LITTLE ROCK

LITTLE ROCK COLLEGE SEISMOLOGICAL OBSERVATORY, PULASKI HEIGHTS, LITTLE ROCK, ARK., U. S. A.
(In cooperation with St. Louis University, St. Louis, Mo.—Records kept in St. Louis)

Two Wood-Anderson short-period seismographs, Howard clock, time checked by radio signals.

Bulletin for January, 1938

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
1	1	W-A	ePNE	$11^h29^m39^s$	$\Delta S-P = 20°5$
		W-A	i_N	11 30 14	
		W-A	eS_E	11 33 17	
		W-A	eS_N	11 33 27	
		W-A	eL_N	11 37 57	
			F	12 00 ±	
2	2	W-A	ePNE	$22^h31^m40^s$	$\Delta P-H = 19°1$
		W-A	eS_E	22 35 14	$H = 22^h27^m17^s$
		W-A	eS_N	22 35 16	
		W-A	eL_N	22 39.2	16°7 N, 98°3 W.
			F	23 30 ±	Normal.
3	3	W-A	ePNE	$20^h48^m11^s$	$\Delta S-P = 19°8$
		W-A	eS_N	20 51 51	
		W-A	eS_E	20 51 53	
		W-A	e_N	20 52 27	
			F	20 54 ±	
4	3	W-A	ePN	$21^h48^m16^s$	
		W-A	ePE	21 48 21	
		W-A	$e(S)_{NE}$	21 51 46	
		W-A	eL_N	21 54 31	
5	18	W-A	iP_N	$4^h39^m38^s$	$\Delta S-P = 18°7$
		W-A	ePE	4 39 38	
		W-A	i_N	4 39 42	
		W-A	i_M	4 40 11	
		W-A	i_E	4 40 24	
		W-A	eS_{NE}	4 43 10	
6	23	W-A	iP	$8^h42^m37^s$	$\Delta P-H = 57°7$
		W-A	i	8 42 45	$H = 8^h32^m50^s$
		W-A	ePR_2	8 46 09	21°0 N, 156°2 W.
		W-A	eS	8 50 33	Felt throughout the
		W-A	e	8 50 47	Hawaiian Islands
		W-A	eL	9 00 29	
7	24	W-A	ePR_1E	$10^h50^m36^s$	$\Delta SKS-H = 107°1$
		W-A	$eSKS_E$	10 56 39	$H = 10^h31^m45^s$
		W-A	$e(PS)_E$	10 59 46	60°4 S, 35°6 W.
		W-A	eL_E	11 01 26	Normal.
			F	12 30 ±	

Minor Seismic Activity: Jan 2, 6h00m to 6h30m; Jan 5, 8h23m to 8h30m; Jan 25, 16h30m to 17^h00^m

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Bulletin for February, 1938 2.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
8	1	W-A	iP_{NE}	$19^h10^m38^s$	$\Delta S-P = 13°0$
		W-A	e_E	19 10 44	
		W-A	e_E	19 11 25	
		W-A	eS_E	19 13 13	
		W-A	eL_E	19 14 12	
			F	19 16 ±	
9	1	W-A	e_{NE}	$19^h23^m24^s$	Region of the Banda Sea
		W-A	i_{NE}	19 23 46	Felt in northern Austra-
		W-A	i_{NE}	19 23 57	lia and on the Island of
		W-A	i_{NE}	19 25 54	Ceram. This earthquake
		W-A	i_{NE}	19 26 52	is being studied by Miss
		W-A	i_N	19 28 31	Florence Robertson of St.
			F	22 30 ±	Louis University.
10	2	W-A	eP_N	$9^h56^m33^s$	$\Delta S-P = 18°5$
		W-A	eP_E	9 56 35	
		W-A	iP_E	9 56 36	
		W-A	i_N	9 57 04	
		W-A	e_E	9 57 19	
		W-A	eS_N	10 00 03	
			F	10 02 ±	
11	5	W-A	iP_{NE}	$2^h30^m09^s$	$\Delta P-H = 33°4$
		W-A	i_N	2 30 21	$H = 2^h23^m38^s$
		W-A	ipP_N	2 30 50	5°1 N, 75°7 W.
		W-A	i_N	2 30 51	Depth by Brunner Depth
		W-A	i_N	2 30 58	Chart 130 Kms.
		W-A	isP_N	2 31 28	
		W-A	$iPcP_{NE}$	2 32 26	
		W-A	iS_E	2 34 52	
			F	3 35 ±	
12	12	W-A	e_E	$6^h31^m33^s$	Local disturbance?
		W-A	e_{NE}	6 31 36	
		W-A	e_E	6 31 48	
			F	6 33 ±	
13	15	W-A	eP	$3^h37^m51^s$	$\Delta S-P = 59°7$
		W-A	eS	3 46 08	$H = 3^h27^m45^s$
					19°3 N, 26°0 W. Normal.

