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 1940

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
1	Jan.2	W-A W-A	iP_N iS_N	$11^h18^m33.6^s$ 11 27 47 11 36	Epicenter by U.S.C.G.S. Region of ϕ = 31° S, λ = 108°W H = $11^h7.6^m$ Δ_{S-P} = 69°8
2	Jan.6	W-A W-A W-A Mac Mac Mac Mac Mac Mac Mac	eE eN (e)PR_1E e(S)E i_N isS_N i_E i_N i_N i_N	$14^h22^m24^s$ 14 22 36 14 22 52 14 30 01 14 30 11 14 30 52 14 31 59 14 37 50 14 38 13 14 38 30	Epicenter by J.S.A. ϕ = 21°8 S λ = 169°4 E H = $14^h03^m38^s$ h = 80 to 90 km by Brunner Depth Chart Δ_{PR_1-H} = 111°5 Δ_{meas} = 111°5 F lost in changing records.
3	Jan.17	W-A W-A Mac W-A W-A	e(P)N ePR_1E iPR_1E $eSKS_N$ F	$1^h28^m51^s$ 1 33 01 1 33 03 1 33 17 3 30	Epicenter by J.S.A. ϕ = 17°2 N, λ=147°3 E H = $1^h14^m57^s$ Δ_{PR_1-H} = 102°6 Δ_{meas} = 102°4
4	Jan.26	Mac Mac	eL_N eM_N F	$7^h31.5^{\pm m}$ 7 39.2± 8 11	
5	Jan.27	Mac	eM_N F	$10^h27^{m\pm}$ 10 48	
6	Jan.28	Mac	eM_N F	$7^h42^{m\pm}$ 8 2	No time on records Time approximated
7	Jan.28	Mac	iM F	$8^h49^{m\pm}$ 9	No time on records Time approximated

Minor Seismic Activity: Jan. 19, 20^h30^m to 21^h29^m; Jan. 20, 10^h28^m to 11^h25^m; Jan. 24, 02^h24^m to 02^h45^m; Jan. 26, 17^h02^m to 18^h54^m; Jan. 27, 05^h58^m to 06^h56^m. Microseisms were especially heavy on January 1-5, 8, 15-22, 25, 27-31.

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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
8	Feb.7	W-A W-A W-A Mac Mac	e_N e_N e_N i_Z i_Z	$16^h04^m49.8^s$ 16 04 51.4 16 04 52.1 16 04 54.3 16 04 56.2	Local shock
9	Feb.7	Mac W-A Mac Mac W-A Mac W-A	eP_{NZ} e_N i_E eS_N iS_Z e_N F	$17^h26^m28^s$ 17 26 36 17 26 39 17 35 00 17 35 04 17 36 21 19 21	Epicenter by J.S.A. $\phi = 52.^{\circ}0$ N $\lambda = 177.^{\circ}1$ E $H = 17^h16^m16^s$ $h = 60 \pm$ km $\Delta_{S-P} = 62.^{\circ}2$ $\Delta_{meas} = 62.^{\circ}2$
10	Feb.8	W-A W-A Mac Mac W-A Mac Mac W-A Mac	eP_E iP_E i_E eS_N iS_E i_N e_N eM_{NE} F	$8^h11^m11^s$ 8 11 13 8 11 14 8 15 35 8 15 37 8 15 44 8 18 37 8 19.1 9 06	Epicenter by J.S.A. $\phi = 39.^{\circ}5$ N $\lambda = 121.^{\circ}5$ W $H = 08^h05^m50^s$ $\Delta_{P-H} = 24.^{\circ}6$ $\Delta_{meas} = 24.^{\circ}7$
11	Feb.9	W-A W-A	i_N e_N	$13^h32^m52^s$ 13 41 49	
12	Feb.9	W-A W-A	e_N e_N	$14^h06^m32^s$ 14 06 46	
13	Feb.12	W-A Mac W-A Mac W-A W-A Mac Mac Mac W-A Mac	eP_N iP_{NEZ} ipP_{NZ} i_E e_N e_E iS_{NE} $e(SR_2)_E$ F	$0^h12^m24^s$ 0 12 26 0 12 40 0 12 57 0 16 40 0 16 50 0 21 25 0 29 30 1 12	Epicenter by J.S.A. $\phi = 26.^{\circ}0$ S $\lambda = 71.^{\circ}0$ W $H = 00^h01^m32^s$ $\Delta_{P-H} = 67.^{\circ}3$ $\Delta_{meas} = 67.^{\circ}5$
14	Feb.12	W-A W-A W-A	e_{NE} e_N e_N	5 35 54 5 36 06 5 45 52	

No.	Date	Inst	Phase	G.M.C.T.	Remarks
15	Feb. 12	Mac Mac Mac Mac Mac Mac	$eSKS_E$ eS_{NE} eE isS_{NE} e_E e_E	$08^h44^m51^s$ 08 46 07 08 46 28 08 47 42 08 48 53 08 53 00	Epicenter by J.S.A. ϕ = 22°.6 S, λ = 177°.5 W H = 08 21 05. h = 200km by Brunner Depth Chart ΔSKS-H = 102°.0 Δmeas = 102°.0 F lost in following earthquake.
16	Feb. 12	W-A W-A	eN_E e_E	$09^h01^m20^s$ 09 01 27	
17	Feb. 12	W-A W-A W-A Mac Mac	iP_{LE} ipP_{LE} eS_{LE} isS_{NE} isS_N F	$09^h26^m33^s$ 09 26 42 09 33 32 09 33 34 09 33 51 10 30	Epicenter by J.S.A. ϕ = 54°.0 N, λ = 160°.0 W H = $09^h17^m57^s$. h about 50 km. by Brunner Chart Δ S-P = 48°.4 Δmeas = 48°.7
18	Feb 12	W-A W-A	iN iN	$21^h12^m56.0^s$ 21 12 58.3	High frequency disturbance.
19	Feb. 14	Mac	eM_{NE} F	$00^h06.5^m$ 00 17	
20	Feb. 14	Mac Mac	eL_{NE} eM_{NE} F	$03^h04.8^m$ 03 13.8+ 03 39	
21	Feb. 16	Mac	eM_{NE} F	$14^h36.4^m$ 14 48	
22	Feb. 19	W-A Mac	eN $e(M)_E$ F	$07^h25^m19^s$ 07 42.7+ 07 48	
23	Feb. 20	Mac Mac W-A Mac Mac W-A	eP_E ipR_{1E} isS_N iE $e(SP)_E$ F	$02^h32^m29^s$ 02 36 54 02 45 46 02 46 04 02 46 15 05 06	Epicenter by J.S.A. ϕ = 14°.4 S λ = 166°.5 E H = $02^h18^m20^s$. h about 200 km. by Brunner Chart ΔP-H = 109°.3 Δmeas = 109°.4

No.	Date	Inst	Phase	G.M.C.T.	Remarks
24	Feb.20	W-A W-A Mac	e_{NE} i_E i_E	$3^h03^m06^s$ 3 03 30 3 03 38	Superimposed on record of previous shock
25	Feb.22	Mac Mac	eL_{NE} eM_{NE} F	$5^h58.7 \pm m$ 6 00.7 6 09	
26	Feb.24	Mac	eM_{NE}	$12^h00^m13^s$	
27	Feb.24	Mac Mac Mac	e_E e_E e_E F	$12^h37^m07^s$ 12 41 28 13 05 06 14 22	
28	Feb.29	W-A W-A W-A W-A W-A	iP_{NE} $iSKS_{NE}$ iS_N i_N $iScS_N$ F	$16^h20^m23^s$ 16 30 42 16 30 51 16 30 55.5 16 31 11 17 10	$\Delta S-P = 84°.4$

Minor Seismic Activity:
= = = = = = = = = = =

Surface waves were recorded
February 2, 6^h46^m to 7^h00^m
February 9, 1^h07^m to 1^h26^m
February 14, 11^h07^m to 12^h06^m
February 20, 15^h00^m for about 2 hours (F lost in changing records)
February 20, 21^h35^m to 22^h06^m
February 25, 08^h17^m to 08^h28^m
February 25, 05^h05^m to 06^h17^m

The large microseismic activity of the entire month reached its recorded maxima February 15 and 19.

