

# SAINT LOUIS UNIVERSITY INSTITUTE OF TECHNOLOGY

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

## SEISMOLOGICAL BULLETIN

Seismological Bulletin for the month of January, 1946.

1.

No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
1	Jan. 2	S.L.	ePR <sub>1</sub> Z	M.S.	15 31 34	Region: 6°5 S., 151°5 E. H = 15 <sup>h</sup> 11 <sup>m</sup> 51 <sup>s</sup> . Δ <sub>PR<sub>1</sub>-H</sub> = 116°1 Δ <sub>meas</sub> = 116°2	
			eLN	S.	16 01.2		
			F	S.	16 51 --		
2	Jan. 3	S.L.	iPZ	M.S.	04 15 53	Time doubtful.	
		Fl.	iPE	W.A.	04 15 53		
3	Jan. 4	S.L.	ePZ	M.S.	19 49 48	Epicentral Region: 10°7 N., 85°6 W. H = 19 <sup>h</sup> 43 <sup>m</sup> 55 <sup>s</sup> . h = 50 <sup>±</sup> km. Δ <sub>eP-H</sub> = 28°2 Δ <sub>meas</sub> = 28°2	
			iPZ	M.S.	19 49 49		
			ipPZ	M.S.	19 49 59		
			iZ	M.S.	19 50 12		
			isSN	S.	19 54 49		
			eLE	S.	19 56 --		
			F	S.	21 00 --		
		Fl.	iPZ	G.W.	19 49 48		Δ <sub>P-H</sub> = 28°2
			eE	G.W.	19 52 23		Δ <sub>meas</sub> = 28°4
			isSN	G.W.	19 54 47		
			eLN	G.W.	19 56.7		
			F	G.W.	20.7		
4	Jan. 5	S.L.	ePZ	M.S.	01 20 07	Epicentral Region: 15°1 N., 90°9 W. H = 01 <sup>h</sup> 15 <sup>m</sup> 11 <sup>s</sup> . h = 200 <sup>±</sup> km. Δ <sub>eP-H</sub> = 23°7 Δ <sub>meas</sub> = 23°6	
			iPZ	M.S.	01 20 08		
			ipPZ	M.S.	01 20 47		
			iPR <sub>1</sub> Z	M.S.	01 20 55		
			ispZ	M.S.	01 21 12		
			eSE	S.	01 24 01		
			isSN	S.	01 25 06		
			iLN	S.	01 26 55		
			F	S.	02.5		
			Fl.	iPN	W.A.		01 20 07
		ipPN		W.A.	01 20 46	Δ <sub>meas</sub> = 23°7	
		iPR <sub>1</sub> N		W.A.	01 20 55		
		isPN		W.A.	01 21 12		
		eSE		W.A.	01 24 05		
		iSE		W.A.	01 24 12		
		isSZ		G.W.	01 25 15		
		F		G.W.	Lost		
		C.G.	ePN	W.A.	01 19 53	Δ <sub>eP-H</sub> = 22°2	
			ipPN	W.A.	01 19 54	Δ <sub>meas</sub> = 22°2	
			ipPN	W.A.	01 20 32		
iSN	W.A.		01 23 48				
F	W.A.		01 28.5				

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
5	Jan. 5	S.L.	iPZ	M.S.	15 20 12		
6	Jan. 5	S.L.	ePR <sub>1</sub> E	S.	20 16 21	15 <sup>09</sup> S., 167 <sup>00</sup> E. H = 20 <sup>h</sup> 57 <sup>m</sup> 32 <sup>s</sup> . h = 100±km. ΔPR <sub>1</sub> -H = 109 <sup>08</sup> Δmeas = 109 <sup>07</sup>	
			e(pPR <sub>1</sub> )Z	M.S.	20 16 35		
			eSKSE	S.	20 22 28		
			iE	S.	20 22 41		
			i(SKKS)E	S.	20 23 42		
			ePSE	S.	20 25 44		
			iE	S.	20 26 01		
			iZ	M.S.	20 27 27		
			iSR <sub>1</sub> E	S.	20 31 36		
			iE	S.	20 32 07		
		F	S.	24 +			
		Fl.	iPR <sub>1</sub> Z	G.W.	20 16 17		ΔPR <sub>1</sub> -H = 109 <sup>05</sup> Δmeas = 109 <sup>06</sup>
			iSKSE	G.W.	20 22 26		
			iE	G.W.	20 22 52		
i(SKKS)E	G.W.		20 23 38				
			iE	G.W.	20 25 59		
			F	G.W.	23.6		
7	Jan. 7	S.L.	eZ	M.S.	06 36 30-	Possibly deeper than normal. Pasadena gives: Roughly: 7 <sup>0</sup> N., 127 <sup>0</sup> E H = 06 <sup>h</sup> 14 <sup>m</sup> 00 <sup>s</sup> .	
			iE	S.	06 36 47		
			eZ	M.S.	06 36 49		
			e(S)E	S.	06 42 22		
			e(PPS)E	S.	06 45 49		
			eSR <sub>1</sub> N	S.	06 52 50		
			e(SR <sub>2</sub> )N	S.	06 55 18		
		F	S.	08.5			
		Fl.	iZ	G.W.	06 36 35		
			eN	G.W.	06 36 48		
e(S)E	G.W.		06 42 21				
			F	G.W.	08.5		
8	Jan. 7	S.L.	ePZ	M.S.	15 56 27		
			eLN	S.	16 05 26		
			F	S.	16.3		
9	Jan. 8	S.L.	ePZ	M.S.	18 59 14	Felt widely in southern California. Pasadena gives: 33 <sup>01</sup> N., 116 <sup>00</sup> W. H = 18 <sup>h</sup> 54 <sup>m</sup> 20 <sup>s</sup> .	
			eSE	S.	19 03 27		
			eLN	S.	19 05 41		
			iMN	S.	19 06 09		
			F	S.	19.3		
		Fl.	e(S)E	G.W.	19 03 23		
			eLN	G.W.	19 05 47		
			iMN	G.W.	19 06 19		
			F	G.W.	19.3		

No.	Date	Sta.	Phase	Inst.	h m s	Remarks			
10	Jan. 11	S.L.	iPZ	M.S.	01 45 27	44°4 N., 130°7 E. H = 01 <sup>h</sup> 33 <sup>m</sup> 34 <sup>s</sup> . h = 600±km. $\Delta P-H = 89^{\circ}1$ $\Delta_{meas} = 89^{\circ}2$			
			ipPZ	M.S.	01 47 35				
			iPR <sub>1</sub> Z	M.S.	01 49 09				
			iZ	M.S.	01 49 38				
			iSKSE	S.	01 54 59				
			iSE	S.	01 55 24				
			isSKSE	S.	01 59 12				
			iE	S.	02 00 12				
			iE	S.	02 00 36				
			iE	S.	02 01 34				
			iN	S.	02 02 15				
			eE	S.	02 04 45				
			iN	S.	02 05 02				
			iN	S.	02 07 40				
			F	S.	03.6				
		Fl.	ipZ	G.W.	01 45 27	$\Delta P-H = 89^{\circ}1$ $\Delta_{meas} = 89^{\circ}1$			
			ipPZ	G.W.	01 47 34				
			iPR <sub>1</sub> Z	G.W.	01 49 09				
			iSKSE	G.W.	01 54 59				
			iSE	G.W.	01 55 24				
			isSKSE	G.W.	01 59 10				
			iE	G.W.	02 00 58				
			iE	G.W.	02 02 02				
			eE	G.W.	02 05 --				
			F	G.W.	03.5				
		C.G.	iSKSE	W.A.	01 55 06	$\Delta S-H = 90^{\circ}5$ $\Delta_{meas} = 90^{\circ}9$			
			iSE	W.A.	01 55 38				
			F	W.A.	02.2				
		11	Jan. 11	S.L.	ipZ	M.S.	18 46 25	Region: 18°N., 93°5 W. H = 18 <sup>h</sup> 41 <sup>m</sup> 33 <sup>s</sup> . Felt at Coatzacoalos, Vera Cruz, Mexico.	
					iSE	S.	18 50 24		
F	S.				19.1				
Fl.	ePN			W.A.	18 46 26				
	eE			W.A.	18 50 03				
	eN			W.A.	18 50 06				
C.G.	e(P)N			W.A.	18 46 11	Time doubtful.			
	eE			W.A.	18 49 27				
12	Jan. 12			S.L.	ePZ	M.S.	03 24 10		
					eZ	M.S.	03 24 22		
		iSN	S.		03 28 42				
		eLN	S.		03 31 42				
		iMN	S.		03 32 19				
		F	S.		03.7				
		Fl.	eSN	G.W.	03 28 43				
			eLE	G.W.	03 31 55				
			iMN	G.W.	03 32 30				
			F	G.W.	03.7				

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
13	Jan. 12	S.L.	ePZ e(S)N eLN F	M.S. S. S. S.	06 09 35 06 14 01 06 17 15 06.4	
14	Jan. 12	S.L.	iPZ iPR <sub>1</sub> Z iPR <sub>2</sub> E iSE iSR <sub>2</sub> E F	M.S. M.S. S. S. S. S.	20 33 35 20 35 09 20 35 42 20 39 47 20 42 57 Lost	Felt at Anchorage and Cordova, Alaska. U.S.C.G.S.: 59°N., 147°5' W. H = 20 <sup>h</sup> 25.7 <sup>m</sup> B.C.I.S.: 60°N., 147°W. H = 20 <sup>h</sup> 25.6 <sup>m</sup>
		Fl.	iPZ i(PR <sub>1</sub> )Z iSE iSR <sub>2</sub> E F	G.W. G.W. G.W. G.W. G.W.	20 33 27 20 35 04 20 39 45 20 42 54 23 ±	
		C.G.	ePE ePR <sub>1</sub> E e(L)E F	W.A. W.A. W.A. W.A.	20 33 38 20 35 19 20 43.1 21.7	
15	Jan. 13	S.L.	eN eLN F	S. S. S.	19 41 36 19 42 42 19.9 +	
16	Jan. 15	S.L.	eE iE eE	W.A. W.A. W.A.	05 28 59 05 29 01 05 29 09	
17	Jan. 15	S.L.	eZ eZ	M.S. M.S.	17 31 54 17 34 55	
18	Jan. 17	S.L.	iPZ	M.S.	02 43 55	Time doubtful.
19	Jan. 17	S.L.	eP'Z eZ i(pPR <sub>1</sub> )Z iSE eZ eZ i(PS)E eSR <sub>1</sub> E eSR <sub>2</sub> E eLE F	M.S. M.S. M.S. S. M.S. M.S. S. S. S. S. S. S.	09 58 16 09 58 42 10 00 16 10 07 11 10 08 31 10 09 00 10 09 55 10 16 27 10 20 37 10 29 30 12.1	Region: 7°S., 146°5' E. H = 09 <sup>h</sup> 39 <sup>m</sup> 40 <sup>s</sup> . h = 150±km.
20	Jan. 20	S.L.	ePR <sub>1</sub> Z iPSE iE ePKKPZ iPPPSE eSR <sub>1</sub> E F	M.S. S. S. M.S. S. S. S.	17 13 26 17 22 50 17 23 07 17 24 11 17 24 50 17 28.2 20 ±	16°9' S., 167°4' E. H = 16 <sup>h</sup> 54 <sup>m</sup> 25 <sup>s</sup> . ΔPS-H = 110°1 Δmeas = 110°0

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20 (Con't.)	Jan. 20	Fl.	ePSE F	G.W. G.W.	17 22 52 19.4	$\Delta_{PS-H} = 110^{\circ}3$ $\Delta_{meas} = 110^{\circ}0$
21	Jan. 21	S.L.	ePZ eZ	M.S. M.S.	19 58 10 19 58 50	South America. Deep?
22	Jan. 23	S.L.	ePZ	M.S.	01 57 14	
23	Jan. 23	S.L.	ePZ	M.S.	06 31 04	
24	Jan. 25	S.L.	iPZ	M.S.	04 35 34	Deep? No surface.
25	Jan. 25	S.L.	ePZ iZ e(SR <sub>1</sub> )N eLN F	M.S. M.S. S. S. S.	17 42 51 17 42 56 17 56 40 18 03.0 18.7	Switzerland. Epicenter by Zurich: 46°23'N., 7°33'E. B.C.I.S. gives: H = 17 <sup>h</sup> 31 <sup>m</sup> 50 <sup>s</sup> .
26	Jan. 26	S.L.	eZ eZ	M.S. M.S.	16 59 48 17 00 14	Weak.
27	Jan. 26	S.L.	iPZ	M.S.	18 28 40	
28	Jan. 27	S.L.	iPZ	M.S.	01 25 57	
29	Jan. 27	S.L.	ePZ	M.S.	21 35 55	
30	Jan. 28	S.L.	ePZ eSN eLN F	M.S. S. S. S.	12 54 46 12 58 52 13 01.0 13.2	Gulf of California. H = 12 <sup>h</sup> 49 <sup>m</sup> 50 <sup>s</sup> .
31	Jan. 28	S.L.	iPZ	M.S.	15 14 05	
32	Jan. 28	S.L.	ePZ	M.S.	23 35 53	Very weak.
33	Jan. 29	S.L.	ePZ eSN F	M.S. S. S.	06 35 00 06 38 58 07.0	
34	Jan. 31	S.L.	iPZ	M.S.	23 28 33	No surface waves.

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Minor Seismic Activity

January 1946

Date	Station	From h m	To h m
January 4	S.L.	10 41	10 53
6	S.L.	10 57	11 50
6	S.L.	15 55	16 10
6	S.L.	23 36	23 58
9	S.L.	21.5	23.5
15	S.L.	06 12	06 32
21	S.L.	19 02	19 30
22	S.L.	03 49	04 08
24	S.L.	06 50	08.0

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
35	Feb. 1	S.L.	ePZ e(S)N e(L)N F	M.S. S. S. S.	00 52 50 00 58 44 01 00 52 01.5	
36	Feb. 2	S.L.	e(P)Z iZ	M.S. M.S.	06 13 59 06 14 11	Weak
37	Feb. 4	S.L.	iPZ epPZ ipPZ iSE isSN iN eLE F	M.S. M.S. M.S. S. S. S. S. S.	03 54 31 03 55 03 03 55 06 04 02 18 04 03 27 04 10 43 04 12.2 04.7	52°5 N., 176°0 W. H = 03 <sup>h</sup> 44 <sup>m</sup> 55 <sup>s</sup> . h = 150±km. $\Delta_{P-H} = 58^{\circ}2$ $\Delta_{meas} = 58^{\circ}1$
		Fl.	ePN epPN iSE	W.A. W.A. G.W.	03 53 59 03 54 39 04 01 45	Time doubtful. $\Delta_{S-P} = 57^{\circ}0$ $\Delta_{meas} = 57^{\circ}9$
38	Feb. 4	S.L.	e(P)Z e(pP)Z	M.S. M.S.	04 23(47) 04 24 13	Indefinite beginning. Aftershock of preceding?
39	Feb. 4	S.L.	iPZ	M.S.	16 09 22	Region: 14°S., 71°W. H = 15 <sup>h</sup> 59 <sup>m</sup> 50 <sup>s</sup> .
40	Feb. 5	S.L.	e(P)Z	M.S.	12 53 08	West Indies.
41	Feb. 5	S.L.	e(P)Z	M.S.	12 59 16	
42	Feb. 5	S.L.	ePZ	M.S.	20 11 13	
43	Feb. 6	S.L.	ePZ	M.S.	10 55 31	
44	Feb. 10	S.L.	iPZ e(S)E	M.S. S.	19 23 55 19 28 41	
45	Feb. 12	S.L.	iPZ eZ eZ eZ iSN e(PS)N eLN F	M.S. M.S. M.S. M.S. S. S. S. S.	02 54 51 02 55 04 02 55 29 02 55 38 03 04 11 03 05 00 03 16 -- 03.9	35°9 N., 5°0 E. H = 02 <sup>h</sup> 43 <sup>m</sup> 28 <sup>s</sup> . $\Delta_{P-H} = 72^{\circ}4$ $\Delta_{meas} = 72^{\circ}4$

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
45 (Con't.)	Feb. 12	Fl.	eSN F	G.W. G.W.	03 04 09 Lost	$\Delta_{\text{meas}} = 72^{\circ}4$
46	Feb. 14	S.L.	iPZ	M.S.	02 18 41	
47	Feb. 14	S.L.	e(P)Z	M.S.	07 12 08	
48	Feb. 14	S.L.	e(P)Z iSE	M.S. S.	17 01 13 17 10 54	South America. Deep.
49	Feb. 15	S.L.	(ePZ) ePZ iPZ iPR <sub>2</sub> Z eSE iSE e(SR <sub>2</sub> )E eLE iME F	M.S. M.S. M.S. M.S. S. S. S. S. S. S.	03 23 12 03 23 15 03 23 19 03 23 59 03 27 47 03 27 56 03 29 18 03 30 20 03 31 01 04.3	47 <sup>o</sup> 3 N., 122 <sup>o</sup> 7 W. H = 03 <sup>h</sup> 17 <sup>m</sup> 49 <sup>s</sup> . Felt strongly in Seattle, Washington. $\Delta P-H = 25^{\circ}0$ $\Delta_{\text{meas}} = 25^{\circ}0$
		FL.	iPZ eSN iSN iME F	G.W. G.W. G.W. G.W. G.W.	03 23 18 03 27 58 03 28 01 03 30 59 04.3	Time doubtful. $\Delta_{\text{meas}} = 24^{\circ}8$
		C.G.	eME	W.A.	03 31 23	
50	Feb. 15	S.L.	iPZ e(S)E	M.S. S.	15 59 50 16 08 13	Region: 17 <sup>o</sup> S., 72 <sup>o</sup> W. H = 15 <sup>h</sup> 50.2 <sup>m</sup> Assumed depth: 100 km.
51	Feb. 16	S.L.	e(P)Z e(S)E	M.S. S.	07 10 20 07 18 55	
52	Feb. 16	S.L.	e(P)Z	M.S.	20 10 39	Very weak.
53	Feb. 16	S.L.	ePZ eLE F	M.S. S. S.	20 18 15 20 49 -- 21.4	Near Samoa. H 20 <sup>h</sup> 05.0 <sup>m</sup> (about)
54	Feb. 16	S.L.	iSKSE eSKSE eLE F	S. S. S. S.	21 47 59 21 48 36 21 22 06 Lost	Near Samoa. $\Delta$ about 95 <sup>o</sup>
55	Feb. 16	S.L.	ePZ iSN F	M.S. S. S.	22 09 45 22 20 59 24.6 +	Near Samoa. H about 21 <sup>h</sup> 56.5 <sup>m</sup>



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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
56	Feb. 18	S.L.	ePR <sub>1</sub> Z	M.S.	00 36 26	Epicentral Region: 6°S., 150°5 E. H = 00 <sup>h</sup> 16 <sup>m</sup> 38 <sup>s</sup> . Δ <sub>PR<sub>1</sub>-H</sub> = 116°8 Δ <sub>meas</sub> = 116°7
			eE	S.	00 42 48	
			eSE	S.	00 44 04	
			ePSE	S.	00 46 23	
			eSR <sub>1</sub> N	S.	00 52.3	
			F	S.	02.9	
57	Feb. 18	S.L.	e(S)E	S.	17 44 47	
			e(L)E	S.	17 48.4	
			F	S.	18.9	
58	Feb. 20	S.L.	e(P)Z	M.S.	03 41 44	
59	Feb. 20	S.L.	ePR <sub>1</sub> Z	M.S.	04 01 49	B.C.I.S. gives: Philippines. H = 03 <sup>h</sup> 41.9 <sup>m</sup>
			eSKSE	S.	04 07 31	
			iPSN	S.	04 11 27	
			iN	S.	04 11 51	
			eN	S.	04 12 16	
			iPPSN	S.	04 12 30	
			eSR <sub>1</sub> E	S.	04 17 38	
			eLE	S.	04 33 --	
			F	S.	06.1	
			60	Feb. 21	S.L.	
eZ	M.S.	15 56 11				
		Fl.	iPZ	G.W.	15 55 50	Δ <sub>P-H</sub> = 87°1 Δ <sub>meas</sub> = 86°7
61	Feb. 22	Fl.	ePN	W.A.	17 29 36	Depth of Focus: 150±km. Epicenter by Tacubaya: 16°24'N., 93°05'W.
			epPZ	G.W.	17 29 55	
			ispZ	G.W.	17 30 03	
			eZ	G.W.	17 30 16	
			iN	G.W.	17 30 17	
			iN	G.W.	17 30 58	
			eSE	G.W.	17 33 40	
			eE	G.W.	17 34 17	
			isSN	G.W.	17 34 40	
			F	G.W.	17.8	
62	Feb. 24	S.L.	eP*E	W.A.	00 52 36.1	Local shock. Felt at Centralia, Ill. See Earthquake Notes, vol.17, no. 3, p. 6, March 1946.
			eE	W.A.	00 52 37.7	
			iSN	W.A.	00 52 49.0	
63	Feb. 24	S.L.	eP'Z	M.S.	09 48 14	Celebes Islands. Possibly deep.
			iSKPZ	M.S.	09 51 29	
			iZ	M.S.	09 51 43	
			iE	S.	09 51 46	
			iPR <sub>2</sub> E	S.	09 53 21	
			iSKSE	S.	09 55 22	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
63 (Continued)	Feb. 24	S.L.	iE	S.	09 55 41	
			iSKKSE	S.	09 57 21	
			iE	S.	09 57 37	
			iE	S.	09 57 47	
			iE	S.	09 59 18	
			iPSKSE	S.	10 00 42	
			iE	S.	10 03 34	
			F	S.	Lost in microseisms	
		Fl.	G.W.	09 51 33		
64	Feb. 24	S.L.	e(P)Z	M.S.	23 49 49	Microseisms strong.
			eZ	M.S.	23 50 01	
			M	S.	24.0	
65	Feb. 25	S.L.	e(PR <sub>1</sub> )Z	M.S.	01 59 23	
			iN	S.	02 04 38	
			i(SKKS)N	S.	02 06 26	
			i(PS)N	S.	02 08 57	
			iN	S.	02 11 34	
			F	S.	Lost in microseisms	
66	Feb. 25	S.L.	ePZ	M.S.	18 05 52	
67	Feb. 25	S.L.	ePZ	M.S.	20 11 28	
68	Feb. 27	S.L.	iPZ	M.S.	06 15 57	Microseisms very strong. Epicentral Region: 22°2 S., 65°7 W. H = 06 <sup>h</sup> 05 <sup>m</sup> 52 <sup>s</sup> . h = 300±km. ΔP-H = 64.98 Δ <sub>meas</sub> = 65.92
			iPZ	M.S.	06 16 57	
			eSZ	M.S.	06 24 17	
			iZ	M.S.	06 24 26	
69	Feb. 28	S.L.	i(SKPN)	S.	02 45 21	Microseisms strong. Off South - East Coast of Borneo. H = 02 <sup>h</sup> 22.8 <sup>m</sup>
			iN	S.	02 46 56	
			i(SKS)N	S.	02 49 04	

Minor Seismic Activity - February 1946

Date	Station	From	To
February 4	S.L.	22 <sup>h</sup> 16 <sup>m</sup>	23 <sup>h</sup> 04 <sup>m</sup>
8	S.L.	18 30	18 50
8	S.L.	23 40	23 56
12	S.L.	13 55	14.5+
17	S.L.	18 24	19 01
19	S.L.	10 08	10 45
19	S.L.	17 24	17 55
19	S.L.	19 43	20 24
21	Fl.	23 03	23 09

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

## SEISMOLOGICAL BULLETIN



Seismological Bulletin for the month of March, 1946.

11.

No.	Date	Sta.	Phase	Inst.	h m s	Remarks
70	March 2	S.L.	ePZ	M.S.	07 56 48	
71	March 2	S.L.	ePZ	M.S.	13 03 20	
72	March 9	S.L.	iPZ iSE eE eE eE F	M.S. S. S. S. S. S.	16 29 33 16 38 30 16 38 53 16 42 59 16 51.4 Lost	Region: 54°N., 160°5 E. H = 16 <sup>h</sup> 18.4 <sup>m</sup> Possibly deeper than normal.
73	March 10	S.L.	iZ	M.S.	19 39 51	May not be seismic.
74	March 12	S.L.  Fl.	ePZ eSN iSN F  eSE iSE iPSE iE F	M.S. S. S. S.  G.W. G.W. G.W. G.W. G.W.	00 13 40 00 23 19 00 23 26 01.6 +  00 23 22 00 23 29 00 24 04 00 28 19 01.5 +	35°8 S., 105°5 W. H = 00 <sup>h</sup> 02 <sup>m</sup> 00 <sup>s</sup> . $\Delta P-H = 75^{\circ}4$ $\Delta_{meas} = 75^{\circ}5$  $\Delta_{PS-H} = 75^{\circ}6$ $\Delta_{meas} = 75^{\circ}6$
75	March 12	S.L.	ePR <sub>1</sub> Z eZ eSKSN eSN ePSN eN e(SR <sub>2</sub> )N e(L)N F	M.S. M.S. S. S. S. S. S. S. S.	02 40 04 02 40 14 02 46 28 02 47 51 02 49 15 02 53 39 02 59 50 03 07 -- 04.9	General Region: 32°N., 52°5 E. H = 02 <sup>h</sup> 21.8 <sup>m</sup> Destruction reported at Chivas and along the Persian Gulf.
76	March 13	S.L.	ePZ iZ	M.S. M.S.	07 31 14 07 31 24	Deep. South America.
77	March 13	S.L.	eP <sub>1</sub> 'Z eSR <sub>1</sub> N eSR <sub>2</sub> E e(L)N F	M.S. S. S. S. S.	09 00 14 09 22 05 09 27 42 09 41.2 10.9	Region: 52°S., 139°E. H = 08 <sup>h</sup> 40 <sup>m</sup> 36 <sup>s</sup> .