Minor Seismic Activity: Feb. 8, 8h30m to 9h00m; Feb. 14, 3h12m to 3h20m

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No.	Date	Inst.	Phase	G.C.T.	Remarks
14	4	W-A	eP_{NE}	$13^h37^m19^s$	
		W-A	iP_E	13 37 23	
		W-A	e_N	13 38 02	
		W-A	eS_{NE}	13 41 21	
			F	13 52 ±	
15	8	W-A	e_E	$6^h00^m52^s$	
		W-A	e_N	6 00 57	
		W-A	eL_E	6 04 09	
			F	Lost in next earthquake	
16	8	W-A	e_N	$6^h15^m27^s$	
		W-A	eL_N	6 30 44	
			F	7 30 ±	
17	22	W-A	eP_N	$15^h28^m52^s$	$\Delta_{P-H} = 33°.7$
		W-A	eP_E	15 28 53	$H = 15^h22^m08^s$
		W-A	e_N	15 29 04	
		W-A	eS_{NE}	15 34 25	52°.2 N, 133°.1 W.
		W-A	iS_N	15 34 35	
		W-A	i_N	15 36 24	Normal.
		W-A	eL_{NE}	15 36 58	
		W-A	$e(M)_E$	15 39 23	
			F	Lost in changing records	
18	22	W-A	eP_N	$22^h34^m22^s$	
		W-A	eP_E	22 34 23	
		W-A	$e(S)_N$	22 38 55	
		W-A	i_N	22 45 11	
		W-A	iM_N	22 45 46	
		W-A	F	23 15 ±	
19	23	W-A	eP_{NE}	$14^h10^m15^s$	
		W-A	e_E	14 11 23	
		W-A	eS_E	14 13 55	
		W-A	e_N	14 18 00	
		W-A	eM_{NE}	14 19 33	
			F	14 26 ±	

No.	Date	Inst.	Phase	G.C.T.	Remarks
20	25	W-A	eP_E	$8^h27^m12^s$	$\Delta P-H = 19.0$
		W-A	eP_N	8 27 14	$H = 8^h22^m50^s$
		W-A	i_N	8 27 27	
		W-A	i_N	8 28 02	17°0 N, 85°5 W.
		W-A	i_N	8 28 56	
		W-A	e_N	8 29 16	Normal.
		W-A	iS_{NE}	8 30 41	
		W-A	eL_N	8 32 21	
			F	8 42 ±	
21	31	W-A	ePn_N	$10^h13^m36^s$	$\Delta Sn-Pn = 234$ miles
		W-A	eSn_N	10 14 17	Near earthquake in New
		W-A	F	10 15 ±	Madrid Region