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Bulletin for 1940

No.	Date	Inst	Phase	G.M.C.T.	Remarks
29	March3	Mac Mac Mac	e_E e_E $e_{L_{NE}}$ F	$00^h31^m49^s$ 00 34 16 00 57 02 45	
30	March4	W-A W-A Mac Mac Mac Mac	ϵP_N iP_E e_E e_N iS_{NE} eL_E F	$20^h07^m28^s$ 20 07 29 20 14 12 20 14 16 20 14 19 20 19.9 20 55	Epicenter by J.S.A. $\phi = 13°.6$ N $\lambda = 46°.2$ W $H = 19^h58^m58^s$ $\Delta S-P = 46°.0$ $\Delta meas = 46°.0$
31	March 5	W-A Mac	e_{NE} e_{NE} F	$23^h08^m13^s$ 23 22.9± 23 30	Amplitudes small
32	March 6	W-A Mac W-A Mac	e_N e_{NE} e_{NE} i_{NE} F	$00^h06^m33^s$ 00 13.9 00 17 06 00 17 16 00 49	
33	March 6	W-A Mac	e_{NE} e_{NE} F	$5^h59^m26^s$ 6 14± 6 23	
34	March 7	Mac Mac Mac	i_{NE} e_N eL_N F	$7^h29^m43^s$ 7 34 28 7 43 8 05	
35	March 7	W-A Mac	i_{NE} e(L) F	$19^h45^m17^s$ 20 04 20 24	Amplitudes small
36	March 9	Mac W-A W-A Mac	e_{NE} e_N e_{NE}	$11^h09^m38^s$ 11 10 42 11 13 05	

No.	Date	Inst	Phase	G.M.C.T.	Remarks
37	March10	Mac W-A Mac	e_N e_E	18h12m15s 18 13 31	
38	March 11	W-A W-A W-A	i_{NE} e_{NE} i_{NE}	19h19m00.3s 19 19 02.7 19 19 04.1	Local shock
39	March 14	Mac W-A	e_N e_N	17h53.7m 17 55.0	Amplitudes small
40	March 14	Mac Mac	e_E e_N	18h45m48s 18 45 58	
41	March 14	W-A W-A Mac W-A Mac W-A	eP_N e_N e_{NE} e_{SE} $e(L)_{NE}$ F	21h30m01s 21 30 04 21 33 57 21 34 02 21 36 13 21 52	Δ_{S-P} = 21?9
42	March 14	Mac W-A	$e(M)_{NE}$ F	22h44.2m 22 55	
43	March 19	W-A Mac	e_N e_{NE}	23h57m50s 24 06 31	
44	March 20	W-A Mac	e_N eL_N F	00h44m07s 00 51.5 01 04	
45	March 20	W-A Mac Mac	e_N eL_{NE} $e(M)_{NE}$ F	02h51m54s 02 56.9 03 01.2 03 20	
46	March 21	W-A Mac W-A W-A Mac	eP_N iP_{NE} i_{NE} e_{NE} F	14h12m36s 14 12 39 14 12 40 14 34.9 16 29	

No.	Date	Inst	Phase	G.M.C.T.	Remarks
47	March 24	W-A Mac W-A W-A	e_N e_{NE} e_N	$12^h04^m04^s$ 12 11 16 12 11 28	
48	March 27	Mac W-A W-A W-A Mac Mac Mac Mac Mac	iP_{NE} ePR_1E eS_E iS_{NE} eSP_{NE} eSR_1NE eL_{NE} eM_{NE} F	$12^h41^m32^s$ 12 43 53 12 49 46 12 49 49 12 50 11 12 53 51 12 59 13 04 14 51	Epicenter by J.S.A. ϕ = 51°.5 N λ = 177°.5 W H = $12^h31^m31^s$ Δ_{S-P} = 59°.4 Δ_{meas} = 59°.4
49	March 27	W-A Mac Mac	e_N e_{NE} eL_{NE} F	$21^h08^m55^s$ 21 16 50 21 26.9 22 08	
50	March 27	W-A W-A W-A W-A	$i\bar{P}_N$ i_{NE} $i\bar{N}\bar{E}$ $i\bar{S}_N$	$21^h34^m13.0^s$ 21 34 16.0 21 34 16.6 21 34 20.5	Local shock Δ_{S-P} = 53 km
51	March 28	W-A Mac W-A Mac Mac	e_N e_{NE} e_{NE} i_{NE} F	$16^h07^m18^s$ 16 08 48 16 15 01 16 18 46 17 56	
52	March 28	Mac W-A W-A W-A Mac W-A Mac	$(e)_N$ iP_N ipP_N eS_{NE} $i(sS)_N$ F	$17^h54^m02^s$ 17 54 05 17 54 18 17 58 24 17 58 55 18	
53	March 28	W-A Mac W-A	e_N e_{NE} F	$20^h07^m04^s$ 20 04 51 20 10	
54	March 30	W-A Mac	e_N eL_{NE} F	$04^h51^m47^s$ 04 56.3 05 21	

No.	Date	Inst	Phase	G.M.C.T.	Remarks
55	March 30	W-A Mac	e_{NE} e_{E} F	06h44m13s 06 55.2 08 12	
56	March 31	W-A W-A Mac W-A W-A Mac	e_{NE} e_{N} i_{NE} i_{E} e_{NE} F	17h02m35s 17 10 45 17 10 48 17 11 13 17 25 18 00	

Minor Seismic Activity:

Surface waves were recorded

March 6, 19^h25^m to 19^h49^m
March 9, 05^h36^m to 05^h43^m
March 10, 10^h46^m to 11^h00^m
March 11, 12^h11^m to 12^h24^m and 20^h34^m to 20^h40^m
March 16, 02^h14^m to 02^h39^m and 20^h55^m to 21^h39^m
March 13, 23^h01^m to 23^h28^m
March 15, 05^h51^m to 06^h46^m
March 18, 06^h17^m to 07^h30^m
March 19, 05^h22^m to 06^h12^m
March 22, 08^h47^m to 09^h02^m and 21^h12^m to 21^h23^m
March 23, 23^h23^m to 23^h34^m
March 25, 16^h51^m to March 26, 05^h56^m
March 27, 19^h18^m to 19^h29^m
March 29, 03^h38^m to 04^h23^m
March 30, 00^h29^m to 31^h34^m

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No.	Date	Inst.	Phase	G.M.C.T.	Remarks
57	April 1	W-A Mac W-A Mac W-A Mac W-A Mac Mac Mac Mac Mac	ePR_1N iPR_1NE iPR_1NE $eSKS_E$ eN $iSKKS_{NE}$ eN i_E eN eL_N eM_N F	$11^h39^m28^s$ 11 39 31 11 39 33 11 44 52 11 46 27 11 46 29 11 47 33 11 49 23 11 50 44 12 17.1 12 27 14 54	Epicenter by J.S. Region of A. $\emptyset = 5^\circ.5$ S. $\lambda = 137^\circ.5$ E. $H = 11^h18^m53^s$ $\Delta SKS-H = 125^\circ.2$ $\Delta meas = 125^\circ.9$
58.	April 6	Mac Mac	eL_E eM_E	$14^h40.2^m\pm$ 14 46.0 $\pm$	
59.	April 7	W-A W-A Mac Mac Mac Mac Mac	ePN iP_N eS_N eS_E e_E eL eM_E F	$09^h54^m41.2^s$ 09 54 42.9 09 59 03.6 09 59 04.8 09 59 10.1 10 00.7$\pm$ 10 02.1$\pm$ 10 25	$\Delta S-P = 24^\circ.3$
60.	April 8	W-A Mac	iP_N iS_{NE} F	$09^h00^m54.8^s$ 09 10 16 11 07	$\Delta S-P = 71^\circ.2$
61.	April 11	Mac Mac Mac	e_E eL_E eM_E F	$09^h25^m53^s$ 09 39.8 09 45 10 18	
62.	April 12	W-A W-A Mac Mac	iP_N i_N eN eM_N F	$19^h54^m37^s$ 19 57 47 19 59 22 20 17.2$\pm$ 20 53	

No.	Date	Inst	Phase	G.M.C.T.	Remarks
63.	April 14	W-A Mac	e_N $i(S)_{NE}$ F	$09^h47^m14^s$ 09 56 44 11 19	
64.	April 14	W-A W-A Mac Mac Mac Mac	eP_N iP_N e_N iS_E e_E i_N F	$15^h08^m31^s$ 15 08 31.5 15 11 05 15 18 37 15 18 58 15 18 59 16 25	$\Delta_{S-P} = 80^\circ$
65.	April 16	Mac W-A Mac Mac W-A W-A W-A	iP_{NEZ} i_{NE} iS_{NE} i_E e_N	$06^h18^m15^s$ 06 19 15 06 26 48 06 27 17 06 27 56	Epicenter by J.S.A. $\phi = 52^\circ.6$ N. $\lambda = 175^\circ.6$ E. $H = 06^h07^m56^s$ $\Delta_{P-H} = 62^\circ.5$ $\Delta_{meas} = 62^\circ.5$
66.	April 16	W-A W-A	iP_N eS_N F	$06^h53^m36^s$ 07 02 12 07 57	Aftershock of the preceding quake. $H = 06^h43^m16^s$ $\Delta_{P-H} = 62^\circ.7$ $\Delta_{meas} = 62^\circ.5$
67.	April 17	Mac Mac Mac Mac	$e(S)_E$ e_E eL_{EN} eM_{EN} F	$22^h03^m25^s$ 22 04 52 22 27 50 22 32 24 23 22	Record weak.
68.	April 18	Mac Mac Mac	e_E eL eM F	$20^h10^m30^s$ 20 40.5± 20 42.0± 21 06	
69.	April 19	W-A W-A Mac Mac Mac	iP_N i_N eS_E L_E M_E F	$00^h17^m22^s$ 00 17 33 00 25 55 00 37.1± 00 43.2± 01 30	$\Delta_{S-P} = 62^\circ.6$
70.	April 19	W-A Mac Mac	iP_N iS_E L_E M_E F	$14^h51^m29^s$ 15 01 00 15 14.1± 15 17.5± 16 29	$\Delta_{S-P} = 72^\circ.9$

No.	Date	Inst	Phase	G.M.C.T.	Remarks
71.	April 27	Mac Mac Mac Mac Mac Mac Mac Mac	e_N i_N e_E e_N e_N eS_E L_E M_E	$10^h01^m50^s$ 10 01 54 10 03 29 10 08 05 10 08 29 10 09 23 10 24.7± 10 29.2±	
72.	April 27	Mac Mac Mac Mac Mac Mac Mac Mac	eP_N eS_N e_N e_E ePS_E L_E M_E F	$10^h44^m54^s$ 10 54 31 10 54 48 10 54 57 10 55 09 11 07.7± 11 10.6± 13 40	$\Delta_{S-P} = 749^0$ These three quakes probably originated off the coast of Chile in the region of $35^0.5$ Latitude.
73.	April 27	Mac Mac Mac Mac Mac	eS_E e_E L_E M_E F	$18^h32^m54^s$ 18 38 48 18 54.7± 18 58.4± 20 50	Due to lack of data and the weakness of the records the epicenter could not be located exactly.

