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 January
1932

No.	Date	Char.	Phase	G.M. Time h. m. s.	Instruments	Remarks
1	January 5	I	e_E	2 05 05	W-A	Epicenter 25°S. 115°W.
			iP_N	2 05 06	W-A	
			e_E	2 14 06	W-A	Δ_{S-P} 68°
			iS_{EN}	2 14 11	W-A	
			F	3 00 ±		
2	January 9	II	e_E	10 35 21	W-A	Possibly deep focus
			i_{EN}	10 40 36 Dilat.	W-A	Surface waves relatively small.
			i_E	10 41 55 Comp.	W-A	
			i_E	10 45 48 Comp.	W-A	
			i_E	10 46 57 Dilat.	W-A	
			i_E	10 49 04	W-A	
			e_E	10 49 41	W-A	
			e_E	10 50 50	W-A	
			i_{EN}	10 51 45	W-A	
			i_E	10 52 11	W-A	
			i_E	10 55 49	W-A	
		End covered by following.				
3	January 9	I	$e(P)_E$	10 50 32	W-A	Short period vibration seems to indicate new quake superposed on preceding.
			$i(S)_{EN}$	11 00 36	W-A	
			i_E	11 00 41	W-A	
			e_E	11 01 00	W-A	
			F	13 30 ±		
4	January 13	I	e_{EN}	17 27 54	W-A	Time approx.
			eL_{EN}	17 46 00	W-A	
			F	18 40		
5	January 17	I	e_E	8 13 00	W-A	
			e_E	8 19 11	W-A	
			e_E	8 23 19	W-A	
			eM_E	8 33 00	W-A	
			F	10 10 ±		

			Phase	G.M.Time h. m. s.	Instruments	Remarks
6	January 20	I	iP_N	2 39 47	W-A	Destructive i in Lima, Peru and other coast towns.
			iS_{EN}	2 46 59	W-A	
			i_E	2 47 26	W_A	
			i_E	2 49 27	W-A	
			i_E	2 49 57	W-A	
			F	3 10 ±		Δ_{S-P} 49°
7	January 21	I	e_N	21 01 08	W-A	Guatamala?
			e_E	21 05 47	W-A	
			F	21 10		
8	January 22	I	e_N	0 40 58	W-A	Guatamala?
			e_E	0 45 17	W-A	
			F	0 50 ±		
9	January 24	I	i_E	4 03 31	W-A	
			e_E	4 09 26	W-A	
			e_E	4 10 10	W-A	
			e_E	4 12 45	W-A	
			e_E	4 13 54	W-A	
			e_{EN}	4 18 33	W-A	
			eM_E	4 39 00	W-A	
			F	6 30 ±		
10	January 24	I	e_E	15 33 04	W-A	
			e_{EN}	15 39 40	W-A	
			e_E	15 42 16	W_A	
			F	16 00 ±		
11	January 25	I	e_{EN}	2 12 10	W-A	
			e_E	2 21 12	W-A	
			e_E	2 27 09	W_A	
			e_E	2 31 55	W-A	
			eM_E	2 49 00	W-A	
			F	3 50 ±		
12	January 26	I	e_E	4 17 18	W-A	
			e_N	4 20 19	W-A	
			e_N	4 20 35	W-A	
			F	4 30 ±		

			Phase	G.M. Time h. m. s.	Instruments	Remarks
13	January 27	I	iP_E	19 49 02	W-A	
			eS_{EN}	19 55 33	W-A	
			i_{EN}	19 59 00	W-A	
			eL_{EN}	20 05 30	W-A	
			F	20 40 ±		
14	January 29	III	eP_E	13 56 07	W-A	Epicenter in or near Solomon Islands.
			ePR_1	14 00 48	W-A	
			e_E	14 07 01	W-A	
			iPS_{EN}	14 10 21	W-A	
			e_E	14 11 39	W-A	
			eSR_{1E}	14 16 27	W-A	
			eSR_{2E}	14 20 27	W-A	
			eSR_{3E}	14 24 10	W-A	
			eM_E	14 37 00	W-A	
			F	17 30 ±		
15	January 29	I	e_E	14 21 22	W-A	Superposed on preceding.
			eE	14 22 21	W-A	
			F	lost on main quake.		
16	January 31	I	eP_E	9 29 48	W-A	Δ_{S-P} 29°3
			eS_E	9 34 37	W-A	
			eM_E	9 41 40	W-A	
			F	9 50 ±		

Besides the above, seismic movement at 7d. 22.0h-22.2h; 18d. 13.6h.-13.8h.; 24d. 10.9h.-11.1h.; 25d. 0.9h.-7.0h.; 30d. 3.5h.-4.7h.; 30d. 8.1h.-8.4h.; 31d. 5.0h.-6.4h.; 31d. 16.4h.-17.5h.

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17	February 3	III	iP_{EN}	6 21 00	Compression	Epicenter 19°2 N. 76°W. Δ_{S-P} 23° Destructive in Santiago, Cuba.
			i_{EN}	6 21	W-A	
			i_{E}	6 21 24	W-A	
			i_{E}	6 25 05	W-A	
			iS_{EN}	6 25 08	W-A	
			i_{N}	6 25 12	W-A	
			iSR_{1E}	6 25 57	W-A	
			i_{N}	6 26 09	W-A	
			iL_{E}	6 26 40	W-A	
			iM_{N}	6 27 40	W-A	
			F	8 30 ±		
18	February 3	I	iP_{N}	12 41 37	W-A	
			eS_{EN}	12 45 47	W-A	
			iM_{EN}	12 48 29	W-A	
			F	13 20 ±		
19	February 5	I	iS_{N}	8 38 03	W-A	
			M_{EN}	8 42 21	W-A	
			F	9 00 ±		
20	February 5-6	Heavy Microseisms Maximum at 6d. 4h.				
21	February 7-8	Strong Microseisms Maximum at 7d. 20h.				
22	February 10	Strong Microseisms beginning at 10h.				
23	February 14	I	e_{E}	23 34 01	W-A	
			e_{N}	23 47 00	W-A	
			eL_{E}	24 27 00	W-A	
			eM_{E}	24 35 00	W-A	
			F	25 10 ±		