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
78	March 15	S.L.	ePR <sub>1</sub> Z	M.S.	03 21 02	Region: 20°N., 145°E. H = 03 <sup>h</sup> 03.0 <sup>m</sup>
			eSKSN F	S. S.	03 27 29 05 ±	
		Fl.	eSKSE F	G.W. G.W.	03 27 31 05 ±	
79	March 15	S.L.	iPZ	M.S.	04 51 27	
80	March 15	S.L.	eZ	M.S.	08 04 44	Pasadena gives: Roughly: 15°S., 167°E. H = 07 <sup>h</sup> 46.0 <sup>m</sup> Possibly deeper than normal.
			eN	S.	08 10 54	
			e(PS)N	S.	08 14 04	
			i(PPS)N	S.	08 14 25	
			i(SR <sub>1</sub> )N	S.	08 19 52	
			iN	S.	08 20 29	
			e(SR <sub>2</sub> )N	S.	08 23 53	
			eE	S.	08 30.8	
			F	S.	10.7	
			Fl.	e(PS)E i(PPS)E eE F	G.W. G.W. G.W. G.W.	
81	March 15	S.L.	ePE	W.A.	13 26 00	Foreshock of # 84.
			ePR <sub>1</sub> E	W.A.	13 27 53	
			eSE	W.A.	13 30 19	
			cE	W.A.	13 32 27	
			eLE	W.A.	13 32 41	
			F	W.A.	Lost	
		Fl.	ePE	W.A.	13 25 59	
			eSE	W.A.	13 30 18	
			F	W.A.	Lost	
		C.G.	ePE	W.A.	13 26 05	
			eSE	W.A.	13 30 19	
			eLE	W.A.	13 32 59	
F	W.A.		Lost			
82	March 15	S.L.	ePE	W.A.	13 46 55	South America.
		Fl.	ePE	W.A.	13 46 58	
		C.G.	ePN	W.A.	13 46 45	
83	March 15	S.L.	eE	W.A.	13 53 25	Part of Preceding?
			cE	W.A.	13 53 32	
		Fl.	eE	W.A.	13 53 26	
			iE	W.A.	13 53 36	
		C.G.	eN	W.A.	13 53 14	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
84	March 15	S.L.	ePE	W.A.	13 54 36	Epicenter by Pasadena: 35°7 N., 118°0 W. H = 13 <sup>h</sup> 49 <sup>m</sup> 36 <sup>s</sup> . Epicentral Intensity about VIII
			iPE	W.A.	13 54 40	
			eSE	W.A.	13 58 52	
			eLE	W.A.	14 01 19	
			F	W.A.	Lost	
		Fl.	ePE	W.A.	13 54 38	
			iPE	W.A.	13 54 40	
			iSE	W.A.	13 58 51	
			eLE	W.A.	14 01 18	
			F	W.A.	Lost	
		C.G.	ePN	W.A.	13 54 42	
			eSE	W.A.	13 58 59	
			eLN	W.A.	14 01 31	
			F	W.A.	Lost	
85	March 15	S.L.	ePZ	M.S.	19 23 53	Aftershock of # 84. Reported felt in Los Angeles.
			eSE	S.	19 28 07	
			iLN	S.	19 30 43	
			F	S.	19.8	
		Fl.	ePE	W.A.	19 23 55	
			eSN	W.A.	19 29 10	
			eLN	W.A.	19 30 34	
			F	W.A.	19.7	
86	March 15	S.L.	eSE	S.	22 03 48	Aftershock of # 84.
			e(L)N	S.	22 06 18	
			F	S.	22.2	
87	March 18	S.L.	ePZ	M.S.	15 55 41	Aftershock of # 84.
			eSE	S.	15 59 55	
			eLN	S.	16 02 24	
			F	S.	16.2	
		Fl.	ePE	W.A.	15 55 43	Time doubtful.
			eSE	W.A.	15 59 51	
			F	W.A.	16.1	
88	March 20	S.L.	ePZ	M.S.	05 19 42	
			eZ	M.S.	05 19 47	
			eZ	M.S.	05 20 13	
			e(S)E	S.	05 24 07	
			iE	S.	05 25 11	
			iE	S.	05 27 37	
			F	S.	06.0	
89	March 24	S.L.	e(F)Z	M.S.	00 49 27	Very weak.
90	March 24	S.L.	e(F)Z	M.S.	05 28 37	Very weak.
91	March 24	S.L.	ePZ e(SR <sub>1</sub> )E F	M.S. S. S.	21 24 58 21 34 06 22.0	Epicentral Region: 0°0 N., 80°0 W. H = 21 <sup>h</sup> 17 <sup>m</sup> 33 <sup>s</sup> . Poss: slightly deeper than normal.

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
92	March 25	S.L.	ePZ	M.S.	08 52 48	Epicentral Region: 19°N., 74.7°W. H = 08 <sup>h</sup> 47 <sup>m</sup> 40 <sup>s</sup> . ΔP-H = 23.92 Δmeas = 23.05
			iZ	M.S.	08 53 04	
			eSE	S.	08 57 05	
			iLN	S.	08 59 37	
			F	S.	09.5	
		Fl.	eSE	G.W.	08 57 09	Time doubtful.
	i(L)E	G.W.	08 59 47			
	F	G.W.	09.4			
93	March 25	S.L.	ePZ	M.S.	22 21 51	Region: 14°N., 93.5°W. H = 22 <sup>h</sup> 16 <sup>m</sup> 45 <sup>s</sup> . h = 100±km.
			eZ	M.S.	22 22 04	
			ipPZ	M.S.	22 22 13	
			eSN	S.	22 26 13	
			iSN	S.	22 26 28	
			isSE	S.	22 26 50	
			F	S.	23.4	
		Fl.	ePN	W.A.	22 21 53	Time doubtful.
			eN	W.A.	22 22 05	
			epPN	W.A.	22 22 13	
			eSN	G.W.	22 25 59	
			iSN	G.W.	22 26 32	
		C.G.	F	G.W.	23 +	
			e(P)N	W.A.	22 21 38	
			eN	W.A.	22 21 51	
	e(S)E	W.A.	22 25 58			
	F	W.A.	22.7			
94	March 26	S.L.	eZ	M.S.	16 58 11	
			eZ	M.S.	16 58 20	
95	March 26	S.L.	ePKP <sub>1</sub> Z	M.S.	17 28 34	Epicentral Region: 3.5°S., 101.95°E. H = 17 09 05
			iPKP <sub>2</sub> Z	M.S.	17 28 37	
			iZ	M.S.	17 28 58	
			iZ	M.S.	17 29 08	
			eZ	M.S.	17 29 20	
			iZ	M.S.	17 29 33	
			iPR <sub>1</sub> Z	M.S.	17 31 51	
			e(PR <sub>4</sub> )E	S.	17 39 37	
			ePSKSE	S.	17 41 45	
			eE	S.	17 42 22	
			i(PR <sub>2</sub> ')N	S.	17 44 04	
			iSR <sub>1</sub> N	S.	17 50 49	
			iN	S.	17 52 43	
			eN	S.	17 53 41	
			iN	S.	17 54 38	
			eSR <sub>2</sub> N	S.	17 56.9	
			F	S.	20.2	
96	March 26	S.L.	e(P)Z	M.S.	22 51 34	
			eE	S.	23 11 34	
			F	S.	23.3	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
97	March 27	S.L.	e(P)Z	M.S.	06 03 52	
98	March 27	S.L.	eZ	M.S.	21 07 47	May not be seismic.
99	March 27	S.L.	eSKSN ePSN e(SR <sub>2</sub> )N F	S. S. S. S.	23 55 50 23 59 25 24 10 -- 25.2	25°0 N., 63°3 E. H = 23 <sup>h</sup> 30 <sup>m</sup> 40 <sup>s</sup> . ΔSKS-H = 110°7 Δ <sub>meas</sub> = 110°7
100	March 28	S.L.	iPZ	M.S.	17 54 44	Deep? No surface waves.
101	March 29	S.L.	ePZ ePR <sub>1</sub> Z eSN F	M.S. M.S. S. S.	07 24 53 07 26 25 07 30 43 Lost	Epicentral Region: 2°8 N., 75°8 W. H = 07 <sup>h</sup> 17 <sup>m</sup> 35 <sup>s</sup> . ΔP-H = 37°8 Δ <sub>meas</sub> = 38°2 Felt at Popayan, Coconucos, and Purace, Columbia, according to Bogota.
102	March 29	S.L.	ePZ iPZ i(pP)Z iZ iSE iSE i(sS)E iE F	M.S. M.S. M.S. M.S. S. S. S. S. S.	07 33 48 07 33 50 07 34 05 07 34 16 07 40 02 07 40 07 07 40 43 07 42 58 11.2	2°1 S., 80°4 W. H = 07 <sup>h</sup> 26 <sup>m</sup> 11 <sup>s</sup> . h = 100±km. ΔP-H = 41°2 Δ <sub>meas</sub> = 41°8 Felt at Guayaquil, Ecuador, according to Pasadena.
		C.G.	ePE eSE F	W.A. W.A. W.A.	07 33 35 07 39 36 08.4	ΔP-H = 39°5 Δ <sub>meas</sub> = 40°2
103	March 29	S.L.	e(P)Z iPZ e(S)E eN F	M.S. M.S. S. S. S.	20 14 25 20 14 29 20 19 39 20 19 59 20.6	
104	March 30	S.L.	ePZ eZ ePR <sub>1</sub> N eZ eSN eLN F	M.S. M.S. S. M.S. S. S. S.	00 09 42 00 09 59 00 11 13 00 11 55 00 16.1 00 21 -- 00.7	Region: 2°N., 76°W. H = 00 <sup>h</sup> 02 <sup>m</sup> 20 <sup>s</sup> .

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16.

Minor Seismic ActivityMarch 1946

Date	Station	From	To
March 13	S.L.	00 <sup>h</sup> 50 <sup>m</sup>	01 <sup>h</sup> 30 <sup>m</sup>
13	S.L.	19 00	19 11
16	S.L.	12 30	12 55
17	S.L.	21 35	22 42
22	S.L.	13 33	14 03
24	S.L.	16 01	18 04

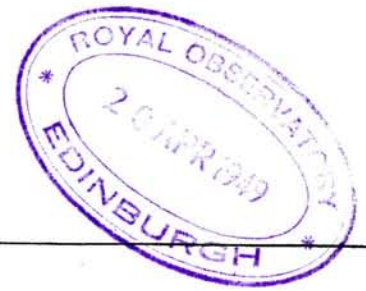
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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
105	April 1	S.L.	ePZ	M.S.	06 13 50	Region: 1°N., 27°W. H = 06 <sup>h</sup> 02 <sup>m</sup> 46 <sup>s</sup> .
			eSE	S.	06 22 56	
			eE	S.	06 23 19	
			eLE	S.	06 35 39	
			F	S.	07.0	
106	April 1	S.L.	ePZ	M.S.	11 01 20	No surface waves.
			eZ	M.S.	11 01 25	
107	April 1	S.L.	ePZ	M.S.	12 37 55	53°0 N., 162°7 W. H = 12 <sup>h</sup> 29 <sup>m</sup> 04 <sup>s</sup> . h = 50±km. Δp-H = 50±1 Δmeas = 50±1 For details of seismic sea-wave see <u>Transactions of the American Geophysical Union</u> , vol. 27, pp. 452-453, June 1946, and pp. 490-500, August 1946. For a full list of aftershocks, see page 25.
			ipPZ	M.S.	12 38 04	
			iPR <sub>1</sub> Z	M.S.	12 39 32	
			iZ	M.S.	12 39 45	
			i(S)E	S.	12 45 05	
		F	S.	Lost		
		Fl.	ePE	W.A.	12 37 54	
			ipPE	W.A.	12 38 03	
			eE	W.A.	12 44 36	
			i(S)E	W.A.	12 45 03	
F	W.A.		Lost			
108	April 1	S.L.	ePZ	M.S.	19 06 31	Aftershock, # 107.
			ipPZ	M.S.	19 06 33	
			iZ	M.S.	19 06 40	
			iSE	S.	19 13 58	
			F	S.	Lost	
109	April 2	S.L.	ipZ	M.S.	04 22 41	Aftershock, #107.
			ipPZ	M.S.	04 22 48	
			iSE	S.	04 29 54	
			isSE	S.	04 30 16	
			iN	S.	04 33 56	
		F	S.	Lost		
		Fl.	ipZ	G.W.	04 22 37	
			ipPZ	G.W.	04 22 46	
			eSE	G.W.	04 29 51	
			isSE	G.W.	04 30 04	
F	G.W.		Lost			

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
110	April 2	S.L.	iPZ	M.S.	05 47 12	Aftershock, # 107.
			iSE	S.	05 54 26	
		Fl.	iPZ	G.W.	05 47 10	
			iZ	G.W.	05 47 15	
			iSE	G.W.	05 54 22	
111	April 2	S.L.	iPZ	M.S.	06 06 06	Aftershock, # 107.
			ipPZ	M.S.	06 06 18	
		Fl.	ePZ	G.W.	06 06 04	
			ipPZ	G.W.	06 06 17	
112	April 2	S.L.	iPZ	M.S.	13 13 20	Aftershock, # 107.
			ipPZ	M.S.	13 13 30	
			e(S)E	S.	13 20 45	
		Fl.	iPZ	G.W.	13 13 18	
113	April 2	S.L.	iPZ	M.S.	14 36 25	Aftershock, # 107.
			iZ	M.S.	14 36 32	
			iZ	M.S.	14 36 38	
			eSN	S.	14 43 37	
		Fl.	ePZ	G.W.	14 36 24	
			eSE	G.W.	14 43 36	
114	April 2	S.L.	iPZ	M.S.	16 39 25	Aftershock, # 107.
			iZ	M.S.	16 39 34	
			eSN	S.	16 46 39	
			eN	S.	16 46 54	
		Fl.	iPZ	G.W.	16 39 24	
			iSE	G.W.	16 46 40	
115	April 3	S.L.	e(P)Z eZ	M.S. M.S.	03 33 04 03 33 09	Aftershock?
116	April 3	S.L.	iPZ	M.S.	09 07 28	Aftershock, # 107.
			iSE	S.	09 14 41	
			F	S.	11.2	
		Fl.	ePZ	G.W.	09 07 31	Time doubtful.
			iSE	G.W.	09 14 44	
			F	G.W.	11.0	
117	April 4	S.L.	iPZ	M.S.	00 54 32	Aftershock, # 107.
118	April 4	S.L.	iPZ	M.S.	07 24 13	Aftershock, # 107.
			iZ	M.S.	07 24 20	

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19.

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
119	April 4	S.L.	iPZ	M.S.	16 40 06	Aftershock, # 107.
			eZ	M.S.	16 40 12	
			iSE	S.	16 47 31	
			F	S.	18.3	
		Fl.	ePZ	G.W.	16 40 06	
			iSE	G.W.	16 47 30	
		F	G.W.	Lost		
120	April 4	S.L.	iPZ	M.S.	21 34 40	Aftershock, # 107.
			ipPZ	M.S.	21 34 47	
			iSE	S.	21 41 54	
			esSE	S.	21 42 07	
			F	S.	23.0	
121	April 5	Fl.	iPZ	G.W.	21 06 34	Epicentral Region: 36°4 N., 24°9 E. H = 20 <sup>h</sup> 54 <sup>m</sup> 15 <sup>s</sup> . h = 100 <sup>±</sup> km. $\Delta_{P-H} = 84.1$ $\Delta_{meas} = 84.1$
			eSE	G.W.	21 16 50	
			eE	G.W.	21 17 17	
			F	G.W.	21.3	
122	April 6	S.L.	eZ	M.S.	03 25 45	Region: 28°S., 70°E. H = 03 <sup>h</sup> 05.5 <sup>m</sup>
			ePKP <sub>2</sub> Z	M.S.	03 26 16	
			ePR <sub>1</sub> Z	M.S.	03 29 53	
			e(PR <sub>1</sub> )N	S.	03 38 10	
			ePSKSN	S.	03 40 23	
			eN	S.	03 45 23	
			eLN	S.	04 23 11	
			F	S.	Lost	
123	April 6	S.L.	iPZ	M.S.	05 01 35	Aftershock, # 107.
			iZ	M.S.	05 01 50	
			eSN	S.	05 08 45	
			iSN	S.	05 08 52	
			F	S.	07.2	
		Fl.	ePZ	G.W.	05 01 35	
			iSE	G.W.	05 08 42	
			F	G.W.	06.8	
124	April 6	S.L.	eZ	M.S.	10 11 27	Weak.
			e(L)N	S.	10 52 --	
			F	S.	11.5	
125	April 6	S.L.	e(F)Z	M.S.	14 04 57	Very weak.
			eE	S.	14 11 26	
			eE	S.	14 12 27	
			eE	S.	14 14 42	
			F	S.	15.5 +	
126	April 7	S.L.	ePZ	M.S.	03 48 03	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
142	April 10	S.L.	iPZ e(S)E F	M.S. S. S.	23 02 55 23 10 21 23.7	Aftershock, # 107.
143	April 11	S.L.	ePZ	M.S.	01 06 13	
144	April 11	S.L.	ePZ	M.S.	01 55 29	
145	April 11	S.L.	ePZ iZ iZ iZ eSE iSE F	M.S. M.S. M.S. M.S. S. S. S.	02 04 34 02 04 42 02 05 04 02 05 17 02 14 40 02 14 43 06.5	Region of: 0°S., 15°W. H = 01h52m32s.
		Fl.	ePZ iZ iZ iSE iE F	G.W. G.W. G.W. G.W. G.W. G.W.	02 04 36 02 05 05 02 05 17 02 14 44 02 14 52 06 -- --	
		C.G.	ePE eSE	W.A. W.A.	02 04 34 02 14 32	
146	April 11	S.L.	e(P)Z	M.S.	02 31 43	
147	April 11	S.L.	ePZ eME F	M.S. S. S.	09 50 25 10 16 -- 10.4	
148	April 11	S.L.	eZ	M.S.	19 39 16	May not be seismic.
149	April 11	S.L.	iPZ eSE	M.S. S.	23 11 00 23 18 09	Aftershock, # 107.
150	April 12	S.L.	iPZ eZ eLE F	M.S. M.S. S. S.	07 49 30 07 49 44 08 18 -- 08.6	Epicentral Region: 36°0 N., 26°2 E. H = 07h36m56s. $\Delta P-H = 8593$ $\Delta_{meas} = 8592$
151	April 13	S.L.	ePZ	M.S.	01 38 56	
152	April 13	S.L.	iPZ iZ	M.S. M.S.	05 28 13 05 28 27	Deep?
153	April 13	S.L.	iPZ	M.S.	08 16 36	
154	April 13	S.L.	eZ eSKSE eSE e(sSKS)E	M.S. S. S. S.	19 12 04 19 21 12 19 22 14 19 23 14	Very Roughly: 15°S., 179°W. H = 18h58.0m h = 300-400 km.

(Continued on next page)

## Seismological Bulletin for the month of April, 1946 (Con't.)

No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
142	April 10	S.L.	iPZ e(S)E F	M.S. S. S.	23 02 55 23 10 21 23.7	Aftershock, # 107.	
143	April 11	S.L.	ePZ	M.S.	01 06 13		
144	April 11	S.L.	ePZ	M.S.	01 55 29		
145	April 11	S.L.	ePZ iZ iZ iZ eSE iSE F	M.S. M.S. M.S. M.S. S. S. S.	02 04 34 02 04 42 02 05 04 02 05 17 02 14 40 02 14 43 06.5	Region of: 0°S., 15°W. H = 01h52m32s.	
		Fl.	ePZ iZ iZ iSE iE F	G.W. G.W. G.W. G.W. G.W. G.W.	02 04 36 02 05 05 02 05 17 02 14 44 02 14 52 06 -- --		
		C.G.	ePE eSE	W.A. W.A.	02 04 34 02 14 32		
146	April 11	S.L.	e(P)Z	M.S.	02 31 43		
147	April 11	S.L.	ePZ eME F	M.S. S. S.	09 50 25 10 16 -- 10.4		
148	April 11	S.L.	eZ	M.S.	19 39 16		May not be seismic.
149	April 11	S.L.	iPZ eSE	M.S. S.	23 11 00 23 18 09		Aftershock, # 107.
150	April 12	S.L.	iPZ eZ eLE F	M.S. M.S. S. S.	07 49 30 07 49 44 08 18 -- 08.6		Epicentral Region: 36°0 N., 26°2 E. H = 07h36m56s. $\Delta P-H = 8593$ $\Delta_{meas} = 8592$
151	April 13	S.L.	ePZ	M.S.	01 38 56		
152	April 13	S.L.	iPZ iZ	M.S. M.S.	05 28 13 05 28 27		Deep?
153	April 13	S.L.	iPZ	M.S.	08 16 36		
154	April 13	S.L.	eZ eSKSE eSE e(sSKS)E	M.S. S. S. S.	19 12 04 19 21 12 19 22 14 19 23 14	Very Roughly: 15°S., 179°W. H = 18h58.0m h = 300-400 km.	

