SECTION V.—SEISMOLOGY.

SEISMOLOGICAL REPORTS FOR OCTOBER, 1918.

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[Dated: Seismological Investigations, Weather Bureau, Dec. 3, 1918.]

TABLE I.—*Noninstrumental earthquake reports, October, 1918.*

Day.	Approximate time, Greenwich Civil.	Station.	Approximate latitude.	Approximate longitude.	Intensity Rossi-Forel.	Number of shocks.	Duration.	Sounds.	Remarks.	Observer.
		ARKANSAS.								
1918.	*H. m.*		° ′	° ′			*M. s.*			
Oct. 4	9 21	Bauxite	34 33	92 24		3		Loud	Like an explosion, followed by three bumps and rapid rocking.	Arkansas Gazette.
		Black Rock	36 08	91 02		1	20			S. J. Howe.
		Brinkley	34 53	91 07	5	1	Few	None	Abrupt trembling SE-NW	H. L. D. Whitson.
		Carlisle	34 47	91 39	5	1	10	Rumbling	Gradual rocking and trembling	J. F. Gillespie.
		England	34 32	91 52						Arkansas Gazette.
		Little Rock	34 45	92 06	5	3	06	Rumbling	Abrupt rocking N-S	R. E. Stevenson, et. al.
		Lonoke	34 47	91 49						Arkansas Gazette.
		Pine Bluff	34 13	91 54		1				W. P. McGeorge.
		Scott	34 43	92 01						Arkansas Gazette.
		Searcy	35 15	91 39	5		Few	Rumbling	A series of quivers; windows rattled, furniture moved.	Sarah Cypert.
13	10 00?	Black Rock	36 08	91 02	2	3	30	None	Three abrupt shocks	S. J. Howe.
	9 30?	Hoxie	36 03	90 55	5	1	30	Rumbling	Abrupt rocking N-S	J. E. Pringle.
	? ?	Jonesboro	35 51	90 39				None	Rocking	Benedictine Sisters.
	9 35?	Pocahontas	36 15	90 56	5	1	30	Rumbling	Gradual trembling N-S	Do.
16	2 11?	Hardy	36 19	91 21	3	1	30	Rumbling	Gradual rocking N-S	C. A. Caywood.
		CALIFORNIA.								
11	4 00?	Calexico	32 41	115 30	3	1	01	None	Abrupt lurch N-S	H. M. Rouse.
	3 45?	Hemet	33 44	116 58	2	1	02	Faint	Trembling NE-SW	C. E. McManigal.
	4 01?	Indio	33 43	116 13	3	1		Faint	Rumbling; gradual rocking	Fred N. Johnson.
	4 00?	Mecca	33 34	116 05	3	1	15		Gradual trembling	Edgar A. Palmer.
	4 15?	Mesa Grande	33 10	116 46	3	1		Faint	Very slight jar N-S	Edward H. Davis.
12	12 30	Lakeport	39 03	122 56	3	1	02	None	Gradual trembling N-S	Mrs. Elizabeth Lawlor.
14	12 05	Calexico	32 41	115 30	5	1	06	Loud	Severe lurch N-S accompanied by a heavy muffled explosion, and followed by loud rumbling and trembling.	H. M. Rouse.
		ILLINOIS.								
16	2 30?	Anna	37 28	89 14			15	None	Trembling W-E	Dr. James I. Hale.
	2 15?	Cairo	37 00	89 10	2	1	01	None	Gradual trembling NE-SW	R. T. Lindley.
		MICHIGAN.								
1	6 38	Calumet	47 14	88 28	3	1	01	None	Trembling	E. S. Gulison.
		TENNESSEE.								
4	9 21	Memphis	35 09	90 03	2	1	05		Bump	S. C. Emery.
16	2 15?	Clarksville	36 31	87 22	2	1	1? 00	Rumbling	Gradual trembling	R. L. Miller.
	2 15?	Memphis	35 09	90 03	5	2	02	Rumbling	Rocking N-S	S. C. Emery.
	2 30?	Savannah	35 12	88 15	5	2			Gradual rocking E-W	F. H. Kendall.
	2 ?	Union City	36 26	89 04	3	1	02	None	Rocking N-S	J. R. Oliver.
		PORTO RICO.								
11-29	14 15	Aguadilla	18 26	67 09	10	55+	*20 ..	None	Began with trembling, followed by rocking and bumping NE-SW; buildings thrown down. A tidal wave swept inland over an area 2 miles long and a half mile wide, leaving its marks 40 feet high on the cliffs. Thirty houses and 9 lives were lost in this tidal wave. First shock lasted 2½ minutes, all others from 1 to 5 or 6 seconds and with intensities 2-7.	William M. Orr.
		Isabela	18 30	67 03	10	55+	*20 ..	None	Began with trembling followed by rocking and bumping NE-SW; buildings thrown down, but no one hurt. Tidal wave swept away several houses. There were almost continuous tremors after the first shocks, intensifying at intervals for several days, and many slight shocks and tremors each day continuing till Oct. 29. Slight shocks were still continuing at intervals into November.	Do.
		San Juan	18 29	66 07	8	6	12 ..	None	First shock was vertical or bumping for 2 minutes; remainder were rocking or swaying N-S. Second shock lasted a half minute; last four only a few seconds each.	F. E. Hartwell.
26	3 40	San Juan	18 29	66 07	7	1	20	None	Vertical bump and trembling E-W	Do.

* Days.

TABLE 2.—*Instrumental reports, October, 1918.*

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

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

Alabama. *Mobile. Spring Hill College.* Cyril Ruhlmann, S. J.

Lat., 30° 41′ 44″ N.; long., 88° 08′ 46″ W. Elevation, 60 meters.

Instrument: Wiechert 80 kg. horizontal.

Instrumental constants.. V — T_0 — ϵ —

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Oct. 11	.....	iP.....	16 20 43	4	.....	.....	2,750	E-W component always undamped.
		S.....	16 25 07	12	.....	.....	.....	
		L_N?...	16 26 07	8	.....	.....	.....	
		L_E?...	16 27 23	8	.....	.....	.....	
		M_E....	16 31 02	15	*36,000	.....	.....	
		M_N....	16 31 19	15	.....	*44,000	.....	
		F.....	18 13 ..	.....	.....	.....	.....	
11	.....	eP.....	18 09 47	.....	.....	.....	.....	
		S?.....	19 14 00	.....	.....	.....	.....	
		M_N....	19 22 21	13	.....	*1,500	.....	
		F.....	19 27 ..	.....	.....	.....	.....	
19	.....	P_E?...	5 28 55	.....	.....	.....	.....	
		iP_N...	5 29 00	.....	.....	.....	.....	
		S_E....	5 31 59	.....	.....	.....	.....	
		S_N....	5 32 12	.....	.....	.....	.....	
		M_N....	5 33 05	6	.....	*4,000	.....	
		M_E....	5 33 47	6	*12,000	.....	.....	
		F.....	6 47 ..	.....	.....	.....	.....	
25	.....	eP.....	6 48 05	.....	.....	.....	2,490	
		S.....	6 52 09	.....	.....	.....	.....	
		L_E....	6 54 01	.....	.....	.....	.....	
		M_E....	6 56 13	10	*3,000	.....	.....	
		M_N....	6 56 13	8	.....	*2,500	.....	
		F.....	7 14 ..	.....	.....	.....	.....	

*Trace amplitude.

Alaska. *Sitka. Magnetic Observatory.* U. S. Coast and Geodetic Survey. F. P. Ulrich.

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

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

Instrumental constants.. V T_0 E 10 17 N 10 15

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Oct. 11	.....	P_E....	14 25 14	.....	.....	.....	.....	
		eS_N...	14 33 40	.....	.....	.....	.....	
		eL_N...	14 47 31	17	.....	.....	.....	
		eL_E...	14 49 ..	20	.....	.....	.....	
		M_N....	14 50 21	15	.....	610	.....	
		M_E....	14 55 07	13	420	.....	.....	
		C_N....	14 54 ..	13	.....	.....	.....	
		C_E....	14 58 ..	13	.....	.....	.....	
		F_E....	15 43 ..	12	.....	.....	.....	
		F_N....	15 56 ..	12	.....	.....	.....	

Arizona. *Tucson. Magnetic Observatory.* U. S. Coast and Geodetic Survey. William H. Cullum.

Lat., 32° 14′ 48″ N., long., 110° 50′ 06″ W. Elevation, 709.6 meters.