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LITTLE ROCK

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
22	Apr 1	W-A	$e(S)_E$	$22^h58^m35^s$	May not be an earthquake.
		W-A	$e(sS)_E$	22 58 53	
			F	23 00 ±	
23	Apr 4	W-A	eP_N	$21^h27^m34^s$	
		W-A	iP_N	21 27 36	
		W-A	eP_E	21 27 37	
		W-A	eS_E	21 30 26	
		W-A	iS_N	21 30 26	
		W-A	i_N	21 30 50	
		W-A	i_N	21 31 04	
			F	21 37 ±	
24	Apr 5	W-A	$(eP)_E$	$11^h15^m22^s$	
		W-A	eP_N	11 15 34	
		W-A	iS_E	11 21 13	
		W-A	iS_N	11 21 14	
		W-A	isS_E	11 21 36	
		W-A	e_E	11 21 56	
		W-A	e_E	11 22 43	
			F	11 30 ±	
25	Apr 10	W-A	eP_E	$19^h34^m53^s$	
		W-A	e_E	19 35 25	
		W-A	e_E	19 35 53	
		W-A	e_E	19 36 09	
		W-A	eS_E	19 38 47	
		W-A	e_E	19 39 32	
			F	19 47 ±	
26	Apr 12	W-A	eP_N	$11^h07^m25^s$	$\Delta_{S-P} = 21°0$
		W-A	iP_N	11 07 31	
		W-A	e_E	11 07 32	
		W-A	i_N	11 07 56	
		W-A	e_E	11 08 01	
		W-A	eS_{NE}	11 11 17	
		W-A	e_E	11 11 45	
			F	11 30 ±	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
27	Apr 12	W-A	eNE	$16^h34^m51^s$	
		W-A	i_N	16 35 24	
		W-A	eN	16 35 48	
		W-A	cL_N	16 38.1	
		W-A	F	16 41 ±	
28	Apr 13	W-A	$ePNE$	$2^h57^m31^s$	$\Delta P-H = 80°6$
		W-A	iP_{NE}	2 57 32	$H = 2^h45^m54^s$
		W-A	$iPcP_{NE}$	2 57 41	Epicenter:
		W-A	i_{NE}	2 58 37	39°4 N, 15°0 E.
		W-A	iS_E	3 07 13	Depth by the
		W-A	eE	3 09 00	Brunner Depth
		W-A	eE	3 10 08	Chart about
		W-A	F	3 45 ±	300 km.
29	Apr 13	W-A	eN	$12^h38^m56^s$	
		W-A	eN	12 39 12	
		W-A	i_N	12 39 42	
		W-A	i_N	12 39 53	
		W-A	F	12 45 ±	
30	Apr 13	W-A	eN	$14^h00^m37^s$	
		W-A	eN	14 01 13	
		W-A	eN	14 01 56	
		W-A	F	14 08 ±	
31	Apr 14	W-A	iP_N	$1^h35^m19^s$	
		W-A	e_N	1 36 50	
		W-A	e(S)E	1 40 36	
		W-A	F	2 00 ±	
32	Apr 16	W-A	ePE	$20^h21^m47^s$	
		W-A	eE	20 22 08	
		W-A	iS_E	20 25 30	
		W-A	i_E	20 26 17	
		W-A	F	20 45 ±	
33	Apr 17	W-A	ePE	$14^h49^m29^s$	$\Delta P-H = 58°3$
		W-A	eE	14 49 42	$H = 14^h39^m42^s$
		W-A	eE	14 50 05	Epicenter:
		W-A	eE	14 52 08	18°5 S, 69°0 W.
		W-A	iS_E	14 57 27	Depth by the
		W-A	i_E	14 57 43	Brunner Depth
		W-A	i_E	14 57 53	Chart: 50+ km.
		W-A	F	15 08 ±	
34	Apr 17	W-A	eN	$21^h39^m54^s$	
		W-A	eE	21 40 38	
		W-A	F	21 45 ±	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
35	Apr 19	W-A W-A W-A W-A W-A W-A W-A W-A	ePN ePR_1N eSKSNE iN eSKKSN eN eN eL_N F	$11^h12^m25^s$ 11 16 04 11 22 50 11 23 00 11 23 20 11 23 22 11 25 17 11 44 25 12 15 ±	$\Delta P-H = 90.9$ $H = 10^h59^m23^s$ Epicenter: 39.0 N, 33.1 E. Destructive in the central part of the district of Anatolia, Turkey, with heavy loss of life
36	Apr 19	W-A W-A	eS_{NE} eN_E F	$23^h43^m11^s$ 23 44 26 23 50 ±	
37	Apr 20	W-A W-A	eE eE F	$12^h45^m14^s$ 13 06 54 13 45 ±	Weak.
38	Apr 22	W-A W-A W-A W-A W-A W-A	$ePNE$ eN eN iE eN eL_N F	$4^h22^m14^s$ 4 22 40 4 25 33 4 27 22 4 28 51 4 32.5 5 10 ±	
39	Apr 25	W-A W-A W-A W-A W-A W-A W-A	ePN ePE ePR_1N iPR_2NE eS_E eE eLE F	$17^h12^m53^s$ 17 12 54 17 13 14 17 13 24 17 17 07 17 17 36 17 20 42 17 45 ±	
40	Apr 25	W-A W-A W-A W-A W-A	ePnNE iPgNE iSNE iSnE eN F	$23^h42^m38^s$ 23 42 40 23 42 51 23 42 53 23 42 55 23 47 ±	$\Delta Sn-Pn = 1.06$ = 73 miles $H = 23^h42^m18^s$ Felt in the vicinity of Findley, Arkansas

