

# 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

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Bulletin for January, 1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
1	Jan.10	W-A	(e) E	02 35 58.9	Local shock. Record weak
		W-A	i <sub>F</sub>	02 35 59.6	
			F	02 36 20 ±	
2	Jan.10	Mac	eP <sub>Z</sub>	09 55 05	H = 09 <sup>h</sup> 49 <sup>m</sup> 43 <sup>s</sup> Δs - P = 22.2
		Mac	eS <sub>E</sub>	09 59 26	
		Mac	eL <sub>E</sub>	10 01.6	
		Mac	eM <sub>E</sub>	10 02.8	
			F	10 16 ±	
3	Jan.10	Mac	eZ	15 30 45	Record weak
		Mac	e(s) <sub>N</sub>	15 35 05	
			F	15 51 ±	
4	Jan.12	W-A	e(s) <sub>N</sub>	21 08 50.1	Local shock Record weak
			F	21 09 05 ±	
5	Jan.12	W-A	eP <sub>oN</sub>	22 26 49.3	Δ = 15 km.
		W-A	eS <sub>oN</sub>	22 26 50.9	
		W-A	eS <sub>oN</sub>	22 26 51.5	
			F <sub>N</sub>	22 51 ±	
6	Jan.13	W-A	e(L) <sub>N</sub>	20 28 18.8	Local shock.
			F	20 28 38 ±	
7	Jan.14	W-A	e <sub>N</sub>	15 23 43.7	Δ = 30 km.
		W-A	eP <sub>N</sub>	15 23 46.2	
		W-A	eS <sub>N</sub>	15 23 49.4	
			F	15 24 00 ±	
8	Jan.14	Mac	e(P) <sub>Z</sub>	19 29 17	
			F	19 32 ±	
9	Jan.14	Mac	e(P) <sub>Z</sub>	19 44 40	
			F	19 46 ±	
10	Jan.14	W-A	e <sub>N</sub>	21 39 44	Reported felt in some of the New Eng- land states.
		Mac	eZ	21 40 20	
		Mac	e <sub>E</sub>	21 42 20	
			F	21 45 ±	
11	Jan.17	Mac	e(s) <sub>E</sub>	17 11 47	
		Mac	eL <sub>N</sub>	17 13 59	
		Mac	eM <sub>N</sub>	17 15 11	
			F	17 36 ±	
12	Jan.22	W-A	e(P) <sub>N</sub>	18 39 57.9	Local shock
		W-A	e(S) <sub>N</sub>	18 40 03.6	
		W-A	e(L) <sub>N</sub>	18 40 05.4	
			F	18 40 33	



No.	Date	Inst.	Phase	G.M.O.T.	Remarks
13	Jan. 23	Mac Mac Mac	e(P)Z eN eN F	13 <sup>h</sup> 36 <sup>m</sup> 30 <sup>s</sup> 13 43 15 13 47 01 14 07	Record weak
14	Jan. 24	Mac Mac	iPZ e(S)E	09 31 55 09 35 51	
15	Jan. 24	Mac Mac	e(P)Z e(S)E F	09 32 32 09 35 30 09 52 ±	
16	Jan. 24	Mac Mac Mac Mac Mac Mac	iPZ iPR <sub>1</sub> N iPR <sub>2</sub> Z iSN LN MN F	20 47 08 20 47 42 20 47 50 20 51 24 20 53.5 20 55.1 22 02	Epicenter by U.S.C. and G.S. 15° + N., 91° + W. H = 20 <sup>h</sup> 41 <sup>m</sup> 57 <sup>s</sup> ΔS - P = 23.6 Δ <sub>meas</sub> = 23.6
17	Jan. 26	W-A	e(S)N F	19 15 22.5 19 15 30 ±	Local shock
18	Jan. 27	Mac	iPZ	02 01 31	Foreshock of #10 F lost.
19	Jan. 27	Mac Mac Mac Mac	iPZ iSNE iNE LE F	02 55 23 03 03 37 03 05 18 03 12 29 04 57 ±	Epicenter by J.S.A. 51.02 N., 176.09 W. H = 02 <sup>h</sup> 45 <sup>m</sup> 26 <sup>s</sup> ΔS - P = 59.02 Δ <sub>meas</sub> = 59.02
20	Jan. 27	Mac	iPZ F	03 07 20 03 12 ±	Aftershock of #19
21	Jan. 27	Mac	iPZ F	03 17 46 03 23 ±	Aftershock of #19
22	Jan. 27	W-A W-A	eN eN F	19 49 13.8 19 49 17.7 19 49 35 ±	Local shock
23	Jan. 30	Mac Mac Mac Mac Mac Mac Mac	iPZ iz e(pP)Z eE iSE i(ss)N iE F	05 40 45 05 41 05 05 42 18 05 46 16 05 46 49 05 49 27 05 49 52 07 30 ±	Epicenter by J.S.A. 09.3 S., 80.2 W. H = 05 <sup>h</sup> 33 <sup>m</sup> 53 <sup>s</sup> (h = 500 + km.) ΔP - F = 40.0 Δ <sub>meas</sub> = 40.0
24	Jan. 31	Mac Mac Mac Mac	iPZ ippZ iSE iE	08 33 45 08 34 02 08 37 44 08 37 58	Epicenter by J.S.A. 18.8 N., 94.97 W. H = 08 <sup>h</sup> 29 <sup>m</sup> 12 <sup>s</sup> h = 100 km. ΔP - H = 20.6 Δ <sub>meas</sub> = 20.6

Minor Seismic Activity - Jan. 11 20<sup>h</sup>28<sup>m</sup> to 21<sup>h</sup>21<sup>m</sup>; Jan. 13 - 03<sup>h</sup>24<sup>m</sup> to 03<sup>h</sup>47<sup>m</sup> (may not be seismic); Jan. 25 18<sup>h</sup>04<sup>m</sup> to 18<sup>h</sup>17<sup>m</sup>; Jan. 27 21<sup>h</sup>03<sup>m</sup> to 22<sup>h</sup>24<sup>m</sup>. Microseisms Jan. 1-11 inclusive; Jan. 19-23 inclusive  
 James B. Macelwane, S.J. Warren J. Stout  
 Director Graduate Fellow

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

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

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Bulletin for February, 1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
25	Feb. 3	W-A W-A	iP <sub>o</sub> N iS <sub>o</sub> N	15.5 15.5	$\Delta S_0 - P_0 = 0^m 02^s.6$ $\Delta = 17$ km. no time correction
26	Feb. 5	W-A	eN F	21 29 40.3 21 29 42 ±	Local shock
27	Feb. 5	W-A W-A W-A	eP <sub>o</sub> N eS <sub>o</sub> NE eN F	22 34 11.6 22 34 14.6 22 34 16.3 22 34 30	$\Delta = 28$ km.
28	Feb. 6	Mac Mac Mac	eZ eE eN F	02 55 19 03 01 19 03 04 53 04 03	
29	Feb. 7	W-A W-A W-A	eP <sub>o</sub> N eS <sub>o</sub> N eS <sub>1</sub> N F	22 31 48.0 22 31 49.4 22 31 49.7 22 32 10 ±	$\Delta = 13$ km.
30	Feb. 11	W-A W-A W-A W-A W-A	eP <sub>o</sub> N eN eS <sub>o</sub> N eN eN F	21 43 22.9 21 43 23.7 21 43 26.7 21 43 27.2 21 43 28.0 21 44 06	$\Delta = 36$ km.
31	Feb. 11	Mac Mac	eZ eN F	06 40 42 06 50 41 07 47 ±	
32	Feb. 16	Mac Mac Mac Mac Mac Mac	iP <sub>z</sub> i(P <sub>c</sub> P) <sub>z</sub> iP <sub>z</sub> iS <sub>EN</sub> i(S <sub>P</sub> ) <sub>N</sub> iS <sub>S</sub> <sub>N</sub> F	07 38 01 07 38 45 07 38 59 07 45 34 07 46 41 07 47 33 08 45	Epicenter by J.S.A. near 15° 2' S., 68° 5' W. H = 07 <sup>h</sup> 28 <sup>m</sup> 41 <sup>s</sup> h = 300 km $\Delta P - H = 58^s.0$ $\Delta_{meas} = 57^s.9$
33	Feb. 16	Mac Mac Mac	e(P) <sub>z</sub> (e) <sub>E</sub> eE F	14 19 12 14 34 45 14 36 36 16 04	
34	Feb. 16	Mac Mac	e(P) <sub>z</sub> eE F	17 10 13 17 19 39 18 25	

Saint Louis Bulletin for February, 1943

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35	Feb.17	Mac Mac	eP <sub>Z</sub> eE F	00 <sup>h</sup> 40 <sup>m</sup> 26 <sup>s</sup> 00 47 33 00 53 ±	
36	Feb.17	W-A W-A W-A	eP <sub>N</sub> eS <sub>N</sub> eN F	18 05 50.4 18 05 52.8 18 05 54.4 18 06 05 ±	Δ = 23 km.
37	Feb.21	Mac	iP <sub>Z</sub> F	00 13 13 00 17 ±	
38	Feb.22	Mac W-A W-A W-A	iP <sub>Z</sub> iS <sub>E</sub> iE M <sub>E</sub>	09 25 58 09 30 28 09 30 42 09 33 54	Epicenter by J.S.A. 15°5 N., 101°2 W. H = 09 <sup>h</sup> 20 <sup>m</sup> 35 <sup>s</sup> Δ <sub>P</sub> - H = 24.8 Δ <sub>meas</sub> = 24.8 Destructive in Mexico
39	Feb.22	Mac	eP <sub>Z</sub>	10 17 29	Aftershock of #38
40	Feb.22	Mac	iP <sub>Z</sub>	11 00 12	Aftershock of #38
41	Feb.23	Mac Mac Mac Mac Mac	eP <sub>Z</sub> eN eS <sub>N</sub> LN M <sub>N</sub> F <sub>N</sub>	23 00 12 23 04 35 23 04 44 23 06 47 23 08 17 23 37 ±	H = 22 <sup>h</sup> 54 <sup>m</sup> 41 <sup>s</sup> Δ <sub>S</sub> - P = 25.6
42	Feb.24	Mac Mac Mac	eP <sub>Z</sub> eN e(S) <sub>N</sub> F	04 29 11 04 29 14 04 33 22 05 28 ±	H = 04 <sup>h</sup> 24 <sup>m</sup> 06 <sup>s</sup> Δ <sub>S</sub> - P = 23.1
43	Feb.28	Mac Mac Mac Mac Mac Mac Mac Mac Mac	(e)? <sub>Z</sub> eN eEN eN eE eE eN eLE eME F	01 08 11 01 12 29 01 18 28 01 19 10 01 19 37 01 21 06 01 22 36 01 35.4 01 40.9 02 35 ±	

Minor Seismic Activity:  
Feb. 2 - 17<sup>h</sup>49<sup>m</sup> to 23<sup>h</sup>35<sup>m</sup>  
7 - 04 50 to 07 00  
17- 02 47 to 04 54  
17- 06 31 to 07 35

Feb. 19 - 09<sup>h</sup>24<sup>m</sup> to 09<sup>h</sup>38<sup>m</sup>  
22 - 17 17 to 17 34  
24 - 00 26 to 00 42

James B. Macelwane, S.J.  
Director

Warren J. Stout  
Graduate Fellow



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Bulletin for March, 1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
44	Mar. 5	Mac Mac Mac	iPNZ iPR1N iSNE F	00 <sup>h</sup> 38 <sup>m</sup> 26 <sup>s</sup> 00 39 38 00 43 56 02 20 ±	Epicenter by J.S.A. 50.5 N., 83.00 W. H = 00 <sup>h</sup> 31 <sup>m</sup> 53 <sup>s</sup> h = 50 ± $\Delta_P - H = 32.8$ $\Delta_{meas} = 33.95$ Surface waves small for quake this deep.
45	Mar. 6	W-A W-A W-A W-A W-A	eN eN iN iN iN FN	20 58 37.1 20 58 38.5 20 58 41.3 20 58 42.1 20 58 42.9 20 59 10 ±	Local shock
46	Mar. 7	Mac Mac Mac	ePZ iPZ iSNE F	03 12 17 03 12 19 03 21 03 05 40 ±	Epicenter by J.S.A. 58.2 N., 166.5 E. H = 03 <sup>h</sup> 01 <sup>m</sup> 45 <sup>s</sup> $\Delta_P - H = 64.5$ $\Delta_{meas} = 64.4$ Possibly deeper than normal
47	Mar. 8	Mac Mac Mac Mac	(e)Z e(S)N eLNE eMNE F	09 35 23 09 39 26 09 41 14 09 42 17 09 57 ±	
48	Mar. 9	W-A W-A W-A W-A	eP1E eS3E eSON eN F	03 27 34 03 28 42 03 29 14 03 29 19 03 30 00 ±	Epicenter by J.S.A. 41.0 N., 81.93 W. H = 03 <sup>h</sup> 25 <sup>m</sup> 25 <sup>s</sup> $\Delta_{S3} = H = 7.0$ Felt in Cleveland and surrounding territory
49	Mar. 9	Mac Mac Mac Mac Mac Mac Mac	(e)Z eEN ePR1EN eFR2EN eSKSEN iPSSEN ePPSEN F	10 03 25 10 07 43 10 08 05 10 10 25 10 14 07 10 17 35 10 18 14 13 55 ±	Epicenter by J.S.A. 61.0 S., 31.2 W. H = 09 <sup>h</sup> 49 <sup>m</sup> 04 <sup>s</sup> $\Delta_{PR1} - H = 110.3$ $\Delta_{PS1} - H = 110.7$ $\Delta_{meas} = 110.0$
50	Mar. 9	W-A W-A	eP <sub>EN</sub> eS <sub>EN</sub> F	15 00 50.3 15 00 53.2 15 01 08 ±	$\Delta = 27$ km.
51	Mar. 11	Mac Mac Mac	eE eE eE F	10 59 28 10 59 34 11 09 06 12 19 ±	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
52	Mar. 13	Mac Mac	(e) <sub>E</sub>	22 <sup>h</sup> 50 <sup>m</sup> 38 <sup>s</sup>	
			e(S) <sub>E</sub>	22 54 18	
			F	23 50 ±	
53	Mar. 14	Mac Mac	e <sub>E</sub>	00 23 24	
			e <sub>E</sub>	01 06 51	
			F <sub>E</sub>	03 50 ±	
54	Mar. 14	Mac	e <sub>E</sub>	17 30 56	Epicenter by J.S.A. 23°0' S., 169°0' E. H = 17 <sup>h</sup> 10 <sup>m</sup> 57 <sup>s</sup> Δ <sub>ps</sub> - H = 112°7' Δ <sub>meas</sub> = 112°1'
		Mac	ep <sub>SE</sub> N	17 39 49	
		Mac	eSR <sub>1</sub> EN	17 46 01	
		Mac	eSR <sub>2</sub> EN	17 50 01	
			F lost in following quake		
55	Mar. 14	Mac	ip <sub>Z</sub>	18 48 04	Epicenter by J.S.A. 18°5' S., 68°3' W. H = 18 <sup>h</sup> 33 <sup>m</sup> 03 <sup>s</sup> h = 120 ±
		Mac	ip <sub>Z</sub>	18 48 33	
		W-A	eS <sub>E</sub>	18 56 12	
		W-A	es <sub>E</sub>	18 57 57	
			F	20 50 ±	
56	Mar. 15	Mac	e <sub>E</sub>	02 49 46	Epicenter by J.S.A. 21° S., 160° E. H = 02 <sup>h</sup> 24 <sup>m</sup> 32 <sup>s</sup> Δ <sub>meas</sub> = 111°
		Mac	e <sub>E</sub>	02 53 10	
		Mac	e <sub>E</sub>	02 53 33	
			F lost in following quake		
57	Mar. 15	Mac	e{PR <sub>1</sub> } <sub>Z</sub>	05 07 36	Epicenter by J.S.A. 10° N., 142° E. Δ <sub>meas</sub> = 112° H = 04 <sup>h</sup> 48 <sup>m</sup> 0 ±
		Mac	e{SR <sub>1</sub> } <sub>N</sub>	05 22 49	
			F	07 11 ±	
58	Mar. 15	Mac	eP <sub>E</sub>	23 12 12	Epicenter by J.S.A. 15°0' S., 177°5' W. H = 22 <sup>h</sup> 59 <sup>m</sup> 17 <sup>s</sup> h = 300 ± km. Δ <sub>p</sub> - H = 95°8' Δ <sub>meas</sub> = 97°0'
		Mac	ep <sub>E</sub>	23 13 27	
		Mac	e <sub>E</sub>	23 16 04	
		Mac	e <sub>E</sub>	23 17 10	
		Mac	iS <sub>NE</sub>	23 22 22	
		Mac	i <sub>N</sub>	23 23 04	
		Mac	i <sub>E</sub>	23 23 09	
		Mac	e <sub>E</sub>	23 24 01	
		Mac	is <sub>E</sub>	23 24 34	
		Mac	e <sub>E</sub>	23 25 04	
		Mac	i <sub>E</sub>	23 25 50	
		Mac	i <sub>E</sub>	23 26 00	
			F	01 40 ±	
59	Mar. 16	Mac	eP <sub>N</sub>	09 56 24	H = 09 <sup>h</sup> 51 <sup>m</sup> 01 <sup>s</sup> h = 80 ± km. Δ <sub>p</sub> - H = 25°4'
		Mac	ep <sub>N</sub>	09 56 40	
		Mac	eS <sub>N</sub>	10 00 47	
		Mac	es <sub>N</sub>	10 01 16	
		Mac	eM <sub>N</sub>	10 05 13	
	F	10 36 ±			

