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STATION CONSTANTS AND INSTRUMENTS

Latitude—40° 26.7' North.

Longitude—79° 57.2' West.

Lithological foundation—Birmingham Shale—Pennsylvania age.

Elevation—273 meters above sea level.

Instruments

Two Wenner horizontal seismographs (Orientation N 30° W and N 60° 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, and from Ottawa via Station CHU.

The average clock drift is one-half second per day.

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

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

Visual Recorder

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

MICROSEISMIC ACTIVITY

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 1 - 5	Considerably above normal
5 - 15	Slightly above normal
15 - 16	Above normal
16 - 17	Slightly above normal
17 - 18	Considerably above normal
18 - 21	Slightly above normal
21 - 22	Above normal
22 - 30	Slightly above normal
30 - 31	Above normal
February 1 - 3	Above normal
3 - 7	Slightly above normal
7 - 10	Above normal
10 - 13	Considerably above normal
13 - 14	Slightly above normal
14 - 15	Normal
15 - 18	Above normal
18 - 19	Considerably above normal
19 - 23	Above normal
23 - 28	Slightly above normal
March 1 - 3	Above normal
3 - 4	Slightly above normal
4 - 5	Above normal
5 - 9	Slightly above normal
9 - 10	Normal
10 - 21	Slightly above normal
21 - 23	Normal
23 - 31	Slightly above normal

(4)

MICROSEISMIC ACTIVITY

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DATE	EVALUATION
April 1 - 9	Above normal
9 - 23	Slightly above normal
23 - 27	Normal
27 - 30	Slightly above normal
May 1 - 2	Slightly above normal
2 - 6	Normal
6 - 8	Slightly above normal
8 - 20	Normal
20 - 21	Slightly above normal
21 - 23	Above normal
23 - 31	Normal
June 1 - 8	Normal
8 - 9	Slightly above normal
9 - 30	Below normal
July 1 - 31	Below normal
August 1 - 8	Below normal
8 - 9	Normal
9 - 11	Above normal
11 - 12	Normal
12 - 18	Below normal
18 - 19	Normal
19 - 28	Above normal
28 - 31	Normal
September 1 - 8	Below normal
8 - 9	Normal
9 - 13	Above normal
13 - 30	Normal

	DATE	EVALUATION
October	1 - 6	Normal
	6 - 8	Slightly above normal
	8 - 11	Normal
	11 - 19	Above normal
	19 - 21	Slightly above normal
	21 - 22	Normal
	22 - 25	Above normal
	25 - 27	Normal
	27 - 29	Above normal
29 - 31	Slightly above normal	
November	1 - 3	Above normal
	3 - 10	Slightly above normal
	10 - 12	Above normal
	12 - 14	Slightly above normal
	14 - 18	Above normal
	18 - 22	Slightly above normal
	22 - 24	Above normal
	24 - 27	Considerably above normal
	27 - 29	Above normal
	29 - 30	Slightly above normal
December	1 - 9	Above normal
	9 - 10	Considerably above normal
	10 - 11	Above normal
	11 - 26	Slightly above normal
	26 - 28	Above normal
28 - 30	Considerably 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. 19	Seismic activity centering about 16h 15m (GCT)			
Jan. 23	Z	iP?	06-50-59	
	H	i	07-14-02	
Jan. 24	Seismic activity centering about 09h 56m (GCT)			
Jan. 27	Seismic activity centering about 08h 30m (GCT)			
310 Feb. 2	Z	iP	17-51-21	$\Delta (S-P) = 56.8^\circ = 6310 \text{ km}$
	H	iS	17-59-20	H = 17h 41-40 (GCT)
	H	i	18-01-51	U.S.C.G.S. gives H = 17h 41.5m GCT Lat. 53° N Long. $172\frac{1}{2}^\circ \text{ W}$
Feb. 13	H	i	18-54-02	U.S.C.G.S. gives H = 18h 24.3m GCT Lat. $33\frac{1}{2}^\circ \text{ S}$ Long. $177\frac{1}{2}^\circ \text{ W}$
Feb. 14	NW	i	18-19-12	U.S.C.G.S. gives
	NW	i	18-24-22	H = 18h 0.75m GCT
	NW	i	18-25-23	Lat. $18\frac{1}{2}^\circ \text{ N}$ Long. 105° W
Mar. 4	Z	i	10-32-45	U.S.C.G.S. gives
	Z	i	10-36-51	H = 10h 19.4m GCT
	(other phases indiscernible due to microseisms.)			Lat. 37° N Long. 70° E
Mar. 16	Seismic activity centering about 22h 28m (GCT)			
				U.S.C.G.S. gives H = 22h 15.1m GCT Lat. 6° S Long. $151\frac{1}{2}^\circ \text{ E}$
Mar. 17	Seismic activity centering about 21h 40m (GCT)			
311 Mar. 24	Z	ip	21-33-43	$\Delta (S-P) = 33.1^\circ = 3680 \text{ km}$
	H	iS	21-09-10	H = 20h 57m 03s GCT U.S.C.G.S. gives H = 20h 56.8 m GCT Lat. 42° N Long. $126\frac{1}{2}^\circ \text{ W}$

