

1930 pour d'ann

Seismological
Bulletin No.9

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

Period 12.04 secs. Damping ratio 20:1 Tilt 1" = 44.0mm.
Universal

Date 1930	Time h m s	Phase	A μ	Period secs.	Remarks
Jan. 5	1 42 35	e			
	1 42 55	i	8	10	Largest amplitude of train
	1 48 43	i			
7	0 7 32	e			
	0 16 0	L			
	0 19.6	M	6	15	
14	6 32 23	L			
-14	22 9 20	P			Δ = 43°.0
	22 11 5	PR1			
	22 15 50	S			
	22 19 30	SR1			
	22 21 30	L			
	21 28	M	25	15	
16	12 23 50	i			Small
	12 28 35	L			
-18	7 10 40	eP			Small. Δ = 34°.7
	7 11 21	i			
	7 16 0	S			
	7 18 25	SR1			
	7 19 20	L			
	7 21.5	M	95	15	
-20	7 19 30	e			Small. PR2?
	7 21 0	i			
	7 23 33	i			
	7 27 32	i			
	7 29 10	L			
	7 31.3	M	15	13	
-21	18 35 30	e			
	18 39 10	L			
	18 41.4	M	8	11	
24	1 43 12	i			
	1 44 35	L			
	1 45.8	M	6	10	
-25	1 54 45	i			
	1 57 20	i			
	2 7 10	L			
	2 8 30	M	12	20	
-28	6 29 35	e			
	6 34 0	L			
	6 35.4	M	17	20	
Feb. -2	15 20 29	i			
	15 34 50	L			
	15 38.5	M	10	22	

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MELBOURNE OBSERVATORY SOUTH YARRA S.E.1 VICTORIA

Date 1930	Universal Time h m s	Phase	A μ	Period secs.	Remarks
Feb. 3	2 50 20	i			Small
	2 53 25	i			"
	2 56 35	L			
	3 0.0	M	5	11	
7	6 34 22	e			Small
	6 42 10	L			
	6 46.2	M	11	17	
7	12 11 0	i			
	12 15 12	L			
	12 18.4	M	8	17	
→7	16 51 35	i			
	17 3 25	L			
	17 7.3	M	8	20	
→12	6 26 50	P			$\Delta = 24.7$
	6 31 22	S			
	16 34 10	L			
	16 35.4	M1	55	16	
	16 39.4	M2	48	14	
→14	20 48 25	i			
	20 50 3	L			
	21 5.6	M1	21	15	
	21 7.7	M2	15	11	
→18	6 19 8	i			
	6 23 32	L			
	6 27.5	M	9	13	
20	19 35 20	e			
	19 39 0	L			
	19 42.3	M	6	14	
→24	20 5 ⁸ 26	i			
	21 5 35	i			
	21 7 35	L			
	21 19 6	M	8	13	
28	18 9 34	e			
	18 13 40	e			
	18 19 20	L			
	18 25.3	M	6	12	
Mar.-6	15 41 22	P			$\Delta = 29.1$
	15 46 22	S			
	15 50 9	L			
	15 52.3	M	145	20	
→10	16 49 11	i	5	10	
	16 53 10	i			
	17 1 40	L			

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MELBOURNE OBSERVATORY

SOUTH YARRA S.E.1 VICTORIA

Date 1930	Universal Time			Phase	A μ	Period secs.	Remarks
	h	m	s				
Mar.10	20	23	28	e			Small
	20	29	35	L?			
-12	5	39	50	e			
	5	40	55	L			
	5	42.4		M	18	15	
-15	7	10	8	i			Obscured by microseisms.
	7	20	5	L			
	7	21.5		M	5	15	
16	10	39	35	e			Small disturbances of very short duration and unusual form. If seismic, from near origin.
	10	41	22	i			
	10	44	13	i			
20	12	53	48	e			
	13	3	50	L			
	13	10.3		M	4	12	
25	10	59	35	iL			
	11	2.3		M	3	10	
-26	7	18	53	eP			$\Delta = 33.3$
	7	18	57	iP			
	7	24	27	S			This phase hard to identify
	7	29	15	L?			
	7	31.5		M	660	20	
-26	11	38	57	P			
	11	44	26	S			This phase hard to identify
	11	48	23	L?			
	11	54.8		M	36	12	
-26	20	28	12	e			
	20	31	45	?			
	20	34	10	?			
	20	39.3		M	8	11.5	
-30	0	42	30	e			
	0	50	55	L			
	0	53.0		M	9	20	
-30	9	2	40	e			Small
	9	15.1		L?			
	9	17.0		M	6	20	
-30	9	22	3	e			Somewhat confused by preceding.
	9	26.8		e			
	9	31.7		e			
	9	39.1		M	10	10	
-30	15	26	17	eP			$\Delta = 31.0$
	15	31	30	eS			
	15	36	50	L			
	15	41.8		M	61	15	