(Continued on next page)

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
154	April 13 (Continued)	S.L.	eN	S.	19 24 00	
			eN	S.	19 25 12	
			eSR <sub>1</sub> N	S.	19 29 02	
			eGN	S.	19 40 --	
			F	S.	20.1	
155	April 14	S.L.	ePZ	M.S.	00 11 26	
156	April 14	S.L.	ePZ	M.S.	04 33 44	Aftershock, # 107?
			e(L)E	S.	04 49.4	
			F	S.	05.5	
157	April 14	S.L.	ePZ	M.S.	21 11 14	
158	April 15	S.L.	iPZ	M.S.	01 16 43	
159	April 15	S.L.	ePZ	M.S.	07 15 09	Aftershock, # 107?
			e(L)E	S.	07 34.1	
			F	S.	07.9	
160	April 16	S.L.	eLE	S.	02 11 19	
			F	S.	02.3	
161	April 16	S.L.	iPZ	M.S.	11 55 56	41°4 N., 20°2 E. H = 11 <sup>h</sup> 43 <sup>m</sup> 50 <sup>s</sup> . ΔP-H = 78.97 Δ <sub>meas</sub> = 78.90
			eLE	S.	11 20 --	
			F	S.	12.7	
162	April 16	S.L.	iPZ	M.S.	13 49 07	Epicentral Region: 40°9 S., 73°2 W. H = 13 <sup>h</sup> 37 <sup>m</sup> 03 <sup>s</sup> . h = 100±km. ΔP-H = 81.92 Δ <sub>meas</sub> = 81.1
			epPZ	M.S.	13 49 25	
			eSN	S.	13 59 12	
163	April 18	S.L.	e(P)Z	M.S.	07 15 59	Southwest Pacific. H = 07 <sup>h</sup> 02.2 <sup>m</sup>
			eSKSE	S.	07 26 24	
			e(SR <sub>1</sub> )E	S.	07 33 21	
			eLE	S.	07 47.0	
			F	S.	09.6	
		Fl.	e(SKS)E	G.W.	07 26 40	
	eLE	G.W.	07 47.0			
	F	G.W.	08.6			
164	April 18	S.L.	e(F)Z	M.S.	11 46 29	Very distant?
			e(M)E	S.	12 33 --	
			F	S.	13 -- --	
165	April 18	S.L.	ePZ	M.S.	20 03 00	Weak.
166	April 19	S.L.	ePZ	M.S.	09 44 39	
			iZ	M.S.	09 44 55	
			e(S)E	S.	09 52 39	
			F	S.	10.6	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
167	April 19	S.L.	iPZ iZ	M.S. M.S.	12 13 20 12 13 35	
168	April 19	S.L.	e(P)Z	M.S.	14 53 39	Very Weak.
169	April 21	S.L.	ePZ	M.S.	00 32 08	
170	April 22	S.L.	iPZ	M.S.	03 32 19	
171	April 22	S.L.	e(P)Z eE F	M.S. S. S.	10 06 06 10 42 -- 11.0	
172	April 23	S.L.	eP'Z iP'Z iZ iZ e(S)Z e(SR <sub>1</sub> )N e(SR <sub>2</sub> )E eN F	M.S. M.S. M.S. M.S. M.S. S. S. S. S.	05 15 29 05 15 31 05 15 49 05 15 56 05 27 09 05 37.0 05 43.0 05 56.4 08.2	Epicentral Region: 49°8 S., 139°0 E. H = 04 <sup>h</sup> 56 <sup>m</sup> 05 <sup>s</sup> . Δ <sub>meas</sub> = 143°8 Possibly deeper than normal.
		Fl.	eP'Z iZ eZ eZ eZ F	G.W. G.W. G.W. G.W. G.W.	05 15 33 05 17 19 05 19 38 05 28 18 05 28 49 07.9	
173	April 23	S.L.	ePZ epPZ eZ iSKSE esSKSN eLE F	M.S. M.S. M.S. S. S. S. S.	10 53 16 10 53 38 10 53 48 11 03 50 11 04 28 11 23.4 13.3	Epicentral Region: 16°1 S., 173°2 W. H = 10 <sup>h</sup> 40 <sup>m</sup> 05 <sup>s</sup> . h = 100±km. Δ <sub>P-H</sub> = 94°4 Δ <sub>meas</sub> = 94°7
		Fl.	eZ eSKSE F	G.W. G.W. G.W.	10 53 28 11 03 52 13.0	
174	April 23	S.L.	e(F)Z eZ	M.S. M.S.	11 13 42 11 13 46	
175	April 23	S.L.	ePZ eN F	M.S. S. S.	17 40 53 17 56.5 18.3	
176	April 24	S.L.	iPZ eSN F	M.S. S. S.	03 55 29 04 00 31 04.5	Pacific Coast of Costa Rica. H = 03 <sup>h</sup> 49.3 <sup>m</sup>
177	April 24	S.L.	ePZ	M.S.	11 11 40	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
178	April 24	S.L.	ePZ	M.S.	11 25 16		
			iZ	M.S.	11 25 28		
			eLE	S.	11 31.4		
			F	S.	12 -- --		
179	April 24	S.L.	ePZ	M.S.	12 44 20		
180	April 25	S.L.	ePZ	M.S.	00 59 50		
181	April 25	S.L.	eZ	M.S.	21 54 07	Pasadena reports: iP 21 <sup>h</sup> 51 <sup>m</sup> 49 <sup>s</sup> . i(S) 21 52 40 .	
182	April 26	S.L.	iPZ	M.S.	08 20 23	49.4 N., 147.6 E. H = 08 <sup>h</sup> 09 <sup>m</sup> 25 <sup>s</sup> . h = 600±km. $\Delta P-H = 78^{\circ}5$ $\Delta_{meas} = 78^{\circ}5$	
			iZ	M.S.	08 20 30		
			epPZ	M.S.	08 22 30		
			eSN	S.	08 29 27		
			e(sS)N	S.	08 33 07		
			F	S.	08.6		
		Fl.	iPN	W.A.	08 20 21		$\Delta P-H = 78^{\circ}3$ $\Delta_{meas} = 78^{\circ}4$
			eSN	G.W.	08 29 24		
			e(sS)N	G.W.	08 33 05		
C.G.	ePE	W.A.	08 20 30	$\Delta P-H = 79^{\circ}8$ $\Delta_{meas} = 79^{\circ}8$			
	eSE	W.A.	08 29 42				
183	April 27	S.L.	ePZ	M.S.	00 21 09	Aleutian Islands. h = 70 km. Possibly 51°N., 175°W. H = 00 <sup>h</sup> 11.3 <sup>m</sup>	
			ipPZ	M.S.	00 21 23		
			eSE	S.	00 29 12		
			eLE	S.	00 41.0		
			F	S.	01.1		
184	April 29	S.L.	ePZ	M.S.	01 37 05	19°6 N., 70°5 W. H = 01 <sup>h</sup> 31 <sup>m</sup> 33 <sup>s</sup> . $\Delta P-H = 25^{\circ}6$ $\Delta_{meas} = 25^{\circ}6$	
			e(S)E	S.	01 41 32		
			eN	S.	01 41 52		
			eLE	S.	01 44.3		
			F	S.	02.2		
185	April 29	S.L.	e(P)Z	M.S.	13 49 50		
			eZ	M.S.	13 50 22		
186	April 30	S.L.	iPZ	M.S.	02 21 30		
			iZ	M.S.	02 21 46		
			e(S)N	S.	02 25 44		
			eZ	M.S.	02 25 50		
			eN	S.	02 29.0		
			F	S.	02.7		
187	April 30	S.L.	ePZ	M.S.	12 13 44		
188	April 30	S.L.	e(P)Z	M.S.	12 23 07	May not be seismic.	



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Aftershocks of Earthquake # 107.

April 1, 1946 - 12<sup>h</sup>29<sup>m</sup>.

(All recordings on M.S. instrument at Saint Louis)

Many of these shocks are recorded on the W.A. instruments at Florissant, about two seconds earlier.

April 1, 1946

<u>P</u>	<u>P</u>
13 <sup>h</sup> 01 <sup>m</sup> 38 <sup>s</sup>	17 <sup>h</sup> 37 <sup>m</sup> 28 <sup>s</sup>
13 04 45	17 49 15
13 26 21	18 05 54
13 28 55	18 15 33
13 35 18	18 21 45
13 37 46	18 36 51
13 43 27	18 38 33
13 49 19	19 42 08
14 04 18	19 49 52
14 08 31	20 01 26
14 10 43	20 12 49
14 15 23	20 36 43
14 35 12	20 41 44
14 56 41	20 44 15
15 29 19	20 46 56
15 59 32	20 52 15
16 01 02	21 19 33
16 12 03	21 30 42
16 17 30	21 43 29
16 49 27	22 24 57
16 55 35	22 58 56
16 59 05	23 39 08
17 08 13	23 43 41
17 31 34	23 46 14

April 2, 1946

<u>P</u>	<u>P</u>
00 17 34	11 35 03
00 41 16	12 44 08
00 53 54	14 34 05
01 07 25	15 17 30
01 24 44	15 29 00
01 37 39	16 19 52
05 02 34	16 50 48
05 33 59	19 40 36
05 36 15	20 07 03
06 10 17	21 58 21
08 43 51	23 09 44

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Aftershocks of Earthquake # 107.

April 3, 1946

P  
04<sup>h</sup>10<sup>m</sup>14<sup>s</sup>  
04 16 00  
05 15 40

P  
08<sup>h</sup>49<sup>m</sup>03<sup>s</sup>  
19 18 20  
21 49 34

April 5, 1946

P  
01 31 10  
07 08 29  
08 04 44

P  
08 39 33  
09 15 06  
13 14 35

Minor Seismic Activity

April 1946

Date	Station	From	To
April 11	S.L.	14 <sup>h</sup> 15 <sup>m</sup>	14 <sup>h</sup> 40 <sup>m</sup>
13	S.L.	07 14	08 43+
14	S.L.	11 16	11 26
16	S.L.	00 17	00 32
17	S.L.	14 --	15+
17	S.L.	16 43	17 10
20	S.L.	23 08	23 30
23	S.L.	01 37	02 18
26	S.L.	20 07	21 29
28	S.L.	03 59	04 07
30	S.L.	07 56	09 33

James B. Macelwane, S. J.  
Director

Harry K. Hail  
Student Assistant

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

**SEISMOLOGICAL BULLETIN**

Seismological Bulletin for the month of May, 1946.

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
189	May 2	S.L.	eMN	S.	01 41.3		
190	May 3	S.L.	iE eE eE	S. S. S.	22 30 03 22 31 09 22 33 25	B.C.I.S. reports earth-quake with provisional Epicenter at: 27 1/2°S., 159 1/2°E. H = 22 <sup>h</sup> 00.2 <sup>m</sup>	
		Fl.	eZ eE iE eE F	G.W. G.W. G.W. G.W. G.W.	22 23 48 22 30 01 22 31 11 22 33 32 Lost		
191	May 3	S.L.	iF'Z iPR <sub>1</sub> Z iZ eSKKSE iSKKSE iPSE iE F	M.S. M.S. M.S. S. S. S. S. S.	22 42 31 22 43 21 22 44 13 22 50 15 22 50 25 22 52 59 22 56 25 Lost		Epicentral Region: 7°S., 155°E. H = 22 <sup>h</sup> 23.8 <sup>m</sup> Δ <sub>meas</sub> = 114.90
		Fl.	ePR <sub>1</sub> Z eZ iSKKSE iPSE eE (L)E F	G.W. G.W. G.W. G.W. G.W. G.W. G.W.	22 43 19 22 43 35 22 50 23 22 52 59 23 02.3 23 20 -- Lost		
192	May 3	S.L.	F	S.	03.5		Phases lost in preceding quake.
		Fl.	F	G.W.	03.4		
193	May 7	S.L.	iPZ (e)N eLN F	M.S. S. S. S.	04 58 13 05 03 22 05 06.3 05 16 --		
		Fl.	eLN F	G.W. G.W.	05 06.8 05 15 --		

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28.

 Seismological Bulletin for the month of May, 1946, (Con't.)

No.	Date	Sta.	Phase	Inst.	h m s	Remarks		
194	May 8	S.L.	iP'Z	M.S.	05 39 47	Epicentral Region: 1°1 S., 98°6 E. H = 05 <sup>h</sup> 20.4 <sup>m</sup> $\Delta_{\text{meas}} = 141.9$		
			iZ	M.S.	05 39 54			
			iZ	M.S.	05 40 21			
			iPR <sub>1</sub> Z	M.S.	05 42 50			
			eE	S.	05 43 52			
			e(SKKS)N	S.	05 50 09			
			iE	S.	05 53 59			
			iN	S.	05 56 50			
			F	S.	09.8			
		Fl.	eP'Z	G.W.	05 39 43	$\Delta_{\text{meas}} = 141.8$		
			iZ	C.W.	05 40 03			
			iPR <sub>1</sub> Z	G.W.	05 42 42			
			ePR <sub>2</sub> E	G.W.	05 45 44			
			eE	G.W.	05 46 17			
			iE	G.W.	05 50 10			
			eE	G.W.	05 52 13			
			iPPSE	G.W.	05 55 13			
			iE	G.W.	05 58 16			
			eSR <sub>1</sub> E	G.W.	06 01.5			
e(L)E	G.W.	06 29.5						
F	G.W.	09.1						
195	May 8	S.L.	ePR <sub>1</sub> Z	M.S.	10 05 40	Epicenter: 3°5 S., 143°3 E. H = 09 <sup>h</sup> 45 <sup>m</sup> 19 <sup>s</sup> . $\Delta_{\text{PS-H}} = 120.2$ $\Delta_{\text{meas}} = 120.1$		
			eSKSN	S.	10 11 10			
			iSKKSE	S.	10 12 37			
			eSN	S.	10 13 35			
			ePSE	S.	10 15 25			
			eSR <sub>1</sub> E	S.	10 22 04			
			eSR <sub>2</sub> N	S.	10 26 37			
			iN	S.	10 28 34			
			eL	S.	10 44.5			
			F	S.	12.8			
			Fl.	iPR <sub>1</sub> Z	G.W.		10 05 46	$\Delta_{\text{meas}} = 120.0$
				eSKSE	G.W.		10 11 06	
				iSKKSE	G.W.		10 12 36	
		eSN		G.W.	10 13 33			
		ePSE		G.W.	10 15 32			
		eSR <sub>1</sub> E		G.W.	10 22 35			
		eSR <sub>2</sub> E	G.W.	10 26 26				
		eLE	G.W.	10 44.4				
		F	G.W.	12.7				
196	May 8	S.L.	iPZ	M.S.	16 04 09	Chile? Deep. Very small surface waves.		
			iZ	M.S.	16 04 42			
			iSE	S.	16 12 21			
			iE	S.	16 13 02			
			e(sS)E	S.	16 13 52			
			eE	S.	16 14 35			
		Fl.	eSE	G.W.	16 12 24			
			eE	G.W.	16 13 02			
			eE	G.W.	16 14 37			

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
197	May 8	S.L.	iPZ iZ	M.S. M.S.	19 27 41 19 27 48	
198	May 9	S.L.	eLN F	S. S.	03 10 -- 03 16.5	
		Fl.	eLN	G.W.	03 11 --	
199	May 9	S.L.	i(P)Z	M.S.	19 00 02	
200	May 9	S.L.	ePZ	M.S.	20 02 09	
201	May 9	S.L.	ePZ iPZ iSE eSR <sub>1</sub> N	M.S. M.S. S. S.	22 40 16 22 40 19 22 50 58 22 56 52	Epicentral Region: 40°0 N., 142 1/2° E. H = 22 <sup>h</sup> 27 <sup>m</sup> 31 <sup>s</sup> . ΔP-H = 87°4 Δmeas = 87°7 Surface waves small.
		Fl.	ePZ iSE	G.W. G.W.	22 40 18 22 50 56	ΔP-H = 87°7 Δmeas = 87°5
202	May 9	S.L.	iPZ iPR <sub>1</sub> Z eZ iSN iLN F	M.S. M.S. M.S. S. S. S.	23 39 21 23 39 46 23 41 35 23 43 24 23 45 03 01.6	Epicenter: 23°1 N., 108°1 W. H = 23 <sup>h</sup> 34 <sup>m</sup> 29 <sup>s</sup> . ΔP-H = 21°7 Δmeas = 21°7
		Fl.	ePZ iZ iZ iSE iSR <sub>1</sub> E iLE F	G.W. G.W. G.W. G.W. G.W. G.W.	23 39 20 23 39 31 23 41 50 23 43 24 23 44 22 23 45 06 01.5	ΔP-H = 21°6 Δmeas = 21°7
		C.G.	e(P)N eSN MN F	W.A. W.A. W.A. W.A.	23 39 19 23 43 23 23 46.0 00 08	
203	May 10	S.L.	i(P)Z eSE eLN F	M.S. S. S. S.	13 29 35 13 35 47 13 42.2 Lost chang- ing records	
204	May 10	S.L.	i(P)Z	M.S.	23 43 09	
205	May 11	S.L.	iPZ eLE	M.S. S.	16 35 06 16 54 --	Epicenter: 66°0N., 0°0E. H = 16 <sup>h</sup> 25 <sup>m</sup> 32 <sup>s</sup> . ΔP-H = 55°8 Δmeas = 55°7

No.	Date	Sta.	Phase	Inst.	h m s	Remarks
206	May 11	S.L.	(e)Z eE LE F	M.S. S. S. S.	17 30 41 17 41.3 18 01.7 Lost	
207	May 11	S.L.	iPZ iZ iSZ eLN F	M.S. M.S. M.S. S. S.	18 49 02 18 49 10 18 57 00 19 07.6 19.9	Region of # 205. H = 18 <sup>h</sup> 39 <sup>m</sup> 28 <sup>s</sup> . $\Delta P-H = 55^{\circ}8$
		Fl.	iPZ eSE eLE F	G.W. G.W. G.W. G.W.	18 49 01 18 56 45 19 08.3 19.7	$\Delta P-H = 55^{\circ}7$
208	May 12	S.L.	iPZ iZ eZ eSE eN e(L)N F	M.S. M.S. M.S. S. S. S. S.	13 28 45 13 28 55 13 30 34 13 35 37 13 38 40 13 39 18 Lost	Region: 39°N., 29°W. Probably deeper than normal.
		Fl.	iPZ iZ eZ	G.W. G.W. G.W.	13 28 44 13 30 36 13 35 44	
209	May 13	S.L.	ePZ iZ eE	M.S. M.S. S.	06 31 58 06 32 06 06 48 02	S.W. of Sitka. Deep?
210	May 13	S.L.	e(P)Z F	M.S. M.S.	06 40 19 07.3	
211	May 14	S.L.	iPZ ipPZ ePR <sub>1</sub> Z eZ eSE esSE	M.S. M.S. M.S. M.S. S. S.	06 11 25 06 11 39 06 12 33 06 13 07 06 17 16 06 17 42	Surface waves very small. Deep.
212	May 14	S.L.	iPN iSN	W.A. W.A.	10 58 43.1 10 59 08.2	Local.
		C.G.	eSN	W.A.	10 59 15.7	
213	May 15	S.L.	iPnN iN eN iSnN iN iS*N	W.A. W.A. W.A. - W.A. W.A. W.A.	06 10 35.9 06 10 39.4 06 10 54.9 06 11 01.4 06 11 01.8 06 11 02.1	Local. Epicenter: 36°39.5' N. 90°41.5' W. H = 06 <sup>h</sup> 10 <sup>m</sup> 02.2 <sup>s</sup> $\Delta P-H = 138.5$ miles. $\Delta_{meas} = 138.7$ miles.

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
213 (Con't.)	May 15	Fl.	iPnN	W.A.	06 10 37.8	$\Delta_{P-H} = 148.5$ miles. $\Delta_{meas} = 148.9$ miles.
			iP*N	W.A.	06 10 40.2	
			iN	W.A.	06 10 42.3	
			iSnN	W.A.	06 11 04.0	
			iN	W.A.	06 11 05.2	
			iN	W.A.	06 11 06.6	
			iE	W.A.	06 11 06.4	
		C.G.	iP*E	W.A.	06 10 23.2	$\Delta_{P-H} = 78.0$ miles. $\Delta_{meas} = 78.5$ miles.
			eP*N	W.A.	06 10 23.4	
			eE	W.A.	06 10 26.1	
			iSnN	W.A.	06 10 38.8	
			iN	W.A.	06 10 40.4	
			iN	W.A.	06 10 42.0	
214	May 15	S.L.	iPZ	M.S.	22 15 46	Epicenter: 16°0 N., 96°2 W. H = 22 <sup>h</sup> 10 <sup>m</sup> 40 <sup>s</sup> . Probably deeper than normal. $\Delta_{P-H} = 23^{\circ}4$ $\Delta_{meas} = 23^{\circ}3$
			iPZ	M.S.	22 15 50	
			ipP	M.S.	22 15 58	
			iZ	M.S.	22 17 28	
			iS	S.	22 19 54	
			iS	S.	22 20 02	
			isS	S.	22 20 12	
		F	S.	Lost		
		Fl.	ePZ	G.W.	22 15 47	$\Delta_{P-H} = 23^{\circ}5$ $\Delta_{meas} = 23^{\circ}4$
			iPZ	G.W.	22 15 49	
		C.G.	ePN	W.A.	22 15 36	$\Delta_{P-H} = 22^{\circ}2$ $\Delta_{meas} = 22^{\circ}0$
			iN	W.A.	22 15 45	
			iN	W.A.	22 16 06	
			eSE	W.A.	22 19.7	
215	May 15	S.L.	iPZ	M.S.	22 29 29	Region of preceding earthquake. H = 22 <sup>h</sup> 24.4 <sup>m</sup>
			isZ	M.S.	22 33 44	
			F		Lost	
		Fl.	ePZ	G.W.	22 29 29	
			iPZ	G.W.	22 29 30	
			eSE	W.A.	22 33 45	
		C.G.	iPN	W.A.	22 29 19	
			iN	W.A.	22 29 27	
			eE	W.A.	22 33 23	
216	May 16	S.L.	iPZ	M.S.	00 27 33	
			eZ	M.S.	00 28 40	
			eE	S.	00 32.3	
			F	S.	01.8	
		Fl.	eE	G.W.	00 33 22	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
217	May 16	S.L.	ePR <sub>1</sub> Z	M.S.	05 44 32	Epicentral Region: 9°9 S., 160°2 E. H = 05 <sup>h</sup> 25 <sup>m</sup> 20 <sup>s</sup> . ΔPS-H = 11196 Δ <sub>meas</sub> = 11195	
			e(SKS)E	S.	05 50 57		
			e(SKKS)E	S.	05 51 51		
			e(S)E	S.	05 52 35		
			ePSE	S.	05 54 01		
			e(SR <sub>1</sub> )E	S.	06 00 37		
			eLE	S.	06 16.7		
			F	S.	08.0		
		Fl.	ePR <sub>1</sub> Z	G.W.	05 44(28)	ΔPS-H = 11198	
			ePSE	G.W.	05 54 03	Δ <sub>meas</sub> = 11194	
			F	G.W.	07.4		
218	May 17	S.L.	iPZ	M.S.	12 01 25		
			eZ	M.S.	12 01 37		
219	May 19	S.L.	iPZ	M.S.	00 42 09	Epicentral Region: 55°0 N., 165°5 E. H = 00 <sup>h</sup> 31 <sup>m</sup> 27 <sup>s</sup> . Depth of Focus: 80±km. ΔP-H = 6698 Δ <sub>meas</sub> = 6697	
			iZ	M.S.	00 42 16		
			i(pP)Z	M.S.	00 42 23		
			iSE	S.	00 51 00		
			eE	S.	00 51 18		
			eN	S.	00 54 19		
			e(SR <sub>2</sub> )E	S.	00 58 49		
			e(sSR <sub>2</sub> )E	S.	00 59 15		
			F	S.	02.5		
			Fl.	iPZ	G.W.		00 42 08
		iZ		G.W.	00 42 16	Δ <sub>meas</sub> = 6696	
		iSN		G.W.	00 50 57		
		iN		G.W.	00 51 14		
					F	G.W.	02.0
220	May 20	S.L.	iPnN	W.A.	00 39 51.7	Local.	
			iPnZ	M.S.	00 39 51.6		
			iSnN	W.A.	00 40 17.8		
			iSnE	W.A.	00 40 17.9		
			iN	W.A.	00 40 18.3		
		Fl.	iPnN	W.A.	00 39 54.4		
			iN	W.A.	00 39 55.0		
			iN	W.A.	00 40 00.9		
			iSnN	W.A.	00 40 22.6		
			iN	W.A.	00 40 23.2		
221	May 20	S.L.	e(P)Z	M.S.	09 07 11	Weak.	
			iZ	M.S.	09 07 28		
		Fl.	e(P)N	W.A.	09 07 14		
			iN	W.A.	09 07 29		
222	May 20	S.L.	iPZ	M.S.	13 57 45		
			iZ	M.S.	13 58 12		



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No.	Date	Sta.	Phase	Inst.	h m s	Remarks		
223	May 20	S.L.	iPZ	M.S.	14 19 49	Possibly deeper than normal.		
			i(pP)Z	M.S.	14 19 55			
			eSE	S.	14 24 10			
			iSN	S.	14 24 14			
			eME	S.	14 31 02			
		F	S.	15.1				
		Fl.	iPZ	G.W.	14 19 50			
			iSN	G.W.	14 24 17			
			eME	G.W.	14 31.1			
			F	G.W.	14.9			
224	May 21	S.L.	iPZ	M.S.	08 37 25			
			ePR <sub>2</sub> Z	M.S.	08 38 41			
			eSE	S.	08 42 44			
		Fl.	eSE	G.W.	08 42 48			
225	May 21	S.L.	iPZ	M.S.	09 23 37	Epicenter: 15°4 N., 61°1 W. Depth of Focus: 50±km. $\Delta P-H = 34^{\circ}6$ $\Delta_{meas} = 34^{\circ}8$		
			ipPZ	M.S.	09 23 46			
			ipPE	W.A.	09 23 48			
			iPR <sub>1</sub> Z	M.S.	09 24 53			
			iZ	M.S.	09 25 10			
			iSE	S.	09 29 10			
			isSE	S.	09 29 28			
			iE	S.	09 29 56			
			iN	S.	09 31 10			
			i(ssr <sub>1</sub> )E	S.	09 31 44			
			iLE	S.	09 31 56			
			F	S.	12.5			
			Fl.	iPZ	G.W.		09 23 39	$\Delta P-H = 34^{\circ}9$ $\Delta_{meas} = 35^{\circ}0$
		ipPZ		G.W.	09 23 51			
		iZ		G.W.	09 24 08			
		iE		G.W.	09 25 24			
		iSE		G.W.	09 29 10			
		isSE		G.W.	09 29 32			
		eN		G.W.	09 31.2			
		F		G.W.	11.8			
		C.G.		ePE	W.A.	09 23 18	$\Delta_{meas} = 33^{\circ}7$ Time uncertain.	
				eE	W.A.	09 24 50		
			eE	W.A.	09 28 38			
226	May 21	S.L.	iPZ	M.S.	19 27 26			
227	May 22	S.L.	e(SKKS)E	S.	09 59 12	B.C.I.S. gives: 19°S., 176°E. H = 09 33.6		
			eLE	S.	10 25 --			
			F	S.	11.0			
		Fl.	e(SKKS)E	G.W.	09 59 11			
			eLE	G.W.	10 25 --			
			F	G.W.	10.8			