Saint Louis Bulletin for March, 1943

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60	Mar. 17	Mac	iP <sub>Z</sub>	23 <sup>h</sup> 08 <sup>m</sup> 22 <sup>s</sup>	H = 22 <sup>h</sup> 58 <sup>m</sup> 12 <sup>s</sup> h = 180 km. $\Delta_P - H = 64.01$
		Mac	iP <sub>E</sub>	23 08 23	
		Mac	iZ	23 03 36	
		Mac	iS <sub>E</sub>	23 16 58	
		Mac	i <sub>E</sub>	23 17 20	
		Mac	iSS <sub>E</sub>	23 18 14	
		Mac	e <sub>E</sub> F	23 18 35 23 53 ±	
61	Mar. 20	Mac	(e) <sub>E</sub>	05 09 56	
		Mac	e <sub>E</sub>	05 15 28	
		Mac	e <sub>E</sub>	05 23 56	
		Mac	e <sub>E</sub> F	05 24 06 07 26 ±	
62	Mar. 20	W-A	iP <sub>1</sub> NE	16 21 17.8	$\Delta = 79$ km.
		W-A	iS <sub>1</sub> NE	16 21 26.5	
			F	16 22 06 ±	
63	Mar. 21	Mac	e <sub>E</sub>	20 55 55	Epicenter by J.S.A. 6°5' S 151°4' E. H = 20 <sup>h</sup> 35 <sup>m</sup> 50 <sup>s</sup> $\Delta_{SKKS} - H = 115.9$ $\Delta_{meas} = 116.5$
		Mac	e <sub>E</sub>	20 56 44	
		Mac	eSKP <sub>E</sub>	20 57 05	
		Mac	eSKKS <sub>NE</sub>	21 02 34	
		Mac	eS <sub>NE</sub>	21 03 18	
		Mac	e <sub>N</sub>	21 03 44	
		Mac	e <sub>E</sub>	21 04 00	
		Mac	e	21 04 18	
		Mac	ePS <sub>E</sub>	21 05 10	
		Mac	e <sub>E</sub>	21 05 49	
		Mac	ePPS <sub>N</sub>	21 06 34	
		Mac	eSR <sub>1</sub> EN	21 11 29	
			F	23 27 ±	
64	Mar. 26	Mac	eZ	17 51 59	Wellington gives SE of Tonga Apia says felt in Nukualofa
		Mac	iZ	17 52 49	
		Mac	e <sub>E</sub>	17 55 38	
		Mac	e <sub>E</sub>	17 56 01	
		Mac	e <sub>E</sub>	17 56 49	
		Mac	e <sub>E</sub>	17 57 31	
		Mac	e <sub>E</sub>	18 02 27	
		Mac	e <sub>E</sub>	18 03 04	
		Mac	eNE	18 03 33	
		Mac	e <sub>E</sub>	18 04 05	
		Mac	e <sub>E</sub>	18 04 09	
		Mac	e <sub>E</sub>	18 04 17	
		Mac	e <sub>E</sub> F	18 05 00 19 25 ±	
65	Mar. 26	W-A	eP	20 22 08.4	$\Delta = 25$ km.
		W-A	iS <sub>0</sub> EH	20 22 11.6	
		W-A	e <sub>E</sub>	20 22 12.1	
			F	20 22 28 ±	

Saint Louis Bulletin, March, 1943

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66	Mar. 26	W-A	e(P <sub>o</sub> ) E	21 01 47.0	(Δ) = 27 km.
		W-A	eS <sub>o</sub> E	21 01 49.9	
			F	21 02 02 ±	

Minor Seismic Activity:

Mar. 4 -- 10<sup>h</sup>52<sup>m</sup> to 11<sup>h</sup>19<sup>m</sup>  
 9 -- 20 10 to 21 59  
 10 -- 03 59 to 04 26  
 10 -- 08 34 (?) to 11 00 (no timing lines)  
 14 -- 09 46 to 10 09  
 15 -- 01 44 to 02 01  
 15 -- 12 06 to 12 21  
 19 -- 09 01 to 09 30  
 22 -- 08 54 to 10 00  
 25 -- 18 16 to 21 38  
 28 -- 21 16 to 21 21  
 28 -- 22 12 to 22 22  
 29 -- 06 15 to 06 52  
 29 -- 10 53 to 11 13  
 29 -- 23 55 to 00 24  
 30 -- 21 18 to 21 24  
 31 -- 21 59 to 22 30

Microseisms --

March 3 - 9 { weak  
 21 - 24 { very weak  
 31 { weak

James B. Macelwane, S.J.  
Director

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### Bulletin for April, 1943

No	Date	Inst.	Phase	G.M.C.T.	Remarks
67	April	Mac	iPz	14 36 43	
		Mac	eZ	14 36 57	
		Mac	iZ	14 37 52	
		Mac	F	16 40 ±	
68	Apr. 4	Mac	eN	12 35 48	
		Mac	eN	12 39 16	
		Mac	eM <sub>N</sub>	12 47.4	
		Mac	F	13 40 ±	
69	Apr. 5	Mac	ePz	02 17 18	
		Mac	eN	02 20 16	
		Mac	F	10 36 ±	
70	Apr. 5	Mac	eZ	08 29 42	H = 08 <sup>h</sup> 25 <sup>m</sup> 19 <sup>s</sup> ΔS - P = 20°0
		Mac	iPz	08 29 52	
		Mac	eS <sub>N</sub>	08 33 35	
		Mac	iM <sub>N</sub>	08 36 28	
		Mac	F	08 56 ±	
71	Apr. 5	Mac	eE	21 13 05	
		Mac	eE	21 14 58	
		Mac	eE	21 15 18	
		Mac	eE	21 16 36	
		Mac	eE	21 18 44	
		Mac	eE	21 26 32	
		Mac	F	23 17 ±	
April 6 — 16.3 hrs. lost changing records					
72	Apr. 7	Mac	e(P)Z	06 25 00	Aftershock of earthquake of April 6, 1943 (16 hour) which J.S. gives epicenter of 29°8 S., 71°0 W.
		Mac	eZ	06 25 05	
		Mac	eS <sub>E</sub>	06 34 14	
		Mac	eE	06 34 25	
		Mac	F	07 15 ±	
73	Apr. 7	Mac	ePz	08 21 37	Same as above
		Mac	e(S) <sub>E</sub>	08 30 46	
74	Apr. 7	Mac	eP <sub>N</sub>	13 18 23	H = 13 <sup>h</sup> 07 <sup>m</sup> 18 <sup>s</sup> h = 100 ± Δ = 71°0 Aftershock of earthquake of April 6, 1943 (16 hr.)
		Mac	eP <sub>E</sub>	13 18 42	
		Mac	eZ	13 19 21	
		Mac	e(S) <sub>E</sub>	13 27 39	
		Mac	e(S) <sub>E</sub>	13 27 42	
		Mac	iS <sub>E</sub>	13 28 06	
Mac	F	15 45 ±			

## Saint Louis Bulletin, April, 1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
75	Apr. 7	W-A	iP <sub>o</sub> N	17 10 11.6	Δ = 25 km.
		W-A	i <sub>N</sub>	17 10 12.8	
		W-A	iS <sub>o</sub> E	17 10 14.3	
		W-A	i <sub>E</sub>	17 10 15.8	
			F	17 10 52 ±	
76	Apr. 7	Mac	iP <sub>Z</sub> F	18 12 07 18 16 ±	
77	Apr. 7	Mac	iP <sub>Z</sub> N	23 29 15	Aftershock of earthquake of April 6, 1943, (16 hour)
		Mac	e <sub>N</sub>	23 29 24	
		Mac	iP <sub>P</sub> Z	23 29 27	
		Mac	iS <sub>E</sub>	23 38 33	
		Mac	i <sub>E</sub>	23 38 44	
		Mac	e <sub>N</sub>	23 38 48	
		Mac	e <sub>N</sub>	23 38 57	
		Mac	e <sub>N</sub>	23 38 59	
		Mac	e <sub>N</sub>	23 39 06	
		Mac	eSR <sub>1</sub> N	23 43 20	
		Mac	e <sub>N</sub>	23 44 32	
		F	02 23 ±		
78	Apr. 9	Mac	e(P) <sub>Z</sub>	09 02 48	Epicenter by J.S.A. 15°7 N., 141°9 E. H = 08 43 42 h = 210 ± km. Δ <sub>PR<sub>1</sub></sub> - H = 106°5 Δ <sub>meas</sub> = 107°2
		Mac	iPR <sub>1</sub> Z	09 06 55	
		Mac	epPR <sub>1</sub> N	09 07 37	
		W-A	i(SKS) <sub>E</sub>	09 13 06	
		Mac	e(SKKS) <sub>NE</sub>	09 14 08	
		Mac	iS <sub>NE</sub>	09 14 19	
		Mac	es <sub>SE</sub>	09 15 57	
		Mac	e <sub>E</sub>	09 21 09	
			F	12 10 ±	
79	Apr. 12	Mac	i <sub>Z</sub>	19 56 41	
		Mac	e <sub>E</sub>	19 07 24	
		Mac	e <sub>E</sub>	19 07 29	
		Mac	e <sub>E</sub>	19 09 08	
		Mac	e <sub>E</sub> F	19 13 45 21 30 ±	
80	Apr. 13	Mac	e(P) <sub>Z</sub>	09 07 27	
		Mac	e(S) <sub>E</sub>	09 15 28	
		Mac	e <sub>E</sub>	09 17 14	
			F	09 44 ±	
81	Apr. 13	W-A	eP <sub>o</sub> N	19 14 07.6	Δ = 35 km.
		W-A	e <sub>N</sub>	19 14 09.0	
		W-A	eS <sub>o</sub> N	19 14 11.3	
		W-A	e <sub>N</sub>	19 14 14.1	
			F	19 14 33 ±	
82	Apr. 15	Mac	iP <sub>Z</sub>	10 58 19	
		Mac	eS <sub>N</sub>	11 07 17	
			F	11 20 ±	

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No.	Date	Inst.	Phase	G.M.C.T.	Remarks
83	Apr. 15	Mac	iPZ	11 46 08	H = 11 <sup>h</sup> 34 <sup>m</sup> 39 <sup>s</sup> h = 250 ± km. Δ = 760
		Mac	eP <sub>o</sub> PN	11 46 23	
		Mac	epPN	11 47 00	
		Mac	iS <sub>NE</sub>	11 55 30	
		Mac	eS <sub>PE</sub>	11 56 07	
		Mac	iN <sub>SE</sub>	11 56 24	
		Mac	es <sub>SE</sub> F	11 57 23 14 28 ±	
84	Apr. 15	Mac	ePZ	14 39 58	
		Mac	eZ	14 40 50	
		Mac	eN	14 46 40	
		Mac	eN	14 46 56	
		Mac	eE	14 49 44	
		Mac	F	15 12 ±	
85	Apr. 15	Mac	eZ	17 34 36	
		Mac	eN	17 38 15	
		Mac	eN	17 52 22	
		Mac	eE	17 52 33	
		Mac	F	18 13 ±	
86	Apr. 19	Mac	iPNEZ	01 24 15	H = 01 <sup>h</sup> 19 <sup>m</sup> 14 <sup>s</sup> Δ <sub>S-P</sub> = 2206
		Mac	iZ	01 24 29	
		Mac	iS <sub>E</sub>	01 28 22	
		Mac	F	01 58 ±	
87	Apr. 19	W-A	iP <sub>o</sub> N	21 35 37.4	Δ = 36 km.
		W-A	iN	21 35 38.9	
		W-A	iS <sub>o</sub> N	21 35 41.2	
		W-A	iN	21 35 44.1	
		W-A	F	21 36 16 ±	
88	Apr. 23	Mac	ePZ	18 18 11	
		Mac	e(S)NZ F	18 26 30 18 58 ±	
89	Apr. 23	W-A	eP <sub>o</sub> N	21 05 53.4	Δ = 33 km.
		W-A	iS <sub>c</sub> N	21 05 56.5	
		W-A	iN	21 05 57.1	
		W-A	eMN	21 06 01.4	
		W-A	F	21 06 03 ±	
90	Apr. 23	W-A	e(P <sub>o</sub> )N	21 23 45.1	Δ = 37 km.
		W-A	eS <sub>o</sub> N F	21 23 48.7 21 23 59 ±	
91	Apr. 24	W-A	iP <sub>o</sub> N	17 00 56.2	Δ = 21 km. Rather strong
		W-A	iN	17 00 57.4	
		W-A	eE	17 00 58.9	
		W-A	iS <sub>o</sub> E	17 00 59.6	
		W-A	iE	17 01 00.2	
		W-A	F	17 01 34 ±	
		W-A			

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No.	Date	Inst.	Phase	G.M.C.T.	Remarks
92	Apr. 27	W-A W-A	eP <sub>o</sub> N eS <sub>o</sub> N F	22 01 11.8 22 01 13.7 22 01 18 ±	Δ = 19 km.
93	Apr. 28	Mac Mac Mac	e(P)z eN eN F	17 31 15 17 32 54 17 37 24 17 55 ±	
94	Apr. 29	Mac Mac Mac Mac	ePz eZ iE iE F	14 37 10 14 37 31 14 47 22 14 47 56 16 07 +	
95	Apr. 29	Mac	eP F	21 06 19 21 08	

Minor Seismic Activity

April 2	-- 23 <sup>h</sup> 04 <sup>m</sup>	to	23 <sup>h</sup> 22 <sup>mm</sup>	April 16	-- 12 <sup>h</sup> 13 <sup>m</sup>	to	12 <sup>h</sup> 28 <sup>m</sup>
6	-- lost		21 30	16	-- 17 22	to	18 06
9	-- 20 35	to	20 46	17	-- 00 55	to	01 08
10	-- 03 18	to	03 46	17	-- 03 35	to	04 11
11	-- lost		17 24	19	-- 11 30	to	11 43
12	-- 05 03	to	05 53	24	-- 22 09	to	22 16
13	-- 13 21	to	13 53	26	-- 01 54	to	02 42
15	-- 21 45	to	21 44	29	-- 00 06	to	01 24

James B. Macelwane, S. J.  
Director

Warren J. Stout  
Graduate Fellow

# 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

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### Bulletin for May, 1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
96	May 1	Mac Mac	e <sub>N</sub> e <sub>E</sub> F	17 01 30 17 11 38 18 04 ±	
97	May 1	W-A W-A W-A	(e) <sub>N</sub> e(P) <sub>N</sub> S <sub>N</sub> F	20 25 44.5 20 25 46.1 20 25 49.0 20 26 11 ±	Local shock
98	May 2	Mac Mac Mac Mac Mac Mac Mac	iP <sub>Z</sub> iP <sub>NE</sub> iP <sub>1Z</sub> iS <sub>E</sub> iS <sub>N</sub> iSR <sub>1N</sub> iSR <sub>2N</sub> F	17 24 40 17 25 02 17 25 44 17 29 53 17 30 33 17 32 02 17 32 30 21 10 ±	Epicenter by J.S.A. 7.0 N. 80.1 W. H = 17 <sup>h</sup> 18 <sup>m</sup> 13 <sup>s</sup> h = 100 km. ΔS - P = 32.7 ΔP - H = 32.7 Δ <sub>meas</sub> = 32.7
99	May 3	Mac Mac Mac Mac	iP' <sub>Z</sub> iP <sub>1EZ</sub> iSK <sub>NE</sub> i <sub>NE</sub> F	02 18 05 02 19 27 02 25 02 02 25 17 05 35 ±	Epicenter by J.S.A. 11.8 N., 123.0 E. H = 01 <sup>h</sup> 59 <sup>m</sup> 11 <sup>s</sup> ΔP' - H = 121.5 Δ <sub>meas</sub> = 121.6
100	May 3	Mac Mac Mac Mac	iP <sub>Z</sub> eS <sub>E</sub> e <sub>E</sub> e <sub>N</sub> F	10 21 54 10 25 40 10 26 10 10 26 44 10 43 ±	H = 10 <sup>h</sup> 17 <sup>m</sup> 17 <sup>s</sup> ΔS - P = 20.3
101	May 3	W-A W-A	e(P) <sub>N</sub> eS <sub>N</sub> F	20 45 14.2 20 45 18.0 20 45 32 ±	Local shock
102	May 5	Mac Mac Mac	e(S) <sub>N</sub> L <sub>N</sub> M <sub>N</sub> F	16 51 04 16 52.9 16 53.6 17 07 ±	
103	May 7	Mac	iP <sub>Z</sub> F	20 35 44 21 40	
104	May 11	W-A	eS <sub>N</sub> F	17 36 16.3 17 36 24 ±	Local shock
105	May 12	Mac Mac	e <sub>N</sub> e <sub>N</sub> F	08 47 46 08 49 35 09 08 ±	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
106	May 13	Mac	(e)E	23 <sup>h</sup> 24 <sup>m</sup> 35 <sup>s</sup>	
		Mac	(e)E	23 34 26	
		Mac	eLE	23 38.5	
		Mac	eME	23 40.2	
			F	00 02 ±	
107	May 17	Mac	eZ	06 54 49	
		Mac	eE	07 00 46	
			F	07 25 ±	
108	May 20	W-A	ePN	22 06 21	$\Delta \cong 20$ km.
		W-A	eSN	22 06 23	
			F	22 06 33 ±	
109	May 21	Mac	eE	07 43 54	
		Mac	eE	07 46 25	
			F	08 15 ±	
110	May 22	Mac	iPZ	09 13 16	$H = 09^h 02^m 08^s$ $\Delta S - P = 70^{\circ} 0$
		Mac	i(P)Z	09 13 25	
		Mac	iSNE	09 22 30	
		Mac	eSR1E	09 27 16	
			F	10 48 ±	
111	May 24	W-A	eN	00 10 39.4	Local shock
		W-A	eSN	00 10 41.9	
			F	00 10 54 ±	
112	May 24	W-A	iPN	19 33 38.8	$\Delta = 8$ km.
		W-A	iSE	19 33 50.2	
			F	19 34 30 ±	
113	May 25	Mac	e(P)Z	23 23 17	Epicenter by J.S.A. 7° N., 127° E. $H = 23^h 07^m 57^s$ $\Delta P - H = 124^{\circ}$ $\Delta S - P = 123^{\circ}$ $\Delta_{meas} = 123^{\circ}$
		Mac	iP'Z	23 26 34	
		Mac	ePR1E	23 28 03	
		Mac	iSKPE	23 29 42	
		Mac	e(S)N	23 36 10	
		Mac	iPSE	23 37 55	
			F	04 24 ±	
114	May 26	Mac	iPZEN	10 36 54	Epicenter by J.S.A. 15° 5' N., 106° 6' W. $H = 10^h 31^m 12^s$ $\Delta P - H = 26^{\circ} 7$ $\Delta_{meas} = 27^{\circ} 0$
		Mac	iSNE	10 41 20	
		Mac	iME	10 44 38	
			F	12 33 ±	
115	May 26	W-A	(e)N	20 32 38.6	Local shock
		W-A	iSN	20 32 43.2	
		W-A	iN	20 32 45.0	
			F	20 32 53 ±	
116	May 27	Mac	e(P)Z	11 03 58	
		Mac	e(S)N	11 06 25	
			e(S)E	11 06 30	
			F	11 21	

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No	Date	Inst.	Phase	G.M.C.T.	Remarks
117	May 27	Mac Mac	e(P)Z e(S)NE F	15 <sup>h</sup> 12 <sup>m</sup> 26 <sup>s</sup> 15 16 55 15 40 ±	
118	May 27	W-A W-A	eP <sub>o</sub> N eS <sub>o</sub> N F	21 39 36.3 21 39 39.1 21 39 52 ±	Δ = 26 km.

