FLORISSANT

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

Three Galitzin-Wilip, two Wood-Anderson short-period seismographs, Shortt synchronome clock

Florissant Bulletin for January, 1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
1	Jan.10	W-A	e_N	02 35 58.6	Local shock
		W-A	e_N	02 36 02.1	Very weak
		W-A	i_N	02 36 04.6	
		W-A	i_N	02 36 05.3	
		W-A	$i_{(L)N}$	02 36 07.9	
		W-A	$i_{(M)N}$	02 36 08.5	
			F	02 36 40	
2	Jan.10	G-W	i_N	09 59 42	Very weak
		G-W	i_N	10 02 50	
			F	10 18	
3	Jan.10	G-W	i_N	15 35 05	Very weak
		G-W	e_N	15 40 27	
			F	15 53	
4	Jan.14	W-A	i_N	21 39 50	
		W-A	i_N	21 41 13	Did not register
		W-A	i_N	21 41 24	on long period
			F	21 48	instruments.
5	Jan. 24	G-W	i_Z	09 32 38	Weak
		G-W	i_Z	09 33 01	
		G-W	e_E	09 35 53	
		G-W	i_E	09 36 50	
			F	09 51	
6	Jan. 24	G-W	iP_Z	20 47 10	
		G-W	iS_N	20 51 26	
		G-W	eL_N	20 55 11	$\Delta S - P = 23°.6$
		G-W	eM_N	20 59 11	
			F	21 26	
7	Jan.27	G-W	iP_Z	02 55 23	J.S.A. gives t51°.2 N.
		G-W	iS_N	03 03 36	176°.9 W. H=02 45 26
		G-W	eL_N	03 13 42	$\Delta P - H = 59°.2$
		G-W	eM_N	03 19 12	$\Delta S - P = 59°.1$
			F	05 51	$\Delta meas = 59°.2$
8	Jan.30	G-W	iP_Z	05 40 47	J.S.A.gives region of
		G-W	i_Z	05 41 02	0°.3 S., 80°.2 W. h about
		G-W	ipP_Z	05 42 21	500 km. $H=05^h33^m53^s$
		G-W	iS_N	05 46 45	$\Delta P - H = 40°.2$
			F	06 26	$\Delta meas = 40°.1$
9	Jan.31	G-W	iP_Z	08 33 45	J.S.A.gives region of
		G-W	ipP_Z	08 34 01	18°.8 N., 94°.7 W. h $\cong$
		G-W	iS_E	08 37 46	100 km. $H=08^h29^m12^s$
			F	09 06	$\Delta P - H = 20°.6$
					$\Delta meas = 20°.5$ / Weak

Minor Seismic Activity - Jan. 11 - 20^h48^m to 21^h11^m, 17 - 17^h11^m to 17^h25^m. Microseisms Strong - Jan. 1-7, 14, 20-23.

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

Three Galitzin-Wilip, two Wood-Anderson short-period seismographs, Shortt synchronome clock

Florissant Bulletin for February, 1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
10	Feb.3	W-A	e_N	15 29 41.1	Local shock
		W-A	e_N	15 29 46.2	Very weak
		W-A	i_N	15 29 48.0	
		W-A	i_N	15 29 49.4	
		W-A	$i(L)_N$	15 29 51.8	
		W-A	$i(M)_N$	15 29 53.3	
		W-A	F	15 30 22	
11	Feb.16	G-W	iP_Z	07 38 00	J.S.A. gives tentative 15°.2 S., 68°.5 W.
		G-W	$i(P_cP)_Z$	07 38 44	
		G-W	ipP_Z	07 38 58	H = 07 28 41
		G-W	iS_N	07 45 35	h = 300 km.
		G-W	$i(sP)_N$	07 46 40	$\Delta_P - H = 57°.9$
		G-W	isS_N	07 47 33	$\Delta_{meas} = 58°.0$
		G-W	F	08 14	
12	Feb.22	About 09^h30^m G.M.T. Record loaned to Harvard station. For data on quake see J. S. A. Preliminary Bulletin #6 for 1943.			
13	Feb.23	G-W	iP_Z	23 00 11	Very weak
		G-W	$i(S)_N$	23 04 39	$\Delta_S - P = 25°.1$
		G-W	eM_N	23 08 20	
		G-W	F	23 29	
14	Feb.24	G-W	eP_Z	04 29 10	Very weak
		G-W	i_N	04 37 21	
		G-W	$i(M)_N$	04 39 31	
		G-W	F	04 59	

Minor Seismic Activity -

Feb.	5 -	03^h42^m	to	04^h09^m
	7 -	05 19	to	07 01
	16 -	15 33	to	15 42
	17 -	03 16	to	03 40

Microseisms strong - Feb. 5-7, 12, 13, 18-20.

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Three Galitzin-Wilip, two Wood-Anderson short-period seismographs, Shortt synchronome clock

MARCH 1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
15	March 5	GW GW GW GW	iPZ iPg1Z iSN e(M)E F	00h38m28s 00 39 37 00 43 57 00 51 00 01 51	J.S.A. gives 05°5 N 83°0 W h=Greater than normal H=00h31m33s Δp-H=33°0 Δmeas = 33°5
16	March 7	GW GW GW	iPZ eSN e(M) E F	03h12m17s 03 20 59 03 35 55 05 14	J.S.A.gives tentative 58°2 N 166°5 E H=03h01m45s May be slightly deep Δp-H= 64°5 Δmeas = 64°4
17	March 8	GW GW GW GW	iN iN iN iN F	09h39m26s 09 42 08 09 42 18 09 43 01 09 52	Weak
18	March 9	WA WA WA WA WA WA WA WA WA	eP4N eN eN iP1N eN iN iS3N e(L)N e(M)N F	03h27m14s 03 27 18 03 27 24 03 27 36 03 27 47 03 28 35 03 28 39 03 29 11 03 29 32 03 33 33	Local Shock J.S.A. gives tentative 41°0 N 81°3 W H=03h25m25s Δp4-H = 7°2 Felt in and around Cleveland, Ohio

Florissant Bulletin
March--1943

No.	Date	Inst.	Phase	C.M.C.T.	Remarks
19	March 9	Gw Gw Gw Gw Gw	ePR_1Z ePR_2N $e(SKS)_N$ iPS_N $e(M)_E$ F	$10^h08^m07^s$ 10 10 24 10 14 06 10 17 36 10 37 03 12 43	J.S.A. gives tentative 61.0 S 31.2 W H=09-49-04 ΔPR_1-H=110.5 ΔPS-H=110.8 Δmeas.=110.1
20	March 10	Gw Gw Gw	i_E e_E F	$08^h14^m03^s$ 08 45 07 08 49 49 09 57	Very Weak
21	March 14	Gw Gw Gw Gw Gw	eZ ePS_E eSR_1E eSR_2E $e(M)_E$ F	17^h29^m 17 39 17 46 17 50 18 36 (Lost	J.S.A. gives Region of 23.0 S 169.0 E H=$17^h10^m57^s$ ΔPS-H=112.5 Δmeas=112. /in Following quake)
22	March 14	Gw Gw Gw Gw Gw	eP_Z $e(pP)_Z$ eS_E esS_E $e(M)_E$ F	$18^h48^m05^s$ 18 48 32 18 56 09 18 57 58 19 19 28 20 17	J.S.A. gives near 18.5 S 68.3 W H=$18^h38^m08^s$ h=120 km. (ca.) ΔP-H=61.3 Δmeas=61.1
23	March 15	Gw Gw Gw	$e(P)_Z$ $e(L)_N$ $e(M)_E$ F	$02^h39^m10^s$ 03 10 23 03 23 53 (Lost	J.S.A. gives 21°S 169°E H=02^h24^m5 ΔP-H=111.1 in next shock. Δmeas =111°
24	March 15	Gw Gw Gw	e_E $e(L)_E$ $e(M)_E$ F	$05^h14^m56^s$ 05 35 53 05 46 43 07 15	J.S.A. gives 10°N 142°E H=04^h48^m Δmeas=112°
25	March 15	Gw Gw Gw Gw Gw	iP_Z ipP_Z e_Z iS_N esS_N F	$23^h12^m13^s$ 23 13 29 23 16 08 23 22 21 23 24 33 00 07	J.S.A. gives near 15.0S 177.5 W H=$22^h59^m17^s$ h=ca. 300 km. ΔP-H=95.9 Δmeas=96.9