Minor Seismic Activity: April 7, 17h00m to 24h00m; April 1[illegible], 5h00m to 5h15m; April 30, 22h15m to 22h45m.

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No.	Date	Inst.	Phase	G.M.C.T.	Remarks
41	May 2	W-A	e_N	$23^h46^m33^s$	
		W-A	iNE	23 47 07	
		W-A	eN	23 48 22	
		W-A	e_{NE}	23 48 52	
			F	23 54 ±	
42	May 2	W-A	e_N	$21^h19^m57^s$	
		W-A	e_N	21 20 06	
		W-A	e_N	21 20 35	
			F	21 21 ±	
43	May 3	W-A	iP_{NE}	$2^h19^m28^s$	$\Delta_{P-H} = 17°.6$
		W-A	ipP_{NE}	2 19 47	$H = 2^h15^m29^s$
		W-A	iS_E	2 22 47	Epicenter:
		W-A	iS_N	2 22 48	13°.2 N, 99°.1 W.
		W-A	iN	2 23 04	Depth by Brunner
		W-A	iE	2 23 55	Depth Chart about
		W-A	iNE	2 24 35	100 km.
		W-A	iNE	2 27 39	Damage reported
			F	2 48 ±	at Iqualo, Mexico.
44	May 3	W-A	eP_N	$19^h28^m04^s$	
		W-A	e_N	19 28 43	
		W-A	$e(S)_N$	19 33 21	
		W-A	eN	19 38 06	
		W-A	eN	19 38 23	
			F	19 45 ±	
45	May 6	W-A	eP_E	$18^h22^m29^s$	$\Delta_{S-P} = 22°.9$
		W-A	ePE	18 22 30	$H = 18^h17^m26^s$
		W-A	iP_N	18 22 31	Epicenter:
		W-A	iN	18 22 50	12°.6 N, 86°.9 W.
		W-A	ePR_1N	18 22 57	
		W-A	iS_E	18 26 39	
		W-A	iSN	18 26 44	
		W-A	eSR_1E	18 27 23	
		W-A	eLE	18 30 03	
			F	19 12 ±	
46	May 8	W-A	e_N	$14^h08^m25^s$	
		W-A	eNE	14 09 14	
			F	Lost in next earthquake	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
47	May 8	W-A	e_N	$14^h58^m45^s$	
		W-A	eNE	15 01 17	
		W-A	eN	15 07 24	
			F	Lost in microseisms.	
48	May 10	W-A	eP_N	$2^h35^m17^s$	
		W-A	eP_E	2 35 20	
		W-A	e_N	2 35 39	
		W-A	eS_E	2 33 32	
		W-A	iS_{NE}	2 38 33	
		W-A	e_E	2 39 06	
			F	2 42 ±	
49	May 11	W-A	ePN	14^h49^m12	$\Delta_{S-P} = 19°.8$
		W-A	iPR_{2N}	14 49 33	$H = 14^h44^m45^s$
		W-A	i_N	14 49 58	Epicenter:
		W-A	e_E	14 51 56	16°.8 N, 100°.7 W
		W-A	iS_{NE}	14 53 05	Normal.
		W-A	iSR_{1E}	14 53 51	
		W-A	eL_E	14 55 18	
		W-A	iM_N	14 57 09	
		W-A	iMN	14 58.2	