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No.	Date	Char.	Phase	G.M. Time h. m. s	Instruments	Remarks
31	March 2	I	eP_{EN}	11 59 37	W-A	
			eS_{E}	12 01 02	W-A	
			F	12 10 ±		
32	March 2	I	eP_{E}	17 47 26	W-A	
			eS_{EN}	17 52 17	W-A	
			eL	17 56 55	W-A	
			F	18 15 ±		
	March 3	Strong microseisms. Maximum at 12h.				
	March 6-10	Strong microseisms.				
33	March 8	I	iP_{EN}	4 39 36	W-A	Compression from N.W. Δ_{S-P} 58°.3 Surface waves poorly defined.
			iS_{E}	4 47 44	W-A	
			i_{EN}	4 49 24	W-A	
			F	5 20 ±		
34	March 10	I	iP_{EN}	23 06 11	W-A	Compression Δ_{S-P} 20°.2 . Felt in Vera Cruz and Oaxaca Mexico.. No trace of Surface waves.
			i_{N}	23 06 24	W-A	
			e_{N}	23 06 46	W-A	
			iS_{N}	23 09 54	W-A	
			F	23 15 ±		
35	March 14	I	iP_{EN}	4 11 06	W-A	Dilatation. Δ_{S-P} 23°.8
			eS_{N}	4 15 20	W-A	
			iS_{N}	4 15 28	W-A	
			eL_{N}	4 17 50	W-A	
			iM_{N}	4 18 25	W-A	
			iM_{N}	4 20 05	W-A	
			F	5 15 ±		
36	March 14	I	iP_{EN}	22 49 42	W-A	Compression Δ_{S-P} 33°.1 Epicenter 9°N. 72°W.
			i_{EN}	22 49 49	W-A	
			i_{N}	22 49 56	W-A	
			iS_{EN}	22 55 09	W-A	
			i_{E}	22 57 39	W-A	

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No.	Date	Char.	Phase	G.M.Time h. m. s.	Instruments	Remarks
36	March 14	I	eL_E	23 00 00	W-A	
			eM_{EN}	23 05 20	W-A	
			F	24 40 ±		
37	March 19	I	e_N	11 14 21	W-A	
			i_E	11 24 27	W-A	
			eM_E	11 56 00	W-A	
			F	13 00 ±		
38	March 26	I	e_{EN}	00 03 00	W-A	Alaska
			i_E	00 03 03	W-A	
			i_E	00 04 46	W-A	
			F	End covered by following.		
39	March 26	II	iP_E	00 06 42	W-A	Epicenter Alaska 61°N. 151°W.
			i_E	00 06 45	W-A	
			i_E	00 06 50	W-A	
			iPR_{1E}	00 08 31	W-A	
			i_E	00 08 48	W-A	
			i_E	00 10 35	W-A	
			i_E	00 13 11		
			iS_E	00 13 21		
			i_E	00 13 53	W-A	
			iSR_{1E}	00 16 43	W-A	
			eL_E	00 18 40	W-A	
			iM_N	00 22 10	W-A	
			F	02 30 ±		
40	March 28	I	e_{EN}	00 55 26	W-A	
			e_N	00 58 50	W-A	
			e_E	01 38 40	W-A	
			eM_E	01 55 00	W-A	
			F	02 30 ±		

Besides the above, seismic movement was recorded at: 8d. 18.2h-19.3h.; 16d. 5.2h-6.1h.; 16d. 22.2h.-22.4h.; 18d. 6.1h-7.0h.; 19d. 11.2h.-11.4h.; 19.20d. 23.4h-0.3h.; 28d. 0.9h-2.3h.; 29d. 0.6h-0.9h.; 29d. 4.0h-4.2h.; 30d. 15.9h-16.2h.; 31d. 19.2h-19.4h.

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41	April 3	I	e_E	20 57 56	W-A	
			e_E	21 03 48	W-A	
			i_E	21 04 40	W-A	
			e_E	21 12 35	W-A	
			eL_{EN}	21 30 00	W-A	
			eM_{EN}	21 40 30	W-A	
			F	23 20 ±		
42	April 4	I	eP_{EN}	19 33 29	W-A	Deep focus.
			iP_{EN}	19 33 31	W-A	
			iS_{EN}	19 39 22	W-A	
			i_N	19 39 52	W-A	
			i_E	19 40 11	W-A	Mere trace of surface waves.
			i_N	19 41 40	W-A	
			e_{EN}	19 42 19	W-A	
			eM_{EN}	20 05 30	W-A	
			F	20 45 ±		
43	April 5	I	eP_N	2 32 17	W-A	
			i_N	2 32 30	W-A	
			i_{EN}	2 32 38	W-A	
			F	2 45 ±		
44	April 5	I	e_{EN}	21 52 08	W-A	
			e_E	21 59 07	W-A	
			F	22 30 ±		
45	April 8	I	e_E	22 44 00	W-A	
			eM_E	23 00 00	W-A	
			F	23 20 ±		
46	April 13	I	e_{EN}	00 05 00	W-A	
			i_{EN}	00 17 51	W-A	
			i_E	00 19 00	W-A	
			eM_E	00 51 00	W-A	
			F	02 10 ±		

No.	Date	Char.	Phase	G.M.Time h. m. s.	Instruments	Remarks
47	April 14	I	eP_E	1 46 15	W-A	
			e_{EN}	1 48 00	W-A	
			e_{EN}	1 55 40	W-A	
			eM_E	2 01 00	W-A	
			F	2 30 ±		
48	April 16	I	eP_N	3 01 16	W-A	Δ_{S-P} 24°5
			eS_{EN}	3 05 36	W-A	
			eM_{EN}	3 10 45	W-A	
			F	4 10 ±		
49	April 22	I	eP_N	5 17 37	W-A	
			i_{EN}	5 18 10	W-A	
			eM_E	6 23 00	W-A	
			F	7 00 ±		
50	April 24	I	eP_{EN}	6 15 54	W-A	26°N. 112°W.
			iS_N	6 19 52	W-A	
			eL_{EN}	6 22 13	W-A	
			iM_{EN}	6 23 05	W-A	
			F	7 00 ±		
51	April 26	II	eP_{EN}	8 05 33	W-A	23°S. 70°W.
			e_E	8 14 15	W-A	
			iS_E	8 14 19	W-A	
			i_E	8 14 42	W-A	
			i_E	8 15 08	W-A	
			e_{EN}	8 15 27	W-A	
			e_{EN}	8 18 22	W-A	
			F	8 40 ±		
52	April 29	I	iP_E	16 28 29	W-A	Δ_{S-P} 58°1
			iS_{EN}	16 36 36	W-A	
			i_{EN}	16 38 15	W-A	
			eM_E	16 52 06	W-A	
			F	17 30 ±		

Besides the above, seismic motion was recorded at: 4d. 15.8h-16.3h; 5d. 11.8h-12.2h; 8d. 12.6h-13.3h; 9d. 10.2h-10.3h; 18d. 10.8h-11.7h; 22d. 6.1h-7.0h; 25 d. 7.9h-8.5h; 28d. 3.8h-4.0h.

