No.	Date	Inst.	Phase	G.M.C.T.	Remarks
5	Jan 27	W-A W-A W-A W-A W-A	ePN iN $eSNE$ iE eLE F	$14^h17^m18^s$ 14 17 30 14 31 49 14 32 12 14 33.5 14 32	Epicenter by J.S.A. ϕ = 13°4 N., λ = 91°3 W. ΔS-P = 25°4 Δmeas = 25°3
6	Jan 29	W-A Mac Mac W-A Mac W-A Mac W-A W-A Mac	ePN iN $eSNE$ iN iE $eLNE$ F	$18^h55^m51^s$ 18 56 04 19 00 22 19 00 28 19 00 49 19 03.1 19 18	Epicenter by San Salvador: 13°5 N., 90°3 W. ΔS-P = 25°5 Δmeas = 25°5 Damage VI.
7	Jan 30	W-A Mac W-A W-A Mac W-A Mac W-A W-A	eE ePR_1NE $eSKKSNE$ iS_N $eSPNE$ $ePPSNE$ eSR_1NE F	$2^h36^m34^s$ 2 37 56 2 44 51 2 45 36 2 47 43 2 48 20 2 53 28 5 09	Epicenter by J.S.A. ϕ = 6°0 S., λ = 115°8 E. H = $2^h18^m29^s$ ΔS-H = 112°4 Δmeas = 112°6
8	Jan 31	W-A W-A W-A W-A W-A	eE iE eE eE eN F	$0^h10^m56^s$ 0 16 40 0 19 55 0 25.9 0 38 0 45	Record very weak.

Minor Seismic Activity: Surface waves were recorded January 3, 17h33m to 17h44m; January 7, 23h59m to 00h05m; January 30, 6h33m to 6h45m.

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SAINT LOUIS

SEISMOGRAPHIC STATION, ST. LOUIS UNIVERSITY, ST. LOUIS, MO., U. S. A.

One Wiechert 80 Kg., two Wood-Anderson long-period seismographs, Wiechert clock

Bulletin for February 1939

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
9.	Feb 8	Mac Mac W-A Mac	e_E eL_E M_E F	$20^h59^m26^s$ 21 04.5 21 07 21 33	
10	Feb 9	W-A W-A W-A	eP_E eS_E eL_E	$15^h36^m31^s$ 15 41 23 15 44.5	Epicenter by J.S.A.: ϕ = 10°6 N., λ = 88°1 W. H = $15^h30^m24^s$ ΔS-P = 28°1
11	Feb 15	W-A Mac W-A Mac W-A Mac Mac W-A Mac	eP_N ioP_N isP_{NE} iS_{NE} isS_{NE} F	$2^h38^m09^s$ 2 36 22 2 36 35 2 40 04 2 40 31 2 59	Epicenter on basis of Cincinnati, Florissant, Pasadena, and St. Louis: ϕ = 17°2 N., λ = 97°5 W. H = $21^h31.3^m$ ΔS-P = 22°0 Depth by Brunner Depth Chart about 80 km. Felt in Mexico City.
12	Feb 16	W-A Mac W-A Mac Mac Mac Mac Mac Mac	iS_{NE} iE iE $ePPS_N$ eSR_{1N} eN eL_{NE} M_E F	$19^h15^m00^s$ 19 15 02 19 15 05 19 16.7 19 21 09 19 26.1 19 32 19 38 20 11	Epicenter from Strasbourg Bulletin: ϕ = 38°5 N., λ = 141°9 E. ΔS-H = 89°3

Minor Seismic Activity: Surface waves were recorded February 8, 6h49m to 7h22m; February 9, 12h54m to 13h19m; Feb 10, 00h46m to 1h39m; Feb 14, 4h10m to 4h35m; Feb 16, 8h59m to 7h35m; Feb 17, 16h13m to 16h39m; Feb 20, 4h41m to 4h58m; Feb 26, 11h17m to 11h41m; Feb 28, 1h27m to 1h38m and 3h49m to 4h29m.