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
26.	March 16	G_W G_W G_W G_W	i_Z i_Z e_N i_N F	$09^h59^m21^s$ 10 00 55 10 05 19 10 09 03 10 21	Very Weak
27	March 17	G_W G_W G_W G_W	iP_Z iS_E i_E eL_E F	$23^h08^m24^s$ 23 17 00 23 18 10 23 34 50 23 53	Weak $\Delta S-P=62°7$
28	March 20	W_A W_A W_A W_A W_A	e_N i_N i_N iL_N eM_N F	$21^h29^m46^s.3$ 21 29 49.5 21 29 50.2 21 29 52.3 21 29 57.5 21 30 10	Local Shock Weak
29	March 21	G_W G_W G_W G_W G_W G_W G_W	e_Z i_Z i_Z $iSKKS_E$ iPS_E iSR_1N eM_Z F	$20^h55^m17^s$ 20 55 52 20 56 42 21 02 28 21 05 16 21 11 26 21 34 45 23 28	U.S.A. gives 06°5 S 155°4 E H=20[illegible] $\Delta PS-P=116°1$ $\Delta mean=116°4$
30	March 25	G_W G_W G_W G_W G_W	e_Z i_Z e_N e_Z eM_N F	$18^h46^m37^s$ 18 49 21 18 55 52 19 02 57 19 36 40 21 03	Very Weak
31	March 26	G_W G_W G_W G_W	iP_Z i_Z iS_E eL_E F	$17^h52^m22^s$ 17 56 04 18 02 26 18 25 20 19 09	$\Delta S-P=79°5$ Wellington gives SE of Tonga Apia says felt in Nukualofa
32	March 31	G_W G_W G_W	i_E e_E e_E F	$22^h01^m23^s$ 22 04 00 22 07 50 22 21	Very Weak

FLORISSANT BULLETIN
March 1943

MINOR SEISMIC ACTIVITY

March	9	20^h37^m	21^h00^m
	11	10 33	11 32
	12	22 57	23 53
	14	09 47	10 00
		12 23	lost (change records)
	15	15 10	15 28
	20	05 24	06 51
	29	06 25	06 45

MICROSEISMS STRONG

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APRIL 1943

No.	Date	Instr.	Phase	G.M.C.T.	Remarks
33	April 1	Gw Gw Gw Gw	e_N e_N eL_N eM_N F	$14^h51^m32^s$ 14 56 28 15 23 57 15 37 12 16 29	Weak Phases marked by micro-seisms
34	April 5	Gw Gw Gw	i_Z i_Z i_Z F	08 36 04 08 37 01 08 38 13 08 50	Very Weak
35	April 6	WA WA WA WA WA WA WA WA WA WA	iP_N ipP_N isP_N $ePcP_N$ ePR_1N $epP^R{}_1N$ iS_E isS_E iSP_N eSR_1N F lost	$16^h18^m36^s$ 16 18 53 16 19 03 16 19 09 16 21 18 16 21 35 16 27 51 16 28 21 16 28 31 16 32 29	J.S.A. gives 29°8 S 71°0 W H=$16^h07^m28^s$ h=ca. 80 km. Destructive in northern Chile ΔP-H=71°2 ΔS-P=71°2 Δmeas=71°2
36	April 7	Gw Gw Gw Gw Gw	iP_Z ipP_Z iz iS_E $e(L)_N$ F	$23^h29^m16^s$ 23 29 29 23 33 52 23 38 35 23 51 00 01 51	Aftershock of #35 H=$23^h18^m08^s$
37	April 9	Gw Gw Gw Gw Gw Gw Gw	eP_Z epP_Z iPR_1Z $i(SKS)_N$ iS_N isS_N eM_N F	$09^h02^m34^s$ 09 03 25 09 06 46 09 12 57 09 14 11 09 15 55 09 40 05 10 52	J.S.A. gives region of 15°7 N 141°0 E H=$08^h48^m42^s$ h=ca.210 km ΔP-H=106° Δmeas=107°1
38	April 11	Gw Gw Gw	iS_E iE $e(L)_Z$ F	$15^h09^m28^s$ 15 15 32 15 32 33 16 53	Beginning lost in paper change Surface waves small

FLORISSANT BULLETIN
APRIL 1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
39	April 15	G_W	i_Z	$11^h10^m22^s$	Weak
		G_W	$i_{Z'}$	11 46 12	
		G_W	i_E	11 55 32	
		G_W	i_E	12 00 06	
			F lost--change paper		
40	April 15	G_W	i_Z	$17^h52^m23^s$	Very Weak
		G_W	i_Z	17 55 32	
			F	18 14	
41	April 15	G_W	e_E	$21^h45^m45^s$	Very Weak
			F	21 51	
42	April 19	G_W	$i(P)_Z$	$01^h24^m46^s$	Weak
		G_W	iS_E	01 28 26	
		G_W	i_E	01 32 36	
		G_W	i_Z	01 33 42	
			F	01 52	
43	April 21	W_A	i_N	$22^h48^m53^s.4$	Local Shock
			i_N	22 48 55.5	
			e_N	22 48 57.9	
			e_N	22 49 00.8	
			i_N	22 49 04.5	
			i_N	22 49 07.3	
			i_N	22 49 10.3	
			$i(L)_N$	22 49 11.7	
			e_N	22 49 25.7	
			$i(M)_N$	22 49 39.0	
			F	22 49 45	
44	April 21	W_A	e_N	$22^h49^m54^s.9$	Local Shock
		W_A	i_N	57.8	
		W_A	i_N	50 03.1	
		W_A	i_N	06.5	
		W_A	i_N	07.4	
		W_A	i_N	08.9	
		W_A	i_N	12.9	
		W_A	i_N	14.5	
		W_A	iL_N	17.3	
		W_A	i_N	20.1	
			F	58	

FLORISSANT BULLETIN
APRIL--1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
45.	April 21	W_A	e(P)E	$17^h01^m00^s.4$	Local Shock
		W_A	i(S)E	17 01 06.0	Phases doubtful
		W_A	iE	17 01 07.7	
		W_A	i(L)E	17 01 14.7	
		W_A	i(M)E	17 01 17.5	
			F	17 02 10	
46.	April 28	Gw	e(P)E	$00^h07^m37^s$	Weak
		Gw	i(P)E	00 07 40	Deep?
		Gw	iN	00 07 45	
		Gw	iE	00 10 21	
		Gw	iN	00 11 13	
			F	00 43	
47.	April 29	W_A	iN	$15^h16^m41^s.2$	Local Shock
		W_A	eN	15 16 55.9	Very Weak
		W_A	i(L)N	15 17 00.8	
		W_A	i(M)N	15 17 12.2	
			F	15 17 27	
48.	April 29	Gw	iZ	$15^h37^m11^s$	Weak
		Gw	iN	15 47 20	
		Gw	iN	15 47 33	
		Gw	iN	15 47 55	
			F	15 46	

MINOR SEISMIC ACTIVITY

April	4	02^h10^m	03^h42^m
	5	21 42	22 11
	5	lost	20 53
	7	09 48	10 12
		lost	14 34
	12	05 21	05 39
		20 30	21 11
	16	01 02	01 11
	23	18 43	18 54