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53	May 1	I	iP_{EN}	19 14 13	W-A	$\Delta_{S-P} = 16^{\circ}9$
			e_E	17 12		
			eS_{EN}	17 24		
			iM_E	18 48		
			F	20 20 ±		
54	May 5	I	eP_E	4 23 52	W-A	No surface waves.
			eS_{EN}	33 42		
			F	40 ±		
55	May 6	I	eP_E	4 30 20	W-A	$\Delta_{S-P} = 52^{\circ}8$
			eS_{EN}	37 34		
			M_{EN}	50 00		
			F	5 45 ±		
56	May 14	II	eP_N	13 27 08	W-A	Epicenter in Celebes Sea, felt at Jolo, P. I., and destructive at Menado, Celebes Island.
			iP_{EN}	30 09		
			iPR_{1EN}	32 20		
			i_N	33 34		
			$i\overline{ScPcS}_N$	37 00		
			i_N	44 00		
			i_N	48 20		
			i_N	49 30		
			F	17 30 ±		
57	May 21	III	iP_N	10 15 35	W-A	$\Delta_{S-P} = 24^{\circ}6$ Epicenter $13^{\circ}8$ N. $88^{\circ}5$ W.
			i_N	16 02		
			iPR_{1N}	16 06		
			iS_N	19 56		
			iSR_{1E}	20 48		
			eL_N	23 00		
			F	13 10 ±		
58	May 22	I	e_{EN}	11 43 00	W-A	
			e_{EN}	53 24		
			eM_E	12 19 00		
			F	14 20 ±		

No.	Date	Char.	Phase	G.M.Time h. m. s.	Instruments	Remarks
59	May 22	I	iP_N	22 45 17	W-A	Two shocks? Epicenter 14°N.58°5W Surface waves relatively small.
			iP_N	45 33		
			i_N	45 54		
			iS_N	49 36		
			iS_N	49 54		
			eL_N	54 35		
			F	23 30		
60	May26	II	ePE	16 22 50	W-A	Deep focus. Epicenter 22.7S. 180°W.
			iP_{EN}	23 07		
			ipP_E	25 06		
			iPR_{1E}	27 33		
			$ipPR_{1E}$	29 13		
			$isPR_{1E}$	29 49		
			$i\overline{ScPcS}_E$	32 45		
			i_{EN}	33 27		
			$iScPcPcS_{EN}$	33 40		
			iS_{EN}	34 18		No true surface waves.
			iSP_{EN}	36 03		
			iPS_{EN}	36 40		
			ipS_E	37 06		
			isS_{EN}	38 03		
			i_E	39 12		
			F	19 15		
61	May 26	I	i_{EN}	21 45 42	W-A	
			i_E	50 03		
			e_E	53 56		
			F	22 10		
62	May 27	I	e_{EN}	0 53 23	W-A	
			e_{EN}	57 13		
			F	1 15		
63	May 28	I	e_{EN}	2 39 28	W-A	
			i_{EN}	45 51		
			eM_E	22 00		
			F	00		

Besides the above, seismic movement was recorded at: 1d.4.6h-5.6h;4d. 7.0h-7.4h;5d.9.4h-9.6h;5d.16.6h-17.2h;7d.11.3h-11.5h;14d.5.7h-6.1h; 14d; 9.3h-9.7h;18d.18;5h-13.6h; 18d.19.3h-21.0h;22d.1.4h-2.3h;22d.13.9h-14.3h;27d.219h-9.0h;31d.2.9h-3.2h.

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64	June 3	III	iP_{EN} I	10 41 53	W-A Wiechert compr.	Δ = 25°9 Amplitudes of P's on Wiechert: I=0; IV=3mm; V=7mm. Epicenter: 16°N. 104°W. Very destructive in S. W. Mexico.
			iP_{EN} II	10 41 59	W-A Wiechert compr.	
			iP_{EN} III	10 42 05	W-A Wiechert compr.	
			iP_{EN} IV	10 42 16	W-A Wiechert compr.	
			iPR_{1N} IV	10 42 46	Wiechert dilat.	
			iP_{EN} V	10 43 10	Wiechert compr.	
			i_{EN}	10 43 28	Wiechert dilat.	
			iS_{EN} I	10 46 26	W-A Wiechert	
			iS II	10 46 31	Wiechert	
			iS_{E} III	10 46 38	W-A Wiechert	
			iS_{EN} IV	10 46 48	W-A Wiechert	
			iS_{EN} V	10 47 43	Wiechert	
			L_{EN}	10 49 00	Wiechert	Largest amplitudes ever recorded here (22 years).
			M_{EN}	10 50 35	Wiechert	
			F	15 00 ±		
65	June 3	I	eP_{EN}	15 01 17	W-A	Aftershock Δ_{S-P} = 25°6
			eS_{EN}	15 05 46	W-A	
			eM_{EN}	15 10 47	W-A	
			F	Covered by following		
66	June 3	I	eP_{EN}	15 13 49	W-A	Δ_{S-P} = 23°6
			eS_{N}	15 18 02	W-A	
			eM_{EN}	15 22 12	W-A	
			F	15 50 ±		
67	June 3	I	iP_{EN}	16 33 07	W-A	Δ_{S-P} = 23°3
			eS_{N}	16 37 17	W-A	
			iM_{EN}	16 40 37	W-A	
			F	Covered by following		
68	June 3	I	eP_{E}	16 57 53	W-A	Δ_{S-P} = 23°9
			eS_{EN}	17 02 08	W-A	
			e_{EN}	17 05 24	W-A	
			eM_{EN}	17 06 57	W-A	
			F	17 30 ±		

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69	June 3	I	eP_E	17 45 07	W-A	Δ_{S-P} = 24°.6
			iP_{EN}	17 45 09	W-A	
			iS_N	17 49 28	W-A	
			iM_E	17 55 02	W-A	
			F	18 50 ±		
70	June 3	I	iP_{EN}	20 05 12	W-A	Δ_{S-P} = 23°.8
			iS_{EN}	20 09 26	W-A	
			L_N	20 12 42	W-A	
			F	Covered by following		
71	June 3	I	eP_{EN}	20 16 59	W-A	Δ_{S-P} = 23°.6
			eS_N	20 21 12	W-A	
			eM_N	20 26 12	W-A	
			F	20 45 ±		
72	June 4	I	eP	2 37 13	W-A	Δ_{S-P} = 24°
			eS_N	2 41 29	W-A	
			e_N	2 44 37	W-A	
			eM_N	2 46 32	W-A	
			F	3 10 ±		
73	June 4	I	eP_E	3 56 25	W-A	Δ_{S-P} = 24°.1
			eS_N	4 00 42	W-A	
			eM_N	4 04 12	W-A	
			F	4 10 ±		
74	June 4	I	iP_{EN}	5 20 26	W-A	
			iM_N	5 33 15	W-A	
			F	5 55 ±		
75	June 4	I	eP_E	10 44 47	W-A	Δ_{S-P} = 23°.4
			eS_N	10 47 08	W-A	
			eM_N	10 52 12	W-A	
			F	10 15 ±		
76	June 4	I	eP_{EN}	16 05 15	W-A	Δ_{S-P} = 23°.6
			eM_N	16 12 29	W-A	
			F	16 20 ±		