		W-A	iMN	15 02.4	
			F	16 25 ±	
50	May 12	W-A	$(eP')_E$	$15^h57^m47^s$	$\Delta_{P'-H} = 117°.4$
		W-A	eP'_E	15 57 49	$H = 15^h39^m02^s$
		W-A	$e(PR_1)_N$	15 59 07	Region of
		W-A	$e(PR_2)_E$	16 01 44	5°.0 S, 147°.5 E.
		W-A	$e(SKS)_{NE}$	16 04 46	Normal.
		W-A	$e(SKKS)_E$	16 06 05	
		W-A	$e(S)_E$	16 06 43	
		W-A	$e(PS)_N$	16 08 56	
		W-A	$e(SR_2)_E$	16 19.7	
		W-A	eLN	16 28.3	
		W-A	eME	16 35.7	
		W-A	eMN	16 38.7	
			F	18 00 ±	
51	May 19	W-A	eP'_N	$17^h28^m03^s$	$\Delta_{P'-H} = 133°.7$
		W-A	e_E	17 30 25	$H = 17^h08^m46^s$
		W-A	iSKPNE	17 31 21	Epicenter:
		W-A	$e(PSKS)_N$	17 40 42	1°.0 N, 118°.9 E.
		W-A	eNE	17 45 37	Normal.
		W-A	eSR1N	17 48 20	
			F	20 00 ±	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
52	May 23	W-A W-A W-A W-A W-A W-A	$e(P)_N$ e_E e_E e_E $iSKS_N$ e_E F	$7^h31^m19^s$ 7 31 23 7 31 36 7 36 38 7 42 30 7 48 32 20 00 ±	Δ_{SKS-H} = 92°7 H = $7^h18^m43^s$ Epicenter: 36°9 N, 141°1 E. Depth by Brunner Depth Chart: 100 km Felt throughout the main island of Japan.
53	May 26	W-A W-A	iP_{NE} iS_{NE} F	$21^h31^m59.5^s$ 21 32 01 21 33 ±	Blast!
54	May 28	W-A W-A W-A W-A W-A W-A	ePR_{NE} iPR_{1N} ePR_{2N} eS_{NE} eL_{NE} eL_{NE} F	$10^h19^m48^s$ 10 20 25 10 20 38 10 24 36 10 28 46 10 30 42 11 30 ±	Δ_{P-H} = 26°7 H = $10^h14^m06^s$ Epicenter: 43°3 N, 125°0 W. Felt at Marshfield coast of Oregon.
55	May 28	W-A W-A W-A W-A W-A	ePR_N eN $e(S)_{NE}$ eN eL_N F	$16^h54^m51^s$ 16 55 03 17 05 25 17 06 16 17 24 48 18 15 ±	
56	May 28	W-A W-A	iP_N iNE F	$18^h17^m23.5^s$ 18 17 34 18 18 ±	Blast?
57	May 30	W-A W-A W-A W-A W-A W-A	ePR_{1E} e_N e_E $e(PS)_{NE}$ $e(PPS)_E$ eL_E F	$14^h48^m37^s$ 14 48 55 14 54 46 14 58 00 14 58 17 15 07 42 18 00 ±	Δ_{PR_1-H} = 108°7 Epicenter: 20°4 S, 169°4 E. H = $14^h29^m48^s$ Normal.
58	May 31	W-A W-A W-A	e_N iNE iNE F	$8^h45^m50^s$ 8 46 21 8 47 25 8 55 ±	