Minor Seismic Activity

April 18 $7^h03^m00^s$ to $07^h21^m00^s$ (Surface waves).
April 19 $11^h36^m00^s$ to $11^h56^m00^s$ (Surface waves).
April 20 Mac EW. shows minor seismic activity From 19^h07^m to 19^h17^m
April 21, 22, 23; Microseisms active
April 24 11^h19^m to 12^h19^m (Surface waves).
April 30 5^h45^m to 6^h03^m (Surface Waves).
22^h44^m to 22^h46^m (Short period waves).

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No.	Date	Inst.	Phase	G.M.C.T.	Remarks
74	May 4	W-A	$e(P)_N$	$07^h34^m40^s$	Epicenter by J.S.A. λ = 175.3E
		Mac	$e(P)_N$	07 34 43	ϕ = 52°6 N.
		W-A	iP_{EN}	07 34 53	ΔiS-eP = 62°6
		Mac	iS_N	07 43 18	ΔP-H = 62.8
		W-A	iE	07 43 32	Δmeas = 62.8
		Mac	iE	07 44 29	
		W-A	e_N	07 44 35	
		W-A	e_E	07 44 47	
		Mac	L_N	07 54.0	
		Mac	M_N	07 58.9±	
		Mac	F	09 55	
75	May 4	Mac	e_N	$16^h52^m56^s$	
		Mac	e_N	16 58 37	
		Mac	M_N	17 10.0±	
		Mac	F	17 32.0	
76	May 4	Mac	e_N	$21^h46^m34^s$	
		Mac	L_N	21 49.3±	
		Mac	M_N	21 58.7±	
			F	23 27.0±	
77	May 5	W-A	iP_N	$02^h12^m08^s$	Epicenter by J.S.A.
		W-A	ipP_N	02 12 15	Region of
		W-A	eS_E	02 18 49	ϕ 5°9 S.
		Mac	iS_E	02 18 51	λ = 81°4 W
		W-A	eS_N	02 19 03	H = $02^h03^m54^s$
		W-A	esS	02 19 03	h about 40 km. by the Brunner Depth Chart
		Mac	L_N	02 25.1±	ΔP-H = 45°1
		Mac	M_N	02 29.0±	Δmeas = 45°2
			F	04 07	
78	May 7	W-A	e	$22^h36^m40^s$	
		W-A	e	22 47 31	
		Mac	L_N	23 12.0±	
		Mac	M_N	23 17.2±	
			F	23 52	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
79	May 10	W-A	eP_N	$01^h30^m10.4^s$	$\Delta_{S-P} = 22°8$
		W-A	i_N	01 30 24	
		Mac	iS_E	01 34 18.4	
		W-A	eS	01 34 22.4	
		Mac	M	01 36.7±	
			F lost in following quake		
80	May 10	Mac	$e(P)_E$	$01^h48^m10.4^s$	$\Delta_{S-P} = 22°1$
		W-A	eP_N	01 48 46.4	
		Mac	iS_E	01 52 48.4	
		Mac	M_E	01 55.4±	
			F	02 31.0±	
81	May 10	W-A	i_N	$19^h19^m14^s$	
		W-A	e_N	19 19 42	
		Mac	M_E	19 41.8±	
82	May 11	Mac	M_E	08 31.5±	
83	May 11	Mac	eP_E	$14^h05^m13^s$	Epicenter by J.S.A.
		W-A	eP_N	14 05 14	$\phi = 52°5$ N.
		Mac	iS_E	14 13 49	$\lambda = 175°6$ E.
		W-A	eS_N	14 13 49	$H = 13^h54^m56^s$
		W-A	iS_E	14 13 49	$\Delta_{S-P} = 62°4$
		Mac	L_E	14 25.5	$\Delta_{P-H} = 62°4$
			Beginning of M was lost in changing record		$\Delta_{meas} = 62°4$
			F	16 26	
84	May 11	W-A	iP_N	$19^h24^m16.7^s$	Local shock
		W-A	iS_N	19 24 19.7	
85	May 11	W-A	iP_N	$19^h29^m03.5^s$	Local shock
		W-A	iS_N	19 29 06	
86	May 11	W-A	$e(S)_N$	$20^h08^m05.3^s$	
		Mac	M_E	20 17 17	
		Mac	M_N	20 17 18	
87	May 12	W-A	eP_N	$16^h33^m16.5^s$	
		Mac	eP_E	16 33 16.5	
		Mac	e_N	16 37 37.5	
		Mac	M_N	16 41.3	
			F	16 56	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
88	May 12	W-A	$i(P)_N$	$17^h15^m55.5^s$	Record weak
		W-A	$e(S)_N$	17 20 54	
		Mac	M_N	17 23 48	
		Mac	F	17 52	
89	May 12	Mac	eP_E	$20^h48^m56.6^s$	$\Delta_{S-P} = 25°.0$
		W-A	eP_N	20 48 57	
		Mac	eS_N	20 53 23.6	
		Mac	eS_E	20 53 24	
		Mac	M_N	20 56.4±	
		Mac	F	21 51	
90	May 15	Mac	e_N	$06^h19^m57^s$	
		Mac	M_N	06 31.9±	
		Mac	L_N	06 39.1±	
			F	07 29	
91	May 17	Mac	eP_N	$02^h06^m08^s$	Epicenter by J.S.A.
		W-A	eP_N	02 06 09	$\phi = 7°.9$ N.
		W-A	$e(P)_N$	02 06 15	$\lambda = 82°.1$ W.
		W-A	$e(P)_E$	02 06 16	$H = 01^h59^m40^s$
		Mac	$i(PR_1)_N$	02 07 16	
		Mac	ePR_{2E}	02 07 21	
		W-A	ePR_{3N}	02 07 42	
		Mac	iS_E	02 11 22	
		W-A	$i(S)_E$	02 11 26	
		Mac	iSR_{1E}	02 13 19	
		W-A	e_E	02 14 25	
		Mac	M	02 15.6±	
			F	03 45	
92	May 18	W-A	eP_E	$05^h08^m52^s$	Epicenter by Pasadena $\phi = 34°03'$ N.
		Mac	eS_N	05 12 54	$\lambda = 116°17'$ W.
		Mac	M_N	05 15.5±	$H = 05^h04^m02^s$
					$\Delta_{meas} = 21°.6$
					$\Delta_{P-H} = 21°.5$
93	May 18	Mac	eS_N	$06^h00^m11^s$	Epicenter same as preceding
		Mac	M_N	06 02 54	
94	May 18	Mac	eS_N	$07^h30^m34^s$	Epicenter same as preceding
		Mac	M_N	07 33.1	
			F	07 42	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
95	May 19	W-A W-A Mac Mac W-A W-A W-A Mac	iP_{NE} e_N i_{NEZ} i_Z eS_N e_N i_E M	$04^h41^m30.6^s$ 04 41 32.3 04 41 40.6 04 42 17 04 45 24 04 45 30.2 04 45 37.6 04 47.8±	Epicenter by J.S.A. ϕ = 33°0 N. λ = 115°0 E. H = $04^h36^m49^s$ Δ_{P-H} = 20°8 Δ_{meas} = 20°9
96	May 19	W-A W-A	iP_E M_E	$05^h56^m23^s$ 06 02 21	After shock of above
97	May 19	W-A W-A	iP_E iS_E F	$06^h40^m05^s$ 06 44 15 08 30	After shock Δ_{S-P} = 22°9
98	May 19	W-A Mac Mac W-A Mac W-A Mac W-A Mac Mac	iP_E eP_N epP_N ipP_E i_N eS_E iS_{NE} esS_E isS_E M_N F	$15^h28^m50^s$ 15 28 49 15 30 47 15 30 49 15 36 21 15 37 48 15 37 49 15 41 21 15 41 21 16 02.0± 17 30	Epicenter by J.S.A. ϕ = 50°3 N. λ = 148°2 E. H = $15^h18^m00^s$ h about 600 km by Brunner Depth Chart Δ_{S-P} = 77°2 Δ_{P-H} = 77°8 Δ_{meas} = 77°5
99	May 19	Mac	M_N F	$19^h18^m35^s$ 19 21 30	
100	May 21	Mac Mac Mac W-A W-A Mac W-A Mac Mac	e_N epP_N $iSKS_E$ e_E e_E i_E i_E eS_E e_F	$19^h02^m14^s$ 19 03 33 19 12 15 19 06 25 19 12 19 19 12 57 19 12 57 19 13 28 19 14 48 20 27	Epicenter by U. S. C. and G.S. ϕ = 23°0 S. λ = 178°.0 W. H = $18^h48.9^m$ h about 400 km. Δ_{pP-H} = 101°.8 Δ_{meas} = 102°5