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One Wiechert 80 Kg., two Wood-Anderson long-period seismographs, Wiechert clock

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
13	Mar 2	Mac Mac Mac Mac	e_N e_N e_N i_N F	$7^h28^m12^s$ 7 30 27 7 36 54 7 37 43 8 45	
14	Mar 5	Mac	eL_E F	$15^h22^m22^s$ 15 45	Epicenter by NEIS Bulletin: ϕ = 35° N., λ = 139° W. Beginning lost in changing records.
15	Mar 7	Mac Mac	e_N e_N F	$2^h30^m09^s$ 2 41 02 4 17	
16	Mar 8	Mac Mac Mac	e_N e_N e_N(L) F	$22^h37^m17^s$ 22 39 25 22 43.5 24 20	
17	Mar 13	Mac Mac	e_N e_N(L) F	$5^h35^m45^s$ 5 52.5 6 48	
18	Mar 20	W-A W-A Mac W-A Mac W-A W-A W-A Mac W-A W-A Mac W-A Mac Mac	ePR_1E eP'NE i(SKS)NE i_E eSKKS$_N$ iS_{NE} e(PPS)E e(SR1)NE eL M F	$3^h40^m00^s$ 3 40 19 3 46 42 3 47 03 3 47 33 3 47 56 3 49 29 3 54 52 4 07 4 14 5 09	Epicenter by J.S.A.: ϕ = 33°4 N., λ = 129°5 E. H = $3^h22^m33^s$ Δ_{S-H} = 99°7 Δ_{meas} = 99°2 Reported felt on island of Kyushu.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
19	Mar 20	Mac	eL	10h59.5m	
		Mac	M	11 13	
			F	12 39	
20	Mar 20	Mac	iP_N	$13^h01^m38^s$	$\Delta S-P = 24°.1$
		Mac	iS_N	13 05 58	
			F	13 42	
21	Mar 21	Mac	$(e)_N$	$1^h31^m00^s$	Epicenter from
		Mac	$(e)_N$	1 31 02	Strasbourg
		W-A - Mac	ePR_1	1 33 59	Bulletin
		Mac	$eSKP_N^{NE}$	1 34 17	$\phi = 3°.0$ S,
		W-A	i_E	1 35 24	$\lambda = 90°.6$ E.
		W-A	e_E	1 39 58	$H = 1^h11.2^s$
		Mac	i_N	1 41 05	$\Delta PR_1-H = 144°.7$
			F	6 05	$\Delta meas = 145°.0$
22	Mar 22	Mac	eL_N	4^h14^m	
			F	6 37	
23	Mar 22	W-A Mac	e_{NE}	$7^h46^m18^s$	
		Mac	e_N	7 52 55	
			F	13 04	
24	Mar 23	W-A Mac	e_{NE}	$16^h47^m04^s$	
			F	18 54	

Minor Seismic Activity: Surface waves: Mar 4, 20^h56^m to 21^h41^m; Mar 6, 9^h13^m to 9^h35^m; Mar 7, 11^h33^m to 11^h48^m and 17^h53^m to 19^h01^m; Mar 10, 0^h51^m to 1^h10^m; Mar 11, 11^h54^m to 12^h14^m; Mar 12, 22^h18^m to 22^h24^m; Mar 13, 5^h50^m to 8^h43^m; Mar 17, 13^h12^m to 13^h48^m; Mar 18, 17^h40^m to 18^h08^m; Mar 21, 8^h28^m to 10^h35^m; Mar 31, 23^h8^m to 23^h14^m.

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One Wiechert 80 Kg., two Wood-Anderson long-period seismographs, Wiechert clock

