

# Earthquake Records by Milne Seismograph Meridian Boom. Stonyhurst College Observatory.

Lat. 53° 50' 7 N., Long 2° 28' 2 W., Above Sea, 363 feet.

Time, Greenwich, 0 or 24 = Midnight.

Abbreviations on the other side.

Date 1917	P <sub>1</sub>		P <sub>2</sub>		P <sub>3</sub>		Maximum		2 A	End		Boom Deviation, 1 mm = 2.20" arc	
	H.	M.	H.	M.	H.	M.	H.	M.	mm	H.	M.	Boom Period = 23 sec.	
Dec. A useless record: so many hours lost every day through poor illumination of the oil lamp, until the 21 <sup>st</sup> . December 1917.													
21	18	6.6	21	18.3	-	-	18	28.3	2.14	-	22	21.	Pillar Inclination 1 mm = 0.38" arc
26	-	-	-	-	-	-	6	10.	-	-	-	-	
28	21	36.5	2	-	-	-	21	57.5	-	-	23	4.	
"	-	-	-	-	-	-	22	2.2	1.0	-	-	-	
29	23	3.1	28	13.1	2	-	23	39.5	4.0	-	24	2.	

1918										1918					
Jan. 14 In tremors										20	18.8	.5	-	January.	
21	20	22.	-	-	-	-	-	-	-	-	-	-			
"	-	-	20	44.6	-	-	21	4.	.4	-	-	-			
25	1	45.6	-	2	1.5	2	11.5	-	.6	2	37.	-			
26	-	-	-	-	-	-	23	10.4	-	-	-	-			
27	-	-	-	-	-	-	2	53.2	.5	-	-	-			
30	21	25.1	21	34.0	21	44.5	21	57.5	-	-	-	-			
P <sub>2</sub> P <sub>3</sub> very sudden maxima; and the more correct record may be															
21	25.1	e	-	-	-	-	21	34.	1.8	-	-	-			
-	-	-	-	-	-	-	21	44.5	2.6	-	-	-			
-	-	-	-	-	-	-	21	57.5	1.2	-	22	7.			

Feb. 2 7 25. e - - - 7 52.5 -1 8 29. February.												
3	-	-	-	-	-	-	14	1.5	-	-	-	-
3	14	44.1	6	-	-	-	15	30.	.3	-	16	12.
4	16	13.5	16	21.1	6	-	16	31.	.5	-	-	-
"	-	-	-	-	-	-	35.5	-	.6	-	17	23.
6	4	5.	-	-	-	-	4	30.	.1	-	-	-
"	-	-	-	-	-	-	36.	-	.1	-	-	-
7	5	36.3	5	45.7	6	15.7?	6	28.5	1.0	-	7	56.
Phase-times computed from time at beginning and end.												
12	-	-	-	-	-	-	23	19.	.2	-	-	-
13	6	25.2	6	28.8	6	49.7	7	1.7	9.0	-	8	50.
19	-	-	-	-	-	-	17	37.5	.1	-	-	-
"	-	-	-	-	-	-	53.5	-	.1	-	-	-
25	-	-	-	-	-	-	7	26.5	.2	-	-	-

March: We have no record. Instrument out of action - mostly through deficiency of photographic papers.

Rev. W. Sidgreaves, S. J.

No further records to Jan. 1920.

Howland G. pro Director.

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	H.	M.	H.	M.	H.	M.	H.	M.	mm	H.	M.	

Jan.

January

4	17	4.6 e	17	17.5 e	17	33.5 ?	17	39.3	2.7	19	0.	
20	23	32.5 e	23	42.2 i	-	-	24	33.7	1.0	25	57.	Driving clock
21	-	-	23	47. e	-	-	23	57.4	.4	24	32.	out of work see
24	1	15. e	1	24.1 e	1	27.8 ?	1	32.3	2.8	tremors 19 <sup>th</sup> & 20 <sup>th</sup> a.m.		
26	7	40.	Strong tremors			-	-	-	-	10	30.	
27	8	19.	do. do.			-	-	-	-	10	10.	
27	-	-	-	-	-	-	13	40.7	.5	-	-	
30	2	58.5	3	3.7 i	3	18.5	3	26.3	26.0	} Many maxima		
"	Probable 2 <sup>nd</sup> shock						3	54.5	13.0			
30	17	21.2 e	-	-	-	-	17	37.0	.3	} 19 30.		
"	-	-	-	-	-	-	18	51.4	1.5			
"	-	-	-	-	-	-	18	57.0	1.6			

Feb.

February

Instrument out of action till 19<sup>th</sup>.  
Driving clock repaired.

