

19<sup>12</sup>

# Jesuit Seismological Service Record

of the

## Seismographic Station, Astronomical and Meteorological Observatory

Santa Clara College, Cal., U. S. A.

 $\phi = 37^{\circ} 26' 36''$  N  $\lambda = 121^{\circ} 57' 03'' = 8^{\text{h}} 7^{\text{m}} 50^{\text{s}}$  W; elevation 27.43 M.

TIME: Mean Civil Greenwich, midnight to midnight, 0-24 hrs.

INSTRUMENTS: Wiechert 80 kg., astatic, horizontal and vertical pendulums.

NOMENCLATURE: International.

FROM FEBRUARY 20, 1912

TO MARCH 12, 1912

DATE.	CHAR.	COMP.	PHASES.	TIME.			PERIOD. s.	AMP.		REMARKS.
				h.	m.	s.		m.	m.	
20	lld	N-S	P <sup>i</sup>	6:	15:	04				
			S							
			L	6:	15:	08				
			M	6:	15:	20	.8	4.25		
			C	6:	15:	38				
			F	6:	17:	15				
		E-W	P <sup>i</sup>	6:	15:	03				
			S							
			L	6:	15:	08				
			M	6:	15:	14	.8	4.5		Distance:—74.35 Km. E. 43° 22' S. Light shock felt.
			C	6:	15:	36				
			F	6:	17:	15				
		V	P							Feb. 23. ld. N-S: Pe. 6:41:39; L. 6:41:46; M. 6:41:57, per. .8 secs., amp. 1 mm.; F. 6:43.
			S							E-W: Pe. 6:41:38; L. 6:41:46; M. 6:41:53, per. .8 secs., amp. 1 mm.; F. 6:43.
			L <sup>i</sup>	6:	15:	03				Trace on vertical. Distance: 96.16 Km.
			M	6:	15:	03	.8	1.5		S. E. Very faint shock felt
			C	6:	15:	36				
			F	6:	16:					

				6: 16		
Mar. 8	Ild	N-S	pi	9: 47: 57		
			S			
			L	9: 48: 06		
			M	9: 48: 06	.8	6.62
			C	9: 49: 00		
			F	9: 49: 30		
		E-W	pi	9: 47: 57		
			S			
			L	9: 48: 06		
			M	9: 48: 17	.8	5
			C	9: 48: 30		
			F	9: 51		
		V	P			
			S			
			L <sup>i</sup>	9: 48: 00		
			M	9: 48: 24	1	1.25
			C			
			F	9: 48: 36		
12	Ild	N-S	pi	13: 41: 54		
			S			
			L	13: 41: 57		
			M	13: 42: 10	.8	4.37
			C	13: 42: 18		
			F	13: 43		
		E-W	pi	13: 41: 54		
			S			
			L	13: 41: 57		
			M	13: 41: 59	.8	4.25
			C	13: 42: 15		
			F	13: 43		
		V	pe	13: 41: 53		
			S			
			L	13: 41: 56		
			M	13: 42: 00		
			C	13: 42: 18		
			F	13: 42: 24		

Distance:— 103.43 Km. S. 37° 07' E.  
Faint shock felt.

Mar. 11. Ild. N-S: Pe. 10:21:12; L. 10:26:00; M. 10:27:21; per. 6 sec., amp.; 1 mm.; C. 10:30:39; F. 10:39.  
E-W: Pe. 10:21:10; L. 10:26:21; M. 10:26:42, per. 6 sec., amp. 1.5 mm.; C. 10:35:30; F. 10:12. Distance: 1314 Km. W. 33° 41' S.

Distance:— 59.81 Km. N. 44° 12' W.  
Faint shock felt.  
Pulsatory oscillations during day.

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$\phi = 37^{\circ} 26' 36''$  N  $\lambda = 121^{\circ} 57' 03'' = 8^{\text{h}} 7^{\text{m}} 50^{\text{s}}$  W; elevation 27.43 M.

TIME: Mean Civil Greenwich, midnight to midnight, 0-24 hrs.

INSTRUMENTS: Wiechert 80 kg., astatic, horizontal and vertical pendulums.

NOMENCLATURE: International.

