SECTION V.—SEISMOLOGY.

SEISMOLOGICAL REPORTS FOR SEPTEMBER, 1918.

W. J. HUMPHREYS, Professor in Charge.

[Dated: Weather Bureau, Washington, D. C., Nov. 1, 1918.]

TABLE 1.—*Noninstrumental earthquake reports, September, 1918.*

Day.	Approximate time, Greenwich Civil.	Station.	Approximate latitude.	Approximate longitude.	Intensity Rossi-Forel.	Number of shocks.	Duration.	Sounds.	Remarks.	Observer.
		CALIFORNIA.								
1918.	*H. m.*		° ′	° ′			*M. s.*			
Sept. 7	9 56	Calexico	32 41	115 30	4	1	15	None	Bump and rapid trembling N-S.	H. M. Rouse.
	10 02	do	32 41	115 30	4	1	20	None	do	Do.
	10 24	do	32 41	115 30	3	1	03	None	Rapid trembling E-W	Do.
		OKLAHOMA.								
10	15 45?	El Reno	35 31	97 57		1	03			M. B. Cope.
	15 30?	Union City	35 23	97 57		1	01		Abrupt bump	James E. Robbins.
	20 00?	Fort Reno	35 33	98 02	3	1	Few	Rumbling	Like rocks falling from roof of building. Abrupt trembling.	Corpl. O. A. Gassaway
11	5 40?	El Reno	35 31	97 57	5-7	1	05		Abrupt bump SW-NE. Some plaster fell. Clock stopped.	M. B. Cope and J. R. Randolph.
	5 20?	Fort Reno	35 33	98 02	5	1	Few	Rumbling	Abrupt trembling	Corpl. O. A. Gassaway.
	5 30?	Union City	35 23	97 57	5	1	01	Rumbling	Abrupt bump; some dishes and fruit jars broke.	James E. Robbins.
	5 45?	Yukon	35 30	97 44	5	1	03	Faint	Rumbling from west like distant freight train, ending with abrupt thud and trembling W-E.	Gordon McComas.
	8 00?	El Reno	35 31	97 57	Light	1	01			M. B. Cope.
	8 30?	Union City	35 23	97 57		1	01			James E. Robbins.

TABLE 2.—*Instrumental seismological reports, September, 1918.*

(Time used: Mean Greenwich, midnight to midnight. Nomenclature: International.)

[For significance of symbols see REVIEW for January, 1918, p. 34.]

Alaska. *Sitka. Magnetic Observatory.* U. S. Coast and Geodetic Survey. J. W. Green.

Lat., 57° 03′ 00″ N.; long., 135° 30′ 06″ W. Elevation, 15.2 meters.

Instruments: Two Bosch-Omori, 10 and 12 kg.

Instrumental constants.. E: V 10, T_0 17; N: V 10, T_0 15

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Sept. 7		eP_E	17 24 33	5				
		eP_N	17 24 40	6				
		S_N	17 31 19	16				
		S_E	17 31 20	14				
		L_E	17 38 17	25				
		M_E	17 48 16	17	3,250			
		M_N	17 46 42	18		1,110		
		C	17 50 ..	17				
		F_N	20 23 ..	11				
		F_E	20 41 ..	11				
12		eP_N	18 06 24					
		eP_E	18 06.30					
		eL_E	18 08 04					
		L_N	18 08 06	15				
		M_E	18 09 45	9	10			
		M_N	18 09 54	10		20		
		F	18 19 ..	8				

Arizona. *Tucson. Magnetic Observatory.* U. S. Coast and Geodetic Survey. F. P. Ulrich.

Lat. 32° 14′ 48″ N.; long., 110° 50′ 06″ W. Elevation, 769.6 meters.

Instruments: Two Bosch-Omori, 10 and 12 kg.

Instrumental constants.. E: V 10, T_0 14; N: V 10, T_0 19

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Sept. 4		P_E	19 56 01	4				Records for this month not very good, some lost motion in the stylus being indicated.
		P_N	19 56 13					
		eL_E	19 56 49					
		eL_N	19 57 09					
		M	19 57 46	6	10	5		
		C	19 58 26	6				
		F	19 59 ..					
7		P_N	17 28 10					
		P_E	17 28 12					
		S_E	17 37 12					
		S_N	17 37 16					
		eL_E	17 51 ..	22				
		eL_N	17 52 ..	20				
		M_N	18 06 04	17		120		
		M_E	18 11 57	17	850			
		C	18 23 ..	16				
		F	20 30 ..	15				
11		eP	3 48 31					
		eL	3 49 20					
		M_N	3 49 55			40		
		M_E	3 50 41		30			
		C	3 51 ..					
		F_E	3 53 ..					
		F_N	3 58 ..					

California. *Berkeley. University of California.*

Lat., 37° 52′ 16″ N.; long., 122° 15′ 37″ W. Elevation, 85.4 meters.

(See Bulletin of the Seismographic Stations, University of California.)

California. *Mount Hamilton. Lick Observatory.*

Lat., 37° 20′ 24″ N.; long., 121° 38′ 34″ W. Elevation, 1,281.7 meters.

(See Bulletin of the Seismographic Stations, University of California.)

California. *Point Loma. Raja Yoga College.* F. J. Dick.

Lat., 32° 43′ 03″ N.; long., 117° 15′ 10″ W. Elevation, 91.4 meters.
Instrument: Two-component, C. D. West seismoscope.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Sept. 5					100	100		Tremors during 24 hours preceding 15h. 00m. on dates given.
8					100	200		
12					200	200		
13					100	200		
14					100	200		
17					50	100		
19					50	50		
21					50	100		

California. *Santa Clara. University of Santa Clara.* J. S. Ricard, S. J.

Lat., 37° 26′ 36″ N.; long., 121° 57′ 63″ W. Elevation, 27.43 meters.

(See Record of the Seismographic Station, University of Santa Clara.)

Colorado. *Denver. Sacred Heart College.* Earthquake Station. A. W. Forstall, S. J.

Lat., 39° 40′ 36″ N.; long., 104° 56′ 54″ W. Elevation, 1,655 meters.