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228	May 22	S.L.	iPZ	M.S.	14 24 22	Weak.
229	May 23	S.L.	e(PR <sub>1</sub> )Z eSKSE eSKKSE e(S)E e(SP)E eSR <sub>1</sub> E eLE F	M.S. S. S. S. S. S. S. S.	01 48 21 01 53 55 01 54 59 01 55 38 01 57 49 02 03 39 02 21.5 03.7	
230	May 25	S.L.	iPZ iZ eE	M.S. M.S. S.	01 51 39 01 51 53 02 07 06	
231	May 26	S.L.	iPZ	M.S.	13 30 49	
232	May 27	S.L.	iPZ iN iZ eE	M.S. W.A. M.S. S.	08 44 18 08 44 30 08 44 59 08 48 09	
		Fl.	ePN eN eE	W.A. W.A. G.W.	08 44 17 08 44 39 08 48 53	
233	May 30	S.L.	ePZ eZ eSN eN eLN F	M.S. M.S. S. S. S. S.	03 52 13 03 52 16 04 01 16 04 02 19 04 12.8 04.8	Epicenter: 46°1 N., 7°5 E. H = 03 <sup>h</sup> 41 <sup>m</sup> 18 <sup>s</sup> . $\Delta P-H = 68^{\circ}0$ $\Delta_{meas} = 68^{\circ}1$
		Fl.	eSN eLN	G.W. G.W.	04 01 16 04 12.7	$\Delta P-H = 68^{\circ}0$ $\Delta_{meas} = 68^{\circ}1$
234	May 31	S.L.	eLE	S.	02 03.8	
235	May 31	S.L.	iPZ ePR <sub>1</sub> Z eSKSN eSKKSE eSN ePSN ePPSE eE F	M.S. M.S. S. S. S. S. S. S. S.	03 25 44 03 29 25 03 36 20 03 36 44 03 36 54 03 37 50 03 38 08 03 49 36 05.3	Epicentral Region: 39°1 N., 41°1 E. H = 03 <sup>h</sup> 12 <sup>m</sup> 43 <sup>s</sup> . $\Delta P-H = 90^{\circ}6$ $\Delta_{meas} = 90^{\circ}4$
		Fl.	ePZ ePR <sub>1</sub> Z eSKSN e(S)N eE F	G.W. G.W. G.W. G.W. G.W. G.W.	03 25 45 03 29 25 03 36 20 03 36 50 03 49.6 04.7	$\Delta P-H = 90^{\circ}8$ $\Delta_{meas} = 90^{\circ}4$

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Minor Seismic Activity

Date	Station	G.M.T. <u>From</u> h m	G.M.T. <u>To</u> h m	Remarks
May 2	S.L.	06 13	06 30	
May 5	S.L.	09 43	10 30	Also at Florissant.
May 6	S.L.	01 26	01 36	
May 9	S.L.	05 09	05 32	
May 19	S.L.	09 56.5	10 07	
May 23	S.L.	07 02	07.7	
May 27	S.L.	12 17	12 23	
May 30	S.L.	11 37	12 10	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
236	June 1	S.L.	e(PS)N eMN F	S. S. S.	16 40 14 17 11.1 17.8	Epicentral Region: 25°8 N., 125°0 E. H = 16 <sup>h</sup> 11 <sup>m</sup> 56 <sup>s</sup> . North-South control poor.
237	June 2	S.L.	ePZ	M.S.	17 13 54	Panama.
238	June 3	S.L.	ePZ ipPZ iZ iSE F	M.S. M.S. M.S. S. S.	13 53 45 13 54 01 13 54 09 14 01 26 Lost	Aleutians. Possibly 51°5N., 170°3W. H = 13 <sup>h</sup> 44 <sup>m</sup> 20 <sup>s</sup> . h = 100±km.
239	June 4	S.L.	ePZ eE F	M.S. S. S.	17 16 04 17 31 20 17.6	
240	June 5	S.L.	ePR <sub>1</sub> Z eE eZ eE e(SKKS)E eE ePSE eZ iE eSR <sub>1</sub> N F	M.S. S. M.S. S. S. S. S. M.S. S. S. S.	01 12 11 01 12 14 01 13 05 01 18 31 01 19 10 01 19 43 01 21 54 01 22 09 01 22 17 01 27 59 03.5	Epicentral Region: 5°1 S., 152°8 E. H = 00 <sup>h</sup> 52 <sup>m</sup> 40 <sup>s</sup> . Possibly deeper than normal. $\Delta PR_1-H = 114^{\circ}4$ $\Delta_{meas} = 114^{\circ}6$
241	June 6	S.L.	ePZ e(M)E F	M.S. S. S.	00 43 25 01 06 -- 01.3	
242	June 6	S.L.	ePZ	M.S.	05 25 31	
243	June 6	S.L.	ePZ eSN ePSE F	M.S. S. S. S.	10 49 39 10 59 14 10 59 54 13 +	1°0 N., 20°0 W. H = 10 <sup>h</sup> 38 <sup>m</sup> 05 <sup>s</sup> . $\Delta P-H = 74^{\circ}3$ $\Delta_{meas} = 74^{\circ}4$
244	June 7	S.L.	ePZ ipZ ipPZ iSN isSZ F	M.S. M.S. M.S. S. M.S. S.	04 18 06 04 18 11 04 18 30 04 22 08 04 22 46 07.7 ±	16°7 N., 94°6 W. H = 04 <sup>h</sup> 13 <sup>m</sup> 18 <sup>s</sup> . h = 100±km. $\Delta P-H = 22^{\circ}1$ $\Delta_{meas} = 22^{\circ}1$

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
244 (Con't.)	June 7	Fl.	ePN iPN ipPN iSN F	W.A. W.A. W.A. W.A. W.A.	04 18 06 04 18 12 04 18 29 04 22 10 05.6 ±	$\Delta P-H = 22^{\circ}1$ $\Delta_{meas} = 22^{\circ}2$
245	June 7	S.L.	ePZ	M.S.	04 51 52	
246	June 9	S.L.	iPZ ipPZ eSN eSR <sub>1</sub> N eLN F	M.S. M.S. S. S. S. S.	07 05 05 07 05 12 07 12 15 07 16 14 07 20.0 08.3	53°0 N., 160°3 W. H = 06 <sup>h</sup> 56 <sup>m</sup> 23 <sup>s</sup> . h = 50±km. $\Delta P-H = 49^{\circ}1$ $\Delta_{meas} = 49^{\circ}0$
247	June 10	S.L.	iPZ eN	M.S. S.	23 46 40 23 55 43	
248	June 11	S.L.	e(P)Z eE eLN F	M.S. S. S. S.	08 05 56 08 10 59 08 15.6 08.6	
249	June 11	S.L.	iPZ	M.S.	18 15 24	11°7 N., 73°8 W. H = 18 <sup>h</sup> 09 <sup>m</sup> 04 <sup>s</sup> . $\Delta P-H = 30^{\circ}8$ $\Delta_{meas} = 30^{\circ}8$ Felt in Santa Maria, according to Bogota.
250	June 12	S.L.	ePR <sub>1</sub> Z e(S)N eN eE i(SR <sub>1</sub> )E F	M.S. S. S. S. S. S.	16 27 12 16 34 45 16 36 59 16 38 21 16 42 28 18.9	12°1 N., 143°4 E. H = 16 <sup>h</sup> 08 <sup>m</sup> 21 <sup>s</sup> . $\Delta PR_1-H = 108^{\circ}9$ $\Delta_{meas} = 108^{\circ}8$
251	June 14	S.L.	ePZ eZ	M.S. M.S.	05 32 14 05 32 21	
252	June 15	S.L.	eP'Z ePR <sub>1</sub> Z iSKPE eSKSE e(S)N eSR <sub>1</sub> E e(M)E F	M.S. M.S. S. S. S. S. S. S.	18 48 25 18 50 44 18 51 55 18 55 40 18 59 05 19 07 40 19 23.3 21.2	Possibly 3°5 S., 126°E. H = 18 <sup>h</sup> 29 <sup>m</sup> 12 <sup>s</sup> . Agreement very poor.
		Fl.	eZ eZ ePR <sub>1</sub> Z iSKPE eSR <sub>1</sub> N F	G.W. G.W. G.W. G.W. G.W. G.W.	18 48 58 18 50 29 18 50 42 18 51 53 19 07 46 21.5 ±	

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253	June 15	S.L.	ePZ	M.S.	19 51 48	Pasadena gives: 32°6 N., 116°3 W. H = 19 <sup>h</sup> 46.9 <sup>m</sup> Magnitude 4.8 Felt in San Diego county.
254	June 16	S.L.	e(P)Z	M.S.	00 32 43	Local? Very weak.
255	June 19	S.L.	ePZ e(SR <sub>1</sub> )E F	M.S. S. S.	12 06 23 12 20 51 13.0	Kamchatka?
256	June 21	S.L.	ePZ e(S)E eLE F	M.S. S. S. S.	04 36 01 04 40 05 04 42 43 04.9	
257	June 21	S.L.	e(S)E e(L)E F	S. S. S.	05 11 47 05 14 19 05.4	Very similar to preceding.
258	June 21	S.L.	ePZ e(SKKS)E eSR <sub>1</sub> E eLE F	M.S. S. S. S. S.	12 34 14 12 45 15 12 52 16 13 06 12 14.1	Δ about 95° ?
259	June 23	S.L.	ePZ eSE e(SR <sub>1</sub> )E F	M.S. S. S. S.	04 14 28 04 21 09 04 24 39 Lost	May be 5° S., 105° W. H about 04 <sup>h</sup> 06.3 <sup>m</sup>
260	June 23	S.L.	iPZ iSEN iLE	M.S. S. W.A.	17 19 07 17 23 56 17 27 03	50°1 N., 125°0 W. H = 17 <sup>h</sup> 13 <sup>m</sup> 19 <sup>s</sup> . ΔP-H = 27°3 Δ <sub>meas</sub> = 27°3 Felt in northwestern North America, Canada and the United States. Building damage and land- slides along the east coast of Vancouver Island. (S.L. readings from J.S.A. Preliminary Bull. # 20, June 23, 1946)
261	June 24	S.L.	eSE eSR <sub>1</sub> N iSR <sub>1</sub> N i(L)N F	S. S. S. S. S.	12 33 12 12 34 03 12 34 19 12 37 13 Lost	Mexico? Vertical not operating.

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
262	June 24	S.L.	iPN	S.	15 53 14	14 <sup>o</sup> 9 N., 89 <sup>o</sup> 7 W. H = 15 <sup>h</sup> 48 <sup>m</sup> 16 <sup>s</sup> . h = 200±km. ΔP-H = 23 <sup>o</sup> 9 Δ <sub>meas</sub> = 23 <sup>o</sup> 8 Vertical not operating.
			ipPN	S.	15 53 52	
			iSN	S.	15 57 09	
			iSN	S.	15 57 27	
			isSN	S.	15 58 31	
			F	S.	Lost	
		Fl.	ipZ	G.W.	15 53 16	ΔP-H = 24 <sup>o</sup> .1 Δ <sub>meas</sub> = 23 <sup>o</sup> 9
			epZ	G.W.	15 53 56	
			iPR <sub>1</sub> Z	G.W.	15 54 05	
			iZ	G.W.	15 54 33	
			eSE	G.W.	15 57 23	
			eSN	G.W.	15 57 27	
			iE	G.W.	15 57 56	
			isSE	G.W.	15 58 36	
F	G.W.	16.4				
263	June 25	S.L.	eN	S.	00 18 08	U.S.C.G.S. gives: 8 <sup>o</sup> S., 126 <sup>o</sup> 5 E. h = 150 km. Vertical not operating.
			eE	S.	00 27 18	
			e(SR <sub>1</sub> )N	S.	00 34 14	
			F	S.	Lost	
			F	S.	Lost	
264	June 25	S.L.	iPN	W.A.	14 17 13	Epicentral Region: 36 <sup>o</sup> 8 S., 72 <sup>o</sup> 2 W. H = 14 <sup>h</sup> 05 <sup>m</sup> 26 <sup>s</sup> . h = 50±km. ΔP-H = 77 <sup>o</sup> 2 Δ <sub>meas</sub> = 77 <sup>o</sup> 2 Vertical not operating.
			epPN	W.A.	14 17 24	
			iSN	S.	14 26 55	
			F	S.	Lost	
			F	S.	Lost	
		Fl.	ePZ	G.W.	14 17 13	ΔP-H = 77 <sup>o</sup> 2 Δ <sub>meas</sub> = 77 <sup>o</sup> 3 Felt at Curico and Chillan, Chile, accord- ing to La Paz.
			epPZ	G.W.	14 17 25	
			eSN	G.W.	14 26 57	
			F	G.W.	Lost	
			F	G.W.	Lost	
265	June 26	S.L.	ePE	W.A.	04 43 54	Near 54 <sup>o</sup> N., 163 <sup>o</sup> W. H = 04 <sup>h</sup> 35.0m Possibly slightly deeper than normal. Vertical not operating.
			eE	W.A.	04 44 05	
			eSE	S.	04 51 07	
			e(L)E	S.	04 54 13	
			e(M)E	S.	04 57 39	
			F	S.	05.5 ±	
			F	S.	05.5 ±	
266	June 26	S.L.	ePN	W.A.	07 58 48	14 <sup>o</sup> 3 N., 91 <sup>o</sup> 3 W. H = 07 <sup>h</sup> 53 <sup>m</sup> 40 <sup>s</sup> . h = 100±km. ΔP-H = 24 <sup>o</sup> 0 Δ <sub>meas</sub> = 24 <sup>o</sup> 3 Vertical not operating.
			ipPN	W.A.	07 58 50	
			ipPN	S.	07 59 07	
			iSE	S.	08 02 58	
			iE	S.	08 03 20	
			i(sS)E	S.	08 03 29	
			F	S.	10 ±	
			F	S.	10 ±	
			F	S.	10 ±	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
266 (Con't.)	June 26	Fl.	ePZ	G.W.	07 58 50	$\Delta P-H = 24^{\circ}2$ $\Delta_{\text{meas}} = 24^{\circ}4$	
			iPZ	G.W.	07 58 51		
			ipPZ	G.W.	07 59 10		
			iZ	G.W.	07 59 24		
			eSE	G.W.	08 03 03		
			iE	G.W.	08 03 25		
			i(sS)E F	G.W.	08 03 36 09.0		
267	June 26	S.L.	eN	S.	12 54 08	$42^{\circ}9$ S., $171^{\circ}6$ E. $H = 12^{\text{h}}34^{\text{m}}42^{\text{s}}$ . $\Delta_{\text{PR1-H}} = 120^{\circ}0$ $\Delta_{\text{meas}} = 120^{\circ}5$ Vertical not operating.	
			ePR <sub>1</sub> N	S.	12 54 52		
			ePSN	S.	13 04 42		
			F	S.	Lost		
		Fl.	ePR <sub>1</sub> Z	G.W.	12 54 55		$\Delta_{\text{PR1-H}} = 120^{\circ}4$
			ePSE F	G.W. G.W.	13 03 44 Lost		$\Delta_{\text{meas}} = 120^{\circ}5$
268	June 27	S.L.	e(SKKS)E	S.	22 05 19	Roughly: $30^{\circ}$ S., $178^{\circ}$ W. $H = 21^{\text{h}}39.7^{\text{m}}$	
			F	S.	Lost		
		Fl.	e(SKKS)E	G.W.	22 05 18		
			e(PPS)E	G.W.	22 08 37		
			eLE	G.W.	22 31 --		
			F	G.W.	23.0 $\pm$		
269	June 28	S.L.	e(SR <sub>2</sub> )N	S.	07 53 43	Region of # 267, according to Riverview.	
			eN	S.	07 54 11		
			eLN	S.	08 04 --		
			F	S.	10 $\pm$		
270	June 30	S.L.	ePE	W.A.	05 04 07	$17^{\circ}7$ N., $94^{\circ}6$ W. $H = 04^{\text{h}}59^{\text{m}}35^{\text{s}}$ . $h = 200^{\pm}$ km. $\Delta P-H = 21^{\circ}4$ $\Delta_{\text{meas}} = 21^{\circ}1$ Vertical not operating.	
			iSE	S.	05 07 52		
			iE	S.	05 08 41		
			iE	S.	05 09 03		
			F	S.	Lost		
			Fl.	ePZ	G.W.		05 04 07
		epPZ		G.W.	05 04 38	$\Delta_{\text{meas}} = 21^{\circ}2$	
		eSE		G.W.	05 07 53		
		iSN		G.W.	05 07 56		
		ePcPE		G.W.	05 08 14		
		eE		G.W.	05 08 27		
		issN		G.W.	05 08 49		
		iE F.		G.W. G.W.	05 09 05 05.5		



# SAINT LOUIS UNIVERSITY INSTITUTE OF TECHNOLOGY

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## SEISMOLOGICAL BULLETIN

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
271	July 1	S.L.	ePE F	W.A.	03 00 24 03.5	Epicentral Region: 64°5' N., 147°8' W. H = 02h52m30s. $\Delta p-H = 42^{\circ}3$ $\Delta_{meas} = 42^{\circ}0$
		Fl.	ePE	G.W.	03 00 21	
272	July 1	Fl.	iPZ	G.W.	10 05 20	Mexico.
273	July 1	S.L.	ePR <sub>1</sub> E	W.A.	22 54 59	Region of: 5°S., 154°E. H = 22h35m42s. h = 100±km. $\Delta_{PR_1-H} = 113^{\circ}9$ $\Delta_{meas} = 113^{\circ}7$
			eE	W.A.	22 55 09	
			eE	W.A.	22 55 36	
			eSKKSE	W.A.	23 01 56	
			eE	W.A.	23 15 36	
			eLE	W.A.	23 32.0	
		F	W.A.	23.9		
		Fl.	ePR <sub>1</sub> Z	G.W.	22 54 55	$\Delta_{PR_1-H} = 113^{\circ}3$ $\Delta_{meas} = 113^{\circ}4$
			eZ	G.W.	22 55 08	
			eZ	G.W.	22 55 32	
eZ	G.W.		23 01 20			
			eSKKSZ	G.W.	23 01 56	
			eLZ	G.W.	23.1	
274	July 4	S.L.	iPZ	M.S.	04 48 22	
			iZ	M.S.	04 48 41	
			eZ	M.S.	04 49 13	
275	July 8	S.L.	eSKSN	S.	18 13 07	Southwest Pacific. Possibly: 29°3' S., 178°0' W. H = 17h48m30s. h = 100±km. $\Delta S-H = 106^{\circ}6$ $\Delta_{meas} = 106^{\circ}3$
			iSKKSN	S.	18 13 57	
			iSN	S.	18 14 36	
			eLN	S.	18 21 20	
			F	S.	Lost	
				S.		
276	July 9	S.L.	ePR <sub>2</sub> E	S.	01 28 19	Region of: 23° S., 176° W. H = 01h08m08s. $\Delta_{PR_2-H} = 101^{\circ}2$ $\Delta_{meas} = 101^{\circ}5$
			iSKSE	S.	01 32 41	
			iSN	S.	01 33 35	
			ePSE	S.	01 34 52	
			iPPSN	S.	01 36 20	
			eSR <sub>1</sub> N	S.	01 40 18	
			iLN	S.	01 58 22	
			F	S.	Lost	
				S.		

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
276 (Con't.)	July 9	Fl.	ePZ	G.W.	01 22 00	$\Delta_{P-H} = 101^{\circ}3$ $\Delta_{meas} = 101^{\circ}3$
			ePR <sub>1</sub> Z	G.W.	01 26 01	
			iZ	G.W.	01 28 51	
			iSR <sub>1</sub> Z	G.W.	01 40 51	
			eZ	G.W.	01 46 47	
			eLZ	G.W.	01 58 --	
			F	G.W.	03 57 --	
277	July 9	S.L.	iPZ	M.S.	10 12 50	Kurile Islands. Possibly region of: 49°N., 154°E. H = 10 <sup>h</sup> 01 <sup>m</sup> 15 <sup>s</sup> . h = 100±km. $\Delta_{P-H} = 75^{\circ}9$ $\Delta_{meas} = 75^{\circ}9$
			ipPZ	M.S.	10 13 09	
278	July 9	S.L.	iPZ	M.S.	13 28 02	Epicentral region: 19°2 S., 169°0 E. H = 13 <sup>h</sup> 13 <sup>m</sup> 50 <sup>s</sup> . h = 170±km. $\Delta_{P-H} = 109^{\circ}3$ $\Delta_{meas} = 109^{\circ}9$
			ipPZ	M.S.	13 28 36	
			iPR <sub>1</sub> Z	M.S.	13 32 35	
			iE	S.	13 33 34	
			iSKSE	S.	13 38 23	
			iSKKSE	S.	13 39 24	
			iE	S.	13 39 46	
			iSE	S.	13 40 19	
			ipSE	S.	13 41 56	
			iE	S.	13 45 28	
		iSR <sub>1</sub> N	S.	13 47 51		
		F	S.	Lost		
		Fl.	ePZ	G.W.	13 28 02	$\Delta_{P-H} = 109^{\circ}3$ $\Delta_{meas} = 109^{\circ}8$
			epPZ	G.W.	13 28 37	
			eZ	G.W.	13 31 02	
			iPR <sub>1</sub> Z	G.W.	13 32 34	
			eZ	G.W.	13 33 33	
ePSZ	G.W.		13 42 08			
iZ	G.W.		13 44 11			
279	July 11	S.L.	ePN	W.A.	04 51 24	Epicentral region: 17°0 N., 93°9 W. H = 04 <sup>h</sup> 46 <sup>m</sup> 39 <sup>s</sup> h = 125±km. $\Delta_{P-H} = 22^{\circ}0$ $\Delta_{meas} = 22^{\circ}1$ Felt in Mexican States of Veracruz, Oaxaca, and Chiapas with in- tensity of IV Mercalli according to Instituto de Geologia.
			iPN	W.A.	04 51 26	
			ipPE	W.A.	04 51 45	
			iSE	W.A.	04 55 18	
			iE	W.A.	04 56 19	
			F	W.A.	07.5	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
279 (Con't.)	July 11	Fl.	ePN	W.A.	04 51 25	$\Delta_{P-H} = 22^{\circ}1$ $\Delta_{meas} = 22^{\circ}2$
			iPN	W.A.	04 51 26	
			ipPN	W.A.	04 51 49	
			iN	W.A.	04 52 49	
			eN	W.A.	04 54 14	
			eSN	W.A.	04 55 20	
			iSN	W.A.	04 55 21	
			F	W.A.	06.4	
280	July 12	S.L.	e(P)E	S.	05 17 31	Mexico.
			eSE	S.	05 21 46	
			eLE	S.	05 26 50	
			F	S.	Lost	
		Fl.	e(P)Z	G.W.	05 17 24	
			eLZ	G.W.	05 27 26	
281	July 12	S.L.	iPZ	M.S.	22 05 42	Epicentral region: 53°0 N., 169°3 W. H = 21 <sup>h</sup> 56 <sup>m</sup> 27 <sup>s</sup> . h = 100±km. $\Delta_{P-H} = 54^{\circ}3$ $\Delta_{meas} = 54^{\circ}3$
			ipPZ	M.S.	22 06 04	
			iSN	S.	22 13 10	
			isSN	S.	22 13 47	
			iN	S.	22 14 15	
			iN	S.	22 15 21	
			eSR <sub>1</sub> N	S.	22 16 58	
			eSR <sub>2</sub> N	S.	22 18 21	
			eLN	S.	22 22 18	
			F	S.	Lost	
		Fl.	ePN	W.A.	22 05 41	$\Delta_{P-H} = 54^{\circ}1$ $\Delta_{meas} = 54^{\circ}1$
			iSN	W.A.	22 13 08	
			esSN	W.A.	22 13 46	
			eN	W.A.	22 14 26	
			eN	W.A.	22 15 20	
			F	W.A.	Lost	
282	July 12	S.L.	iPZ	M.S.	23 35 47	Epicentral region: 5°7 N., 82°5 W. H = 23 <sup>h</sup> 29 <sup>m</sup> 15 <sup>s</sup> . h = 100±km. $\Delta_{P-H} = 33^{\circ}2$ $\Delta_{meas} = 33^{\circ}7$
			ipPZ	M.S.	23 36 09	
			iPR <sub>1</sub> Z	M.S.	23 37 07	
			eN	S.	23 40 00	
			eSE	S.	23 41 12	
			iSR <sub>1</sub> N	S.	23 42 58	
			F	S.	Lost	
			Fl.	ePN	W.A.	
		iPN		W.A.	23 35 50	
		e(PR <sub>1</sub> )N		W.A.	23 37 02	
		eN		W.A.	23 37 46	
		F	eSN	W.A.	23 41 13	Lost
F	W.A.		Lost			

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
283	July 13	S.L.	iPZ	M.S.	01 53 14	Epicentral region: 36°8 N., 138°7 E. H = 01h40m05s. $\Delta P-H = 92^{\circ}2$ $\Delta_{meas} = 92^{\circ}2$
284	July 15	S.L.	e(P)N eSN eLN F	S. S. S. S.	18 38 53 18 43 54 18 46 -- Lost	Probable Region: 8°N., 90° W. H = 18h32m45s. Deep.
		Fl.	e(P)Z	G.W.	18 39 00	
285	July 16	S.L.				Recorded but not timed. H = 05h26m39s. Epicentral region: 34°7 N., 25°2 E. $\Delta P-H = 85^{\circ}5$ $\Delta_{meas} = 85^{\circ}7$
		Fl.	ePZ eSZ ePSZ	G.W. G.W. G.W.	05 39 14 05 49 49 05 50 46	
286	July 16	S.L.	iPZ	M.S.	20 25 06	Region of: 21°S., 66°W. H = 20h15m04s. h = 300±km. $\Delta P-H = 64^{\circ}4$ $\Delta_{meas} = 64^{\circ}3$
			iZ	M.S.	20 25 36	
			ipPZ	M.S.	20 26 05	
			eSE	S.	20 33 33	
			esSE	S.	20 34 40	
			iE	S.	20 35 08	
			F	S.	Lost	
287	July 17	S.L.	ePZ	M.S.	05 14 22	
			iPZ	M.S.	05 14 23	
288	July 17	S.L.	ePZ	M.S.	10 39 07	Mexico.
			eSE	S.	10 43 14	
			eSR <sub>1</sub> E	S.	10 44 12	
		Fl.	e(PR <sub>1</sub> )N	W.A.	10 39 23	Time doubtful.
289	July 18	S.L.	iPZ	M.S.	06 13 11	Epicentral region: 49°3 N., 129°5 W. H = 06h07m02s. $\Delta P-H = 29^{\circ}6$ $\Delta_{meas} = 29^{\circ}6$
			iPR <sub>1</sub> Z	M.S.	06 13 57	
			iPR <sub>2</sub> Z	M.S.	06 14 19	
			eSE	W.A.	06 18 15	
			eLE	W.A.	06 22 52	
			F	W.A.	07.0	
			Fl.			
290	July 18	S.L.	iPZ	M.S.	07 22 40	Epicentral region: 49.7 N., 128.9 W. H = 07h16m30s. $\Delta P-H = 29^{\circ}7$ $\Delta_{meas} = 29^{\circ}6$
			iPR <sub>1</sub> Z	M.S.	07 23 35	
			iZ	M.S.	07 24 36	
			iSZ	M.S.	07 27 37	
			iZ	M.S.	07 28 30	
			eLN	W.A.	07 31.6	
			F	W.A.	Lost	
			Fl.			