No.	Date	Char.	Phase	G. M. Time h. m. s.	Instruments	Remarks
77	June 4	I	eP_{EN}	7 06 36	W-A	
			eS_{EN}	7 10 49	W-A	
			eL_{N}	7 14 36	W-A	
			F	7 40 ±		
78	June 4	I	iP_{EN}	9 44 35	W-A	Δ_{S-P} = 23°.9
			eS_{N}	9 48 50	W-A	
			iS_{E}	9 48 58	W-A	
			eM_{EN}	9 51 58	W-A	
			F	10 35 ±		
79	June 5	I	eP_{EN}	9 09 44	W-A	Δ_{S-P} = 23°.8
			iP_{EN}	9 09 45	W-A	
			iS_{N}	9 13 58	W-A	
			eM_{E}	9 18 33	W-A	
			F	10 40 ±		
80	June 6	II	eP_{E}	8 49 57	W-A	Δ_{S-P} = 25°.9
			iP_{EN}	8 50 03	W-A	Destructive in Eureka, California
			i_{EN}	8 50 16	W-A	Epicenter: 41°.2 N. 124°W.
			i_{E}	8 50 32	W-A	
			i_{N}	8 54 07	W-A	
			eS_{N}	8 54 29	W-A	
			eS_{E}	8 54 32	W-A	
			iM_{N}	8 58 26	W-A	
			F	Covered by following		
81	June 6	I	eP_{EN}	9 17 33	W-A	Δ_{S-P} = 23°.3
			eS_{EN}	9 21 48	W-A	
			eM_{EN}	9 24 28	W-A	
			F	11 35 ±		
82	June 6	I	eP_{EN}	11 54 56	W-A	Δ_{S-P} = 22°.7
			eS_{EN}	11 59 01	W-A	Felt in Santiago, Cuba.
			iM_{EN}	12 01 37	W-A	
			F	12 35 ±		
83	June 8	I	eP_{EN}	5 01 55	W-A	
			eM_{EN}	5 17 50	W-A	
			F	5 40 ±		

No.	Date	Char.	Phase	G.M.Time h. m. s.	Instrument	Remarks
84	June 8	I	iP_{EN}	8 00 52	W-A	$\Delta_{S-P} = 42.^{\circ}7$
			iS_{EN}	8 07 24	W-A	
			eM_{EN}	8 16 42	W-A	
			F	8 40 ±		
85	June 8	I	eP_{EN}	10 42 00	W-A	$\Delta_{S-P} = 24.^{\circ}4$
			eS_{EN}	10 46 19	W-A	
			eM_{EN}	10 51 27	W-A	
			F	11 10 ±		
86	June 9	I	iP_{E}	4 40 40	W-A	$\Delta_{S-P} = 23.^{\circ}9$
			eS_{N}	4 44 56	W-A	
			eL_{N}	4 47 16	W-A	
			F	5 45 ±		
87	June 10	I	iP_{EN}	3 17 35	W-A	
			eM_{EN}	3 26 57	W-A	
			F	3 40 ±		
88	June 10	I	iP_{EN}	21 34 28	W-A	$\Delta_{S-P} = 23.^{\circ}4$
			eS_{N}	21 38 39	W-A	
			eM_{N}	21 42 08		
			F	22 10 ±		
89	June 10	I	iP_{EN}	23 05 00	W-A	$\Delta_{S-P} = 58.^{\circ}1$
			iS_{EN}	23 13 07	W-A	
			F	23 20 ±		
90	June 14	I	iP_{EN}	6 19 18	W-A	$\Delta_{S-P} = 35.^{\circ}2$
			eS_{EN}	6 24 58	W-A	
			i_{EN}	6 25 35	W-A	
			F	7 15 ±		
91	June 16	I	e_{E}	1 38 04	W-A	
			i_{E}	1 38 17	W-A	
			i_{N}	1 40 51	W-A	
			i_{EN}	1 41 42	W-A	
			i_{N}	1 41 58	W-A	
			$e(S)_{N}$	1 47 29	W-A	
			$i(S)_{N}$	1 47 36	W-A	
			eM_{N}	2 35 30	W-A	
			F	3 00 ±		

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No.	Date	Char.	Phase	G.M.Time h. m. s.	Instrument	Remarks
92	June 18	III	eP_{EN} I	10 17 09	W-A compr.	Epicenter: 18°.8 N. 104°.5 W. Destructive in S. W Mexico.
			iP_{EN} II	10 17 16	W-A compr.	
			iP_{EN} III	10 17 34	W-A Wiechert compr.	
			iS_{N} I	10 21 34	W-A	
			iS_{EN} II	10 21 41	W-A Wiechert	
			i_{N}	10 21 49	W-A W-A	
			iS_{E} III	10 21 57	W-A Wiechert	
			iL_{EN}	10 25 30	Wiechert	
			iM_{EN}	10 27 07	Wiechert	
			F	14 30 ±		
93	June 18	I	iP_{EN}	22 04 19	W-A	Δ_{S-P} = 23°.5
			iP_{EN}	22 04 26	W-A	
			eS_{EN}	22 08 31	W-A	
			iS_{EN}	22 08 43	W-A	
			eL_{N}	22 11 30	W-A	
			F	22 35 ±		
94	June 19	I	eP_{N}	8 46 42	W-A	Δ_{S-P} = 23°.9
			eS_{N}	8 50 58	W-A	
			eM_{N}	3 56 20	W-A	
			F	9 15 ±		
95	June 20	I	iP_{EN}	9 07 17	W-A	Δ_{S-P} = 25°.4
			iS_{N}	9 11 44	W-A	
			L_{N}	9 16 24	W-A	
			F	Covered by following		
96	June 20	I	iP_{EN}	9 32 26	W-A	Δ_{S-P} = 30°.2
			e_{EN}	9 37 13	W-A	
			eS_{EN}	9 37 33	W-A	
			iS_{E}	9 37 36	W-A	
			eL_{N}	9 40 15	W-A	
			F	10 30 ±		
97	June 21	I	iP_{N}	4 24 21	W-A	Δ_{S-P} = 23°.9
			i_{EN}	4 24 22	W-A	
			i_{EN}	4 24 24	W-A	
			iS_{E}	4 28 37	W-A	
			F	Covered by following		