MICROSEISMS STRONG

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13
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MAY--1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
49	May 2	G_W G_W G_W	i_E i_E e_E F	$06^h45^m29^s$ 06 45 35 06 46 49 06 50	Very Weak
50	May 2	W_A W_A W_A W_A W_A G_W G_W G_W G_W	iP_N ipP_N iPR_1N iPR_2N $iPePP_N$ iS_E isS_E iX_E $iS_{E1}E$ F	$17^h24^m11^s$ 17 25 07 17 25 43 17 26 04 17 27 39 17 29 53 17 30 38 17 30 59 17 31 33 20 40	Epicenter 7°.0 N 80°.1 W $H=17^h18^m13^s$ Depth about 100 km $\Delta S-P=32°.8$ $\Delta P-H=32°.8$ $\Delta meas=32°.8$
51	May 3	G_W G_W G_W G_W G_W G_W G_W G_W G_W G_W G_W	eP'_Z i_Z i_Z iPR_1Z i_Z i_N $i(SKS)_N$ $i(SKKS)_N$ i_N i_N iSP_N F	$02^h1^m05^s$ 02 18 48 02 19 17 02 19 26 02 21 40 02 24 21 02 25 17 02 26 47 02 29 05 02 29 13 02 29 21 04 27	Epicenter region of 11°.8 N 123°.0 E $H=01^h59^m11^s$ $\Delta P'-H=121°.5$ $\Delta meas=121°.4$
52	May 3	W_A W_A G_W G_W	$i(P)_E$ i_E i_E e_E F	$10^h21^m56^s$ 10 25 42 10 26 17 10 26 45 10 34	Very Weak
53	May 5	G_W G_W G_W	$(e)_Z$ e_E i_N F	$16^h53^m31^s$ 16 53 46 16 55 2$ 17 04	Very Weak
54	May 5	W_A W_A W_A W_A	e_N i_N i_N e_N F	$17^h37^m09^s.4$ 17 37 10.2 17 37 11.2 17 37 13.0 17 37 30	Local Shock

FLORISSANT BULLETIN
MAY--1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
55	May 5	W_A W_A W_A W_A	e_N e_N e_N e_N F	$17^h40^m23^s.4$ 17 40 24.4 17 40 25.1 17 40 25.0 17 40 38.4	Local Shock
56	May 13	G_W G_W	i_E e_E F	$23^h40^m05^s$ 23 42 29 23 57	Very Weak
57	May 17	G_W	e_E F	$08^h00^m52^s$ 08 24	Very Weak
58	May 17	G_W G_W G_W	e_E e_E e_E F	$10^h12^m51^s$ 10 13 00 10 14 59 10 46	Very Weak
59	May 17	G_W G_W G_W G_W	e_Z e_Z i_E $e(L)_E$ F	$17^h37^m06^s$ 17 38 50 17 39 34 17 42 08 18 06	Weak
60	May 18	G_W G_W G_W	e_Z e_Z e_E F	$06^h24^m29^s$ 06 29 52 06 41 29 07 40	Weak
61	May 22	W_A G_W G_W G_W G_W	iP_N $i(pP)_Z$ e_Z iS_E $i(sS)_E$ F	$09^h13^m19^s$ 09 13 29 09 16 43 09 22 32 09 22 50 10 28	Depth about 50 km $\Delta_{S-P}=70°.6$
62	May 24	W_A W_A W_A W_A W_A	i_N i_N i_N i_N i_N F	$19^h33^m50^s.9$ 19 33 54.2 19 33 57.6 19 34 02.1 19 34 09.2 19 34 56	Local Shock

FLORISSANT BULLETIN
MAY--1943

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
63	May 25	GW	eP'_Z	$23^h26^m26^s$	Epicenter region of
		GW	iP'_Z	23 26 29	07° N 127° E
		GW	iPR_1Z	23 28 06	H=$23^h07.7^m$
		GW	$eSKP_N$	23 29 41	$\Delta P'-H=122°$
		GW	iS_E	23 36 08	$\Delta S-P=123°$
		GW	iPS_E	23 37 59	$\Delta_{meas}=122°$
			F	03 32	
64	May 26	GW	iP_Z	$10^h36^m53^s$	Epicenter near
		GW	iS_E	10 41 20	15°.5 N 106°.6 W
		GW	$i(^L)_E$	10 44 30	H=$10^h31^m12^s$
			F	11 58	$\Delta P-H=26°.8$
					Δ_{meas} = 27°.1
65	May 27	GW	$e(S)_Z$	$15^h16^m56^s$	Weak
		GW	e_E	15 20 18	
		GW	e_E	15 20 41	
			F	15 38	

MINOR SEISMIC ACTIVITY

May 1	17^h32^m	17^h49^m
3	17 05	18 11
7	20 46	21 35
18	08 48	10 11
21	07 43	08 06
31	02 41	02 55

Microseisms Strong

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JUNE----1943

No.	Date	Inst	Phase	G.M.C.T.	Remarks
66	June 1	G_W G_W G_W	$e(P)_Z$ $e(S)_E$ $e(L)_E$ F	$04^h20^m35^s$ 04 24 59 04 28 19 05 24	$\Delta S-P=24°6$
67	June 2	G_W G_W G_W	$e(P)_Z$ e_E $i(S)_E$ F	$05^h29^m04^s$ 05 33 07 05 33 13 06 05	$\Delta S-P=22°9$
68	June 3	G_W G_W G_W	$e(S)_E$ $e(L)_E$ $e(M)_E$ F	$20^h17^m37^s$ 20 40 20 20 43 20 indeterminate	Very Weak
69	June 3	G_W G_W	$e(S)_E$ $e(M)_E$ F	$21^h12^m03^s$ 21 39 01 22 34	Very Weak
70	June 5	W_A W_A W_A W_A	e_N e_N i_N e_N F	$20^h50^m13^s.9$ 20 50 15.5 20 50 17.6 20 50 39.5 20 50 34	Local Shock Weak
71	June 7	G_W G_W G_W G_W	e_Z e_Z $e(L)_N$ e_N F	$23^h39^m44^s$ 23 43 23 00 22 40 00 26 20 indeterminate	Very Weak
72.	June 8	G_W G_W G_W	e_N i_N $e(M)_N$ F	$01^h30^m14^s$ 01 30 21 01 35 29 02 30	P phases lost in #71 Recorded weak
73.	June 8	G_W G_W G_W	e_Z $iP'_{Z}R_1)_E$ $e(S$ F	$21^h02^m13^s$ 21 02 21 21 24 52 00 49	Epicenter by J.S.A. near 05° S, 102°.5 E H= $20^h42^m52^s$ $\Delta_{meas}=145°3$