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
291	July 18	S.L.	iPZ iZ	M.S. M.S.	07 26 18 07 26 35	Epicentral region: 49°7 N., 128°9 W. H = 07 <sup>h</sup> 20 <sup>m</sup> 09 <sup>s</sup> . $\Delta_{P-H} = 29^{\circ}6$ $\Delta_{meas} = 29^{\circ}6$	
		Fl.				Recorded, time doubtful.	
292	July 18	S.L.	iPZ	M.S.	14 32 44	Tentative epicenter according to Pasadena: 34°32'N., 115°59'W. H = 14 <sup>h</sup> 27 <sup>m</sup> 58 <sup>s</sup> . $\Delta_{P-H} = 21^{\circ}1$ $\Delta_{meas} = 20^{\circ}9$	
			iZ	M.S.	14 34 00		
			eLE	W.A.	14 38 56		
			F	W.A.	14 53 --		
293	July 19	S.L.	iPN	W.A.	14 24 49		
294	July 19	S.L.	e(P)N	W.A.	22 18 29		
295	July 23	S.L.	ePN	W.A.	05 46 33	Time doubtful.	
			eLN	W.A.	05 48 16		
			F	W.A.	05 53.3		
		Fl.	ePE	W.A.	05 46 30		
			eE	W.A.	05 47 28		
			eLE	W.A.	05 48 12		
F	W.A.	05 54.7					
296	July 23	S.L.	ePZ	M.S.	17 46 47	Aleutians.	
			Fl.	ePE	W.A.		17 46 45
		eLE	G.W.	18 08.2			
		F	G.W.	19.7			
297	July 24	Fl.	ePR <sub>1</sub> E	G.W.	11 19 26	Region of: 5°S., 153°E. H = 11 <sup>h</sup> 00 <sup>m</sup> 00 <sup>s</sup> . $\Delta_{PR_1-H} = 113^{\circ}7$ $\Delta_{meas} = 113^{\circ}8$	
			eSKKSE	G.W.	11 26 29		
			ePSE	G.W.	11 29 08		
			F	G.W.	13.4		
298	July 25	S.L.	iPZ	M.S.	16 52 18	Epicentral region: 50°3 N., 179°5 W. H = 16 <sup>h</sup> 42 <sup>m</sup> 08 <sup>s</sup> . $\Delta_{P-H} = 61^{\circ}1$ $\Delta_{meas} = 61^{\circ}1$	
			eSZ	M.S.	17 00 46		
			eSR <sub>1</sub> Z	M.S.	17 04 55		
		Fl.	ePN	W.A.	16 52 16		$\Delta_{P-H} = 60^{\circ}8$ $\Delta_{meas} = 60^{\circ}8$
			e(S)N	W.A.	17 00 27		
			F	W.A.	17 59 00		

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
299	July 26	S.L.	iPZ	M.S.	04 23 04	Epicentral region: 48°4 N., 179°9 E. H = 04 <sup>h</sup> 12 <sup>m</sup> 47 <sup>s</sup> . $\Delta P-H = 62^{\circ}2$ $\Delta_{meas} = 62^{\circ}2$	
		Fl.	ePN	W.A.	04 23 02	$\Delta P-H = 62^{\circ}1$ $\Delta_{meas} = 61^{\circ}9$	
300	July 26	S.L.	iPZ	M.S.	06 54 57	Epicentral region: 19°8 S., 70°9 W. H = 06 <sup>h</sup> 44 <sup>m</sup> 53 <sup>s</sup> . h = 80±km. $\Delta P-H = 61^{\circ}1$ $\Delta_{meas} = 61^{\circ}1$	
			ipPZ	M.S.	06 55 17		
		Fl.	ePZ	G.W.	06 54 57	$\Delta P-H = 61^{\circ}3$	
			iPZ	G.W.	06 54 59	$\Delta_{meas} = 61^{\circ}2$	
			ipPZ	G.W.	06 55 14		
			iZ	G.W.	06 55 24		
			iPR <sub>1</sub> Z	G.W.	06 57 19		
			ipPR <sub>1</sub> Z	G.W.	06 57 44		
			eSE	G.W.	07 03 10		
			iSE	G.W.	07 03 14		
			isSE	G.W.	07 03 45		
			iScSE	G.W.	07 04 44		
			isScSE	G.W.	07 05 15		
			F	G.W.	09.5		
301	July 27	Fl.	ePN	G.W.	05 56 04		
302	July 28	S.L.	iPZ	M.S.	08 08 35		
			Fl.	eE	G.W.	08 14 49	
				eLE F	G.W. G.W.	08 22 12 08 50.0	
303	July 28	S.L.	eE	S.	16 43 19		
			eE	S.	16 43 41		
			F	S.	17 15.0		
		Fl.	eE	G.W.	16 42 57		
			F	G.W.	17 08 --		
304	July 28	S.L.	iPZ	M.S.	22 30 26	Epicentral region: 51°5 N., 176°6 W. H = 22 <sup>h</sup> 20 <sup>m</sup> 30 <sup>s</sup> . $\Delta P-H = 59^{\circ}0$ $\Delta_{meas} = 59^{\circ}0$	
			Fl.	ePE	W.A.	22 30 23	$\Delta P-H = 58^{\circ}6$
		eSN		G.W.	22 38 35	$\Delta_{meas} = 58^{\circ}7$	
		F		G.W.	23.5		

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
305	July 30	S.L.	ePZ	M.S.	03 46 02	Near Sakhalin Is.
306	July 30	S.L.	iPZ	M.S.	07 35 51	
			eN F	S. S.	07 43 02 08 53 --	
		Fl.	eE F	G.W. G.W.	07 42 57 08 28 --	
307	July 30	S.L.	ePE	S.	18 45 03	Bering Sea. Near 57°N., 161°W. Possibly: H about 18 <sup>h</sup> 36 <sup>m</sup> 3
			eSN F	S. S.	18 52 15 20.5	
		Fl.	eE	W.A.	18 45 16	
			iSE	G.W.	18 52 09	
			F	G.W.	20.5	
308	July 31	S.L.	iPZ	M.S.	00 36 11	
			iPR <sub>1</sub> Z	M.S.	00 37 21	
			iZ	M.S.	00 38 29	
			iSN	S.	00 41 58	
			F	S.	01 30 --	

Minor Seismic Activity

Date	Station	G.M.T. <u>from</u>	G.M.T. <u>to</u>	Remarks
July 8	Fl.	18 <sup>h</sup> 40 <sup>m</sup>	19 <sup>h</sup> 13 <sup>m</sup>	
July 10	S.L.	17 26	18 06	Surface waves on heavy microseisms.
July 13	S.L.	18 46	18 48	
July 15	S.L.	22 45	23 30	Surface waves on heavy microseisms.
July 17	S.L.	01 58	02 38	
July 27	Fl.	02 30	03 00	
July 27	Fl.	22 35	00 05	

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**SAINT LOUIS UNIVERSITY  
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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
309	August 1	S.L.	iPZ	M.S.	01 17 59	
310	August 1	S.L.	i(P)Z	M.S.	02 24 58	May not be seismic.
311	August 1	S.L.	ePZ eSN F	M.S. S. S.	21 01 28 21 06 09 21.9	Foreshock, August 4, 17 <sup>h</sup> .
312	August 2	S.L.	iPZ iZ eSN eN F	M.S. M.S. S. S. S.	01 16 55 01 47 03 01 54 06 01 58 17 02.8	54°N., 163°W. H = 01h38.0 <sup>m</sup>
313	August 2	S.L.	i(P)Z	M.S.	05 22 17	
314	August 2	S.L.	eZ eZ	M.S. M.S.	12 56 52 12 57 10	
315	August 2	S.L.	ePZ iPZ ePR <sub>1</sub> N iN e(PR <sub>2</sub> )N i(pPR <sub>2</sub> )N i(PR <sub>3</sub> )N eSN isSN iPSN i(pPS)N iN i(ScS)N iN eN iSR <sub>1</sub> N F	M.S. M.S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S. S.	19 29 41 19 29 42 19 32 16 19 32 41 19 34 07 19 34 24 19 34 50 19 38 31 19 38 51 19 39 00 19 39 28 19 39 43 19 39 58 19 40 14 19 40 59 19 43 10 22.5	25°5 S., 71°2 W. H = 19h19m01s. h = 80±km. ΔP-H = 66°7 Δ <sub>meas</sub> = 66°7 Felt throughout Northern Chile. Extensive damage reported at Vallenar and Copiapo. (E-W Spreng- nether not operating)
		Fl.	iPZ iSE isSN iSR <sub>1</sub> E i(sSR <sub>2</sub> )E F	G.W. G.W. G.W. G.W. G.W. G.W.	19 29 41 19 38 32 19 38 56 19 42 55 19 46 24 22.5	ΔP-H = 66°7 Δ <sub>meas</sub> = 66°8
316	August 2	S.L.	iPZ	M.S.	19 54 58	Aftershock.



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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
317	August 2	S.L.	eZ eZ	M.S. M.S.	22 20 32 22 20 56	May not be seismic.
318	August 2	S.L.	eZ	M.S.	23 12 06	May not be seismic.
319	August 2	S.L.	eZ iZ e(L)N F	M.S. M.S. S. S.	23 23 56 23 24 27 23 59 -- 24.3	
320	August 3	S.L.	iPZ ipPZ iZ eSKSN eSN ePSN eLN F	M.S. M.S. M.S. S. S. S. S. S.	13 19 18 13 19 30 13 19 37 13 29 47 13 30 19 13 30 41 13 47 -- Lost.	Region of: 37°N., 141°E. H = 13 <sup>h</sup> 06.3 <sup>m</sup> h = 50+km. Agreement poor.
321	August 4	S.L.	ePZ iPZ iSE F	M.S. M.S. W.A. W.A.	17 56 47 17 56 50 18 01 50 20.7±	19°2 N., 68°9 W. H = 17 <sup>h</sup> 51 <sup>m</sup> 07 <sup>s</sup> . ΔP-H = 26°5 Δ <sub>meas</sub> = 26°8 Destructive in the West Indies. Pasadena gives Magnitude 8.1.
		Fl.	iPZ iSE F	G.W. W.A. W.A.	17 56 47 18 01 49 04±	ΔP-H = 26°5 Δ <sub>meas</sub> = 26°9
322	August 4	S.L.	ePZ iPZ eSN F	M.S. M.S. W.A. W.A.	20 59 04 20 59 06 21 04 03 21.6±	Aftershock of # 321.
323	August 6	S.L.	e(S)E eE e(PS)E e(PPS)E eLE F	S. S. S. S. S. S.	03 13 19 03 14 30 03 15 48 03 17 03 03 40.3 Lost	Solomon Islands. h about 50 km. B.C.I.S. gives: 11°5 S., 165°5 E. H = 02 <sup>h</sup> 46.9 <sup>m</sup>
324	August 6	S.L.	ePZ eE eSE eSR <sub>1</sub> E e(L)E F	M.S. S. S. S. S. S.	06 03 01 06 07 20 06 07 43 06 08 52 06 09.4 07.5±	Aftershock of # 321.
325	August 7	Fl.	iPE iSE esSE F	W.A. W.A. W.A. W.A.	19 41 16 19 49 05 19 49 22 Lost	Epicentral Region: 51°0 N., 173°6 W. H = 19 <sup>h</sup> 31 <sup>m</sup> 35 <sup>s</sup> . h=50±km. ΔP-H = 57°2 Δ <sub>meas</sub> = 57°2

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51.

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
326	August 8	S.L.	eP	W.A.	13 34 07	Aftershock of # 321. H = 13 <sup>h</sup> 28 <sup>m</sup> 27 <sup>s</sup> . S.L. readings from J.S.A. Preliminary Bulletin # 32, August 8, 1946.
			eS	W.A.	13 38 50	
		Fl.	ePZ	G.W.	13 34 07	
			iPZ	G.W.	13 34 09	
			iZ	G.W.	13 34 36	
			iSZ	G.W.	13 39 00	
F	G.W.	Lost				
327	August 8	S.L.	ePN	W.A.	17 29 47	Aftershock of # 321.
			eSN	W.A.	17 34 40	
			F	S.	18.5	
		Fl.	ePE	W.A.	17 29 46	
			iSE	G.W.	17 34 32	
			F	G.W.	19 -- --	
328	August 9	S.L.	ePE	S.	08 31 18	Aftershock of # 321. Vertical not operating.
			eSE	S.	08 35 46	
			F	S.	Lost.	
329	August 9	S.L.	ePE	S.	20 12 24	Aftershock of # 321. Vertical not operating.
			iSE	S.	20 16 59	
			F	S.	22.5	
330	August 10	S.L.	ePE	S.	02 16 05	Vertical not operating. Aftershock of # 321.
			eSE	S.	02 20 38	
			F	S.	04 -- --	
331	August 10	S.L.	ePE	S.	09 05 56	Vertical not operating. Aftershock of # 321.
			eSE	S.	09 10 28	
			iSE	S.	09 10 50	
			F	S.	10.7	
332	August 10	S.L.	ePE	S.	11 51 25	Vertical not operating. Aftershock of # 321.
			eSE	S.	11 55 56	
			iSE	S.	11 56 16	
			F	S.	Lost.	
333	August 11	S.L.	iZ	M.S.	02 12 22	8°3 S., 155°7 E. H = 01 <sup>h</sup> 54 <sup>m</sup> 26 <sup>s</sup> . $\Delta_{PS-H} = 113^{\circ}9$ $\Delta_{meas} = 114^{\circ}0$ Readings reported for M.S. instrument may not be seismic.
			eP'E	S.	02 13 02	
			ePR <sub>1</sub> E	S.	02 14 02	
			iZ	M.S.	02 14 22	
			eSKSE	S.	02 19 49	
			iSKKSE	S.	02 20 59	
			iPSE	S.	02 23 30	
			iPPSE	S.	02 24 46	
			iSR <sub>2</sub> E	S.	02 34 07	
			iLE	S.	02 49.8	
			F	S.	06 -- --	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
333 (Con't.)	August 11	Fl.	ePR <sub>1</sub> E	G.W.	02 13 58	$\Delta_{PS-H} = 113^{\circ}6$ $\Delta_{meas} = 113^{\circ}9$
			eSKKSZ	G.W.	02 20 57	
			ePSZ	G.W.	02 23 27	
			e(PPS)E	G.W.	02 24 39	
			F	G.W.	05.2	
334	August 11	S.L.	iPZ	M.S.	03 46 43	
335	August 11	S.L.	e(S)E	S.	10 07 56	
			eLE	S.	10 10 34	
			F	S.	10.5	
336	August 11	S.L.	ePZ	M.S.	13 18 23	Aftershock of # 321
			eSE	S.	13 23 00	
			eLE	S.	13 25 30	
			eME	S.	13 27 29	
			eE	S.	13 28 50	
			F	S.	Lost.	
337	August 11	S.L.	e(S)E	S.	16 57 20	
			eLE	S.	17 00 02	
			F	S.	17.5	
338	August 11	S.L.	e(P)Z	M.S.	18 35 54	
			e(S)E	S.	18 40 39	
			F	S.	19.4	
339	August 12	S.L.	ePZ	M.S.	02 44 56	
			eSE	S.	02 49 40	
			F	S.	04 -- --	
340	August 12	S.L.	e(P)Z	M.S.	05 36 21	
341	August 12	S.L.	e(P)Z	M.S.	06 28 41	
			iZ	M.S.	06 28 51	
342	August 12	S.L.	ePZ	M.S.	07 10 18	Near Samoa. Apia re- ports: eP 06h57m38s iS 06 58 33
			e(S)E	S.	07 20 58	
			eLE	S.	07 40.3	
			F	S.	09.0	
343	August 12	S.L.	iPZ	M.S.	09 37 26	Near: 20°N., 71°W. H = 09h32.0 <sup>m</sup>
			eSE	S.	09 41 54	
			F	S.	11.0	
344	August 12	S.L.	ePZ	M.S.	20 10 38	Region of # 343.
			e(S)E	S.	20 15 11	
			F	S.	20.7	
345	August 13	S.L.	ePZ	M.S.	05 03 55	
346	August 13	S.L.	ePZ	M.S.	08 34 24	Region of # 343.
			eSE	S.	08 38 57	
			F	S.	09.5	

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53.

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
347	August 13	S.L.	ePZ eSE F	M.S. S. S.	14 32 29 14 36 50 14.9	Region of # 343.
348	August 13	S.L.	ePZ eE eE F	M.S. S. S. S.	23 20 20 23 27 36 23 31 55 24.2	
349	August 14	S.L.	iPZ iZ eSE F	M.S. M.S. S. S.	01 01 42 01 01 50 01 06 20 02.0	Aftershock of # 321
350	August 14	S.L.  Fl.	iPZ ipPZ iZ iSE isSE F  eSE esSE F	M.S. M.S. M.S. S. S. S.  G.W. G.W. G.W.	09 53 28 09 53 41 09 53 59 10 04 13 10 04 39 11.0  10 04 10 10 04 35 Lost.	Epicentral Region: 38°7 N., 142°0 E. H = 09 <sup>h</sup> 40 <sup>m</sup> 40 <sup>s</sup> . h = 75±km. Δ <sub>P-H</sub> = 89°1 Δ <sub>meas</sub> = 89°1  Δ <sub>meas</sub> = 89°0
351	August 14	S.L.	e(P)Z F	M.S. S.	19 52 27 20.2	Indefinite.
352	August 15	S.L.	iPZ epPZ e(S)E	M.S. M.S. S.	01 08 57 01 09 18 01 18 18	May be 31°S., 68°W. Using H = 00 <sup>h</sup> 57.7 <sup>m</sup> h = 100 km.
353	August 15	S.L.  Fl.	(e)E e(PR <sub>1</sub> )E eE e(S)N e(PS)E eE F  ePZ ePR <sub>1</sub> Z eSN ePSE F	S. S. S. S. S. S. S.  G.W. G.W. G.W. G.W. G.W.	15 38 42 15 43 13 15 44 34 15 51 02 15 52 48 15 55 39 18.7  15 38 38 15 43 13 15 51 04 15 52 40 18.5	22°3 S., 171°4 E. H = 15 <sup>h</sup> 24 <sup>m</sup> 02 <sup>s</sup> . Δ <sub>meas</sub> = 109°9 Probably deeper than normal.  Δ <sub>meas</sub> = 109°8
354	August 15	S.L.	ePZ iPZ	M.S. M.S.	18 06 16 18 06 18	
355	August 16	S.L.	ePZ eSE F	M.S. S. S.	02 27 43 02 32 28 03.6	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
356	August 16	S.L.	iPZ	M.S.	23 59 51	
357	August 17	S.L.	ePZ eZ eSE F	M.S. M.S. S. S.	04 50 20 04 50 48 04 55 06 05.9	Aftershock of # 321.
358	August 17	S.L.	e(S)E eLE F	S. S. S.	07 15 04 07 21.6 07.9	
359	August 17	S.L.	i(P)Z	M.S.	07 41 25	
360	August 17	S.L.	e(PPS)E eE F	S. S. S.	10 12 57 10 14 10 Lost.	B.C.I.S. gives: 35°8 N., 45°7 E. H = 09 <sup>h</sup> 48 <sup>m</sup> 09 <sup>s</sup> .
361	August 17	S.L.	ePZ eE eSN F	M.S. S. S. S.	11 25 31 11 29 41 11 30 21 12.4	Region of # 343.
362	August 17	S.L.	e(P)Z e(PS)E F	M.S. S. S.	23 51 03 24 02 12 25.3	B.C.I.S. gives: 35°8 N., 45°7 E. H = 23 <sup>h</sup> 37.7 <sup>m</sup>
363	August 18	S.L.	ePZ eSE F	M.S. S. S.	02 21 04 02 25 44 03.1	
364	August 18	S.L.	iPZ ipFZ eZ eZ eSE esSE	M.S. M.S. M.S. M.S. S. S.	07 00 34 07 01 02 07 01 13 07 03 33 07 11 00 07 11 49	Region of # 321. H = 06 <sup>h</sup> 47 <sup>m</sup> 55 <sup>s</sup> . h = 150±km.
365	August 18	S.L.	ePZ eSE F	M.S. S. S.	17 15 00 17 19 46 18.1	
366	August 19	S.L.	eZ eZ	M.S. M.S.	03 27(48) 03 28 03	Indefinite.
367	August 19	S.L.	iPZ eSN eLN F	M.S. S. S. S.	04 08 45 04 13 15 04 16 30 05.1	Aftershock of # 321.

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55.

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
368	August 19	S.L.	iPZ	M.S.	05 46 25	Region of # 343.
			iPZ	M.S.	05 46 28	
			iZ	M.S.	05 46 40	
			iZ	M.S.	05 46 56	
			iPR <sub>1</sub> Z	M.S.	05 47 15	
			iZ	M.S.	05 47 26	
			eSE	S.	05 51 05	
			iSE	S.	05 51 12	
			eSR <sub>1</sub> E	S.	05 52 13	
			eLN	S.	05 54 01	
			F	S.	07.1	
			Fl.	ePE	W.A.	
		eSE	G.W.	05 51 12		
F	G.W.	06.7				
369	August 20	S.L.	ePZ	M.S.	03 32 44	Central America. H about 03 <sup>h</sup> 27.0 <sup>m</sup>
			eSE	S.	03 37 23	
			eE	S.	03 38 17	
			eE	S.	03 43 39	
			F	S.	04.7	
370	August 20	S.L.	e(SKS)E	S.	10 07 08	Japan.
			e(S)E	S.	10 08 01	
			e(PS)E	S.	10 09 23	
			eE	S.	10 14.4	
			F	S.	11.0	
371	August 20	S.L.	iPZ	M.S.	12 55 02	Aftershock of # 321.
			iZ	M.S.	12 55 08	
			iZ	M.S.	12 58 29	
			eSN	S.	12 59 32	
			eE	S.	12 59 49	
			eE	S.	13 00 09	
			eSR <sub>1</sub> E	S.	13 00 26	
			eME	S.	13 04.2	
			F	S.	Lost.	
372	August 21	S.L.	iPZ	M.S.	03 31 56	
			eMN	S.	03 39.4	
			F	S.	03.7	
373	August 21	S.L.	ePZ	M.S.	04 35 24	
374	August 21	S.L.	e(P)Z	M.S.	14 35 12	
			iPZ	M.S.	14 35 21	
			(e)E	S.	14 39 25	
			eSE	S.	14 39 56	
			eMN	S.	14 44 43	
			F	S.	15.5	

## Seismological Bulletin for the month of August, 1946 (Con't.)

No.	Date	Sta.	Phase	Inst.	h m s	Remarks
375	August 21	S.L.	ePZ	M.S.	18 14 06	Region: 25°S., 177°W. H = 18 <sup>h</sup> 00 <sup>m</sup> 20 <sup>s</sup> . h = 100±km.
			ePR <sub>1</sub> E	S.	18 18 18	
			epPR <sub>1</sub> E	S.	18 18 40	
			eSKSE	S.	18 24 35	
			iSKSE	S.	18 24 39	
			iSKKSE	S.	18 25 17	
			iSE	S.	18 25 48	
			isSN	S.	18 26 31	
			iSR <sub>1</sub> N	S.	18 32 52	
			iE	S.	18 34 25	
		F	S.	Lost.		
		Fl.	ePZ	G.W.	18 14 04	
			ePR <sub>1</sub> Z	G.W.	18 18 14	
			iSKSE	G.W.	18 24 37	
			iSKKSE	G.W.	18 25 15	
			iSN	G.W.	18 25 46	
			isSN	G.W.	18 26 31	
iSR <sub>1</sub> N	G.W.		18 32 51			
F	G.W.	Lost.				
376	August 21	S.L.	ePZ	M.S.	19 04 58	
377	August 21	S.L.	iPZ	M.S.	19 23 19	Large aftershock, # 321. H = 19 <sup>h</sup> 17 <sup>m</sup> 40 <sup>s</sup> .
			iZ	M.S.	19 23 21	
			iZ!	M.S.	19 23 23	
			iSE	S.	19 27 47	
			iE!	S.	19 27 53	
			F	S.	25±	
		Fl.	ePZ	G.W.	19 23 22	
			iFZ	G.W.	19 23 35	
			iSE	G.W.	19 27 56	
			F	G.W.	23+	
378	August 21	S.L.	e(P)Z	M.S.	21 58 04	Indefinite. Aftershock of # 321.
			e(S)N	S.	22 02 33	
			F	S.	22.5	
379	August 21	S.L.	ePZ	M.S.	23 06 11	
380	August 22	S.L.	ePZ	M.S.	01 15 57	Very weak.
			eZ	M.S.	01 17 01	
381	August 22	S.L.	ePZ	M.S.	01 23 23	
			e(S)E	S.	01 27.9	
			F	S.	Lost.	
382	August 22	S.L.	ePZ	M.S.	01 50 41	
			iPZ	M.S.	01 50 44	
			iZ	M.S.	01 51 18	
			e(S)N	S.	01 55.3	
			iZ	M.S.	01 55 39	
			F	S.	02.8	

-- Another shock?