No.	Date	Char.	Phase	G.M.Time h. m. s.	Instrument	Remarks
98	June 21	I	iP_{EN}	4 38 54	W-A	Δ_{S-P} = 23°7
			$eS_{N?}$	4 43 00	W-A	
			iS_{EN}	4 43 08	W-A	
			i_{EN}	4 43 14	W-A	
			eM_{EN}	4 49 42	W-A	
			F	5 50 ±		
99	June 21	I	eP_{N}	7 15 48	W-A	Δ_{S-P} = 65°.1
			eS_{EN}	7 24 38	W-A	
			e_{EN}	7 24 45	W-A	No surface waves.
			F	7 30 ±		
100	June 22	II	iP_{EN} I	13 04 30	W-A Wiechert compr.	Epicenter: 17°.3 N. 103°.3W.
			iP_{EN} II	13 04 38	W-A Wiechert dilat.	Destructive in
			iP_{EN} III	13 04 51	W-A aWiechert compr.	S.W.Mexico.
			iP_{EN}	13 04 55	W-A Wiechert dilat.	Tidal wave destroys Cuyutlan.
			i_{EN}	13 05 14	W-A	
			iPR_{1EN} III	13 05 21	W-A	
			iS_{EN} I	13 08 42	W-A	
			iS_{EN} II	13 08 55	W-A Wiechert	
			i_{EN}	13 08 57	W-A	
			iS_{EN} III	i3 09 07	W-A Wiechert	
			iL_{E}	13 12 42	W-A Wiechert	
			F	16 00 ±		
101	June 22	I	iP_{EN}	16 53 30	W-A	Δ_{S-P} = 23°5
			eS_{E}	16 57 42	W-A	
			iL_{EN}	17 00 34	W-A	
			F	17 30 ±		
102	June 24	I	iP_{N}	9 49 09	W-A	Δ_{S-P} = 25°.2
			eS_{N}	9 53 34	W-A	
			F	10 15 ±		
103	June 25	I	eP_{EN}	20 59 22	W-A	Δ_{S-P} = 23°8
			eS_{N}	21 03 37	W-A	
			F	21 20 ±		
104	June 26	I	eP_{EN}	19 31 11	W-A	Δ_{S-P} = 76°.7
			iS_{E}	19 41 00	W-A	
			F	20 30 ±		

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105	June 29	I	iP_N eS_N F	22 26 57 22 32 35 22 50	W-A W-A	Epicenter by St.Louis and San Juan: $5^{o}5$ N. 78^{o}W.

Besides the above, seismic movement at: 3d. 13.4h-13.8h; 3d. 19.0h-19.5h; 3d. 22.1h-22.2h; 4d. 0.2h-0.8h; 4d. 10.4h-10.5h; 4d. 13.8h-14.6h; 5d. 3.8h-4.1h; 5d. 16.8h-17.1h; 7d. 0.4h-1.5h; 7d. 15.4h-16.0h; 8d. 21.4h-22.0h; 9d. 21.9h-22.5h; 10d. 19.7h-20.0h; 11d. 9.0h-9.3h; 11d. 17.3h-17.7h; 12d. 6.8h-7.0h; 18d. 12.5h-13.0h; 18d. 23.9h-24h; 20d. 4.2h-5.2h; 22d. 0.9h-1.1h; 22d. 15.7h-15.9h; 23d. 2.6h-2.9h; 23d. 19.1h-19.2h; 23d. 22.1h-22.3h; 26d. 21.5h-22.8h; 27d. 9.0h-9.4h; 26d. 2.2h-3.4h; 28d. 13.1h-13.4h; 29d. 18.6h-20.0h; 30d. 17.1h-17.7h.

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106	July 2	I	$ePEN$	1 22 00	W-A	$\triangle_{S-P}$ 24°.1
			eS_N	1 26 17	W-A	
			F	1 40 ±		
107	July 3	I	$ePEN$	17 40 04	W-A	$\triangle_{S-P}$ ~~24°.1~~ 50°
			iS_N	17 47 21	W-A	No surface waves.
			F	17 50 ±		
108	July 5	I	iP_N	10 11 44	W-A	$\triangle_{S-P}$ 24°.3
			eS_N	10 16 02	W-A	
			M_N	10 20 35	W-A	
			F	10 30 ±		
109	July 6	I	iP_{EN}	15 12 20	W-A	$\triangle_{S-P}$ 24°.6
			eS_{EN}	15 16 41	W-A	
			eM_{EN}	15 20 00	W-A	
			F	15 30 ±		
110	July 7	II	eP_E	16 20 35	W-A	$\triangle_{S-P}$ 22°.1
			iP_E	16 20 38 compr.	W-A	Epicenter: 28° N; 113°.5 W.
			i_{EN}	16 20 46 dilat.	W-A	
			i_N	16 24 35	W-A	
			iS_{EN}	16 24 38	W-A	
			iL_N	26 23	W-A	
			iM_N	27 25	Wiechert	
			F	18 30 ±		
111	July 9	I	e_E	13 15 00	W-A	New shock?
			iEN	13 20 56	W-A	
			i_E	13 21 51	W-A	
			i_N	13 22 32	W-A	
			i_{EN}	13 36 25	W-A	
			F	14 30 ±		
112	July 10	I	e_E	00 55 25	W-A	
			e_N	01 05 54	W-A	
			eM_{EN}	01 26 45	W-A	
			F	01 45 ±		

No.	Date	Char.	Phase	G.M.Time h. m. s.	Instrument	Remarks
113	July 10	I	iP_{EN}	7 57 59	W-A	$\triangle_{S-P}$ 61°.2
			eS_{EN}	8 08 26	W-A	
			eM_{N}	8 29 40	W-A	
			F	9 30 ±		
114	July 12	II	iP_{EN}	19 28 52 dilat.	W-A	$\triangle_{S-P}$ 21°.6
			iP_{EN}	19 28 55 dilat.	W-A	Epicenter: 25°.6 N. 110°.5 W.
			iP_{EN}	19 28 56 compr.	W-A	
			i_{N}	19 32 43	W-A	
			iS_{EN}	19 32 43	W-A	
			iL_{EN}	19 34 28	W-A	
			iM_{EN}	19 35 34	W-A	
			F	22 30 ±		
115	July 13	I	eP_{E}	2 31 23	W-A	$\triangle_{S-P}$ 23°.7
			eS_{E}	2 35 37	W-A	
			eL_{EN}	2 37 50	W-A	
			F	2 50 ±		
116	July 13	I	eP_{E}	4 10 37	W-A	$\triangle_{S-P}$ 22°
			eS_{EN}	4 14 36	W-A	
			eL_{EN}	4 16 50	W-A	
			F	4 40 ±		
117	July 14	I	e_{E}	9 09 00	W-A	
			e_{E}	9 12 26	W-A	
			i_{E}	9 22 11	W-A	
			eL_{E}	9 54 00	W-A	
			F			
118	July 16	I	eP_{EN}	23 28 00	W-A	$\triangle_{S-P}$ 24°.6
			eS_{N}	23 32 21	W-A	
			eM_{N}	23 37 40	W-A	
			F	23 45 ±		
119	July 20	I	eP_{E}	7 57 18	W-A	$\triangle_{S-P}$ 21°.3
			iP_{EN}	7 57 21	W-A	
			eS_{N}	8 01 11	W-A	
			eL_{N}	8 03 50	W-A	
			F	8 20 ±		