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

Instrumental constants.. V T_0 E 10 14 N 10 18

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Oct. 11	.....	P_E....	14 22 22	.....	.....	.....	.....	
		P_N....	14 22 26	.....	.....	.....	.....	
		S_E....	14 28 47	.....	.....	.....	.....	
		S_E....	14 28 52	.....	.....	.....	.....	
		eL_N...	14 34 15	.....	.....	.....	.....	
		M_N....	14 42 30	12	.....	480	.....	
		M_E....	14 48 12	12	440	.....	.....	
		C_N....	14 47 ..	12	.....	.....	.....	
		C_E....	14 51 ..	12	.....	.....	.....	
		F_N....	15 30 ..	13	.....	.....	.....	
		F_E....	16 03 ..	12	.....	.....	.....	

Arizona. *Tucson. 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.*	
Oct. 14	.....	e_E.....	12 37 15	22	.....	.....	.....	Nothing definite on N.
		M_E....	12 41 ..	20	10	.....	.....	
		F_E....	12 47 ..	.....	.....	.....	.....	
19	.....	e_E.....	2 07 13	.....	.....	.....	.....	
		eL_E...	2 07 54	.....	.....	.....	.....	
		e_N.....	2 08 44	.....	.....	.....	.....	
		M_E....	2 09 ..	9	10	.....	.....	
		eL_N...	2 10 00	.....	.....	.....	.....	
		M_N....	2 13 ..	9	.....	10	.....	
		F_N....	2 17 ..	8	.....	.....	.....	
		F_E....	2 24 ..	9	.....	.....	.....	
19	.....	eP_N...	3 28 40	4	.....	.....	.....	Phases not well defined.
		eP_E...	3 28 47	4	.....	.....	.....	
		S_N....	3 33 09	4	.....	.....	.....	
		S_E....	3 33 31	.....	.....	.....	.....	
		L_N....	3 38 51	.....	.....	.....	.....	
		L_E....	3 38 59	.....	.....	.....	.....	
		M_N....	3 40 19	19	.....	140	.....	
		M_E....	3 40 47	19	120	.....	.....	
		F_N....	3 47 ..	15	.....	.....	.....	
		F_E....	3 51 ..	14	.....	.....	.....	
25	.....	eP_N...	3 52 34	.....	.....	.....	.....	No well defined phases.
		eP_E...	3 52 49	.....	.....	.....	.....	
		eL_E...	4 06 ..	24	.....	.....	.....	
		eL_N...	4 07 ..	.....	.....	.....	.....	
		M_N....	4 13 30	15	.....	5	.....	
		M_E....	4 18 10	14	10	.....	.....	
		F_N....	4 20 ..	.....	.....	.....	.....	
		F_E....	4 21 ..	.....	.....	.....	.....	
27	.....	eL_E...	16 10 30	25	.....	.....	.....	Nothing on N.
		M_E....	16 14 30	21	.....	.....	.....	
		F_E....	16 31 ..	18	.....	.....	.....	
27	.....	eL_E...	18 00 50	20	.....	.....	.....	Nothing on N.
		M_E....	18 14 45	17	10	.....	.....	
		F_E....	18 26 ..	17	.....	.....	.....	

California. *Berkley. 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 Califronia.)

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.*	
Oct. 18	.....	.....	.....	.....	50	100	.....	Tremors during 24 hours preceding 15h.

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.)

TABLE 2.—*Instrumental reports, October, 1918*—Continued.

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.

Instrumental constants.....

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Oct. 2	.....	P.....	14 22 ...	.....	.....	.....	.....	S not discernible. Record affected by heavy machinery in motion.
		S.....	14 ? ?					
		L_E....	14 33 ...	15–20	*4,000			
		L_N....	14 34 ...	20	.....	*4,000		
		M_N....	14 37 ...	15	.....	*8,000		
		M_E....	14 41 ...	15	*7,500			
		C.....	15 07 ...					
		F_N....	15 29 ...					
		F_E....	15 31 ...					
12–13	.....	.....	.....	.....	.....	.....	.....	Activity on both compoments at intervals during day.
16	.....	.....	.....	.....	.....	.....	.....	Wavelets at intervals during day.
25	.....	L_E....	17 12 ...	.....	.....	.....	.....	Visible waves and thickening of pen marks.
		F_E....	17 17 ...					
28	.....	L.....	1 10 ...	.....	.....	.....	.....	Visible activity on both components.
		F.....	2 30 ...					

* Trace amplitude.

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

Lat., 38° 54′ 12″ N.; long., 77° 03′ o3″ 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.*	
Oct. 4	.....	P.....	9 27 04	.....	.....	.....	.....	Disturbance small and irregular. Apparently a near-by 'quake.
		F.....	9 29 ...					
11	.....	P.....	14 19 27	.....	.....	.....	2,460	F lost in next 'quake.
		S.....	14 23 29	.....	.....	.....	.....	
		M_E....	14 24 20	.....	*40,000	.....	.....	
		L.....	14 24 50	.....	.....	.....	.....	
		M.....	14 30 30	.....	*35,000	*50,000	.....	
		F.....	17 ? ?	.....	.....	.....	.....	
11	.....	P.....	17 08 41	.....	.....	.....	2,450	F lost in microseisms.
		S.....	17 12 42	.....	.....	.....	.....	
		L.....	17 14 06	16	.....	.....	.....	
		F.....	18 ? ?	.....	.....	.....	.....	
11	.....	P.....	20 11 18	.....	.....	.....	.....	Do.
		F.....	20 20 ?	.....	.....	.....	.....	
12	.....	P.....	0 04 38	.....	.....	.....	2,460	Do.
		S?.....	0 08 40	.....	.....	.....	.....	
		F.....	0 15 ...	.....	.....	.....	.....	
12	.....	P.....	0 20 50	.....	.....	.....	2,460	Do.
		S.....	0 24 52	.....	.....	.....	.....	
		L.....	0 30 30	12	.....	.....	.....	
		F.....	0 ? ?	.....	.....	.....	.....	
12	.....	P?.....	0 37 58	.....	.....	.....	.....	Do.
		S?.....	0 41 54	.....	.....	.....	.....	
		F.....	0 ? ?	.....	.....	.....	.....	
12	.....	P.....	8 24 40	.....	.....	.....	2,440	
		S.....	8 28 40	.....	.....	.....	.....	
		L.....	8 34 15	14	.....	.....	.....	
		F.....	9	.....	.....	.....	.....	
13	.....	P.....	4 56 32	.....	.....	.....	2,460	
		S.....	5 00 34	.....	.....	.....	.....	
		L.....	5 06 ...	12	.....	.....	.....	
		F.....	5 30 ...	.....	.....	.....	.....	
14	.....	P.....	0 29 31	.....	.....	.....	2,480	
		S.....	0 33 35	.....	.....	.....	.....	
		L.....	0 38 50	12	.....	.....	.....	
		F.....	1 15 ...	.....	.....	.....	.....	

* Trace amplitude.

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.*	
Oct. 14	.....	P.....	2 20 30	.....	.....	.....	2,500	
		S.....	2 24 35	.....	.....	.....	.....	
		L.....	2 30 ...	12	.....	.....	.....	
		F.....	2 40 ...	.....	.....	.....	.....	
18	.....	P.....	21 38 32	.....	.....	.....	2,440	
		S.....	21 42 32	.....	.....	.....	.....	
		L.....	21 46 ...	20	.....	.....	.....	
		F.....	22	.....	.....	.....	.....	
19	.....	L.....	2 18 to	.....	.....	.....	.....	
			2 28 ...	.....	.....	.....	.....	
19	.....	P.....	3 28 45	.....	.....	.....	3,070	
		S.....	3 33 33	.....	.....	.....	.....	
		L.....	3 39 30	16	.....	.....	.....	
		F.....	4 30 ...	.....	.....	.....	.....	
25	.....	P.....	3 47 56	.....	.....	.....	2,410	
		S.....	3 51 54	.....	.....	.....	.....	
		L.....	3 53 15	.....	.....	.....	.....	
		L.....	3 57 ...	16	.....	.....	.....	
		F.....	5	.....	.....	.....	.....	
27	.....	eL....	16 31 ...	24	.....	.....	.....	
		F.....	16 50 ...	.....	.....	.....	.....	
27	.....	e.....	17 29?...	.....	.....	.....	.....	Time uncertain. Clock failed to register hour marks.
		S?.....	17 32?27	.....	.....	.....	.....	
		eL....	18 10?...	.....	.....	.....	.....	
		L.....	18 25?...	20	.....	.....	.....	
		L.....	18 33?...	16	.....	.....	.....	
		F.....	19	.....	.....	.....	.....	
29	.....	P.....	12 31 22	.....	.....	.....	2,020	
		S.....	12 34 47	.....	.....	.....	.....	
		L.....	12 42 ...	20	.....	.....	.....	
		F.....	13 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. { E: V 165 T_0 5.4 ϵ 0; N: 143 5.2 0; Z: *80 5.0 0* }