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
383	August 22	Fl.	e(SKS)N e(S)N F	G.W. G.W. G.W.	16 55 30 16 56 34 17.6	La Paz gives: H = 16h31m08s.
384	August 23	S.L.	iPZ eSE F	M.S. S. S.	08 35 39 08 42 49 09.5	
385	August 23	S.L.	e(P)Z eLE F	M.S. S. S.	10 25 38 10 47.5 11.5	Indefinite beginning.
386	August 24	S.L.	iPZ iZ eSE F	M.S. M.S. S. S.	02 47 51 02 48 22 02 52 38 04.5	
387	August 24	S.L.	ePZ iZ	M.S. M.S.	13 02 22 13 02 33	
388	August 27	S.L.	ePZ	M.S.	07 21 58	
389	August 27	S.L.	iZ eE	M.S. S.	23 57 14 24 01 00	May not be seismic.
390	August 28	S.L.	e(SKS)E eE e(SKKS)E eE eE e(PS)E eE e(SR <sub>1</sub> )E eE eLE F	S. S. S. S. S. S. S. S. S. S. S.	20 30 56 20 31 30 20 32 00 20 33 25 20 33 46 20 34 55 20 38 49 20 41 21 20 43 29 20 56 15 22.1	North of New Zealand, according to Pasadena.
391	August 28	S.L.	ePZ eSE F	M.S. S. S.	22 31 56 22 36 30 Lost.	Aftershock of # 321.
392	August 28	S.L.	iPZ iZ iZ iZ iZ iZ ipPZ iZ iZ iPR <sub>1</sub> Z iZ isPZ	M.S. M.S. M.S. M.S. M.S. M.S. M.S. M.S. M.S. M.S. M.S. M.S.	22 38 31 22 38 35 22 39 09 22 39 26 22 39 37 22 39 55 22 40 28 22 40 47 22 40 52 22 41 14 22 41 22 22 41 29	27°0 S., 62°7 W. H = 22h28m20s. h = 600±km. ΔP-H = 7094 Δ <sub>meas</sub> = 7025

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
392	August 28 (Continued)	S.L.	iZ	M.S.	22 41 35		
			iZ	M.S.	22 42 21		
			iSE	S.	22 46 50		
			iE	S.	22 47 08		
			iScSE	S.	22 47 36		
			isSE	S.	22 50 20		
			esPSE	S.	22 51 02		
			iE	S.	22 51 24		
			iE	S.	23 00 55		
		F	S.	24.6±			
		Fl.	ePN	W.A.	22 38 32		$\Delta_{P-H} = 70^{\circ}6$ $\Delta_{meas} = 70^{\circ}6$
			epPZ	G.W.	22 40 29		
			iSE	G.W.	22 46 52		
			iE	G.W.	22 47 39		
isSE	G.W.		22 50 22				
F	G.W.	23.6					
393	August 28	S.L.	eZ	M.S.	23 06 25		
			iZ	M.S.	23 08 39		
			iZ	M.S.	23 09 21		
394	August 29	S.L.	e(P)Z	M.S.	04 08 42	Indefinite beginning.	
			e(S)E	S.	04 17 57		
			e(SR <sub>1</sub> )E	S.	04 23 19		
			F	S.	04.7		
395	August 29	S.L.	e(SKS)E	S.	23 20 32	Region: 23°S., 172°E. H = 22 <sup>h</sup> 55.5 <sup>m</sup>	
			eE	S.	23 23 23		
			ePSE	S.	23 23 59		
			eLE	S.	23 48 44		
			F	S.	25.5		
396	August 30	S.L.	ePZ	M.S.	05 42 41	Gulf of California. H about 05 <sup>h</sup> 38.0 <sup>m</sup>	
			eSE	S.	05 46 37		
			eLE	S.	05 49 08		
			iME	S.	05 49 51		
			F	S.	06.1		
397	August 30	S.L.	ePZ	M.S.	11 21 36	Pasadena gives: 33°14' N., 115°42' W. H = 11 <sup>h</sup> 16 <sup>m</sup> 45 <sup>s</sup> .	
			eLE	S.	11 28.6		
			F	S.	11.6		

Aftershocks of West Indian Earthquake of August 4, 1946. Many of these shocks were also recorded at Florissant, averaging about one second later. Unless otherwise noted, all readings are for Saint Louis.

August 4, 1946

P  
21<sup>h</sup>27<sup>m</sup>53<sup>s</sup>  
21 55 21  
23 58 43

August 5, 1946

P  
00<sup>h</sup>14<sup>m</sup>14<sup>s</sup>  
00 30 57  
00 35 04  
00 57 28

August 5, 1946

P  
02<sup>h</sup>06<sup>m</sup>05<sup>s</sup>  
02 47 38  
03 25 21  
03 41 42

(Continued on next page)

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Aftershocks of West Indian Earthquake of August 4, 1946 (Continued)

August 5, 1946 (Con't.)

P  
05<sup>h</sup>47<sup>m</sup>16<sup>s</sup>  
05 59 52  
07 14 56  
09 58 18  
12 13 30  
12 38 56  
13 16 49

August 6, 1946

P  
15<sup>h</sup>20<sup>m</sup>44<sup>s</sup>  
16 21 31  
17 09 21

August 7, 1946

P  
18<sup>h</sup>32<sup>m</sup>06<sup>s</sup> - Fl.  
19 27 03 - Fl.  
19 58 53 - Fl.

Minor Seismic Activity

Date	Station	From G.M.T.	To G.M.T.	Remarks
August 1	S.L.	16 <sup>h</sup> 08 <sup>m</sup>	16 <sup>h</sup> 33 <sup>m</sup>	Weak Surface
August 7	Fl.	07 46	07 59	Surface
August 8	Fl.	02 00	02 20	Surface
August 9	S.L.	18 50	19 25	Surface
August 9	S.L.	22 58	24 00	Surface?
August 10	S.L.	07 00	07 56	Surface
August 10	S.L.	18 26	18 47	Weak Surface
August 11	S.L.	06 52	07 36	Weak Surface
August 12	S.L.	15 14	15 43	Surface
August 12	S.L.	21 27	21 50	Surface
August 12	S.L.	23 08	23 23	Weak Surface
August 14	S.L.	04 38	04 57	Surface
August 14	S.L.	19 11	19 32	Surface
August 15	S.L.	05 21	05 40	Surface
August 15	S.L.	20 07	21.5+	Surface
August 19	S.L.	17 58	18 37	Surface
August 20	S.L.	22 --	24 --	Surface (Distant)
August 21	S.L.	07 00	07 16	Surface
August 28	S.L.	02 30	03 30	Surface
August 30	S.L.	06 33	06 37	Surface (Near)
August 30	S.L.	07 37	07 52	Surface (Near)
August 30	S.L.	10 05	10 24	Surface
August 30	S.L.	21 00	22 08	Surface

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Student Assistant

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

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
398	September 1	S.L.	iZ	M.S.	15 32 52	
399	September 2	S.L.	iPZ	M.S.	21 56 31	Epicentral Region: 17°5' N., 95° W. H = 21 <sup>h</sup> 51 <sup>m</sup> 48 <sup>s</sup> . h = 100±km.
			ipPZ	M.S.	21 56 46	
			iZ	M.S.	21 57 00	
			iZ	M.S.	21 57 31	
			eSE	S.	22 00 23	
			esSE	S.	22 00 57	
			F	S.	22 25±	
		Fl.	iPZ	G.W.	21 56 32	
			iZ	G.W.	21 57 01	
			eSN	G.W.	22 00 25	
			eN	G.W.	22 00 29	
			eE	G.W.	22 00 40	
F	G.W.	22 17±				
400	September 4	S.L.	iPZ	M.S.	18 49 06	
			iZ	M.S.	18 49 30	
			iZ	M.S.	18 49 49	
401	September 6	S.L.	iPZ	M.S.	22 04 52	Aftershock of # 321 Tentative Epicenter: 19°2' N., 68°9' W. H = 17 <sup>h</sup> 51 <sup>m</sup> 07 <sup>s</sup> . ΔP-H = 26°5' Δ <sub>meas</sub> = 26°8'
			iPR <sub>1</sub> Z	M.S.	22 05 34	
			iPR <sub>2</sub> Z	M.S.	22 05 49	
			eSE	S.	22 09 25	
			eSR <sub>1</sub> E	S.	22 10 56	
			eLE	S.	22 12 41	
			eMN	S.	22 15 14	
			F	S.	22 52±	
		Fl.	eN	G.W.	22 09 41	
			eMN	G.W.	22 15 25	
402	September 7	S.L.	iPZ	M.S.	08 12 13	Tentative epicenter; according to B.C.I.S.: 48° N., 155°5' E. H = 08 <sup>h</sup> 04 <sup>m</sup> 00 <sup>s</sup> .
			iZ	M.S.	08 12 32	
403	September 7	S.L.	eE	S.	13 17 01	
404	September 9	S.L.	iZ	M.S.	15 55 30	Possibly seismic.
			iZ	M.S.	15 55 45	
			iZ	M.S.	15 55 54	
405	September 10	S.L.	iPZ	M.S.	00 31 12	West coast of South America?
			eSE	S.	00 40 43	
			F	S.	07 51±	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
406	September 11	S.L.	iZ eE	M.S. S.	02 12 10 02 26 22	
407	September 12	Fl.	iPR <sub>1</sub> N iSK <sub>3</sub> N iPSN	G.W. G.W. G.W.	15 37 18 15 42 58 15 47 08	Tentative Epicenter: 23°N., 92°E. H = 15 <sup>h</sup> 17 <sup>m</sup> 17 <sup>s</sup> . Δ <sub>PR<sub>1</sub>-H</sub> = 118.06 Δ <sub>meas</sub> = 118.01
408	September 12	S.L.	iZ	M.S.	16 06 13	
409	September 13	S.L.	iPZ iZ iZ eN	M.S. M.S. M.S. S.	05 01 37 05 01 45 05 01 51 05 10 35	Epicentral Region: 33°N., 41.7°W. H = 04 <sup>h</sup> 51 <sup>m</sup> 11 <sup>s</sup> .± Δ <sub>meas</sub> = 40.0
		Fl.	eN	G.W.	05 10 40	
410	September 13	S.L.	iZ eE	M.S. S.	16 07 25 16 14 09	
		Fl.	eN eE	G.W. G.W.	16 13 43 16 16 20	
411	September 13	S.L.	iPZ i(pP)Z iSE i(sS)E	M.S. M.S. S. S.	19 10 28 19 10 45 19 19 44 19 20 14	Tentative Epicenter: 52.8°N., 160°E. H = 18 <sup>h</sup> 59 <sup>m</sup> 17 <sup>s</sup> . Possibly deeper than normal. Δ <sub>P-H</sub> = 70.4 Δ <sub>meas</sub> = 70.4
		Fl.	iPZ iSE i(sS)E	G.W. G.W. G.W.	19 10 27 19 19 42 19 20 04	Δ <sub>P-H</sub> = 70.3 Δ <sub>meas</sub> = 70.3
412	September 13	S.L.	iZ	M.S.	20 13 46	
		Fl.	iE iN iN	G.W. G.W. G.W.	19 54 38 20 17 10 20 17 45	Mexico?
413	September 14	S.L.	iZ iZ	M.S. M.S.	05 20 37 05 20 47	Kurile Islands?
414	September 14	S.L.	i(P)Z iZ eE F	M.S. M.S. S. S.	06 20 59 06 21 03 06 26 43 06 53 <sup>±</sup>	Pacific Ocean off west coast of Mexico.
		Fl.	eZ eE eZ	G.W. G.W. G.W.	06 24 19 06 27 19 06 35 13	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
415	September 14	S.L.	iP <sub>1</sub> Z i(SKP)Z	M.S. M.S.	20 08 06 20 11 35	Tentative Epicenter according to B.C.I.S.: 40°5' S., 149°E. H = 19 <sup>h</sup> 48 <sup>m</sup> 42 <sup>s</sup> (B.C.I.S.) Δ <sub>meas</sub> = 135.2	
		Fl.	eZ	G.W.	21 00 29		
416	September 14	S.L.	iZ	M.S.	22 18 10		
			iZ	M.S.	22 18 17		
			iZ	M.S.	22 24 07		
417	September 15	S.L.	iZ	M.S.	03 36 57		
			iZ	M.S.	03 37 04		
418	September 15	S.L.	iPZ	M.S.	05 28 19	Near south coast of Panama.	
			iZ	M.S.	05 30 49		
419	September 15	S.L.	iPZ	M.S.	16 15 54	Aftershock of # 321. H = 16 <sup>h</sup> 10 <sup>m</sup> 12 <sup>s</sup> (B.C.I.S.)	
			iZ	M.S.	16 16 51		
			eN	S.	16 21 16		
		Fl.	eN	G.W.	16 21 23		
420	September 16	S.L.	iZ	M.S.	10 05 25		
			iZ	M.S.	10 05 38		
			eE	S.	10 12 37		
421	September 17	S.L.	eN	W.A.	20 01 10		
422	September 18	S.L.	iPZ	M.S.	02 14 29	Tentative Epicenter: 16°N., 102°W. H = 02 <sup>h</sup> 09 <sup>m</sup> 09 <sup>s</sup> . Δ <sub>P-H</sub> = 24.4 Δ <sub>meas</sub> = 24.7	
			iPR <sub>1</sub> Z	M.S.	02 15 16		
			eSN	S.	02 18 48		
			eSR <sub>1</sub> N	S.	02 19 57		
			F	S.	02 43 <sup>±</sup>		
		Fl.	iPZ	G.W.	02 14 31		Δ <sub>P-H</sub> = 24.7
			eSN	G.W.	02 18 50		Δ <sub>meas</sub> = 24.8
			eSR <sub>1</sub> N	G.W.	02 20 00		
423	September 19	S.L.	iZ	M.S.	02 20 08	Possibly seismic.	
			iZ	M.S.	02 20 11		
			iZ	M.S.	02 20 58		
			iZ	M.S.	02 21 22		
424	September 19	S.L.	iPZ	M.S.	07 02 33	Aftershock of # 321. H = 06 <sup>h</sup> 56.8 <sup>m</sup> Δ <sub>meas</sub> = 26.8	
			iPR <sub>1</sub> Z	M.S.	07 03 06		
			eSE <sub>1</sub>	S.	07 07 04		
			eN	S.	07 07 16		
			F	S.	07 42 <sup>±</sup>		
		Fl.	ePZ	G.W.	07 02 34		Δ <sub>meas</sub> = 26.9
			eSZ	G.W.	07 07 04		

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425	September 20	S.L.	iZ	M.S.	02 05 35	Possibly seismic.	
			iZ	M.S.	02 05 49		
			eE	S.	02 28 27		
			eE	S.	02 37 15		
426	September 20	S.L.	iPZ	M.S.	17 41 40	Aftershock of # 321. H = 07 <sup>h</sup> 35 <sup>m</sup> 56 <sup>s</sup> . $\Delta P-H = 26^{\circ}9$ $\Delta_{meas} = 26^{\circ}8$	
			eSE	S.	17 46 13		
			eLE	S.	17 50 29		
			F	S.	18 28 $\pm$		
		Fl.	iPZ	G.W.	17 41 38		$\Delta P-H = 26^{\circ}7$ $\Delta_{meas} = 27^{\circ}0$
			e(S)Z	G.W.	17 46 34		
			eLZ	G.W.	17 49 39		
			F	G.W.	18 14 $\pm$		
427	September 22	S.L.	iPZ	M.S.	08 05 04	Depth probably 100 <sup>+</sup> km. Aleutian Islands.	
			i(pP)Z	M.S.	08 05 17		
			iZ	M.S.	08 05 22		
			e(S)E	S.	08 12 55		
		e(S)N	S.	08 12 56			
		Fl.	eN	G.W.	08 29 56		
428	September 23	S.L.	e(PS)E	S.	22 21 55	Epicentral Region according to B.C.I.S.: 14 <sup>o</sup> S., 167 <sup>o</sup> E. H = 21 <sup>h</sup> 53.4 <sup>m</sup>	
			eE	S.	22 22 12		
			e(PPS)E	S.	22 22 31		
			e(SR <sub>1</sub> )E	S.	22 31 38		
			eLE	S.	22 48 20		
			eME	S.	22 57 40		
			F	S.	Lost		
		Fl.	i(PS)Z	G.W.	22 21 57		
			iE	G.W.	22 22 12		
			eLZ	G.W.	22 45 27		
429	September 23	S.L.	iP'Z	M.S.	23 48 39	Tentative Epicenter: 5 <sup>o</sup> 8 S., 147 <sup>o</sup> 7 E. H = 23 <sup>h</sup> 29 <sup>m</sup> 56 <sup>s</sup> . $\Delta S-H = 118^{\circ}7$ $\Delta_{meas} = 118^{\circ}7$	
			iPR <sub>1</sub> Z	M.S.	23 50 03		
			iSKSE	S.	23 55 28		
			iSZ	M.S.	23 57 53		
			iPSZ	M.S.	23 59 54		
			iPPSZ	M.S.	24 00 38		
			iSR <sub>1</sub> E	S.	24 06 23		
			iZ	M.S.	24 07 17		
			F	S.	02 33 $\pm$		
			Fl.	iP'Z	G.W.		23 48 40
				iZE	G.W.		23 50 01
		iPR <sub>1</sub> Z		G.W.	23 51 02		
		iE		G.W.	23 51 05		
		eSE		G.W.	23 57 53		
			iE	G.W.	23 59 02		
			iE	G.W.	24 02 46		
eLZ	G.W.		24 29 27				
F	G.W.		02 05 $\pm$				

No.	Date	Sta.	Phase	Inst.	h m s	Remarks			
430	September 25	S.L.	iPZ	M.S.	10 11 12	Tentative Epicenter: 19°8 N., 70°0 W. H = 10 <sup>h</sup> 05 <sup>m</sup> 42 <sup>s</sup> . $\Delta P-H = 25^{\circ}5$ $\Delta_{meas} = 25^{\circ}6$			
			eSN	S.	10 15 45				
			iSE	S.	10 15 55				
			eLN	S.	10 18 03				
			F	S.	11 16 <sup>±</sup>				
		Fl.	ePZ	G.W.	10 11 13		$\Delta P-H = 25^{\circ}6$		
			ePEN	G.W.	10 11 14		$\Delta_{meas} = 25^{\circ}9$		
			iPR <sub>1</sub> E	G.W.	10 11 50				
			e(PR <sub>2</sub> )E	G.W.	10 12 13				
			eN	G.W.	10 12 56				
			eSN	G.W.	10 15 49				
			eLN	G.W.	10 18 04				
			F	G.W.	11 03 <sup>±</sup>				
431	September 25	S.L.	iPZ	M.S.	15 03 39	Aftershock of # 430. H = 09 <sup>h</sup> 58.1 <sup>m</sup> $\Delta_{meas} = 25^{\circ}6$ May be deep?			
			i(pP)Z	M.S.	15 03 48				
			eSE	S.	15 08 20				
			e(sS)E	S.	15 04 40				
			eSR <sub>1</sub> E	S.	15 09 27				
			eLE	S.	15 11 07				
			F	S.	16 03 <sup>±</sup>				
		Fl.	e(S)Z	G.W.	15 08 30		Time doubtful.		
			eZ	G.W.	15 09 37				
			eLN	G.W.	15 12 21				
			eZ	G.W.	15 20 16				
			F	G.W.	15 55 <sup>±</sup>				
432	September 26	S.L.	i(P')Z	M.S.	11 10 47	Epicentral Region: 25°6 S., 178°E. H = 10 <sup>h</sup> 53 <sup>m</sup> 16 <sup>s</sup> . h = 600 <sup>±</sup> km. Magnitude 6 1/2 (Pasadena.)			
			e(pP')E	S.	11 11 02				
			ePR <sub>1</sub> Z	M.S.	11 11 14				
			e(SKS)E	S.	11 16 09				
			iZ	M.S.	11 17 04				
			iSE	S.	11 17 46				
			eN	S.	11 20 46				
			eN	S.	11 25 24				
			F	S.	12 26 <sup>±</sup>				
			Fl.	e(P')Z	G.W.		11 10 57	Time doubtful.	
				eZ	G.W.		11 13 47		
		F		G.W.	11 42 <sup>±</sup>				
		433	September 26	S.L.	iZ		M.S.	13 57 10	
					iZ		M.S.	13 58 02	
434	September 26	S.L.	iZ	M.S.	14 59 46				
			iZ	M.S.	15 00 31				
435	September 28	S.L.	iPZ eME	M.S. S.	07 24 09 07 32 34	Tentative Epicenter according to Pasadena: 33°57'N., 116°51'W. H = 07 <sup>h</sup> 19 <sup>m</sup> 09 <sup>s</sup> . $\Delta P-H = 22^{\circ}5$ $\Delta_{meas} = 22^{\circ}1$			

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
436	September 29	S.L.	e(P)E	S.	03 16 51	Tentative Epicenter: 4°8 S., 152°8 E. H = 03 <sup>h</sup> 01 <sup>m</sup> 55 <sup>s</sup> . $\Delta_{PS-H} = 114^{\circ}1$ $\Delta_{meas} = 114^{\circ}1$
			eE	S.	03 16 55	
			eP'Z	M.S.	03 20 17	
			i(FR <sub>1</sub> )Z	M.S.	03 21 42	
			eN	S.	03 25 15	
			eN	S.	03 26 41	
			e(SKS)N	S.	03 27 43	
			e(SKKS)N	S.	03 28 55	
			eSN	S.	03 29 29	
			ePSN	S.	03 31 01	
			iPSZ	M.S.	03 31 05	
			F	M.S.	Lost in following phases.	
437	September 29	S.L.	eE	S.	06 39 25	Time doubtful.
438	September 29	S.L.	iZ	M.S.	08 19 13	
			iZ	M.S.	08 19 29	
439	September 29	S.L.	e(SKKS)E	S.	09 35 58	Tentative Epicenter according to U.R.S.S.: 4°S., 151°E. H = 09 <sup>h</sup> 09 <sup>m</sup> 36 <sup>s</sup> . (B.C.I.S.)
			e(PS)E	S.	09 38 55	
			e(SR <sub>1</sub> )E	S.	09 44 39	
440	September 30	S.L.	iPZ	M.S.	01 08 53	Tentative Epicenter: 12°6 S., 75°8 W. H = 00 <sup>h</sup> 59 <sup>m</sup> 51 <sup>s</sup> . h = 100±km. $\Delta_{P-H} = 53^{\circ}1$ $\Delta_{meas} = 53^{\circ}0$
			i(pP)Z	M.S.	01 09 09	
			eSN	S.	01 16 12	
			iSE	S.	01 16 19	
			isSE	S.	01 16 47	
			iE	S.	01 18 33	
			F	S.	02 47±	
441	September 30	S.L.	ePR <sub>1</sub> E	S.	11 47 23	
			e(S)E	S.	11 54 50	
			iPSE	S.	11 56 29	
			eE	S.	11 58 02	
			iSR <sub>1</sub> E	S.	12 02 10	
			eSR <sub>2</sub> E	S.	12 05 45	
			eLE	S.	12 18 20	
			eME	S.	12 28 35	
			F	S.	13 29±	



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MINOR SEISMIC ACTIVITY

Date	Station	<u>From</u> G.M.T.	<u>To</u> G.M.T.	Remarks
September 1	S.L.	20 <sup>h</sup> 36 <sup>m</sup>	20 <sup>h</sup> 44 <sup>m</sup>	
September 9	S.L.	10 33	11 21	
September 11	S.L.	10 54	11 28	
September 18	S.L.	08 45	08 57	
September 22	S.L.	22 16	22 45	
September 22	Fl.	22 16	22 45	
September 22	S.L.	17 59	18 06	
September 22	Fl.	18 01	18 07	
September 27	S.L.	08 45	09 13	