20	19	41.1 e	19	49.5 i	-	-	20	3.0	3.0	} 22 20		
"	-	-	55. i	-	-	-	11.3	4.0				
21	10	30.3 e	10	35.2 i	-	-	10	40.7	.9	} after 12 <sup>h</sup>		
"	-	-	-	-	-	-	43.0	.8				

Mar.

March

1	6	21.4 e	-	-	-	-	6	43.3	.1	7	0.	
6	3	28.4 i	-	-	-	-	3	54.3	1.0	? in tremors		
12	-	-	-	-	-	-	15	46.	-	-	-	
15	0	25.1 e	0	35.6 i	-	-	1	2.2	3.2	2	58.	
16	10	1.5 e	10	22.5 i	-	-	10	37.7	.2	11	42.	
22	?	-	-	-	-	-	3	56.5	.4	4	44.	
24	6	2.3 e	6	14.8 i	-	-	6	41.1	.4	} 7 58.		
"	-	-	-	-	-	-	48.6	.4				
27	Oscillations about a small westerly displacement						17	45.5	-	-	-	
29	-	-	2	24.5 i	2	41.1 i	2	47.7	.3	3	41.	

Rev<sup>d</sup> W. Sidgreaves, S. J.

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Date 1917	P <sub>1</sub>		P <sub>2</sub>		P <sub>3</sub>		Maximum		2 A	End		Boom Deviation, 1 mm = 22 0" arc Boom Period = 20 sec. Pillar Inclination 1 mm = 0.38" arc		
	H.	M.	H.	M.	H.	M.	H.	M.	mm	H.	M.			
Apr. 2	-	-	-	-	-	-	10	4.5	.1	-	-	April		
2	-	-	-	-	-	-	5	28.2	.1	-	-			
"	-	-	-	-	-	-	5	53.7	.1	-	-			
5	-	-	-	-	-	-	5	37.	.2	-	-			
12	3	15.8 i	3	25. i	-	-	3	43.5	.5	4	32.			
14	-	-	-	-	-	-	15	55.5	-	-	-			
16	In trs.	-	-	-	-	-	19	55.1	.3	In trs.	-			
21	-	-	-	-	-	-	0	31.6	-	-	-			
21	0	48.1 e	0	57.5 i	1	4.3	1	11.0	1.0	2	52.			
22	-	-	-	-	-	-	6	39.6	-	-	-			
22	-	-	-	-	-	-	7	3.7	-	-	-			
26	-	-	-	-	-	-	14	27.5	-	-	-			
29	11	56.3 e	-	-	-	-	12	36.3	1.2	13	40.			
29	17	29.	Tremors without maxima					-	-	-	17	59.		
May 1	18	50.4 i	18	54.	19	14. i	19	15.1	6.2	-	-	May		
1	In preceding						19	52.3 i	19	58.3	> 32.0		24	30.
2	2	5.5	trs. with maxima					2	54.	.3	-		-	
"	-	-	-	-	-	-	3	2.	.3	-	-			
"	-	-	-	-	-	-	3	14.	.3	-	-			
"	-	-	-	-	-	-	4	28.	.3	-	-			
"	-	-	-	-	-	-	4	39.5	.3	-	7		0.	
2	14	55.2 i	-	-	-	-	15	37.5	.6	-	16		0.?	
3	6	34.5	-	-	-	-	6	38.3	.1	-	7		24.	
4	1	23. i	1	26.6 i	-	-	2	10.	.6	-	-			
"	-	-	-	-	-	-	22.	.7	-	-	-			
"	-	-	-	-	-	-	37.6	.6	-	-	3	30.		
4	15	20.3	-	-	-	-	15	20.3	-	-	-			
"	-	-	-	-	-	-	27.8	-	-	-	-			
4	-	-	-	-	-	-	19	31.5	.1	-	-			
5	-	-	-	-	-	-	9	9.3	-	-	-			
6	22	16. e	Rest lost			-	22	26.7	.2	-	-	Gas light failing		
"	-	-	-	-	-	-	32.4	.2	-	-				
7	19	30.8 e	-	-	-	-	19	48.	.1	-	-			
9	16	11.2 e	16	13.3 i	16	22.5	16	24.2	1.9	-	-			
"	-	-	Second shock			-	17	30.1	2.0	-	-	19	16.	
9	20	46.7	20	52.7	No max		-	-	3.1	-	23			12.
10	-	-	-	-	-	-	17	27.5	.1	-	-	-		
12	-	-	-	-	-	-	16	20.5	-	-	-	-		
"	-	-	-	-	-	-	23.7	-	-	-	-	-		
19	In trs.	5	57.5 i	-	-	-	6	2.	.6	6	43.	All in trs.		
24	20	5.1 e	-	-	-	-	20	50.3	.5	21	56.	-		
29	7	5.	trs. till			-	-	-	-	8	33.	-		
31	-	-	-	-	-	-	14	26.5	-	-	-	-		
June 1	-	-	-	-	-	-	14	26.5	-	-	-	June		
6	4	39.5?	-	-	-	-	5	26.3	.2	6	30.			
7	3	7.7	-	-	-	-	3	30.8	.1	-	-			
"	-	-	-	-	-	-	38.2	.1	-	4	42.			
8	1	13.4	1	18.7 i	1	29.9?	1	38.8	2.0	4	24.			
9	17	42.2	17	58.3	-	-	18	27.5	.2	19	10.			
13	18	8.1	-	-	-	-	18	23.	.1	18	54.			
24	20	8.	No "cut off"			-	20	31.	.5	22	10.			