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
101	May 24	Mac W-A W-A W-A W-A	iP_{NE} iP_{NE} iS_{E} L_{E} M_{E} F	$16^h42^m52^s$ 16 42 52 16 50 13 16 51.0± 17 02± 22 00	Epicenter by J.S.A. $\phi = 10°.8$ S $\lambda = 77°.8$ W. $H = 16^h34^m00^s$ Depth = 50 km. by Brunner Depth Chart Felt strongly in Peru and Ecuador. Several hundred casualties in Lima. $\Delta_{P-H} = 50°.0$ $\Delta_{meas} = 50°.9$
102	May 24	W-A Mac Mac W-A W-A Mac Mac	iP_{EN} iP_{EN} iS_{EN} iS_{EN} i_{E} M_{N} F	$22^h06^m50^s$ 22 06 50 22 14 05 22 14 06 22 16 36 22 26.0± 01 40	After shock of preceding quake $H = 21^h57^m56^s$ $\Delta_{S-P} = 50°.0$ $\Delta_{P-H} = 50°.1$
103	May 28	W-A Mac Mac Mac Mac	eP_{EN} ePR_1E e_{N} L_{E} M_{E} F	$09^h59^m39^s$ 10 01 10 10 06 45 10 37.0± 10 39.6± 12 54	Provisional Epicenter by U.S.C.G.S. $\phi = 2°.0$ S $\lambda = 136°.0$ E. $H = 09^h40.4^m$ $\Delta_{PR_1-H} = 125°.1$ $\Delta_{meas} = 124°.8$
104	May 29	W-A W-A Mac Mac W-A W-A Mac	eP_{EN} eS_{E} eS_{E} eS_{N} iX_{E} M_{EN} F	$02^h05^m05^s$ 02 10 56 02 10 57 02 10 58 02 12 38 02 17 40 04 24	Epicenter by J.S.A. $\phi = 66°.6$ N. $\lambda = 132°.7$ W. $H = 01^h57^m57^s$ $\Delta_{S-P} = 36°.5$ $\Delta_{P-H} = 36°.6$ $\Delta_{meas} = 36°.7$
105	May 29	Mac Mac Mac Mac	e_{E} e_{E} e_{E} e_{E} F	$05^h30^m31^s$ 05 31 32 05 34 04 05 36 31 05 39	Small
106	May 31	Mac Mac	e_{E} M_{E} F	$01^h04^m56^s$ 01 30.5 02 36	Record weak

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
107	May 31	Mac Mac	M_E F	$03^h21.7^m$ 04 13	Weak
108	May 31	Mac Mac Mac	$e(S)_E$ M_E F	$05^h11^m04^s$ 05 13 33 06 45	Weak
109	May 31	W-A W-A W-A W-A W-A	iP_N iP_N iS_E iS_E iS_{NE}	$19^h03^m36.9^s$ 19 03 40.3 19 04 01.5 19 04 03.2 19 04 06.8	Local shock. Felt strongly in Paducah Ky. Δ_{S-P} = 215 km.

Minor Seismic Activity

May 1 09^h08^m to 09^h21^m Surface waves
" 13^h01^m to 13^h27^m Surface waves
May 3 21^h08^m to 21^h37^m
May 10 30^h22^m to 21^h08^m
May 11 03^h21^m to 03^h38^m
$22^h6.5^m$ to $22^h23.5^m$
May 22 11^h10^m to 11^h17^m
12^h23^m to 12^h34^m
May 27 8^h17^m to 9^h50^m Surface waves

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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 1940

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
110	June 2	W-A	iPEN	$11^h 47^m 43^s$	$\Delta S-P = 57^\circ.8$
		Mac	iPE	11 47 43	
		W-A	iSE	11 55 48	
		Mac	iSEN	11 55 49	
		Mac	ME	12 08 56	
		Mac	F	13 28	
111	June 2	Mac	eN	$19^h 42^m 41^s$	
		Mac	eN	19 50 30	
112	June 3	W-A	iPEN	$18^h 10^m 07^s$	Epicenter by J.S.A.
		Mac	ePEN	18 10 08	$24^\circ.4$ N, $110^\circ.4$ W.
		Mac	iSNE	18 14 04	$H = 18^h 05^m 11^s$
		W-A	iSE	18 14 04	h = about 50 km.
		W-A	eSN	18 14 05	$\Delta S-P = 21^\circ.7$
		W-A	LE	18 16.8 ±	$\Delta P-H = 22^\circ.1$
			F	20 14	$\Delta_{meas} = 22^\circ.0$
113	June 5	W-A	ePEN	$11^h 08^m 29^s$	Epicenter by J.S.A.
		W-A		11 09 55	$67^\circ.0$ N, $138^\circ.7$ W.
		W-A	eSEN	11 14 25	$H = 11^h 0\overline{1}^m 00^s$
		W-A	iE	11 15 37	$\Delta P-H = 39^\circ.2$
		W-A	iE	11 16 02	$\Delta_{meas} = 39^\circ.6$
		W-A	MN	11 20.6	
			F	12 11	
114	June 10	Mac	eN	$1^h 28^m 29^s$	
		Mac	eN	1 28 01	
		Mac	eN	1 30 40	
115	June 17	Mac	ePE	$10^h 36^m 40^s$	Epicenter by J.S.A.
		Mac	eE	10 38 52	$\phi = 21.^\circ 0$ N, $\lambda = 153^\circ.6$ W
		Mac	eE	10 40 18	$H = 10^h 27^m 00^s$
		Mac	eSN	10 44 37	$\Delta P-H = 56^\circ.7$
		Mac	eN	10 46 28	$\Delta S-P = 56^\circ.6$
		Mac	eN	10 51 10	$\Delta_{meas} = 55^\circ.7$
		Mac	LN	10 51.6 ±	
		Mac	MN	10 54.5 ±	
		Mac	F	13 30	
116	June 18	Mac	ePN	$14^h 12^m 46^s$	$\Delta S-P = 35^\circ.8$
		W-A	ePN	14 12 47	
		Mac	eNE	14 16 42	
		W-A	e(S)N	14 18 33	
		Mac	e(S)NE	14 18 34	
		Mac	eN	14 19 45	
		Mac	eNE	14 28 53	
			F	15 56	

St. Louis Bulletin for June, 1940

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
117	June 18	W-A W-A Mac Mac Mac	eP_{NE} eS_{NE} iS_{NE} L_{NE} M_{NE} F	$18^h49^m35^s$ 18 58 10 18 58 10 19 08.9 19 14.4 21 25	Epicenter by J.S.A. $\phi = 54^{\circ}0$ N, $\lambda = 175^{\circ}.4$E. $H = 18^h39^m17^s$ $\Delta_{S-P} = 62^{\circ}.6$ $\Delta_{P-H} = 62^{\circ}.4$ $\Delta_{meas} = 62^{\circ}.3$
118	June 22	W-A Mac W-A W-A	eP'_N $iSKP_{EN}$ i_N $iSKP_N$ F	$11^h55^m37^s$ 11 58 35 11 58 44 12 04 31 14 00 00	$\Delta_{SKP-P'} = 116^{\circ}.4$
119	June 23	W-A W-A W-A	eP_E eS_E e_E F	21 46 17.9 21 50 10 21 52 37 22 18	Epicenter by U.S.C.G.S $25^{\circ}.0$ N, $110^{\circ}.0$ W. $\Delta_{S-P} = 21^{\circ}.0$ $\Delta_{meas} = 21^{\circ}.5$
120	June 25	W-A W-A Mac Mac Mac	iP_{NE} eS_E eS_N e_N e_N	$3^h03^m44^s$ 3 13 01 3 13 02 3 17 40 3 21 45	$\Delta_{S-P} = 78^{\circ}.7$
121	June 25	Mac Mac	e_E e_N	$4^h54^m45^s$ 4 59 26	Possibly an after-shock of the preceding quake.
122	June 26	W-A Mac Mac	e_N e_E M_E F	$8^h19^m33^s$ 8 41 28 9 04.4 10 06	Record very weak

Minor Seismic Activity

June 2, 23^h25^m to 24^h03^m; June 4, 14^h43^m to 16^h31^m;

June 13, 7^h00^m to 12^h00^m. Strong microseisms June 14 and 15.

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Director

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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

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
123	July 1	W-A Mac W-A W-A Mac Mac Mac Mac Mac	iP_{EN} eP_{EN} e_E eS_E eS_N iS_E e_E L_E M_E F	$21^h 38^m 06^s$ 21 38 06 21 39 54 21 44 51 21 44 51 21 44 54 21 48 16 21 52 08 21 55 58 22 30	North of the Azores at approximately 27°.0 W, 47°.5 N. $H = 21^h 29^m 44^s$ $\Delta S-P = 45°.5$
124	July 2	Mac Mac Mac Mac	e_E e_E e_E M_E F	$19^h 32^m 49^s$ 19 35 16 19 39 31 19 51 41 21 43	Record weak
125	July 6	W-A Mac W-A Mac W-A W-A W-A W-A W-A Mac Mac Mac Mac	eP_{EN} iP_{EN} e_N ipP_{EN} ipP_{EN} e_E i_N e_N iS_{EN} iS_{EN} isS_N iSR_{1NE} M_E F	$3^h 47^m 04^s$ 3 47 04 3 47 24 3 47 39 3 47 40 3 48 26 3 48 52 3 50 09 3 52 29 3 52 30 3 53 30 3 54 47 4 00 ± 5 20	Epicenter by J.S.A. 12°.3 N, 64°.4 W. $H = 3^h 40^m 24^s$ h = 160 km. $\Delta S-P = 34°.8$ $\Delta P-H = 34°.8$ $\Delta meas = 34°.8$
126	July 6	Mac Mac Mac	e_N i_N e_N	$17^h 21^m 58^s$ 17 22 44 17 25 33	Record very weak
127	July 6	Mac Mac Mac	e_N e_N e_N F	$18^h 13^m 45^s$ 18 16 35 18 18 51 18 29	Record very weak
128	July 6	Mac Mac	e_N e_N F	$21^h 10^m 43^s$ 21 11 58 21 17	Record very weak