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

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
442	October 2	S.L.	ePZ	M.S.	04 57 29	50°3 N., 157°7 E. H = 04 <sup>h</sup> 46 <sup>m</sup> 07 <sup>s</sup> . Depth of Focus: 50 <sup>+</sup> km. $\Delta$ <sub>iP-H</sub> = 73°2 $\Delta$ <sub>meas</sub> = 73°2
			iPZ	M.S.	04 57 31	
			iZ	M.S.	04 57 35	
			ipPZ	M.S.	04 57 42	
			i(PcP)Z	M.S.	04 57 46	
			ePR <sub>1</sub> Z	M.S.	05 00 27	
			iSE	S.	05 06 45	
			isSE	S.	05 07 11	
			iE	S.	05 07 39	
			i(ScS)E	S.	05 08 03	
			eE	S.	05 11 04	
			eSR <sub>2</sub> E	S.	05 14 52	
			eME	S.	05 19.2	
			F	S.	Lost	
443	October 2	S.L.	iPZ	M.S.	05 56 11	
444	October 2	S.L.	iPZ	M.S.	06 54 37	H = 06 <sup>h</sup> 43 <sup>m</sup> 13 <sup>s</sup> . Region of # 442. $\Delta$ <sub>P-H</sub> = 73°2
			ipPZ	M.S.	06 54 48	
			i(PcP)Z	M.S.	06 54 52	
			iPR <sub>1</sub> Z	M.S.	06 57 33	
			iZ	M.S.	06 59 15	
			iSE	S.	07 03 54	
			isSE	S.	07 04 19	
			eSR <sub>1</sub> E	S.	07 08 29	
			eSR <sub>2</sub> E	S.	07 11 32	
			eME	S.	07 16.8	
			F	S.	08.9	
445	October 2	S.L.	eLE	S.	12 45.0	
			F	S.	13.8	
446	October 3	S.L.	eE	S.	07 05 08	Two earthquakes?
			eE	S.	07 06 31	
			eE	S.	07 09 08	
			eE	S.	07 14 37	
			eLE	S.	07 38.2	
			F	S.	08.5	
447	October 3	S.L.	eE	S.	15 51 24	B.C.I.S. reports two earthquakes. 1.) 40°4 N., 33°5 E. H = 15 <sup>h</sup> 39 <sup>m</sup> 10 <sup>s</sup> . 2.) 23°S., 171 1/2° E. H = 15 <sup>h</sup> 36 <sup>m</sup> 42 <sup>s</sup> .
			iE	S.	16 04 54	
			eE	S.	16 05 48	
			eE	S.	16 06 06	
			eE	S.	16 10 51	
			eLE	S.	16 26.2	
			F	S.	18.4	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
448	October 4	S.L.	iPE ipPN iE i(PR <sub>1</sub> )E eE iSE eE F	S. S. W.A. W.A. W.A. S. W.A. S.	14 51 10 14 51 20 14 51 28 14 51 42 14 52 05 14 55 47 14 56 17 17.1	19°7 N., 69°2 W. H = 14 <sup>h</sup> 45 <sup>m</sup> 35 <sup>s</sup> . Depth of Focus: 50±km. ΔP-H = 26°3 Δ <sub>meas</sub> = 26°3
449	October 5	S.L.	(eP)Z eSN eLN F	M.S. S. S. S.	09 28 52 09 33 30 09 35 45 09 44 --	
450	October 5	S.L.	e(P)Z	M.S.	17 57 49	
451	October 7	S.L.	iPZ	M.S.	07 05 43	
452	October 8	S.L.	e(P)Z eN	M.S. S.	23 15 30 23 20.7	Very weak.
453	October 9	S.L.	eME F	S. S.	06 20.4 06.8±	Microseisms very large.
454	October 9	S.L.	iPZ iZ eSZ eSE i(PS)E eE eLN	M.S. M.S. M.S. S. S. S. S.	20 36 44 20 36 51 20 45 38 20 45 46 20 47 14 20 49 01 21 02 --	South America?
455	October 9	S.L.	eZ eSE iE eMN F	M.S. S. S. S. S.	04 43 06 04 48 47 04 52 26 05 21 -- 06.6	
456	October 11	S.L.	eLE F	S. S.	01 37.6 01 45 --	
457	October 13	S.L.	iPZ iZ	M.S. M.S.	21 37 22 21 37 33	ΔP-H = 86°8 B.C.I.S. gives: 33°8 N., 26°5 E. H = 21 <sup>h</sup> 24 <sup>m</sup> 30 <sup>s</sup> .
458	October 13	S.L.	iPZ iSE isSE F	M.S. S. S. S.	23 23 27 23 31 50 23 33 05 Lost	24° S., 65°5 W. H = 23 <sup>h</sup> 13 <sup>m</sup> 00 <sup>s</sup> Depth of Focus: 200±km.

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks		
459	October 14	S.L.	eSKSE	S.	05 09 40	30°7 S., 178°2 W. H = 04 <sup>h</sup> 44 <sup>m</sup> 45 <sup>s</sup> . $\Delta_{P-H} = 106^{\circ}8$ $\Delta_{meas} = 107^{\circ}0$		
			iSKKSE	S.	05 10 22			
			iSE	S.	05 11 06			
			ePSE	S.	05 12 36			
			L	S.	05 31.6			
			F	S.	Lost			
460	October 15	S.L.	eZ	M.S.	06 58 31			
461	October 15	S.L.	e(L)N	S.	15 11.2			
462	October 21	S.L.	ePZ	M.S.	13 51 27	Region: 9°N., 82°W. H = 13 <sup>h</sup> 45 <sup>m</sup> 1		
			iPZ	M.S.	13 51 32			
			eSN	S.	13 56.6			
			iE	S.	13 57 19			
			eE	S.	13 58.6			
			F	S.	Lost			
463	October 22	S.L.	ePR <sub>1</sub> Z	M.S.	10 18 46	Epicentral Region: 15°0 S., 167°8 E. H = 10 <sup>h</sup> 00 <sup>m</sup> 43 $\Delta_{P-H} = 108^{\circ}7$ $\Delta_{meas} = 108^{\circ}8$		
			iPR <sub>1</sub> Z	M.S.	10 18 49			
			epPR <sub>1</sub> Z	M.S.	10 19 32			
			eZ	M.S.	10 19 58			
			eE	S.	10 20 55			
			iSKSE	S.	10 24 36			
			eE	S.	10 25 34			
			Fl.	e(P)Z	G.W.		10 14 11	$\Delta_{PR_1-H} = 109^{\circ}0$ $\Delta_{meas} = 108^{\circ}7$
				e(pP)Z	G.W.		10 15 05	
		ePR <sub>1</sub> Z		G.W.	10 18 51			
		epPR <sub>1</sub> Z		G.W.	10 19 34			
		iSKSE		G.W.	10 24 43			
		iE		G.W.	10 25 38			
		eZ		G.W.	10 27 57			
		eSR <sub>2</sub> Z		G.W.	10 38 56			
		F		G.W.	11.8			
		464	October 22	S.L.	iPZ	M.S.	21 22 16	Region? 6°N., 83°W. H = 21 <sup>h</sup> 15 <sup>m</sup> 6
		465	October 24	S.L.	e(P)Z	M.S.	02 39 27	
eZ	M.S.				02 39 56			
(e)E	S.				02 42 07			
eE	S.				02 44.2			
eLE	S.				02 48.4			
F	S.				Lost			
466	October 25	S.L.	iPZ	M.S.	22 01 15	53°5 N., 159°8 E. H = 21 <sup>h</sup> 50 <sup>m</sup> 23 <sup>s</sup> . $\Delta_{P-H} = 70^{\circ}0$ $\Delta_{meas} = 70^{\circ}0$		
			ipPZ	M.S.	22 01 47			
			iSE	S.	22 10 13			
			eSR <sub>1</sub> E	S.	22 14 57			
			esSR <sub>1</sub> E	S.	22 16.2			
			eN	S.	22 17.0			
			eN	S.	22 18 14			
			eLE	S.	22 24 --			
			F	S.	Lost			

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
466 (Con't.)	October 25	Fl.	iPZ	G.W.	22 01 15	$\Delta_{P-H} = 70^{\circ}0$ $\Delta_{meas} = 69^{\circ}8$	
			ipPZ	G.W.	22 01 46		
			iSE	G.W.	22 10 13		
			isSN	G.W.	22 11 08		
			iN	G.W.	22 12 04		
			eSR <sub>1</sub> N	G.W.	22 14 58		
			F	G.W.	22.8		
467	October 26	S.L.	ePR <sub>1</sub> Z	M.S.	00 39 56	Epicentral Region: 60°6 S., 37°0 W. H = 00 <sup>h</sup> 21 <sup>m</sup> 11 <sup>s</sup> . $\Delta_{PS-H} = 108^{\circ}6$ $\Delta_{meas} = 108^{\circ}5$	
			eN	S.	00 44 22		
			iSKSN	S.	00 46 12		
			eSKSN	S.	00 47.2		
			ePSN	S.	00 49 21		
			iSR <sub>1</sub> N	S.	00 55 12		
			F	S.	03.5		
		Fl.	ePR <sub>1</sub> Z	G.W.	00 39 57		$\Delta_{PR_1-H} = 108^{\circ}3$ $\Delta_{meas} = 108^{\circ}6$
			eZ	G.W.	00 40 30		
			eSKSN	G.W.	00 46 09		
			ePSZ	G.W.	00 49 31		
			eSR <sub>1</sub> N	G.W.	00 55.1		
			F	G.W.	02.7		
468	October 26	S.L.	eZ	M.S.	00 47 43		
469	October 28	S.L.	eZ	M.S.	06 36 39		
470	October 28	S.L.	iPZ	M.S.	11 30 06		
471	October 29	S.L.	eLN	S.	00 13.2		
			F	S.	Lost		
		Fl.	eLN	G.W.	00 14.3		
472	October 29	S.L.	e(P)Z	M.S.	03 37 29		
			eLN	S.	03 46.9		
473	October 29	S.L.	ePnN	W.A.	10 46 50.7	Local. H = 10 <sup>h</sup> 46 <sup>m</sup> 07 <sup>s</sup> .5 $\Delta_{Sn-Pn} = 185$ miles.	
			eN	W.A.	10 47 07.7		
			iSnN	W.A.	10 47 23.7		
			iSnE	W.A.	10 47 24.1		
			Fl.	iSnN	W.A.		10 47 25.0
474	October 29	S.L.	iPZ	M.S.	11 53 48		
			eSE	W.A.	12 01 55		
475	October 30	S.L.	iPZ	M.S.	07 56 35	53°7 N., 163°3 W. H = 07 <sup>h</sup> 47 <sup>m</sup> 44 <sup>s</sup> . Depth of Focus: 50±km. $\Delta_{P-H} = 50^{\circ}2$ $\Delta_{meas} = 50^{\circ}2$	
			ipPZ	M.S.	07 56 44		
			iZ	M.S.	07 56 56		
			i(PcP)Z	M.S.	07 57 54		
			iPR <sub>1</sub> Z	M.S.	07 58 34		
			i(pPR <sub>1</sub> )Z	M.S.	07 58 46		

(Continued on next page)

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
475 (Con't.)	October 30	S.L.	iSE	S.	08 03 52		
			isSZ	M.S.	08 04 12		
			eN	S.	08 06.1		
			iN	S.	08 07 47		
			F	S.	Lost		
		Fl.	iPZ**	G.W.	07 56 35		$\Delta_{P-H} = 50^{\circ}2$ $\Delta_{meas} = 50^{\circ}0$
			ipPZ	G.W.	07 56 45		
			eZ	G.W.	07 58 40		
			iSN	G.W.	08 03 50		
			isSN	G.W.	08 04 08		
			iN	G.W.	08 04 46		
			iE	G.W.	08 05 49		
			iE	G.W.	08 06 22		
			eLE	G.W.	08 13.0		
			F	G.W.	10.5		
476	October 30	S.L.	iPZ	M.S.	14 24 18	Region: 56°N., 167°E. H = 14h13m5 Probably deeper than normal.	
			iZ	M.S.	14 24 30		
			iSE	S.	14 33 18		
			e(SR <sub>1</sub> )E	S.	14 38.1		
			eN	S.	14 41.51		
			e(L)N	S.	14 49.5		
			F	S.	Lost		
477	October 30	S.L.	i(P)Z	M.S.	04 28 11		
478	October 31	S.L.	eZ	M.S.	20 05 16		

MINOR SEISMIC ACTIVITY

Date	Station	G.M.T. <u>From</u>	G.M.T. <u>To</u>	Remarks
October 3	S.L.	05h09m	05h25m	
October 23	S.L.	19 28	19 40	
October 26	S.L.	12.3	13 16	Seismic?

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
479	November 1	S.L.	iPZ i(S)N eSE iSE FN	M.S. S. W.A. W.A. S.	11 24 14 11 32 02 11 32 10 11 32 12 15 33 --	Region: 51°1 N., 174°2 W. S.E. of Adah. H = 11 <sup>h</sup> 14 <sup>m</sup> 25 <sup>s</sup> . $\Delta_{iP-H} = 57^{\circ}9$ $\Delta_{meas} = 57^{\circ}8$ Magnitude 7.0: Pasadena.
480	November 1	S.L.	iPZ	M.S.	11 39 13	Aftershocks of # 479.
481	"	"	"	"	11 52 25	
482	"	"	"	"	12 20 03	
483	"	"	"	"	13 24 18	
484	"	"	"	"	13 52 54	
485	"	"	ePZ	"	15 07 49	
486	"	"	"	"	15 42 28	
487	"	"	"	"	19 46 50	
488	November 2	S.L.	eP'Z ePR <sub>1</sub> Z i(SKP)Z eZ eSKSZ iSR <sub>1</sub> E FN	M.S. M.S. M.S. M.S. M.S. S. S.	14 22 58 14 24 46 14 26 14 14 29 00 14 30 07 14 41 52 16 30 --	Region: 5°5 N., 125°6 E. S.E. of Mindanao. H = 14 <sup>h</sup> 04 <sup>m</sup> 00 <sup>s</sup> $\Delta_{ePR_1-H} = 125^{\circ}1$ $\Delta_{meas} = 125^{\circ}1$
489	November 2	S.L.	iPZ iZ ipPZ iZ iPR <sub>1</sub> E iPR <sub>1</sub> N ipPR <sub>1</sub> Z i(PR <sub>2</sub> )E iZ i(SKS)E iSE	M.S. M.S. M.S. M.S. S. S. M.S. S. M.S. S. S.	18 42 09 18 42 20 18 42 27 18 42 44 18 45 55 18 46 08 18 46 16 18 47 54 18 50 09 18 52 12 18 53 27	Region: 42°1 N., 71°9 E. U.R.S.S.: Mount Tchatkal- sky to the N.E. of Namangan. H = 18 <sup>h</sup> 28 <sup>m</sup> 39 <sup>s</sup> . h = 100±km. $\Delta_{iP-H} = 98^{\circ}6$ $\Delta_{meas} = 98^{\circ}2$ Magnitude 7.6: Pasadena. U.R.S.S.: Destruction in the districts of Uybeck and Kirghiy (Turkestan).
490	November 3	S.L.	iPZ iPE iPZ iSE iSN i(SR <sub>1</sub> )N FN	M.S. S. M.S. S. S. S. S.	19 44 25 19 44 27 19 44 30 19 54 13 19 54 15 19 59 19 21 16 --	Region: 0°4 N., 17°3 W. S.W. of Liberia, approx. in middle of the Atlantic. H = 19 <sup>h</sup> 32 <sup>m</sup> 40 <sup>s</sup> . $\Delta_{iP-H} = 76^{\circ}2$ $\Delta_{meas} = 76^{\circ}8$

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
490 (Con't.)	November 3	Fl.	iPE	G.W.	19 44 28	$\Delta_{iP-H} = 76^{\circ}9$ $\Delta_{meas} = 77^{\circ}0$	
			iPZ	G.W.	19 44 30		
			iSE	G.W.	19 54 16		
			eSN	G.W.	19 54 22		
			eSR <sub>1</sub> N	G.W.	19 59 27		
			eSR <sub>2</sub> E	G.W.	20 02 46		
			FN	G.W.	20 42 --		
491	November 4	S.L.	iPZ	M.S.	22 01 10	Region: 40°0 N., 54°3 E. U.R.S.S.: East coast of the Caspian Sea, Turk- menen; felt IV at Bakou and III at Stalinabad. H = 21 <sup>h</sup> 47 <sup>m</sup> 17 <sup>s</sup> . $\Delta_{iP-H} = 95^{\circ}3$ $\Delta_{meas} = 95^{\circ}3$ Magnitude 7.5: Pasadena.	
			ePN	S.	22 01 11		
			iPE	S.	22 01 12		
			iZ	M.S.	22 01 23		
			iPR <sub>1</sub> Z	M.S.	22 05 06		
			iPR <sub>2</sub> Z	M.S.	22 07 07		
			iSKSN	S.	22 11 32		
			i(SKKS)E	S.	22 11 58		
			ePSZ	M.S.	22 13 41		
			i(PPS)Z	M.S.	22 14 01		
		FN	S.	26 38 --			
		Fl.	iPZ	G.W.	22 01 11		$\Delta_{iP-H} = 95^{\circ}4$ $\Delta_{meas} = 95^{\circ}3$
			iZ	G.W.	22 01 31		
			iPR <sub>1</sub> Z	G.W.	22 05 07		
			iPR <sub>2</sub> Z	G.W.	22 06 54		
			i(SKKS)N	G.W.	22 12 03		
			i(S)N	G.W.	22 12 23		
iPSZN	G.W.		22 13 45				
iPPSN	G.W.	22 14 00					
FN	G.W.	24 20 --					
492	November 5	S.L.	iPZ	M.S.	07 10 17	Region of: 25°S., 65°W. Northern Argentina. H = 07 <sup>h</sup> 59 <sup>m</sup> 48 <sup>s</sup> h = about 200±km.	
			e(pP)Z	M.S.	07 11 11		
			iSE	S.	07 18 50		
			i(sS)E	S.	07 20 12		
			iE	S.	07 21 27		
			iE	S.	07 24 40		
			FN	S.	07 47 --		
493	November 5	S.L.	eZ	M.S.	22 57 36	Japan.	
			eZ	M.S.	22 58 40		
494	November 6	S.L.	iPR <sub>1</sub> E	S.	20 16 03	Region of: 36°N., 81°E Turkistan. H = 19 <sup>h</sup> 56 <sup>m</sup> 5 <sup>s</sup>	
			e(SKS)N	S.	20 22 11		
			FN	S.	22 20 --		
495	November 7	S.L.	ePZ	M.S.	18 11 42	Aftershock of August 4, 17h. Region: 19°4 N., 69°5 W. North coast of Dominion Republic. H = 18 <sup>h</sup> 06 <sup>m</sup> 04 <sup>s</sup> . $\Delta_{eP-H} = 26^{\circ}3$ $\Delta_{meas} = 26^{\circ}5$	
			ePR <sub>2</sub> Z	M.S.	18 12 35		
			eSN	S.	18 16 21		
			FN	S.	19 32 --		



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No.	Date	Sta.	Phase	Inst.	h m s	Remarks		
496	November 7	S.L.	eP*N	W.A.	20 43 33	Epicenter in Washington Co. near Cruise, Mo. Felt at Lone Dell, Mo. $H = 20^h 43^m 20^s$ . $\Delta_{eP*-H} = 47.3$ miles. $\Delta_{eS*-H} = 54.5$ miles.		
			iS*N	W.A.	20 43 42			
			FN	W.A.	20 45 --			
		Fl.	eS*N	W.A.	20 43 45			
			iN	W.A.	20 43 51			
			FN	W.A.	20 45 --			
497	November 7	S.L.	ePZ	M.S.	21 40 42	Pacific Ocean west of South America.		
			iPZ	M.S.	21 40 46			
			FN	S.	22 58 --			
498	November 8	S.L.	ePZ	M.S.	05 28 36			
			FN	S.	05 53 --			
499	November 10	S.L.	iPZ	M.S.	13 06 06	Pacific coast of North Chile $h = 150^{\pm}$ km.		
			iZ	M.S.	13 06 30			
			ipPZ	M.S.	13 06 37			
			iPcPZ	M.S.	13 06 48			
			i(sP)Z	M.S.	13 06 57			
			iZ	M.S.	13 07 12			
			i(S)E	S.	13 15 10			
			iSE	S.	13 15 16			
			isSE	S.	13 16 08			
			iE	S.	13 24 25			
			FN	S.	13 46 --			
			Fl.	ePN	W.A.		13 06 08	
				epPZ	G.W.		13 06 40	
		eN		W.A.	13 06 46			
		eN		W.A.	13 06 58			
		eSE		G.W.	13 15 21			
		esSE		G.W.	13 16 11			
		FE		G.W.	13 25 --			
		500	November 10	S.L.	iPZ	M.S.	17 51 33	Region: 8.7 S., 77°6 W. B.C.I.S.: 360 km. N. of Lima. Destruction in Feru between the Marañon River and White Mts; the effects of destruction and quake itself were felt in villages of Santiago de Chuco, Pisco-bamba, Pamabarón and Molebamba; 800 deaths and 500 injuries. $H = 17^h 42^m 55^s$ . $\Delta_{iP-H} = 48^{\circ}0$ $\Delta_{meas} = 48^{\circ}8$ Magnitude 7 1/4: Pasadena
					iZ	M.S.	17 51 40	
iPcPE	S.				17 53 15			
iPR <sub>1</sub> Z	M.S.				17 53 38			
iPR <sub>2</sub> N	S.				17 53 57			
eSZ	M.S.				17 58 27			
i(SR <sub>1</sub> )N	S.				18 02 27			
FN <sub>1</sub>	S.	22 40 --						

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks		
500 (Con't.)	November 10	Fl.	iPZ	G.W.	17 51 37	$\Delta_{iP-H} = 48^{\circ}6$ $\Delta_{meas} = 48^{\circ}9$		
			iPR <sub>1</sub> N	G.W.	17 53 39			
			iSN	G.W.	17 58 50			
			i(SR <sub>1</sub> )N	G.W.	18 02 31			
			iMN	G.W.	18 10 37			
			FN	G.W.	21 37 --			
501	November 10	S.L.	iPZ	M.S.	18 59 16	Aftershock of # 500.		
502	November 10	S.L.	iPZ	M.S.	19 59 34	Aftershock of # 500.		
			ePR <sub>1</sub> Z	M.S.	20 01 33			
503	November 10	S.L.	iPZ	M.S.	21 11 13	Aftershock of # 500.		
			ePR <sub>1</sub> Z	M.S.	21 13 13			
504	November 10	S.L.	ePZ	M.S.	22 11 11	Aftershock of # 500.		
505	November 11	S.L.	iPZ	M.S.	21 08 47	Aleutians.		
			iZ	M.S.	21 09 00			
			iE	S.	21 09 05			
			FE	S.	22 07 --			
		Fl.	iPE	W.A.	21 08 47			
506	November 12	S.L.	iPZ	M.S.	06 05 18	Region: 52°9 N., 163°0 W. S. of Unimak, Aleutians. H = 05h56m22s. $\Delta_{iP-H} = 50^{\circ}4$ $\Delta_{meas} = 50^{\circ}7$		
			iZ	M.S.	06 05 31			
			eSN	S.	06 12 35			
			i(M)E	S.	06 24 45			
			FN	S.	08 31 --			
		Fl.	iPN	W.A.	06 05 21		$\Delta_{iP-H} = 50^{\circ}8$ $\Delta_{meas} = 50^{\circ}5$	
			iSN	G.W.	06 12 36			
			iSR <sub>2</sub> E	G.W.	06 21 20			
			iMN	G.W.	06 24 44			
			FE	G.W.	07 29 --			
507	November 12	S.L.	iPZ	M.S.	17 42 15	Region: 20°0 S., 173°9 W. Tonga Archipelago H = 17h28m42s. $\Delta_{iP-H} = 97^{\circ}3$ $\Delta_{meas} = 97^{\circ}5$ Magnitude 7.5: Pasadena		
			iZ	M.S.	17 42 19			
			iPR <sub>1</sub> Z	M.S.	17 46 07			
			iSKSE	S.	17 52 41			
			iSN	S.	17 53 46			
			FN	S.	22 02 --			
			Fl.	iPZ	G.W.		17 42 14	$\Delta_{iP-H} = 97^{\circ}1$ $\Delta_{meas} = 97^{\circ}4$
				iPR <sub>1</sub> Z	G.W.		17 46 06	
		iSKSZ		G.W.	17 52 34			
		iSN		G.W.	17 53 40			
		i(PS)E		G.W.	17 55 06			
		S.L.	iSR <sub>1</sub> E	G.W.	18 00 24			
			iSR <sub>2</sub> E	G.W.	18 04 16			
FZ	G.W.		20 16 --					
508	November 12		S.L.	ePZNE	M.S.-	23 46 55		
					W.A.			