Minor Seismic Activity: May 25, 21h30m to 21h39m

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Records read by R. R. Heinrich, Instructor

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Note: The Little Rock Station, after an interruption, during June, July and August, resumed registration on September 16, 1938, for the second half of the year.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
59	Sept 17	W-A	eP_{NE}	$17^h23^m34^s$	Δ J.S.A. = 13°8
		W-A	e	17 23 36	Epicenter: 33°6 N,
		W-A	eP_N	17 23 24	109°1 E.
		W-A	eS?	17 26 05	$H = 17^h20^m16^s$
		W-A	eS_{NE}	17 26 17	Depth: normal.
		W-A	iSR_1NE	17 26 45	
		W-A	iL_{NE}	17 27 07	
		W-A	i	17 27 11	
		W-A	M	17 27 32	
		W-A	F	17 40 ±	
60	Sept 20	W-A	e_N	$4^h43^m20^s$	Time uncertain.
		W-A	e_N	4 43 47	
		W-A	i_N	4 46 04	
		W-A	iM?	4 46 16	
		W-A	F	4 49 ±	
61	Sept 29	W-A	iP_N	$23^h36^m02^s$	Δ_{S-P} = 14°1
		W-A	eS_{NE}	23 38 48	Time uncertain.
		W-A	iS_{NE}	23 38 58	
			F	23 41 ±	
62	Sept 29	W-A	eP_{NE}	$23^h39^m35^s$	Δ_{P-H} = 13°8
		W-A	i	23 39 45	Time uncertain.
		W-A	eS?	23 41 35	
		W-A	eS_{NE}	23 42 13	
		W-A	L	23 43 19	
		W-A	F	23 51 ±	

Minor Seismic Activity:
Strong microseisms September 20 to 21; September 27.

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LITTLE ROCK

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(In cooperation with St. Louis University, St. Louis, Mo.—Records kept in St. Louis)

Two Wood-Anderson short-period seismographs, Howard clock, time checked by radio signals.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
63	Oct 1	W-A	e	$22^h16^m58^s$	$\Delta_{S-P} = 14.^\circ5$
		W-A	eS_N	22 18 08	Aftershock of
		W-A	i	22 19 08	September 29.
			F	22 22 ±	
64	Oct 10	W-A	eP^1N	$21^h07^m10^s$	Δ J.S.A.= 130.°5
		W-A	ePR_1NE	21 09 45	Epicenter: = 1.°0 N.,
		W-A	$eSKP_N$	21 10 33	125.°0 E.
		W-A	i	21 13 35	$H = 20^h48^m04^s$
		W-A	$eSKS_E$	21 13 55	
		W-A	L	21 49 10	
			F	22 10 ±	
65	Oct 19	W-A	eP?	$4^h44^m46^s$	
		W-A	e	4 54 48	
		W-A	e	4 55 10	
		W-A	e	4 59 16	
		W-A	L	5 00	
		W-A	M	5 26	
		W-	F	5 40	
66	Oct 20	W-A	$ePKP_N$	$2^h38^m46^s$	Δ J.S.A. = 139.°2
		W-A	$ipPKP_N$	2 38 54	Epicenter:
		W-A	$iSKP_N$	2 42 13	9.°5 S., 122.°8 E.
		W-A	iPR_2NE	2 44 35	$H = 2^h19^m15^s$
		W-A	$iSKS_{NE}$	2 44 45	Depth 50 km.
		W-A	$iSKKS_{NE}$	2 48 18	
		W-A	iS?	2 48 39	
		W-A	i?	2 51 10	
			L	3 00 30	
			F	4 10 ±	

Minor Seismic Activity: Oct. 14, 17h13m to 17h19m; Oct. 23, 5h16m to 5h19m.

