL			
	19 23.2	M	40	10	
6	15 38.6	L			obscured by micros
	15 41.7	M	9	20	

Date	Universal Time			Phase	A	Period	Remarks
	h.	m	s				
1931							
Aug. 7	2	18	10	e			{difficult to separate from micros. either may be P Press reports near Aitape, New Guinea.
	2	18	46	e			
	2	19	40	PR1			
	2	23	55	S			
	2	26	5	SR1			
	2	27	.4	L			
	2	32		M	392?	10.5?	
7	12	4	40	L?			any earlier phases obscured by micros
	12	6.1		M	16	13	
8	21	12	45	L			ditto.
	21	16.2		M	16	12	
10	9	46	38?	eP			very small
	9	47	35	i			
	9	50	8	S	16	11	
	9	51	5	iL?			
	9	53.5		M1	29	9.5	
	9	55.4		M2	28	9	
10	21	32	32	e			small; all phases hard to identify.
	21	32	55	i			
	21	33	32	i			much shorter period superposed.
	21	36	24	i		40	
	21	39	0	e		25	
	21	42	8	S?			
	21	45	15	i			
	21	51	10	SR2?			
	21	58.8?		L			
	22	18.8		M	975	23	
13	22	15	37	iP			$\Delta = 28.9$
	22	17	0	PR1			
	22	20	35	eS			
	22	24	15	L			
	22	26.2		M	45	20	
17	6	53	16	i			
	6	53	55	L			
	6	54.5		M	15	15	
18	14	45	18	e			
	14	46	0	i			
	14	56.55		ee			
	15	9.6?		L			
	15	21.9		M	24	20	
24	21	59	43	i			micros strong; amplitudes small
	22	0	30	e			
	22	1	55	i			
	22	24	30	L			
27	15	41	7	e			P? very small PE1? PR2? well marked
	15	45	13	i			
	15	47	18	i			
	15	51	30	S			

Date	Universal Time			Phase	A	Period	Remarks.
	h	m	s				
1931							
Aug. 27	16	13?		L			continued from previous sheet
	16	26					considerable increase in amplitude.
	16	29.7		M	202	20	
Sept. 6	20	57	0	e			
	20	58.5		L			short train of waves
9	0	6	10	i			
	0	8	22	L			
	0	10.8		M	4	15	
9	20	48	28	e			very small
	20	51	30	i			small but distinct
	20	55	30	i	19	10	largest waves of trace
	20	56	32	i	17	9	
	21	6		L?			identification very doubtful
11	21	20.7		L			short train
11	22	28	13	e			P?
	22	29	5	e			PR?
	22	32	43	S			
	22	34	53	L			
	22	35.3		M	15	20	
15	21	12	53	P			$\Delta = 18\%6$
	21	13	15	PR1			
	21	16	22	S			
	21	17	30	L			
	21	17.8		M	9	14	
16	18	33	57	e			obscured by micros
	18	34	30	L			
	18	35.5		M	8	15	
19	7	56	0	e			
	7	59	17	e			
	8	8.5		M	13	22	
20	23	58	15	e			
	23	59	20	i			
21	0	1	30	L			
21	2	41	13?	e			very small and obscured by micros.
	2	44	14	e			paper defective 50m - 52m.
	2	53	30	L			
	3	0.0		M	15	18	
21	10	46	40	i			
	10	47	25	i			paper defective 55m - 56m.
	10	59		?			
21	13	39	53	eP			
	13	39	57	iP			
	13	40	45	i			
	13	45	11	iS			
	13	46	0	i			largest wave of trace
	13	49.5		L?			amplitudes diminish from this point

Date	Universal Time			Phase	A μ	Period secs.	Remarks
	h	m	s				
1931 Sept.22	9	25	0	e			shallow waves
	22	19	39 48	i			small
		19	43 0	L			
		19	45.5	M	12	20	
	24	4	26				few long waves of short amplitude
-25	6	8	53	iP			$\Delta = 49.5$
	6	10	54	PR1			
	6	16	2	S	82	10	
	6	19	25	SR1			
	6	24	10	L			
	6	28.8		M1	692	21	
	6	32.3		M2	509	18	
-25	16	40	12?	eP			$\Delta = 18.3?$
	16	43	15	iS			
	16	43	58	SR1			
	16	44	12	L			
	16	45.6		M	46	11	
-25	20	36	7	e			hardly distinguishable from micros
	20	39	35	S			
	20	39	57	i			
	20	41	12	L			
	20	42.1		M	30	11	
29	5	25	13?	i			small
	5	29	3	i			
	5	31	7	i			
	5	34.27		i			
	5	41.3		L			
29	9	3	38	e			small
	9	11	30	L			
	9	18.7		M	7	15	

Notes: Record lost Aug.3d 3h 20m - 24h.

Small or undecipherable records were registered
July 17d 10h, 12h: 28d 14h.:29d 0h.
Aug. 7d 7h, 11h: 16d 12h.:22d 22h.
Sept. 26d 20h.: 28d 17h.

J. M. Baldwin,

Government Astronomer.