FROM MARCH 17, 1912

TO MAY 23, 1912

DATE.	CHAR.	COMP.	PHASES.	TIME.			PERIOD.	AMP.		REMARKS.
				h.	m.	s.		s.	m.	
17	IId	N-S	P i	22:	26:	57				
			S							
			L	22:	27:	03				
			M	22:	27:	16	.8	3.62		
			C	22:	27:	18				
			F	22:	29:	48				
		E-W	P i	22:	26:	57				
			S							
			L	22:	27:	03				
			M	22:	27:	12	.8	2.8		Distance:— 81.62 Km. S. $37^{\circ} 43'$ E. Faint shock felt.
			C	22:	27:	26				
			F	22:	29:	48				
		V	P							April 9. Pulsatory Oscillations during day. Average period 1.5 secs. Max. amp. 1.5 mm.
			S							April 28. Pulsatory Oscillations during day.
			L j	22:	26:	54				
			M	22:	26:	54	.8	2.12		
			C							
			F	22:	27:	33				

May 6	IIr	N-S	P			
			S			
			Le	19: 31: 00		
			M	19: 38: 12	8	1
			C	19: 41		
			F	19: 48		
	E-W		P			
			S			
			Le	19: 30: 00		
			M	19: 33: 30	10	1.37
			C	19: 40: 33		
			F	20: 03		
	V		P			
			S			
			L			
			M			
			C			
			F			
21	IIId	N-S	P i	4: 58: 11		
			S			
			L	4: 58: 14		
			M	4: 58: 21	.8	3
			C	4: 58: 30		
			F	4: 59: 48		
	E-W		P i	4: 58: 11		
			S			
			L	4: 58: 14		
			M	4: 58: 21	.8	3.25
			C	4: 58: 40		
			F	4: 59: 30		
	V		P i	4: 58: 10		
			S			
			L	4: 58: 12		
			M	4: 58: 21	.8	1
			C	4: 58: 30		
			F	4: 58: 57		

Distance:— W. 36° 9' N.  
Preliminaries not distinguishable from oscillations. Sinusoid. (Alaskan quake.)

Distance:— 59.81 Km. W. 42° 43' S.  
Very faint shock felt.

May 23. Ir. N-S: Trace at 3:32:36. E-W: Le. 3: 11:34; M. 3:32:36, period 15 secs., amp. .75 mm.; F. 4:00. (Hawaiian quake.)

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of the

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$\phi = 37^{\circ} 26' 36''$  N  $\lambda = 121^{\circ} 57' 03'' = 8^{\text{h}} 7^{\text{m}} 50^{\text{s}}$  W; elevation 27.43 M.

TIME: Mean Civil Greenwich, midnight to midnight, 0-24 hrs.

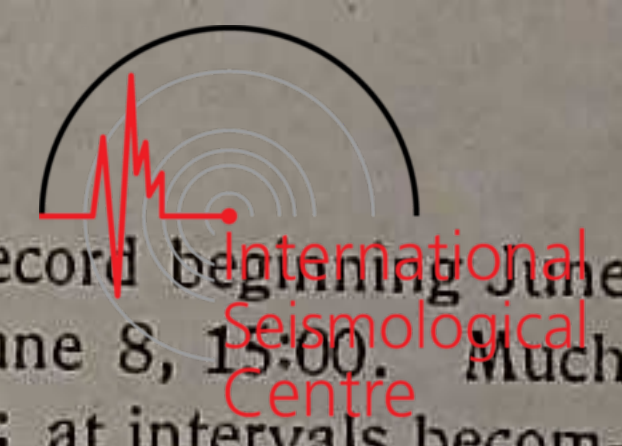
INSTRUMENTS: Wiechert 80 kg., astatic, horizontal and vertical pendulums.

NOMENCLATURE: International.

FROM MAY 24, 1912

TO JUNE 10, 1912

DATE.	CHAR.	COMP.	PHASES.	TIME.			PERIOD.	AMP.	REMARKS.
				h.	m.	s.			
24	Id	N-S	Pi	21:	10:	18			
			S						
			L	21:	10:	30			
			M	21:	10:	36	1	2.75	
			C	21:	11:	00			
			F	21:	12:	45			
		E-W	Pi	21:	10:	18			
			S						
			L	21:	10:	30			Distance:—125 Km. N. 36° W.
			M	21:	10:	36	1	2	
			C	21:	10:	52			
			F	21:	13				May 27. Trace on horizontal at 12:39.
		V	P						
			S						
			L						
			M						
			C						
			F						