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
508 (Con't.)	November 12	Fl.	ePNE	W.A.	23 46 55	
509	November 14	S.L.	iPE	S.	11 40 25	Region: 19°4 N., 68°9 W. B.C.I.S.: Aftershock of August 4, 17 <sup>h</sup> . H = 11 <sup>h</sup> 34 <sup>m</sup> 45 <sup>s</sup> . Δ <sub>iP-H</sub> = 26°5 Δ <sub>meas</sub> = 26°8
			iPR <sub>1</sub> E	W.A.	11 40 58	
			iSE	S.	11 44 56	
			iLE	S.	11 47 50	
			FN	S.	12 32 --	
		Fl.	ePE	G.W.	11 40 29	
	iSZ	G.W.	11 45 22	Δ <sub>meas</sub> = 27°0		
	FE	G.W.	12 19 --			
510	November 17	S.L.	iPKP <sub>1</sub> Z	M.S.	03 08 10	Region of: 6°S., 132°E. H = 02 <sup>h</sup> 49 <sup>m</sup> 2 h = 120 km.: U.R.S.S.
			iSKPZE	M.S.-	03 11 24	
				W.A.		
		iE	S.	03 11 38		
Fl.	iSKPZ	G.W.	03 11 25			
	iNE	G.W.	03 11 40			
511	November 19	S.L.	e(P)N	W.A.	01 21 32	
512	November 19	S.L.	ePZ	M.S.	05 50 46	
513	November 20	S.L.	ePZ	M.S.	05 18 45	Isthmus of Tehuantepec?
			iZ	M.S.	05 19 02	
			iZ	M.S.	05 19 08	
514	November 20	S.L.	ePZ	M.S.	05 33 09	Region of: 7°5 S., 78°0 W. N.W. Peru. H = 05 <sup>h</sup> 24 <sup>m</sup> 6
			ePR <sub>2</sub> Z	M.S.	05 35 46	
515	November 21	S.L.	ePZ	M.S.	01 55 39	Region: 38°6 N., 20°3 E. Ionian Isles. H = 01 <sup>h</sup> 43 <sup>m</sup> 26 <sup>s</sup> . Δ <sub>eP-H</sub> = 81°0 Δ <sub>meas</sub> = 80°6
516	November 21	S.L.	eZ	M.S.	03 34 56	
517	November 22	S.L.	eN	W.A.	01 17 30	
518	November 22	Fl.	eME	G.W.	02 37 05	Central America, off coast of Salvador. H = approx. 02 <sup>h</sup> 21 <sup>m</sup> 8 .
			FE	G.W.	02 54 --	
519	November 22	S.L.	eZ	M.S.	16 29 38	
520	November 23	S.L.	ePZN	M.S.-	08 38 42	Vicinity of the Aleutians.
				W.A.		
		Fl.	ePN	W.A.	08 38 40	

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
521	November 23	S.L.	ePZ	M.S.	20 06 47	Vicinity of the Aleutians.
522	November 24	S.L.	eZ	M.S.	13 53 25	
523	November 26	S.L.	e(P)Z	M.S.	12 09 59	N.W. South America.
524	November 27	S.L.	ipZN	M.S.-	09 24 23	Region of: 15°N., 96°W. H = 09 <sup>h</sup> 19 <sup>m</sup> 1 h = 50±km.
				W.A.		
			ipPZ	M.S.	09 24 33	
			eSE	W.A.	09 28 48	
525	November 28	S.L.	ipZ	M.S.	16 04 36	Region: 18°7 S., 175°2 W Tonga Archipelago H = 15 <sup>h</sup> 51 <sup>m</sup> 36s. h = 300±km. Δ <sub>iP-H</sub> = 97.2 Δ <sub>meas</sub> = 97.6 Magnitude 6 3/4 : Pasadena.
			ipPZ	M.S.	16 05 42	
			eSKSE	S.	16 14 47	
			e(S)E	S.	16 15 17	
526	November 29	S.L.	ipZN	M.S.-	11 41 39	Aleutians Area. h = 100±km. About 53°N., 163°W.
			ipPZ	M.S.	11 41 55	
527	November 29	S.L.	ipZ	M.S.	12 38 08	
528	November 30	S.L.	ipZNE	M.S.-	00 54 07	Lower part of South America. h = 250±km.
				W.A.		
			ipPZ	M.S.	00 54 58	
			iZ	M.S.	00 55 28	
			i(pPR <sub>1</sub> )ZNE	M.S.-	00 58 02	
				W.A.		

MINOR SEISMIC ACTIVITY

Date	Station	G.M.T. From	G.M.T. To	Remarks
November 7	S.L.	16 <sup>h</sup> 48 <sup>m</sup>	17 <sup>h</sup> 53 <sup>m</sup>	
November 7	Fl.	18 19	18 31	
November 10	S.L.	01 33	02 15	
November 12	S.L.	14 45	15 59	Quake started while records were changed.
November 12	Fl.	14 52	15 28	
November 13	S.L.	04 18	04 28	
November 17	Fl.	23 33	23 52	
November 18	Fl.	15 03	15 27	Quake started while rec- ords were being changed.
November 19	Fl.	01 47	01 51	
November 21	Fl.	04 25	05 29	
November 24	Fl.	16 07	17 25	

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

**SEISMOLOGICAL BULLETIN**

Seismological Bulletin for the month of December, 1946

78.

No.	Date	Sta.	Phase	Inst.	h m s	Remarks
529	December 1	S.L.	ePZ	M.S.	11 40 49	West coast of Chile. La Paz: 900 km. distant. h = 70 km.
			epPZ	M.S.	11 41 03	
			eZ	M.S.	12 09 12	
		Fl.	eE	C.W.	11 47 06	
530	December 3	S.L.	ePZ	M.S.	07 05 09	Guatemala
			eZ	M.S.	07 05 25	
		Fl.	ePN	W.A.	07 05 12	
			eN	W.A.	07 05 28	
531	December 3	S.L.	ePZ	M.S.	22 59 02	Isthmus of Tehuantepec?
			e(S)N	S.	23 03 13	
532	December 4	S.L.	ePZ	M.S.	20 36 40	
533	December 4	S.L.	ePR <sub>1</sub> Z	M.S.	21 58 31	Afghanistan. U.S.S.R.: 35°50'N., 68°30'E. B.C.I.S.: H = 21 <sup>h</sup> 40.2 <sup>m</sup> Δ <sub>meas</sub> = 103°6
			iZ	M.S.	21 58 38	
			eZ	M.S.	21 59 15	
534	December 4	Fl.	eME	G.W.	23 49 00	Region of: Formoso. 23°5' N., 12°5' E. Aftershock of September 9 - 10h. H = 22 <sup>h</sup> 46.8 <sup>m</sup> B.C.I.S.: Destruction in the region of Tainan, 53 deaths, 312 injured, 100 buildings destroyed.
			FN	G.W.	24 20 --	
535	December 5	S.L.	ePR <sub>1</sub> Z	M.S.	07 04 48	Region: 5°2' S., 144°38' E. Dutch New Guinea. H = 06 <sup>h</sup> 44 <sup>m</sup> 3 <sup>s</sup> . Possibly deeper than normal. Δ <sub>meas</sub> = 120°4 Δ <sub>ePR<sub>1</sub>-H</sub> = 120°6
536	December 5	S.L.	e(P)Z	M.S.	10 16 46	
537	December 7	S.L.	ePZ	M.S.	04 29 55	

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 Seismological Bulletin for the month of December, 1946 (Con't.)

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
538	December 7	S.L.	iPZ iZ	M.S. M.S.	17 38 00 17 38 22	Kamchatka (About 54°N., 160°E.)? Deeper than normal.
539	December 8	S.L.	iPZ epPZ eZ	M.S. M.S. M.S.	12 18 08 12 18 33 12 18 43	South America? h = 100±km.
540	December 8	S.L.	iPZ iZ	M.S. M.S.	12 25 36 12 25 44	May be region of: 58°S., 87°5' W. H = 12h13.6m
541	December 10	S.L.	iPZ	M.S.	02 38 03	Region of : N.W. Peru. 8°0' S., 78°0' W. H = 02h29m27s.
542	December 10	S.L.	eZ eZ iZ iZ iZ	M.S. M.S. M.S. M.S. M.S.	04 03 51 04 09 52 04 10 09 04 10 24 04 10 48	Pasadena: Mexico.
		Fl.	eE iNE iZ FN	G.W. G.W. G.W. G.W.	04 09 55 04 10 35 04 11 29 04 18 --	
543	December 10	S.L.	ePZ	M.S.	07 35 23	Region: 43°0' N., 140°0' E. Sea of Japan. H = 07h22m40s. Possibly deeper than normal.
544	December 10	S.L.	e(P)Z iZ	M.S. M.S.	15 45 13 15 45 30	
545	December 10	S.L.	e(P)Z eLZ	M.S. M.S.	15 47 54 15 54 06	May be a part of the preceding quake.
		Fl.	eLN e(L)N	W.A. W.A.	15 54 06 15 54 41	
546	December 10	S.L.	e(PR <sub>1</sub> )Z esSPZ	M.S. M.S.	16 50 26 17 02 22	Region: 23°3' S., 178°6' W. Riffe Is., S.W. of Tonga, Archipelago. H = 16h33m13s. Pasadena: h = 600 km. Δ <sub>meas</sub> = 103°2
		Fl.	eN	W.A.	17 01 47	Δ <sub>meas</sub> = 103°1

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No.	Date	Sta.	Phase	Inst.	h m s	Remarks
547	December 10	S.L.	eZ	M.S.	17 36 25	
			iZ	M.S.	17 36 30	
			eZ	M.S.	17 42 36	
		Fl.	eN	W.A.	17 42 38	
548	December 10	Fl.	eNS	W.A.	19 47 18	
549	December 11	S.L.	ePZ	M.S.	10 03 01	
550	December 11	S.L.	eZ	M.S.	13 17 25	Pasadena: Montana.
			iZ	M.S.	13 18 20	
			eZ	M.S.	13 18 39	
		Fl.	eN	W.A.	13 18 39	
551	December 11	S.L.	eZ	M.S.	21 07 47	
			eZ	M.S.	21 12 31	
			eZ	M.S.	21 13 55	
552	December 13	S.L.	ePZ	M.S.	10 28 26	Gulf of Tehuantepec?
			eZ	M.S.	10 29 11	
		Fl.	ePN	W.A.	10 28 31	
553	December 13	S.L.	iPZ	M.S.	12 57 17	South America. Northwest Peru.
			eZ	M.S.	12 58 12	
			ePR <sub>1</sub> Z	M.S.	12 59 13	
		Fl.	iE	G.W.	13 03 57	
FE	G.W.		13 30 --			
554	December 13	S.L.	ePZ	M.S.	13 57 15	In Pacific Ocean off N.W. United States Coast?
			iZ	M.S.	13 57 24	
		Fl.	ePE	W.A.	13 57 15	
			eME FE	G.W. G.W.	14 07 55 14 10 --	
555	December 15	Fl.	eE	W.A.	21 40 21	
556	December 15	S.L.	iPZ	M.S.	23 10 17	Isthmus of Tehuantepec?
			eZ	M.S.	23 10 56	
			eZ	M.S.	23 11 11	
			eZ	M.S.	23 11 15	
557	December 16	S.L.	iZ	M.S.	15 04 30	
			iZ	M.S.	15 04 59	
			iZ	M.S.	15 05 02	
558	December 16	S.L.	iPZ	M.S.	21 46 38	Near Isthmus of Tehuantepec?
		Fl.	ePN	W.A.	21 46 39	





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82.

 Seismological Bulletin for the month of December, 1946 (Con't.)

No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
563 (Continued)	December 20	S.L.	iSZ	M.S.	19 44 01	2000 killed and 36000 buildings destroyed.  $\Delta_{eP-H} = 96^{\circ}5$ $\Delta_{meas} = 96^{\circ}7$	
			iZ	M.S.	19 44 53		
			iPSZ	M.S.	19 45 08		
			iPPSZ	M.S.	19 45 48		
			FZ	M.S.	22 31 --		
		Fl.	ePZ	G.W.	19 32 38		
			iZNE	G.W.	19 32 54		
			iN	G.W.	19 33 45		
			iE	G.W.	19 34 04		
			iZN	G.W.	19 34 18		
			iNE	G.W.	19 34 46		
			iZNE	G.W.	19 35 52		
			iZNE	G.W.	19 36 17		
			iPR <sub>1</sub> ZE	G.W.	19 36 37		
			iZNE	G.W.	19 37 38		
			iZNE	G.W.	19 37 55		
			iZNE	G.W.	19 38 22		
			iFR <sub>2</sub> ZNE	G.W.	19 38 40		
			iZE	G.W.	19 41 52		
			iSKSE	G.W.	19 42 58		
iN	G.W.	19 43 30					
iSE	G.W.	19 44 06					
iPSZNE	G.W.	19 44 15					
FNE	G.W.	24 53 --					
564	December 21	S.L.	iZ	M.S.	02 18 56		
565	December 21	S.L.	iPZ	M.S.	03 51 40	Region: 44°3' N., 148°1' E. Off E. coast of Etorofu Island in Kuriles. H = 03 <sup>h</sup> 39 <sup>m</sup> 24 <sup>s</sup> Foreshock of earthquake of December 21 - 10 <sup>h</sup> . $\Delta_{iP-H} = 81^{\circ}7$ $\Delta_{meas} = 82^{\circ}0$	
			iPcPZ	M.S.	03 51 54		
			iZ	M.S.	03 52 11		
		Fl.	ePNE	W.A.	03 51 40		$\Delta_{eP-H} = 81^{\circ}7$
			iSE	G.W.	04 01 50		$\Delta_{meas} = 81^{\circ}8$
		FE	G.W.	05 28 --			
566	December 21	S.L.	ePZ	M.S.	04 55 20	Isthmus of Tehuantepec?	
			iZ	M.S.	04 55 31		
			iZ	M.S.	04 56 17		
567	December 21	S.L.	ePZ	M.S.	10 24 03	Foreshock of earthquake of December 21 - 10 <sup>h</sup> .	
			iPZ	M.S.	10 24 06		
			iPcPZ	M.S.	10 24 16		
568	December 21	S.L.	iPZ	M.S.	10 31 08	Region: 148°0' E., 44°2' N. H = 10 <sup>h</sup> 18 <sup>m</sup> 50 <sup>s</sup> . Magnitude: 7 - Pasadena. $\Delta_{iP-H} = 82^{\circ}1$ $\Delta_{meas} = 82^{\circ}3$	
			iPcPZ	M.S.	10 31 20		
			iZ	M.S.	10 31 32		
			eSE	W.A.	10 41 20		
			FZ	M.S.	12 36 --		

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83.

 Seismological Bulletin for the month of December, 1946 (Con't.)

No.	Date	Sta.	Phase	Inst.	h m s	Remarks
568 (Con't.)	December 21	Fl.	iPZNE iSNE FE	G.W. G.W. G.W.	10 31 09 10 41 19 14 36 --	$\Delta_{iP-H} = 82^{\circ}2$ $\Delta_{meas} = 82^{\circ}1$
569	December 21	S.L.	iPZ iPcPZ	M.S. M.S.	10 50 54 10 51 02	Aftershock of # 568.
570	December 21	S.L.	iPZ iZ iPcPZ iZ	M.S. M.S. M.S. M.S.	10 59 03 10 59 08 10 59 13 10 59 20	Aftershock of # 568.
571	December 21	S.L.	iPZ	M.S.	11 03 49	Aftershock of # 568.
572	December 21	S.L.	iPZ iPcPZ	M.S. M.S.	12 20 00 12 20 11	Aftershock of # 568.
573	December 21	S.L.	iPZ iPcPZ	M.S. M.S.	12 51 49 12 52 00	Aftershock of # 568.
574	December 21	S.L.	iPZ iPcPZ	M.S. M.S.	12 56 37 12 56 50	Aftershock of # 568.
575	December 21	S.L.	iPZ	M.S.	13 08 35	Aftershock of # 568.
576	December 21	S.L.	iPZ	M.S.	13 34 49	Aftershock of # 568.
577	December 21	S.L.          Fl.	iPZ iZ iPcPZ iPR <sub>1</sub> Z iPR <sub>2</sub> Z iSE iPSE  iPZNE iPcPZ iSNE iPSE FE	M.S. M.S. M.S. M.S. M.S. S. S.  G.W. G.W. G.W. G.W. G.W.	20 01 05 20 01 11 20 01 19 20 04 13 20 06 04 20 11 21 20 12 08  20 01 06 20 01 14 20 11 20 20 12 16 22 25 --	Region: 44 <sup>o</sup> 5 N., 147 <sup>o</sup> 8 E. Aftershock of earthquake of December 21 - 10 <sup>h</sup> . H = 19 <sup>h</sup> 48 <sup>m</sup> 50 <sup>s</sup> . Pasadena: Magnitude 6 3/4. $\Delta_{iS-H} = 81^{\circ}7$ $\Delta_{meas} = 82^{\circ}1$  $\Delta_{iP-H} = 81^{\circ}7$ $\Delta_{meas} = 81^{\circ}9$
578	December 21	S.L.	iPZ iZ F	M.S. M.S. M.S.	20 32 53 20 33 05 Lost	Region: 44 <sup>o</sup> 3 N., 148 <sup>o</sup> 2 E. Aftershock of earthquake of December 21 - 10 <sup>h</sup> . H = 20 <sup>h</sup> 20 <sup>m</sup> 36 <sup>s</sup> . $\Delta_{iP-H} = 81^{\circ}9$ $\Delta_{meas} = 81^{\circ}9$
579	December 24	S.L.	iPZ i(PcP)Z iSE iME FE	M.S. M.S. S. S. S.	16 49 45 16 50 02 16 59 58 17 23 16 18 30 --	Region: 44 <sup>o</sup> 5 N., 148 <sup>o</sup> 5 E. Aftershock of earthquake of December 21 - 10 <sup>h</sup> . H = 16 <sup>h</sup> 37 <sup>m</sup> 29 <sup>s</sup> . $\Delta_{iP-H} = 81^{\circ}7$ $\Delta_{meas} = 81^{\circ}8$

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84.

No.	Date	Sta.	Phase	Inst.	h m s	Remarks
579 (Con't.)	December 24	Fl.	iSE FE	G.W. G.W.	16 59 55 18 53 --	$\Delta_{iS-H} = 81^{\circ}2$ $\Delta_{meas} = 81^{\circ}6$
580	December 25	S.L.  Fl.	iPZ iZ FE  iPEN iEN FE	M.S. M.S. S.  W.A. W.A. G.W.	06 23 07 06 23 15 07 38 --  06 23 06 06 23 41 06 51 --	Aleutians.
581	December 25	S.L.  Fl.	iPZ iZ iPZ iZ iZ iZ iSE FE  iPEN iE iSE iE FE	M.S. M.S. M.S. M.S. M.S. M.S. S. S.  W.A. W.A. G.W. G.W. G.W.	11 23 18 11 23 35 11 23 39 11 23 45 11 24 02 11 24 52 11 31 34 12 39 --  11 23 17 11 23 28 11 31 32 11 32 18 11 57 --	Region: $51^{\circ}0$ N., $179^{\circ}9$ E. Kirilof Bay, N. of Am- chitka Is., Aleutians. $H = 11^h13^m16^s$ . $h = 100 \pm km$ . $\Delta_{iP-H} = 61^{\circ}2$ $\Delta_{meas} = 61^{\circ}3$  $\Delta_{iP-H} = 61^{\circ}1$ $\Delta_{meas} = 61^{\circ}1$
582	December 26	S.L.	eZ iPKP'Z iZ iPR <sub>1</sub> Z FE	M.S. M.S. M.S. M.S. S.	17 09 33 17 10 05 17 10 29 17 13 12 19 10 --	Region: $11^{\circ}2$ S., $118^{\circ}9$ E. Indian Ocean, S.W. of Soemba. $H = 16^h50^m33^s$ . $\Delta_{iPKP'-H} = 142^{\circ}7$ $\Delta_{meas} = 142^{\circ}7$
583	December 26	S.L.	iPZ iZ iPR <sub>1</sub> Z FE	M.S. M.S. M.S. S.	19 44 15 19 44 29 19 46 14 20 08 --	Near Panama?
584	December 28	S.L.  Fl.	ePZ iPZ iPR <sub>1</sub> Z iPR <sub>2</sub> Z iZ iSE iZ eE iLE FE  iSEN iLEN iEN iMZEN iZ FE	M.S. M.S. M.S. M.S. M.S. S. M.S. S. S. S. S.  G.W. G.W. G.W. G.W. G.W. G.W.	01 03 45 01 03 48 01 04 22 01 04 39 01 04 56 01 08 29 01 09 07 01 09 55 01 11 22 01 58  01 08 32 01 11 34 01 12 56 01 13 53 01 15 55 01 24 --	Region: $19^{\circ}2$ N., $69^{\circ}4$ W. Samana Bay, Domin. Rep. $H = 00^h58^m07^s$ $\Delta_{iP-H} = 26^{\circ}6$ $\Delta_{meas} = 26^{\circ}8$  $\Delta_{iS-H} = 26^{\circ}9$ $\Delta_{meas} = 27^{\circ}0$

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85.

 Seismological Bulletin for the month of December, 1946 (Con't.)

No.	Date	Sta.	Phase	Inst.	h m s	Remarks	
585	December 28	S.L.	iPZ	M.S.	10 21 43	Region: 44°6 N., 148°2 E. Aftershock of earthquake of December 21 - 10 <sup>h</sup> . H = 10 <sup>h</sup> 09 <sup>m</sup> 25 <sup>s</sup> . $\Delta_{iP-H} = 81.99$ $\Delta_{meas} = 81.99$	
			iZ	M.S.	10 21 58		
			iSE	S.	10 31 53		
			iE	S.	10 55 16		
			FE	S.	12 09 --		
		Fl.	iSE	G.W.	10 31 53		$\Delta_{IS-H} = 81.94$
			iE	G.W.	10 38 20		$\Delta_{meas} = 81.97$
	FE	G.W.	11 22 --				
586	December 30	S.L.	ePZ	M.S.	11 19 58	Guatemala.	
			iZ	M.S.	11 20 12		
			iZ	M.S.	11 20 20		
			iZ	M.S.	11 21 03		
			iZ	M.S.	11 21 17		
			e(S)N	S.	11 24 43		
			FN+	S.	11 53 --		
587	December 31	S.L.	iPZ	M.S.	23 07 40	Region of: 22°0 S., 65°5 W. N.W. tip of Argentina. H = 22 <sup>h</sup> 57.3 <sup>m</sup> h = 150 <sup>±</sup> km.	
			ipPZ	M.S.	23 08 09		
			iZ	M.S.	23 08 20		

Saint Louis: No EW or NS Sprengnether records from November 18 to December 20.

MINOR SEISMIC ACTIVITY

Date	Station	G.M.T. From	G.M.T. To	Remarks
December 5	Fl.	07 <sup>h</sup> 41 <sup>m</sup>	07 <sup>h</sup> 56 <sup>m</sup>	
December 5	Fl.	10 29	10 32	
December 17	Fl.	02 05	02 11	
December 18	Fl.	02 46	02 56	
December 18	Fl.	14 35	14 40	
December 19	S.L.	11 45	11 47	
December 20	Fl.	23 50	23 57	
December 22	S.L.	02 46	07 10	
December 22	S.L.	12 31	14 53	
December 24	S.L.	04 28	06 41?	No m marks on records
December 24	Fl.	04 36	06 14	
December 24	S.L.	10 06	11 23?	No m marks on records
December 24	S.L.	15 26	15 44	
December 25	S.L.	01 38	03 04	
December 25	S.L.	05 27	05 49	
December 26	Fl.	18 08	18 52	
December 27	S.L.	13 12	14 06	
December 30	S.L.	04 29	05 05	
December 31	S.L.	02 03	03 52	
December 31	S.L.	06 48	07 00	

 James B. Macelwane, S. J.  
 Director

 Francis E. Gotch  
 Student Assistant

CORRECTIONS AND ADDITION

<u>Year</u>	<u>Page</u>	<u>No.</u>	<u>Remarks</u>
1944	27	151	Epicenter should be: 58°N., <u>154</u> °W.
1944	28	152	Region Doubtful
1944	31	179	Epicenter should be: 33°S., <u>73</u> °W.
1945	17	109	Epicenter should be: 19°S., 168° <u>E</u> .
1945	44	270	Epicenter should be: 37°2N., 17°1 <u>E</u> .
1945	47	280	Epicenter should be: 30°N., 138° <u>E</u> .

Add To

Bulletin 1946, Page 68 - Earthquake of October 8, 1946:

<u>Sta.</u>	<u>Phase</u>	<u>h m s</u>	<u>Remarks</u>
S.L.	iP <sub>3</sub>	01 12 24.7	$\Delta_{P_3-H} = 82.7$ mi.
	iP <sub>1</sub>	01 12 25	
	i	01 12 28	
	i	01 12 29.9	
	i	01 12 34.5	
	iS <sub>1</sub>	01 12 39	
	iS <sub>3</sub>	01 12 40	
Fl.	S <sub>3</sub> -P <sub>3</sub> = 17.1 sec.		$\Delta_{S_3-P_3} = 93.4$ mi. $\Delta_{Calc} = 92.6$ mi.

Epicenter in Iron County, Missouri. 90°34'W., 37°28'N., H = 01<sup>h</sup>12<sup>m</sup>02.5<sup>s</sup>.  
 For details see:

Heinrich, Ross R., "The Ozark Earthquake of October 8, 1946",  
Trans. Amer. Geophys. Union, Vol. 28, No. 5, pp. 687-690,  
 October 1947.

James B. Macelwane, S. J.  
 Director

Ross R. Heinrich  
 Associate Professor

August 1949