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
74	June 9	G-W	$e(P')_Z$	$03^h25^m41^s$	Epicenter from JSA
		G-W	iPR_{1Z}	03 28 51	about same as #73
		G-W	iPR_{2Z}	03 31 58	H = 03 06 41
			F	08 04	Δ_{meas} = 145°3
75	June 13	G-W	iP_Z	05 24 24	Epicenter by JSA
		G-W	iZ	05 24 45	near 42°0 N, 145°0E
		G-W	iZ	05 28 04	$H = 05^h11^m52^s$
		G-W	iS_E	05 34 57	"Epicenter deter-
		G-W	$iSKKS_E$	05 35 10	mination difficult"
		G-W	$i(PS)_E$	05 35 40	Δ_{P-H} = 84°9
		G-W	eSR_{1E}	05 40 45	Δ_{meas} = 85°7
		G-W	$e(L)_N$	05 50 40	
		G-W	$e(M)_N$	05 57 40	
			F	08 07	
76	June 13	G-W	iP_Z	08 49 40	Main Aftershock of
		G-W	e_E	09 00 04	#75
		G-W	iS_E	09 00 14	$H = 08^h37^m08^s$
		G-W	i_E	09 00 42	$\Delta_P - H$ = 84°9
		G-W	$i(SR_1)_E$	09 06 00	Δ_{meas} = 85°7
		G-W	eL_E	09 28 00	
		G-W	eM_E	09 34 00	
			F	11 07	
77	June 13	G-W	eP_Z	16 36 13	Aftershock of #75
		G-W	eS_E	16 46 40	J.S.A. gives
		G-W	eL_E	17 17 10	H = 16 23 29
		G-W	$e(M)_E$	17 29 10	Δ_{S-P} = 84°5
			F		Δ_{meas} = 85°7
78	June 14	G-W	$i(P)_Z$	02 25 02	Aftershock of #75
		G-W	$e(L)_E$	03 22 20	Record Weak
			F	03 58	
79	June 14	G-W	$e(P)_Z$	16 35 19	Aftershock of #75
			eL_E	17 05 40	Very weak record
			F	lost in Following	
80	June 14	G-W	$e(P)?_Z$	17 28 26	
		G-W	$e(S)?_N$	17 32 27	
		G-W	e_N	17 34 53	
		G-W	i_N	17 35 00	
		G-W	i_N	17 35 13	
			F	17 59	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
81	June 15	G-W	iP_Z	$11^h23^m28^s$	Aftershook of #75
		G-W	iS_E	11 33 50	$\Delta_{S-P} = 83°.3$
		G-W	$e(L)_E$	11 53 00	$\Delta_{meas} = 85°.7$
		G-W	$e(M)_E$	12 20 40	
			F	13 26	
82	June 15	G-W	iP_Z	18 27 01	Epicenter byJSA 13.7 N, 93.1 W
		G-W	iPR_{1Z}	18 27 32	h = slightly greater than normal
		G-W	iS_E	18 31 30	
			F lost in following		H = 18 21 36
					$\Delta_{P-H} = 25°.0$
					$\Delta_{meas} = 25°.2$
83	June 15	W-A	eN	19 41 14.8	Local shock
		W-A	iN	19 41 15.4	
		W-A	iN	19 41 20.7	
		W-A	iN	19 41 24.0	
		W-A	iN	19 41 32.0	
		W-A	iN	19 41 33.6	
			F	19 41 43	
84	June 15	G-W	iP_Z	19 50 42	Aftershock of #82
		G-W	iS_E	19 55 13	H = $19^h45^m15^s$
			F		$\Delta_{P-H} = 25.2$
85	June 15	G-W	iP_Z	20 30 58	Aftershock of #82
		G-W	$e(PR_2)_Z$	20 31 46	$\Delta_{S-P} = 25°.4$
		G-W	iS_N	20 35 29	
			F	21 49	
86	June 15	G-W	eS_N	22 15 34	Probably after-shock of #82
			F	22 34	
87	June 17	W-A	e_N	22 51 59.2	Local shock
		W-A	i_N	22 52 00.4	Record Weak
		W-A	i_N	22 52 03.0	
		W-A	e_N	22 52 04.3	
			F	22 52 18	
88	June 20	G W	iP_Z	15 45 26	St. Louis gives
		G-W	$eSKS_N$	15 55 47	H = 15 32 12
		G-W	eS_E	15 56 11	$\Delta_{S-P} = 93°.3$
		G-W	$e(L)_E$	16 14 10	$\Delta_{P-H} = 93°.3$
		G-W	eM_E	16 23 10	
			F	17 17	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
89	June 20	G-W	ePZ	$17^h52^m20^s$	$H = 17^h38^m40^s$
		G-W	e(SKS)E	18 02 59	$\Delta_{S-P} = 98°.6$
		G-W	e(S)E	18 03 32	
		G-W	e(L)E	18 20 10	
			F	19 19	
90	June 24	G-W	e(S)?E	20 50 38	Very weak record
		G-W	e(L)E	21 03 10	
			F	21 41	
91	June 25	W-A	iPE	04 16 13	Very weak record
		W-A	iE	04 16 21	
		G-W	e(S)?E	04 32 53	
			F	04 41	
92	June 30	G-W	iZ	11 07 14	Weak record
		G-W	iZ	11 09 49	
		G-W	iZ	11 10 03	
		G-W	iE	11 10 49	
			F	12 12	

Minor Seismic Activity

June	4	23^h23^m	to	23^h26^m
	6	19 35	to	20 06
	11	09 04	to	09 45
	18	20 08	to	20 52
	19	09 49	to	10 49
	27	18 05	to	18 32
	28	03 30	to	04 41

Note: Minor Seismic Activity beginning about 15^h19^m GMT June 28 was interrupted by a cessation of recording. Other activity, beginning after resumption of recording, could not be placed in time.

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SEISMOLOGICAL BULLETIN

FLORISSANT STATION

Latitude: geographical, 38° 46' 06" N; geocentric, 38° 37' N.
Longitude: 90° 22' 12" W. Altitude: h = 160m, H+h = 4 km.
Lithologic foundation: Pennsylvanian shale.
Seismographs: Calitzin-Wilip ENZ, Wood-Anderson short period EN.
Clock: Shortt synchronome.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
93	July 11	G.W.	iPZ	$02^h24^m44^s$	32°.7 S, 178°.6 W.
		G.W.	epPZ	02 25 31	H = $02^h10^m32^s$.
		G.W.	i(P')Z	02 28 29	h = 180 km.
		G.W.	iPR_1Z	02 29 09	Δ_{PR_1-H} = 109°.2
		G.W.	e(SP)Z	02 38 39	Δ_{meas} = 108°.4
		G.W.	i(sSP)N	02 39 07	
		G.W.	F	05 33.0	
94	July 12	G.W.	eLZ	23 02 00	
		G.W.	F	23 27.0	
95	July 22	G.W.	ePZ	02 16 53	0°.7 S, 81°.3 W.
		G.W.	$e(PR_2)Z$	02 18 27	H = $02^h09^m23^s$.
		G.W.	eSE	02 22 56	Δ_{P-H} = 39°.3
		G.W.	$e(SR_2)E$	02 25 43	Δ_{meas} = 39°.9
		G.W.	F	02 53.0	
96	July 23	G.W.	iP'N	15 12 37	7°.0 S, 111°.3 E.
		G.W.	ipPN	15 13 17	H = $14^h53^m22^s$.
		G.W.	iPR_1N	15 15 56	h = 120 km.
		G.W.	$iSKP_1Z$	15 16 14	$\Delta_{P'-H}$ = 143°.0
		G.W.	$iSKP_2E$	15 16 39	Δ_{meas} = 143°.4
		G.W.	iPR_2N	15 19 09	
		G.W.	iSKSZ	15 19 54	
		G.W.	iSKKSE	15 22 46	
		G.W.	i(S)?N	15 24 24	
		G.W.	F	18 42.0	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
97	July 25	W-A W-A W-A	ePoN eN iSoN	$06^h49^m29^s.6$ 06 49 36.0 06 49 42.1	$38°.05$ N, $91°.3$ W. H = $06^h49^m09^s.5$. Δ_{So-Po} = 71.4 miles Δ_{meas} = 71.4 miles Southeast of Cuba, Mo. For details see Trans. Amer. Geoph. Union, Vol. 27, page 320, 1946.
98	July 26	G.W.	eN	02 33 08	
99	July 28	G.W. G.W. G.W. G.W. G.W. G.W. G.W.	ePZ eZ eSE eE e(SR_2)E iE F	04 12 33 04 12 41 04 18 51 04 19 05 04 22 12 04 28 09 05 00.0	$59°.6$ N, $149°.0$ W. H = $04^h04^m43^s$. May be slightly deeper than normal. Δ_{P-H} = $41°.8$ Δ_{meas} = $41°.6$
100	July 29	G.W. W-A W-A G.W.	iPZ iPR_1N iSE F	03 08 09 03 08 50 03 12 54 07 30.0	$18°.7$ N, $66°.9$ W. H = $03^h02^m15^s$. Δ_{P-H} = $28°.0$ Δ_{meas} = $28°.3$
101	July 29	G.W. G.W. G.W. G.W.	eN e(S)N eLN F	11 50 08 11 53 40 11 57.0 12 55.5	Indefinite beginning. Aftershock of No. 100.
102	July 30	G.W. G.W. G.W. G.W. G.W.	ePZ ePR_1Z iSE iSR_1E F	01 08 25 01 09 04 01 13 10 01 14 34 02 54.0	$18°.8$ N, $66°.7$ W. H = $01^h02^m30^s$. Δ_{P-H} = $28°.1$ Δ_{meas} = $28°.3$
103	July 30	W-A W-A G.W. G.W.	ePN eN e(S)N F	02 19 44 02 19 54 02 25 01 Lost	South America Aftershock.
104	July 30	G.W. G.W.	ePZ F	04 29 10 05 04.0	Puerto Rico Aftershock of No. 100.
105	July 30	G.W. G.W.	e(L)N F	18 33 18 18 38.0	

FLORISSANT STATION BULLETIN FOR JULY, 1943.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
106	July 30	G.W. G.W. G.W.	ePZ eSN F	$21^h26^m01^s$ 21 30 30 22 09.0	Aftershock of No. 100.
107	July 31	G.W. G.W. G.W.	ePR$_1$Z eSN F	03 28 35 03 32 43 04 35.0	Puerto Rico Aftershock of No. 100. Deep?