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67	Nov 5	W-A	eP_N	$8^h56^m34^s$	Δ J.S.A. = $93.^o9$
		W-A	$iSKS_{NE}$	9 C7 36	Epicenter:
		W-A	$iSKKS_{NE}$	9 08 14	36°8 N., 139°6 E.
		W-A	eS_{NE}	9 08 24	$h = 8^h43^m18^s$
		W-A	ePS_{NE}	9 09 24	Depth normal.
		W-A	eSR_1	9 13 39	
		W-A	L	9 24 00	
		W-A	M	9 31 00	
			F	11 ±	
68	Nov 6	W-A	eP_N	$9^h07^m00^s$	Δ J.S.A. = $91.^o3$
		W-A	iP_N	9 07 04	Epicenter:
		W-A	iPR_1NE	9 10 37	37°0 N., 143°7 E.
		W-A	ePR_2	9 12 39	$H = 8^h53^m58^s$
		W-A	eS_{NE}	9 17 55	Depth normal.
		W-A	iS_{NE}	9 18 00	Very strong
		W-A	$iSKKS_N$	9 18 00	quake.
		W-A	iPS_N	9 19 00	
		W-A	iPPS	9 14 45	
		W-A	iScS	9 21 53	
		W-A	SR_1NE	9 24 10	
		W-A	SR_2NE	9 27 40	
		W-A	i	9 36 40	
		W-A	L	9 37 40	
		W-A	M	9 44 29	
			F	11 15 ±	
69	Nov 6	W-A	eP_N	$21^h52^m01^s$	$\Delta_{S-P} = 90.^o1$
		W-A	ePR_1N	21 55 29	$H = 21^h39^m03^s$
		W-A	ePR_2N	21 57 01	Aftershock of
		W-A	iS_{NE}	22 02 55	the previous
		W-A	ePS_N	22 03 54	quake.
		W-A	$ePPS_N$	22 04 19	
		W-A	$iPPPS_N$	22 04 56	
		W-A	SR_1NE	22 09 00	
		W-A	L	22 22 36	
		W-A	M	22 44	
			F	23 30	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
70	Nov 10	W-A	eP_N	$20^h27^m34^s$	Δ_{S-P} = 49°1
		W-A	iP_N	20 27 36.5	Epicenter by
		W-A	i	20 27 42	J.S.A.: 55°6 N.,
		W-A	iPR_1NE	20 29 27	157°7 W.
		W-A	iPR_2NE	20 30 07	H = $20^h18^m48^s$
		W-A	$iScP_N$	20 32 04	Depth normal.
		W-A	iS_{NE}	20 34 40	
		W-A	iS_{NE}	20 34 43	
		W-A	$iScS_E$	20 37 27	
		W-A	iSR_1	20 37 42	
		W-A	L	20 42	
			F	(Lost in change of records)	
71	Nov 11	W-A	iP_{NE}	$1^h06^m35^s$	Δ_{S-P} = 47°3
		W-A	ePR_{1N}	1 08 14	Epicenter by
		W-A	iS_{NE}	1 13 34	J.S.A. = 54°9 N.,
		W-A	iSP_N	1 13 46	156°0 W.
		W-A	$iScS_N$?	1 16 21	H = $1^h57^m57^s$
		W-A	SR_{1NE}	1 16 36	Aftershock of
		W-A	L	1 19 30	the previous
		W-A	M	1 23 20	quake.
			F	2 10 ±	
72	Nov 13	W-A	eP_E	$13^h26^m02^s$	Δ J.S.A. = 82°3
		W-A	ipP_E	13 26 12	Epicenter:
		W-A	iPR_{1NE}	13 29 17	46°0 N., 149°4 E.
		W-A	iS_{NE}	13 36 15	H = $13^h13^m50^s$
		W-A	isS_{NE}	13 36 40	Depth 50 km.
		W-A	iSP_{NE}	13 37 10	
			F	14 05 ±	
73	Nov 17	W-A	eP_{NE}	$4^h03^m17^s$	Δ J.S.A. = 47°4
		W-A	iP_E	4 03 26	Epicenter:
		W-A	$iPeP_N$ or	4 05 03	52°4 N., 155°0 W.
		W-A	PR_{1N}	4 [illegible] 03	H = $3^h54^m49^s$
		W-A	iS_{NE}	4 10 [illegible]7	Depth 50 km.
		W-A	isS_{NE}	4 10 [illegible]7	
		W-A	isP_{NE}	4 11 [illegible]3	
		W-A	iPS_N	4 11 24	
		W-A	i	4 12 24	
		W-A	$iScS_N$	4 13 08	
		W-A	SR_1	4 13 26	
		W-A	X?	4 13 51	
		W-A	iSR_2?	4 14 12	
		W-A	L	4 17 50	
		W-A	iScPPcS	4 20 27	
		W-A	M	4 21 46	
			F	5 20 ±	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
74	Nov 22	W-A	eP_N	$1^h27^m12^s$	Δ J.S.A. = 93°2
		W-A	epP_N	1 27 22	Δ_{S-P} = 93°5
		W-A	eS_E	1 38 14	Epicenter by
		W-A	iS_N	1 38 22	J.S.A.: 36°3 N.
		--	F	3 00 ±	141°6 E.
		--			H = $1^h14^m06^s$
					Depth about 60 km.
75	Nov 30	W-A	eP_{NE}	$2^h43^m01^s$	Δ J.S.A. = 92°7
		W-A	eP_N	2 43 10	Epicenter:
		W-A	$iSKKS_{NE}$	2 54 02	37°5 N., 141°3 E.
		W-A	iS_E	2 54 14	H = $2^h28^m52^s$
		W-A	iPS_N	2 54 55	Depth normal.
		W-A	$ePPPS_N$	2 55 55	
		W-A	L	3 13 24	
		W-A	M	3 20	
			F	4 15	