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Oct. 4	.....	e.....	9 27 03	.....	.....	.....	.....	Heavy microseisms.
		eL?...	9 29 24	.....	.....	.....	.....	
		F.....	9 50 ..	.....	.....	.....	.....	
11	.....	iP.....	14 19 19	.....	.....	.....	.....	Gram from Mainka. F lost in a second quake. Vertical lost in changing sheets.
		S_E....	14 23 28	.....	.....	.....	.....	
		iS_N....	14 23 34	.....	.....	.....	.....	
		eL....	14 24 38	.....	.....	.....	.....	
		M_N....	14 30 19	14	.....	*10,500	.....	
		M_{E1}...	14 30 27	9	*38,000	.....	.....	
		M_{E2}...	14 35 50	12	*19,000	.....	.....	
		M_{E3}...	14 48 49	12	* 6,500	.....	.....	
		M_{E4}...	14 51 25	12	*7,000	.....	.....	
		M_{E5}...	15 00 03	.....	*13,000	.....	.....	
11	.....	P_N....	17 08 39	.....	.....	.....	.....	No distinct M.
		P_E....	17 08 41	.....	.....	.....	.....	
		iS_E....	17 12 43	.....	.....	.....	.....	
		S_N....	17 12 51	.....	.....	.....	.....	
		eL....	17 14 00	.....	.....	.....	.....	
		L_N....	17 17 03	16	.....	.....	.....	
		L_E....	17 18 31	15	.....	.....	.....	
		F.....	18 10 ..	.....	.....	.....	.....	
			VERTICAL.		*Az.*			
		P.....	*17 08 43*	.....	.....	.....	.....	Do.
		S.....	*17 12 34*	.....	.....	.....	.....	
		eL....	*17 15 48*	.....	.....	.....	.....	
		L.....	*17 16 14*	15	.....	.....	.....	
		F.....	*18 20* ..	.....	.....	.....	.....	
12	.....	eP_E...	0 20 42	.....	.....	.....	.....	
		eP_N...	0 20 48	.....	.....	.....	.....	
		S?.....	0 25 27	.....	.....	.....	.....	
		L.....	0 35 47	9	.....	.....	.....	
		F.....	0 50 ..	.....	.....	.....	.....	
12	.....	L.....	1 45 17	7	.....	.....	.....	
		to	1 50 ..	.....	.....	.....	.....	

* Trace amplitude.

TABLE 2.—*Instrumental reports, October, 1918*—Continued.

District of Columbia. *Washington. Georgetown University*—Contd.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Oct. 12		P_N	8 24 39					Microseisms. No distinct M.
		P_E	8 24 44					
		S_N	8 28 41					
		S_E	8 28 52					
		L	8 34 22	12				
		F	9 09 ..					
13		eP	4 59 34					No distinct M.
		S?	5 00 37?					
		eL	5 02 37?					
		L_E	5 06 28	17				
		L_N	5 06 35	11				
		F	5 16 ..					
13		L	22 24 to 22 30 ..	7				Heavy microseisms.
14		iP_N	0 29 33					No distinct M.
		iP_E	0 29 35					
		iS_E	0 33 40					
		eS_N	0 33 42					
		eL	0 34 47					
		L_E	0 39 01	13				
		L_N	0 39 22	17				
		F	1 03 ..					
14		L_N to	2 30 27 2 35 ...	11				Does not show on E.
18		eP_N	21 38 35					
		eP_E	21 38 44					
		S_N	21 42 49					
		S_E	21 42 58					
		eL?	21 44 06					
		L_N	21 48 08	15				
		L_E	21 48 38	16				
		F	22					
19		L	2 18 to 2 24 ..	18				Scarcely shows on E. Microseisms.
19		eP	3 28 48					Microseisms.
		S	3 33 34					
		eL_E?	3 35 34					
		M_E	3 38 35	19	*800			
		M_N	3 ? ?	11		*400		
		F	4 22 ..					
25		P_E	3 47 58					Microseisms. No distinct M.
		iP_N	3 47 58					
		S_N	3 52 09					
		S_E	3 52 16					
		eL_E	3 53 42					
		eL_N	3 53 48					
		L_E	3 55 27	10				
		L_N	3 57 16	16				
		F	5 20 ..					
27		e	16 01 20					
		L_E	16 26 20	30				
		L_N	16 28 20	30				
		F	17					
27		e	17 27 36					Heavy microseisms. Very difficult.
		S?	17 32 22					
		F	19 25 ..					
29								'Quake registered. Data omitted because of uncertainty of time. Clock out of order.
30		e	12 43 ?					Sheet off at 13h., .08m. Time doubtful. Clock out of order.
		F	? ? ?					

* Trace amplitude.

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

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 18.5

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918. Oct. 1		e	1 22 00					Phase ill-defined.
		L	1 23 18					
		M	1 32 48	18	*300			
		C	1 37 ..	18				
		F	2 47 ..	18				

* Trace amplitude.

Hawaii. *Honolulu. Magnetic Observatory*—Continued.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1818.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Oct. 2		cP	0 31 48					
		S	0 38 42	18				
		L	0 45 54	18				
		M	0 56 30	19	*100			
		C	1 02 ..	19				
		F	1 34 ..	19				
6		e	20 21 00	18				
		L	20 31 00					
		M	20 34 00	17				
		F	20 44 ..	17				
9		iP	9 40 48	17				
		eL	10 02 30					
		M	10 05 00	18	*300			
		C	10 10 ..	18				
		F	10 41 ..	19				
11		P	14 27 24	17				
		S	14 37 42	19	*2,100			
		L	14 55 00	21				
		M	15 09 18	17	*3,100			
		C	15 46 ..	17				
		F	18 30 ..	17				
13		P	12 57 48					
		S	13 00 54					
		L	13 02 00					
		M	13 07 00	18	*200			
		C	13 10 ..	18				
		F	13 42 ..					
14		P	12 15 18					Waves ill-defined, because of irregular motion of the paper.
		S	12 19 12					
		L	12 22 ..					
		M	12 26 30	18	*500			
		F	13 33 ..	19				
16		e	20 27 30					Phases ill-defined, because of irregular motion of the paper.
		L	20 46 ..					
		M	20 53 48	16	*100			
		C	21 04 ..	17				
		F	22 20 ..					
19		P	3 34 06	19				An abrupt change at $3^h\ 53^m\ 12^s$, too early for L.
		S	3 42 48	19				
		L	3 55 ..					
		M	3 57 42	18	*1,000			
		C	4 04 ..	18				
		F	5 41 ..	18				
21		eL	23 09 ..					
		M	23 15 ..	18	*100			
		F	23 28 ..					
22		eL	9 48 12					
		M	9 53 06	18	*100			
		F	9 57 ..					
22		P	10 28 24	18				
		L	10 40 ..					
		M	10 45 ..	19	*100			
		C	10 48 ..	18				
		F	11 14 ..	18				
24		eP	19 33 00					
		L	19 46 ..					
		M	19 51 00	18	*100			
		C	19 53 00	18				
		F	20 15 ..					
25		eP	3 55 00					
		iS	4 06 00	19				
		L	4 23 00					
		M	4 34 12	18	*300			
		C	4 40 ..	17				
		F	6 34 ..	17				
27		iP	15 37 00	17				Tremors continue to the beginning of the next quake.
		iS	15 43 42	17				
		L	15 51 06	27				
		M	15 58 30	19	*6,900			
		C	16 24 ..	19				
27		eP	17 19 18					Obscured by C of preceding quake.
		iS	17 24 42	18				
		eL	17 31 30					
		M	17 41 00	17	*2,400			
		C	18 09 00	18				
		F	20 14 ..	18				
29		eL	12 59 00					
		M	13 02 00	18	*100			
		F	13 19 ..					

* Trace amplitude.

TABLE 2.—*Instrumental reports, October, 1918*—Continued.