Minor Seismic Activity:

May 1 --- 17<sup>h</sup>01<sup>m</sup> to 18<sup>h</sup>04<sup>m</sup>  
 2 --- 05 12 to 05 09  
 2 --- 06 44 to 06 51  
 3 --- 17 03 to 18 27  
 7 --- 09 06 to 09 44  
 8 --- 06 32 to 06 40  
 10 --- 11 54 to 12 28

May 17 --- 16<sup>h</sup>32<sup>m</sup> to 17<sup>h</sup>12<sup>m</sup>  
 17 --- 20 52 to 21 08  
 18 --- 05 24 to 07 14  
 24 --- 03 20 to 03 51  
 28 --- 00 55 to 01 14  
 31 --- 03 04 to 03 21

James B. Macelwane, S.J.  
 Director

Warren J. Stout  
 Graduate Fellow

# 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

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Bulletin for June, 1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
119	June 1	Mac	ePZ	04 <sup>h</sup> 20 <sup>m</sup> 35 <sup>s</sup>	H = 04 <sup>h</sup> 15 <sup>m</sup> 14 <sup>s</sup> ΔS - P = 24.6
		Mac	eS <sub>E</sub>	04 24 59	
		Mac	eE	04 26 01	
		Mac	eE	04 26 14	
		Mac	eE	04 26 40	
		Mac	LE	04 27 15	
		Mac	ME F	04 28 11 05 24 ±	
120	June 1	Mac	i(P)Z	16 16 20	
		Mac	e(S) <sub>N</sub> F	16 20 35 16 55 ±	
121	June 2	Mac	eZ	05 29 05	H = 05 <sup>h</sup> 24 <sup>m</sup> 12 <sup>s</sup> Δ(S - P) = 21.8
		Mac	iPZ	05 29 07	
		Mac	iS <sub>E</sub> F	05 33 07 06 05	
122	June 3	Mac	eZ	20 07 04	Weak
		Mac	i(P)Z	20 07 07	
		Mac	eE F	20 17 43 23 36 ±	
123	June 7	Mac	eZ	19 00 06	Weak
		Mac	e(S) <sub>N</sub> F	19 04 21 19 23 ±	
124	June 7	Mac	eZ	23 39 34	F lost in following quake. Phases not distinct.
		Mac	iZ	23 39 45	
		Mac	eN	23 43 25	
		Mac	eN	00 03 59	
125	June 8	Mac	(e)Z	01 23 25	Phases not distinct and mashed by pred preceding quake.
		Mac	iZ	01 23 44	
		Mac	iZ	01 23 47	
		Mac	eN	01 30 01	
		Mac	eN	01 33 18	
		Mac	F <sub>N</sub>	02 34 ±	
126	June 8	W-A	ePoN	20 49 55.8	Δ = 12 km. Felt in Webster Groves, Missouri
		W-A	iS <sub>O</sub> E F	20 49 57.1 20 50 11 ±	
127	June 8	Mac	eZ	21 02 10	Epicenter region by J. S.A. 5° S, 102.5° H = 20 <sup>h</sup> 42 <sup>m</sup> 52 <sup>s</sup> Δ <sub>meas</sub> = 145.3
		Mac	iP'Z	21 02 24	
		Mac	eN	21 22 23	
		Mac	eSR <sub>1</sub> N F	21 24 55 00 38 ±	



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No.	Date	Inst.	Phase	G.M.C.T.	Remarks
128	June 9	Mac Mac	e(P') <sub>Z</sub> e(PR <sub>1</sub> ) <sub>N</sub> F	03 <sup>h</sup> 25 <sup>m</sup> 52 <sup>s</sup> 03 28 51 06 30 ±	Probably aftershock of #127
129	June 13	Mac Mac Mac Mac Mac Mac Mac Mac	iP <sub>Z</sub> iZ ePR <sub>1</sub> Z iZ eE eSKS <sub>E</sub> eS <sub>E</sub> iSKKS <sub>E</sub>	05 24 24 05 24 47 05 27 45 05 28 06 05 34 06 05 34 38 05 35 06 05 35 12	Epicenter by J.S.A. 42°0' N., 145° E. H = 05 <sup>h</sup> 11 <sup>m</sup> 52 <sup>s</sup> Δ P - H = 84.9 Δ <sub>meas</sub> = 85.8 05 24 47 may be P of of a second shock. F lost in aftershock.
130	June 13	Mac Mac	iP <sub>Z</sub> iS <sub>E</sub>	06 10 56 06 21 10	Aftershock of #129 F lost in following quake.
131	June 13	Mac Mac	iP <sub>Z</sub> iS <sub>E</sub>	08 28 44 08 39 19	Aftershock of #129 F lost in following quake
132	June 13	Mac Mac Mac Mac Mac	iP <sub>Z</sub> i(SKS) <sub>E</sub> iS <sub>E</sub> i <sub>E</sub> eSR <sub>1</sub> E F	08 49 41 09 00 05 09 00 17 09 00 42 09 06 03 11 05 ±	Aftershock of #129
133	June 13	Mac Mac	eP <sub>Z</sub> eS <sub>E</sub> F	16 36 06 16 46 41 17 36 ±	Aftershock of #129
134	June 13	Mac Mac Mac	eP <sub>Z</sub> e(SKS) <sub>E</sub> eS <sub>E</sub> F	17 52 00 18 02 22 18 02 34 19 37 ±	Aftershock of #129
135	June 14	Mac Mac Mac Mac	iP <sub>Z</sub> eE e(SKS) <sub>E</sub> eS <sub>E</sub>	16 35 05 16 44 58 16 45 30 16 45 41	Aftershock of #129 F lost in following quake.
136	June 14	W-A Mac Mac Mac Mac Mac	e(P) <sub>N</sub> eE e(S) <sub>E</sub> eL <sub>E</sub> iZ iM <sub>E</sub> F	17 28 23 17 28 28 17 32 19 17 34.0 17 27 49 17 27 57 18 17 ±	

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No.	Date	Inst.	Phase	G.M.C.T.	Remarks
137	June 15	Mac W-A Mac W-A Mac Mac	iPZ eN iS <sub>E</sub> eN eE iE F	11 23 28 11 23 46 11 33 51 11 34 05 11 39 38 11 39 53 13 37	Aftershock #129
138	June 15	Mac W-A Mac W-A	iPZ e(P) <sub>N</sub> i(S) <sub>N</sub> eS <sub>N</sub>	18 26 59 18 27 22 18 27 38 18 31 26	Epicenter region by J.S.A. 13° 7' N. 93° 1' W H = 18h 21m 36s $\Delta_S - P = 25^{\circ} 00$ $\Delta_P - H = 24^{\circ} 08$ $\Delta_{\text{meas}} = 25^{\circ} 1$ F lost in following quake.
139	June 15	W-A W-A Mac W-A W-A	iP <sub>1</sub> N iP <sub>0</sub> N iS <sub>Z</sub> iS <sub>0</sub> NE i <sub>N</sub> F	19 41 12.4 19 41 13.5 19 41 15.7 19 41 16.5 19 41 17.6 19 42 00 ±	$\Delta = 37$ km.
140	June 15	Mac W-A	iPZ eS <sub>N</sub>	19 50 40 19 55 07	Aftershock of #138 F lost in following quake
141	June 15	Mac W-A W-A	iPZ eS <sub>E</sub> eE	20 30 57 20 35 18 20 35 39	Aftershock of #138
142	June 15	Mac W-A	iPZ iS <sub>E</sub> F <sub>E</sub>	22 11 30 22 15 35 22 25 ±	$\Delta_S - P = 22^{\circ} 4$ Doubtful aftershock of #138.
143	June 18	Mac Mac	e(P) <sub>N</sub> e(S) <sub>N</sub> F	14 15 10 14 19 35 14 57 ±	
144	June 18	W-A W-A W-A W-A W-A	iP <sub>0</sub> N iS <sub>0</sub> E iE iE iM <sub>N</sub> F	20 34 24.4 20 34 27.7 20 34 28.1 20 34 28.6 20 34 33.2 20 34 50 ±	
145	June 19	W-A W-A W-A	iP <sub>0</sub> N iS <sub>0</sub> E iN F	21 18 16.3 21 18 18.0 21 18 18.8 21 18 35 ±	$\Delta = 16$ km.

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No.	Date	Inst.	Phase	G.M.C.T.	Remarks
146	June 20	Mac Mac Mac Mac	iPZ eSKSEN eSE iN	15 <sup>h</sup> 45 <sup>m</sup> 26 <sup>s</sup> 15 55 50 15 56 11 15 56 40	$\Delta$ SKS - P = 93.3 F lost in following quake
147	June 20	Mac Mac Mac Mac	iPZ eW e(SKS) <sub>N</sub> e <sub>F</sub> N	17 52 20 18 02 36 18 02 50 18 02 57 20 02 ±	
148	June 20	W-A W-A	iP <sub>ON</sub> iS <sub>o</sub> N F	19 15 43.1 19 15 45.6 19 16 00 ±	$\Delta = 27$ km.
149	June 23	Mac Mac	eE e <sub>F</sub>	17 38 20 17 38 44 17 49 ±	
150	June 24	Mac Mac Mac	(e) <sub>N</sub> e <sub>N</sub> e <sub>F</sub>	20 43 08 21 47 46 21 49 06 21 44 ±	
151	June 28	Mac Mac	e(P) <sub>Z</sub> e(S) <sub>N</sub> F	15 15 05 15 23 15 17 02 ±	
152	June 29	Mac Mac Mac Mac	e(P) <sub>Z</sub> eE eE e <sub>F</sub>	09 23 42 09 30 32 09 42 29 09 45 11 11 03 ±	
153	June 30	Mac Mac Mac	iZ iZ iE	11 07 12 11 07 22 11 10 54	F lost in following quake
154	June 30	Mac Mac	iZ iZ	11 09 56 11 10 05	F lost in following quake.
155	June 30	Mac	iZ F	11 18 58 12 26 ±	
156	June 30	Mac Mac Mac Mac Mac Mac	iP <sub>NZ</sub> ep <sub>PZ</sub> PR <sub>1Z</sub> iS <sub>EZN</sub> es <sub>SE</sub> eSR <sub>1N</sub> F	20 22 31 20 22 53 20 24 42 20 30 11 20 30 53 20 34 05 21 03 ±	Epicenter by J.S.A. 13°9' S, 72°6' W. H = 20 <sup>h</sup> 13 <sup>m</sup> 10 <sup>s</sup> h = 100 km. $\Delta$ P - H = 55.1 $\Delta$ S - P = 55.2 $\Delta$ meas = 55.1

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## Minor Seismic Activity:

June 2	--	03 <sup>h</sup> 45 <sup>m</sup>	to	04 <sup>h</sup> 10 <sup>m</sup>
3	--	12 35	to	13 23
4	--	23 17	to	23 46
6	--	01 27	to	01 35
11	--	09 01	to	09 54
14	--	02 42	to	05 03
16	--	07 40	to	08 41
18	--	17 07	to	17 50
19	--	09 31	to	09 55
21	--	10 34	to	11 20
23	--	23 04	to	23 29
25	--	05 02	to	05 11
25	--	19 35	to	21 03
26	--	05 03	to	05 13
27	--	16 58	to	18 33
28	--	03 05	to	04 40
29	--	09 25	to	11 03

James B. Macelwane, S.J.  
Director

Warren J. Stout  
Graduate Fellow



# SAINT LOUIS UNIVERSITY

## INSTITUTE OF GEOPHYSICAL TECHNOLOGY

3621 OLIVE STREET, SAINT LOUIS 8, MO., U. S. A.

### SEISMOLOGICAL BULLETIN



#### SAINT LOUIS STATION

Latitude: geographical,  $38^{\circ} 38' 10''$  N., geocentric,  $38^{\circ} 27' N.$

Longitude:  $90^{\circ} 14' 10''$  W. Altitude:  $h = 161m$ ,  $H+h = 4$  km.

Lithologic foundation: Mississippian limestone

Seismographs: Wood-Anderson short period EN;  
Macelwane-Sprengnether Z; Sprengnether NE.

Clock: Wiechert

21.

Bulletin for July, 1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
157	July 3	Mac	eP <sub>Z</sub>	21 <sup>h</sup> 08 <sup>m</sup> 06 <sup>s</sup>	May be slightly deeper than normal
		Mac	e <sub>Z</sub>	21 08 12	
		Mac	e(S) <sub>E</sub>	21 14 20	
		Mac	e <sub>E</sub>	21 16 57	
		Mac	eL <sub>E</sub>	21 19 42	
		Mac	F	21 45.0	
158	July 4	Mac	eP <sub>Z</sub>	09 58 06	11 <sup>o</sup> 3 N., 84 <sup>o</sup> 5 W. H = 09 <sup>h</sup> 52 <sup>m</sup> 10 <sup>s</sup> $\Delta P-H = 28^{\circ}2$ $\Delta_{meas} = 28^{\circ}0$
		Mac	eS <sub>E</sub>	10 02 54	
		Mac	iL <sub>E</sub>	10 05 16	
		Mac	F	11 49.5	
159	July 4	Mac	eP <sub>Z</sub>	18 10 58	Lesser Antilles
		Mac	eS <sub>N</sub>	18 17 02	
		Mac	F <sub>N</sub>	18 50.5	
160	July 5	Mac	iP <sub>Z</sub>	21 17 32	16 <sup>o</sup> 6 S., 74 <sup>o</sup> 0 W. H = 21 <sup>h</sup> 07 <sup>m</sup> 58 <sup>s</sup> h = 100 Km $\Delta P-H = 57^{\circ}0$ $\Delta_{meas} = 57^{\circ}0$
		Mac	iS <sub>E</sub>	21 25 24	
		Mac	iScS <sub>E</sub>	21 27 17	
		Mac	F	23 16.0	
161	July 6	Mac	iP <sub>Z</sub>	09 49 43	15 <sup>o</sup> 4 S., 69 <sup>o</sup> 2 W. H = 09 <sup>h</sup> 40 <sup>m</sup> 08 <sup>s</sup> h = 130 km $\Delta P-H = 57^{\circ}7$ meas 57 <sup>o</sup> 4
		Mac	ipP <sub>Z</sub>	09 50 21	
		Mac	eS <sub>E</sub>	09 57 33	
		Mac	esS <sub>E</sub>	09 58 39	
		Mac	F	10 23.0	
162	July 6	Mac	(e) <sub>Z</sub>	13 21 18	32 <sup>o</sup> 4 N., 41 <sup>o</sup> 6 W. H = 13 <sup>h</sup> 13 <sup>m</sup> 52 <sup>s</sup> $\Delta P-H = 39^{\circ}8$ $\Delta_{meas} = 39^{\circ}8$
		Mac	eP <sub>Z</sub>	13 21 26	
		Mac	eS <sub>Z</sub>	13 27 42	
		Mac	e <sub>E</sub>	14 00	
		Mac	F		

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
163	July 6	W-A Mac	eM F	22 <sup>h</sup> 14 <sup>m</sup> 30.5 <sup>s</sup> 22 27.0	Epicenter by NESAs: 44°9' N., 73°2' W. West of Swanton, Vermont
164	July 8	Mac Mac Mac Mac	eE iZ eLE F	15 05 10 15 16 53 15 18 42 16 43.0	
165	July 9	Mac Mac	eLE F	03 17 58 03 46.0	
166	July 9	Mac Mac	iPZ eS F	23 37 48 23 45 17 23 54.0	52°9' N., 166°5' W. H = 23 <sup>h</sup> 28 <sup>m</sup> 37 <sup>s</sup> $\Delta$ P-H = 52°5' $\Delta$ meas = 52°6'
167	July 11	Mac Mac Mac Mac Mac Mac Mac Mac Mac	eE epPE iPRIZ epPRIZ e(S)E i(sSP)E e(PPS)E eLE F	02 44 38 02 25 17 02 29 04 02 29 45 02 36 49 02 39 06 02 39 42 02 58 38 05 58.5	32°7' S., 178°6' W. H = 02 <sup>h</sup> 10 <sup>m</sup> 32 <sup>s</sup> h = 180 <sup>±</sup> km $\Delta$ PR <sub>1</sub> -H = 108°4' $\Delta$ meas = 108°3'
168	July 12	Mac Mac Mac	eZ e(L)N F	08 33 20 08 50 16 09 31.0	
169	July 14	Mac Mac	eLN F	10 55.5 11 11.0	
170	July 14	Mac Mac	eLN F	20 29 28 21 28.0	
171	July 15	Mac Mac	eLN F	00 32 28 00 47.0	
172	July 15	Mac Mac Mac Mac Mac Mac Mac	ePZ eZ ePRIZ e(S)N eLE eN F	12 28 22 12 28 43 12 28 54 12 32 45 12 34 50 12 35 36 13 08.5	Lesser Antilles
173	July 15	Mac	eZ	21 56 56	
174	July 16	Mac Mac Mac Mac Mac Mac	ePZ eSZ e(PS)E eSR <sub>1</sub> E eLE F	01 32 44 01 43 16 01 43 47 01 49 06 02 00.0 02 18.5	Japan