June 8	Id	N-S	P <sub>i</sub>	23: 53: 13		
			S			
			L	23: 53: 18		
			M	23: 53: 18	1	2.75
			C	23: 53: 29		
			F	23: 54: 30		
	E-W		P <sub>i</sub>	23: 53: 13		
			S			
			L	23: 53: 18		
			M	23: 53: 18	1	2.25
			C	23: 53: 48		
			F	23: 54: 20		
	V		P	Trace		
			S			
			L			
			M			
			C			
			F			
10	Ir	N-S	Pe	16: 12: 30		
			S			
			L	16: 21: 00		
			M	16: 23: 42	6	.62
			C	16: 25: 00		
			F	18: 00		
	E-W		Pe	16: 12: 30		
			S			
			L	16: 21: 18		
			M	16: :23 12	6	1
			C	16: 24: 00		
			F	18: 00		
	V		P			
			S			
			L			
			M			
			C			
			F			

June 7. Traces of sinuous record beginning June 7, 10:07, ending June 8, 15:00. Much agitation entire day; at intervals becoming strong. Max. Amp. 1 mm., per. 1 sec., at 11:52:48. (Alaskan disturbances.)

Distance:— 74.35 Km. S. 39° 17' E.

Distance:— 2743 Km. W 38° 19' N.  
Irregular sinusoid, Much agitation during day

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 NO. 98-99-100.  
 International  
 Seismological  
 Centre

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$\phi = 37^{\circ} 26' 36''$  N  $\lambda = 121^{\circ} 57' 03'' = 8^{\text{h}} 7^{\text{m}} 50^{\text{s}}$  W; elevation 27.43 M.

TIME: Mean Civil Greenwich, midnight to midnight, 0-24 hrs.

INSTRUMENTS: Wiechert 80 kg., astatic, horizontal and vertical pendulums.

NOMENCLATURE: International.

FROM JUNE 18, 1912 TO JULY 13, 1912

DATE.	CHAR.	COMP.	PHASES.	TIME.			PERIOD. s.	AMP. m. m.	REMARKS.
				h.	m.	s.			
18	Ilv	N-S	Pe	22:	26:	22			Distance:— 183 Km. W. 35° 32' N.
			S						
			L	22:	26:	42			
			M	22:	27:	14	1.5	2.5	
			C	22:	27:	30			
			F	22:	31				
		E-W	Pe	22:	26:	22			
			S						
			L	22:	26:	42			
			M	22:	27:	06	1.5	3.5	
			C	22:	27:	30			
			F	22:	31:	22			
		V	P						
			S						
			L						
			M						
			C						
			F						

July 7	Ilr	N-S	Pe	20: 04: 00		
			S			
			L	20: 09: 08		
			M	20: 20: 44	6	2.75
			C	20: 23: 30		
			F	21: 30		
		E-W	Pe	20: 04: 00		
			S			
			L	20: 09: 30		
			M	20: 18: 06	6	2.25
			C	20: 24: 00		
			F	21: 31		
		V	P			
			S			
			L			
			M			
			C			
			F			
12	Illd	N-S	Pj	4: 05: 54		
			S	4: 06: 18		
			L	4: 06: 30		
			M	4: 06: 33	.8	11.62
			C	4: 08: 00		
			F	4: 11: 09		
		E-W	Pj	4: 05: 54		
			S	4: 06: 18		
			L	4: 06: 30		
			M	4: 06: 33	.8	15.5
			C	4: 07: 48		
			F	4: 12		
		V	P			
			S			
			Li	4: 06: 18		
			M	4: 06: 50	.8	3
			C			
			F	4: 07: 18		

Distance:— 2158 Km. N, 39° 16' W.  
Sinusoid. (Alaska)

July 8, Trace of Sinusoid on Horizontal: P. 22: 00, F. 22:30. Pulsatory oscillations during the day.

July 11, Trace of d record on Horizontal: P. 20: 53:47, F. 20:54:45.

Distance:— 299.72 Km. E. 36° 51' S.

Light shock felt. Followed by trace: P. 4:15:53, F. 4:18.

July 13. Trace of d record on Horizontal: P. 15: 01:15, F. 15:04.