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: V 177, T_0 3.4, ε 4:1; N: V 205, T_0 3.4, ε 4:1

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*Km.*	
Oct. 4		eP_E	9 22 02					Disturbance identified by press reports from Pine Bluff and Little Rock, Ark.
		eP_N?	9 22 15					
		eS_E	9 22 51					
		L_N	9 23 16					
		L_E	9 23 17					
		M	9 23 22		10.2	7.8		
		F	9 30					
11		iP_N	14 22 00					
		eP_E	14 22 01					
		iS_E	14 26 18					
		S_N?	14 27 14					
		L_E?	14 31 33					
		L_N?	14 31 43					
		M_N	14 33 29			39.8		
		M_E	14 37 13		35.0			
		F	16 03					Records changed here.
19		eP_N	2 05 37					S not discernible. E phase not clear.
		L_N	2 09 46					
		M_E	2 12 50	15	1.7			
		M_N	2 18 04	6–8		0.5		
		F	2 33					
19		P	3 28 24 to 3 28 26					S not discernible.
		L_E	3 32 46					
		L_N?	3 32 50					
		M_N	3 33 00			8.8		
		M_E	3 33 39		4.2			
		F	4 17					

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.	Remarks.
1918			*H. m. s.*	*Sec.*	*μ*	*μ*	*Km.*	
Oct. 4		P	9 27 29					
		eL_E	9 27 48					
		eL_N	9 28 00					
		M	9 28 06	3	10	20		
		F	9 29					
11		P	14 19 29	4				Stylus passed off the edge of the paper twice in one direction on each component.
		S_E	14 23 38	13				
		S_N	14 23 45	13				
		eL_N	14 26 08	23				
		eL_E	14 27 28					
		M_E	14 30 13	15	4,700			
		M_N	14 30 33	15		5,200		
		C_E	14 35	14				
		C_N	14 41	13				
		F_E	15 38	14				
		F_N	16 42	14				
11		iP	17 08 40	3				No long waves on E.
		S_E	17 12 41	3				
		S_N	17 12 44	3				
		L_N	17 16 20					
		M_N	17 18 42	14	10	40		
		C	17 21	13				
		F	17 51	12				
12		i	8 24 43	3				No long waves on E.
		eL_N	8 34 19					
		M_N	8 34 50	13		10		
		F_N	8 41					
13		P	4 57	3				No long waves on E.
		eL_N	5 06 35					
		M_N	5 07 20	13				
		F	5 09					
14		eP	0 30 26	3				No long waves on E.
		eL_N	0 39 30					
		M_N	0 40 17	12		10		
		F	0 50					

Maryland. *Cheltenham. 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.*	
Oct. 18		P_N	21 38 41					Nothing on E.
		S_N	21 42 40	9				
		L_N	21 46 12					
		M_N	21 49 28	13		10		
		C_N	21 50					
		F_N	21 52					
19		eP_N	3 28 42	4				No long waves on E.
		eP_E	3 28 50	4				
		eS_N	3 33 27	4				
		L_N	3 39 01	18				
		M_N	3 42 18	12	30	150		
		C_N	3 44	12				
		F_N	4 05	12				
25		P	3 48 27	3				No long waves o E.
		S	3 52 28	3				
		eL_N	3 56 20	18				
		M_N	4 00 48	16		40		
		C_N	4 08	16				
		F_N	4 37	12				
27		eL_N	16 35					Nothing on E.
		F_N	18 47					
29		eP_N	12 33 55					Nothing on E. Time of P uncertain on account of microseisms.
		eL_N	12 41 57					
		M_N	12 44 00	16		10		
		C_N	12 49	16				
		F_N	12 57	14				

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, ε 0; N: V 50, T_0 25, ε 4:1

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Oct. 11		O	14 14 14				2,690	24° 10′. Destructive at west end of Porto Rico. Tidal wave at Aguadilla and San Juan. N stylus not registering from 14h. 24m. 52s. to 14h. 41m. 28s. E stylus left drum at 14h. 28m. 22s. and worked on and off during M. eL_E not readily distinguished from S waves. As read, velocity of long waves comes out 243.8 kms. per minute. PS_E alternating waves. F lost in next record.
		P_N	14 19 41	4				
		eP_E	14 20 11	4				
		PS_E	14 22 40	2				
		S_E	14 24 01	10				
		S_N	14 24 07					
		eL_E?	14 25 16	20				
		M_E	14 28 17					
		M_E	14 29 52	12		*41,500		
		M_E	14 42	12				
		M_E	14 46	12				
		M_E	14 49	12				
		M_E	14 52 37	12				
		M_E	14 53 47	12				
		M_E	14 54	12				
		M_E	14 55	12				
		M_E	14 56	12				
		n	14 42					
		F?	17 postea					
11		O	17 04 48				1,900	17° 6′.
		P_N	17 08 49					
		P_E	17 09 49	4				
		S_E	17 12 11					
		S_E	17 12 25	6				
		eL_N	17 13 08	15				
		e_E	17 13 39	8				
		eL_E	17 14 49	18				
		M_N	17 16 10	15		*11,000		M_E, 17h. 16m. 52s.; 1,000 micra.
		C_E	17 19 30					
		C_N	17 26	12				
		F?	18					
12		O?	0 14 23				3,440?	30° 37′.
		P_N	0 20 59					
		S_E	0 26 12	6				
		L_N?	0 30 11	12				
		M_N	0 32 10	12				
		F?	0 43					
12		L_N	1 46 21	10–11				
		F	1 48					

* Trace amplitude.

TABLE 2.—*Instrumental reports, October, 1918*—Continued.

Massachusetts. *Cambridge. Howard University Seismographic Station*—Continued.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Oct. 12		*O*	*8 19 31*				2,610	23° 45′.
		iP_N	8 24 53	3				
		eP_E	8 25 17	2				
		S_N	8 29 09	6				
		S_E	8 29 39	6				
		eL_E	8 31 00	20				
		L_N	8 32 16	15				
		L_N	8 35 31	13–14				
		F	8 52 ..					
13		*O*	*22 postea*					
		L_N	22 26 ..	8				
		F	22 27 ..					
14		*O*	*0 25 14*				2,150	19° 21′.
		eP_N	0 29 43					
		eP_E	0 29 56					
		S_E	0 33 19	6				
		S_N	0 33 54	10				
		eL_N	0 35 50	25				
		eL_E	0 36 58	20				
		M_E	0 40 47	12				E damped 1.5/1 by magnet.
		M_N	0 40 49	13		*7,000		Undamped.
		F_E	1 20 ..					
14		*O*	*2 postea.*					
		L_N	2 30 37	10				
		F	2 32 18					
14		*O*	*12 02 41*				10,320	92° 59′ by SE–PE.
		O	*12 02 48*				10,240	92° 20′ by LN–SE. NW. India?
		eP_E	12 15 59					
		e_N	12 25 42					
		S_E	12 27 11					
		S_N	12 28 32					
		e_E	12 41 11					
		e_N	12 42 24					
		e_N	12 47 05	6				
		eL_N	12 50 44	30				
		eL_E	12 54 20	40				
		L_E	12 56 ..	35				
		M_E?	13 02 ..	20	*600			Trace.
		L_E	12 08 ..	15				
		F_E?	13 27 ..					
		L_E repl	14 15 48	16				Long waves returning from anticentrum, amplitudes very slight.
		to	14 22 41	20				
		F	14 28 45					
18		*O*	*21 30 13*				3,235	29° 19′. P lost in microseisms.
		S_N	21 41 30	6½				
		S_E	21 41 51	7				
		eL_E	21 44 22	25				
		eL_N	21 44 44					
		L_E	21 46 22	15				
		L_N	21 52 42	12				
		F	22 08 ..					
19		L_E	2 18 31	18				
		L	2 21 19	20				
		F	2 35 41					
19		*O*?	*3 22 07*				3,870?	△ from eL_E–P_N.
		P_N	3 29 16					
		P_E	3 30 20					
		S_N?	3 34 24					
		S_E?	3 35 10	11				
		eL_E	3 39 03	40				
		eL_N	3 39 07	34				
		M_N	3 44 30			*2	7,500	Undamped.
		M_E	3 44 34	*1,900				Damped 1½/1 magnetically.
		F_E	4 33					
25		*O*	*3 42 59*				2,630	Similar to record of Oct. 11, 1918, *O:* 14h. 14m. 14s.
		P_E	3 48 20	3				
		iP_N	3 48 47	4				
		e_N	3 49 43	2–4				
		S_E	3 52 35	7				
		S_N	3 53 09	6				
		e_N?	3 53 17	12				
		L_E	3 53 44	20				
		eL_N	3 55 31					
		M_N	3 57 05			*4,250		Undamped.
		L_E	3 57 14	24				
		L_E	4 01 36	12	*500			Damped 1½/1.
		M_N	4 04 27					
		C_N	4 05 01					
		F_E	4 52					
27		*O*?	*15 33*				12,250?	110° 15′. P not identified among small microseisms. N gave a less definite record. F lost in next 'quake.
		S_E?	16 00 00	8				
		e_E	16 04 19	6				
		e_E	16 13 19	6				
		eL_E?	16 26 09					
		L_E	16 28 30	30				
		L_E	16 30 21	32				
		L_E	16 35 03	20				
		L_E	16 39 53	18				
		to	16 48 05					
		L_E	16 58 49	15				
		to	17 02 30					
		F	17 ? ?					