Minor Seismic Activity:

Date		From h. m.	To h. m.
July	1	21 36	21 48
	2	07 49	07 57
	8	14 54	15 21
	9	03 21	03 44
	15	00 33	00 51
	23	10 01	10 08
	24	20 37	23 49
	26	08 52	08 53
	26	12 17	12 37
	30	20 00	20 31
	31	20 14	20 18

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
108	Aug. 1	G.W.	ePZ	$16^h32^m49^s$	21°.0 S. 170°.9 E.
		G.W.	eZ	16 35 41	H = $16^h18^m42^s$.
		G.W.	epPKPZ	16 37 23	h = 200 km.
		G.W.	eSKSE	16 43 02	Δ_{SKS-H} = 109°.6
		G.W.	iSKKSE	16 44 02	Δ_{meas} = 109°.8
		G.W.	iSN	16 44 46	
		G.W.	esSN	16 46 26	
		G.W.	e(SP)E	16 46 40	
		G.W.	eE	16 52 03	
		G.W.	F	18 13.0	
109	Aug. 2	G.W.	ePKPZ	01 05 33	47°.1 S, 166°.4 E.
		G.W.	ePR1Z	01 07 15	H = $00^h46^m31^s$.
		G.W.	eE	01 07 47	Δ_{PS-H} = 124°.9
		G.W.	eSKPE	01 08 42	Δ_{meas} = 124°.8
		G.W.	ePSN	01 17 23	
		G.W.	e(PPS)E	01 18 46	
		G.W.	e(PPSS)E	01 25 29	
		G.W.	eLE	01 46 44	
		G.W.	F	04 00.0	
110	Aug. 2	G.W.	eSE	04 35 35	Puerto Rico.
		G.W.	eLN	04 38.6	
		G.W.	F	04 54.0	
111	Aug. 2	G.W.	ePZ	05 44 04	Deep.
		G.W.	epPZ	05 44 32	
112	Aug. 2	G.W.	eLN	10 09 08	Puerto Rico.
		G.W.	F	10 26.0	
113	Aug. 2	G.W.	eLE	12 16 38	Puerto Rico.
		G.W.	F	12 32.0	
114	Aug. 7	W-A	e(P)N	16 04 05	Deep.
		G.W.	e(pP)Z	16 04 30	
		G.W.	eZ	16 04 47	
		G.W.	e(S)?E	16 08 05	
		G.W.	e(sS)E	16 08 50	
		G.W.	eE	16 09 11	
		G.W.	F	16 12.0	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
115	Aug. 8	W-A	ePE	$00^h44^m34^s$	18°5 N, 67°3 W.
		W-A	epPE	00 44 43	H = $00^h38^m45^s$.
		G.W.	ePR_1Z	00 44 58	h = 50 km.
		G.W.	e(S)E	00 49 23	Δ_{P-H} = 27°9
		G.W.	eSR1E	00 50 49	Δ_{meas} = 28°2
		G.W.	$e(sSR_1)E$	00 51 50	
		G.W.	F	01 41.0	
116	Aug. 8	W-A	ePN	08 37 15	16°0 N, 96°4 W.
		W-A	ePN	08 37 18	H = $08^h32^m11^s$.
		W-A	eSN	08 41 28	Δ_{P-H} = 22°9
		G.W.	F	09 01.0	Δ_{meas} = 23°0
117	Aug. 9	G.W.	e(P)Z	17 18 14	
		G.W.	eZ	17 18 51	
		G.W.	eN	17 28 07	
		G.W.	F	17 41.0	
118	Aug. 10	G.W.	ePZ	15 24 19	55°1 N, 163°5 E
		G.W.	iPZ	15 24 21	H = $15^h13^m31^s$.
		G.W.	ePR_3Z	15 28 56	Δ_{P-H} = 66°9
		G.W.	iSE	15 33 19	Δ_{meas} = 66°7
		G.W.	eN	15 35 26	
		G.W.	eLE	15 41 54	
		G.W.	F	17 52.0	
119	Aug. 10	W-A	ePN	15 47 34	Aftershock.
		W-A	eSN	15 56 34	
		W-A	eN	15 56 51	
		W-A	F	Lost.	
120	Aug. 13	G.W.	ePZ	07 48 06	1°8 N, 30°5 W.
		G.W.	eSZ	07 56 59	H = $07^h37^m25^s$.
		G.W.	esSE	07 57 25	h = 50 km.
		G.W.	$e(sSR_2)E$	08 04 40	Δ_{P-H} = 66°3
		G.W.	eE	08 06 29	Δ_{meas} = 66°0
		G.W.	eLE	08 08 56	
		G.W.	F	08 36.0	
121	Aug. 14	G.W.	ePZ	02 45 18	Mexico.
		G.W.	$e(PR_1)Z$	02 45 37	
		G.W.	eSN	02 49 33	
		G.W.	F	03 16.0	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
122	Aug. 15	G.W.	ePZ	$00^h19^m03^s$	19°.8 N, 66°.8 W.
		G.W.	eZ	00 20 55	H = $00^h13^m12^s$.
		G.W.	eSE	00 23 53	Δ_{P-H} = 27°.6
		G.W.	eLE	00 25 44	Δ_{meas} = 27°.9
		G.W.	F	01 27.5	
123	Aug. 18	G.W.	eSE	16 46 26	20°.7 S, 68°.4 W.
		G.W.	esSE	16 47 16	H = $16^h27^m50^s$.
					h = 100±km.
					Δ_{S-H} = 62°.8
					Δ_{meas} = 63°.0
124	Aug. 20	G.W.	e(SKS)N	01 52 26	About 95°.
		G.W.	e(SKKS)N	01 53 21	
		G.W.	e(PS)E	01 54 52	
		G.W.	eSR$_1$E	01 59 04	
		G.W.	F	03 30.5	
125	Aug. 21	G.W.	ePZ	09 21 34	Probable Epicenter:
		G.W.	eSN	09 30 40	26°.4 S, 113°.6 W.
		G.W.	F	09 52.0	H = $09^h10^m33^s$.
					Δ_{P-H} = 68°.9
					Δ_{meas} = 68°.9
126	Aug. 22	G.W.	iPZ	11 13 25	51°.0 N, 174°.5 W.
		G.W.	epPZ	11 13 35	H = $11^h03^m42^s$.
		G.W.	eSE	11 21 25	h = 50±km.
		G.W.	esSE	11 21 47	Δ_{P-H} = 57°.5
		G.W.	F	12 13.5	Δ_{meas} = 57°.6
127	Aug. 29	G.W.	(ePN)	02 51 23	Indefinite beginning.
		G.W.	eSN	02 55 56	Region: 17° N, 101° W.
		G.W.	eLN	02 59 47	H = $02^h46^m.2$
		G.W.	F	03 17.0	
128	Aug. 29	G.W.	e(S)E	03 54 28	Region: 33° N, 117° W.
		G.W.	eN	03 56 52	H = $03^h45^m.2$
		G.W.	eME	03 58 43	
		G.W.	F	04 11.0	
129	Aug. 31	G.W.	ePZ	15 41 40	Time uncertain.
		G.W.	eSE	15 47 51	Region: 31° N, 42° W.
		G.W.	F	Lost.	H = $15^h34^m.0$

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
130	Aug. 31	G.W.	ePZ	16 15 59	Time uncertain.
		G.W.	ipPZ	16 16 17	14°1 N, 91°3 E.
		G.W.	eE	16 19 10	H = $16^h10^m45^s$.
		G.W.	eE	16 19 53	h = 100 km.
		G.W.	iSE	16 20 17	ΔP-H = 24°7
		G.W.	isSE	16 20 46	Δ_{meas} = 24°8
		G.W.	iE	16 21 02	
		G.W.	iE	16 22 19	
		G.W.	F	17 48.5	

Minor Seismic Activity:

Date	From h. m.	To h. m.
Aug. 15	03 02	03 19
17	03 27	03 29
23	08 06	08 10
31	00 51	01 19