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TIME: Mean Civil Greenwich, midnight to midnight, 0-24 hrs.

INSTRUMENTS: Wiechert 80 kg., astatic, horizontal and vertical pendulums.

NOMENCLATURE: International.

FROM JULY 14, 1912 TO AUGUST 24, 1912

DATE	CHAR.	COMP.	PHASES.	TIME			PERIOD s.	AMP. m. m.	REMARKS
				h.	m.	s.			
14	IId	N-S	P i	22:	31:	17			
			S						
			L	22:	31:	25			
			M	22:	31:	33	.8	3	
			C	22:	31:	45			
			F	22:	33				
		E-W	P i	22:	31:	17			
			S						
			L	22:	31:	28			Distance:— 118 Km. N.W. Very faint shock felt.
			M	22:	31:	30	.8	3	
			C	22:	31:	42			July 24, Trace of record on Horizontal: P. 12:09, F. 12:14.
			F	22:	32:	30			
		V	P						July 25, Trace of record on Horizontal: P. 6:17:30, F. 6:19.
			S						
			L i	22:	31:	17			
			M	22:	31:	17	.8	2.5	
			C						
			F	22:	31:	36			

Aug. 9	lr	N-S	P			
			S			
			L e	2: 13: 24		
			M	2: 23: 30	12	.75
			C	2: 24: 00		
			F	2: 50		
		E-W	P			
			S			
			L e	2: 13: 24		
			M	2: 22: 00	15	.75
			C	2: 23: 00		
			F	2: 55: 30		
		v	P			
			S			
			L			
			M			
			C			
			F			
24	ld	N-S	P i	5: 10: 18		
			S			
			L	5: 10: 21		
			M	5: 10: 22	.8	1.5
			C	5: 10: 35		
			F	5: 12: 16		
		E-W	P i	5: 10: 18		
			S			
			L	5: 10: 21		
			M	5: 10: 22	.8	1.5
			C	5: 10: 35		
			F	5: 12: 16		
		v	P			
			S			
			L			
			M			
			C			
			F			

Distance:— P. indistinguishable. Sinuous record.  
(Simultaneous to Constantinople quake.)

Aug. 17, Sinusoid on E-W; P. 19:36:51, L. 20:00:39, M. 20:19:00; period 15 secs., Amp. .5 mm., C. 20:26:00, F. 20:53 (Hawaiian quake.)

Aug. 18, Trace of quake on Horizontal; L. 21:14:46, M. 21:15:06; period 1.5 secs., Amp. 3.25 mm., F. 21:23. (Felt in N. Mexico and Arizona.)

Distance:— 59.81 Km. S. E. Very faint shock felt.

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University of Santa Clara, California, U. S. A.

$\phi = 37^{\circ} 26' 36''$  N  $\lambda = 121^{\circ} 57' 03'' = 8^{\text{h}} 7^{\text{m}} 50^{\text{s}}$  W; elevation 27.43 M.

TIME: Mean Civil Greenwich, midnight to midnight, 0-24 hrs.

INSTRUMENTS: Wiechert 80 kg., astatic, horizontal and vertical pendulums.

NOMENCLATURE: International.

FROM AUGUST 31, 1912, TO OCTOBER 27, 1912

DATE	CHAR.	COMP.	PHASES.	TIME			PERIOD s.	AMP. m. m.	REMARKS
				h.	m.	s.			
Sept. 12	Ild	N-S	P						Aug. 31, Iv. Le 4:54:00, M. 4:54:52; period 1 sec., Amp. 1 mm., C. 4:55:08, F. 4:56:30. (Felt in Reno, Nev.)  Sept. 5-6, Pulsatory Oscillations.  Distance:— Local Strong shock felt.  Sept. 29, Iv. Sinuous record: P. 21:04:56, L. 21:36:12, M. 21:49:00; period 16 secs, Amp. .5 mm.; C. 22:00, F. 22:41.  Oct. 1-3. Pulsatory Oscillations.
			S						
			Li	17:	27:	18			
			M	17:	27:	45	.8	43.75	
			C	17:	29:	30			
			F	17:	35:	30			
		E-W	P						
	S								
	Li		17:	27:	21				
	M		17:	27:	45	.8	42.65		
	C		17:	29:	24				
	F		17:	35:					
	V	P							
S									
Li		17:	27:	54					
M		17:	27:	54	.8	52.5			
C									
F		17:	28:	24					