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
25	Apr 3	Mac	e_E	$16^h32^m46^s$	
		Mac	eL_{NE}	16 42	
		Mac	M_E	16 45	
			F	17 12	
26	Apr 4	Mac	$e(PR_1)_E$	$10^h30^m20^s$	Record weak.
		Mac	ePS_E	10 39 29	
		Mac	e_E	10 44 28	
		Mac	eL_E	11 00	
		Mac	M_E	11 07	
			F	13 04	
27	Apr 5	Mac W-A	eP_E	$16^h57^m09^s$	Epicenter from Florissant Bulletin ϕ = 20°0 S., λ = 168°8 E. H = $16^h42^m40^s$ Δ_{S-P} = 110°0 Δ_{meas} = 110°3
		Mac	e_E	16 57 22	
		Mac W-A	iPR_1E	17 01 42	
		Mac	i_E	17 01 52	
		Mac W-A	$iSKSE$	17 07 46	
		W-A	$iSKKSE$	17 09 28	
		Mac	eS_N	17 11 20	
		W-A	e_E	17 11 20	
		W-A	eL_N	17 25	
		W-A	M_N	17 38	
			F	19 34	
28	Apr 6	Mac	e_E	$9^h32^m02^s$	Record weak.
		Mac	e_E	9 36 27	
		Mac	eL_E	9 43	
		Mac	M_{NE}	9 47	
			F	10 16	
29	Apr 7	Mac W-A	e_E	$9^h20^m20^s$	Record weak.
		Mac	eL_E	9 34	
		Mac	M_E	9 38	
			F	10 12	
30	Apr 12	Mac	e_E	$14^h00^m45^s$	
		Mac	M_N	14 10	
31	Apr 15	Mac	eN	$7^h45^m11^s$	
		Mac	eN	7 45 31	
		Mac	e_E	7 48 55	
		Mac	eN	7 49 53	
			F	7 58	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
32	Apr 15	W-A Mac Mac	eP_E eS_E iM_E F	$15^h46^m32^s$ 15 51 04 15 54 19 16 03	$\Delta S-P = 25°6$ Record weak.
33	Apr 15	W-A Mac	iS_E e_E	$17^h31^m37^s$ 17 31 42	Local shock felt in southeastern Missouri.
34	Apr 15	Mac Mac Mac	$eSR2E$ eL_N M_E F	$20^h44^m06^s$ 20 59 21 13 22 56	
35	Apr 18	W-A Mac W-A W-A W-A W-A W-A	eP_N ipP_N $iPcP_E$ iS_{NE} $i(ScS)_E$ iSR_1N $eSR2E$ F	$6^h33^m38^s$ 6 33 57 6 34 18 6 42 31 6 43 35 6 46 54 6 50 20 9 31	Epicenter re-determined by J.S.A.: $\emptyset = 26°6$ S., $\lambda = 71°3$ W. Depth by Brunner Depth Chart 100 km. $\Delta S-P = 37°3$ meas = 67.4 Damage in Chile. $H = 6^h22^m47^s$
36	Apr 20	Mac	M_E F	$23^h08.6^m$ 24 43	
37	Apr 21	Mac	eL_E F	$1^h55.7^m$ 2 32	Record weak.
38	Apr 21	W-A Mac W-A Mac Mac W-A Mac Mac Mac W-A	iP_N i_{NE} epP_N ipP_{NE} eS_N $iSKS_E$ isS_E F	$4^h40^m36^s$ 4 40 37 4 42 31 4 42 34 4 50 04 4 50 08 4 53 37 6 37	Epicenter by J.S.A.: Region of $\emptyset = 48°6$ N., $\lambda = 138°0$ E. Depth by Brunner Depth Chart 550 km. $H = 4^h29^m11^s$ $\Delta P-H = 82°6$ $\Delta meas = 82°6$

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
39	Apr 23	Mac Mac W-A	iP_E eS_N F	$16^h34^m54^s$ 16 44 42 19 52	Epicenter by J.S.A.: ϕ = 0°1 N., λ = 18°0 W. H = $16^h23^m09^s$ Δ_{P-H} = 76°2 Δ_{meas} = 76°3
40	Apr 25	Mac Mac W-A Mac W-A Mac W-A W-A	iP_N epP_N iS_E iS_N isS_E eE iE F	$13^h02^m42^s$ 13 03 10 13 09 59 13 10 00 13 10 32 13 10 49 13 12 20 13 42	Epicenter by J.S.A. Region of ϕ = 12°2 S., λ = 75°3 W. Depth by Brunner Depth Chart abcut 150 km, H = $12^h53^m44^s$ Δ_{P-H} = 52°9 Δ_{meas} = 52°9 Felt at Lima, Peru.
41	Apr 26	Mac	M_N	$21^h55 \pm ^m$	
42	Apr 30	Mac Mac Mac W-A Mac Mac W-A W-A W-A W-A W-A	ePE eE iPR_1E iPR_2E iE $e(S)N$ ePS_NE iSR_1E iSR_2E $e(SR_3)_E$ F	$3^h10^m11^s$ 3 13 39 3 14 48 3 17 22 3 21 04 3 22 49 3 24 25 3 30 44 3 35 17 3 38 53 6 35	Epicenter by J.S.A. Region of ϕ = 10°8 S., λ = 158°5 E. H = $2^h55^m24^s$ Δ_{PS-PR_1} = 11398 Δ_{meas} = 11397 Record strong. Destructive in Solomon Islands.