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	H.	M.	H.	M.	H.	M.	H.	M.	mm	H.	M.	
July 4	0	52.0 i	1	1.8	1	29.0 i	1	37.9	7.0			July 4: Times uncertain "cut off" out of action - Computed from time noted at beginning and end.
4	-	-	6	0.0 i	6	29.0 i	6	36.8	3.9	8	17.	
25	3	35.2 e	3	48. i	-	-	4	5.	0.7			
"	-	-	-	-	-	-	-	10.	1.5			
"	-	-	-	-	-	-	-	36.5	.2			
"	-	-	-	-	-	-	-	43.5	.5			
27	1	11.2 i	1	19. i	1	29.8	1	35.9	8.5			
27	-	-	-	-	-	-	3	48.5	2.0			
27	-	-	16	33.3	16	44.2	16	50.	.6	17	40.	
28	-	-	-	-	-	-	0	48.5	.2			
"	-	-	-	-	-	-	-	52.5	.4			
29	14	45. i	14	55.2	-	-	15	22.6	5.6	17	50.	
29	22	13. i	-	-	-	-	23	8.7	6.6	23	10.	
30	-	-	-	-	-	-	15	39.5	.2			
31	0	15.4 i	0	24.5 i	-	-	0	42.8	2.8	3	20.	
31	3	43.3 i	Strong tremors till					-	-	-	6	20.
31	-	-	-	-	-	-	7	36.	.3	-	-	
<hr/>												
Aug 20	23	12.	-	-	-	-	23	15.8	.5	23	54.	August Time shutter acting badly.
21	21	58.7 e	22	6.6 i	22	14.1	22	15.3	.5	22	58.	
30	-	-	3	47. i	-	-	4	10.	1.1			
"	-	-	second shock		-	-	4	41.9	1.7			
"	-	-	Third do.		-	-	4	50.2	1.8			
"	-	-	Fourth do.		-	-	5	12.9	5.1			
"	-	-	-	-	-	-	6	26.	1.4	9	45.	
<hr/>												
Sep 4	-	-	-	-	-	-	18	23.4	.3	-	-	September
No other disturbance up to Sep. 19, when the instrument fell out of action till the 27 <sup>th</sup> . And on the remaining days there was no disturbance.												
<hr/>												
Oct. 7	14	55.2 e	15	6.6	-	-	15	14.6	1.5	16	26.	In tremors.
17	-	-	-	-	-	-	2	2.5	-	-	-	
19	16	58.5 e	-	-	-	-	17	22.	.5			
"	-	-	-	-	-	-	-	26.5	.5	18	13.	
22	-	-	-	-	-	-	8	9.2	.4			
23	-	-	-	-	-	-	2	26.3	.1	3	10.	
28	17	10.7?	17	16.2	-	-	17	24.7	.5	18	27.	
<hr/>												
Nov. 2	16	29.5	-	-	-	-	17	0.0	.2	-	-	Time shutter idle.
5	12	20.7 e	12	30.1 i	13	0.0?	13	7.5	1.8	14	55.	
7	-	-	-	-	-	-	2	15.2	.2	-	-	
9	-	-	-	-	-	-	19	13.7	-	-	-	
16	[22	33.5	-	-	-	-	-	-	-	24	41.	
"	58.0	23	12.6 i	23	18.2 i	23	21.2	.6				
18	3	21.2 e	-	-	-	-	3	59.2	1.8	5	52	
23	-	-	-	-	-	-	4	49.	.1	-	-	
"	-	-	-	-	-	-	10	4.	-	-	-	

18: Times computed from G.M.T. at end and measured length (mm) of 45 minutes run, supposing the rate of the motor-clock to be the same as at the beginning.

Rev. W. Sidgreaves, S. J.

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