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
129	July 10	W-A Mac W-A W-A W-A W-A Mac Mac W-A W-A W-A W-A	iP_{NE} iP_N i_N i_N i_N i_N i_N $iSKS_N$ $iSKS_{NE}$ i isP_N iS F	$6^h01^m54^s$ 6 01 54 6 02 02 6 02 18 6 02 46 6 03 05 6 05 42 6 11 27 6 11 28 6 11 37 6 11 58 6 12 06 8 30	Epicenter by J.S.A. 45°.6 N, 128°.6 E. $H = 5^h49^m50^s$ Depth = 500 km. $\Delta_{P-H} = 89°.4$ $\Delta_{meas} = 89°.4$
130	July 11	W-A W-A	e_N i_N	$18^h23^m09^s$ 18 24 10	Very weak
131	July 12	W-A W-A W-A	eNE e_N e_E F	$19^h06^m37^s$ 19 12 41 19 12 44 19 30	Record very weak
132	July 13	Mac Mac W-A Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	ePE iP_N iP_N iPR_{1N} i_N iPR_{2E} iS_N iS_E eX_N iSR_{1E} iSR_{2N} L_N M_N F	$16^h53^m48^s$ 16 53 48.4 16 53 48.5 16 54 10 16 54 49 16 54 56 16 58 54 16 58 55 16 59 42 17 00 54 17 01 37 17 62.5± 17 01.5± 20 08	Epicenter by J.S.A. $\phi = 9°.1$ N, $\lambda = 82°.5$ W. $H = 16^h47^m35^s$ $\Delta_{S-P} = 30°.1$ $\Delta_{P-H} = 30°.1$ $\Delta_{meas} = 30°.3$
133	July 13	W-A W-A W-A	iP_N iS_N i_N F	$12^h08^m23^s.7$ 12 08 26 12 08 30.5 12 09.1±	Local shock $\Delta < 25$ km.
134	July 14	W-A W-A W-A W-A W-A W-A W-A W-A	iP_N ipP_N i_N iS_E i_E iSP_E $isSP_E$ iE F	$6^h03^m09^s$ 6 03 26 6 03 35 6 11 14 6 11 21 6 11 54 6 12 14 6 13 26 10 42	Epicenter by J.S.A. 52°.7 N, 177°.6 W. $H = 5^h53^m18^s$ Depth by Brunner Depth Chart = 80 km. $\Delta_{S-P} = 59°.0$ $\Delta_{P-H} = 59°.0$ $\Delta_{meas} = 59°.0$
135	July 16	Mac Mac	$e(S)_{EN}$ M_N F	$3^h35^m23^s$ 3 44.5± 4 44	Record very weak

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
136	July 19	W-A	eP_E	$4^h 58^m 01^s$	Epicenter by J.S.A.
		W-A	eP_N	4 58 02	$\phi = 50°.7$ N, $\lambda = 177°.9$E.
		Mac	eP_{NE}	4 58 02	$H = 4^h 47^m 39^s$
		W-A	eS_{NE}	5 06 33	Depth normal
		Mac	iS_{NE}	5 06 34	$\Delta_{meas} = 62°.6$
		Mac	eN	5 07 46	$\Delta_{P-H} = 63°.0$
		Mac	eN	5 14 12	$\Delta_{S-H} = 62°.6$
		Mac	M_N	5 26.9±	$\Delta_{S-P} = 62°.3$
			F	6 56.0±	
137	July 20	Mac	eP_E	2 07 15	Epicenter between the Samoa and Tonga Islands
		W-A	$eSKS_E$	2 17 48	$\Delta_{P-H} = 95°.2$
		Mac	$eSKS_{NE}$	2 17 49	
		Mac	$eSKKS_N$	2 18 24	
		Mac	iS_E	2 18 29	
			M	2 40.6	
			F	5 30.0±	
138	July 21	Mac	i_{NE}	15 56 45	
		Mac	i_{NE}	16 06 18	
		Mac	eN	16 21 26	
		Mac	L_N	16 25.2	
			F	18 02	
139	July 23	Mac	eN	$0^h 15^m 54^s$	Epicenter by Pasadena
		Mac	eN	0 22 40	37°38' N, 118°52' W.
		Mac	eN	0 23 35	$H = 23^h 00^m 33^s$
140	July 23	Mac	M_N	$14^h 22^m.2$±	Record weak
			F	14 33.0	
141	July 27	W-A	iP_{EN}	$13^h 37^m 47^s$	Epicenter by J.S.A.
		Mac	iP_{NE}	13 37 47	13°.7 N, 91°.3 W.
		Mac	ipP_N	13 38 02	$H = 13^h 32^m 30^s$
		Mac	isP_N	13 38 12	Depth by Brunner
		Mac	iS_{EN}	13 41 58	Depth Chart = 100 km.
		Mac	ipS_N	13 42 17	$\Delta_{P-H} = 24°.9$
		Mac	isS_N	13 42 27	$\Delta_{meas} = 24°.9$
		W-A	M	13 45.9	
		Mac	F	17 02 ±	
142	July 30	W-A	eP_N	$0^h 25^m 01^s$	Record weak
		Mac	eS_E	0 35 31	$\Delta_{S-P} = 84.8$
		Mac	M_E	1 00.1	
			F	2 50	
143	July 30	Mac	$e(S)_E$	$5^h 50^m 44^s$	Record very weak
		Mac	M_E	6 03.3 ±	
			F	6 22.0	
144	July 30	W-A	eP_N	$15^h 33^m 54^s$	$\Delta_{S-P} = 23°.0$
		W-A	eP_N	15 35 15	Probably Mexican origin
		Mac	eS_E	15 39 25	
		W-A	eP_N	16 10 31	
		Mac	eS_{NE}	16 14 42	
		Mac	ePE	19 30 38	
		Mac	eS_N	19 34 55	

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No.	Date	Inst	Phase	G.M.C.T.	Remarks
145	Aug. 5	W-A	eP_N	$8^h 29^m 47^s$	J.S.A. epicenter:
		W-A	eP_E	8 29 50	40°.5 N, 168°.5 W.
		Mac	eP_E	8 29 52	H = $8^h 19.9^m$
		Mac	e_N	8 37 53	Δ_{S-P} = 58°.6
		Mac	eS_N	8 38 07	Δ_{meas} = 58°.7
		Mac	iS_E	8 38 07	
		Mac	eL_{NE}	8 47.4	
		Mac	eM_E	8 55.4	
			F	lost in following earthquake	
146	Aug. 5	Mac	eL_E	$10^h 44^m 4^s$	
		Mac	eL_N	10 44.9	
			F	11 35 ±	
147	Aug. 5	Mac	e_N	$22^h 31^m 4^s$	
		Mac	eM_N	22 41.8	
			F	24 00 ±	
148	Aug. 7	W-A	eP_N	$3^h 06^m 23^s$	Epicenter by J.S.A. near
		W-A Mac	iP_N	3 06 24	23°.0 S, 71°.5 W. off
		W-A	iE	3 06 35	Pacific coast of Chile.
		W-A	ipP_N	3 06 47	Depth at least 150 Km.
		W-A	iN	3 06 51	H = $2^h 56^m.1^m$
		W-A	iE	3 06 58	Δ_{meas} = 64°.0
		W-A	e_N	3 07 04	Δ_{S-P} = 64°.0
		W-A Mac	eS_E	3 14 50	
		W-A Mac	eS_N	3 14 51	
		W-A	esS_E	3 15 33	
		W-A Mac	esS_N	3 15 37	
		W-A Mac	isS_E	3 15 37	
			F	4 06 ±	
149	Aug. 7	W-A	iP_{NE}	$14^h 21^m 47^s$	
			F?	14 32 ±	
150	Aug. 8	W-A	iP_N	$13^h 08^m 22^s$	
151	Aug. 8	W-A	iP_N	$13^h 19^m 07^s$	Δ_{S-P} = 23°.5
		W-A	e_N	13 19 20	
		W-A	e_N	13 19 28	
		W-A	eE	13 19 37	
		W-A	eS_N	13 23 32	
		W-A	e_E	13 23 32	
		W-A	e_N	13 38 30	
		W-A	e_N	13 38 31	
			F	13 43 ±	
152	Aug. 8	W-A	iP_N	16 51 22	May not be of seismic
			F	17 01 ±	origin

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
153	Aug.11	W-A	iP_E	$16^h59^m13^s$	Distant earthquake
		Mac	e_E	16 59 16	
		Mac	e_N	17 00 22	
		Mac	e_E	17 04 01	
		Mac	e_E	17 10 35	
		W-A	$e(S)_E$	17 10 39	
		Mac	$i(S)_{NE}$	17 10 39	
		Mac	i_N	17 11 12	
		Mac	eL_E	17 30.3	
		Mac	eL_N	17 30.9	
		Mac	eM_N	17 33.1	
		Mac	eM_1E	17 33.7	
		Mac	eM_2E	17 40.9	
			F	lost in following earthquake	
154	Aug.11	Mac	eL_E	$19^h13^m.3$ s	
			F	19 29 ±	Weak
155	Aug.13	W-A	$i(P)_E$	$15^h36^m09^s$	Records changed
156	Aug.13	Mac	eP_N	$15^h50^m18^s$	Epicenter by J.S.A. near 49°.0 N, 132°.0 E. $H = 15^h37^m49^s$ $\Delta_{meas} = 85°.0$ $\Delta_{P-H} = 85°.0$
		Mac	iP_N	15 50 20	
		Mac	i_N	15 54 05	
		Mac	iS_{NE}	16 00 51	
		Mac	iPS_N	16 01 40	
		Mac	iPS_E	16 01 42	
			F	19 00 ±	
157	Aug.17	W-A	eP_N	$12^h15^m31^s$	Time correction uncertain
		W-A	iP_{EN}	12 15 32	
		Mac	iP_N	12 15 33	
		W-A	e_N	12 15 41	
		Mac	e_E	12 18 23	
		Mac	$eS?_N$	12 20 04	
		Mac	e_E	12 20 16	
			F	12 47 ±	
158	Aug.18	Mac	e_E	$6^h19^m28^s$	Time correction uncertain
		Mac	e_N	6 19 32	
		Mac	eL_E	6 47.9	
		Mac	e_N	6 51.9	
		Mac	eM_E	6 58.9	
			F	8 07 ±	
159	Aug.20	W-A	iP_E	$17^h38^m38^s$	
		W-A	i_N	17 40 22	
		Mac	e_E	17 40 24	
		W-A	i_E	17 40 27	
		Mac	e_{NE}	17 40 49	
		Mac	e_N	17 40 54	
		Mac	e_E	18 10.5	
		Mac	$e(M)_E$	18 26.0	
		Mac	$e(M)_N$	18 26.3	
		Mac	eM_N	18 29.3	
			F	Lost in following earthquake	