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
175	July 16	Mac	iP <sub>Z</sub>	16 <sup>h</sup> 02 <sup>m</sup> 52 <sup>s</sup>	Probably in Guatemala Deep
		Mac	ipP <sub>Z</sub>	16 03 35	
		Mac	eS <sub>E</sub>	16 06 57	
		Mac	esS <sub>E</sub>	16 08 11	
		Mac	F	16 24.0	
176	July 17	Mac	eL <sub>N</sub>	06 01 45	
		Mac	F <sub>N</sub>	06 05.0	
177	July 18	Mac	eP <sub>Z</sub>	08 05 38	Epicentral Region: 21°7 S., 70°7 W. H = 07 <sup>h</sup> 55 <sup>m</sup> 18 <sup>s</sup> May be slightly deeper than normal. $\Delta P-H = 62^{\circ}7$ $\Delta_{meas} = 62^{\circ}8$
		Mac	e <sub>Z</sub>	08 05 47	
		Mac	eS <sub>E</sub>	08 14 08	
		Mac	eE	08 14 25	
		Mac	F	09 24.0	
178	July 19	Mac	eP <sub>Z</sub>	11 15 02	12°6 N., 86°9 W. H = 11 <sup>h</sup> 09 <sup>m</sup> 30 <sup>s</sup> $\Delta P-H = 25^{\circ}7$ $\Delta_{meas} = 25^{\circ}7$
		Mac	e <sub>Z</sub>	11 15 20	
		Mac	e(PR <sub>1</sub> ) <sub>Z</sub>	11 15 25	
		Mac	eS <sub>N</sub>	11 19 35	
		Mac	eL <sub>E</sub>	11 20 17	
		Mac	F	11 40.0	
179	July 19	Mac	e <sub>Z</sub>	22 54 26	
		Mac	e <sub>Z</sub>	22 54 40	
		Mac	e <sub>Z</sub>	22 58 26	
		Mac	e <sub>N</sub>	23 00.0	
		Mac	F		
180	July 20	Mac	iP <sub>Z</sub>	06 56 01	
181	July 21	Mac	eP <sub>Z</sub>	04 25 34	Epicentral Region: 37°S., 110°W. H = 04 <sup>h</sup> 13.7 <sup>m</sup>
		Mac	ipP <sub>Z</sub>	04 25 38	
		Mac	iS <sub>E</sub>	04 35 26	
		Mac	eSR <sub>1E</sub>	04 40 21	
		Mac	e	04 46 27	
		Mac	F	06 50.0	
182	July 21	Mac	iP <sub>Z</sub>	22 50 33	Ecuador
		Mac	e(S) <sub>M</sub>	22 56 41	
		Mac	eSR <sub>2</sub> ) <sub>E</sub>	22 59 30	
		Mac	F	23 20.0	
183	July 22	Mac	iP <sub>Z</sub>	02 16 52	C°7 S., 81°3 W. H = 02 <sup>h</sup> 09 <sup>m</sup> 23 <sup>s</sup> $\Delta P-H = 39^{\circ}2$ $\Delta_{meas} = 39^{\circ}7$
		Mac	ePR <sub>Z</sub>	02 18 29	
		Mac	eS <sup>2N</sup>	02 22 53	
		Mac	eSR <sub>2E</sub>	02 25 57	
		Mac	F	02 55.0	
184	July 22	Mac	e(P) <sub>Z</sub>	07 21 39	
		Mac	eL <sub>E</sub>	07 50.0	
		Mac	F	08 07.0	
185	July 23	Mac	eL <sub>E</sub>	07 57.0	

## SAINT LOUIS STATION BULLETIN FOR JULY, 1953

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
186	July 23	Mac	iPz	15 <sup>h</sup> 12 <sup>m</sup> 38 <sup>s</sup>	7°05', 111°3 E. H = 11 <sup>h</sup> 53 <sup>m</sup> 22 <sup>s</sup> h = 120 km $\Delta P-H = 113^{\circ}5$ $\Delta_{meas} = 113^{\circ}5$
		Mac	ipPN	15 13 18	
		Mac	iPR1N	15 15 57	
		Mac	iSKP1z	15 16 15	
		Mac	iSKP2E	15 16 40	
		Mac	iPR2N	15 19 10	
		Mac	iSKSE	15 19 55	
		Mac	iSKKSE	15 22 46	
		Mac	i(S)N	15 24 24	
		Mac	F	18 43.0	
187	July 24	Mac	ePz	23 34 45	Central America?
		Mac	eSE	23 38 50	
		Mac	eLE	23 40 49	
		Mac	F	23 57.0	
188	July 25	W-A	eP1E	06 49 27.0	38°05' N., 91°3' W. H = 06 <sup>h</sup> 49 <sup>m</sup> 09 <sup>s</sup> .5 $\Delta S_1-P_1 = 69^{\circ}5$ miles $\Delta_{meas} = 69^{\circ}4$ miles Southeast of Cuba, Mo.
		W-A	eN	06 49 27.4	
		W-A	iS1E	06 49 39.2	
		W-A	iN	06 49 40.3	
		W-A	iN	06 49 41.0	
189	July 26	Mac	(e) z	02 27 12	
		Mac	e z	02 27 21	
		Mac	eS N	02 32 49	
		Mac	eL N	02 38 18	
		Mac	F	02 53.0	
190	July 28	Mac	eP z	04 12 34	59°6' N., 119°0' W. H = 04 <sup>h</sup> 10 <sup>m</sup> 43 <sup>s</sup> May be slightly deeper than normal $\Delta P-H = 4290$ $\Delta_{meas} = 4199$
		Mac	e z	04 12 37	
		Mac	e z	04 12 45	
		Mac	e(PR1) z	04 14 11	
		Mac	eSE	04 18 54	
		Mac	e(SR1) E	04 22 00	
		Mac	e <sub>E</sub>	04 28 00	
		Mac	F	05 02.0	
191	July 29	Mac	ePz	03 08 08	18°7' N., 66°9' W. H = 03 <sup>h</sup> 02 <sup>m</sup> 15 <sup>s</sup> $\Delta P-H = 27^{\circ}8$ $\Delta_{meas} = 28^{\circ}1$
		Mac	iPz	03 08 13	
		W-A	iN	03 08 32	
		W-A	iPR1N	03 08 50	
		W-A	iN	03 09 44	
		W-A	iN	03 09 50	
		W-A	iN	03 10 14	
		W-A	iN	03 10 21	
		W-A	iN	03 10 27	
		W-A	iSE	03 12 52	
		W-A	iE	03 13 30	
		W-A	iN	03 14 54	
		W-A	iN	03 14 58	
		W-A	iN	03 15 04	
		W-A	iN	03 15 08	
		W-A	iLN	03 15 45	
W-A	F	06 30.0			





No.	Date	Inst.	Phase	G.M.C.T.	Remarks
192	July 29	Mac Mac	ePz eSz	06 26 33 06 31 00	Aftershock of No. 191
193	July 29	Mac Mac Mac Mac Mac	ePz iz ez ez ez	11 48 35 11 49 10 11 53 51 11 53 54 11 53 58	Aftershock of No. 191
194	July 29	Mac Mac Mac Mac	ePz iz iz ez	18 11 49 18 11 53 18 12 50 18 13 41	Aftershock of No. 191
195	July 30	Mac Mac Mac W-A W-A Mac W-A W-A Mac W-A W-A W-A W-A W-A W-A W-A Mac Mac	ePz iPz iPR1z iN iN iPR2z iN iN iSN eN eN eN eN eN eN eN iLN F	01 08 24 01 08 28 01 09 02 01 09 09 01 09 15 01 09 18 01 09 21 01 09 27 01 13 05 01 13 45 01 13 54 01 13 57 01 14 02 01 14 10 01 14 12 01 15 34 03 06.0	$\Delta 18.8$ N., $66^{\circ}.7$ W. $\Delta H = 01^h 02^m 30^s$ $\Delta P-H = 27^{\circ}.9$ $\Delta_{meas} = 28^{\circ}.1$
196	July 30	Mac Mac Mac Mac	ePz ez e(S)N e(SR1)N F	02 19 43 02 19 53 02 24 55 02 26 27 Lost	Aftershock of No. 195
197	July 30	Mac Mac Mac Mac	ePz eSN eL F	04 29 07 04 34 10 04 37 21 04 07.0	Aftershock of No. 195 Puerto Rica
198	July 30	Mac Mac Mac Mac Mac	eN e(P)z eSN eLN F	18 23 13 18 26 24 18 30 25 18 32 55 18 47.0	Indefinite beginning
199	July 30	Mac Mac Mac Mac	e(P)N eSN e(SR1)N F	21 25 57 21 30 21 21 31 31 22 14.0	

SAINT LOUIS STATION BULLETIN FOR JULY, 1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
200	July 31	Mac	eP <sub>Z</sub>	03 <sup>h</sup> 27 <sup>m</sup> 50 <sup>s</sup>	Aftershock; Puerto Rica Deep?
		Mac	e <sub>Z</sub>	03 28 14	
		Mac	iPR <sub>1Z</sub>	03 28 33	
		Mac	iPR <sub>2Z</sub>	03 28 52	
		Mac	eSN	03 32 40	
		Mac	eLN	03 35 20	
		Mac	F	04 46.0	
201	July 31	Mac	eLN	21 07.0	
		Mac	F	22 29.0	

Minor Seismic Activity:

June 2 -- 07 46 to 07 50  
 4 -- 02 31 to 02 34  
 4 -- 22 09 to 22 11  
 14 -- 19 14 to 19 16  
 20 -- 20 00 to 20 31  
 23 -- 10 00 to 10 03  
 26 -- 08 52 to 08 53  
 27 -- 01 32 to 01 36

J. B. Macelwane, S. J.  
Director

Harry K. Hail  
Student Assistant

### SAINT LOUIS STATION

Latitude: geographical  $38^{\circ} 38' 10''$  N., geocentric,  $38^{\circ} 27' N.$   
 Longitude:  $90^{\circ} 14' 10''$  W. Altitude:  $h = 161m$ ,  $H+h = 4$  km.  
 Lithologic foundation: Mississippian limestone  
 Seismographs: Wood-Anderson short period EN;  
                   Macelwane-Sprengnether Z; Sprengnether NE  
 Clock: Wiechert

27.

Bulletin for August, 1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
202	Aug. 1	Mac	eP <sub>Z</sub>	01 18 20	$11^{\circ} 8' N.$ , $65^{\circ} 0' W.$ $H = 01^h 11^m 44^s$ $\Delta P-H = 32^{\circ} 6'$ $\Delta_{meas} = 32^{\circ} 7'$
		Mac	e <sub>Z</sub>	01 18 33	
		Mac	eS <sub>E</sub>	01 23 44	
		Mac	eL <sub>E</sub>	01 27 25	
		Mac	F	01 55.0	
203	Aug. 1	Mac	eL <sub>E</sub>	07 21.0	
		Mac	F	07 32.0	
204	Aug. 1	Mac	e(PKP) <sub>Z</sub>	16 36 29	$21^{\circ} 0' S.$ , $170^{\circ} 9' E.$ $H = 16^h 18^m 42^s$ $h = 200$ km $\Delta S KS - H = 109^{\circ} 4'$ $\Delta_{meas} = 109^{\circ} 9'$
		Mac	epPKP <sub>Z</sub>	16 37 24	
		Mac	eSKS <sub>E</sub>	16 43 03	
		Mac	eSKKS <sub>E</sub>	16 44 04	
		Mac	iS <sub>N</sub>	16 44 48	
		Mac	esS <sub>N</sub>	16 46 27	
		Mac	e(SP) <sub>E</sub>	16 46 49	
		Mac	e(PPS) <sub>E</sub>	16 48 27	
		Mac	e <sub>E</sub>	16 52 07	
		Mac	F	19 07.0	
205	Aug. 2	Mac	ePKP <sub>Z</sub>	01 05 31	$47^{\circ} 1' S.$ , $166^{\circ} 4' E.$ $H = 00^h 46^m 15^s$ $\Delta PS-H = 124^{\circ} 7'$ $\Delta_{meas} = 124^{\circ} 8'$
		Mac	ePR <sub>1N</sub>	01 07 15	
		Mac	eSR <sub>1E</sub>	01 08 39	
		Mac	e(TR <sub>3</sub> ) <sub>E</sub>	01 11 29	
		Mac	eSKS <sub>E</sub>	01 12 34	
		Mac	eSKKS <sub>E</sub>	01 14 10	
		Mac	e(S) <sub>E</sub>	01 15 13	
		Mac	ePS <sub>E</sub>	01 17 21	
		Mac	e(PPS) <sub>N</sub>	01 18 21	
		Mac	e(PPPS) <sub>N</sub>	01 19 09	
		Mac	eSR <sub>1N</sub>	01 24 13	
		Mac	ePPSS <sub>E</sub>	01 25 08	
		Mac	e <sub>N</sub>	01 27 30	
		Mac	eSR <sub>2N</sub>	01 28 49	
		Mac	eSR <sub>3N</sub>	01 32 53	
		Mac	e(X) <sub>N</sub>	01 35 55	
Mac	eL <sub>E</sub>	01 46 15			
Mac	F	04 10.0			

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
206	Aug. 2	Mac Mac	eP <sub>Z</sub> ez	02 <sup>h</sup> 27 <sup>m</sup> 57 <sup>s</sup> 02 28 30	
207	Aug. 2	Mac Mac Mac Mac Mac Mac	eP <sub>Z</sub> ePR <sub>1Z</sub> eS <sub>E</sub> eSR <sub>1N</sub> eL <sub>N</sub> F	04 30 55 04 31 28 04 35 34 04 36 39 04 38.5 04 54.0	Puerto Rico
208	Aug. 2	Mac Mac Mac Mac	eP <sub>Z</sub> ipP <sub>Z</sub> eL <sub>N</sub> F	05 44 03 05 44 31 05 56.0 06 12.0	Deep
209	Aug. 2	Mac Mac Mac Mac	eP <sub>Z</sub> eS <sub>E</sub> eL <sub>E</sub> F	10 01 44 10 06 15 10 08 57 10 34.0	Puerto Rico
210	Aug. 2	Mac Mac Mac Mac Mac Mac Mac	eP <sub>Z</sub> e <sub>Z</sub> ez ePR <sub>1Z</sub> eS <sub>N</sub> eSR <sub>1E</sub> F	12 07 23 12 07 57 12 08 09 12 08 19 12 12 42 12 14 27 12 35.0	Puerto Rico
211	Aug. 2	Mac Mac Mac Mac	eP <sub>Z</sub> eS <sub>E</sub> e(L) <sub>E</sub> F	20 25 58 20 30 18 20 33 04 20 58.0	Epicentral Region: 19°5' N., 63° W. H = 20 ± 20.5m
212	Aug. 4	Mac Mac W-A Mac Mac Mac	eP <sub>Z</sub> e(S) <sub>N</sub> e(P) <sub>N</sub> e <sub>N</sub> e <sub>E</sub> F	01 01 01 01 05 25 01 05 41 01 09 16 01 11 27 01 24.0	Two shocks? Puerto Rico?
213	Aug. 6	Mac W-A W-A W-A	iP <sub>Z</sub> e <sub>N</sub> e <sub>N</sub> F	12 15 22 12 15 26 12 15 34 12 22.0	Deep?
214	Aug 7	Mac Mac Mac Mac Mac Mac Mac	eP <sub>Z</sub> epP <sub>Z</sub> ez e <sub>Z</sub> e(S) <sub>E</sub> e(sS) <sub>E</sub> e <sub>E</sub> F	16 04 00 16 04 29 16 04 45 16 05 05 16 07 56 16 08 48 16 09 10 Lost	Deep

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
215	Aug. 8	Mac Mac Mac Mac Mac Mac Mac Mac Mac	eP <sub>Z</sub> iP <sub>Z</sub> i <sub>Z</sub> ePR <sub>1Z</sub> epPR <sub>1Z</sub> e(S) <sub>N</sub> eSR <sub>1N</sub> e(sSR <sub>1</sub> ) <sub>N</sub> F	00 <sup>h</sup> 44 <sup>m</sup> 33 <sup>s</sup> 00 44 42 00 44 46 00 44 56 00 45 35 00 49 15 00 50 44 00 51 44 Lost	18°5 N., 67°3 W. H = 00 <sup>h</sup> 38 <sup>m</sup> 45 <sup>s</sup> h = 50 <sup>±</sup> km ΔP-H = 27°8 Δ <sub>meas</sub> = 28°1
216	Aug. 8	Mac Mac Mac	eP <sub>Z</sub> e <sub>Z</sub> F	07 <sup>h</sup> 09 <sup>m</sup> 11 <sup>s</sup> 07 09 34 Lost	
217	Aug. 8	Mac Mac Mac Mac Mac Mac Mac W-A W-A	eP <sub>Z</sub> iP <sub>Z</sub> i <sub>Z</sub> ePR <sub>1Z</sub> e <sub>Z</sub> ePR <sub>2Z</sub> e <sub>Z</sub> eSE F	08 37 16 08 37 19 08 37 26 08 37 43 08 37 50 08 37 56 08 38 08 08 41 31 08 51.0	16°0 N., 96°4 W. H = 08 <sup>h</sup> 32 <sup>m</sup> 11 <sup>s</sup> ΔP - H = 23°0 Δ <sub>meas</sub> = 23°0
218	Aug. 8	Mac Mac Mac Mac Mac Mac	eP <sub>Z</sub> e <sub>Z</sub> e(S)? <sub>N</sub> eL <sub>N</sub> e <sub>N</sub> F	15 20 23 15 20 28 15 24 35 15 27 51 15 29 50 15 40.0	
219	Aug. 9	Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	iP <sub>Z</sub> e <sub>Z</sub> i <sub>Z</sub> i(PR <sub>1</sub> ) <sub>Z</sub> e(PR <sub>2</sub> ) <sub>Z</sub> e <sub>Z</sub> e <sub>Z</sub> eS <sub>N</sub> i <sub>N</sub> i(M) <sub>N</sub> eS <sub>C</sub> P <sub>Z</sub> F	05 35 00 05 35 05 05 35 09 05 35 20 05 35 33 05 35 40 05 36 50 05 39 02 05 41 49 05 42 40 05 42 50 Uncertain	38°1 N., 118°5 W H = 05 <sup>h</sup> 30 <sup>m</sup> 04 <sup>s</sup> ΔP-H = 22°1 meas = 22.1
220	Aug.13	Mac	eP <sub>Z</sub>	00 12 36	
221	Aug.13	Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	eP <sub>Z</sub> iP <sub>Z</sub> e <sub>Z</sub> epR <sub>1Z</sub> eS <sub>E</sub> esS <sub>E</sub> e <sub>F</sub> e(sSR <sub>2</sub> ) <sub>E</sub> eL <sub>E</sub> F	07 48 04 07 48 07 07 48 10 07 48 16 07 56 57 07 57 22 08 02 14 08 04 32 08 08 40 08 45.0	1°8 N., 30°5 W. H = 07 <sup>h</sup> 37 <sup>m</sup> 25 <sup>s</sup> h = 50 <sup>±</sup> Km ΔP-H = 66°6 Δ <sub>meas</sub> = 65°9