Minor Seismic Activity: Surface waves were recorded April 1, 2h22m to 4h54m; Apr 2, 1h28m to 4h19m; Apr 5, 23h41m to Apr 6, 1h19m; Apr 6, 4h1m to 6h6m and 12h48m to 15h16m; Apr 8, 11h15m to 11h50m; Apr 16, 11h11m to 11h23m; Apr 17, 11h55m to 13h26m; Apr 19, 13h22m to 14h13m; Apr 21, 14h52m to 24h1m; Apr 22, 12h2m to 13h5m; Apr 24, 13h19m to 13h58m and 21h53m to 24h3m; Apr 23, 12h2m to 13h5m; Apr 24, 13h19m to 13h58m and 21h53m to 24h3m; Apr 26, 11h45m to 12h43m; Apr 28, 00h55m to 1h21m; Apr 30, 13h51m to 15h00m

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Bulletin for May 1939

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
43	May 1	Mac	eL E F	$5^h19.5^m$ 6 05	
44	May 1	W-A Mac W-A	ePN iSKKS E iS E	$6^h11^m25.5^s$ 6 22 15 6 22 18	Epicenter from Florissant Bull. ϕ = 39°.4 N., λ = 139° E. H = $5^h58^m30^s$ ΔP-H = 8°.7 Δmeas = 90°.0
45	May 1	W-A W-A Mac W-A	eP E ePR$_1$E iSKKS NE F	$6^h13^m09^s$ 6 16 41 6 24 02 10 01	Epicenter same as #44. H = $6^h00^m25^s$ Destructive in Japan.
46	May 1	Mac W-A Mac	e(S)NE eL N F	$18^h29^m19^s$ 18 48 19 07	Probably after-shock of #44 and #45.
47	May 1-2	W-A Mac Mac	e(P)E eS NE eL N F	$23^h58^m15^s$ 00 02 29 00 4.5 01 18	Epicenter (after Pasadena): Region of ϕ = 32° N., λ = 117° W. ΔS-P = 23°.4 Damage in San Diego.
48	May 2	Mac W-A Mac W-A W-A W-A W-A	iP E iN iE iS N iN F	$13^h19^m38^s$ 13 19 41 13 22 55 13 23 35 13 23 38 17 07	Epicenter by JSA ϕ = 29°.4 N., λ = 113°.5 W. H = $13^h14^m49^s$ Felt in San Diego and Tucson ΔP-H = 21°.4 Δmeas = 21°.4
49	May 4	Mac	ME F	00^h11^m 00 27	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
50	May 6	Mac W–A W–A W–A Mac Mac W–A	ePNE epPE iN iSE isSE F	$6^h06^m51^s$ 6 07 01 6 08 14 6 12 04 6 12 14 9 38	Epicenter by J.S.A. Region of ϕ = 7°5 N. λ = 84°5 W. H = $6^h00^m30^s$ h = 50 km. by Brunner Depth Chart ΔP–H = 31°2 Δmeas = 31°6
51	May 6	Mac Mac	e(SR$_1$)N eLN F	$17^h37^m04^s$ 17 58.4 18 45	Felt in Philippines especially in Mindoro.
52	May 6	Mac Mac Mac	e(PS)E eSR$_1$E eLE F	$20^h33^m06^s$ 20 39 08 20 56.2± 21 49	J.S.A. gives H = about $20^h04.6^m$
53	May 8	Mac Mac W–A Mac Mac Mac Mac Mac W–A W–A	iPNE ipPNE iE eN eSE (e)E iSNE esSNE F	$1^h55^m54^s$ 1 56 09 1 56 13 2 02 50 2 03 05 2 03 07 2 03 13 2 03 39 5 23	Epicenter by J.S.A. ϕ = 36°4 N., λ = 24°3 W. H = $1^h46^m58^s$ h = 90–100 km. by Brunner Depth Chart ΔP–H = 51°4 Δmeas = 51°4 Felt heavily on central and eastern groups of the Azores
54	May 8	Mac Mac	e(S)E eLE F	$16^h31^m35^s$ 16 40.2 17 07	Aftershock of #53
55	May 9	Mac Mac Mac	iSNE eNE MNE F	$7^h43^m22^s$ 7 47 04 7 53 9 21	Epicenter by J.S.A ϕ = 51°0 N., λ = 152°5 W. H = $7^h28^m43^s$ ΔS–H = 43°5
56	May 10	Mac W–A Mac W–A Mac Mac Mac	iPNE eSE iSN iPSN iSR$_1$N MN F	$7^h54^m34^s$ 8 02 29 8 02 31 8 02 57 8 06 45 8 17 ± 11 20	Epicenter by J.S.A. ϕ = 51°0 N., λ = 177°2 W. ΔP–H = 59°5 Δmeas = 59°5 H = $7^h44^m35^s$