Instrument: Wiechert 80 kg., astatic, horizontal pendulum.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Sept. 7		P_E	17 37 ..					Time of S very doubtful.
		P_N	17 38 ..					
		S	17 48 (?)					
		L_N	17 52 ..	15	*2,000–3,000			
		L_E	17 54 ..	15	*2,000–3,000			
		M	18 05 ..	15	*2,000	*3,000		
		C	18 37 ..					
		F	19 28 ..					
14								Wavelets at intervals during day.
17		L	5					Visible activity on both components.
		F	8					
28		L_N	4 10 ..					Distinct but very small and irregular.
		F_N	4 17 ..					

* Trace amplitude.

District of Columbia. *Washington. U. S. Weather Bureau.*

Lat., 38° 54′ 12″ N.; long., 77° 03′ 03″ W. Elevation, 21 meters.

Instrument: Marvin (vertical pendulum), undamped. Mechanical registration.

Instrumental constants.. V 110, T_0 6.4

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Sept. 7		eP	17 28 48					Long continued L waves of nearly uniform amplitude.
		eS	17 39 22					
		eL	17 49 ..					
		L	18 03 04					
		F	22					
11		e	4 03 40					F lost in microseisms.
		F	4 15 ..					
12		e	18 24 ..					
		L	18 29 10					
		F	18 50 ..					
14		P	17 17 36				9,080	Trace of small amplitude throughout.
		S	17 27 56					
		L	17 51 ..	20				
		F	18 35 ..					
22		e	10 14 20					Do.
		S?	10 17 30					
		eL	11 15 ..					
		F	11 30 ..					

TABLE 2.—*Instrumental seismological reports, September, 1918*—Continued.

District of Columbia. *Washington. U. S. Weather Bureau*—Contd.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Sept. 29		e?	12 19 ..					e lost in microseisms. Amplitudes small; do not show on E-W.
		S	12 19 55					
		eL	12 47 ..					
		F	13 10 ..					
30		P	13 44 45				7,075	
		S	13 53 23					
		L	14 10 ..					
		L	14 15 ..	16				
		F	14 50 ..					
30		eL?	18 45 ..					Trace amplitudes small throughout.
		L	19 00 ..	20				
		L	19 36 ..	16				
		F	20 15 ..					

District of Columbia. *Washington. Georgetown University.* F. A. Tondorf, S. J.

Lat., 38° 54′ 25″ N.; long., 77° 04′ 24″ W. Elevation, 42.4 meters. Subsoil: Decayed diorite.

Instruments: Wiechert 200 kg. astatic horizontal pendulums, 80 kg. vertical.

Instrumental constants..

	V	T_0	ϵ
E	165	5.4	0
N	143	5.2	0
Z	*80*	*3.0*	*0*

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Sept. 4		e_E	20 10 06					Heavy microseisms.
		e_N	20 10 11					
7		eP	17 28 53					Do.
		eS_N	17 39 26					
		iS_E	17 39 29					
		eL?	17 49 48	14				
		M_{E1}	18 07 57	20	*3,400			
		M_{N1}	18 13 05	17		*2,800		
		M_{E2}	18 18 37	17	*2,600			
		M_{N2}	18 19 10	15		*2,000		
		F	22 30 ..					
11		e_N	4 03 40					Do.
		e_E	4 04 07					
		F	4 50 ..					
14		eP	17 17 40					
		S	17 28 09					
		L_E	17 52 ..	19				
		L_E	17 55 25	19				
		F	19 15 ..					
29		eP	12 18 59					Do.
		S_E	12 29 59					P possibly earlier. Sheet taken off at 12h. 36m.
		S_N	12 30 03					
		F	? ? ?					
30		e?	14 07 43					Needle put down at 14h. 04m. Very heavy microseisms.
		L_E	14 11 37	17				
		L_N	14 11 48	17				
		F?	14 50 ..					
30		L_E	18 56 40	21				Very heavy microseisms. Does not show on N-S.
		F	20 12 ..					

* Trace amplitude.

Hawaii. *Honolulu. Magnetic Observatory.* U. S. Coast and Geodetic Survey. Frank Neumann.

Lat., 21° 19′ 12″ N.; long., 158° 03′ 48″ W. Elevation, 15.2 meters.

Instrument: Milne seismograph of the Seismological Committee of the British Association.

Instrumental constant.. T_0 18.6

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ.	μ.	*km.*	
Sept. 2		P	14 25 00					Beginning very faint.
		S	14 32 30	19				
		L	14 41 00	20				
		M	14 49 00	19	*500			
		C	14 55 ..	18				
		F	15 29 ..	19				
5		eP	7 45 18	20				Phases ill defined. First P tremors very irregular. Faint disturbance as early as 7h. 27 m.
		L	7 49 12	22				
		M	7 58 06	18	*200			
		C	8 06 12	19				
		F	8 17 ..	19				

* Trace amplitude.

Hawaii. *Honolulu. Magnetic Observatory*—Continued.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Sept. 7		eL	7 51 ..	19				Little more than a series of irregular tremors preceded by microseisms.
		M	8 00 48		*100			
		C	8 02 48					
		F	8 14 ..					
7		P	17 25 00					Pendulum swinging continuously off paper during time of M. Amplitude possibly 3 or 4 times this amount.
		S	17 32 00					
		L	17 36 54	18				
		M	17 41 ..					
		to	17 50 ..		*17,000			
		C	19 30 ..	17				
		F	22 30 ..	18				
8		P	0 25 48	18				
		S	0 32 24	20				
		L	0 36 06					
		M	0 41 00	20	*1,100			
		C	0 45 ..	18				
		F	1 30 ..	18				
8		eP	5 49 00	18				
		S	5 55 42	18				
		L	6 04 42					
		M	6 07 30	20	*300			
		C	6 12 ..	19				
		F	7 07 ..	18				
8		eP	12 02 30					
		M	12 07 ..		*100			
		C	12 10 ..					
		F	12 19 ..					
11		eP	4 17 48	19				Phases ill defined. Small disturbance at 6h. 28m. may be a separate quake, amplitude *100.
		S	4 27 48	18				
		L	4 46 00					
		M	4 55 00	18	*300			
		C	5 07 ..	19				
		F	7 16 ..	19				
12		P	13 31 30	17				
		L	13 42 06					
		M	13 44 36	18	*200			
		C	13 50 00	19				
		F	15 01 ..	19				
12		eP	18 15 42					F lost changing sheets.
		L	18 17 24					
		M	18 18 24		*300			
		C	18 21 ..					
		F						
14		eP	17 13 36	18				
		S	17 20 24	18				
		L	17 30 54					
		M	17 34 36	18	*1,600			
		C	17 40 ..	18				
		F	19 43 ..	18				
15		eP	18 18 00					
		L	18 31 30					
		M	18 38 00		*200			
		C	18 42 ..					
		F	19 03 ..					
16		eP	13 26 00					
		L	13 45 42					
		M	13 49 36		*200			
		C	13 55 ..					
		F	14 38 ..					
22		P	10 19 48	20				Tremors of *100 and *200 amplitude occur at 13h. 30m. and 14h. 22m., respectively.
		L	10 54 00					
		M	11 03 48	19	*400			
		C	11 11 ..	18				
		F	14 48 ..	18				
25		e	10 09 00	20				Preceded by light tremors; e may be P or S.
		L	10 18 00	18				
		M	10 23 00		*200			
		F	11 48 ..					
28		L	10 57 12	18				Quake preceded and followed by light tremors.
		M	11 01 30		*100			
		C	11 06 ..					
		F	11 18 ..					
30		eP	13 42 12	18				Record very irregular; evidently local.
		S	13 46 36					
		L	13 48 00	18				
		M	13 49 00	18	*1,100			
		C	13 59 48	18				
		F	15 28 ..	17				
30		P	16 24 18					Tremors continuous to following quake.
		L	16 34 42	18				
		M	16 38 00		*100			
		C	16 41 ..					
		F						