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No.	Date	Char.	Phase	G.M.Time h. m. s.	Instrument	Remarks
120	July 20	I	e_E	20 23 10	W-A	Surface waves very small.
			i_{EN}	20 24 31	W-A	
			e_{EN}	20 29 57	W-A	
			i_{EN}	20 30 44	W-A	
			i_N	20 31 21	W-A	
			F	21 40 ±		
121	July 21	I	eP_E	00 11 29	W-A	$\triangle_{S-P}$ 21.6°
			iP_{EN}	00 11 31	W-A	
			eS_E	00 15 25	W-A	
			eM_{EN}	00 20 00	W-A	
			F	00 25 ±		
122	July 21	I	eP_E	12 56 13	W-A	
			i_{EN}	13 00 33	W-A	
			i_{EN}	13 35 49	W-A	
			i_{EN}	13 37 29	W-A	
			e_{EN}	13 40 34	W-A	
			eM_{EN}	14 09 00	W-A	
			F	15 00 ±		
123	July 25	I	iP_{EN}	8 37 24	W-A	No surface waves.
			i_{EN}	8 41 18	W-A	
			i_{EN}	8 47 22	W-A	
			F	8 55 ±		
124	July 25	II	iP_{EN}	9 17 54	compr.W-A	$\triangle_{S-P}$ 23°.1 Epicenter: 17°.2 N. 104°W.
			i_{EN}	9 18 02	dilat.W-A	
			iPR_{1EN}	9 18 25		
			i_E	9 21 11	W-A	
			iS_E	9 22 03	W-A	
			iS_N	9 22 04	W-A	
			i_N	9 22 11	W-A	
			i_{EN}	9 25 40	W-A	
			iM_N	9 26 10	W-A	
			F	Covered by following.		
125	July 25	I	eP_{EN}	9 34 50	W-A	$\triangle_{S-P}$ 22°.8
			eS_N	9 38 57	W-A	
			F	12 30 ±		

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No.	Date	Char.	Phase	G.M.Time h. m. s.	Instrument	Remarks
126	July 29	I	eP_E	00 55 12	W-A	No surface waves.
			iP_{EN}	00 55 36	W-A	
			i_E	01 03 15	W-A	
			i_{EN}	01 03 58	W-A	
			F	01 05 ±		
127	July 30	I	e_E	21 17 11	W-A	
			ii_N	21 19 41	W-A	
			i_{EN}	21 21 39	W-A	
			i_{EN}	21 21 51	W-A	
			i_E	21 26 23	W-A	
			F	21 40 ±		

Seismic movement also at: 13d. 2.6h-2.9h; 13d. 7.1h-7.4h; 18d. 0.6h-0.9h; 19d. 17.0h-.7.1h-; 21d. 16.5h-18.1h; 23d. 1.4h-1.7h; 23d. 1.9h-2.3h; 23d. 6.6h-6.8h- 25d. 19.2h-19.4h; 27d. 21.6h-21.9h; 30d. 7.4h-7.6h; 31d. 6.4h-6.9h.

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No.	Date	Char.	Phase	G.M.Time h. m. s.	Instrument	Remarks
128	August 2	I	ePe eS_{NE} F	4 46 48 4 58 11 5 30	W-A W-A W-A	time-uncertain Indistinct. $\Delta_{S-P} = 95.6^{\circ}$
129	August 4	I	iP_{EN} iS_{EN}	6 48 26 6 57 22	W-A W-A	Indistinct. $\Delta_{S-P} = 66.2^{\circ}$
130	August 4	I	eP_{N} eS_{N} eL_{E}	17 48 27 17 52 49 ?	W-A W-A	Indistinct. $\Delta_{S-P} = 24.7^{\circ}$
131	August 6	I	iP_{N} iS_{EN} eL	4 05 59 4 13 52 very indistinct	W-A W-A	$\Delta_{S-P} = 56^{\circ}$ Probably deep.
132	August 6	I	eP_{N} iS_{E} eS_{N}	17 29 57 17 30 15 17 30 15	W-A W-A W-A	Local quake. $\Delta_{S-P} = 1^{\circ}\ 31'$
	August 9		Seismic motion: 7.3 - 7.8 C.S.T. Seismic motion centered at 10 P.M., C.S.T.			
	August 10		Seismic motion from 7.5 - 7.7 P.M., C.S.T.			
133	August 11	I	eP_{NE} iS_{EN} F	9 51 14 9 58 40 10 20	W-A W-A	$\Delta_{S-P} = 51.5^{\circ}$? Probably deep.
134	August 12	I	iP_{EN} iS_{EN}	3 33 19 3 40 53	W-A W-A	$\Delta_{S-P} = 52.8^{\circ}$? Probably deep.
	August 13		Emergent waves beginning at 21.9 (G.M.T.) and ending at approx. 23.0 (G.M.T.)			
135	August 14	I	eP_{EN} iS_{EN}	4 58 48 5 04 41	W-A W-A	$\Delta_{S-P} = 37.1^{\circ}$?
	August 14		Seismic activity between 5.1 and 5.3 A.M.			

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No.	Date	Char.	Phase	G.M. Time h. m. s.	Instrument	Remarks
136	August 17	I	iP_{EN}	8 52 01	W-A	Av. Δ_{S-P} = 24°.8
			iS_{EN}	8 56 23	W-A	
	August 18		Seismic activity centering about 14.2 (G.M.T.)			
			Seismic activity centering about 20.5 (G.M.T.)			
	August 19		Seismic activity between 13.2 and 13.5 hr.			
			Seismic activity at about 20.5 hr.			
137	August 19	I	eP_{EN}	18 12 36	W-A	Δ_{S-P} = 24.6°
			eS_{N}	18 16 57	W-A	
			F	18 30 ±		
	August 20		Seismic motion between 9.8 and 10.0 hr.			
	August 22		Indistinct emergent phases between 4.9 - 5.9 hr.			
			Emergent L waves from 11.9 - 12.5 hr.			
138	August 24	I	eP_{NE}	3 45 52	W-A	Δ_{S-P} = 25.2°
			eS_{EN}	3 49 57	W-A	
		?	eSR_{1EN}	3 53 16	W-A	
		?	eL_{EN}	3 53 40	W-A	
			F	4 30 ±		
139	August 25	I	eP_{EN}	8 11 03	W-A	Δ_{S-P} = 24.7°
			eS_{EN}	8 15 30	W-A	
		?	eSR_{1EN}	8 16 36	W-A	
			iL_{EN}	8 19 03	W-A	
			eM_{CN}	8 21 28	W-A	
			F	9 10 ±		
140	August 29	I	iP_{EN}	17 10 11	W-A	Local short-period only Δ = 19 miles. Duration = 1.2 mm. Blasting at quarry.
			iS_{EN}	17 10 12		