			Phase	G.M.C.T.	Remarks
160	Aug.20	W-A	eP_N	$19^h06^m55^s$	
			F	21 22 ±	
161	Aug.20	W-A	iP_N	$19^h19^m24.9^s$	Near earthquake
		W-A	iE	19 19 26.3	
		W-A	i_N	19 19 27.3	
		W-A	iS_N	19 19 38.8	
		W-A	i_N	19 19 39.0	
			F	19 21 ±	
162	Aug.22	W-A Mac	eP_{NE}	$3^h36^m23^s$	Epicenter by J.S.A.
		W-A	iS_E	3 43 53	$\phi = 52°.2$ N, 165.8 W.
		W-A Mac	iS_E	3 43 54	$H = 3^h27^m17^s$. Depth normal
		Mac	iM_N	3 51.3	$\Delta_{S-P} = 52°.4$ $\Delta_{P-H} = 52°.4$
			F	8 36 +	$\Delta_{meas} = 52°.4$
163	Aug.22	W-A	iP_N	$20^h00^m38.3^s$	Local earthquake
		W-A	i_N	20 00 39.0	Δ_{S-P} = 18.3 mi ≒ 0°.3
		W-A	iE	20 00 39.8	
		W-A	i_N	20 00 39.9	
		W-A	iS_E	20 00 41.5	
		W-A	iS_N	20 00 41.9	
		W-A	i_N	20 00 42.6	
		W-A	i_N	20 00 47.1	
			F	21 03 ±	
164	Aug.23	W-A	eP_N	$20^h33^m02^s$	
		W-A	eP_E	20 33 06	
		W-A	iP_E	20 35 ±	
165	Aug.24	Mac	e_N	$13^h42^m9^s$	Distant earthquake
		Mac	eE	13 54.9	
		Mac	e_N	13 55.0	
		Mac	iE	13 55 03	
		Mac	e_N	13 55 06	
		Mac	eL_E	14 15.5	
			F	Lost in changing records	
166	Aug.25	W-A	eP_{NE}	$2^h37^m01^s$	According to
		Mac	$e(S)_E$	2 44 20	Florissant
		Mac	eE	2 44 26	Depth approximately
		Mac	e_E	2 45 09	100 km. Δ ca 53°
		Mac	e_N	2 49.7	
			F	3 13 ±	
167	Aug.26	W-A	eP_N	$5^h08^m00^s$	Epicenter by J.S.A.
		Mac	e_N	5 09 11	2°.0 N, 90°.5 W.
		Mac	eS_E	5 13 49	$H = 5^h00.8^m$
		W-A	d_N	5 13 52	$\Delta_{meas} = 35°.2$
		Mac	e_N	5 13 56	$\Delta_{S-P} = 35°.2$
		Mac	eL_E	5 15.7	Time correction
		Mac	eM_N	5 20.7	uncertain
			F	5 27 ±	

Minor Seismic Activity:

Aug.5, 15^h37^m to Aug. 6, 0^h18^m; Aug. 8, 22^h32^m to 23^h13^m; Aug.10, 5^h40^m to 8^h29^m; Aug. 12, 15^h56^m to 17^h15^m; Aug.15, 3^h01^m to 6^h10^m; Aug. 16, 15^h26^m to 19^h48^m; Aug.19, 21^h00^m to 22^h16^m; Aug. 20, 8^h02^m to 10^h11^m; Aug. 24, 8^h07^m to 9^h06^m; Aug. 30, 3^h03^m to 3^h37^m; 14^h56-15^h2

J. B. Macelwane, S.J., Director F. Robertson, Inst.

SAINT LOUIS

13 SEPT. 1941

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 September, 1940

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
128	Sept. 6	W-A	eP_N	3 02 13	$\Delta S-P = 67.5$
		Mac	$(e)_E$	3 02 23	Slight depth of focus
		Mac	$e(P_cP)_E$	3 03 15	
		Mac	e_N	3 03 16	
		W-A	eS_E	3 11 16	
		Mac	iS_{NE}	3 11 16	
		Mac	esS_N	3 11 22	
		Mac	eL_E	3 27.2	
		Mac	eL_N	3 27.5	
			F	4 08 ±	
129	Sept. 8	W-A	$(e)_E$	$6^h 26^m 02^s$	
		Mac	e_N	6 26.2	
		W-A	$(e)_N$	6 26 22	
		W-A	i_E	6 26 39	
		Mac	$eL?_E$	6 26 43	
		Mac	$eL?_N$	6 26 47	
		W-A	e_E	6 28 44	
			F	6 38 ±	
130	Sept. 8	Mac	$ePNE$	$10^h 25^m 50^s$	$\Delta S-P = 63?8$
		W-A	iP_{NE}	10 25 52	
		Mac	eE	10 34 10	
		Mac	eE	10 34 29	
		Mac	eS_N	10 34 32	
		Mac	eS_E	10 34 35	
		Mac	eE	10 49.2	
		Mac	eM_E	10 50.5	
		Mac	eM_N	10 50.9	
			F	11 38 ±	
131	Sept. 9	W-A	eP_N	$4^h 10^m 51^s$	
			F?	4 13 ±	
132	Sept.14	Mac	eE	$19^h 03.4^m$	
		Mac	eM_E	19 04.7	
			F	19 33 ±	
133	Sept.14	W-A	$(e)P_E$	23 14 34	
		Mac	iP_Z	23 14 39	
		W-A	iP_{NE}	23 14 39	
		W-A	ePR_{1N}	23 15 02	
		W-A	e_N	23 15 29	
		Mac	eE	23 23 30	
		Mac	eM_E	23 24.2	
			F	23 55 ±	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
134	Sept.17	Mac	e_E	$9^h 01^m 5^s$	
		Mac	eM_E	9 08.2	
		Mac	e_N	9 13.7	
		Mac	eM_N	9 15.3	
			F	9 45 ±	
135	Sept.18	W-A	$(e)_N$	$15^h 19^m 22^s$	Probably somewhat deep.
		W-A	e_N	15 19 26	
		W-A	i_E	15 19 27	
		Mac	e_N	15 19 27	
		Mac	iZ	15 20 06	
		Mac	e_N	15 20 10	
		Mac	$eSNE$	15 27 50	
		W-A	eS_{NE}	15 27 51	
		W-A Mac	esS_E	15 28 38	
		W-A	esS_N	15 28 39	
		Mac	isS_N	15 28 42	
		Mac	e_E	15 29 07	
		Mac	e_E	15 30 05	
			F	?	
136	Sept.19	Mac	eP_N	$18^h 34^m 16^s$	Epicenter by Dominion Observatory of New Zealand: Near 23° S and 169° E. H = $18^h 19.7^m$ Δ ca 113°
		Mac	eP_E	18 34 18	
		Mac	e_E	18 37 35	
		Mac	e_N	18 37 36	
		W-A	iPR_1E	18 38 54	
		Mac	iPR_1Z	18 38 54	
		Mac	iPR_1E	18 38 55	
		Mac	e_N	18 39 25	
		Mac	e_E	18 44 50	
		Mac	$eSKKS_E$	18 45 48	
		W-A	$iSKKS_E$	18 45 53	
		Mac	i_N	18 45 56	
		W-A	eS_N	18 46 39	
		Mac	iS_N	18 46 40	
			F	22 48 ±	
137	Sept.20	Mac	e_E	$0^h 27.4^m$	
		Mac	e_N	0 27.7	
		Mac	e_{NE}	0 29.2	
		Mac	e_E	0 56.3	
		Mac	eM_E	1 00.0	
			F	lost in microseisms	
138	Sept.21	Mac	$(e)P_{NZ}$	$12^h 29^m 48^s$	
		Mac	iZ	12 29 51	
		W-A	i_N	12 29 55	
		W-A	e_E	12 30 01	
		Mac	e_N	12 34.2	
		Mac	eS_E	12 34 24	
		Mac	eL_N	12 41.1	
			F	13 01 ±	
139	Sept.21	W-A	$(e)P_N$	$14^h 06^m 51^s$	
		Mac	e_N	14 06 53	
		Mac	$(e)_Z$	14 06 56	
		Mac	iZ	14 07 11	
		W-A	i_N	14 07 13	