* Trace amplitude.

TABLE 2.—*Instrumental seismological reports, September, 1918*—Continued.

Hawaii. *Honolulu. Magnetic Observatory*—Continued.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Sept. 30	.....	P.....	18 08 42	19	.....	.....	.....	Tremors continuous to follow quake.
		S.....	18 14 30	19	.....	.....	.....	
		L.....	18 19 06	.....	.....	.....	.....	
		M.....	18 25 30	18	*3,600	.....	.....	
		C.....	18 32 ..	18	.....	.....	.....	
		F.....	.....	17	.....	.....	.....	
30	.....	P.....	18 55 30	.....	.....	.....	.....	Possibly Srepl occurs at 19h. 03m. .06s.
		L.....	19 05 18	18	.....	.....	.....	
		M.....	19 10 00	19	*3,600	.....	.....	
		C.....	19 21 ..	19	.....	.....	.....	
		F.....	21 47 ..	19	.....	.....	.....	

* Trace amplitude.

Kansas. *Lawrence. University of Kansas.* Department of Physics and Astronomy. F. E. Kester.

Lat., 38° 57′ 30″ N.; long., 95° 14′ 58″ W. Elevation, 301.1 meters.

Instrument: Wiechert.

Instrumental constants..{E: T 177, T_0 3.4, e 4:1; N: T 205, T_0 3.4, e 4:1}

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*		
Sept. 7	.....	eP.....	12 28 06	.....	.....	.....	.....	Record very complex; many small waves throughout the record and their beginnings and endings very illegible.
		S_E?...	12 35 20	.....	.....	.....	.....	
		or	12 37 53	.....	.....	.....	.....	
		S_N.....	12 37 57	.....	.....	.....	.....	
		L_N.....	12 48 57	.....	.....	.....	.....	
		L_E?...	12 48 57	.....	.....	.....	.....	
		or	12 50 57	.....	.....	.....	.....	
		M_N.....	1 06 37	.....	.....	*12,400	.....	
		M_E.....	1 06 56	.....	*12,400	.....	.....	
		F_N.....	2 39 ..	.....	.....	.....	.....	
		F_E.....	2 53 ..	.....	.....	.....	.....	

* Trace amplitude.

Maryland. *Cheltenham. Magnetic Observatory.* U. S. Coast and Geodetic Survey. George Hartnell.

Lat., 38° 44′ 00″ N.; long., 76° 50′ 30″ W. Elevation, 71.6 meters.
Instruments: Two Bosch-Omori, 10 and 12 kg.

Instrumental constants..{E: V 10, T_0 15; N: V 10, T_0 15}

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*
Sept. 7	.....	P.....	17 29 23	3	.....	.....	.....
		S_N.....	17 40 00	14	.....	.....	.....
		S_E.....	17 40 11	14	.....	.....	.....
		eL.....	18 01 30	19	.....	.....	.....
		M_E.....	18 24 31	15	1,200	.....	.....
		M_N.....	18 29 02	15	.....	1,710	.....
		C_N.....	18 36 ..	15	.....	.....	.....
		C_E.....	18 53 ..	15	.....	.....	.....
		F_E.....	20 35 ..	15	.....	.....	.....
		F_N.....	21 40 ..	15	.....	.....	.....
11	.....	P_N.....	4 03 58	3	.....	.....	.....
		P_E.....	4 04 04	3	.....	.....	.....
		M_N.....	4 08 ..	8	.....	5	.....
		C_N.....	4 12 ..	.....	.....	.....	.....
12	.....	eL_N.....	18 29 48	.....	.....	.....	.....
		eL_E.....	18 30 08	.....	.....	.....	.....
		M_N.....	18 30 25	13	.....	10	.....
		M_E.....	18 30 55	11	10	.....	.....
		F_E.....	18 34 ..	.....	.....	.....	.....
		F_N.....	18 38 ..	.....	.....	.....	.....
30	.....	e_N.....	14 12 25	.....	.....	.....	.....
		L_N.....	14 14 57	.....	.....	.....	.....
		M_N.....	14 15 57	15	.....	20	.....
		F.....	14 23 ..	.....	.....	.....	.....

Massachusetts. *Cambridge. Harvard University Seismographic Station,* J. B. Woodworth.

Lat., 42° 22′ 36″ N.; long., 71° 06′ 59″ W. Elevation, 5.4 meters. Foundation: Glacial sand over clay.

Instruments: Two Bosch-Omori 100 kg. horizontal pendulums (mechanical registration).