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
222	Aug. 13	Mac	eP <sub>Z</sub>	15 <sup>h</sup> 35 <sup>m</sup> 29 <sup>s</sup>	Indefinite beginning
223	Aug. 14	Mac Mac Mac Mac Mac	eP <sub>Z</sub> e(PR <sub>1</sub> ) <sub>Z</sub> e <sub>Z</sub> eS <sub>N</sub> F <sub>N</sub>	02 45 16 02 45 35 02 47 26 02 49 17 03 23.0	Mexico
224	Aug. 14	Mac Mac Mac Mac	e(PKP) <sub>Z</sub> e(SKS) <sub>E</sub> e(S) <sub>E</sub> F	08 26 35 08 33 36 08 35 27 09 45.0	Indefinite
225	Aug. 15	Mac Mac Mac Mac	iP <sub>Z</sub> eS <sub>E</sub> eL <sub>E</sub> F	00 19 02 00 23 41 00 25 47 01 38.0	19°8 N., 66°8 W. H = 00 <sup>h</sup> 13 <sup>m</sup> 12 <sup>s</sup> ΔP-H = 27°5 Δmeas = 27°7
226	Aug. 17	Mac Mac Mac	iP <sub>Z</sub> e(S) <sub>N</sub> F	01 18 16 01 27 28 01 32 --	Region: 54°N., 160° E. H = 01 <sup>h</sup> 07.2 <sup>m</sup>
227	Aug. 17	Mac Mac Mac Mac	eP <sub>Z</sub> eS <sub>N</sub> eSR <sub>1N</sub> F	03 20 21 03 24 43 03 25 35 03 42.0	Region: 17°N., 78° W. H = 03 <sup>h</sup> 15.0 <sup>m</sup>
228	Aug. 17	Mac Mac Mac Mac	e(P) <sub>Z</sub> e <sub>Z</sub> e <sub>E</sub> e <sub>E</sub>	09 23 04 09 26 16 09 26 31 09 33 56	
229	Aug. 18	Mac Mac	eP <sub>Z</sub> epP <sub>Z</sub>	16 38 03 16 38 31	20°7 S., 68°4 W. H = 16 <sup>h</sup> 27 <sup>m</sup> 50 <sup>s</sup> h = 100± km ΔP-H = 62°9 Δmeas = 62°9
230	Aug. 19	Mac Mac	eP <sub>Z</sub> e <sub>Z</sub>	10 53 07 10 53 15	Deep?
231	Aug. 19	Mac Mac Mac Mac Mac	iP <sub>Z</sub> e <sub>Z</sub> e <sub>Z</sub> eS <sub>N</sub> F	23 42 55 23 43 13 23 43 45 23 46 57 Lost	Region: 18° N., 100° W. H = 23 <sup>h</sup> 38.0 <sup>m</sup>



No.	Date	Inst.	Phase	G.M.C.T.	Remarks
232	Aug. 20	Mac	$e_z$	01 <sup>h</sup> 40 <sup>m</sup> 56 <sup>s</sup>	$\Delta$ about 95°
		Mac	$e(SKS)_E$	01 52 11	
		Mac	$e(SKKS)_N$	01 52 53	
		Mac	$e(S)_N$	01 53 39	
		Mac	$eSR_{1E}$	01 58 50	
		Mac	$eL_E$	02 13 49	
		Mac	F	03 35.0	
233	Aug. 20	Mac	$eP_z$	05 09 35	
234	Aug. 21	Mac	$eP_z$	09 21 33	Probable Epicenter: 26°4 S., 113°6 W. H = 09 <sup>h</sup> 10 <sup>m</sup> 33 <sup>s</sup> $\Delta_{P-H} = 68.08$ $\Delta_{meas} = 68.08$
		Mac	$e_z$	09 21 37	
		Mac	$eS_E$	09 30 38	
		Mac	$e(SR_2)_E$	09 38 21	
		Mac	F	09 52.0	
235	Aug. 22	Mac	$eP_z$	01 37 37	Region: 39° N., 142° E. H = 01 <sup>h</sup> 24.8 <sup>m</sup>
		Mac	$eS_E$	01 48 24	
		Mac	F	02 22.0	
236	Aug. 22	Mac	$iP_z$	11 13 27	51°0 N., 174°5 W. H = 11 <sup>h</sup> 03 <sup>m</sup> 42 <sup>s</sup> h = 50± Km $\Delta_{P-H} = 57.08$ $\Delta_{meas} = 57.08$
		Mac	$eS_E$	11 21 27	
		Mac	$esS_E$	11 21 45	
		Mac	F	12 23.0	
237	Aug. 27	Mac	$eSKSE$	01 05 59	Region: 31° S., 171° W. H = 01 <sup>h</sup> 41.4 <sup>m</sup>
		Mac	$eSKKSE$	01 06 42	
		Mac	$eS_E$	01 07 26	
		Mac	$eSR_{2N}$	01 19 20	
		Mac	$eL_N^{2N}$	01 27 25	
		Mac	$eM_N$	01 37 26	
		Mac	F	02 21.0	
238	Aug 22	Mac	$eP_z$	10 34 48	Region: 52° N., 131° W. H = 10 <sup>h</sup> 28.3 <sup>m</sup>
		Mac	$eS_E$	10 40 06	
		Mac	$eL_E$	10 44 30	
		Mac	F	10 53.0	
239	Aug. 29	Mac	$eP_z$	02 51 20	Region: 17° N., 101° W. H = 02 <sup>h</sup> 46.2 <sup>m</sup>
		Mac	$e_z$	02 51 24	
		Mac	$eS_N$	02 55 33	
		Mac	$eM_E$	03 01 25	
		Mac	F	03 20.0	
240	Aug. 29	Mac	$iP_z$	03 50 11	Region: 33° N., 117° W. H = 03 <sup>h</sup> 45.2 <sup>m</sup>
		Mac	$e_z$	03 50 26	
		Mac	$eS_E$	03 54 22	
		Mac	$eL_E$	03 56 39	
		Mac	$eE$	03 57 33	
		Mac	$eM_E$	03 58 42	
		Mac	F	04 19.0	
241	Aug. 30	Mac	$eP_z$	23 56 38	Southwest Pacific
		Mac	$e_z$	23 58 10	
		Mac	$e(S)_N$	24 07 58	
		Mac	F	25 18.0	

SAINT LOUIS STATION BULLETIN FOR AUGUST, 1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
242	Aug. 31	Mac	eP <sub>Z</sub>	15 <sup>h</sup> 41 <sup>m</sup> 34 <sup>s</sup>	Region: 31° N., 42° W. H = 15 <sup>h</sup> 34.0 <sup>m</sup>
		Mac	eS <sub>E</sub>	15 47 48	
		Mac	eL <sub>E</sub>	15 53 54	
		Mac	eM <sub>E</sub>	15 56 07	
		Mac	F	Lost	
243	Aug. 31	Mac	iP <sub>Z</sub>	16 15 56	14°1 N., 91°3 W. H = 16 <sup>h</sup> 10 <sup>m</sup> 45 <sup>s</sup> h = 100 ± Km Δ <sub>P-H</sub> = 24.05 Δ <sub>meas</sub> = 24.06
		Mac	iP <sub>Z</sub>	16 15 59	
		Mac	i <sub>Z</sub>	16 16 07	
		Mac	iP <sub>Z</sub>	16 16 13	
		Mac	iPR <sub>LZ</sub>	16 16 40	
		Mac	iSN	16 20 09	
		Mac	iN	16 20 18	
		Mac	iSSN	16 20 45	
		Mac	F	18 36.0	

Minor Seismic Activity:

August 3	09h30m	-	09h32m
4	22 41	-	22 44
7	11 26	-	11 49
13	01 26	-	01 27
15	02 54	-	03 19
15	13 25	-	13 53
16	07 56	-	07 58
17	15 35	-	15 50
23	08 05	-	08 14
27	04 57	-	05 12
28	10 37	-	11 01
31	07 40	-	07 43

James B. Macelwane, S. J.  
Director

H. K. Hail  
Student Assistant



# AINT LOUIS UNIVERSITY INSTITUTE OF GEOPHYSICAL TECHNOLOGY

3621 OLIVE STREET, SAINT LOUIS 8, MO., U. S. A.

## SEISMOLOGICAL BULLETIN



### SAINT LOUIS STATION

Latitude: geographical, 38° 38' 10" N., geocentric, 38° 27' N.  
 Longitude: 90° 14' 10" W. Altitude: h = 161m, H+h = 4 km.  
 Lithologic foundation: Mississippian limestone  
 Seismographs: Wood-Anderson short period EN;  
                   Macelwane-Sprengnether Z; Sprengnether NE.  
 Clock: Wiechert

Bulletin for September, 1943

33.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
244	Sept. 1	Mac	eP <sub>Z</sub>	12 <sup>h</sup> 11 <sup>m</sup> 15 <sup>s</sup>	
245	Sept. 1	Mac Mac	eP <sub>Z</sub> e <sub>E</sub>	16 15 48 16 22 00	
246	Sept. 2	Mac Mac	eP <sub>Z</sub> e <sub>Z</sub>	09 12 37 09 13 57	
247	Sept. 2	Mac Mac Mac Mac Mac	eP <sub>Z</sub> e <sub>Z</sub> eS <sub>E</sub> e <sub>E</sub> F	13 45 23 13 45 55 13 53 28 13 54 16 Lost.	Region: 18°S, 69°W. H = 13 <sup>h</sup> 35.5 <sup>m</sup> May be 100 km. deep.
248	Sept. 2	Mac Mac Mac Mac Mac	eP <sub>Z</sub> epP <sub>Z</sub> eS <sub>N</sub> eN F	23 18 01 23 18 19 23 22 12 23 22 42 23 34.0	16°5' N, 100°4' W. H = 23 <sup>h</sup> 12 <sup>m</sup> 54 <sup>s</sup> h = 100 <sup>+</sup> km. Δ <sub>P-H</sub> = 23.9 Δ <sub>meas</sub> = 23.9
249	Sept. 3	Mac Mac Mac	e <sub>E</sub> eL <sub>E</sub> F	04 00 56 04 08.5 04 30.0	
250	Sept. 4	Mac Mac	eL <sub>E</sub> F	07 51.0 08 10.0	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
251	Sept. 4	Mac Mac	eP <sub>Z</sub> e <sub>Z</sub>	12 <sup>h</sup> 14 <sup>m</sup> 16 <sup>s</sup> 12 14 24	
252	Sept. 5	Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	eP' <sub>Z</sub> e <sub>Z</sub> ePR <sub>1E</sub> e <sub>Z</sub> eSKP <sub>Z</sub> eSKP <sub>2Z</sub> eSKS <sub>Z</sub> e(SKKS) <sub>E</sub> e(S)? <sub>E</sub> e <sub>E</sub> F	08 53 46 08 55 53 08 56 12 08 57 07 08 57 20 08 57 36 09 01 11 09 02 58 09 05 24 09 06 00 11 58.0	Region: 0.5°N, 125.5°E H = 08 <sup>h</sup> 35.0 <sup>m</sup> .
253	Sept. 6	Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	e <sub>Z</sub> i <sub>Z</sub> iP' <sub>Z</sub> iPR <sub>1Z</sub> iSKP <sub>E</sub> iSKKS <sub>E</sub> i(PS) <sub>E</sub> iPR' <sub>2N</sub> iSR <sub>1N</sub> F	04 00 35 04 00 38 04 00 41 04 03 03 04 04 05 04 09 41 04 13 07 04 17 01 04 20 06 08 46.0	52°7 S, 159°6 E. H = 03 <sup>h</sup> 41 <sup>m</sup> 40 <sup>s</sup> ΔPR <sub>1</sub> -H = 130°7 Δ <sub>meas</sub> = 131°0
254	Sept. 7	Mac Mac Mac	eP <sub>Z</sub> iLE F	19 33 58 19 46 53 20 25.0	Northwest Canada Epicentral Region: 68°2 N, 137°7 W. H = 19 <sup>h</sup> 26 <sup>m</sup> 27 <sup>s</sup> ΔP-H = 39°5 Δ <sub>meas</sub> = 39°5
255	Sept. 9	Mac Mac Mac Mac Mac Mac	e <sub>Z</sub> e <sub>Z</sub> e <sub>N</sub> e <sub>N</sub> e <sub>N</sub> e <sub>N</sub>	04 24 52 04 28 39 04 30 13 04 32 40 04 34 47 04 39 13	Very weak
256	Sept. 10	Mac Mac Mac Mac Mac Mac Mac	eP <sub>Z</sub> iPR <sub>1Z</sub> ePR <sub>2Z</sub> e <sub>N</sub> eSN e <sub>N</sub> F	02 37 28 02 38 05 02 38 20 02 40 54 02 42 14 02 42 42 03 46.0	18°9 N, 66°2 W H = 02 <sup>h</sup> 31 <sup>m</sup> 32 <sup>s</sup> ΔP-H = 28°3 Δ <sub>meas</sub> = 28°7
257	Sept. 10	Mac Mac Mac Mac Mac Mac Mac	eP <sub>Z</sub> ePR <sub>1Z</sub> iSKS <sub>E</sub> iSKKS <sub>E</sub> i(S) <sub>E</sub> i(SR <sub>1</sub> ) <sub>E</sub> F	08 50 24 08 54 22 09 01 01 09 01 50 09 02 50 09 08 16 Lost	35°5 N, 135°1 E. H = 08 <sup>h</sup> 37 <sup>m</sup> 04 <sup>s</sup> ΔP-H = 91°7 Δ <sub>meas</sub> = 94°8 Destruction reported at Tottori, Japan.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
258	Sept. 11	Mac Mac Mac	e <sub>E</sub> eL <sub>E</sub> F	01 <sup>h</sup> 18 <sup>m</sup> 15 <sup>s</sup> 02 00 -- 02 17 --	
259	Sept. 11	Mac Mac Mac Mac Mac Mac	eP <sub>Z</sub> e <sub>Z</sub> ePR <sub>1Z</sub> e(SKKS) <sub>E</sub> eN F	19 47 28 19 48 47 19 51 14 19 58 23 20 00 11 22 20 --	Probable Epicenter: 10°0 S, 179°1 W. H = 19 <sup>h</sup> 34 <sup>m</sup> 06 <sup>s</sup> ΔP-H = 95°1 Δmeas = 95°1
260	Sept. 12	Mac	eL <sub>E</sub>	02 30.0	
261	Sept. 14	Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	e(P) <sub>Z</sub> ePR <sub>1E</sub> iSKS <sub>E</sub> iSKKS <sub>E</sub> eSN e <sub>E</sub> iPS <sub>E</sub> iPPS <sub>E</sub> eSR <sub>2E</sub> eSR <sub>3E</sub> eL <sub>E</sub> F	02 15 58 02 20 22 02 26 30 02 27 33 02 28 12 02 28 48 02 29 53 02 32 12 02 40 22 02 43 42 02 53.9 Lost	The epicenter could not be located accurately due to conflicting reports. It is probably situated in the region 22°S, 170°E with H = 02 <sup>h</sup> 01.3 <sup>m</sup> . While this quake is probably deeper than normal, the present interpretation is based on normal tables.
262	Sept. 14	Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	ePR <sub>1Z</sub> iSKS <sub>E</sub> eSKKS <sub>E</sub> eS <sub>E</sub> iPS <sub>E</sub> i(PPS) <sub>E</sub> iSR <sub>1E</sub> i(PR' <sub>2</sub> ) <sub>N</sub> iSR <sub>3E</sub> eGN eLN F	04 06 14 04 12 28 04 13 27 04 14 02 04 15 50 04 16 28 04 22 12 04 24 37 04 29 49 04 33 58 04 39.0 Lost	26°1 S, 171°9 E H = 03 <sup>h</sup> 47 <sup>m</sup> 10 <sup>s</sup> ΔPS-H = 111°5 Δmeas = 111°8
263	Sept. 14	Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	e <sub>Z</sub> ? eP <sub>Z</sub> eP <sub>Z</sub> e(PR <sub>1</sub> ) <sub>Z</sub> e(P <sub>P</sub> PR <sub>1</sub> ) <sub>Z</sub> eN e <sub>E</sub> eSKS <sub>E</sub> iSKS <sub>E</sub> e(SKS) <sub>E</sub> eSKKS <sub>E</sub> iSN iS <sub>S</sub> E iSPN iSR <sub>1E</sub> iSR <sub>2E</sub>	07 32 21 07 32 31 07 33 00 07 36 00 07 36 52 07 40 03 07 41 03 07 42 51 07 43 01 07 43 11 07 43 31 07 44 20 07 46 06 07 46 18 07 51 30 07 56 02	General Region: 29°S, 178°W. H = 07 <sup>h</sup> 18.3 <sup>m</sup> h = 100±km.