* Trace amplitude.

Massachusetts. *Cambridge. Howard University Seismographic Station*—Continued.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Oct. 27		*O*	*17 postea*					Probably two 'quakes. See attempted diagnosis in two records next below. N less definite.
		e_E	17 22 53					
		e_E	17 27 23	4				
		S_E	17 28 15	6				
		eL_E	17 31 51	15–8				
		L_E	17 33 35	8				Sinusoidal waves set in.
		L_E	17 42 05	18				One wave.
		L_E	17 42 23	8				
		L_E	18 11 16	26				
		L_E	18 28 33	20				
		L_E	18 34 25	16				
		L_E	18 44 47	15				
		L_E	18 53 32	15				
		L_E	19 01 17	12				
		L_E	19 17 05	20				
		F?	19 50 15					
27		*O*	*17 12 16*				3,600	32° 24′. △ from L–S. F lost in next 'quake.
		eP_E	17 22 23					
		S_E	17 28 15	6				
		eL_E	17 31 51	15–8				
		L_E	17 33 35	8				
		to	17 42 05	18				
		L_E	17 42 23	8				
		to	17 48 15					
		F	? ? ?					
27		*O*	*17 22 36*				11,100	99° 54′. N record less definite.
		S_E	17 48 15					
		eL_E	18 11 16	26				
		L_E	18 28 33	20				
		L_E	18 34 25	16				
		L_E	18 39 55	20				
		L_E	18 44 47	15				
		L_E	18 53 32	15				
		L_E	19 01 17	12				
		L_E	19 17 05	20				
		F_E?	19 50 15					
30		*O*	*12 postea*				7,000?	P and S lost in microseisms of 6-second period.
		e_N	12 37 54	8				
		e_N	12 42 31	12				
		eL_N	12 43 28	28				
		eL_E	12 44 15	24				
		L_N	12 44 39	18				
		L_E	12 45 20	16				
		F_E	13 05					

* Trace amplitude.

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.

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

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
4		iP	9 22 36				500	Pine Bluff, Ark.
		L	9 22 48	(?)		*1,000		
		F	9 24 12					
11		P_N	14 20 30				3,300	Porto Rico.
		P_E	14 20 ?					
		S_E	14 25 24					
		S_N	14 25 30					
		L_E	14 27 30					
		L_N	14 27 48					
		M_N	14 30 12	12		*22,000		
		M_N	14 31 30			*24,000		
		M_E	14 32 36	24	*10,000			
		F	16 10 ..					
11		iP_N	17 09 36				4,500	Hardly any record on E.
		S_N	17 16 00					
		L_N	17 20 36	12		*1,000		
		F	17 35 ..					
19		eP_N	3 28 18				2,800	
		P_E	3 ? ?					
		iS_N	3 32 48					
		S_E	3 33 30					
		L_N	3 34 36					
		M_N	3 40 12	24		*12,000		
		eL_E	3 40 42	12	*1,000			
		F	4 05 ..					
25		P_N	3 48 54				3,000	No record on E.
		S_N	3 53 42					
		L_N	3 56 06					
		M_N	4 03 00	3		*1,500		
		F	4 20 ..					

* Trace amplitude.

TABLE 2.—*Instrumental reports, October, 1918*—Continued.

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.

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

(Report for October, 1918, not received.)

New York. *Fordham. 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.

		V	T_0	ε
Instrumental constants..	E	72	5.0	0
	N	72	5.0	0

(Report for October, 1918, not received.)

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

Lat., 42° 26′ 58″ N.; long. 76° 29′ 09″ W. Elevation, 242 meters.
Instruments: Two Bosch-Omori, 25 kg., horizontal pendulums (mechanical registration)

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

1918.			H. m. s.	Sec.	μ	μ	km.	
Oct. 4		e_N	9 27 52	2				
		L_N	9 28 23	8				
		F_N	9 32 ..					
11		P_N	14 19 59	3				
		i_N	14 20 51	7		*1700		
		S_N	14 24 32	15				
		M_N	14 29 13	14		*9000		
		M_E	14 32 37	13	*13000			
		M_E	14 33 30	13	*14000			
		M_N	14 33 35	12		*18000		
		M_N	14 34 40	12		*15000		
		F_N	17 03 ..					
11		P_N	17 09 08	3				
		S_N	17 13 39	7				
		L_N	17 15 35	20				
		F_N	18 00 ..					
14		P_N	0 30 05	3				
		S_N	0 34 31	6				
		eL_N	0 37 15	20				
		F_N	0 52 ..					
14		eP_N	8 25 03	3				
		eS_N	8 29 45	5				
		L_N	8 32 18	22				
		F_N	8 50 ..					
14		P_N?	12 16 22	4				P indistinct, possibly microseisms.
		e_E	12 19 07	4				
		eS_N	12 27 59	8				
		eS_E	12 28 38	9				
		eL_E	12 55 ..	25				
		F	13 09 ..					
18		eP_N	21 39 58	5				Early phases obscured by microseisms.
		eS_E	21 44 33	7				
		eS_N	21 44 40	6				
		L_E	21 46 32	22				
		F_E	22 12 ..					
19		e	2 16 30					Microseisms.
		eL_E	2 19 35	18				
		F_E	2 36 ..					
19		P_N	3 29 47	4				Do.
		S_E	3 35 20	5				
		S_N	3 35 21	5				
		F_E	4 33 ..					
25		P_N	3 48 43	5				
		S_N	3 53 11					
		S_E	3 53 12					
		L_E	3 55 04	23				
		F_E	5 17 ..					
27		e	15 48 30					F lost in next 'quake.
		e	15 54 30					
		e	15 57 15					
		e	16 04 ..					
		eL	16 25 ..	28				
		F	? ? ?					
27		e	17 36 ..					
		eL	18 04 30					
		F	19 28 ..					
29		e_N	12 37 20	4				
		e	12 41 ..					
		eL_E	12 43 30	18				
		F_E	13 11 ..					

* Trace amplitide.

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.

	V	T_0
Instrumental constants..	35	20

(Report for October, 1918, not received.)

1918.			H. m. s.	Sec.	μ	μ	Km.	
Oct. 11		P_E	14 19 07				1,370	
		P_N	14 19 08					
		L_E	14 22 07					
		L_N	14 22 16					
		M_E	14 22 27		*22,000			
		M_N	14 22 30			*16,000		
		F_N	15 31 00					
		F_E	15 36 13					
11		P	17 09 00		*600	*500		Faint trace.
		F_E	17 20 00					
		F_N	17 28 00					
14		P	0 30 00					Faint trace. Amplitudes too small to measure.
		F	0 35 00					
19		P_E	3 26 46				1,325	
		P_N	3 26 54					
		L	3 30 46					
		M_N	3 31 06			*600		
		M_E	3 32 02		*700			
		F_N	3 43 00					
		F_E	3 44 00					
25		P	3 46 32				1,060	
		L_E	3 49 32					
		M_E	3 49 42		*1,100			
		L_N	3 49 44					
		M_N	3 49 56			*2,000		
		F_E	4 11 00					
		F_N	4 15 00					
29		P_N	12 26 53				1,110	
		P_E	12 26 54					
		L_E	12 29 26					
		M_E	12 29 50		*1,400			
		M_N	12 31 54			*1,100		
		F_E	12 43 16					
		F_N	12 45 00					

* Trace amplitude.

Porto Rico. *Vieques. Magnetic Observatory.* U. S. Coast and Geodetic Survey. Wallace M. Hill.

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

Instruments: Two Bosch-Omori.

		V	T_0
Instrumental constants.	E	10	17.5
	N	10	18.2

(Report for October, 1918, not received.)