Instrumental constants..{E: V 80, T_0 23, e 0; N: V 50, T_0 25, e 4:1}

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Sept. 7	.....	*O*.....	*17 17 14*	.....	.....	.....	8,900	(80° 06′ of arc.) Special, subject to possible corrections. N record unsatisfactory. ePN masked by microseims, comes later about 17h. 29m. 42s., and S_E about 17h. 40m. 22s., damped by magnet. East tylus off sheet from 18h. 12m. 36s. to 18h. 13m. 03s.
		iP_E...	17 29 22	7	.....	.....	.....	
		S_E.....	17 39 27	11	.....	.....	.....	
		M_E.....	17 40 21	20	6,500	.....	.....	
		eL_E?..	17 53 ..	.....	.....	.....	.....	
		M_E.....	18 04 ..	26	22,500	.....	.....	
		M_E.....	18 07 22	18	29,500	.....	.....	
		M_E.....	18 11 ..	16	35,750	.....	.....	
		M_E.....	18 12 36	14	65,000	.....	.....	
		M_E.....	18 15 27	15	49,750	.....	.....	
		M_E.....	18 21 ..	16	40,000	.....	.....	
		L_{repl}..	19 03 31	16	510	.....	.....	
		to	19 05 18	15	.....	.....	.....	
		L_{rep}?..	21 19 35	2–15	.....	.....	.....	
		F_E.....	22 05 ..	.....	.....	.....	.....	
8	.....	*O?*.....	*0 28 04*	.....	.....	.....	6,485?	58° 25′ ? N component stopped.
		e_E?....	0	.....	.....	.....	.....	
		S_E.....	0 46 06	8	.....	.....	.....	
		eL_E...	0 56 32	28	.....	.....	.....	
		M_E?...	1 01 50	20	.....	.....	.....	
		C_E.....	1 07 14	15	.....	.....	.....	
		F.....	1 20 ..	.....	.....	.....	.....	
8	.....	eL_E...	6 26 38	28–24	.....	.....	.....	N component not working.
		L_E.....	6 31 58	20	.....	.....	.....	
		F.....	6 49 18	.....	.....	.....	.....	
11	.....	*O*.....	*4 postea*	.....	.....	.....	1,000–2,000	N undamped. E damped 1.5:1.
		e_N?...	4 04 28	.....	.....	.....	.....	
		e_E.....	4 05 59?	.....	.....	.....	.....	
		L_N?...	4 06 57	4–5	.....	.....	.....	
		L_E.....	4 07 01	12	.....	.....	.....	
		F.....	4 14 ..	.....	.....	.....	.....	
14	.....	*O?*.....	17 05 ..	.....	.....	.....	10800?	N component not registering.
		e_E?...	17 39 24	6	.....	.....	.....	
		S_E.....	17 39 24	6	.....	.....	.....	
		eL_E...	17 51 32	20–30	.....	.....	.....	
		L_E.....	17 54 42	20	.....	.....	.....	
		L_E.....	17 58 52	15	.....	.....	.....	
		L_E.....	18 04 52	15	.....	.....	.....	
		L_E.....	18 09 46	15	.....	.....	.....	
		F?.....	18 25 ..	.....	.....	.....	.....	
30	.....	*O?*.....	13 20 44	.....	.....	.....	10155?	e in microseisms.
		e?.....	13 ? ?	.....	.....	.....	.....	
		S_N.....	13 44 58	9	.....	.....	.....	
		S_E.....	13 44 59	8	.....	.....	.....	
		eL_N...	14 05 18	40	.....	.....	.....	
		L_E.....	14 08 20	20	.....	.....	.....	
		L_E.....	14 08 59	20	.....	.....	.....	
		L_E.....	14 14 09	20	.....	.....	.....	
		C_E.....	14 16 23	15	.....	.....	.....	
		F_E?...	14 41 ..	.....	.....	.....	.....	
30	.....	*O*.....	*18 postea*	.....	.....	.....	.....	Very distant. N undamped.
		L_E.....	18 56 19	24	.....	.....	.....	
		L_E.....	19 02 54	20	.....	.....	.....	
		to	19 07 53	.....	.....	.....	.....	
		L_E.....	19 08 25	15	.....	.....	.....	
		to	19 10 29	.....	.....	.....	.....	
		L_N.....	19 30 40	.....	.....	.....	.....	
		M_N?..	19 36 30	18	.....	.....	.....	
		M_N...	19 38 00	15	.....	.....	.....	
		M_N...	19 47 ..	20	.....	.....	.....	
		L_E.....	19 49 05	20	.....	.....	.....	
		to	19 54 13	.....	.....	.....	.....	
		L_E.....	20 03 ..	15	.....	.....	.....	
		F_E.....	20 50 ..	.....	.....	.....	.....	
30	.....	*O*.....	*1 postea*	.....	.....	.....	.....	Not identified on N.
		e_E?....	1 39 15	6	.....	.....	.....	
		e_E.....	1 41 39	6	.....	.....	.....	
		L_E.....	1 44 41	20	.....	.....	.....	
		F.....	2 03 ..	.....	.....	.....	.....	

TABLE 2.—*Instrumental seismological reports, September, 1918*—Continued.

Missouri. *Saint Louis. St. Louis University.* Geophysical Observatory. J. B. Goesse, S. J.

Lat., 38° 38′ 15″ N.; long., 90° 13′ 58″ W. Elevation, 160.4 meters. Foundation: 12 feet of tough clay over limestone of Mississippi system, about 300 feet thick.

Instrument: Wiechert 80 kg. astatic, horizontal pendulum.

Instrumental constants.. V 80, T_0 7, ϵ 5:1

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Sept. 7	.....	eP....	17 28 18	.....	.....	.....	8,900	Reported from South Africa.
		S.....	17 38 24	.....	.....	.....	.....	
		L.....	17 53 48	30	.....	.....	.....	
		M.....	17 59 30	24	.....	*19,000	.....	
		M.....	18 07 18	18	*18,000	.....	.....	
		M.....	18 10 18	18	.....	*12,000	.....	
		M.....	18 25 30	18	.....	*8,000	.....	
		M.....	18 32 00	18	.....	*7,000	.....	
		F.....	20 25 ..	.....	.....	.....	.....	
12	.....	eL....	18 25 30	1	.....	*2,000	.....	
		L.....	19 25 00	.....	.....	.....	.....	
		L.....	19 42 06	0.5	.....	*1,000	.....	
		F.....	? ? ?	.....	.....	.....	.....	
30	.....	P.....	13 47 00	.....	.....	.....	3,860	
		S ?....	13 52 42	.....	.....	.....	.....	
		L.....	13 56 30	.....	.....	.....	.....	
		M.....	14 08 12	24	.....	*1,000	.....	
		F.....	? ? ?	.....	.....	.....	.....	