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No.	Date	Inst.	Phase	G.M.C.T.	Remarks
139 (continued)	Sept.21	Mac	e_N	14 08 00	
		Mac	e_N	14 12 46	
		Mac	iS_{NE}	14 12 50	
		Mac W-A	$eS?_N$	14 14 34	
		Mac	iN	14 14 35	
			F	15 19 ±	
140	Sept.22	Mac	$iP'Z$	$23^h09^m34^s$	Δ ca 110°
		Mac	iZ	23 09 41	According to Manila Station Bulletin felt slightly at Butnam and Hinatuan
		W-A	e_N	23 09 41	
		Mac	iZ	23 09 43	
		Mac	iPR_1Z	23 11 38	
		Mac	$eSKS_{NE}$	23 15 43	
		Mac	e_N	23 17 23	
		W-A	eS_N	23 17 25	
		Mac	iS_{NE}	23 17 25	
			F	25 28 ±	Depth about 500 Km.
141	Sept.23	W-A	eP_{NE}	$7^h25^m13^s$	
		W-A	e_E	7 33 03	
		W-A	eS_N	7 33 14	
		Mac	iS_E	7 33 14	
			F	8 20 ±	
142	Sept.24	W-A	iP_E	$10^h04^m00^s$	
		W-A	e_E	10 10 35	
		W-A	iS_E	10 10 38	
		Mac	iS_E	10 10 39	
		Mac	iS_N	10 10 40	
			F	10 12 *	
143	Sept.26	Mac	e_N	$4^h20^m54^s$	Distant
		Mac	i_E	4 21 09	
		Mac	e_N	4 23 37	
		Mac	e_E	4 24 26	
		Mac	e_N	4 28.5	
		Mac	e_E	4 30.1	
			F	7 10 ±	
144	Sept.27	Mac	iP_{NZ}	$2^h32^m54^s$	
		W-A	eP_{NE}	2 32 55	
		Mac	ipP_Z	2 33 22	
		W-A	ipP_N	2 33 22	
		W-A	eS_E	2 41 19	
		W-A	eS_N	2 41 20	
		Mac	iS_E	2 41 20	
		Mac	iS_N	2 41 21	
		W-A	isS_E	2 41 46	
		Mac	eNE	2 41 51	
		Mac	esS_E	2 42 07	
			F	3 15 ±	

No.	Date	Inst.	Phase	G.A.C.T.	Remarks
145	Sept.30	Mac	iP_Z	$9^h48^m20^s$	
		Mac	eS_N	9 52 46	
		Mac	eS_E	9 52 48	
			F	10 22 ±	
146	Sept.30	Mac	e_E	$11^h37^m50^s$	
		Mac	eL_E	12 11.7	
		Mac	eM_N	12 19.7	
		Mac	eM_E	12 21.7	
			F	Lost in following earthquake	
147	Sept.30		Beginning lost in coda of preceding earthquake		
		Mac	eL_{NE}	$14^h46.7$	
			F	16 22 ±	

Minor Seismic Activity:

Sept. 1,	2^h30^m	to 4^h04^m	
Sept. 3,	1 48	3 48	
Sept. 7,	19 52	21 18	
Sept. 8,	18 33	18 39	
Sept. 15,	12 22	13 46	
Sept. 23	2 15	2 18	10^h56^m to 11^h40^m
Sept. 24	1 12	2 49	
Sept. 25	18 23	21 00	
Sept. 29	6 00	8 20	

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 October, 1940

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
148	Oct. 1	Mac	e_E	$23^h00^m49^s$	Distant
		Mac	e_E	23 17 09	
		Mac	e_E	23 21 59	
			F	24 00	
149	Oct. 2	W-A	iP_N	$3^h21^m49^s$	$\Delta S-P = 30^\circ5$
		W-A	ipP_N	3 21 55	Epicenter by J.S.A.
		Mac	e_E	3 26 14	$9^\circ0$ N, $87^\circ0$ W.
		Mac	eS_E	3 26 43	$H = 3^h15.2^m$
		Mac	eS_E	3 26 58	Depth over 50 Km.
		Mac	iS_E	3 27 18	
		Mac	i_E	3 28 30	
		Mac	eM_E	3 33 28	
			F	4 23 ±	
150	Oct. 3	W-A	eP_N	$5^h06^m30^s$	$\Delta S-P = 61^\circ0$
		W-A	epP_N	5 06 56	Possibly near
		W-A	ePR_{1N}	5 08 46	19.0° S, 71.0° W.
		W-A	eS_N	5 14 47	$H = 4h56.4m$
		Mac	i_E	5 14 49	h = 100 Km.
		W-A	i_N	5 14 50	
			F	5 30 ±	
151	Oct. 4	Mac	iP_Z	$8^h05^m00^s$	$\Delta P-H = 62^\circ2$
		Mac	i_Z	8 05 05	Epicenter by J.S.A.
		Mac	ipP_Z	8 05 13	$20^\circ8$ S, $70^\circ4$ W.
		Mac	$i(pP)_Z$	8 05 28	$H = 7^h54^m48^s$
		Mac	iP_cP_Z	8 05 44	h = 75 Km.
		Mac	iPR_{1Z}	8 07 38	
		W-A	i_N	8 12 40	
		Mac	e_E	8 13 12	
		Mac	iS_E	8 13 25	
		Mac	isS_E	8 13 48	
			F	9 00 ±	
152	Oct. 4	Mac	iP_Z	$9^h43^m16^s$	Aftershock of No. 151
		Mac	i_Z	9 43 27	
		W-A	eS_N	9 51 41	
		W-A	e_N	9 51 55	
153	Oct. 5	Mac	iP_Z	$14^h44^m49^s$	$\Delta S-P = 30^\circ5$
		W-A	iP_N	14 44 49	Epicenter by J.S.A.
		Mac	i_Z	14 44 59	$8^\circ7$ N, $84^\circ6$ W.
		Mac	iPR_{1N}	14 45 40	$H = 14h38m30s$
		Mac	iP_cP_Z	14 47 48	
		Mac	iS_N	14 49 54	
		Mac	iSR_{1N}	14 51 40	
		Mac	iSR_{2N}	14 52 08	
		Mac	i_E	14 52 40	
		Mac	iM_{1N}	14 58 30	
		Mac	iM_{2N}	15 03 00	
			F	Lost in changing records	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
154	Oct. 5	Mac	iP_Z	18 22 47	Δ_{S-P} = 26.2
		Mac	i_Z	18 22 58	
		Mac	eS_N	18 27 24	
		Mac	eE	18 28 27	
			F	19 00 ±	
155	Oct. 6	W-A	eP_N	$15^h 48^m 32^s$	Δ_{S-P} = 59°9
		W-A	iP_N	15 48 40	Epicenter by J.S.A.
		W-A	eS_N	15 56 50	18°0 S, 71°0 W.
		Mac	e_E	16 04 05	$H = 15^h 38.7^m$
		Mac	eM_E	16 13 50	
			F	17 30 ±	
		Records changed during earthquake			
156	Oct. 7	Mac	ePR_{1Z}	$7^h 01^m 39^s$	Distant
		Mac	iZ	7 02 12	
		Mac	iZ	7 03 22	
		Mac	$e(S)_E$	7 08 34	
		Mac	eE	7 10 12	
		Mac	eE	7 14 02	
157	Oct.10	W-A	iP_N	$19^h 34^m 47^s$	Near earthquake
		W-A	iS_N	19 35 13	Δ_{S-P} = 150 miles
		W-A	iS_E	19 35 13	New Madrid area?
			F	19 36 26	
158	Oct.11	W-A	iP_N	$8^h 00^m 59^s$	Epicenter by J.S.A.
		W-A	e_N	8 01 15	61°.0 N, 149°.0 W.
		W-A	eP_cP_N	8 02 48	$H = 7^h 53.3^m$
		Mac	e_N	8 08 04	
		Mac	e_E	8 10 38	
		Mac	eL_N	8 14 38	
		Mac	eM_N	8 18 38	
			F	9 00 ±	
159	Oct.11	W-A	eP_N	$18^h 53^m 27^s$	Δ_{P-H} = 80°8
		W-A	iP_N	18 53 28	Epicenter by J.S.A.
		Mac	iP_Z	18 53 28	40°.7 S, 73°6 W.
		Mac	i_Z	18 53 41	$H = 18^h 41^m 17^s$
		Mac	iS_E	18 03 36	
		Mac	iS_N	18 03 37	
			F	22 00 ±	
160	Oct.12	W-A	eP_N	2 53 05	
		Mac	iP_Z	2 53 05	
		W-A	i_N	2 53 39	
		Mac	i_Z	2 53 39	
		W-A	e_N	2 57 20	
			F	3 00 ±	
161	Oct.13	W-A	eP_N	17 59 36	
		Mac	eP_Z	17 59 36	

Due to instrumental difficulties, no records from Oct. 15-Nov. 11, 1940

Minor Seismic Activity: Oct.2, 10^h00^m to 12^h00^m surface waves; Oct. 4; 5^h00^m to 6^h00^m surface waves; Oct.13, 13^h00^m to 15^h00^m surface waves; Oct. 14, 6^h00^m to 7^h00^m surface waves.