1918.			H. m. s.	Sec.	E	μ	Km.	
Oct. 11		P	14 15 07					Within 15 seconds after beginning, pendulums swung against stops jarring the stylus points from their bearings. E was replaced at 14h 21m and N at 14h 24m. The large number of small shocks recorded during the rest of the month are of the same general character, beginning with waves of 1 to 2 seconds period and ending with waves of 4 to 6 seconds period. In a few cases there appear to be two or three long waves of 10 to 12 seconds period at the time of the maximum with the short-period waves superimposed upon them.
		L_E	14 15 07					
		L_N	14 15 12					
		M						
		C	14 27 ..	15				
		F_N	16 18 ..	12				
		F_E	16 32 ..	12				
11		P_N	15 50 51	2				
		P_E	15 50 54	2				
		L_N	15 51 20					
		M_N	15 51 34			60		
		M_E	15 51 54		40			
		F	15 56 ..	4				

TABLE 2.—*Instrumental reports, October, 1918*—Continued.

Porto Rico. *Vieques. 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.*	
Oct. 11		P	16 02 28	2				
		L_N	16 02 51					
		L_E	16 02 58					
		M	16 03 08		170	180		
		F	16 10 ..	5				
11		P	17 04 17	6				
		eL_E	17 04 26	16				
		eL_N	17 04 36	18				
		M_N	17 05 13	18		3,240		
		M_E	17 06 38	14	1,250			
		C	17 07 ..	11				
		F	17 33 ..	8				
11		eP_E	17 18 28					
		eL_N	17 18 54					
		M_E	17 19 28		20	20		
		F	17 24 ..					
11		eP_E	17 24 20					
		eP_N	17 24 33					
		F	17 30 ..		20	20		
11		P	18 26 51					
		M_N	18 27 02		10	30		
		F	18 31 ..					
11		P	19 09 00					
		eL_K	19 10 03					
		eL_E	19 10 06					
		M	19 10 23		40	40		
		F	19 18 ..					
11		eP_E	20 06 53					
		eP_N	20 07 06					
		M_N	20 07 35			170		
		M_E	20 07 53		60			
		F	20 17 ..					
11		eP_E	21 51 47					
		eP_N	21 51 55		10	10		
		F	21 57 ..					
11		eP	23 32 13					
		F	23 39 ..		20	20		
11		eP	23 48 58					
		F	23 51 ..		10	10		
11		eP_N	23 58 42					
		eP_E	23 58 46					
		F	24 00 ..		10	20		
12		eP_E	0 00 00					
		eP_N	0 00 12					
		M_E	0 04 14		40	40		
		F	0 09 ..					
12		P_E	0 16 10					
		L	0 16 38					
		M_E	0 16 56		70	120		
		F	0 26 ..					
12		P_E	0 28 18					
		L_E	0 28 42					
		L_N	0 28 45					
		M_E	0 29 02		30	20		
		F	0 34 ..					
12		P_E	0 33 16					
		L_N	0 33 40		20	30		
		L_E	0 33 46					
		F	0 45 ..					
12		eP_E	1 03 14					
		eP_N	1 03 21					
		L_E	1 03 34					
		M_E	1 03 56		20	10		
		F	1 10 ..					
12		eP_E	4 31 43					
		eP_N	4 31 49					
		F	4 33 ..		10	10		
12		eP_E	4 33 43					
		L_E	4 34 07					
		L_N	4 34 12					
		M_E	4 34 43		20	20		
		F	4 44 ..					
12		eP	6 58 28					
		F	7 02 ..		20	20		
12		eP_E	8 09 42					
		L	8 10 03					
		M_E	8 10 24		20	20		
		F	8 14 ..					

Porto Rico. *Vieques. 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.*	
Oct. 12		P_E	8 19 34	2				
		P_N	8 19 39	2				
		eL_E	8 19 52	16				
		eL_N	8 20 02	16				
		M_N	8 20 24	10		550		
		M_E	8 20 40	10	350			
		C	8 23 ..	8				
		F	8 41 ..	5				
13		eP_E	4 52 11					
		eP_N	4 52 19	2				
		eL_N	4 52 39	10				
		M_E	4 53 00		90			
		M_N	4 54 17	8		190		
		F	5 04 ..	4				
13		eP_N	18 19 38					
		eP_E	18 19 45					
		F	18 25 ..		10	20		
13		eP_N	20 23 47					
		eP_E	20 23 56					
		L_N	20 24 11					
		L_E	20 24 14					
		M_E	20 24 43		30			
		M_N	20 25 20			40		
		F	20 32 ..					
14		P	0 25 18	2				
		L_N	0 25 42					
		M	0 26 02	13	200	900		
		C	0 28 ..					
		F	0 40 ..	5				
14		P	2 16 21					
		L_E	2 16 42					
		L_N	2 16 48					
		M_E	2 17 04		20			
		M_N	2 18 00			20		
		F	2 24 ..					
14		P	4 53 26	1				Possibly two or three separate shocks.
		eL	4 53 48					
		F	5 03 ..	4	40	30		
15		eP_E	0 13 54	2				
		L	0 14 14					
		F	0 24 ..	5	20	20		
15		e_N?	3 15 46					
		e_E?	3 16 02					
		P?	3 16 14	2				
		eL_N	3 16 26					
		eL_E	3 16 36					
		M_E	3 16 55	10	70			
		M_N	3 17 25	8		70		
		F	3 29 ..	5				
16		eP_E	19 20 17	2				
		eP_N	19 20 25	2				
		L_N	19 20 46					
		F	19 31 ..	5	20	20		
17		e	8 19 40	2				
		L	8 19 59					
		M_E	8 20 16	10	40			
		M_N	8 20 44	14		40		
		F	8 26 ..					
17		eP_N	21 29 29					
		eP_E	21 29 35					
		F	21 36 ..		20	20		
18		P	19 22 54	2				
		L_N	19 23 19					
		F	19 29 ..	5	20	20		
18		P_E	21 34 13	2				
		P_N	21 34 17	2				
		L_N	21 34 35	17				
		L_E	21 34 42					
		M_E	21 35 00	18	620			
		M_N	21 35 51	11		370		
		C	21 37 ..	9				
		F	21 58 ..	7				
19		e_N	3 28 12					Distant earthquake.
		e_E	3 28 59					
		L	3 35 28	28				
		M_E	3 40 00	18	30			
		M_N	3 37 13	22		20		
		C_E	3 42 ..	15				
		C_N	3 39 ..	20				
		F	3 56 ..	14				

TABLE 2.—*Instrumental reports, October ,1918*—Continued.

Porto Rico. *Vieques. 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.*	
Oct. 19		eP_N	7 05 48	1				
		eP_E	7 05 57	1				
		eL_N	7 06 24					
		eL_E	7 06 37					
		M_E	7 06 41	5	30			
		M_N	7 07 14	5		20		
		F	7 14 ..	5				
21		eP	6 44 49					
		F	6 49 ..		20	20		
21		eP	6 49 12					
		F	6 55 ..		10	10		
21		eP_N	13 09 ..					Nothing definite on E.
		F_N	13 11 ..			10		
23		eP	14 31 10					
		F	14 38 ..		10	10		
24		eP	22 59 38					
		F	23 04 ..		10	10		
25		eP_N	3 43 26	2				N stylus jarred from bearings at 3 42 50; replaced at 3 53.
		L	3 43 29					
		M_E	3 44 05	17	7,000			
		C_E	3 48 ..	14				
		F_N	4 38 ..	10				
		F_E	4 55 ..	10				

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.. V E 10, N 10; T_0 E 15, N 16

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Oct. 11		P	14 20 19				2,870	
		S	14 24 53					
		L	14 26 53	18				
		M_N	14 33 ..			*25,000		
		M_E	14 34 30		*21,000			
		F	16 45 ..					
11		P_E	17 14 ..					Not conspicuous on N.
		eL_E	17 16 ..					
		F	17 30 ..					
19		e	3 30 50					
		L	3 43 30					
		F	4					
25		P	3 48 20				3,050	
		S	3 53 07					
		L	3 55 ..					
		L	3 58 ..					
		F	4 20 ..					

*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.*	
Oct. 1		e	0 16 45					Small irregular amplitudes in L.
		e	0 35 41					
		eL	0 41 ..					
		F	1 10 ..					
11		*O*	*14 14 10*				3,190	Porto Rico. F merged in next 'quake.
		P_N	14 20 24					
		S_N	14 25 21					
		L_N	14 28 ..					
		M_N	14 34 ..	12		550		
		L_N	14 55 ..	12				
		L_N	15 10 ..	10				
		L_N	15 30 ..	13				
		L_N	15 40 ..	13				
		L_N	15 50 ..	12				
		L_N	16 00 ..	12				
		L_N	16 15 ..	12				
		F	17 ? ?					