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Period 12.01 secs. Damping ratio 20:1 Tilt 1" = 44.6mm.
Universal

Date	Time	Phase	A	Period	Remarks
1930	h m s		μ	secs	
April-2	4 29 22	e			
	4 33 0	i			
	4 42 55	L			
	4 49.0	M	3	20	
-2	20 9 39	e			
	20 22.2	M	4	15	
-4	2 17 15	e			
	2 22 9	i			
	2 22.4	M	7	7	
-4	9 31 30	eP			$\Delta = 29.4$
	9 36 32	iS			
	9 38 54	eL			
	9 42.0	M	26	20	
4	20 33 15	e			?
	20 42.9	M	2	15	
7	12 54 45	L			
	12 55.5	M	2	15	
15	4 3 40	i			
	4 16.6	M	2	13	
-15	10 43 33	e			Phases uncertain.
	10 57.3	M	11	16	
15	22 16 22	e			
	22 21 50	L?			
	22 30.2	M	3	12	
-20	1 50 20	i			small "
	1 54 5	i			
	1 59 0	L			
	2 3.5	M	2	14	
-20	16 28 21	iP			$\Delta = 28.4$
	16 33 15	eS			
	16 36 18	L			
	16 39.4	M	6	14	
-21	12 3 55	e			very small
	12 14 0	i	6	11	
	12 19 44	i			
	12 26 45	e			
	12 33 58	L			
	12 39.8	M	14	17	

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MELBOURNE OBSERVATORY
SOUTH YARRA S.E. 1 VICTORIA

Date	Universal Time			Phase	A μ	Period secs.	Remarks
	h	m	s				
1930							
April 23	22	11	39	iS?			
	22	23	21	L?			
	22	34.2		M	6	17	
25	11	38	44	i			
	11	41	0	e			
	11	42.2		M	20	14	
26	16	42	3	e			earlier movements, if any, obscured by micros.
	16	42	41	iS?	14	12	
	16	49	27	i			
	16	58	3	L		35	
	17	0.8		M	14	20	
27	10	23	0	e			
	10	25	30	L			
	10	26.5		M	3	19	
27	14	37	20	e?			
	14	58	5	L			
	15	1.6		M	9	18	
27	21	46	13	e?			
	21	49	20	i			
	21	55.1		M1	11	8	
	21	56.8		M2	12	9	
28	18	56	25	e			very small
	19	16	30	L			
	19	23.6		M	9	25	
30	16	13	22	i			
	16	23	20	i			
	16	27	40?	L			
	16	34.7		M	3	12	
May	1	1	18 47	i			
		1	19 35	i			
		1	30 25	L			small amplitude
	1	10	23 28	i			small, preceded by minute disturbance.
		10	34 12	L			
		10	38.2	M	5	11	
2	1	48	21	P			$\Delta = 25.4$
	1	52	50	S			
	1	54	37	L			
	2	1.5		M1	38	18	
	2	3.3		M2	16	12	
2	6	8	3	P			$\Delta = 31.7$
	6	13	22	S			
	6	18	20	L			
	6	19.4		M	32	18	

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MELBOURNE OBSERVATORY
SOUTH YARRA S.E. 1 VICTORIA.

Date	Universal Time			Phase	A	Period	
	h	m	s				
1930							
May 18	0	10	36	e			
	0	13	0	S			
	0	17	0	L			
	0	22.8		M	11	10.5	
19	3	55	25	e			probably L; amplitude small
19	15	22	28	i			
	15	36.2		M	3	15	
20	7	55	20	i			
	7	58	28	i			
	8	0	37	L?			
	8	6.6		M	17	12	
20	11	39	25	i			
	11	46	10	i			
	11	54	45	L			
	11	57.6		M	14	22	
28	1	46.0		L			
	1	48.4		M	7	15	
June 1	13	13	22	e			
	13	17	42	e			
	13	20	42	i			
	13	25	15	L			
	13	26.3		M1	19	14	
	13	29.3		M2	16	14	
1	13	32	35	i			probably L of e.q. whose earlier phases are obscured by preceding
	13	39.7		M	39	18	
4	9	56	50	iP			$\Delta = 29.4$
	10	1	52	iS			
	10	4	0	i			
	10	7	31?	L			
	10	14.2		M	15	10	
5	11	49	19	P			$\Delta = 32.0$
	11	50	35	PR			
	11	54	40	S			
	11	59.0		L			
	12	2.4		M	29	13	
8	17	56	21	e			very small
	17	59	55	L			
	18	3.6		M	9	13	
11	0	56	22	P			$\Delta = 28.3$
	0	57	17	i			
	1	1	15	S			
	1	3	37	L			
	1	7.5		M	288	24	