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No.	Date	Char.	Phase	G.M.Time h. m. s.	Instrument	Remarks
140	September 3	I	iP_{EN}	12 11 37	W-A	$\triangle_{S-P}$ 35°.3
			i_{EN}	12 11 52	W-A	Small surface
			e_{EN}	12 14 57	W-A	waves.
			eS_{E}	12 21 58	W-A	
			iS_{EN}	12 22 10	W-A	
			i_{E}	12 22 29	W-A	
			eL_{EN}	12 37	W-A	
			F_{EN}	13 45		
141	September 8	I	iP_{EN}	1 46 15	W-A	$\triangle_{S-P}$ 24°.6
			eS_{EN}	1 50 36	W-A	
			iL_{EN}	1 53 54	W-A	
			iM_{EN}	1 56 48	W-A	
			F	2 20		
142	September 14	I	eP_{EN}	7 51 09	W-A	$\triangle_{S-P}$ 40°.8
			i_{N}	7 51 24	W-A	Epicenter:
			iPR_{1EN}	7 54 02	W-A	61°N. 146°W.
			eS_{EN}	7 57 27	W-A	Ratio of S/L
			eSR_{1EN}	8 00 23	W-A	types large.
			eM_{EN}	8 06 05	W-A	Probably mod-
			F	8 30		erately deep.
143	September 15	II	eNE	14 21 15	W-A	Quake reported
			$eScPcPcS$	14 21 49	W-A	at Hawkes
			e_{EN}	14 24 09	W-A	Bay, New
			eSR_{2EN}	14 29 51	W-A	Zealand.
			eL_{EN}	14 57 22	W-A	
			eW_{2EN}	16 07 04	W-A	
			F	16 40		
	September 20	Seismic motion between 12-30 and 13-30.				
144	September 23	I	iP_{EN}	14 34 21	W-A	$\triangle_{S-P}$ 81°.3 ?
			i_{EN}	14 34 22	W-A	(Scrase and
			ipP_{EN}	14 35 22	W-A	Stechschulte)
			isS_{EN}	14 36 02	W-A	meas. 83°
			i_{EN}	14 37 33	W-A	
			i_{EN}	14 37 47	W-A	
			e_{EN}	14 44 16	W-A	
			iS_{EN}	14 44 21	W-A	
			L	14 46 22	W-A	
			F	16		

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No.	Date	Char.	Phase	G.M.Time h. m. s.	Instrument	Remarks
145	September 26	I	eP_{EN} iS_{N} eL_{E} F	19 33 01 19 43 13 19 52 33 21 00 ±	W-A W-A W-A	$\triangle_{S-P}$ 31°2
146	September 29	I	e_{EN} eL_{EN} F	4 09 34 4 39 4 54 ±	W-A	
147	September 29	I	eP_{EN} eS_{EN} F(?)	17 58 31 18 08 21	W-A	$\triangle_{S-P}$ 86°3

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No.	Date	Inst.	C/D	Phase	G.M.C.T.	S-P	△	P-O	O--Remarks
148	Oct. 2	W-A		iPN	3-04-56	4'48"	27°8	5'49"	Tentative
		W-A		iPR_{1N}	3-05-47				Epicenter:
		W-A		ePR_{2N}	3-06-02				10°9 N.86°5W.
		W-A		eS_{EN}	3-09-43				
		W-A		eSR_{1N}	3-11-13				
		W-A		eSR_{2N}	3-11-37				
		W-A		eLEN	3-12-46				
		W-A		F	3-40				
	Oct. 3	Seismic activity centering around 4-50.							
	Oct. 8	Seismic activity centering around 1-30.							
	Oct. 9	Seismic activity centering around 1-10.							
	Oct. 9	Seismic activity centering around 23-10.							
149	Oct. 10	W-A		iP_{EN}	14-22-51				
		W-A		i_{EN}	14-22-57				
		W-A		LE	14-44-06				
150	Oct. 11	W-A		eP_{EN}	19-13-06	3'54"	21°4	4' 43"	19^h 08' 23".
		W-A		eS_{EN}	19-17-02				Tentative
		W-A		eL_{EN}	19-19-07				Epicenter:
		W-A		eM_{EN}	19-21-31				25°N. 110°W.
		W-A		F	19-50				
151	Oct. 15	W-A		eP_{EN}	19-45-57	4'17"	24°1	5' 12"	19^h 40'45".
		W-A		eS_N	19-50-14				
				F	20				
152	Oct. 16	W-A		eP_{EN}	12-16-42	6' 56"	46°4	8' 25"	12^h 08'17".
		W-A		iP_{EN}	12-16-49				
		W-A		iS_{EN}	12-23-38	6' 57"	46°6	8' 26"	12^h 08'23".
		W-A		eS_N	12-23-45				Tentative
				ePS_{EN}	12-23-50				Epicenter:
				i_{EN}	12-26-31				55°N. 155°W.
									Two shocks.

No.	Date	Inst.	C/D	Phase	G.M.C.T.	S-P	△	P-O	O--Remarks
152 c	Oct. 16	W-A W-A		eL_{EN} eM F	12-31- 12-34 13-00				
153	Oct. 24	W-A W-A		eP_{EN} iP_{EN} eS_{E} iS_{E} iE	12-11-25 12-11-26 12-18-21 12-18-29 12-20-53	iS-iP 7' 03"			(iF 400 km. deep, this is SS)
	Oct. 27	Seismic activity centered at about 10-15 (G.M.T.)							
154	Oct. 29	W-A W-A W-A W-A		eP_{EN} eS_{N} iL_{eN} eM_{EN} F	3-41-53 3-46-11 3-49-10 3-51-28 4-14	4' 18"	24°3	5' 14"	$3^{h}36'39"$.
155	Oct. 30	W-A W-A W-A W-A W-A W-A W-A W-A		eP_{EN} $ePcP_{EN}$ iS_{EN} ePS_{EN} e_{EN} eSR_{1EN} eL_{EN} eM_{EN} F	20-55-30 20-56-52 21-02-32 21-02-42 21-05-35 21-06-17 21-09 21-14-34 22-15	7'05"	48°0	8'36"	$20^{h}46'54"$.

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 1932

No.	Date	Inst.	C/D	Phase	G.M.C.T.	S-P	△	P-O	O--Remarks
156	Nov. 2	W-A W-A W-A W-A W-A		ePE_N i iS_{EN} eL_{EN} eM_{EN} F	11 13 58 11 14 05 11 22 44 11 26 11 39 12 00	7'43"	64°7	10'34"	$11^h03^m23^s$. Tentative Epicenter 23° S, 111° W.
	Nov. 7	W-A		Seismic activity centering at about 20h.					
	Nov. 8	W-A		Seismic activity centering at about 6h.					
	Nov. 9	W-A		Seismic activity centering at about 20h.					
	Nov. 12	W-A		Emergent phases (North component) beginning at about 13h.40m.30s. Very indistinct.					
	Nov. 13	W-A		Emergent phases beginning at approximately 16-50.					
157	Nov. 13	W-A W-A W-A W-A		$iP_{I\ EN}$ $iP_{II\ EN}$ $ePR_{I\ EN}$ $iS_cP_cS_{EN}$ $iS_{I\ EN}$ $iS_{II\ EN}$ $iSR_{I\ EN}$	4 59 12 4 59 16 5 02 43 5 09 06 5 09 25 5 09 29 5 15 14				Possibly two shocks. Tentative Epicenter 41° N., 135° E. Stech-schulte's Tables. O - 4 h 46^m51^s.
158	Nov. 15	W-A W-A W-A W-A		ePE_N $i(?)_{EN}$ $i(?)_{EN}$ eS_N	10 36 06 10 36 26 10 36 37 10 40 48	4'42"	27°	15'42"	$10^h20^m24^s$.
159	Nov. 17	W-A W-A W-A W-A		iPE_N $ePR_{1\ E}$ iS_{EN} iL_{EN}	6 07 55 6 08 31 6 12 28 6 15 28	4'33"	26°	5'31"	O - 6h 02^m20^s. Tentative Epicenter 18° N., 104° W.

