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1960

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**SEISMOLOGICAL
OBSERVATORY BULLETIN
UNIVERSITY OF PITTSBURGH**



PITTSBURGH, PENNSYLVANIA

Seismological Observatory Bulletin

University of Pittsburgh

VOLUME 3

No. 2

JANUARY - DECEMBER, 1960

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(This Bulletin is issued yearly)

STATION CONSTANTS AND INSTRUMENTS

Latitude— $40^{\circ} 26.7'$ North

Longitude— $79^{\circ} 46.2'$ West

Lithological foundation—Birmingham Shale—Pennsylvania Age

Elevation—273 meters above sea level.

Instruments

Two Wenner horizontal seismographs (Oriented $N 30^{\circ} W$ and $N 60^{\circ} E$)

One Benioff vertical seismograph (long-period recording only)
The above instruments operate with photographic recording.)

Time Service and Control

Time marks are given by two Observatory master clocks. One is a special astronomical type (used as stand-by) while the other is a Frodsham astronomical clock (used for routine work). Time signals are recorded automatically (or manually, depending on weather conditions) several times daily. These signals are transmitted from Washington, D.C. via stations NSS and WWV.

Instrument Constants

Magnification curves for the Wenner Seismographs were given in No. 1, Vol. 1 of this Bulletin. The magnification curve for the Benioff is not yet completed. The "nominal" magnification for this instrument is approximately 24,000.

New Instrument Vault

An instrument vault has been built in the Cathedral of Learning to house the mechanically recording pedula. Included in this vault will be an interferometer-type tiltmeter and a well-gage recorder.

Visual Recorder

A visual recorder, adapted to the Wenner Seisometer, is being used currently on an experimental basis.

MICROSEISMS — 1960

These data have been evaluated according to the following scale:

HORIZONTAL AMPLITUDE	DESIGNATION
Less than 2 microns	Below normal
Between 2 and 3 microns	Normal
More than 3 microns	Above normal

DATE	EVALUATION
January 2 — 6	Above normal
6 — 11	Slightly above normal
11 — 13	Considerably above normal
13 — 22	Above normal
22 — 27	Slightly above normal
27 — 31	Above normal
31 — February 1	Considerably above normal
February 1 — 6	Above normal
6 — 7	Considerably above normal
7 — 8	Above normal
8 — 12	Slightly above normal
12 — 16	Above normal
16 — 17	Slightly above normal
17 — 18	Normal
18 — 19	Slightly above normal
19 — 23	Above normal
23 — 25	Slightly above normal
25 — March 1	Above normal
March 1 — 3	Slightly above normal
3 — 4	Above normal
4 — 7	Considerably above normal
7 — 13	Above normal
13 — 15	Considerably above normal
15 — 20	Above normal
20 — 21	Considerably above normal
21 — 27	Above normal
27 — April 1	Slightly above normal
April 1 — 2	Slightly above normal
2 — 5	Normal
5 — 7	Slightly above normal
7 — 8	Above normal

MICROSEISMS — 1959

DATE	EVALUATION
8 — 9	Slightly above normal
9 — 20	Normal
20 — 29	Slightly above normal
29 — May 1	Clock not functioning
May 1 — 8	Slightly above normal
8 — 13	Normal
13 — 23	Below normal
23 — 25	Normal
25 — 29	Below normal
29 — June 1	Normal
June 1 — 6	Below normal
6 — 11	Normal
11 — 12	Slightly above normal
12 — 13	Normal
13 — 16	Slightly above normal
16 — 18	Normal
18 — 23	Below normal
23 — 24	Normal
24 — 28	Slightly above normal
28 — 29	Normal
29 — July 1	Below normal
July 1 — 8	Below normal
8 — 9	Normal
9 — 15	Below normal
15 — 18	Normal
18 — 22	Below normal
22 — 25	Normal
25 — August 1	Below normal
August 1 — 4	Normal
4 — 10	Below normal
10 — 12	Normal
12 — 18	Below normal
18 — 22	Normal
22 — 25	Slightly above normal
25 — 26	Normal
26 — September 1	Below normal