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MELBOURNE OBSERVATORY
SOUTH YARRA S.E.1 VICTORIA

Date 1930	Universal Time			Phase	A μ	Period secs.	Remarks
	h	m	s				
June 15	7	49	35	e			
	7	55	37	L			
	8	0.5		M	3	15	
15	11	52	47	e			
	11	57.0		M	3	16	
15	21	28	7	e			PR2?
	21	32	48	e			S?
	21	39	47	L			
	21	46.2		M	10	18	
19	13	22	40				
	13	31	37	L			
	13	35.7		M	19	21	
19	13	51.5		L			earlier phases masked by preceding e.q.
	13	55.4		M	26	19	
21	20	49	38	L			
	20	51.1		M	11	15	
23	19	46	18	i			
	19	50	43	L			
	19	53.3		M	11	15	
25	10	47	0	i			
	10	53	22	L			small
25	21	47	15	e			small
	21	51	0	i			"
	21	57	22	i			"
26	14	39	25	i			
	14	43.2		M	1	10	
30	13	20.0		M	1	10	Beginning obscured by micros.

J. M. Baldwin.

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air main*

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

Period 12 secs. damping ratio 20:1 Tilt 1" = 42.8mm.
Universal

Date 1930	Time h m s	Phase	A μ	Period secs.	Remarks
July-2	21 16 0	P			Δ = 82.0°
	21 26 16	S			
	21 31 42	SR1			
	21 41 40	L			
	21 49.6	M	124	27	
-5	18 2 12	e			very small
	18 8 29	S			
	18 14 11?	L			
	18 17.3	M	13	14	
-13	1 34 40	S?			
	1 47 40	e			
	1 58.6	M	6	17	
-14	23 7 ?	e			phases not recognised
	23 19 ?	L?			
	23 39 25	L			
	23 42.2	M	24	23	
15	1 30	F			
22	19 48 8	e			
	20 5	L			
-25	9 18 29	i			
	9 23.3	M	7	20	
28	18 13 25	i			otherwise obscured by micros.
Aug-2	16 23 32	i			S?
	16 29 40	i			
	16 32 18	i			
	16 33 3	L			
	16 35.3	M	12	18	
2	22 11 0	L			
	22 13.0	M	5	20	
9	23 56 23	i			
10	0 4.5	L			
	0 6.2	M	1	18	
12	7 30.6	M	2	8	obscured by micros of irregular period.
-18	10 6 37	P			Δ = 85.4°
	10 12 5	PR2			
	10 16 50	i			
	10 17 10	S			
	10 18 0	PS			
	10 23 2	SR1			
	10 33 58	L			
	10 42.6	M	29	20	

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MELBOURNE OBSERVATORY
SOUTH YARRA S.E. 1 VICTORIA

Date 1930	Universal Time			Phase	A μ	Period secs.	Remarks
	h	m	s				
Aug 19	1	20	5	i	3	12	
	1	22	21	L			
	1	24.8		M			
-20	21	13	35	S	12	16	
	21	26	12	L			
	21	28.5		M			
23	11	47	30	L	3	15	
	12	1.0		M			
-24	9	20	15	iS	84	15	
	9	23	46	L			
	9	25.8		M			
27	14	57	18	i	6	14	
	15	0	0	L			
	15	3.3		M			
29	11	44	38	i	10	18	
	11	45	42	L			
	11	46.4		M			
Sept. 1	14	36	25	e	2	10	
	14	38	38	L			
	14	39.4		M			
1	17	13	45	e	6	20	
	17	17.9		M			
6	6	53	35	e	2	10	very small
	6	58	32	L			
	7	0.3		M			
-13	23	23	2	iP	25	15	$\Delta = 27^{\circ}.0$
	23	27	45	S			
	23	30	10	L			
	23	33.2		M			
-14	3	6	5	P	72	13	$\Delta = 22^{\circ}.0$
	3	7	3	i			
	3	10	5	S			
	3	12	49?	L			
	3	13.7		M			
-14	17	19	19	iP	12	15	$\Delta = 25^{\circ}.5$
	17	20	11	i			
	17	23	49	S			
	17	27	10?	L			
	17	29.7		M			
15	3	22	45	e	1	14	L?
	3	26.5		M			
15	22	54	29	i	5	18	
	22	56	8	L			
	22	58.4		M			

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MELBOURNE OBSERVATORY
SOUTH YARRA S.E. 1 VICTORIA.