Period 12.06 secs. Damping ratio 20:1 Tilt 1" = 40.8 mm.
Universal

Date	Time	Phase	A	Period	Remarks.
1931	h m s		μ	secs	
Oct. 3	19 19 30	P			$\Delta = 33.2$ Beginning of very complicated train 95mm or more on trace
	19 24 59	S			
	19 26.5?	L			
		M			
3	22 9.5	L			
	22 14.6	M		14	
-3	22 54 0	P			$\Delta = 29.2$
	22 59 0	S			
	23 0.8	L			
	23 4.5	M	526	16	
4	1 2.5	L			
	1 9.3	M	55	10	
4	6 34 37	i			
	6 39 30	L			
	6 42.6	M	4	13	
	6 59.0	L			
	7 8.3	M	6	11	
5	7 20 19	i			small
	7 21 30	i			
	7 22 10	i			
	7 22.9	M	6	9	
6	17 15 24	e			very small
	17 16 36	e			
	17 17 25	L?			
	17 21.3	M	5	11	
-6	18 24 58	iS			
	18 29 15	L1?			
	18 32 38	L2?			
	18 33.8	M	7	10	
8	2 7 12	e			
	2 9 43	i			
	2 10 56	L			
	2 13.9	M	8	15	
-8	23 33 5	S			
	23 36 12?	L			
	23 40.3	M	6	15	
-9	2 52 0?	P			very small $\Delta = 28.6?$
	2 56 56	S			
	2 59 12	L			
	3 3.2	M	9	13	

Seismological
Bulletin No.16 contd

MELBOURNE OBSERVATORY

Date 1931	Universal Time			Phase	A μ	Period secs	Remarks
	h	m	s				
Oct 10	0	26	19	P			$\Delta = 33.2$ Very complicated train contain- ing three or four shocks at short intervals.
	0	27	35	PR2			
	0	31	38	i			
	0	31	48	S			
	0	33	38	SR1			
	0	34	.9	L			
	0	35	.5	M	1500	23	
10	5	37	28	i			small
	5	39	37	i			
	5	44	.0	M	5	15	
10	7	11	55	S?			
	7	14	32	L			
	7	18	.6	M	9	18	
10	7	24	.4	L			previous still recording
	7	28	.2	M	14	17	
12	0	49	53	i			large micros superposed
	0	52	12	i			
	0	53	16	i			
	0	53	45?	L			
	0	58	.3	M1	18	15	
	0	59	.3	M2	17	12	
12	3	11	34	i			
	3	13	44	e			
	3	14	30	L			
	3	18	.3	M	24	16	
12	10	30	18	e			
	10	33	28	i			
	10	33	58	L			
	10	36	.3	M	10	13	
12	13	30	18	eP			$\Delta = 27.3$
	13	35	3	iS			
	13	37	41	i			
	13	38	30	L			
	13	41	.3	M	29	14	
13	4	46	20	S			
	4	49	15	L			
	4	52	.8	M	21	16	
13	11	1	0	e			very small
	11	2	58	L			
	11	7	.8	M	3	10	
13	11	22	44?	e			obscured by micros and by ending of previous.
	11	27	49	i			
	11	31	22	e			
	11	34	22	L			
	11	36	.6	M	15	12	

Seismological
Bulletin No.16 contd.

MELBOURNE OBSERVATORY
SOUTH YARRA S.E.1 VICTORIA

Date	Universal Time	Phase	A μ	Period secs.	Remarks
1931	h m s				
Oct 13	20 19 0	e			PR2?
	20 22 32	S			
	20 25.5	L			
	20 28.9	M	20	15	
-18	0 45.5?	e			small; obscured by micros
	0 50 20	iS			
	0 52 15	L			
	0 56.2	M	78	14	
<18	4 36 22	iP			$\Delta = 25.3$
	4 37 45	I			
	4 38 42	i			
	4 40 50	S			
	4 43 45	i	83	15	largest wave of trace
18	23 35 38	e			
	23 38 53	L			
	23 41.9	M	5	16	
23	11 51 28	i			
	11 55 53	i			
	11 56 19	i			
	11 57 42	e			
	12 0 8	L			
23	12 59.3	e			small
	13 3.7	L			
-23	20 13 8	eP			$\Delta = 32.7$
	20 18 33	S			
	20 21 12	L			
	20 23.4	M	34	18	
24	11 36 30	e			
	11 41 13	e			
	11 41 50	i			
	11 46 26	L			
	11 47.6	M	13	13	
26	12 13 20	e			small
	12 16 55	e			"
27	18 18 30	e			small and obscured by micros
	18 22 38	i			
	18 27.4	L			
	18 29.2	M	6	16	
Nov. 1	19 13 44	i			small
	19 27.7?	L			
2	1 2 50	e			small
	1 28.3	L			

Seismological
Bulletin No.16 contd.

MELBOURNE OBSERVATORY
SOUTH YARRA S.E. 4 VICTORIA.

Date	Universal Time			Phase	A μ	Period secs.	Remarks
	h	m	s				
1931							
Nov-21	12	33	24	e			
	12	39.7		M	6	12	
-21	17	16	49	e			very small
	17	17	24	i			
	17	21.7		L			
	17	23.9		M	14	12	
26	12	4	1	i			
	12	4	22	L			
-26	12	39	18	iS			preceding phases small and masked by previous
	12	40	10	L			
	12	42.33		M	15	10.5	
Dec. -1	3	26	5?	e			very small
	3	30	7	S			
	3	31	19	L			
	3	32.6		M	43	16	
-1	18	14	28	eP?			$\Delta = 19.9?$
	18	18	9	iS			
	18	19	15	L			
	18	21.5		M	50	27	
-6	4	6	53	oi			
	4	18	46	L			
	4	22.2		M	9	13	
-7	19	0	47	iS			well marked; only faint traces of earlier waves
	19	2.3		L			
	19	3.5		M	16	10	
10	8	4	44	S?			
	8	5	45	L			
10	8	41	37	S			
	8	42	38	L			
16	4	26	13	e			
	4	29	28	i			
-18	9	58	12	eP			$\Delta = 51.8$
	10	5	35	S			
	10	14	49	L			
	10	23.2		M	19	18	
25	2	50	13	i			
	2	50	50	L			
-25	3	8	0	iP			$\Delta = 14.4?$ this phase may be P ₁
	3	10	46	iS			
	3	11	18	L			
	3	12.1		M	91	15	

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