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
57	May 11	Mac Mac	eE MNE F	$17^h59^m34^s$ 18 16.6 19 14	
58	May 12	Mac	ME F	$3^h12.4^m$ 3 39	
59	May 14	Mac Mac Mac	eN eE eLNE F	$18^h39^m24^s$ 18 42 19 18 56.9 20 30	
60	May 16	Mac Mac Mac	eNE eLE ME F	$7^h48^m54^s$ 8 10 8 18 9 02	
61	May 19	W-A W-A W-A W-A W-A	iPNE ipPNE ipPcP iS isS F	$18^h35^m32^s$ 18 35 57 18 36 06 18 43 36 18 44 19 19 59	Epicenter by J.S.A. ϕ = 17°0 S., λ = 70°0 W. H = $18^h25^m47^s$ h = 100 km. by the Brunner Depth Chart. ΔS-P= 59°0 Δmeas = 59°0
62	May 22	Mac Mac	eNE MNE F	$2^h05^m21^s$ 2 33 3 51	
63	May 23	Mac W-A Mac Mac W-A W-A	ePNE eNE iSNE iE F	$2^h54^m40^s$ 2 54 58 2 58 44 2 59 00 3 27	Epicenter by J.S.A. ϕ = 18°0 N., λ = 101°0 W. H = $2^h49^m42^s$ Depth slightly greater than normal ΔS-P = 22°3 Δmeas = 22°3
64	May 27	Mac Mac	eN e(L)N F	$4^h15^m04^s$ 4 43.0 5 19	

Minor Seismic Activity: Surface waves were recorded May 1, 12h36m to 13h05m; May 3, 6h44m to 7h13m; May 3, 7h53m to 8h58m; May 9, 3h34m to 7h38m; May 10, 15h53m to 17h09m and 20h10m to 20h53m; May 11, 3h43m to 4h27m and 10h10m to 14h23m; May 12, 7h50m to 9h24m; May 15, 4h9m to 4h50m and 21h33m to 22h03m; May 18, 23h07m to 24h21m; May 19, 8h14m to [illegible] May 21, 4h18m to 4h47m; May 22, 6h38m to 6h51m; May 23, 5h18m to 10h23m to 11h09m; May 27, 1h47m to 3h02m.

[illegible].J., Director—H.F. Eirkenhauer, S.J., Graduate Student

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One Wiechert 80 Kg., two Wood-Anderson long-period seismographs, Wiechert clock