Date	Universal Time			Phase	A	Period secs.	Remarks
	h	m	s				
Sept. 15	23	15	18	i	6	17	
	23	19	10	L			
	23	21.7		M			
15	23	47	15	i	9	19	
	23	50	55	L			
	23	52.5		M			
16	10	20	41	i	3	11	
	10	23	42	L			
	10	25.8		M			
21	8	40	5	iP	3	12	$\Delta = 28^{\circ}.5$
	8	45	0	iS			
	8	47	25	L			
	8	50.6		M			
23	5	40	42	e	6	17	
	5	44	56	L			
	5	56.1		M			
23	7	20	49?	L	4	15	masked by micros
	7	23.7		M			
24	12	23	7	i	6	10	masked by micros
	12	26	35	i			
	12	33	50	L?			
	12	37	30	L?			
	12	38.8		M1			
	12	43.7		M2			
25	18	12	15	eP	34	15	$\Delta = 27^{\circ}.7$
	18	13	0	i			
	18	17	4	S			
	18	20	10	L			
	18	25.8		M			
26	19	53	37	i	3	15	very small
	19	57	46	L			
	20	2.0		M			
26	21	37	11	i	14	12	
	21	38	17	L			
	21	41.4		M			
30	21	28	20	e	231	15	very small; possibly PR1
	21	32	40	S			
	21	35	52	L			
	21	41.0		M1			
	21	44.3		M2			

J. M. Baldwin.

Period 12.01 secs. Damping Ratio 20:1 Til t 1" = 42.3mm.
Universal

Date	Time	Phase	A	Period	Remarks
1939	h m s		μ	secs.	
Oct. 2	0 57 47	e			
	1 8 35	L			
	1 11 30	M	3	13	
2	7 7 23	e			may be L
	7 13.2	M	9	13	
3	18 22 22	e			very small
	18 26 56	e			
	18 32 0	L?			
	18 34.3	M	9	12	
5	2 37 10	e			very small
	2 40 5?	L			
	2 44.4	M	2	12	
5	18 43 13?	eP			very small
	18 43 10	S			
	18 51 22	L			
	18 54.2	M	21	18	
6	4 30.7	e			
	4 38.8	M	2	15	
8	10 25 43	P			$\Delta = 31^{\circ}.7$
	10 26 49	PR1			
	10 31 2	S			
	10 33 20	SR1			
	10 35 10	L			
	10 36.2	M	157	20	
8	19 8 42	e			very small
	19 18 36	e			
	19 21 51	i			
	19 26 46	L?			
	19 29.6	M	3	15	
14	15 17 46	L			
	15 19.5	M	2	15	
16	20 53 52	e			
	20 58 25	iS?			
	21 2 30	L			
	21 4.9	M	6	17	
17	9 4 38	e			
	9 11 0	e			
	9 11 40	i			
	9 34 10	L?			

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Universal

MELBOURNE OBSERVATORY

SOUTH YARRA S.E. 1 VICTORIA.

Date	Time	Phase	A	Period	Remarks
1930	h m s		μ	secs.	
Oct. 17	12 47 5	L			
	12 48.6	M	3	12	
22	18 17 42	i			S?
	18 20 0	i			
	18 22 20	L			
	18 25.5	M	5	10	
23	9 4 35	P			
	9 9 42	i			
	9 12 12	i			
	9 18 0	?			beginning of large sinusoidal waves
	9 19.3	M	32	16	
24	20 24 57	P			$\Delta = 54.3$
	20 32 35	S			largest amplitude of trace
	20 36 20	i			
	20 41.2	L			
	20 47.0	M	114	16	
27	2 6 23	iP			felt at Canberra
	2 6 33	M			
27	12 36 30	e			
	12 41 35	iS?			
	12 44 57	i			
	12 47.4	M	2	15	
27	21 49 23	e			
	21 54.4	M	3	12	
28	21 27 48	S			
	21 37 12	L			
	21 43.0	M	24	18	
29	6 2 22	i			obscured by strong micros
31	10 30 28	P			
	10 31 28	PR2			
	10 35 45	i			
	10 37 50	L			
	10 41.7	M	65	15	
31	16 8 38?	e			
	16 13 10	i			
	16 15 30	L			
	16 21.4	M	12	13	
31	18 7 ca	e			
	18 25.2	M	1	12	
31	18 43 8	L			earlier phases masked by preceding
	18 47.5	M	12	15	
31	22 11 55?	e			
	22 17.1	M	3	14	