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

Date.	Character.	Phase.	Time.	Period T.	Amplitude. AP	Amplitude. AQ	Distance	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Oct. 11			*VERTICAL.*		*Az.*			
		eP	*14 20 38*					
		eS	*14 26 00*					
		eL	*14 29* ..	*20*				
		L	*14 34* ..	*12*				
		L	*15 00* ..	*10*				
		F	*15 20* ..					
			SASKATOON.					
		O	*14 14 44*				4,980	
		P	14 23 11					
		S	14 29 52					
		S_{repl}	14 33 10					
		L ?	14 37 ..					
			HALIFAX.					
		O	*14 14 10*				3,0[N]0	
		P_N	14 20 14					
		S_N	14 25 03					
		L_N	14 28 ..					
11		e_E	17 08 15					The deformation instrument confirms the phases noted, and also seems to indicate phases at about 16h. 58m. and 17h. 03m. 30s. The record is so contradictory in itself and in conjunction with the Halifax and Saskatoon records next below that it is impossible to deduce a value for either Δ or *O*.
		e	17 09 34					
		i_E	17 14 15					
		eL	17 16 ..	18				
		F	18 20 ..					
			HALIFAX.					
		i_N	17 09 25					
		e	17 14 14					
		eL_E	17 15 30	18				
		eL_N	17 17 ..	16				
			SASKATOON.					
		i	17 12 22					
		i	17 24 31					
		eL	17 29 ..	16				
12		e_N?	0 25 ..					
		e	0 29 36					
		L	0 37 ..					
		F	0 50 ..					
12		e ?	8 30 ..					Irregular small amplitudes from 8h. 40m. to 9h. 10m.
		e	8 32 06					
		eL	8 34 48	14				
		F	9 10 ..					
14		P	0 30 ?					Disturbance lasting about an hour and of small amplitude. Minute breaks failed to record. Time approximated from deformation instrument whose rate is only 17mm. per hour.
		eL	0 36 ?	20				
		F	1 ?					
14		e	12 20? ..					Do.
		eL	12 28? ..					
		F	13 ? ..					
15		e_N	23 48 ..	3				
		e_N	23 50 12	4				
		eL	23 52 ..	12				
16		F	0 05 ..					
18		*O*?	*21 33 47*				2,890	
		eP_N?	21 39 33					
		eS?	21 44 08					
		eL	21 48 ..					
		L	21 50 ..	18				
		L	22 18 ..	12				
		F	22 25 ..					
19		e	2 13 30					
		eL	2 20 00	15				
		L	2 25 ..	8				
		F	2 50 ..					
19		*O*	*3 22 49*				3,620	
		iP	3 29 39					
		iS	3 33 04					
		eL	3 38 18					
		L	3 44 ..	18				
		L	4 03 ..	12				
		L	4 11 ..	12				
		F	4 30 ..					
			VERTICAL.		*Az.*			
		eL?	*3 39* ..					
		L	*3 44* ..	*20*				
		F	*3 45* ..					

TABLE 2.—*Instrumental reports, October, 1918*—Continued

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

Date	Character.	Phase.	Time.	Period	Amplitude. AP	Amplitude. AQ	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Oct. 25	.....	*O*	*3 42 50*	.....	.....	.....	3,040	Reported from Porto Rico.
		P_N	3 48 50	.....	.....	.....	.....	
		eS_N	3 53 36	.....	.....	.....	.....	
		e	3 54 40	3	.....	.....	.....	
		eL	3 55 ..	20	.....	.....	.....	
		L	4 03 ..	12	.....	.....	.....	
		L	4 14 ..	11	.....	.....	.....	
		L	4 30 ..	11	.....	.....	.....	
		F	5 05 ..	.....	.....	.....	.....	
27	.....	*O*	*15 55 +*	.....	.....	.....	13,000	Δ from $S-P_{repl}$, and *O* from $S-1_s$ (interval S for S–O).
		eP_{repl}	15 55 23	.....	.....	.....	.....	
		eS	16 03 43	.....	.....	.....	.....	
		eL	16 29 ..	20	.....	.....	.....	Sinusoidal L waves.
		L	16 43 ..	16	.....	.....	.....	F lost in next 'quake.
		F	17 ? ?	.....	.....	.....	.....	
27	.....	*O*	*17 06?*	.....	.....	.....	13,500	Data very conflicting. Δ probably too small and *O* too late.
		e	17 27 21	.....	.....	.....	.....	
		e	17 37 11	.....	.....	.....	.....	
		eL	18 05 54	26	.....	.....	.....	
		L	18 30 ..	16	.....	.....	.....	
		L	18 40 ..	16	.....	.....	.....	
		L_{repl}?	19 04 ..	20	.....	.....	.....	
		F	19 40 ..	.....	.....	.....	.....	
20	.....	e_N	12 33 41	6	.....	.....	.....	Microseisms mask the earlier phases. N component better of the two.
		e_N	12 37 00	6	.....	.....	.....	
		e_N	12 38 56	6	.....	.....	.....	
		e	12 40 26	.....	.....	.....	.....	
		e_N	12 43 ..	.....	.....	.....	.....	
		eL	12 46 ..	20	.....	.....	.....	
		L	12 55 ..	12	.....	.....	.....	
		L	13 06 ..	8	.....	.....	.....	
		F	13 20 ..	.....	.....	.....	.....	

Canada. *Toronto. Dominion Meteorological Service.*

Lat., 43° 40′ 01″ N.; long., 79° 23′ 54″ 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	Amplitude. AP	Amplitude. AQ	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Oct. 1	.....	eL	1 38 24	.....	.....	.....	.....	
		eL	1 42 00	.....	.....	.....	.....	
		M	1 45 06	.....	*200	.....	.....	
		F	2 10 06	.....	.....	.....	.....	
2	.....	L?	1 37 06?	.....	*50	.....	.....	Phases masked by microseisms.
11	.....	P	14 20 42	.....	.....	.....	2,990	Porto Rico. Destructive tidal wave. Clear record.
		iP	14 21 12	.....	.....	.....	.....	
		iS	14 25 24	.....	.....	.....	.....	
		L	14 26 12	.....	.....	.....	.....	
		iL	14 29 48	.....	.....	.....	.....	
		M	14 34 36	.....	.....	.....	.....	
		to	14 36 36	.....	(1)	.....	.....	
		eL	17 17 30	.....	.....	.....	.....	
		eL	17 20 06	.....	.....	.....	.....	
		M	17 25 06	.....	.....	.....	.....	
		F	18 02 00?	.....	.....	.....	.....	
13	.....	M	3 00 24	.....	*50	.....	.....	
13	.....	eL	5 08 18	.....	.....	.....	.....	Marked gradual thickening.
		M	5 10 36	.....	200	.....	.....	
		F	5 15 30	.....	.....	.....	.....	
13	.....	L	13 52 24	.....	*50	.....	.....	
		F	14 00 36	.....	.....	.....	.....	
14	.....	L	0 34 30	.....	.....	.....	.....	
		eL	0 40 12	.....	.....	.....	.....	
		M	0 41 18	.....	*300	.....	.....	
		F	1 16 54?	.....	.....	.....	.....	
14	.....	e	12 28 18?	.....	.....	.....	.....	
		L	12 54 24	.....	.....	.....	.....	
		eL	12 56 24	.....	.....	.....	.....	
		M	13 00 54	.....	*800	.....	.....	
		F	13 48 42	.....	.....	.....	.....	
15	.....	L	23 49 00	.....	.....	.....	.....	F lost in microseisms.
		M	23 50 54	.....	*100	.....	.....	
		F	? ? ?	.....	.....	.....	.....	

* Trace amplitude. [1] Over *25000.