No.	Date	Inst	Phase	G.M.C.T.	Remarks
130	Oct. 4	W-A Mac W-A Mac W-A W-A W-A Mac W-A Mac	eP_{NE} iPE e_N eE eN iNE i_N F	$22^h28^m49^s$ 22 28 53 22 32 45 22 35 04 22 35 05 22 35 25 22 35 42 23 61	Epicenter by J.S.A. $\phi = 23°8$ N, $\lambda = 108°1$ W. $H = 22^h24^m06^s$ $\Delta_{iP-H} = 21°2$ $\Delta_{meas} = 21°2$
131	Oct. 10	W-A W-A W-A W-A	$e(P)_N$ iP_N e_N eS_N	$18^h45^m01^s$ 18 45 05 18 55 20 18 55 37	Epicenter by J.S.A. Region of $\phi = 41°2$ N, $\lambda = 143°4$ E. $H = 18^h32^m12^s$
132	Oct 10	W-A W-A W-A W-A	eP_N iP_N e_N eS_N	$19^h03^m56^s$ 19 03 59 19 14 13 19 14 32	Epicenter same as #131.
133	Oct. 17	Mac W-A Mac W-A Mac W-A Mac Mac Mac W-A	ePR_1NE $iSKS_{NE}$ iS_{NE} iNE isS_{NE} iSP_{NE} F	$6^h40^m56^s$ 6 46 52 6 48 29 6 49 17 6 49 29 6 50 23 9 11	Epicenter by J.S.A. $\phi = 16°8$ S, $\lambda = 167°7$ E. $H = 6^h22^m08^s$ h = 110 km by the Brunner Depth Chart. $\Delta_{S-H} = 110°0$ $\Delta_{meas} = 110°1$
134	Oct. 19	W-A W-A W-A W-A W-A W-A W-A	eP_N iPR_1N i_N e_N iS_E i_E i_E	$11^h57^m56^s$ 11 58 12 11 58 27 12 01 04 12 01 16 12 01 37 12 07 50	Epicenter by J.S.A. $\phi = 47°6$ N, $\lambda = 70°0$ W. $H = 11^h53^m58^s$ $\Delta_{P-H} = 17°1$ $\Delta_{meas} = 17°2$
135	Oct. 20	Mac W-A Mac Mac	$e(S)_N$ eNE eL_{NE} F	$20^h12^m23^s$ 20 13 26 21 17 30 21 04	Record weak
136	Oct. 27	W-A W-A	e_N i_N F	$1^h43^m32^s$ 1 44 35 1 52	Dominion Observatory Bulletin gives $H = 1^h36^m34^s$ Record weak.

Minor Seismic Activity: Oct. 18, 11^h21^m to 11^h36^m; Oct. 26, 1^h27^m to 1^h55^m; and 22^h20^m to 22^h56^m; Oct. 27, 11^h59^m to 12^h10^m; Oct. 30 23^h07^m to 23^h25^m.

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One Wiechert 80 Kg., two Wood-Anderson long-period seismographs, Wiechert clock

Bulletin for 1939

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
137	Nov. 3	Mac	eM_E F	$20^h 34.0^{+m}_{-}$ 21 00	
138	Nov. 6	W-A W-A	i_{NE} i_N F	h m s 16 31 27.4 16 31 28.1 16 32 00	Local shock
139	Nov.13	W-A W-A W-A W-A W-A W-A W-A W-A	iP_{NE} ipP_{NE} isP_{NE} e_N eS_N $i(SP)_N$ i_{NE} eL_{NE} F	$7^h51^m19^s$ 7 51 35 7 51 49 7 52 51 7 55 50 7 56 17 7 56 44 7 59 10 8 25	Epicenter by J.S.A. ϕ = 47°7 N, λ = 123°4 W H = $7^h45^m50^s$ h about 50 km by Brunner Depth Chart Δ_{P-H} = 25°7 Δ_{meas}=25°6 Felt in state of Washington.
140	Nov.13	W-A W-A W-A W-A W-A W-A	i_N i_N i_E i_N i_N F	$21^h37^m14.8^s$ 21 37 15.7 21 37 17.4 21 37 18.3 21 37 23.4 21 37 26.2 21 38 07	Local shock reported felt in South St. Louis
141	Nov. 17	Mac Mac Mac	e_{NE} e_E e_N F	$19^h48^m50^s$ 19 51 02 19 51 52 20 02	
142	Nov.18	Mac W-A Mac W-A Mac W-A Mac Mac	eP_{NE} eS_{NE} esS_{NE} e eM_{NE} F	$1^h44^m11^s$ 1 53 36 1 53 36 2 04.9 2 12.8 2 40	Δ_{S-P} = 71.9 h about 60 km by Brunner Depth Chart