			F	17: 28: 24		
Oct 8	lv	N-S	P <sub>i</sub>	6: 43: 04		
			S			
			L	6: 43: 18		
			M	6: 43: 26	1	2.25
			C	6: 44: 24		
			F	6: 45: 40		
		E-W	P <sub>j</sub>	6: 43: 04		
			S			
			L	6: 43: 18		
			M	6: 43: 26	1	2.75
			C	6: 44: 00		
			F	6: 46: 30		
		v	P			
			S			
			L			
			M			
			C			
			F			
25	lId	N-S	P <sub>i</sub>	3: 16: 14		
			S			
			L	3: 16: 28		
			M	3: 16: 28	.8	57
			C	3: 18: 42		
			F	3: 24: 15		
		E-W	P <sub>j</sub>	3: 16: 14		
			S			
			L	3: 16: 28		
			M	3: 16: 36	.8	54.5
			C	3: 18: 12		
			F	3: 28		
		v	P			
			S			
			L <sub>j</sub>	3: 16: 14		
			M	3: 16: 54	.8	21.25
			C	3: 17: 18		
			F	3: 17: 30		

Trace from 3:19:39 to 3:20:12.

Distance:— 140.78 Km. W. 39° 17' N.

Oct. 18, Trace of Sinusoid on E-W; P. 12:15:42, F. 12:34.

Oct. 20, Record of d quake about 1:00.

Distance:— 139.78 Km. N. 43° 43' W. Two light shocks felt: 7:16:14 and 7:20.

Oct. 25, lId, N-S.: P. 4:01:09, L. 4:01:21, M. 4:01:24; period 1 sec., Amp. 3.87 mm., C. 4:01:45, F. 4:03:30. E-W: P. 4:01:09, L. 4:01:21, M. 4:01:26; period 1 sec., Amp. 4.12 mm., C. 4:01:45, F. 4:04:30. Trace on Vertical. Distance: 125.24 Km., E. 43° 12' S. Faint shock felt.

Oct. 24-27, Pulsatory Oscillations.

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TIME: Mean Civil Greenwich, midnight to midnight, 0-24 hrs.

INSTRUMENTS: Wiechert 80 kg., astatic, horizontal and vertical pendulums.

NOMENCLATURE: International.

FROM NOVEMBER 7, 1912, TO DECEMBER 20, 1912

DATE	CHAR.	COMP.	PHASES.	TIME			PERIOD s.	AMP. m. m.	REMARKS
				h.	m.	s.			
Nov. 7	IIv	N-S	P i	7:	46:	18			
			S						
			L						
			M	7:	17:	41	1.5	4.8	
			C	8:	02:	00			
			F	8:	29				
		E-W	P i	7:	46:	18			
			S						
			L						Distance:— L obscure. W. $41^{\circ} 7' \text{ N}$ .
			M	7:	17:	06	1.5	5.5	
			C	8:	09:	30			
			F	9:	46				Nov. 14, Trace of d record; 6:56.
		V	P						
			S						
			L						
			M						
			C						
			F						

19	lr	N-S	P e	14: 01: 00		
			S			
			L	14: 08: 30		
			M	14: 10: 00	1.5	1.75
			C	14: 14: 50		
			F	14: 24		
		E-W	P e	14: 01: 00		
			S			
			L	14: 08: 20		
			M	14: 10: 00	6	2.25
			C	14: 14: 40		
			F	14: 50		
		v	P			
			S			
			L			
			M			
			C			
			F			
Dec. 9	lr	N-S	P e	20: 39: 26		
			S			
			L	20: 49: 15		
			M	20: 51: 42	18	.5
			C	20: 53: 30		
			F	20: 58		
		E-W	P e	20: 39: 00		
			S			
			L	20: 49: 00		
			M	20: 55: 50	8	1.75
			C	20: 56: 12		
			F	21: 12: 38		
		v	P			
			S			
			L			
			M			
			C			
			F			

Distance:— 2223 Km. W. 37° 52' N.

Pulsatory Oscillations Nov. 19-20 and Dec. 4-5.

Dec. 7, Trace of v record ; 23 :08.

Distance:— 3204 Km. W. 15° 57' N. Sinusoid.

Pulsatory oscillations Dec. 14-20.