(Continued on next Page)

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
263 (Con't.)	Sept. 14	Mac	iSR <sub>3</sub> E	07 <sup>h</sup> 58 <sup>m</sup> 25 <sup>s</sup>	
		Mac	iXE	07 59 17	
		Mac	iGE	08 01 03	
		Mac	iGE	08 01 59	
		Mac	F	12 20.0	
264	Sept. 14	Mac	e(P) <sub>Z</sub>	11 25 00	Very weak
265	Sept. 14	Mac	iP <sub>Z</sub>	15 35 59	
		Mac	i <sub>Z</sub>	15 36 07	
		Mac	e <sub>Z</sub>	15 36 42	
266	Sept. 17	Mac	eLE	05 16.6	
267	Sept. 17	Mac	e <sub>Z</sub>	10 27 12	15°1 S, 167°5 E H = 10 <sup>h</sup> 09 <sup>m</sup> 37 <sup>s</sup> h = 150±km. ΔSKS-H = 109°1 Δ <sub>meas</sub> = 108°8
		Mac	eSKSE	10 34 09	
		Mac	eSKKSE	10 35 05	
		Mac	eSN	10 35 49	
		Mac	e <sub>S</sub> SN	10 36 48	
		Mac	e(SP) <sub>E</sub>	10 37 31	
Mac	F	12 46.5			
268	Sept. 19	Mac	eP <sub>Z</sub>	04 59 00	30°8 S, 113°6 W. H = 04 <sup>h</sup> 47 <sup>m</sup> 48 <sup>s</sup> h = 100±km. ΔP-H = 72°2 Δ <sub>meas</sub> = 72°4
		Mac	iSE	05 08 17	
		Mac	e(PS) <sub>N</sub>	05 08 51	
		Mac	e <sub>S</sub> SN	05 09 02	
		Mac	F	Uncertain	
269	Sept. 20	Mac	eP <sub>Z</sub>	00 59 02	20°3 N, 108°7 W. H = 00 <sup>h</sup> 53 <sup>m</sup> 52 <sup>s</sup> h = 80 km. ΔP-H = 23°9 Δ <sub>meas</sub> = 23°9
		Mac	eP <sub>Z</sub>	00 59 06	
		Mac	iP <sub>Z</sub>	00 59 10	
		Mac	i <sub>P</sub> P <sub>Z</sub>	00 59 21	
		Mac	eSE	01 03 23	
		Mac	iSN	01 03 37	
		Mac	i <sub>S</sub> SE	01 03 50	
		Mac	i <sub>E</sub>	01 04 46	
		Mac	i <sub>M</sub> E	01 06 25	
		Mac	F	02 58.0	
270	Sept. 21	Mac	eLN	04 28 18	
		Mac	F	05 49.0	
271	Sept. 22	Mac	iP <sub>Z</sub>	12 16 29	South America Deep?
		Mac	i <sub>Z</sub>	12 16 49	
272	Sept. 22	Mac	e(P') <sub>Z</sub>	23 36 47	Region: 33°S, 179°5 E. H = 23 <sup>h</sup> 18.6 <sup>m</sup> h = 150±km.
		Mac	e( <sub>P</sub> P') <sub>Z</sub>	23 37 10	
		Mac	eSKSE	23 43 13	
		Mac	e(SKKS) <sub>E</sub>	23 44 31	
		Mac	eSN	23 45 13	
		Mac	i(PS) <sub>E</sub>	23 46 51	

(Continued on next page)

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
272 (Con't.)	Sept. 22	Mac Mac Mac Mac Mac	e(PPS) <sub>N</sub> eSR <sub>1</sub> <sub>N</sub> iSR <sub>2</sub> <sub>N</sub> eN F	23 48 04 23 51 58 23 57 11 24 02 39 03 00 --	
273	Sept. 23	Mac Mac Mac Mac Mac Mac	iP <sub>Z</sub> i <sub>Z</sub> eS <sub>E</sub> eL <sub>E</sub> eM <sub>E</sub> F <sub>E</sub>	12 42 02 12 42 04 12 45 54 12 47 57 12 50 27 13 08.0	29°0 N, 112°8 W. H = 12 <sup>h</sup> 37 <sup>m</sup> 18 <sup>s</sup> ΔP-H = 21°0 Δmeas = 21°0
274	Sept. 23	Mac Mac Mac Mac Mac Mac Mac	iP <sub>Z</sub> i <sub>Z</sub> i <sub>Z</sub> iSN iSE iLN F	15 05 49 15 06 12 15 06 24 15 09 58 15 10 06 15 10 36 17 30 --	14°9 N, 91°7 W. H = 15 <sup>h</sup> 00 <sup>m</sup> 33 <sup>s</sup> ΔP-H = 24°1 Δmeas = 23°9
275	Sept. 23	Mac	eP <sub>Z</sub>	15 36 38	Aftershock?
276	Sept. 24	Mac Mac Mac	e <sub>Z</sub> e(L) <sub>N</sub> F	03 00 07 03 19 38 04 36 --	
277	Sept. 24	Mac Mac Mac Mac Mac	e <sub>Z</sub> e(S)? <sub>N</sub> e <sub>E</sub> e <sub>N</sub> e(L) <sub>E</sub>	06 55 10 07 00 11 07 01 46 07 03 46 07 05 52	
278	Sept. 24	Mac	e(P) <sub>Z</sub>	11 22 22	
279	Sept. 24	Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	eP <sub>Z</sub> ePR <sub>1</sub> <sub>Z</sub> ePR <sub>1</sub> <sub>N</sub> eSKSN eSKKSN eSN ePSN ePPSN e(PKKP) <sub>Z</sub> e <sub>Z</sub> F	11 45 28 11 49 42 11 55 09 11 56 05 11 56 51 11 57 12 11 58 41 11 59 48 12 01 17 12 01 37 13 28.0	General Region: 34°N, 74°E. H = 11 <sup>h</sup> 31.2 <sup>m</sup>
280	Sept. 26	Mac Mac Mac Mac	eP' <sub>Z</sub> iP' <sub>Z</sub> i <sub>Z</sub> ePR <sub>1</sub> <sub>E</sub>	02 28 01 02 28 06 02 28 12 02 31 15	Distance about 145° off West Coast of Madagascar.

(Continued on next page)

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
280 (Con't.)	Sept. 26	Mac	eSKSE	02 <sup>h</sup> 35 <sup>m</sup> 01 <sup>s</sup>	
		Mac	ePR <sub>3</sub> E	02 37 01	
		Mac	ePR <sub>1</sub> E	02 38 40	
		Mac	ePSKSE	02 41 35	
		Mac	eE	02 46 51	
		Mac	eSPSN	02 50 49	
		Mac	F	04 26.0	
281	Sept. 26	Mac	eP <sub>z</sub>	18 21 15	Epicentral Region: 51°0 N, 179°7 W. H = 18 <sup>h</sup> 11 <sup>m</sup> 04 <sup>s</sup> Δ <sub>P-H</sub> = 61.3 Δ <sub>meas</sub> = 61.3
		Mac	eSE	18 29 41	
		Mac	eSE	18 29 48	
		Mac	ePSN	18 30 08	
		Mac	e(SR <sub>1</sub> )E	18 34 29	
		Mac	F	19 53.0	
282	Sept. 26	Mac	eP <sub>z</sub>	22 44 56	5°1 N, 82°9 W. H = 22 <sup>h</sup> 38 <sup>m</sup> 08 <sup>s</sup> Δ <sub>P-H</sub> = 34.0 Δ <sub>meas</sub> = 34.0
		Mac	e <sub>z</sub>	22 44 57	
		Mac	e <sub>z</sub>	22 46 39	
		Mac	eSE	22 50 23	
		Mac	F	23 14.0	
283	Sept. 27	Mac	iP <sub>z</sub>	04 53 21	No Surface Work Japan?
		Mac	e(PR <sub>1</sub> ) <sub>z</sub>	04 57 18	
284	Sept. 27	W-A	ePE	17 09 36.7	
		W-A	eSE	17 10 27.7	
		W-A	F	17 11.5	
285	Sept. 27	Mac	ePR <sub>1z</sub>	22 22 15	Epicentral Region: 31°1 S, 176°9 W. H = 22 <sup>h</sup> 03 <sup>m</sup> 47 <sup>s</sup> Δ <sub>PR<sub>1</sub>-H</sub> = 106.6 Δ <sub>meas</sub> = 107.1 h = 80±km.
		Mac	e(pPR <sub>1</sub> )? <sub>z</sub>	22 22 30	
		Mac	eSKSE	22 28 27	
		Mac	iSKKSE	22 29 19	
		Mac	eSN	22 30 01	
		Mac	ePSE	22 31 35	
		Mac	ePPSE	22 33 26	
		Mac	i(PKKP) <sub>z</sub>	22 33 27	
		Mac	e <sub>z</sub>	22 33 37	
		Mac	eN	22 36 08	
		Mac	eSR <sub>2</sub> E	22 41 34	
		Mac	F	24 55.5	
286	Sept. 28	Mac	eLE	08 41 08	
287	Sept. 28	Mac	ePR <sub>1z</sub>	11 03 38	17°9 N, 148°2 E. H = 10 <sup>h</sup> 45 <sup>m</sup> 36 <sup>s</sup> Possibly deeper than normal. Δ <sub>PR<sub>1</sub>-H</sub> = 102.2 Δ <sub>meas</sub> = 101.7
		Mac	eSKSE	11 10 01	
		Mac	eSN	11 11 13	
		Mac	ePSE	11 12 29	
		Mac	eSR <sub>1</sub> N	11 18 05	
		Mac	F	12 35.0	

SAINT LOUIS STATION BULLETIN FOR SEPTEMBER, 1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
288	Sept. 29	Mac Mac	eL <sub>E</sub> F	05 <sup>h</sup> 35 <sup>m</sup> 00 <sup>m</sup> 05 43.0	
289	Sept. 29	Mac Mac	eL <sub>E</sub> F	10 03.5 10 56.5	
290	Sept. 29	Mac Mac	eL <sub>E</sub> F	24 05.6 24 31.0	
291	Sept. 30	Mac Mac	eL <sub>E</sub> F	08 10.5 08 48.0	
292	Sept. 30	Mac Mac	eL <sub>E</sub> F	12 51.0 13 17.0	

Minor Seismic Activity:

Date	From h. m.	To h. m.
Sept. 2	14 06	14 07
2	20 32	20 34
8	17 09	17 12
13	23 11	23 35
14	23 12	23 19
15	01 20	02 10
15	14 39	15 41
16	00 33	01 10
20	04 26	10 24
20	16 03	21 15
24	14 54	14 57

James B. Macelwane, S. J.  
Director

Harry K. Hail  
Student Assistant

# SAINT LOUIS UNIVERSITY INSTITUTE OF GEOPHYSICAL TECHNOLOGY

3621 OLIVE STREET, SAINT LOUIS 8, MO., U. S. A.

## SEISMOLOGICAL BULLETIN

### SAINT LOUIS STATION

Latitude: geographical,  $38^{\circ}38'10''$  N., geocentric,  $38^{\circ}27'$  N.  
 Longitude:  $90^{\circ}14'10''$  W. Altitude:  $h = 161\text{m}$ ,  $H+h = 4\text{ km}$ .  
 Lithologic foundation: Mississippian limestone  
 Seismographs: Wood-Anderson short period EN;  
 Macelwane-Sprengnether Z; Sprengnether NE.  
 Clock: Wiechert

Bulletin for October, 1943

40.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
293	Oct. 1	Mac Mac Mac	e(S)N eLN F	$12^{\text{h}}39^{\text{m}}48^{\text{s}}$ 12 42 28 12 55.0	
294	Oct. 1	Mac Mac Mac Mac	iPZ eSE eLE F	18 02 42 18 10 27 18 16 49 19 17.0	$9^{\circ}1' \text{ N}, 37^{\circ}3' \text{ W}.$ $H = 17^{\text{h}}53^{\text{m}}14^{\text{s}}.$ $\Delta P-H = 55^{\circ}0$ $\Delta_{\text{meas}} = 54.99$
295	Oct. 1	Mac	ePZ	18 23 57	
296	Oct. 1	Mac	ePZ	20 15 19	
297	Oct. 2	Mac Mac Mac Mac	eZ eN eLN F	05 32 53 05 41 03 05 45 29 06 09.0	
298	Oct. 2	Mac Mac Mac Mac	ePZ eE eLE F	07 02 11 07 08 46 07 11 32 07 15.0	U.S.C.G.S. gives: $40^{\circ}6' \text{ N}, 121^{\circ}9' \text{ W}.$ $H = 06^{\text{h}}56^{\text{m}}41^{\text{s}}.$
299	Oct. 2	Mac Mac Mac	ePZ eE F	09 30 51 09 39 58 09 43.0	South America



No.	Date	Inst.	Phase	G.M.C.T.	Remarks
300	Oct. 2	Mac Mac Mac Mac Mac Mac Mac Mac Mac	iPZ eZ ipPZ eZ eZ eSE esSE F	11 <sup>h</sup> 27 <sup>m</sup> 47 <sup>s</sup> . 11 28 00 11 28 08 11 28 39 11 30 20 11 31 54 11 32 31 12 04.0	14°0 N, 91°8 W. H = 11 <sup>h</sup> 22 <sup>m</sup> 34 <sup>s</sup> . h = 100±km. ΔP-H = 24.5 Δ <sub>meas</sub> = 24.6
301	Oct. 2	Mac Mac Mac Mac Mac	ePZ eZ iZ e(PS)N F	17 31 22 17 31 58 17 32 09 17 41 39 17 43.0	Roughly: 29°S, 74°W.
302	Oct. 3	Mac Mac Mac Mac Mac	ePZ eSE ePSE eSR <sub>1</sub> E F	01 01 39 01 08 40 01 09 14 01 11 34 01 49 --	North Atlantic Azores?
303	Oct. 3	Mac Mac Mac Mac	ePZ eZ eE F	08 40 00 08 40 06 08 45 55 09 35.0	Region: 43°N, 14°E. H = 08 <sup>h</sup> 28.5 <sup>m</sup> Italy
304	Oct. 3	Mac Mac Mac Mac	ePR <sub>1</sub> Z eE eSR <sub>1</sub> E F	19 15 43 19 28 19 19 31 12 21 12.0	General Region: 29°5 S, 172°E. H = 18 <sup>h</sup> 56.5 <sup>m</sup>
305	Oct. 3	Mac Mac	ePZ eZ	20 06 29 20 12 05	
306	Oct. 4	Mac Mac	ePZ F	10 17 26 10 19.0	
307	Oct. 4	Mac Mac Mac Mac Mac Mac Mac	ePR <sub>1</sub> E eSKSE eSN ePSE eSR <sub>1</sub> E eSR <sub>2</sub> E F	10 58 39 11 04 52 11 06 22 11 08 00 11 13 36 11 18 00 12 42 --	15°0 S, 167°9 E H = 10 <sup>h</sup> 39 <sup>m</sup> 16 <sup>s</sup> ΔPR <sub>1</sub> -H = 109°3 Δ <sub>meas</sub> = 109°0

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
308	Oct. 4	Mac Mac	eLE F	12 <sup>h</sup> 11 <sup>m</sup> 54 <sup>s</sup> 12 51 --	
309	Oct. 5	Mac	ePZ	16 38 00	South Pacific?
310	Oct. 5	Mac	ePZ	19 33 52	Weak. South Pacific?
311	Oct. 6	Mac Mac	iPZ eZ	17 44 16 17 44 54	South America Deep?
312	Oct. 7	Mac Mac Mac Mac	e(PR <sub>1</sub> )Z eN eLE F	11 03 00 11 15 56 11 36 58 12 19.0	Approximately: 10°S, 160°E H = 10 <sup>h</sup> 43.8 <sup>m</sup>
313	Oct. 7	Mac	ePZ	15 44 05	Weak. Central America?
314	Oct. 8	Mac	ePZ	22 33 42	Weak.
315	Oct. 9	Mac Mac Mac	e(P)Z eLN F	10 29 16 10 42 38 10 48.0	
316	Oct. 10	Mac Mac	eLE F	10 08 40 10 17.0	
317	Oct. 11	Mac	iPZ	17 09 24	
318	Oct. 12	Mac Mac Mac Mac	e(P)Z e(S)N e(SR <sub>2</sub> )E F	11 15 55 11 22 29 11 26 01 11 45.0	Weak beginning.
319	Oct. 13	Mac Mac Mac Mac Mac Mac Mac	ePZ iPZ eSN iSN iLE iMN F	04 49 27 04 49 34 04 53 21 04 53 29 04 55 52 04 57 34 05 52.0	Region: 26°5 N, 110° W. H = 04 <sup>h</sup> 44 <sup>m</sup> 48 <sup>s</sup> . ΔP-H = 20°5 Δ <sub>meas</sub> = 20°4 Surface waves very sharp.
320	Oct. 13	Mac	ePZ	05 56 12	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
321	Oct. 15	Mac Mac Mac	ePZ eZ F	05 <sup>h</sup> 58 <sup>m</sup> 46 <sup>s</sup> 05 58 50 06 01.0	
322	Oct. 15	Mac Mac	ePZ F	07 16 17 07 17.5	Tacubaya gives H = 07 <sup>h</sup> 09 <sup>m</sup> 22 <sup>s</sup> .
323	Oct. 15	Mac	ePZ	08 34 13	Epicentral Region: 8 <sup>o</sup> .6 N, 103 <sup>o</sup> .8 W H = 08 <sup>h</sup> 27 <sup>m</sup> 42 <sup>s</sup> . $\Delta_{P-H} = 32.91$ $\Delta_{meas} = 32.91$
324	Oct. 15	Mac Mac Mac	ePZ eZ F	12 05 56 12 06 00 12 07.0	
325	Oct. 15	Mac Mac Mac	iPZ eZ F	22 19 48 22 19 56 22 24.0	South America?
326	Oct. 16	Mac Mac Mac	eZ eLE F	00 47 11 01 23 -- 02 15 --	Very weak.
327	Oct. 16	Mac Mac	ePZ F	05 09 33 05 10 --	South America.
328	Oct. 16	Mac Mac Mac	ePZ eLE F	10 07 01 10 13.8 10 45 --	Puerto Rico.
329	Oct. 16	Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	iPZ ipPZ iZ e(PR <sub>3</sub> ?)E eSKSE iSKKSE eSE esSE ePSE ePPSE eSR <sub>1</sub> E eLE F	13 21 27 13 21 47 13 22 05 13 27 14 13 31 32 13 31 55 13 32 03 13 32 46 13 33 10 13 34 23 13 37 40 13 47 48 Lost	33 <sup>o</sup> .9 N, 27 <sup>o</sup> .8 E. H = 13 <sup>h</sup> 08 <sup>m</sup> 50 <sup>s</sup> h = 100±km. $\Delta_{P-H} = 87.5$ $\Delta_{meas} = 87.7$