Minor Seismic Activity: Nov. 9, 8h59m to 9h40m; Nov. 10, 15h29m to 15h31m; Nov. 10, 15h35m to 15h40m; Nov. 11, 9h01m to 9h45m; Nov. 12, 9h01m to 9h16m; Nov. 13, 23h06m to 24h10m.

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Bulletin for December 1938

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
76	Dec 9	W-A	eP_N	$4^h03^m56^s$	
		W-A	e_N	4 04 57	
		W-A	e_N	4 08 50	
		W-A	e_N	4 11 08	
		W-A	e_N	4 20 06	
		W-A	e_N	4 21 28	
		W-A	L?	4 22 21	
			F	4 46 ±	
77	Dec 12	W-A	e_N	$3^h22^m53^s$	
		W-A	e_N	3 23 45	
		W-A	i_{NE}	3 23 55	
		W-A	i_{NE}	3 24 01	
		W-A	i_{NE}	3 24 33	
		W-A	i_{NE}	3 25 12	
		W-A	i_{NE}	3 26 28	
			F	3 32 ±	
78	Dec 13	W-A	e_{NE}	$9^h27^m20^s$	
		W-A	e_{NE}	9 28 22	
		W-A	e_{NE}	9 29 43	
		W-A	i_{NE}	9 30 38	
		W-A	i_{NE}	9 31 47	
		W-A	i_{NE}	9 31 55	
		W-A	i_{NE}	9 32 04	
			F	10 40 ±	

Minor Seismic Activity: Dec. 3, 17h57m to 18h1m; Dec. 7, 14h43m to 14h47m; Dec. 15, 18h18m to 18h55m; Dec. 16, 19h29m to 19h55m; Dec. 17, 0h15m to 0h40m; Dec. 19, 18h35m to 18h42m.

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