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
131	Sept. 2	G.W.	ePZ	23 18 02	16.5 S, 100.4 W.
		G.W.	epPZ	23 18 20	H = $23^h12^m54^s$.
		G.W.	e(S)E	23 21 05	h = 100±km.
		G.W.	e(ScS)E	23 28 09	Δ_{P-H} = 24°0
		G.W.	F	23 34.0	Δ_{meas} = 24°0
132	Sept. 4	G.W.	eLE	07 51.0	
133	Sept. 5	G.W.	e(P')Z	08 53 47	Region:
		G.W.	iPR$_1$Z	08 56 10	1/2° N, 125 1/2° E.
		G.W.	i(SKP)Z	08 57 04	H = $08^h35.0^m$
		G.W.	iSKPZ	08 57 14	
		G.W.	eSKKSE	09 03 08	
		G.W.	F	11 30.0	
134	Sept. 6	G.W.	iP'Z	04 00 43	52°7 S, 159°6 E.
		W-A	eN	04 01 30	H = $03^h41^m40^s$.
		W-A	ePR$_1$N	04 03. 07	Δ_{PR_1-H} = 131°3
		W-A	eSKPN	04 04 05	Δ_{meas} = 131°0
		W-A	e(PR$_2$)N	04 05 21	
		W-A	eSN	04 11 24	
		W-A	eN	04 13 47	
		G.W.	F	08 40.0	
135	Sept. 7	G.W.	eZ	19 46 21	Surface waves very sharp.
		G.W.	iLE	19 47 16	Northwest Canada. Epicentral
		G.W.	F	20 16.0	Region: 68°2 N, 137°7 W.
					H = $19^h26^m27^s$.
					Δ_{meas} = 39°4
136	Sept. 14	W-A	eE	07 34 51	C.W.'s not operating.
		W-A	ePR$_1$E	07 36 00	General Region:
		W-A	e(pPR$_1$)E	07 37 01	29° S, 178° W.
		W-A	e(SKKS)E	07 43 56	H = $07^h18.3^m$
		W-A	eSE	07 44 19	h = 100±km.
		W-A	F	09 15.5	
137	Sept. 17	G.W.	eLE	05 18.5	
138	Sept. 17	G.W.	e(SKS)E	10 33 57	15°1 S, 167°5 E.
		G.W.	e(SKKS)E	10 34 38	H = $10^h09^m37^s$.
		G.W.	eSE	10 35 35	h = 150±km.
		G.W.	eN	10 36 13	Δ_{SP-H} = 109°0
		G.W.	eSPN	10 37 15	Δ_{meas} = 108°7
		G.W.	F	Lost.	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
139	Sept. 19	G.W.	ePZ	04 59 01	30°.8 S, 113°.6 W.
		G.W.	e(pP)Z	04 59 20	H = $0^h4^m7^m48^s$.
		G.W.	iSN	05 08 19	h = 100±km.
		G.W.	ePSE	05 08 52	ΔP-H = 72°.4
		G.W.	esSE	05 09 10	Δmeas = 72°.5
		G.W.	eSR_1E	05 12 54	
		G.W.	F	Uncertain	
140	Sept. 20	G.W.	ePZ	00 59 05	20°.3 N, 108°.7 W.
		G.W.	eSE	01 03 36	H = $00^h53^m52^s$.
		G.W.	isSN	01 03 51	h = 80 km.
		G.W.	iMN	01 06 28	ΔP-H = 24°.3
		G.W.	F	02 36.0	Δmeas = 23°.9
141	Sept. 21	G.W.	eLE	04 28 06	
		G.W.	F	05 33 --	
142	Sept. 22	G.W.	ePR_1Z	23 37 22	Region:
		G.W.	eSKSN	23 43 23	33° S, 179 1/2° E.
		G.W.	e(SKKS)N	23 44 35	H = $23^h18.6^m$
		G.W.	e(S)N	23 45 16	h = 150±km.
		G.W.	e(PS)N	23 46 50	
		G.W.	eSR_1E	23 51 57	
		G.W.	eSR_2E	23 57 15	
		G.W.	F	02 28 --	
143	Sept. 26	G.W.	iP'Z	02 28 07	EW, NS not operating.
		G.W.	eSKSZ	02 35 12	Distance about 145°, off
		G.W.	eZ	02 37 37	West coast of Madagascar.
		G.W.	ePR_4Z	02 38 55	
		G.W.	e(PPSS)Z	02 51 50	
		G.W.	F	04 18 --	
144	Sept. 26	G.W.	ePZ	18 21 15	Epicentral Region:
		G.W.	eSE	18 29 40	51°.0 N, 179°.7 W.
		G.W.	eSR_1E	18 33 19	H = $18^h11^m04^s$.
		G.W.	eSR_2E	18 36 11	ΔP-H = 61°.3
		G.W.	eLE	18 40.5	Δmeas = 61°.1
		G.W.	F	19 39 --	
145	Sept. 26	G.W.	eZ	22 45 00	5°.1 N, 82°.9 W.
		G.W.	eE	22 48 16	H = $22^h38^m08^s$.
		G.W.	eSE	22 50 27	ΔS-H = 33°.9
		G.W.	F	23 09.0	Δmeas = 34°.1

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
146	Sept. 27	W-A	ePN	$17^h09^m40^s.5$	
		W-A	eSE	17 10 33.7	
		W-A	F	17 12.0	
147	Sept. 27	G.W.	e(P)Z	22 17 55	Epicentral Region:
		G.W.	ePR_1Z	22 22 19	31°.1 S, 176°.9 W.
		G.W.	eSKSE	22 28 27	$H = 22^h03^m47^s$.
		G.W.	eSKKSE	22 29 19	$h = 80 \pm$km.
		G.W.	ePSE	22 31 37	$\Delta_{PR_1-H} = 107°.0$
		G.W.	eZ	22 32 10	$\Delta_{meas} = 107°.0$
		G.W.	eE	22 32 36	
		G.W.	eZ	22 32 40	
		G.W.	eSR_1E	22 36 59	
		G.W.	$isSR_1E$	22 37 30	
		G.W.	eSR_2E	22 41 35	
		G.W.	F	24 42.0	
148	Sept. 28	G.W.	$e(PR_1)Z$	11 03 44	17°.9 N, 148°.2 E.
		G.W.	e(SKS)E	11 10 07	$H = 10^h45^m36^s$.
		G.W.	ePSE	11 12 21	Possibly deeper than normal.
		G.W.	F	12 32.0	$\Delta_{PS-H} = 101°.4$
					$\Delta_{meas} = 101°.5$
149	Sept. 29	G.W.	eLE	10 03.0	
		G.W.	F	10 44.0	
150	Sept. 29	G.W.	eLE	24 07.0	
		G.W.	F	24 16 --	
151	Sept. 30	G.W.	eLE	08 16.0	
		G.W.	F	08 42.0	
152	Sept. 30	G.W.	eLE	12 52.5	
		G.W.	F	13 11.0	

Minor Seismoc Activity:

Date	From h. m.	To h. m.
Sept. 6	14 59	15 06
15	07 06	07 33
16	13 35	13 41
17	00 37	00 52
20	04 28	04 40
20	07 20	08 00
21	19 40	19 48