Date 1930	Universal Time			Phase	A μ	Period secs.	Remarks
	h	m	s				
Nov. 1	2	8	40	i			obscured by micros
	2	12.6		M	2	10	
1	12	45	17	i			
	12	46	30	L			
	12	49.8		M	11	13	
3	18	49	8	S?			earlier phases obscured by micros
	18	51	32	i			
	18	58.7		M	26	13	
8	3	30	15	iP			beginning of larger amplitude and longer period
	3	36	32	S			
	3	42	15	L?			
	3	43	2	?			
	3	48	35	L?			
	3	49.8		M	11	15	
9	19	16	7	iP			$\Delta = 38^{\circ}.2$
	19	17	46	iPR2			
	19	22	8	S			
	19	27.3		L			
	19	32.8		M	441	18	
10	8	46	8	e			
	8	51	0	i			
	8	53.4		M	8	14	
10	13	51	14	P			$\Delta = 33^{\circ}.2$
	13	53	4	i			
	13	56	43	S			
	13	59	50	SR1			
	14	0	45	L			
	14	5.1		M	313	10.5	
11	20	9	10	e			
	20	11	48	L			
	20	14.5		M	15	20	
15	23	18	29	i			earlier phases obscured by heavy micros
	23	21	10	S			
	23	26	30	L			
	23	30.4		M	16	16	
17	12	14	45	e			
	12	18	0	L?			
	12	21.8		M	11	15	
21	3	16	22	e			
	3	19	32	L			
	3	22.3		M	6	14	

Date 1930	Universal Time			Phase	A	Period secs	Remarks
	h	m	s				
Nov. 22	14	3	25	e			P?
	14	4	57	i			PR1?
	14	9	3	e			S?
	14	11	18	e			SR1?
	14	12	42	L			
	14	14.2		M	46	20	
22	22	2	25	e			
	22	5.4		M	3	20	
23	1	41	7	e			
	1	43.8		M	8	22	
24	1	24	ca	e			
	1	27.0		M	2	20	
24	2	48	16	e			
	2	50.6		M	2	17	
24	2	59	6	e			
	3	6.2		M	13	20	
24	14	10	28	e			
	14	23.0		M	4	11	
25	19	16	47	e			P?
	19	24	45	S			
	19	35	0.	L			
	19	42.8		M	38	16	
26	5	7	10	e			
	5	9	55	L			
	5	14.8		M	4	11	
28	8	25	50	eL			sinusoidal waves of small amplitude
30	21	12	40?	e			
	21	20.8		M	3	11	
Dec. 2	7	23	7	e			
	7	36	35?	L			Very small
3	19	3	12	P			$\Delta = 71^\circ 2$
	19	5	50	PR1			
	19	7	32	PR2			
	19	12	28	S			
	19	13	8	PS			
	19	22	30				beginning of waves of long period
	19	37.5		M	202	20	
8	17	23	3	e			
	17	28	7	iP			
	17	33	23	iS			$\Delta = 31^\circ 4$
	17	37	40	L			
	17	45.1		M	36	15	

Seismological
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MELBOURNE OBSERVATORY
SOUTH YARRA S.E.1 VICTORIA

Date	Universal Time			Phase	A	Period secs.	Remarks
	h	m	s				
1930 Dec-13	2	40	5	e			very small
	2	44	35	S			
	2	48	0	i			
	2	50.7		M	8	9	
17	11	27	38	i			small
	11	33	19	i			"
21	15	9	35	iS			small
	15	10	50	i			"
	15	16	22	e			"
	15	21	28	L			
23	21	48	4	e			PR2?
	21	51	5	S?			
	21	55	8	L			
	21	59.0		M	24	10.5	
25	13	27	18	i			
	13	32.9		M	4	10	
25	13	56	15	e			confused with end of preceding
	13	59	30	S			
	14	1	20	i			
	14	5.1		M	16	8.5	
31	20	26	35	e			
	20	27	14	i			
	20	30	27	e			
	20	30	48	S?			
	20	34	8	L			
	20	35.0		M	17	13	

Correction to record for 1928 Mar.29 5h. - Not originally
Add 10m to the times given for each phase. entered.

J. H. Burdett.
Government Astronomer.