DATE	EVALUATION
September 1 — 3	Below normal
3 — 11	Normal
11 — 12	Slightly above normal
12 — 13	Above normal
13 — 17	Slightly above normal
17 — 18	Normal
18 — 25	Below normal
25 — 26	Normal
26 — October 1	Below normal
October 1 — 2	Normal
2 — 4	Above normal
4 — 7	Normal
7 — 8	Slightly above normal
8 — 10	Above normal
10 — 15	Slightly above normal
15 — 19	Normal
19 — 22	Above normal
22 — 25	Slightly above normal
25 — 29	Above normal
29 — November 1	Slightly above normal
November 1 — 5	Slightly above normal
5 — 6	Above normal
6 — 8	Considerably above normal
8 — 9	Above normal
9 — 14	Slightly above normal
14 — 22	Above normal
22 — 23	Considerably above normal
24 — 27	Above normal
27 — 29	Considerably above normal
29 — December 1	Above normal
December 1 — 3	Considerably above normal
3 — 9	Above normal
9 — 12	Considerably above normal
12 — 16	Above normal
16 — 17	Considerably above normal
17 — 18	Above normal
18 — 21	Slightly above normal
21 — January 1	Above normal

SECTION ON SEISMIC DATA

Earthquakes for which preliminary phases have been identified or for which preliminary epicenters have been worked out are numbered in the left-hand column as of No. 1, September 8, 1939. It was on this date that our new station was placed in operation.

GNWCH	DATE	COMPNT.	PHASE	GMT	
	Jan. 13	Z	iP	15-49-59	Δ (S-P) = 55.6° = 6180Km H = 15h40m27s
		Z	i	15-50-02	
		H	Is	15-57-50	
	15	Z	iP	09-39-46	Δ (S-P) = 54.4° = 6045Km H = 09-30-22
		H	iS	09 -47-29	
		H	i	09 -49-34	
	23	Seismic activity centering about 00h 57m G.C.T. Seismic activity centering about 04h 50m G.C.T. Seismic activity centering about 16h 20m G.C.T.			
	Feb. 2	Seismic activity centering about 23h 48m G.C.T.			
	Feb. 4	Seismic activity centering about 05h 50m G.C.T.			
	24	Seismic activity centering about 00h 12m G.C.T.			
	Mar. 10	Z	iP?	00-03-40	C
	20	Z	i	17-20-30?	C
		H	i	17-31-03?	C
		Other phases indiscernible because of microseisms			
	23	H	i	00-47-30?	
	28	Seismic activity centering about 00h 42m G.C.T.			
	29	Seismic activity centering about 07h 32m G.C.T.			
	31	H	i	20-11-20	
		H	i	20-14-03	
	Apr. 1	Seismic activity centering about 14h 35m G.C.T.			
	13	Z	e	12-43-25?	
		H	i	12-48-48?	
		H	i	12-48-27?	
	14	Seismic activity centering about 06h 04m G.C.T.			
	May 12	Seismic activity centering about 22h 31m G.C.T.			
	13	Seismic activity centering about 10h 24m G.C.T.			
		Z	e	16-14-44?	
	18	Seismic activity centering about 17h 32m G.C.T.			
	19	Seismic activity centering about 10h 50m G.C.T.			
	20	Seismic activity centering about 12h 20m G.C.T. Seismic activity centering about 18h 10m G.C.T.			

GNWCH	DATE	COMPNT.	PHASE	GMT	
	May 21	Z	iP	10-14-56	D Δ (S-P) = 77.9° = 8655Km
		H	iS	10-24-52	H = 10-03-00
	22	H	e	10-42-41	
		H	iPP?	10-44-48	
		H	i	10-54-53	
		Z	iP	19-07-59	C Δ (S-P) = 77.5° = 6510Km
		H	iS	19-17-53	H = 18-56-06
		Z	iP?	19-20-45	D
		Horizontal phases indiscernible because of overlapping trace.			
	24	H	i	15-09-24	
	25	Z	i	08-47-16	C
	29	H	e	08-01-16?	
	31	Z	iP	11-08-01?	C Δ (S-P) = 29.7° = 3300Km
		H	iS	11-13-04?	H = 11-01-51?
	June 2	Seismic activity centering about 09h 40m G.C.T.			
	3	Seismic activity centering about 22h 25m G.C.T.			
	4	Seismic activity centering about 02h 24m G.C.T.			
	6	H	eP	01-24-35	Δ (S-P) = 32.6° = 3620Km
		H	iS	01-29-59	H = 01-17-59 G.C.T.
		H	i	01-35-09	
		Z	iP?	06-38-30	
		Z	i	06-41-54	
		Z	i	06-42-44	
		H	e	06-48-26	
	10	Seismic activity centering about 22h 10m G.C.T.			
	11	H	i	00-42-52	
		Seismic activity centering about 16h 10m G.C.T.			
	12	Seismic activity centering about 07h 25m G.C.T.			
	15	Seismic activity centering about 00h 05m G.C.T.			
		Z	i	04-45-53?	
	20	Z	i	02-13-12	D
		H	iS?	02-23-03	
		Z	iP?	02 -11-52	C H = 12-59-56
		H	i	02 -15-02	Δ (S-P) = 78° = 8665Km
		H	iS	02 -21-49	