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SEISMOLOGICAL BULLETIN

FLORISSANT STATION

Latitude: geographical, 38° 46' 06" N; geocentric, 38° 37' N.
Longitude: 90° 22' 12" W. Altitude: h = 160m, H+h = 4 km.
Lithologic foundation: Pennsylvanian shale.
Seismographs: Galitzin-Wilip ENZ, Wood-Anderson short period EN.
Clock: Shortt synchronome.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
153	Oct. 1	G.W.	e(S)E	$12^h39^m54^s$	
		G.W.	eLE	12 42 36	
		G.W.	F	12 51.0	
154	Oct. 1	G.W.	ePZ	18 02 43	9°.1 N, 37°.3 W.
		G.W.	eSE	18 10 29	$H = 17^h53^m14^s$.
		G.W.	F	18 58.0	$\Delta_{P-H} = 55°.1$
					$\Delta_{meas} = 55°.0$
155	Oct. 2	G.W.	eLE	05 46.1	
		G.W.	F	06 00.0	
156	Oct. 2	G.W.	e(S)E	07 08 34	U.S.C.G.S. gives:
		G.W.	eLE	07 11.5	40°.6 N, 124°.9 W.
		G.W.	F	07 17.0	$H = 06^h56^m41^s$.
157	Oct. 2	G.W.	e(pP)Z	11 28 06	14°.0 N, 91°.8 W.
		G.W.	e(sS)E	11 32 40	$H = 11^h22^m34^s$.
		G.W.	F	12 00.0	$\Delta_{meas} = 24°.7$
158	Oct. 3	G.W.	ePZ	01 01 40	North Atlantic Azores.
		G.W.	eSE	01 08 41	
		G.W.	eSR_1E	01 11 40	
		G.W.	eE	01 12 47	
		G.W.	F	01 50.0	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
159	Oct. 4	G.W.	ePR$_1$Z	$10^h58^m37^s$	15°0 S, 167°9 E.
		G.W.	eSKSE	11 04 48	H = $10^h39^m46^s$.
		G.W.	eSKKSE	11 05 43	Δ_{PR_1-H} = 108°9
		G.W.	eN	11 06 32	Δ_{meas} = 108°9
		G.W.	ePSE	11 08 04	
		G.W.	ePPSE	11 09 09	
		G.W.	F	12 29.0	
160	Oct. 9	G.W.	eLE	10 43 31	
		G.W.	F	10 48.0	
161	Oct. 10	G.W.	eLE	10 08 41	
		G.W.	F	10 15.0	
162	Oct. 13	G.W.	ePZ	04 49 35	Region: 26°5 N, 110° W.
		G.W.	eSE	04 53 24	H = $04^h44^m48^s$.
		G.W.	eE	04 55 01	Δ_{S-P} = 20°6
		G.W.	iLE	04 55 53	Δ_{meas} = 20°5
		G.W.	iME	04 57 50	Surface waves very
		G.W.	F	05 43.0	sharp.
163	Oct. 16	G.W.	eLE	10 13 46	
		G.W.	F	10 27 --	
164	Oct. 16	G.W.	iPZ	13 21 27	All other phases lost
		G.W.	epPZ	13 21 48	changing records.
					33°9 N, 27°8 E.
					H = $13^h08^m50^s$.
					h = 100±km.
					Δ_{P-H} = 87°5
					Δ_{meas} = 87°7
165	Oct. 17	G.W.	e(SKKS)E	23 03 43	Δ = about 130°
		G.W.	eE	23 06 14	New Guinea?
		G.W.	e(PS)E	23 07 31	
166	Oct. 19	G.W.	eSE	17 48 27	Epicentral Region:
		G.W.	eLE	17 51 22	18°0 N, 104°3 W.
		G.W.	iME	17 53 48	H = $17^h38^m50^s$.
		G.W.	F	18 09.0	Δ_{S-H} = 24°1
					Δ_{meas} = 24°1
167	Oct. 20	G.W.	eSE	04 18 19	Region: 16° N, 107° W.
		G.W.	e(sS)E	04 18 40	H = 04^h08^m2
		G.W.	eLE	04 21 48	Probably deeper than
		G.W.	F	04 36.0	normal.

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
168	Oct. 20	G.W.	eSE	$12^h53^m02^s$	Region: 20° N, 109° W.
		G.W.	eLE	12 56 20	H = $12^h43^m.2$
		G.W.	F	13 02 --	
169	Oct. 21	G.W.	iPZ	23 21 47	16°.5 S, 177°.4 W.
		G.W.	iPR$_1$Z	23 25 37	H = $23^h08^m08^s$.
		G.W.	iSKSE	23 32 25	ΔP-H = 98°.7
		G.W.	iSKKSE	23 33 05	Δ_{meas} = 98°.7
		G.W.	iSE	23 33 18	
		G.W.	iSP	23 34 08	
		G.W.	eSR$_1$	23 40 40	
170	Oct. 22	G.W.	ePR$_1$Z	16 20 26	Epicentral Region:
		G.W.	eE	16 30 17	24°.1 N, 121°.8 E.
		G.W.	eSR$_1$E	16 36 08	H = $16^h01^m22^s$.
		G.W.	F	17 42 --	ΔPR$_1$-H = 110°.7
					Δ_{meas} = 110°.1
171	Oct. 24	G.W.	(e)E	14 01 46	U.S.C.G.S. gives:
		G.W.	eE	14 02 01	48° N, 156° E.
		G.W.	e(PS)E	14 02 18	H = $13^h40^m.3$
		G.W.	eSR$_1$E	14 06 35	All preceding phases
		G.W.	F	14 47 --	lost changing records.
172	Oct. 24	G.W.	ePZ	16 18 19	22°.0 S, 174°.6 W.
		G.W.	eZ	16 21 34	H = $16^h04^m40^s$.
		G.W.	ePR$_1$Z	16 22 18	ΔP-H = 98°.7
		G.W.	eSKSE	16 28 54	Δ_{meas} = 99°.0
		G.W.	iSKKSE	16 29 29	
		G.W.	F	18 56 --	
173	Oct. 24	G.W.	iPZ	23 34 01	54°.2 N, 162°.0 E.
		G.W.	ipPZ	23 34 14	H = $23^h23^m06^s$.
		G.W.	eSE	23 43 06	h = 50 km.
		G.W.	iSE	23 43 08	ΔP-H = 68.4
		G.W.	esSE	23 43 30	Δ_{meas} = 68°.4
		G.W.	F	24 17.0	
174	Oct. 26	G.W.	ePE	04 55 52	37°.0 N, 123°.6 W.
		G.W.	eLE	05 05 38	H = $04^h50^m20^s$.
		G.W.	F	05 19.0	ΔP-H = 25°.8
					Δ_{meas} = 26°.0
175	Oct. 29	G.W.	eLN	17 31 --	
		G.W.	F	17 37 --	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
176	Oct. 29	G.W. G.W. G.W.	eE eLE F	$17^h47^m30^s$ 17 50 27 18 02 --	

Minor Seismic Activity:

Date	From h. m.	To h. m.
Oct. 3	19 58	20 17
4	12 47	13 11
5	20 29	20 45
16	01 21	02 05
27	07 56	08 13
27	17 07	17 41

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
177	Nov. 2	G.W.	eME	$18^h04^m00^s$	Probably the earthquake reported by Pasadena as 32° 58' N, 116° 00' W. $H = 17^h50^m41^s$.
		G.W.	F	18 10 --	
178	Nov. 2	G.W.	e(PR_1)Z	18 27 27	General Region: 59° S, 30° W. $H = 18^h08^m7$ Possibly deeper than normal.
		G.W.	eSKSE	18 33 43	
		G.W.	eE	18 34 12	
		G.W.	eSKKSE	18 34 42	
		G.W.	eSE	18 35 10	
		G.W.	eE	18 35 32	
		G.W.	ePSE	18 36 38	
		G.W.	eE	18 37 11	
		G.W.	ePPSE	18 37 43	
		G.W.	eE	18 38 10	
		G.W.	F	22 01 --	
179	Nov. 3	G.W.	ePZ	14 40 20	61°0 N, 149°0 W. $H = 14^h32^m25^s$. $\Delta_{P-H} = 42°4$ $\Delta_{meas} = 42°3$
		G.W.	iPZ	14 40 22	
		G.W.	iZ	14 40 27	
		G.W.	iZ	14 40 52	
		G.W.	i(PcP)Z	14 42 08	
		G.W.	iZ	14 43 12	
		G.W.	e(ScP)E	14 46 03	
		G.W.	iSE	14 46 46	
		G.W.	iE	14 47 31	
		G.W.	iSR_1E	14 49 13	
		W-A	iLN	14 54 --	
		G.W.	F	19 08 --	
180	Nov. 4	G.W.	ePZ	06 20 29	Epicentral Region: 57°1 N, 163°0 E. $H = 06^h09^m48^s$. h = 50±km. $\Delta_{P-H} = 66°2$ $\Delta_{meas} = 66°3$
		G.W.	eSE	06 29 13	
		G.W.	e(PS)E	06 30 16	
		G.W.	F	07 10 --	
181	Nov. 4	G.W.	eZ	07 02 10	Region: 57° S, 28° W. $H = 06^h45^m8$
		G.W.	ePR_1Z	07 04 45	
		G.W.	ePSE	07 14 04	
		G.W.	ePPSE	07 14 32	
		G.W.	F	09 09 --	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
182	Nov. 5	G.W.	eIE	10^h55^m0 s	
		G.W.	F	11 15 --	
183	Nov. 6	G.W.	e(P)?Z	08 48 02	6°.1 S, 133°.1 E.
		G.W.	eP'Z	08 50 46	H = $08^h31^m40^s$.
		G.W.	e(pP')Z	08 51 16	h = 50±km.
		G.W.	iPR_1Z	08 52 45	Δ_{PR_1-H} = 129°.6
		G.W.	$ipPR_1Z$	08 53 02	Δ_{meas} = 129°.0
		W-A	iE	08 53 14	
		W-A	iE	08 53 21	
		W-A	iSKPE	08 54 04	
		W-A	i(sSKP)E	08 54 18	
		W-A	eE	08 56 44	
		W-A	eSKSE	08 57 24	
		W-A	esSKSE	08 58 12	
		W-A	eE	09 00 10	
		W-A	eE	09 00 17	
			F	Lost	
184	Nov. 8	G.W.	e(P)Z	07 08 39	U.S.C.G.S. gives:
		G.W.	$e(PR_1)Z$	07 10 37	81° N, 2 1/2° W.
		G.W.	eSE	07 15 41	H = $06^h59^m19^s$.
		G.W.	eSR_1E	07 19 32	
		G.W.	eLE	07 23 09	
		G.W.	F	08 00 --	
185	Nov. 9	G.W.	iPZ	11 58 51	43°.8 N, 148°.2 E.
		G.W.	iPcPZ	11 58 59	H = $11^h46^m42^s$.
		G.W.	ipPZ	11 59 11	h = 100±km.
		G.W.	ipPcPZ	11 59 19	Δ_{P-H} = 82°.2
		G.W.	iSE	12 08 57	Δ_{meas} = 82°.3
		G.W.	eSKSE	12 09 16	
		G.W.	isSE	12 09 32	
		G.W.	F	13 07 --	
186	Nov. 13	G.W.	eE	19 09 32	Time Doubtful.
		G.W.	eE	19 11 52	Epicenter by St. Louis:
		G.W.	eE	19 13 11	19°.9 S, 169°.9 E.
		G.W.	F	21 14 --	H = $18^h43^m59^s$.
					Δ_{meas} = 109°.8
187	Nov. 16	G.W.	ePN	11 47 34	Vertical out of operation.
		G.W.	iSE	11 55 19	Epicentral Region:
		G.W.	F	13 24 --	14°.9 S, 74°.8 W.
					H = $11^h38^m06^s$.
					h = 80 km.
					Δ_{P-H} = 55°.6
					Δ_{meas} = 55°.6