* Trace amplitude.

New York. *Buffalo. Canisius College.* John A. Curtin, S. J.

Lat., 42° 53′ 02″ N.; long., 78° 52′ 40″ W. Elevation, 190.5 meters.

Instrument: Wiechert 80 kg. horizontal.

Instrumental constants.. V 80, T_0 7, ϵ 5:1

(Report for September, 1918, not received.)

New York. *Fordham University.* Daniel H. Sullivan, S. J.

Lat., 40° 51′ 47″ N.; long. 73° 53′ 08″ W. Elevation, 29.3 meters.

Instrument: Wiechert, 80 kg.

Instrumental constants.. E: V 72, T_0 5.0, ϵ 0; N: V 72, T_0 5.0, ϵ 0

(Report for September, 1918, not received.)

New York. *Ithaca. Cornell University.* Heinrich Ries.

Lat., 42° 26′ 58″ N.; long., 76° 29′ 09″ W. Elevation, 242.6 meters.

Instruments: Two Bosch-Omori, 25 kg., horizontal pendulum (mechanical registration).

Instrumental constants.. E: V 13, T_0 22, ϵ 4:1; N: V 14, T_0 25, ϵ 4:1

(Report for September, 1918, not received.)

Panama Canal. *Balboa Heights.* Governor, Panama Canal.

Lat., 8° 57′ 39″ N.; long., 79° 33′ 29″ W. Elevation, 27.6 meters.

Instruments: Two Bosch-Omori, 100 kg.

Instrumental constants.. V 35, T_0 20

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Sept. 7	.....	P_E....	8 29 07	.....	.....	.....	400	
		P_N....	8 29 15	.....	.....	.....	.....	
		L_E....	8 30 11	20	.....	.....	.....	
		L_N....	8 30 15	20	.....	.....	.....	
		M_N....	8 30 25	.....	.....	*400	.....	
		M_E....	8 30 27	.....	*200	.....	.....	
		F.....	8 34 00	.....	.....	.....	.....	
8	.....	P.....	0 03 28	20	.....	.....	.....	Trace indistinct.
		F.....	0 05 34	.....	.....	.....	.....	
8	.....	P_E....	17 35 04	.....	.....	.....	8,950	
		P_N....	17 35 16	.....	.....	.....	.....	
		L_E....	18 03 04	20	.....	.....	.....	
		L_N....	18 03 16	20	.....	.....	.....	
		M_E....	18 13 24	.....	*1,500	.....	.....	
		M_N....	18 14 52	.....	.....	*1,000	.....	
		F_N....	20 07 00	.....	.....	.....	.....	
		F_E....	20 20 00	.....	.....	.....	.....	

* Trace amplitude.

Panama Canal. *Balboa Heights.* Governor, Panama Canal—Contd.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Sept. 17	.....	P_E....	22 46 08	.....	.....	.....	330	
		P_N....	22 46 12	.....	.....	.....	.....	
		L_N....	22 46 22	20	.....	.....	.....	
		L_E....	22 47 06	20	.....	.....	.....	
		M_E....	22 47 14	.....	*2,000	.....	.....	
		M_N....	22 47 16	.....	.....	*2,000	.....	
		F_E....	22 55 00	.....	.....	.....	.....	
		F_N....	22 56 00	.....	.....	.....	.....	

* Trace amplitude.

Porto Rico. *Vieques. Magnetic Observatory.* U. S. Coast and Geodetic Survey. F. L. Adams.

Lat., 18° 09′ N.; long., 65° 27′ W. Elevation, 19.8 meters.

Instruments: Two Bosch-Omori.

Instrumental constants.. E: V 10, T_0 17; N: V 10, T_0 20

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Sept. 7	.....	eP$_N$...	17 35 29	9	.....	.....	.....	Phases tabulated as eP may be P_{repl}.
		eP$_E$...	17 35 50	9	.....	.....	.....	
		S_E....	17 43 14	16	.....	.....	.....	
		$S_{N\,repl}$.	17 50 48	16	.....	.....	.....	
		$S_{E\,repl}$.	17 51 00	16	.....	.....	.....	
		L_N....	18 07 38	40	.....	.....	.....	
		eL$_E$...	18 13 ..	.....	.....	.....	.....	
		M_N....	18 25 16	21	.....	400	.....	
		M_E....	18 32 14	17	480	.....	.....	
		C_E....	18 37 ..	17	.....	.....	.....	
		C_N....	18 39 ..	16	.....	.....	.....	
		F_E....	20 19 ..	17	.....	.....	.....	
		F_N....	20 28 ..	17	.....	.....	.....	

Vermont. *Northfield. U. S. Weather Bureau.* Wm. A. Shaw.

Lat., 44° 10′ N.; long., 72° 41′ W. Elevation, 256 meters.

Instruments: Two Bosch-Omori, mechanical registration.

Instrumental constants.. E: V 10, T_0 15; N: V 10, T_0 16

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Sept. 7	.....	P_E....	17 28 36	.....	.....	.....	.....	N component not registering.
		eS$_E$?..	17 38 02	.....	.....	.....	.....	
		eL$_E$?..	17 50 ..	.....	.....	.....	.....	
		L_E....	18 00 ..	20	.....	.....	.....	
		L_E....	18 08 ..	16	.....	.....	.....	
		M_E....	18 15 ..	.....	*25,000	.....	.....	
		F_E....	20 15 ..	.....	.....	.....	.....	
30	.....	eL....	14 13 ..	.....	.....	.....	.....	
		F.....	14 25 ..	.....	.....	.....	.....	

* Trace amplitude.

Canada. *Ottawa. Dominion Astronomical Observatory.* Earthquake Station. Otto Klotz.

Lat., 45° 23′ 38″ N.; long., 75° 42′ 57″ W. Elevation, 83 meters.

Instruments: Two Bosch photographic horizontal pendulums, one Spindler & Hoyer 80kg. vertical seismograph.