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
330	Oct. 17	Mac Mac	ePZ eZ	17 <sup>h</sup> 32 <sup>m</sup> 26 <sup>s</sup> 17 32 39	
331	Oct. 17	Mac Mac Mac Mac Mac	e(SKKS)E eE eE e(PPS)E F	23 03 43 23 06 13 23 07 31 23 08 15 24 22 --	$\Delta$ = about 130° New Guinea?
332	Oct. 19	Mac Mac Mac Mac Mac	ePZ eZ eSE eE F	17 44 06 17 44 16 17 48 27 17 48 49 18 01.0	Epicentral Region: 18°0 N, 104°3 W. H = 17 <sup>h</sup> 38 <sup>m</sup> 50 <sup>s</sup> . $\Delta_{P-H}$ = 24°1 $\Delta_{meas}$ = 24°0
333	Oct. 20	Mac Mac Mac Mac Mac Mac	ePZ e(pP)Z eSE e(sS)E eLE F	04 13 51 04 14 01 04 18 15 04 18 36 04 21 17 04 40.0	Region: 16° N, 107° W. H = 04 <sup>h</sup> 08.2 <sup>m</sup> Probably deeper than normal.
334	Oct. 20	Mac Mac Mac Mac	ePZ eSE eLE F	12 48 35 12 53 01 12 56 18 13 02 --	Region: 20° N, 109° W. H = 12 <sup>h</sup> 43.2 <sup>m</sup>
335	Oct. 21	Mac Mac Mac Mac Mac Mac	iPZ iPR <sub>1</sub> Z iSKSE iSKKSE iSE eSPE	23 21 47 23 25 40 23 32 39 23 33 10 23 33 20 23 33 50	16°5 S, 177°4 W. H = 23 <sup>h</sup> 08 <sup>m</sup> 08 <sup>s</sup> . $\Delta_{P-H}$ = 98°8 $\Delta_{meas}$ = 98°8
336	Oct. 22	Mac	ePZ	00 44 19	
337	Oct. 22	Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	ePR <sub>1</sub> Z eSKSE eSKKSE eSE e(PS)E ePPSE eE ePPPSE eE eSR <sub>1</sub> E F	16 20 27 16 26 21 16 27 14 16 27 42 16 29 58 16 30 17 16 31 17 16 32 00 16 33 58 16 36 09 18 01.0	Epicentral Region: 24°1 N, 121°8 E H = 16 <sup>h</sup> 01 <sup>m</sup> 22 <sup>s</sup> . $\Delta_{PR_1-H}$ = 110°8 $\Delta_{meas}$ = 110°3

## SAINT LOUIS STATION BULLETIN FOR OCTOBER, 1943

45.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
338	Oct. 23	Mac	iPZ	17 <sup>h</sup> 18 <sup>m</sup> 48 <sup>s</sup>	South America.
339	Oct. 23	Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	iPN eZ iP'Z ePR <sub>1</sub> N iPR <sub>1</sub> Z iZ iSKPZ iN iSKSN iN iSKKSN iSE iE iPSN i(PKKP)N iPPSE iPPPSE F	17 38 21 17 41 36 17 42 00 17 42 54 17 43 02 17 43 17 17 44 25 17 48 04 17 48 39 17 49 14 17 49 50 17 50 32 17 51 08 17 52 23 17 52 43 17 53 16 17 54 37 20 19.0	28°5' N, 93°4' E H = 17 <sup>h</sup> 23 <sup>m</sup> 33 <sup>s</sup> . Possibly deeper than normal. $\Delta_{P-H} = 113^{\circ}1$ $\Delta_{meas} = 113^{\circ}4$
340	Oct. 24	Mac Mac	eLE F	10 42 32 11 06.0	
341	Oct. 24	Mac Mac Mac Mac Mac Mac	eSN iN ePSN eSR <sub>1</sub> E eSR <sub>2</sub> N F	14 01 37 14 02 03 14 02 27 14 06 35 14 09 50 15 35.0	Deep? U.S.C.G.S. gives: 48° N, 156° E H = 13 <sup>h</sup> 40.3 <sup>m</sup> Preceding phases lost changing records.
342	Oct. 24	Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	ePZ ePR <sub>1</sub> N ePR <sub>2</sub> N eSKSN iSKKSE iSN iPSE ePPSE iSR <sub>1</sub> N F	16 18 23 16 22 25 16 24 32 16 28 55 16 29 29 16 29 54 16 31 23 16 32 04 16 37 11 20 04 --	22°0' S, 174°6' W. H = 16 <sup>h</sup> 04 <sup>m</sup> 10 <sup>s</sup> . $\Delta_{P-H} = 99^{\circ}4$ $\Delta_{meas} = 99^{\circ}1$
343	Oct. 24	Mac Mac Mac Mac Mac Mac	iPZ ipPZ eSE iSEZ isSN F	23 34 02 23 34 13 23 43 07 23 43 09 23 43 30 24 35.0	54°2' N, 162°0' E. H = 23 <sup>h</sup> 23 <sup>m</sup> 06 <sup>s</sup> . h = 50 km. $\Delta_{P-H} = 68^{\circ}6$ $\Delta_{meas} = 68^{\circ}7$

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
344	Oct. 25	Mac	ePZ	11 <sup>h</sup> 53 <sup>m</sup> 59 <sup>s</sup>	Very weak.
345	Oct. 25	Mac	ePZ	20 57 36	Weak.
346	Oct. 26	Mac Mac Mac Mac	ePZ eE iLN F	04 55 56 05 00 18 05 04 05 05 26.0	37°0 N, 123°6 W. H = 04 <sup>h</sup> 50 <sup>m</sup> 20 <sup>s</sup> . $\Delta P-H = 26.91$ $\Delta_{meas} = 26.91$
347	Oct. 26	Mac Mac	eLN F	12 12 57 12 22 --	
348	Oct. 26	Mac	ePZ	20 03 49	Weak.
349	Oct. 29	Mac Mac	eLN F	17 30 -- 17 41 --	
350	Oct. 29	Mac Mac Mac Mac	eZ eN eLN F	17 43 06 17 47 22 17 49 54 18 06 --	
351	Oct. 30	Mac	ePZ	23 12 31	Weak.

Minor Seismic Activity:

Date	From h. m.	To h. m.
Oct. 2	16 35	17 26
4	07 30	07 34
	12 38	13 17
	16 06	21 11
5	15 31	22 15
7	16 37	17 00
8	16 13	21 04
10	01 35	06 15
17	01 33	01 55
	17 40	20 44
25	21 39	22 07
27	07 52	08 27

James B. Macelwane, S. J.  
Director

Harry K. Hail  
Student Assistant

# SAINT LOUIS UNIVERSITY INSTITUTE OF GEOPHYSICAL TECHNOLOGY

3621 OLIVE STREET, SAINT LOUIS 8, MO., U. S. A.

## SEISMOLOGICAL BULLETIN

### SAINT LOUIS STATION

Latitude: geographical, 38° 38' 10" N., geocentric, 38° 27' N.  
 Longitude: 90° 14' 10" W. Altitude: h = 161m, H+h = 4 km.  
 Lithologic foundation: Mississippian limestone  
 Seismographs: Wood-Anderson short period EN;  
                   Macelwane-Sprengnether Z; Sprengnether NE.  
 Clock: Wiechert

Bulletin for November, 1943

47.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
352	Nov. 2	Mac	ePZ	00 <sup>h</sup> 30 <sup>m</sup> 46 <sup>s</sup>	
353	Nov. 2	Mac Mac Mac	ePZ eZ eZ	02 20 22 02 21 44 02 21 49	
354	Nov. 2	Mac Mac Mac	e(L)N eME F	18 02 38 18 03 59 18 14 --	Probably the earthquake reported by Pasadena as 32° 58' N, 116° 00' W. H = 17 <sup>h</sup> 50 <sup>m</sup> 41 <sup>s</sup> .
355	Nov. 2	Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	ePR <sub>1</sub> Z iSKSE eN iSKKSN iSE eE eFSE iE iFPSE iN F	18 27 25 18 33 44 18 34 15 18 34 41 18 35 09 18 35 31 18 36 39 18 37 14 18 37 41 18 38 12 22 42 --	General Region: 59° S, 30° W. H = 18 <sup>h</sup> 08.7 <sup>m</sup> Possibly deeper than normal.
356	Nov. 2	Mac	ePZ	19 06 35	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
357	Nov. 2	Mac Mac Mac Mac	ePZ eZ eLE F	23 <sup>h</sup> 02 <sup>m</sup> 44 <sup>s</sup> 23 04 32 23 16 16 23 27 --	
358	Nov. 3	Mac Mac	ePZ eZ	02 03 37 02 03 47	Deep? No surface waves.
359	Nov. 3	Mac	iPZ	08 32 26	
360	Nov. 3	Mac Mac Mac W-A W-A Mac Mac Mac Mac	i(ScP)N iSN iN i(SR <sub>1</sub> )E i(SR <sub>2</sub> )E iLZ iLZ iLZ F	14 46 03 14 46 48 14 47 00 14 49 17 14 49 59 14 54 05 14 54 48 14 55 08 19 08 --	61°0 N, 149°0 W. H = 14 <sup>h</sup> 32 <sup>m</sup> 25 <sup>s</sup> . $\Delta S-H = 42^{\circ}3$ $\Delta_{meas} = 42^{\circ}5$ Preceding Phases lost changing records.
361	Nov. 3	Mac Mac Mac Mac Mac Mac Mac	ePZ eZ eZ eSE eN oMN F	22 11 13 22 11 23 22 11 35 22 18 33 22 20 57 22 31 43 22 48 --	Epicentral Region: 11°4 S, 76°4 W. H = 22 <sup>h</sup> 02 <sup>m</sup> 08 <sup>s</sup> . $\Delta P-H = 51.6$ $\Delta_{meas} = 51.7$
362	Nov. 4	Mac Mac Mac Mac Mac	ePZ ipPZ eE eSN F	06 20 30 06 20 37 06 26 04 06 29 16 07 10 --	Epicentral Region: 57°1 N, 163°0 E. H = 06 <sup>h</sup> 09 <sup>m</sup> 48 <sup>s</sup> . h = 50 <sup>±</sup> km. $\Delta P-H = 66.4$ $\Delta_{meas} = 66.5$
363	Nov. 4	Mac Mac Mac Mac Mac Mac Mac	e(PR <sub>1</sub> )Z e(SKS)?E eE ePSE ePPSE ePPPSN F	07 04 52 07 10 18 07 13 43 07 14 03 07 14 32 07 15 30 09 39 --	Region: 57° S, 28° W. H = 06 <sup>h</sup> 45.8 <sup>m</sup>
364	Nov. 5	Mac Mac	ePZ eZ	08 46 47 08 47 03	





No.	Date	Inst.	Phase	G.M.C.T.	Remarks
365	Nov. 5	Mac	ePZ	09 <sup>H</sup> 30 <sup>m</sup> 26 <sup>s</sup>	
366	Nov. 5	Mac Mac Mac Mac	ePZ eE eE F	10 41 45 10 51 42 10 54 01 11 10 --	
367	Nov. 6	Mac Mac Mac Mac Mac Mac Mac Mac	iP'Z i(PR <sub>1</sub> )Z iN i(sSKP)N i(S)N i(sS) i(sSP)N F	08 50 46 08 53 05 08 53 14 08 54 20 09 01 43 09 02 18 09 03 23 14 02 --	6°1 S, 133°1 E H = 08 <sup>h</sup> 31 <sup>m</sup> 40 <sup>s</sup> . h = 50 <sup>+</sup> km. Δ <sub>P'-H</sub> = 129°0 Δ <sub>meas</sub> = 129°1
368	Nov. 6	Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	eZ ePR <sub>1</sub> E eSKSN eSKKSN eSN eE ePPSE eN eSR <sub>1</sub> N F	20 57 14 20 57 46 21 04 24 21 04 54 21 05 17 21 05 42 21 05 57 21 10 56 21 11 49 21 26 --	South Atlantic.
369	Nov. 7	Mac Mac Mac Mac Mac Mac	eZ e(PR <sub>1</sub> )Z e(SKSE) e(SKKS)N e(PS)N F	08 45 39 08 46 03 08 52 59 08 53 30 08 55 02 10 14 --	
370	Nov. 8	Mac Mac Mac Mac Mac Mac	ePZ ePR <sub>1</sub> Z eSE eSR <sub>1</sub> N eLE F	07 08 31 07 10 27 07 15 57 07 19 37 07 23 08 08 28 --	U.S.C.G.S. gives: 81° N, 2 1/2° W. H = 06 <sup>h</sup> 59 <sup>m</sup> 19 <sup>s</sup> .
371	Nov. 9	Mac Mac Mac Mac Mac Mac Mac	iPZ iPcPZ ipPZ ipPcPZ iPR <sub>1</sub> Z iSZ iSE	11 58 49 11 58 59 11 59 09 11 59 17 12 01 59 12 08 47 12 08 47	43°8 N, 148°2 E. H = 11 <sup>h</sup> 46 <sup>m</sup> 42 <sup>s</sup> . h = 100 <sup>+</sup> km. Δ <sub>P-H</sub> = 82°2 Δ <sub>meas</sub> = 82°3

(Con't. next page)

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
371 (Con't.)	Nov. 9	Mac	iSKSM	12 <sup>h</sup> 09 <sup>m</sup> 07 <sup>s</sup>	
		Mac	isSE	12 09 30	
		Mac	eScSE	12 09 42	
		Mac	eN	12 09 54	
		Mac	eE	12 10 04	
		Mac	eN	12 10 39	
		Mac	eSR <sub>1</sub> N	12 14 21	
		Mac	F	13 01 --	
372	Nov. 12	Mac	e(P)Z	07 36 10	
373	Nov. 13	Mac	e(P)Z	11 06 36	
		Mac	eLN	11 25 15	
		Mac	F	12 30 --	
374	Nov. 13	Mac	e(PR <sub>1</sub> )Z	19 03 01	19°9 S, 169°9 E. H = 18 <sup>h</sup> 43 <sup>m</sup> 59 <sup>s</sup> . Δ <sub>PS-H</sub> = 110°2 Δ <sub>meas</sub> = 109°9
		Mac	eSKKSE	19 10 07	
		Mac	eSE	19 10 48	
		Mac	iFSE	19 12 25	
		Mac	eE	19 17 12	
		Mac	iSR <sub>1</sub> E	19 18 33	
		Mac	F	21 26 --	
375	Nov. 14	Mac	eFZ	04 27 59	Central America?
		Mac	eE	04 35 43	
		Mac	F	04 52 --	
376	Nov. 15	Mac	iPZ	00 06 27	Two shocks?
		Mac	eZ	00 07 07	
		Mac	eZ	00 08 39	
		Mac	i(P)?Z	00 09 38	
		Mac	F	00 15 --	
377	Nov. 15	Mac	eZ	18 41 04	May not be seismic.
		Mac	iZ	18 41 54	
378	Nov. 16	Mac	eZ	05 35 55	38°4 S, 99°2 W. H = 05 <sup>h</sup> 24 <sup>m</sup> 17 <sup>s</sup> . Δ <sub>meas</sub> = 77°1
		Mac	eSE	05 45 45	
		Mac	eSR <sub>1</sub> E	05 50 47	
		Mac	F	06 20 --	