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
188	Nov. 17	G.W.	ePZ	$15^h10^m10^s$	Deep. Japan?
		G.W.	ePR$_1$Z	15 14 08	
		G.W.	eSE	15 20 11	
		G.W.	esSE	15 20 53	
		G.W.	F	15 55 --	
189	Nov. 18	G.W.	ePZ	22 00 53	Epicentral Region:
		G.W.	eSE	22 09 01	20°8 S, 63°5 W.
		G.W.	eScSE	22 10 15	H = $21^h50^m46^s$.
		G.W.	esSE	22 11 10	h = 300+km.
		G.W.	osScSE	22 12 37	ΔP-H = 65°1
		G.W.	F	22 27 --	Δmeas = 64°8
190	Nov. 20	G.W.	ePZ	08 30 59	Region:
		G.W.	eSE	08 35 38	15°5 N, 105°5 W.
		G.W.	eLE	08 38 55	H = 08^h25^m3
		G.W.	F	08 46 --	
191	Nov. 20	G.W.	ePZ	19 05 22	Time doubtful.
		G.W.	eSE	19 12 04	Region:
		G.W.	eLE	19 15 32	4° S, 106° W.
		G.W.	F	20 -- --	H = 18^h57^m1
192	Nov. 21	G.W.	ePZ	19 47 00	Epicentral Region:
		G.W.	eSE	19 51 12	17°0 N, 98°5 W.
		G.W.	e(sS)E	19 51 29	H = $19^h42^m00^s$.
		G.W.	F	20 14.5	h = 50 km.
					ΔP-H = 22°7
					Δmeas = 22°7
193	Nov. 24	G.W.	ePR$_1$Z	13 36 27	Region:
		G.W.	e(PS)E	13 46 07	23° N, 121° E.
		G.W.	eSR$_1$E	13 51 55	H = 13^h17^m2
		G.W.	F	15 41 --	
194	Nov. 26	G.W.	ePZ	22 33 26	41°5 N, 34°2 E.
		G.W.	iSE	22 43 54	H = $22^h20^m42^s$.
		G.W.	F	03 13 --	Δmeas = 85°7
					ΔP-H = 87°3
					ΔS-P = 84°5
195	Nov. 28	G.W.	e(PR$_1$)Z	06 40 27	Region:
		G.W.	e(SKKS)E	06 46 58	10° N, 129° E.
		G.W.	e(PS)E	06 49 32	H = 22^h20^m2
		G.W.	ePPSE	06 51 01	
		G.W.	F	08 29 --	

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
196	Nov. 28	G.W. G.W. G.W.	ePZ iSE F	$17^h22^m28^s$ 17 31 44 19 31 --	Epicentral Region: 52°.6 N, 153°.4 E. $H = 17^h10^m58^s$. $\Delta_{P-H} = 73°.7$ $\Delta_{meas} = 73°.8$
197	Nov. 29	G.W. G.W. G.W. G.W.	iPZ iSE iE F	19 48 13 19 57 19 19 57 30 21 18 --	27°.7 S, 67°.3 W. $H = 19^h37^m05^s$. $\Delta_{P-H} = 70°.0$ $\Delta_{meas} = 70°.0$ Possibly deeper than normal.
198	Nov. 29	G.W. G.W. G.W.	eSE eLE F	21 38 39 21 53 39 23 25 --	Region: 57° N, 174° E. $H = 21^h19^m.8$

Minor Seismic Activity:

Date	From h. m.	To h. m.
Nov. 6	07 09	07 57
7	08.0	09.0
8	23 03	23 59
18	19 30	20 00
20	00 32	00 46
20	07 56	08 20

No.	Date	Inst.	Phase	G.M.C.T.	Remarks
199	Dec. 1	G.W.	iPR_1Z	$06^h25^m02^s$	4°.5 S, 141°.7 E.
		G.W.	$ipPR_1Z$	06 25 41	H = $06^h04^m50^s$.
		G.W.	eSKSE	06 30 23	h = 100±km.
		G.W.	esSKSE	06 31 21	Δ_{P-H} = 122°.2
		G.W.	eSKKSE	06 31 47	Δ_{meas} = 122°.1
		G.W.	iPSE	06 34 52	
		G.W.	F	08 55 --	
200	Dec. 1	G.W.	iPZ	10 45 02	Epicentral Region:
		G.W.	ipPZ	10 45 31	18°.6 S, 69°.4 W.
		G.W.	iSE	10 53 19	h = 100+km.
		G.W.	isSE	10 54 04	H = $10^h35^m00^s$.
		G.W.	F	13 30 --	Δ_{P-H} = 61°.0
					Δ_{meas} = 61°.1
201	Dec. 2	G.W.	eSKSE	02 18 57	U.S.C.G.S. Gives:
		G.W.	eSKKSE	02 19 51	30° S, 178° W.
		G.W.	ePSE	02 22 08	H = $01^h54^m.0$
		G.W.	F	04 40 --	
202	Dec. 2	G.W.	iZ	05 28 21	
		G.W.	eE	05 37 53	
		G.W.	F	07 18 --	
203	Dec. 3	G.W.	eSKSE	05 03 54	New Guinea.
		G.W.	eSKKSE	05 05 27	Δ = about 126°
		G.W.	e(PS)E	05 08 38	U.S.C.G.S. gives:
		G.W.	F	Lost in following	3° S, 140° E.
204	Dec. 3	G.W.	i(pP)Z	07 05 37	42°.3 N, 144°.0 E.
		G.W.	iZ	07 08 38	H = $06^h52^m50^s$.
		G.W.	eSE	07 15 37	h = 50±km.
		G.W.	eSR_1E	07 21 21	Δ_{PR_1-H} = 85°.0
		G.W.	F	07 54 --	Δ_{meas} = 85°.4
205	Dec. 8	G.W.	iPZ	19 44 08	Epicentral Region:
		G.W.	eSE	19 48 37	14°.4 N, 96°.3 W.
		G.W.	F	20 57 --	H = $19^h38^m46^s$.
					Δ_{P-H} = 24°.5
					Δ_{meas} = 24°.5
(No Florissant Records from Dec. 16 to Dec. 26)					

Minor Seismic Activity:

Date	From h. m.	To h. m.
Dec. 9	03 50	04 10

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