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
143	Nov.21	W-A W-A Mac Mac W-A	i_N e_N e_N e_{NE} e_N F	$11^h15^m20^s$ 11 18 55 11 20 50 11 27 16 11 29 30 12 30	Epicenter by US.C.G.S. $\phi = 10°0$ N, $\lambda = 60°0$ E $H = 11^h01.2^m$ h = 300 km
144	Nov.23	Mac W-A W-A W-A W-A Mac W-A Mac W-A	iP_{NE} i_E i_N i_N iS_{NE} i_{NE} F	$15^h15^m0.4^s$ 15 15 0.9 15 15 1.4 15 15 3.7 15 15 5.6 15 15 7.5 15 24	Epicenter by J.S.A. $\phi = 38°13'27"N$ $\lambda = 90°4'4"W$ $H = 15^h14^m51.3^s$ $\Delta P-S = 51$ km. $\Delta_{calc} = 48.5$ km Felt throughout Illinois and neighboring states. Intensity VI Wood-Neumann Modified Mercalli Scale in epicentral region.
145	Nov.25	Mac Mac	eL_E eM_N F	$0^h07.1^m$ 0 10.5 1 00	
146	Nov.28	W-A Mac	e_E e_E F	$2^h16^m11^s$ 2 21.1 2 35	
147	Nov. 29	Mac Mac	eL_E eM_E F	$4^h42.9^m$ 4 43.3 4 52	
148	Nov.29	W-A W-A	e_N e_N F	$21^h37^m44^s$ 21 38.9 21 40	
149	Nov.30	W-A W-A	e_N e_N	$22^h20^m36^s$ 22 20 37	Local shock

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
150	Nov.30	W-A	e_N	$22^h27^m05.9^s$	Local shock
		W-A	i_N	22 27 21.1	
		W-A	i_E	22 27 21.9	
		W-A	i_{NE}	22 27 24.4	
		W-A	e_N	22 27 28	
			$_F$	22 28.5	
151	Nov.30	W-A	e_N	$22^h51^m28.4^s$	Local shock
		W-A	e_N	22 51 32.0	

Minor Seismic Activity:
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Surface waves were recorded

November 4, 10^h08^m to 10^h28^m
November 5, 02^h28^m to 02^h40^m
November 7, 04^h50^m to 05^h12^m and 15^h52^m to 16^h11^m
November 10, 17^h47^m to 18^h23^m and 21^h12^m to 22^h04^m
November 11, 08^h21^m to 08^h42^m
November 18, 01^h05^m to 01^h22^m
November 21, 09^h25^m to 10^h19^m and 22^h25^m to 22^h53^m

James B. Macelwane, S.J.
Director

H.F. Birkenhauer, S.J.
Graduate Student

SAINT LOUIS

SEISMOGRAPHIC STATION, ST. LOUIS UNIVERSITY, ST. LOUIS, MO., U. S. A.