GNWCH DATE	COMPNT.	PHASE	GMT
June 25			Seismic activity centering about 01h 52m G.C.T. Seismic activity centering about 15h 45m G.C.T.
30	H	i	20-35-43
July 1			Seismic activity centering about 08h 50m G.C.T.
10			Seismic activity centering about 01h 25m G.C.T.
13			Seismic activity centering about 08h 15m G.C.T.
20			Seismic activity centering about 21h 45m G.C.T.
24			Seismic activity centering about 10h 40m G.C.T.
25	H	i	04-01-31?
	Z	iP	11-23-26 C ? $\Delta(S-P) = 70.7^\circ = 7855\text{Km}$
	H	iS	11-32-44? H = 11-12-14?
29			Seismic activity centering about 02h 20m G.C.T. Seismic activity centering about 18h 35m G.C.T.
31			Seismic activity centering about 03h 58m G.C.T.
Aug. 2			Seismic activity centering about 05h 45m G.C.T.
4	Z	eP?	07-51-42?
	H	i	08-00-23
5			Seismic activity centering about 23h 25m G.C.T.
9	Z	eP	07-55-52
	H	i	08-01-25
	H	i	08-04-00
			Seismic activity centering about 18h 02m G.C.T.
13	H	i	14-32-16
	H	i	14-42-18
20			Seismic activity centering about 21h 15m G.C.T.
Sept. 14	H	i	02-02-25
19	Z	e	19-08-04
	Z	i	19-08-05
	H	i	19-13-29
	H	i	19-15-33
29			Seismic activity centering about 12h 39m G.C.T. Seismic activity centering about 19h 45m G.C.T.

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GNWCH DATE	COMPNT.	PHASE	GMT
Oct. 6			Seismic activity centering about 08h 37m G.C.T.
7	Z	e	15-53-47
	H	i	15-39-39
8	Z	i	01-56-33 D
	Z	i	06-06-18? C
	Z	i	06-07-37? D
	H	i	06-14-54?
	H	i	06-15-43?
11			Seismic activity centering about 08h 25m G.C.T.
13	Z	i	15-03-36
	H	i	15-12-55
14	Z	i	21-29-15?
	H	i	21-37-40?
28	Z	i	12-54-46 D
	Z	i	12-55-10 D
30	Z	i	21-43-21 C
	Z	i	21-43-46 D
Nov. 1	Z	i	08-57-42? D
	H	i	09-07-36?
2			Seismic activity centering about 18h 45m G.C.T.
6	Z	i	05-49-44 C
9			Seismic activity centering about 04h 09m G.C.T. Seismic activity centering about 11h 35m G.C.T.
13	Z	iP	09-30-36 $\Delta(S-P) = 57.8^\circ = 6420\text{Km}$
	H	iS	09-38-41 H = 09-20-48
21			Seismic activity centering about 22h 30m G.C.T.
24			Seismic activity centering about 08h 20m G.C.T.
Dec. 1			Seismic activity centering about 21h 20m G.C.T.
2	Z	i	09-21-25 D
	Z	i	09-22-19 D
	Z	i	09-48-19 C
			Other phases indiscernible because of microseisms

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3 Seismic activity centering about 04h 18m G.C.T.

6	Z	i	09-06-35	C
	Z	i	09-06-49	C
	H	i	09-15-21	
29	Z	i	18-20-33	C
	Z	i	19-11-43	C
	Z	i	19-12-00	C