J. B. Macelwane, S.J., Director Ross R. Heinrich, Instructor

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

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
		Clock out of Order, Oct. 20 to Nov.11			
162	Nov.12	Mac	e_E	$4^h47^m52^s$	
		Mac	e_N	4 48 05	
		Mac	e_N	4 56 57	
		Mac	e_E	4 58 03	
			F	5 34 ±	
163	Nov.16	Mac	$(e)_N$	$2^h37^m05^s$	$\Delta_{S-P} = 62°.4$
		W-A	iP_N	2 37 33	$H = 2^h27.2^m$
		W-A	iP_E	2 37 34	
		Mac	iS_E	2 46 07	
		W-A	iS_E	2 46 09	
		Mac W-A	eS_N	2 46 18	
		Mac	eL_N	2 56.3	
		Mac	eL_E	2 57.3	
		Mac	eM_N	3 05.3	
		Mac	eM_E	3 05.4	
			F	4 34 ±	
164	Nov.17	W-A	eP_E	$4^h02^m44^s$	$\Delta_{S-P} = 30°.5$
		W-A	eP_N	4 02 48	$H = 3^h56^m27^s$
		Mac	e_N	4 07 41	
		W-A	eS_N	4 07 53	
		Mac	eL_{NE}	4 11.5	
		Mac	eM_{NE}	4 12.4	
			F	4 35 ±	
165	Nov.19	Mac	$(e)P_E$	$15^h14^m29^s$	Epicenter by J.S.A.
		W-A	eP_{NE}	15 14 32	near 40°.7 N, 142°.3 E.
		W-A Mac	epP_E	15 14 47	$H = 15^h01^m47^s$
		W-A Mac	epP_N	15 14 48	Depth about 50 Km.
		Mac	e_E	15 24 46	$\Delta_{P-H} = 87°.6$
		W-A Mac	e_N	15 24 56	$\Delta_{meas} = 87°.7$
		Mac	e_E	15 24 57	
		W-A Mac	iS_E	15 25 15	
		Mac	iS_N	15 25 17	
		W-A	eS_E	15 25 21	
		W-A Mac	isS_E	15 25 41	
		Mac	isS_N	15 25 41	
		Mac	eL_E	15 41.5	
		Mac	eL_N	15 42.5	
		Mac	$e(M)_N$	15 53.0	
			F	17 16 ±	
166	Nov.22	Mac	e_N	$9^h50.8^m$	
		Mac	e_E	9 58.3	
		Mac	eL_{NE}	9 59.4	
		Mac	e_N	10 04.4	
			F	10 36 ±	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
167	Nov.23	W-A	eP_E	$3^h55^m00^s$	Epicenter by J.S.A.
		Mac	eP_{NE}	3 55 02	9°9 N, 83°8 W.
		W-A	e_E	3 55 13	H = $3^h48^m55^s$
		Mac	e_E	3 55 57	Δ_{P-H} = 29°2
		Mac	e_N	3 55 58	
		Mac	e_E	3 59 51	
		Mac	e_N	3 59 52	
		Mac	$e(S)_E$	4 00 23	
		W-A	e_E	4 00 29	
		Mac	i_N	4 00 46	
		Mac	e_E	5 01 49	
			F	5 48 ±	
168	Nov.23	Mac	$(e)_N$	$23^h19^m41^s$	Local
		W-A	iP_E	23 19 42	
		W-A	iP_N	23 19 43	
		W-A	eS_E	23 20 14	
		W-A Mac	iS_N	23 20 15	
		Mac	iS_E	23 20 15	
			F	23 32 ±	

Minor Seismic Activity:

Nov. 16, 20^h07^m to 22^h14^m; Nov. 17, 6^h57^m to 8^h37^m;
Nov 17, 20^h00^m to 21^h37^m; Nov. 22, 21^h18^m to 23^h21^m;
Nov. 25, 19^h09^m to Nov. 26, 4^h03^m; Nov. 28, 4^h43^m to 5^h39^m.

Large microseismic storm Nov. 27.

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 December, 1940

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
169	Dec. 1	W-A	eP_N	$21^h16^m59^s$	
		W-A	eP_E	21 17 00	
		W-A	ePR_{1E}	21 17 55	
		W-A	ePR_{2E}	21 18 10	
		W-A	e_E	21 22 00	
		Mac	e_N	21 22 10	
		Mac	e_E	21 22 15	
		Mac	e_E	21 24.7	
		Mac	i_E	21 25 14	
		W-A	e_E	21 25 17	
			F	22 15 ±	
170	Dec. 7	Mac	iP_Z	$22^h21^m14^s$	Pasadena gives
		W-A	i_E	22 21 16	$\phi = 31°.7$ N, $\lambda = 115°.1$ W
		W-A	e_N	22 21 17	$H = 22^h16.5^m$
		Mac	e_E	22 21 20	Felt in San Diego
		W-A	i_E	22 21 42	
		Mac	iS_{NE}	22 25 26	$\Delta_{S-P} = 23°.2$
		Mac	eL_N	22 27.8	
		W-A	iNE	22 27 51	
		Mac	e_E	22 28.2	
		Mac	eM_N	22 28 59	
		Mac	iM_E	22 29 52	
			F	22 43 ±	
171	Dec. 8	Mac	iP_Z	6 30 53	
		W-A	iP_{NE}	6 30 54	
			F	6 38 ±	
172	Dec.15	Mac	eP_Z	$23^h58^m25^s$	
		W-A	iP_N	23 58 27	
		W-A	iP_E	23 58 28	
		Mac	eP_N	23 58 29	
		Mac	e_N	24 03 04	
		Mac	$e(S)_E$	24 03 24	
		Mac	eS_N	24 03 25	
		Mac	eL_N	24 05.6	
		Mac	eM_{NE}	24 09.6	
			F	24 27 ±	
173	Dec.20	Mac W-A	$(e)P_{ZE}$	$7^h30^m57^s$	Epicenter by J.S.A.
		Mac W-A	iP_{NZ}	7 30 59	$43°28'$ N, $71°26'$ W.
		Mac	iZ	7 31 07	$H = 7^h27^m28^s$
		W-A	i_E	7 31 08	$\Delta_{meas} = 14°.9$
		W-A	eS_E	7 33 51	$\Delta_{S-P} = 14.9$
		Mac W-A	e_N	7 33 57	Felt throughout New
		W-A	eL_N	7 35 11	England
		Mac	iZ	7 35 12	
		W-A	iE	7 35 13	
		Mac	i_N	7 35 15	
			F	8 11 ±	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
174	Dec.20	Mac	eP_Z	$23^h46^m28^s$	Epicenter by Pasadena: Region of 40° N, and 124° W. Felt in Humboldt and Mendocino Counties
		W-A	eP_E	23 46 31	
		W-A	e_E	23 47 04	
		Mac	e_E	23 48 36	
		W-A	eS_E	23 50 57	
		Mac	eS_N	23 50 59	
		Mac W-A	e_E	23 51 10	
		Mac	e_N	23 51 48	
		W-A	e_E	23 51 58	
		Mac	eL_E	23 54.1	
		Mac	eM_N	23 55.1	
		Mac	eM_E	23 55.7	
			F	25 03 ±	
175	Dec.22	Mac	eP_Z	$12^h45^m27^s$	Epicenter: region of 13° S and 178° W. H ca 12^h32^m $\Delta_{meas} = 96°.8$ $\Delta_{SKS-H} = 96°.9$
		Mac	$i(SKS)_E$	12 56 00	
		Mac	e_N	12 56 05	
		Mac	eS_{NE}	12 57 02	
		Mac	eP_{SE}	12 58 09	
		Mac	$i(SR_1)_N$	13 03 27	
		Mac	eSR_{1E}	13 03 43	
		Mac	$eL?_E$	13 17.3	
			F	Lost in changing records	
176	Dec.22	Mac W-A	iP_{NEZ}	$19^h09^m17^s$	Epicenter: region of 14° S and 71° W. H ca 19^h00^m Depth ca 250 km. by Brunner Depth Chart $\Delta_{meas} = 56°.1$
		Mac W-A	ipP_{EZ}	19 10 11	
		W-A	e_N	19 16 53	
		W-A	iS_{NE}	19 16 54	
		Mac	iS_{NE}	19 16 55	
		Mac	e_E	19 18 07	
		Mac	isS_N	19 18 22	
		W-A	isS_E	19 18 23	
		Mac	isS_E	19 18 25	
		Mac	iE	19 18 45	
		Mac	iN	19 18 50	
		Mac	iN	19 20 17	
		Mac	iE	19 20 23	
			F	22 02 ±	
177	Dec.24	Aftershock of the New England Quake of Dec. 20, 1940 A joint investigation of this earthquake is being made by Weston and Harvard.			
178	Dec.28	Mac	iP_Z	$16^h51^m34^s$	$\phi = 18°.3$ N. $\lambda = 146°.7$ E. $H = 16^h37^m42^s$ $\Delta_{meas} = 101°.9$ $\Delta_{P-H} = 101°.3$
		Mac	e_E	16 51 44	
		W-A	e_E	16 51 47	
		Mac	e_E	16 55 16	
		Mac	iZ	16 55 42	
		W-A	e_E	16 55 44	
		Mac	e_E	16 55 50	
		W-A	iE	16 55 51	
		Mac	e_E	16 56 11	
		Mac	iN	17 02 13	
		W-A	e_E	17 02 25	
		Mac	iN	17 02 29	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
178	Dec.28 (cont.)	Mac	eL?$_Z$	$17^h09.3^m$	
		Mac	eM_N	17 33.8	
		Mac	eM_E	17 39.3	
		F			Lost in microseisms
179	Dec.29	Mac	(e)P_Z	$16^h43^m04^s$	
		Mac	i$_Z$	16 43 06	
		Mac	e$(S)_N$	16 50 37	
		Mac	eL_N	16 58.6	
		F		17 36 ±	
180	Dec.29	Mac	eP_Z	$18^h12^m48^s$	
		Mac	e$_N$	18 12 50	
		Mac	i$_Z$	18 12 52	
		W-A	e$_E$	18 12 57	
		Mac	e$_{NE}$	18 18 34	
		Mac	eS_N	18 18 37	
		Mac	eL_N	18 25.6	
		F			Lost in microseisms
181	Dec.29	Mac	iP_Z	$19^h04^m53^s$	
		F		19 07 ±	

Minor Seismic Activity:

Dec. 1,	16^h05^m	to	16^h13^m
Dec. 4,	13 10		15 34
Dec. 15,	2 30		3 15
Dec. 17,	16 54		17 33
Dec. 18,	4 38		19 12
Dec. 27	22 09		22 48
Dec 30	12 00		14 36
	20 49		21 45
Dec 31	7 50		8 20

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