One Wiechert 80 Kg., two Wood-Anderson long-period seismographs, Wiechert clock

Bulletin for 1939

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
152	Dec.1	Mac Mac Mac	e_N eM_E eM_N	$6^h58^m36^s$ 7 22.8± 7 23.6±	
153	Dec.1	W-A W-A W-A W-A W-A W-A	e_N i_N e_N i_N i_E e_E F	$14^h27^m57.1^s$ 14 28 08.3 14 28 11.7 14 28 14.7 14 28 18.4 14 28 20.3 14 29.4	Local shock
154	Dec.5	W-A Mac Mac	e_{NE} e_E e_E F	$0^h01^m06^s$ 0 05 48 0 10.3 0 22	
155	Dec.5	Mac W-A W-A W-A W-A Mac W-A W-A W-A W-A W-A W-A W-A W-A	iP_N ipP_N i_N iPR_{1N} $ipPR_{1N}$ iS_N i_{NE} i_S i_E i_E eL_E eM_E F	$8^h35^m27^s$ 8 35 41 8 36 00 8 36 10 8 36 24 8 39 44 8 39 55 8 40 06 8 40 12 8 40 25 8 42± 8 47± 14 02	Epicenter by J.S.A. ϕ = 13°5 N, λ = 90°9 W, H = $8^h30^m10^s$ h about 75 km by Brunner Depth Chart Δ_{P-H} = 24°9 Δ_{meas} = 25°0
156	Dec.5	W-A Mac Mac	e_N e_N $e(L)_N$ F	$17^h57^m15^s$ 18 01 56 18 10.7 18 18	
157	Dec.7	W-A Mac W-A Mac	e_{NE} eS_{NE} e_E F	$11^h26^m25^s$ 11 34 29 11 38.6 12 19	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
158	Dec.12	W-A W-A	i_N i_N F	$2^h55^m01^s$ 2 55 56 3 00 00	
159	Dec.17	W-A W-A	e_N e_N	$7^h48^m22^s$ 7 48 51	
160	Dec.21	Mac W-A W-A Mac W-A W-A	iP_{NE} eP_E iS_E eN iE	$21^h00^m48^s$ 21 00 51 21 05 45 21 05 53 21 06 48	Epicenter by J.S.A. ϕ = 9°9 N, λ = 84°7 W, H = $20^h54^m47^s$ Δ_{P-H} = 29°1 Δ_{meas} = 29°0
161	Dec.21 Dec.22	W-A W-A W-A W-A W-A	eN e_E i_N i $iSKP_{NE}$ F	$21^h19^m29^s$ 21 19 34 21 19 47 21 22 44 21 23 07 2 49	Epicenter by J.S.A. Region of ϕ = 0° N, λ = 122° E H = $21^h00.5^m$ Δ_{SKP-H} = 132°2 Δ_{meas} = 131°4
162	Dec.22	W-A Mac W-A W-A Mac W-A	$e(P)_N$ i_E eS_N i_E iSR_{1E}	$4^h50^m01^s$ 4 51 00 4 55 07 4 55 14 4 56 35	Epicenter by J.S.A. ϕ = 9°8 N, λ = 84°2 W H = $04^h44^m02^s$ Δ_{S-H} = 29°2 Δ_{meas}=29°0 F lost in following shock
163	Dec.22	W-A W-A W-A W-A W-A	eP_{NE} iP_{NE} e_N e_{NE} eL_N F	$7^h04^m08^s$ 7 04 14 7 08 03 7 10 41 7 11.3 8 49	
164	Dec.24	W-A W-A W-A	e_N e_{NE} e_{NE}	$19^h00^m16^s$ 19 00 26 19 00 36 19 09	
165	Dec.24	W-A W-A	e_N e_N	$22^h35^m31^s$ 22 35 43	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
166	Dec.26	W-A W-A W-A W-A W-A W-A W-A	ePN iN iN iPR_1E iN eS_N eN F	$12^h00^m36^s$ 12 00 50 12 00 54 12 01 04 12 01 08 12 04 47 12 04 56 12 13	$\Delta_{S-P} = 23°1$ $H = 11^h55^m30^s$ U.S.C.G.S. gives $\phi = 13°5$ N, $\lambda = 88°4$ W, $H = 11^h55.2^m$
167	Dec.26-27	W-A W-A W-A W-A W-A	iP_E iN $i(SKS)_{NE}$ $i(SKKS)_N$ iS_N F	$24^h10^m17^s$ 24 12 19 24 20 28 24 21 04 24 21 08 01 43	Epicenter by J.S.A. (after Strasbourg) $\phi = 39°5$ N, $\lambda = 38°2$ E $H = 23^h57^m23^s$ $\Delta_{P-H} = 89°3$ $\Delta_{meas} = 89°4$ Destructive in Anatolia
168	Dec. 27	W-A W-A W-A	eN eN eN	$23^h50^m29^s$ 23 50 34 23 50 54	

Minor Seismic Activity

Surface waves were recorded
December 1, 17^h44^m to 18^h20^m
December 9, 3^h21^m to 3^h30^m
December 11, 2^h16^m to 2^h23^m
December 28, 0^h49^m to 1^h13^m
December 31, 10^h43^m to 14^h15^m

Microseisms were especially heavy Dec. 1, 11, 24, 25, 26, 28, and 31.

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Director

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