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

Date.	Character.	Phase.	Time.	Period T.	Amplitude. AP	Amplitude. AQ	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	η	*km.*	
Oct. 18	.....	S?	21 44 30	.....	.....	.....	.....	
		L?	21 46 24	.....	.....	.....	.....	
		eL	21 49 30	.....	.....	.....	.....	
		M	21 53 30	.....	*600	.....	.....	
		F	22 06 30	.....	.....	.....	.....	
19	.....	eL	2 18 48	.....	.....	.....	.....	
		M	2 20 06	.....	*200	.....	.....	
		F	2	.....	.....	.....	.....	
19	.....	P	3 28 42	.....	.....	.....	3,910	Possibly Central Africa. F lost in microseisms.
		S	3 34 24	.....	.....	.....	.....	
		iL	3 41 06	.....	.....	.....	.....	
		iL	3 43 18	.....	.....	.....	.....	
		M	3 49 24	.....	*1300	.....	.....	
		F	.....	.....	.....	.....	.....	
25	.....	eP	3 49 18	.....	.....	.....	3,070	Reported from Porto Rico. Amlitude of P increased gradually.
		eS	3 54 06	.....	.....	.....	.....	
		eL	3 55 30	.....	.....	.....	.....	
		eL	3 59 48	.....	.....	.....	.....	
		M	4 03 36	.....	*3000	.....	.....	
		iL	4 06 00	.....	.....	.....	.....	
		F	5 22 42	.....	.....	.....	.....	
27	.....	e	15 29 48	.....	.....	.....	.....	Microseisms at 15h. 22m. Light off at 17h. 27m. attending to instrument. F merged into next 'quake.
		e	15 50 18	.....	.....	.....	.....	
		P?	15 56 18	.....	.....	.....	.....	
		e	16 09 18	.....	.....	.....	.....	
		L	16 24 48	.....	.....	.....	.....	
		L	16 26 30	.....	.....	.....	.....	
		eL	16 28 48	.....	.....	.....	.....	
		M	16 38 48	.....	*1800	.....	.....	
		L	16 54 00	.....	.....	.....	.....	
		F	17 ? ?	.....	.....	.....	.....	
27	.....	L	17 55 18	.....	.....	.....	.....	F merged in next 'quake.
		L	18 01 12	.....	.....	.....	.....	
		eL	18 17 48	.....	.....	.....	.....	
		L	18 22 36	.....	.....	.....	.....	
		M	18 28 54	.....	*1500	.....	.....	
		eL	18 42 06	.....	.....	.....	.....	
		L	19 01 42	.....	.....	.....	.....	
		F	19 ? ?	.....	.....	.....	.....	
27	.....	eL	19 14 42	.....	.....	.....	.....	
		M	19 26 18	.....	*1400	.....	.....	
		F?	20 18 12	.....	.....	.....	.....	
29	.....	L	12 43 48	.....	.....	.....	.....	
		M	12 47 00	.....	*200	.....	.....	
		F	13 19 48	.....	.....	.....	.....	

* 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.

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

Date	Character.	Phase.	Time.	Period	Amplitude. AP	Amplitude. AQ	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	μ	μ	*km.*	
Oct. 1	.....	L	1 19 47	.....	.....	.....	.....	
		M	1 26 11	.....	*200	.....	.....	
		F	1 37 59	.....	.....	.....	.....	
2	.....	Por L.	0 45 24?	.....	.....	.....	.....	
		M	1 21 48	.....	*100	.....	.....	
		F	? ? ?	.....	.....	.....	.....	
9	.....	M	9 46 34	.....	*100	.....	.....	
		F	9 56 53	.....	.....	.....	.....	
11	.....	P	14 23 38	.....	.....	.....	5,750	Porto Rico. Disastrous 'quake.
		S	14 31 01	.....	.....	.....	.....	
		L	14 42 49	.....	.....	.....	.....	
		M	14 51 10	.....	*9,000	.....	.....	
		M_{repl}	17 30 31	.....	.....	.....	.....	
		F	18 14 47	.....	.....	.....	.....	
				Vertical.		*Az.*		
		P	*14 24 00*	*6*	.....	.....	*6,110*	*Porto Rico.*
		S	*14 31 42*	*8–10*	.....	.....	.....	
		L	*14 44 42*	*24*	.....	.....	.....	
		M	*14 50 24*	*12*	.....	*31*	.....	
		F	.. .. ..	.....	.....	.....	.....	
13	.....	P	2 57 49	.....	.....	.....	.....	
		L	3 01 16	.....	.....	.....	.....	
		M	3 02 15	.....	*200	.....	.....	
		F	3 08 39	.....	.....	.....	.....	

* Trace amplitude.

TABLE 2.—*Instrumental reports, October, 1918*—Continued.

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*	*μ*	*km.*	
Oct. 13		M	13 25 57		*100			
		F	13 39 43					
14		M	1 02 24		*100			
		F	1 20 06					
14		P	12 33 53					
		L	12 38 58					
		M	12 44 13		*500			
		F	13 40 07					
15		P	23 31 19					
		L	23 32 49					
		M	23 33 48		*200			
		F	23 42 14					
18		L	22 01 49					
		L	22 06 46					
		M	22 10 15		*200			
		F	22 15 02					
19		P	3 30 21				5,750	May be West Indies or Central America.
		S	3 37 44					
		L	3 46 35					
		M	3 54 27		*2,000			
		F	4 49 02					
25		P	3 52 18				6,130	
		S	4 00 01					
		L	4 11 30					
		M	4 19 32		*9,000			
		F	5 11 30					
27		P	15 51 05				4,180	F merged in next 'quake.
		S	15 57 02					
		L	16 07 24					
		M	16 20 41		2,000			
		F	17 ? ?					
27		P	17 30 01					Do.
		L	17 45 16					
		M	17 58 32		*1,300			
		L	18 33 11					
		F	19 ? ?					
27		L	19 31 00?					
		M	19 43 18		*250			
		F	20 05 26					
29		L	12 50 47					
		M	12 59 09		*100			
		F	13 ? ?					

*Trace amplitude.

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

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 pendulums (mechanical registration).

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

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Aug. 8		e_E	10 37 30	5				
		L_E	10 46 20	36				
		L_N	10 47 35	32				
		F_E	11 17 ..					
		F_N	11 23 ..					
15		eP_N	12 39 24	4				
		e_N	12 41 15	4				
		e_N	12 42 24	4				
		e_N	12 47 06	7				
		e_E	12 47 07	9				
		e_N	12 50 06	10				
		e_N	12 52 27	16				
		e_E	12 57 10	15				
		e_N	12 57 28	13				
		L_E	13 13 10	32				
		L_N	13 15 14	40				
		F_N	15 15 ..					
		F_E	15 24 ..					

TABLE 3.—*Late seismological reports (Instrumental)*—Continued.

New York. *Ithaca. Cornell University*—Continued.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1918.			*H. m. s.*	*Sec.*	*μ*	*μ*	*km.*	
Aug. 15		eS_E	18 07 50	6				
		eL_E	18 24 ..	26				
		F_E	19 13 ..					
17		eP_N	7 03 55	4				
		S_E	7 12 15	11				
		L_E	7 27 40	20				
		L_N	7 29 ..	25				
		F_E	7 41 ..					
23		e_E	7 03 30					
		e_N	7 03 59	6				
		e_E	7 06 25	16				
		e_N	7 07 25	8				
		e_E	7 12 05	16				
		L_E	7 35 ..	28				
		L_N	7 37 30	24				
		F_E	8 45 ..					
Sept. 7		eP_E	17 28 45	4				
		eP_N	17 28 50	4				
		S_E	17 38 40	8				
		S_N	17 38 42	9				
		L_E	17 49 00	20				
		M_E	18 05 50	21	*3,400			
		M_N	18 15 25	17		*5,600		
		F_N	21 48 ..					
		F_E	22 13 ..					
12		e_E	18 26 36	6				
		eL_N	18 27 40	13				
		eL_E	18 28 33	13				
		F	18 50 ..					
14		e_E	17 22 ..	7				
		eS_E	17 27 17	8				
		eL_E	17 45 50	17				
		F_E	18 30 ..					
29		eL_N	12 46 25	30				
		F_N	13 04 ..					
30		P_E	13 43 10	3				
		eP_N	13 44 50	4				
		S_N	13 53 07	8				
		eL_N	14 09 ..	20				
		F_N	14 40 ..					
30		eL_N	18 55 30	20				
		F_N	20 00 ..					

* Trace amplitude.

SEISMOLOGICAL DISPATCHES.[1]

Pine Bluff, Ark., October 4, 1918.

Earth tremors lasting several seconds shortly after 3 o'clock this morning were reported from Pine Bluff, Ark. (Assoc. Pr.)

San Juan, P. R., October 11, 1918.

There were two earthquakes this morning, the first of which occurred at 10:19 and the second three minutes later. They lasted several seconds, shaking and cracking buildings. Light tremors continued to be felt until 1:02 o'clock this afternoon. Gov. Yager estimates the loss of life at 150. Unconfirmed reports state that there was great damage done by the quake in Santo Domingo. (Assoc. Pr.)

San Juan, P. R., October 12, 1918.

A slight additional shock was felt at 4 o'clock this morning. (Assoc. Pr.)

St. Thomas, Virgin Islands, October 12, 1918.

A heavy and prolonged earthquake was felt here at 10:15 o'clock Friday morning (Oct. 11). No damage was done. (Assoc. Pr.)

Mayagüez, P. R., October 14, 1918.

There were more than a dozen distinct shocks felt here in the course of the night. Seventy-five per cent of the masonry buildings at Mayagüez are a total loss. (Assoc. Pr.)

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