Instrumental constants.. V 120, T_0 26

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Sept. 2	.....	eL$_N$?..	15 08 ..	19	.....	.....	.....	
		L.....	15 20 to	.....	.....	.....	.....	
			15 53 ..	18	.....	.....	.....	
4	.....	e$_N$.....	20 11 28	.....	.....	.....	.....	
		F.....	20 18 30	.....	.....	.....	.....	
7	.....	*O*.....	*17 17 37*	.....	.....	.....	7,360	Difficult record. It evidently is not S, but can not be identified with any other phase. The same impulse appears on the records of Saskatoon and Halifax, particularly on E-W components.
		P.....	17 28 24	.....	.....	.....	.....	
		eS.....	17 37 11	.....	.....	.....	.....	
		I_E....	17 38 50	.....	.....	.....	.....	
		L_E....	17 50 ..	40	.....	.....	.....	
		M.....	18 10 ..	16	550	500	.....	
		L.....	18 25 ..	16	.....	.....	.....	
		L.....	19 00 ..	16	.....	.....	.....	
		L.....	19 25 ..	15	.....	.....	.....	
		L.....	19 45 ..	14	.....	.....	.....	
		L.....	19 50 ..	14	.....	.....	.....	
		L.....	20 10 ..	17	.....	.....	.....	
		L.....	20 35 ..	17	.....	.....	.....	
		L.....	21 20 ..	17	.....	.....	.....	
8	.....	F.....	1 20 ..	.....	.....	.....	.....	

TABLE 2.—*Instrumental seismological reports, September, 1918*—Continued.

Canada. *Ottawa. Dominion Astronomical Observatory*—Continued.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
			VERTICAL.					
1918.			*H. m. s.*	*Sec.*	*p.*	*Az.*	*dm.*	
Sept. 7		*eP*	*17 28 45*					
		eL	*17 52 30*					
		L	*18 00*	*32*				
		L	*18 06*	*16*				
		L	*18 10*	*17*				
		L	*18 15*	*17*				
		L	*18 22*	*17*				
		L	*18 27*	*17*				
		L	*18 40*	*16*				
		L	*18 53*	*15*				
		F	*19 10*					
7		*O*	*17 17 31*				5,500	Saskatoon record furnished by Ottawa.
		P_N	17 26 31					
		S_E	17 33 40					
		i_E	17 35 13					
		L	17 42 30					
7		*O*	*17 17 51*				8,000	Halifax record furnished by Ottawa.
		P	17 29 12					
		S_E	17 38 32					
		i_E	17 39 48					
		L	17 52 ..					
8		e_N	6 08 ..					
		e_E	6 11 30					
		eL	6 25 to					
			6 35 ..	13				
		F	7					
11		e	4 05 to					
			4 17 ..	8				
		F	4 40 ..					
11		eL_E	5 04 ..					
		L_E	5 17 ..	22				
		L	5 30 ..					
		F	5 40 ..					
12		e_N	18 25 ..					
		eL	18 27 to	16				
			18 55 ..	8				
		F	19					
14		*O*	*17 05 01*				8,880	
		P_N	17 17 08					
		S	17 27 12					
		eL_E	17 41 30	23				
		L	17 44 ..	17				
		L	17 55 ..	18				
		L	18 03 ..	15				
		L	18 30 ..	15				
		L	18 43 ..	15				
		F	19					
16		eL_E	14 13 ..	26				
		L	14 19 ..	18				
		L	14 25 ..	16				
		F	14 35 ..					
22		e	10 13 30					
		i	10 17 53					
		e	10 29 18					
		eL_N?	11 07 ..					
		L_E	11 07 ..	27				
		L	11 15 ..	27				
		L	11 20 ..	27				
		F	11 35 ..					
29		*O*	*12 07 1[illegible]*				8,720	
		P	12 19 17					
		S	12 29 13					
		eL	12 43 ..	41				
		L	12 55 ..	19				
		L	13 00 ..	17				
		F	13 20 ..					
30		*O*	*13 34 3[illegible]*				6,820	
		P	13 44 50					
		S	13 53 10					
		L	14 03 30					
		L	14 12 ..	18				
		L	14 25 ..	15				
		L	14 52 ..	12				
		F	15 10 ..					
1918.		eL_N?..	*H. m. s.* 18 42 ..	*Sec.*	*p.*	*Az.*	*dm.*	
Sept. 30		L_N	18 45 ..	32				
		L_E	18 53 ..	25				
		L	19 00 ..	17				
		L_E	19 15 ..	15				
		L_E	19 20 ..	15				
		L	19 35 ..	18				
		L	19 55 ..	17				
		L_E	20 15 ..	14				
		F	20 40 ..					

Canada. *Toronto. Dominion Meteorological Service.*

Lat., 43° 40′ 01″ N.; long., 79° 23′ 51″ W. Elevation, 113.7 meters. Subsoil: Sand and clay.

Instrument: Milne horizontal pendulum, North. In the meridian.

Instrumental constant.. T_0 18. Pillar deviation, 1 mm. swing of boom=0.50′.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Sept. 2		L	15 19 42					Early phases missed.
		L	15 26 06		*100			Light turned down at 14h. 51m.
		F	15 51 00					
5								Microseisms going on from 12h. to 13h. when other stations recorded a small quake.
7		e ?	17 27 12				7,140?	Real beginning of P may be masked by microseisms. The phase at 17h. 38m. 48s. may suggest a dual quake.
		P ?	17 28 24					
		eP	17 29 18					
		i	17 32 36					
		S	17 37 00					
		i	17 38 48					
		iL ?	17 40 48					
		i	17 49 48					
		iL	17 53 00					
		iL	18 02 12					
		iL	18 08 18					
		iL	18 11 36					
		M_1	18 13 36					
		to	18 15 00		*25,000			
		iL	18 16 24					
		M_2	18 17 30					
		iL	18 18 36					
		iL	19 54 06					
		iL	20 00 54					
		L_{repl}	22 38 18					
		F	22 56 36					
8		eL	0 49 48					Distant. Gradual thickening.
		iL	1 01 54					
		M	1 04 30		*300			
		L	1 16 36					
		F ?	1 45 30					
8		eL	6 13 42					Gradual thickening.
		eL	6 25 30					
		eL	6 27 54					
		M	6 28 06		*300			
		eL	6 32 06					
		F	6 59 18					
8								Microseisms began at 14h. 42m. and were very heavy during night until morning of 9th.
11								Microseisms during morning hours.
12		eL	18 26 18					
		eL	18 28 18					
		M	18 28 42		*200			
		eL?	19 09 06					
		F	19 11 18?					
14		e	17 21 24					Microseisms going on before e.
		eS	17 26 06					
		L	17 42 06					
		eL	17 48 00					
		L	17 54 54					
		M	17 55 54		*300			
		F	19 16 30					
16		L	14 11 12					
		L	14 13 18					
		eL	14 16 42					
		M	14 18 30		*300			
		F	14 41 54					

TABLE 2.—*Instrumental seismological reports, September, 1918*—Continued.