From the ISC collection scanned by SISMOS

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
379	Nov. 16	Mac	ePZ	11 47 32	Epicentral Region: 14°9 S, 74°8 W. H = 11 <sup>h</sup> 38 <sup>m</sup> 06 <sup>s</sup> . h = 80±km. ΔP-H = 55°5 Δmeas = 55°5
		Mac	iPZ	11 47 33	
		Mac	ipPZ	11 47 46	
		Mac	iSE	11 55 17	
		Mac	isSE	11 55 42	
		Mac	eE	11 56 40	
		Mac	F	13 31 --	
380	Nov. 17	Mac	iPZ	15 10 14	Deep. Japan?
		Mac	iPR <sub>1</sub> Z	15 14 11	
		Mac	iSE	15 20 14	
		Mac	esSE	15 20 58	
		Mac	eE	15 27 44	
		Mac	eLE	15 33 20	
		Mac	F	16 00 --	
381	Nov. 18	Mac	ePZ	22 00 50	Epicentral Region: 20°8 S, 63°5 W. H = 21 <sup>h</sup> 50 <sup>m</sup> 46 <sup>s</sup> . h = 300+km. ΔP-H = 64°7 Δmeas = 64°7
		Mac	ePcPZ	22 01 23	
		Mac	epPZ	22 02 01	
		Mac	cSE	22 09 01	
		Mac	eScSE	22 10 14	
		Mac	esSE	22 11 04	
		Mac	esScSE	22 12 36	
Mac	F	22 35 --			
382	Nov. 19	Mac	ePZ	05 16 33	South America. Deep? No Surface Waves.
		Mac	eZ	05 17 01	
		Mac	eZ	05 17 14	
383	Nov. 20	Mac	iPZ	08 31 00	Region: 15°5 N, 105°5 W. H = 08 <sup>h</sup> 25.3 <sup>m</sup>
		Mac	eSE	08 35 33	
		Mac	eLE	08 38 46	
		Mac	F	08 47 --	
384	Nov. 20	Mac	ePZ	19 05 19	Region: 4° S, 106° W. H = 18 <sup>h</sup> 57.1 <sup>m</sup>
		Mac	eSE	19 12 03	
		Mac	eLE	19 15 12	
		Mac	F	20 -- --	
385	Nov. 20	Mac	ePZ	20 10 15	Aftershock of #384.
		Mac	eSE	20 16 57	
		Mac	eLE	20 20 31	
		Mac	F	20 50 --	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
386	Nov. 21	Mac	iFZ	19 <sup>h</sup> 46 <sup>m</sup> 59 <sup>s</sup>	Epicentral Region: 17° N, 98°5' W. H = 19 <sup>h</sup> 42 <sup>m</sup> 00 <sup>s</sup> . h = 50 km. $\Delta P-H = 22^{\circ}6$ $\Delta_{meas} = 22^{\circ}6$
		Mac	ipFZ	19 47 08	
		Mac	eSN	19 51 00	
		Mac	esSN	19 51 15	
		Mac	F	20 19 --	
387	Nov. 23	Mac	ePZ	07 47 09	No Surface Waves.
388	Nov. 24	Mac	eZ	13 35 26	Region: 23° N, 121° E. H = 13 <sup>h</sup> 17.2 <sup>m</sup>
		Mac	ePR <sub>1</sub> Z	13 36 30	
		Mac	eH	13 36 38	
		Mac	ePR <sub>2</sub> E	13 39 00	
		Mac	eSKSN	13 42 30	
		Mac	eSKKSN	13 43 40	
		Mac	eFSN	13 46 02	
		Mac	eN	13 50 03	
		Mac	eSR <sub>1</sub> N	13 52 00	
		Mac	F	Lost.	
389	Nov. 26	Mac	eZ	21 44 33	Sumatra Possibly deeper than normal.
		Mac	iP'Z	21 44 43	
		Mac	iPR <sub>1</sub> Z	21 48 04	
		Mac	eSKPN	21 48 21	
		Mac	eSKSN	21 51 58	
		Mac	eSR <sub>1</sub> E	22 05 49	
Mac	F	Lost.			
390	Nov. 26	Mac	ePZ	22 33 22	41°5' N, 34°2' E. H = 22 <sup>h</sup> 20 <sup>m</sup> 42 <sup>s</sup> . $\Delta S-P = 85^{\circ}7$ $\Delta P-H = 86^{\circ}5$ $\Delta_{meas} = 85^{\circ}7$
		Mac	iZ	22 33 33	
		Mac	iSN	22 43 56	
		Mac	F	03 52 --	
391	Nov. 28	Mac	eZ	06 39 57	Region: 10° N, 129° E. H = 22 <sup>h</sup> 20.2 <sup>m</sup>
		Mac	ePR <sub>1</sub> Z	06 40 18	
		Mac	ePSN	06 50 10	
		Mac	eSR <sub>1</sub> E	06 56 51	
		Mac	F	08 36 --	
392	Nov. 28	Mac	ePZ	17 22 29	Epicentral Region: 52°6' N, 153°4' E H = 17 <sup>h</sup> 10 <sup>m</sup> 58 <sup>s</sup> . $\Delta P-H = 73^{\circ}8$ $\Delta_{meas} = 73^{\circ}9$
		Mac	eZ	17 22 40	
		Mac	e(S)E	17 31 39	
		Mac	F	19 47 --	

SAINT LOUIS STATION BULLETIN FOR NOVEMBER, 1943.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
393	Nov. 29	Mac	iPZ	19 <sup>h</sup> 48 <sup>m</sup> 11 <sup>s</sup>	27°7 S, 67°3 W H = 19 <sup>h</sup> 37 <sup>m</sup> 05 <sup>s</sup> . ΔP-H = 69°7 Δ <sub>meas</sub> = 69°9 Possibly deeper than normal.
		Mac	iZ	19 49 05	
		Mac	iSE	19 57 16	
		Mac	ePSN	19 57 49	
		Mac	eN	19 58 14	
		Mac	eN	19 58 36	
		Mac	F	21 27 --	
394	Nov. 29	Mac	ePZ	21 30 05	Region: 57° N, 174° E. H = 21 <sup>h</sup> 12.8 <sup>m</sup>
		Mac	eSE	21 38 41	
		Mac	eE	21 43 13	
		Mac	F	23 26 --	

Minor Seismic Activity:

Date	From h. m.	To h. m.
Nov. 6	06 48	08 00
7	06 51	07 22
8	23 02	23 48
15	21 40	22 09
16	17 42	18 03
18	19 05	20 00
20	00 29	01 06
20	07 55	08 25
23	22 42	23 24
24	07 41	08 13
27	09 10	10 00

# AINT LOUIS UNIVERSITY INSTITUTE OF GEOPHYSICAL TECHNOLOGY

3621 OLIVE STREET, SAINT LOUIS 8, MO., U. S. A.

## SEISMOLOGICAL BULLETIN

### SAINT LOUIS STATION

Latitude: geographical,  $38^{\circ} 38' 10''$  N., geocentric,  $38^{\circ} 27' N.$   
 Longitude:  $90^{\circ} 14' 10''$  W. Altitude:  $h = 161m$ ,  $H+h = 4$  km.  
 Lithologic foundation: Mississippian limestone  
 Seismographs: Wood-Anderson short period EN;  
                   Macelwane-Sprengnether Z; Sprengnether NE.  
 Clock: Wiechert

Bulletin for December, 1943

54.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
395	Dec. 1	Mac	eZ	06 <sup>h</sup> 23 <sup>m</sup> 39 <sup>s</sup>	4 <sup>o</sup> 5 S, 141 <sup>o</sup> 7 E. H = 06 <sup>h</sup> 04 <sup>m</sup> 50 <sup>s</sup> . h = 100 <sup>±</sup> km. $\Delta_{PR_1-H} = 122^{\circ}2$ $\Delta_{meas} = 122^{\circ}2$
		Mac	iPR <sub>1</sub> Z	06 25 02	
		Mac	e(pPR <sub>1</sub> )E	06 25 47	
		Mac	ePR <sub>2</sub> N	06 27 55	
		Mac	e(pPR <sub>2</sub> )E	06 28 19	
		Mac	iSKSE	06 30 22	
		Mac	esSKSE	06 31 22	
		Mac	eSKKSE	06 31 52	
		Mac	esSKKSN	06 32 45	
		Mac	eSE	06 32 51	
		Mac	eE	06 33 27	
		Mac	esSN	06 33 44	
		Mac	eE	06 34 21	
		Mac	iPSE	06 34 52	
		Mac	F	09 02 --	
396	Dec. 1	Mac	ePZ	10 44 58	Epicentral Region: 18 <sup>o</sup> .6 S, 69 <sup>o</sup> .4 W. h = 100+km. H = 10 <sup>h</sup> 35 <sup>m</sup> 00 <sup>s</sup> . $\Delta_{P-H} = 60^{\circ}6$ $\Delta_{meas} = 60^{\circ}7$
		Mac	iPZ	10 45 00	
		Mac	ipPZ	10 45 27	
		Mac	iPePZ	10 45 37	
		Mac	eSN	10 53 11	
		Mac	iSE	10 53 16	
		Mac	isSE	10 54 02	
		Mac	F	13 33 --	
397	Dec. 2	Mac	eSKSE	02 18 57	U.S.C.G.S. gives: Region: 30 <sup>o</sup> S, 178 <sup>o</sup> W. H = 01 <sup>h</sup> 54.0 <sup>m</sup>
		Mac	eSKKSE	02 19 49	
		Mac	ePSE	02 22 04	
		Mac	ePPSE	02 23 09	
		Mac	F	04 40 --	

No.	Date	Instr.	Phase	G.M.C.T.	Remarks
398	Dec. 2	Mac Mac Mac Mac Mac	e(P')N e(SKPN) eSKSN eN F	05 <sup>h</sup> 27 <sup>m</sup> 18 <sup>s</sup> 05 29 43 05 34 11 05 37 04 07 28 --	Approximately 24° N, 121° E. H = 05 <sup>h</sup> 08.9 <sup>m</sup>
399	Dec. 3	Mac Mac Mac Mac Mac Mac Mac	eP'Z ePR <sub>1</sub> Z eSKSE eSKKSE eSN ePSE F	04 56 58 04 58 43 05 03 59 05 05 27 05 06 52 05 08 51 Lost in following	New Guinea. Δ = about 126° U.S.C.G.S. gives: 3° S, 140° E.
400	Dec. 3	Mac Mac Mac Mac Mac	iPZ eSN iSN eSR <sub>1</sub> N F	07 05 22 07 15 38 07 15 46 07 21 27 08 09 --	42°3' N, 144°0' E H = 06 <sup>h</sup> 52 <sup>m</sup> 50 <sup>s</sup> . h = 50±km. Δ <sub>P-H</sub> = 85°5' Δ <sub>meas</sub> = 85°5'
401	Dec. 7	Mac Mac Mac Mac Mac Mac Mac	iPZ ipPZ iSN issN iE iSR <sub>1</sub> E F	01 12 22 01 12 41 01 16 26 01 17 00 01 17 08 01 17 24 01 43	Epicentral Region: 15°9' N, 93°8' W. H = 01 <sup>h</sup> 07 <sup>m</sup> 22 <sup>s</sup> . h = 100±km. Δ <sub>P-H</sub> = 23°2' Δ <sub>meas</sub> = 23°1'
402	Dec. 8	Mac Mac	e(P)Z eE	09 26 06 09 33 32	Microseisms strong.
403	Dec. 8	Mac Mac Mac	iPZ iSN F	19 44 06 19 48 29 21 00 --	Epicentral Region: 14°4' N, 46°3' W. H = 19 <sup>h</sup> 38 <sup>m</sup> 46 <sup>s</sup> . Δ <sub>P-H</sub> = 24°5' Δ <sub>meas</sub> = 24°5'
404	Dec. 9	Mac Mac Mac Mac	eFZ e(S)N eLN F	03 29 30 03 37 40 03 41 -- 04 30 --	Region: 63° N, 178° W. H = 03 <sup>h</sup> 19.9 <sup>m</sup>
405	Dec. 11	Mac Mac Mac Mac	e(P)Z iZ iZ iZ	01 00 44 01 01 13 01 01 28 01 01 34	No Surface Waves.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
406	Dec. 13	Mac Mac	eE eE	16 <sup>h</sup> 23 <sup>m</sup> 31 <sup>s</sup> 16 24 31	Masked by microseisms. Riverview gives: H = 15 <sup>h</sup> 53 <sup>m</sup> 31 <sup>s</sup> .
407	Dec. 14	Mac Mac	i(P)Z eZ	16 07 19 16 07 33	E-W and N-S out of operation.
408	Dec. 14	Mac	eZ	20 34 51	E-W and N-S out of operation.
409	Dec. 21	W-A W-A W-A	eFN eSN F	13 52 36 13 57 39 Lost	Approximately: 13° N, 70° W. H = 13 <sup>h</sup> 46.3 <sup>m</sup> Mac Instruments not operating.
410	Dec. 21	Mac Mac Mac Mac	ePZ eSN e(SR <sub>2</sub> )E F	22 13 26 22 19 29 22 22 22 22 51 --	Ecuador.
411	Dec. 22	Mac Mac Mac Mac Mac Mac Mac Mac Mac Mac	ePZ iPZ ipPZ e(PR <sub>1</sub> )Z e(pPR <sub>1</sub> )Z iSN esSE eE F	07 09 39 07 09 42 07 10 10 07 11 29 07 12 03 07 15 55 07 16 47 07 19 28 07 42 --	2°8 S, 76°9 W. H = 07 <sup>h</sup> 01 <sup>m</sup> 56 <sup>s</sup> . h = 150±km. Δ <sub>P-H</sub> = 42°5 Δ <sub>meas</sub> = 43°1
412	Dec. 22	Mac Mac Mac Mac Mac	ePZ iZ iSN iLN F	12 59 25 12 59 29 13 04 33 13 07 38 Lost	12°7 N, 70°6 W. H = 12 <sup>h</sup> 53 <sup>m</sup> 02 <sup>s</sup> . Δ <sub>P-H</sub> = 31°2 Δ <sub>meas</sub> = 31°3
413	Dec. 22	Mac Mac Mac	eZ iMN F	16 01 27 16 02 01 16 05 --	Pasadena gives: 34° 20' N, 115° 48' W. H = 15 <sup>h</sup> 50 <sup>m</sup> 28 <sup>s</sup> .
414	Dec. 23	W-A W-A	ePN F	09 24 40 09 26 --	



No.	Date	Inst.	Phase	G.M.C.T.	Remarks
415	Dec. 23	Mac	ePZ	16 <sup>h</sup> 02 <sup>m</sup> 21 <sup>s</sup>	13°5 N, 70°8 W. H = 15 <sup>h</sup> 56 <sup>m</sup> 06 <sup>s</sup> . $\Delta_{P-H} = 30^{\circ}3$ $\Delta_{meas} = 30^{\circ}4$ May be slightly deeper than normal.
		Mac	iPZ	16 02 23	
		Mac	iZ	16 02 27	
		Mac	iSN	16 07 29	
		Mac	F	17 51 --	
416	Dec. 23	Mac	iPZ	16 09 50	Aftershock of No. 415
417	Dec. 23	Mac	ePZ	16 27 13	Aftershock of No. 415
418	Dec. 23	Mac	ePE	19 15 00	6°1 S, 153°3 E H = 19 <sup>h</sup> 00 <sup>m</sup> 13 <sup>s</sup> . $\Delta_{PR_1-H} = 114^{\circ}0$ $\Delta_{meas} = 114^{\circ}6$ Possibly slightly deeper than normal
		Mac	e(F')Z	19 18 31	
		Mac	ePR <sub>1</sub> E	19 19 41	
		Mac	iE	19 19 57	
		Mac	iSKSE	19 25 30	
		Mac	iSKKSE	19 26 41	
		Mac	eSN	19 27 19	
		Mac	i(PS)E	19 29 29	
		Mac	i(PPS)E	19 30 46	
		Mac	iN	19 31 06	
		Mac	F	24.2----	
419	Dec. 24	Mac	ePZ	01 06 33	12°9 N, 70°0 W H = 01 <sup>h</sup> 00 <sup>m</sup> 10 <sup>s</sup> . $\Delta_{P-H} = 31^{\circ}2$ $\Delta_{meas} = 31^{\circ}3$
		Mac	iSN	01 11 35	
		Mac	eN	01 12 07	
		Mac	eSR <sub>2</sub> N	01 13 58	
		Mac	F	02 04 --	
420	Dec. 24	Mac	e(PR <sub>1</sub> )Z	02 07 19	Very roughly: 6° S, 157° E. H = 01 <sup>h</sup> 48.2 <sup>m</sup>
		Mac	eSKSN	02 13 37	
		Mac	eE	02 16 16	
		Mac	ePSN	02 17 11	
		Mac	eN	02 22 31	
Mac	F	04 30 --			
421	Dec. 24	Mac	ePZ	02 17 27	Weak.
422	Dec. 24	Mac	(eN)	05 11 54	Solomon Islands Region.
		Mac	ePR <sub>1</sub> N	05 16 44	
		Mac	e(PPS)E	05 27 08	
		Mac	F	06.5----	
423	Dec. 24	Mac	e(PPS)E	12 13 51	Very roughly: 5° S, 153° E. H = 12 <sup>h</sup> 44.5 <sup>m</sup>
		Mac	eSR <sub>1</sub> E	12 19 27	
		Mac	F	Lost	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
424	Dec. 24	Mac Mac	ePZ F	12 <sup>h</sup> 29 <sup>m</sup> 03 <sup>s</sup> Lost	
425	Dec. 25	Mac Mac Mac	ePSE eSR1E F	05 01 17 05 06 51 06 56 --	Epicentral Region: 6°1 S, 154°2 E. H = 04 <sup>h</sup> 32 <sup>m</sup> 10 <sup>s</sup> . $\Delta_{PS-H} = 114^{\circ}2$ $\Delta_{meas} = 114^{\circ}2$
426	Dec. 25	Mac Mac Mac	e(P)Z eSN F	07 49 16 07 55 53 08 00 --	
427	Dec. 25	Mac Mac Mac Mac Mac Mac Mac	ePZ iPZ eZ iSE eLE iLE F	08 22 28 08 22 32 08 24 18 08 26 24 08 28 25 08 28 34 09 40 --	25°6 N, 110°7 W. H = 08 <sup>h</sup> 12 <sup>m</sup> 36 <sup>s</sup> . $\Delta_{P-H} = 21^{\circ}7$ $\Delta_{meas} = 21^{\circ}7$
428	Dec. 25	Mac Mac Mac Mac	ePZ eSN eLN F	10 45 01 10 48 56 10 51 22 10 59 --	Aftershock of #427.
429	Dec. 25	Mac Mac	ePZ eZ	19 52 28 19 52 33	
430	Dec. 26	Mac Mac Mac Mac	iPZ eSN iE F	05 02 37 05 06 56 05 07 14 06 08 --	18°8 N, 104°2 W. H = 04 <sup>h</sup> 57 <sup>m</sup> 22 <sup>s</sup> . $\Delta_{P-H} = 24^{\circ}0$ $\Delta_{meas} = 24^{\circ}0$
431	Dec. 27	Mac Mac Mac Mac	eSKSE eSKKSE ePSE F	04 20 12 04 21 11 04 23 21 06.1----	29°9 S, 179°3 W. H = 03 <sup>h</sup> 55 <sup>m</sup> 22 <sup>s</sup> . $\Delta_{FS-H} = 107^{\circ}5$ $\Delta_{meas} = 107^{\circ}7$
432	Dec. 30	Mac Mac Mac	(e)Z e(PPS)N F	06 42 57 06 53 44 Lost in following	Probably from the same region as #431.

SAINT LOUIS STATION BULLETIN FOR DECEMBER, 1943.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
433	Dec. 30	Mac Mac	eN F	07 <sup>h</sup> 59 <sup>m</sup> 49 <sup>s</sup> 09 30 --	Region: 31° S, 178° W. H = 07 <sup>h</sup> 36.3 <sup>m</sup>
434	Dec. 30	Mac Mac Mac Mac Mac	eP'Z e(PR <sub>1</sub> )Z ePSE eE F	22 21 16 22 22 27 22 32 16 22 32 45 24 31 --	New Guinea. Δ = about 120° Riverview gives: H = 22 <sup>h</sup> 02 <sup>m</sup> 23 <sup>s</sup> .

Minor Seismic Activity:

Date	From h. m.	To h. m.
Dec. 17	14 --	16 --
24	06 51	07 37
24	08 59	09 20
25	12 27	12 43
27	01 22	01 42

James B. Macelwane, S. J.  
Director

Harry K. Hail  
Student Assistant