No.	Date	Inst.	C/D	Phase	G.M.C.T.	S-P	△	P-O	O--Remarks
159	Nov. 17 (continued)	W-A		iM EN F	6 18 30 7 30				
160	Nov. 18	W-A		eP_{EN} eS_{EN}	1 04 54 1 09 20	44'26"	25°.3	5'24"	$00^h59^m30^s$.
161	Nov. 19	W-A		iP_{EN} eS_{EN} F	9 04 02 9 11 16 9 30				
162	Nov. 22			Local quake. $\Delta(S_g-P_g)$ = 14 secs. = 75 miles. eP_g E eS_g E	7 56 30 7 56 44				
	Nov. 22			Seismic activity centering at about 15-13.					
163	Nov. 26	W-A		eP_{EN} eS EN eL_{EN} F	4 36 34 4 46 50 5 09 ? 5 30		91°.4		$4^h24^m03^s$. Tentative Epicenter 41° N., 135° E. Moderately deep.
	Nov. 27	W-A		Emergent phases beginning at about 20h.-30m. Very indistinct.					
164	Nov. 29	W-A		eP_N eS_N	10 22 06 10 31 24	9'18"	70°.4	11'10"	0 = $10^h10^m56^s$.

SAINT LOUIS

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

Bulletin for 193

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

No.	Date	Inst.	C/D	Phase	G.M.C.T.	S-P	△	P-O	O--Remarks
165	Dec. 4	W-A		eP_E	4-11-55	6'32"	42°7	7'56"	$4^h03^m59^s$. Tentative Epicenter: 38° N. 35° W.
		W-A		eSn	4-18-27				
		W-A		eLn	4-21-40				
		W-A		F	5-40 ±				
166	Dec. 4	W-A		iP_N	8-30-25	3'22"	82° 12'18"		$8^h18^m07^s$.
		W-A		iPcP	8-30-47	(PR_1-P)			
		W-A		iPR_1	8-33-47				
		W-A		eSR_{1N}	8-46-13				
		W-A		eL_{EN}	8-57-40				
		W-A		eM_{EN}	9-03				
		W-A		F	10-45 ±				
	Dec. 4	Emergent phases centering around 11h.00m.00s.							G.M.T.
167	Dec. 7	W-A	C	iP	16-27-16	4'22"	24°7	5'18"	$16^h21^m58^s$. Tentative Epicenter: 18° N. 103°5 W.
		W-A		iPR_{1N}	16-27-53				
		W-A		iPR_{2N}	16-28-03				
		W-A		$ePcP_{EN}$	16-30-58				
		W-A		iS_{EN}	16-31-38				
		W-A		eSR_{1E}	16-32-45				
		W-A		F	18-15 ±				
168	Dec. 9	W-A		iP_N	8-44-23	7'39"	53°6	9'17"	$8^h35^m06^s$. Probably deep.
		W-A		iS_E	8-52-02				
		W-A		F	9-50 ±				
	Dec. 10	Emergent phases centering at about 11h.15m.00s. G.M.T.							
	Dec. 18	Emergent phases centering at about 6h.40m. 00s. G.M.T.							
169	Dec. 19	W-A	I	eP_{EN}	6-34-05	4'28"	25°5	5'26"	$6^h28^m39^s$. Two shocks.
		W-A	II	iP_{EN}	6-34-27				
		W-A	I	eS_{EN}	6-38-33				
		W-A	II	iS_{EN}	6-38-55				
		W-A		eL_{EN}	6-44				
		W-A		eM_N	6-46-50				
		W-A		F	7-15 ±				
170	Dec. 20	W-A		eP_{EN}	2-43-38	6'58"	46°8	8'27"	$2^h35^m11^s$. Probably deep.
		W-A		eS_{EN}	2-50-36				
		W-A		F	3-15 ±				

No.	Date	Inst.	C/D	Phase	G.M.C.T.	S-P	△	P-O	θ--Remarks
171	Dec. 21	W-A		iP_E	6-14-58	4'00"	22°1	4'51"	$6^h10^m07^s$. Tentative Epicenter: 38°1 N., 118°5 W. Three shocks
		W-A		iP_{EN}	6-15-01				
		W-A		iP_E	6-15-06				
		W-A		iPR_{1EN}	6-15-35				
		W-A		iS_N	6-18-57				
		W-A		iS_{EN}	6-19-01				
		W-A		iS_N	6-19-05				
		W-A		iSR_{1EN}	6-20-05				
		Wiechert		eL_{EN}	6-20-24				
		Wiechert		iM_{EN}	6-21-34				
		W-A		F	7-45 ±				
	Dec. 21	Emergent phases centering at 7h.53m., 11h.45m., 12h.51m., and 14h.16m. Probably aftershocks of main quake.							
	Dec. 24	Emergent phases centering at about 7h.30m.00s. G.M.T.							
	Dec. 24	Emergent phases centering at about 12h.00m.00s. G.M.T.							
172	Dec. 25	W-A	C	iP_{EN}	2-18-21	△P-O =	103°		$2^h04^m21^s$. Tentative Epicenter: 35° N., 98° E.
		W-A	D	iP_{EN}	2-18-24				
		W-A	C	iP_{EN}	2-18-31				
		W-A		iPR_{1N}	2-22-29				
		W-A		iPR_{2EN}	2-24-24				
		W-A		$iScPcS_{EN}$	2-29-08				
		W-A		$iScPcS_{EN}$	2-29-12				
		W-A		iPS_{EN}	2-31-35				
		W-A		iSR_{1EN}	2-37-15				
		W-A		eL_{EN}	2-46-16				
		W-A		iM_{EN}	3-03-16				
		W-A		F	4-20 ±				
173	Dec. 29	W-A		eP_E	6-24				
		W-A		eS_N	6-31				
		W-A		F	6-40 ±				
174	Dec. 29	W-A		eP_{EN}	6-48				
		W-A		eS_{EN}	6-55				
		W-A		F	7-10 ±				
	Dec. 30-31	Three tremors registered, but clock was stopped.							