Canada. *Toronto. Dominion Meteorological Service*—Continued.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Sept. 22		L	10 34 42					Microseisms going on.
		L	10 52 48					
		eL	11 18 36					
		M	11 19 42		*200			
		F	11 48 54?					
29		S?	12 30 12					Distant.
		e	12 35 00					
		L	12 44 06					
		eL	12 54 18					
		eL	12 56 54					
		M	12 57 30		*300			
		F	13 30 24?					
30		P?	13 45 00?					Time of P and F very doubtful.
		eS	13 53 42					
		eL	14 02 00					Microseisms going on.
		M	14 16 30		*600			
		L	14 30 48					
		F	? ? ?					
30		e	18 44 00					May be a dual quake.
		L	18 52 48					
		eL	18 56 36					
		M_1	19 02 24		*2,000			
		eL	19 42 36					
		eL	19 49 00					
		M_2	19 53 00		*800			
		lL	19 57 00					
		F?	21 13 30					

* Trace amplitude.

Canada. *Victoria, B. C. Dominion Meteorological Service.*

Lat., 48° 24′ N.; long., 123° 19′ W. Elevation, 67.7 meters. Subsoil: Rock.

Instrument: Wiechert, vertical; Milne horizontal pendulum, North. In the meridian.

Instrumental constant.. T_0 18. Pillar deviation, 1 mm., swing of boom=0.54″.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Sept. 2		P?	14 57 22					
		M	15 07 42		*200			
		F?	15 21 28					
5		M	12 30 56		*100			
7		P	17 23 38					
		S	17 26 02					
		i	17 27 44					
		L	17 33 28					
		M_1	17 53 08		*30,000			
		M_2	17 57 02					
		F	22 29 32					
			VERTICAL.					
						Az		
		P	**17 23 30*	*3*			*1,430*	*Lines crossed at time of quake.*
		S	*17 26 00*	*8*				
		L	*17 ? ?*					
		M	*17 42 00*	*24*		*34*		
		F	*? ? ?*					
8		P or L?	0 11 56					Probably aftershock from above.
		M	0 50 07		*200			
		F	1 20 50					
8		P	6 03 00					Do.
		L	6 14 30					
		M	6 21 30		*200			
		F	7 01 00					
8		L?	22 27 37					Do. Microseisms from 21h. 20m. 8th to 0h. 40m. 9th.
		eL	22 42 30					
		M	22 56 08		*200			
9		F	0 33 31					
9		L	0 01 05		*200			
		F	0 04 05					
9								Local tremor felt in parts of city at 12h. 30m. duration 1 sec. and accompanied by a rumbling noise. Not recorded.
12		M	13 51 31		*100			Probably aftershock.

Canada. *Victoria, B. C. Dominion Meteorological Service*—Contd.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	*Az.*	*km.*	
Sept. 12		P	18 08 15				1,410	Alaska?
		L	18 10 43					
		M	18 12 11		*200			
		F	18 22 01					
14		P	17 21 17				2,770	
		S	17 25 43					
		L	17 37 01					
		M	17 44 53		*500			
		F	18 38 00					
15		M?	6 13 29		*50			
16		P	14 01 49?					
		M	14 12 38		*200			
		F	14 23 57					
22		P	10 58 51				1,720	
		S	11 01 49					
		L	11 07 43					
		M	11 12 08		*200			
		F	11 29 50					
28		P	10 56 30					
		M	10 59 27		*100			
		F	11 03 24					
29		eL	12 50 21					
		eL	12 52 08					
		L	12 57 03					
		M	13 06 54		*500			
		F	13 30 30					
30		P	13 31 33				1,710	
		S	13 34 30					
		L	13 39 25					
		M	13 55 39		*600			
		F	14 54 10					
30		P	18 04 32				2,760	
		S	18 08 57					
		L	18 15 31					
		M	18 47 18		*1,000			
		F	? ? ?					
30		L	19 15 50					P and S probably masked by end of previous quake.
		M	19 40 55		*1,500			
		F	20 42 23					

* Trace amplitude.

TABLE 3.—*Late seismological reports (instrumental).*

Arizona. *Tucson. Magnetic Observatory.* U. S. Coast and Geodetic Survey. F. P. Ulrich.

Lat. 32° 14′ 48″ N.; long. 110° 50′ 06″ W. Elevation, 769.6 meters.

Instruments: Two Bosch-Omori, 10 and 12 kg.

Instrumental constants { E: V 10, T_0 14; N: V 10, T_0 19 }

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E.	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Aug. 8		eL_E	10 33 20	24	10			
		M_E	10 41 37	19				
		F_E	10 55 ..	16				
15		eP_E	12 38 30	6				Paper on E was changed between 14h. 08m. and 14h. 26m. End occurred during this time.
		eP_N	12 39 40	5				
		S_E	12 48 23	16				
		S_N	12 48 26					
		eL_E	13 14 37	25				
		eL_N	13 16 24	24				
		M_E	13 26 30	18	150			
		M_N	13 47 24	16		20		
		C_E	13 53 ..	16				
		C_N	13 56 ..	16				
		F_N	14 09 ..	16				
23		eL_E	7 18 46	24				
		M_E	7 40 49	16	10			
		F_E	8 05 ..	15				

TABLE 2.—*Instrumental seismological reports, September, 1918*—Con.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
Massachusetts. *Cambridge. Harvard University Seismographic Station,* J. B. Woodworth.								
Lat., 42° 23′ 36″ N.; long., 71° 06′ 59″ W. Elevation, 5.4 meters. Foundation: Glacial sand over clay.								
Instruments: Two Bosch-Omori 100 kg. horizontal pendulums (mechanical registration).								
Instrumental constants..					V	T_0	ϵ	
					E 80	23	0	
					N 50	25	4:1	
1918. Aug. 4	.....	.....	*H. m. s.* 16 postea	*Sec.*	μ	μ	*km.*	8 sec. periods for about 15 minutes. Clock contacts failed; time approximate only.
5	.....	L_E....	2 35 ..	20	.....	.....	.....	
		to.....	2 50 ..	.....	.....	.....	.....	
8	.....	e_N?....	10 25 17	.....	.....	.....	.....	
		eL_N...	10 38 21	40	.....	.....	.....	
		L_N....	10 43 31	20	.....	.....	.....	
		L_N....	10 46 21	30	.....	.....	.....	
		L_N....	10 49 55	25	.....	.....	.....	
		L_E....	10 51 00	30	.....	.....	.....	
		L_N....	10 56 47	20	.....	.....	.....	Amplitude N increases.
		to.....	10 59 11	18	.....	.....	.....	
		F_N....	11 37 ..	.....	.....	.....	.....	
14	.....	L_E....	18 15 51	.....	.....	.....	.....	
		F.....	19 19 ..	.....	.....	.....	.....	
14	.....	e_E?....	20 54 37	.....	.....	.....	.....	Possibly artificial. Some record on N also.
		L_E....	20 54 53	8–13	.....	.....	.....	
		F.....	21 15 ..	.....	.....	.....	.....	
15	.....	*O*.....	*12 26 21*	.....	.....	.....	6,426	Break in record from 13 h. 01 m. to 13 h. 05 m. changing sheets, and on E from 14 h. 56 m. to 15 h. 44 m. stylus tipped over.
		P_N....	12 35 44	2	.....	.....	.....	
		i.....	12 37 56	.....	.....	.....	.....	
		i.....	12 38 07	2	.....	.....	.....	
		S_N....	12 42 43	20	.....	.....	.....	
		eL_N...	12 52 22	.....	.....	.....	.....	
		eM_N...	12 58 ..	22	.....	.....	.....	
		M_E....	13 28 ..	.....	.....	.....	.....	
		M_E....	13 30 30	28	.....	.....	.....	
		M_E....	13 38 30	30	.....	.....	.....	
		M_E....	13 46 30	16	.....	.....	.....	
		M_E....	13 54 ..	.....	.....	.....	.....	
		L_E....	14 04 30	.....	.....	.....	.....	
		L_E....	16 34 ..	24	.....	.....	.....	
		to.....	16 46 ..	.....	.....	.....	.....	
		F_E....	17 15 ..	.....	.....	.....	.....	
15	.....	*O*?....	*17 48 24*	.....	.....	.....	9,850?	
		S_E?....	18 10 50	8	.....	.....	.....	
		L_E....	18 30 18	26	.....	.....	.....	
		L_N....	18 30 54?	.....	.....	.....	.....	
		L_E....	18 34 30	30	.....	.....	.....	
		M_E?...	18 39 53	24	.....	.....	.....	
		L_E....	18 49 ..	20	.....	.....	.....	
		L_E....	18 57 ..	15	.....	.....	.....	
		F.....	19 52 ..	.....	.....	.....	.....	
21	.....	*O*.....	*4 11 54*	.....	.....	.....	225	Local shock near South Paris, Me. (44° 07′ 40″ N., 70° 32′ 18″ W.).
		P_E....	4 12 28	.....	.....	.....	.....	
		M_E....	4 12 53	.....	.....	.....	.....	
		C.....	4 13 04	8	.....	.....	.....	
		to.....	4 13 45	.....	.....	.....	.....	
		F.....	4 14 08	.....	.....	.....	.....	
23	.....	*O*.....	*6 43 47*	.....	.....	.....	10,960	Volcanoes "Llame" (Llaimas?) and Lanin in Andes reported in eruption. Lanin 71° 30′ W., 39° 45′ S. About 9,000 kms.
		eP_E...	7 02 ..	.....	.....	.....	.....	
		e_E....	7 06 13	.....	.....	.....	.....	
		S_E....	7 14 14	20	.....	.....	.....	
		S_N....	7 14 59	.....	.....	.....	.....	
		eL_E...	7 36 51	40	.....	.....	.....	
		L_E....	7 42 ..	20	.....	.....	.....	
		L_E....	7 48 54	15	.....	.....	.....	
		F.....	8 50 ..	.....	.....	.....	.....	

SEISMOLOGICAL DISPATCHES.[1]

Buenos Aires, August 23, 1918 (belated dispatch).

Government telegraph stations report that the eruption of Mounts Llame and Lanan, in the territory of Neuquen, are not serious. The inhabitants of two towns near the mountains were reported to have left their homes. (Assoc. Pr.)

Honolulu, T. H., August 30, 1918 (belated dispatch).

The great active volcano of Kilauea, on the island of Hawaii, which caused a sensation in the scientific world last February by suddenly discharging a lava flow from its inner pit, is now showing preliminary signs of another eruption. (Assoc. Pr.)

No press reports of seismological or volcanological disturbances were received during September, 1918.

RECORD OF SEA WAVES PRODUCED BY THE EARTHQUAKE OF SEPTEMBER 7, 1918.

[Communicated by the United States Coast and Geodetic Survey.]

The tide gages of the United States Coast and Geodetic Survey at San Francisco, Cal., and Honolulu, Hawaii, recorded a marked tidal disturbance on the two days following the earthquake of September 7, 1918. The disturbance began with a rise of tide in each case.

At Honolulu the beginning occurred at $1^h\ 25^m$ p. m., Hawaiian standard time, or $23^h\ 55^m$ G. M. T. The maximum amplitude of about 0.9 foot came not quite an hour later. The waves were quite regular, as a rule, with an average period of about 25 minutes, and were still in evidence, though of small amplitude, two days after the beginning.

At San Francisco the beginning occurred about $6^h\ 40^m$ p. m., 120th meridian standard time, or $2^h\ 40^m$ G. M. T., September 8. The maximum amplitude of about 3 inches came not quite an hour later. The waves were very irregular, so that only an approximate determination of the period was possible, somewhere between 15 and 20 seconds.

Records of this earthquake from the seismographs at the magnetic observatories of this bureau indicate that the earthquake occurred at about $17^h\ 17^m$ G. M. T., so that it took the sea waves $6^h\ 38^m$ to reach Honolulu and $9^h\ 23^m$ to reach San Francisco.

[1] Reported by the organization indicated and collected by the seismological station at Georgetown University, Washington, D. C.