GNWCH DATE	COMPNT.	PHASE	GMT	
Mar. 27	Z	e	06-53-10	U.S.C.G.S. gives
	NW	i	06-55-34	H = 06h 34.1m GCT
	NW	i	06-56-33	Lat. 4° N
	Z	i	06-57-02	Long. 127½° E
	NW	i	07-05-26	
312 Apr. 13	Z	iP	20-01-26	$\Delta(S-P) = 29.5^\circ = 3,280$ km
	Z	iPP	20-02-16	H = 19h 55m 18s GCT
	H	iS	20-06-28	U.S.C.G.S. gives
				H = 19h 55m 41s GCT
				Lat. 47.1° N
				Long. 122.7° W
313 Apr. 20	Z	iP	03-41-00	$\Delta(S-P) = 75.5^\circ = 8390$ km
	Z	i	03-41-03	H = 03h 29m 11s GCT
	H	i	03-44-09	U.S.C.G.S. gives
	H	iS	03-50-44	H = 03h 29.0m GCT
				Lat. 38° S
				Long. 72.5° W
Apr. 23	Seismic activity centering about 12h 01m GCT			
Apr. 25	Timing equipment out of order U.S.C.G.S. gives			
				H = 13h 55.0m GCT
				Lat. 20° S
				Long. 69½° W
Apr. 30	Z	i	01-42-26	U.S.C.G.S. gives
	Z	i	01-42-30	H = 01h 23.4m GCT
	Z	i	01-45-40	Lat. 6° N
	H	i	01-51-13	Long. 126° E
	H	i	01-52-08	
	H	i	02-01-28	
May 2	NW	i	11-41-26	
314 May 3	Z	iP	06-09-26	$\Delta(S-P) = 76.8^\circ = 8,535$ km
	H	iS	06-19-17	H = 05h 57m 37s GCT
				U.S.C.G.S. gives
				H = 05h 56.7m GCT
				Lat. 48° N
				Long. 153½° E

GNWCH DATE	COMPNT.	PHASE	GMT	
May 9	Z	iP	13-59-13	U.S.C.G.S. gives
				H = 13h 36.3m GCT
				Lat. 5° N
				Long. 95° E
May 10	NW	e	00-36-13	U.S.C.G.S. gives
				H = 00h 24.7m GCT
				Lat. 19° N
				Long. 106½° W
May 24	Seismic activity centering about 16h 50m GCT			
315 May 30	Z	ip	01-42-59	$\Delta(S-P) = 59.4^\circ = 6,600$ km
	H	iS	01-51-14	H = 01h 33m 0.05 GCT
				U.S.C.G.S. gives
				H = 01h 32.9m GCT
				Lat. 20° S
				Long. 69½° W
June 12	Seismic activity centering about 18h 13m (GCT)			
June 19	Seismic activity centering about 13h 06m (GCT)			
July 8	Seismic activity centering about 13h 02m (GCT)			
July 9	Z	e	18-47-21	U.S.C.G.S. gives
	NW	i	18-49-15	H = 18h 44m 50s
	NW	i	18-49-28	Lat. 33° N
				Long. 71° W
316 July 10	Z	eP	04-17-05	$\Delta(S-P) = 82.4^\circ = 9155$ km
	H	eS	04-17-19	H = 03-54-45 GCT
	H	iS	04-17-23	U.S.C.G.S. gives
				H = 03h 53m 36s GCT
				Lat. 39° N
				Long. 71° E
July 21	Z	i	08-11-06	U.S.C.G.S. gives
				H = 08h 01m 34s GCT
				Lat. 16° S
				Long. 74° N
July 23	Z	e	09-12-06	
	H	i	09-12-20	
	H	i	09-14-33	

GNWCH DATE	COMPNT.	PHASE	GMT	
July 23	H	i	10-56-09	U.S.C.G.S. gives H = 10h 26m 49s GCT Lat. $18\frac{1}{2}^{\circ}$ S Long. 169° E
July 23	H	eP	15-15-25	$\Delta = 75.6^{\circ} = 8,400$ km calc.
	H	iP	15-25-10	H = 15h 03m 43s GCT U.S.C.G.S. gives H = 15h 03m 30s GCT Lat. $38\frac{1}{2}^{\circ}$ N Long. $26\frac{1}{2}^{\circ}$ E
317 Aug. 5	Z	iP	19-16-35	$\Delta(S-P) = 36.5^{\circ} = 4,055$ km
	H	iPP	19-18-17	H = 19h 09m 28s GCT
	H	iS	19-22-26	U.S.C.G.S. gives H = 19h 08m 47s GCT Lat. 1° S Long. 78° W
318 Aug. 6	H	eP	00-49-43	$\Delta(\text{Calc.}) = 106.9^{\circ} = 11,880$ km
	H	iPP	00-54-01	H = 00h 35m 25s GCT
	H	iSKPKS?	01-00-26	U.S.C.G.S. gives
	H	iSKPKPKS?	01-01-01	H = 00h 35m 27s GCT
	H	iS	01-01-50	Lat. 19° S
	H	i	01-02-20	Long. $174\frac{1}{2}^{\circ}$ W
Aug. 17	Seismic activity centering about			19h 05m G.C.T. U.S.C.G.S. gives H = 18h 34m 07s GCT Lat. 43° N Long. 146° E
Aug. 18	Seismic activity centering about			14h 15m (GCT) U.S.C.G.S. gives H = 13h 33m 25s GCT Lat. $8\frac{1}{2}^{\circ}$ N Long. $82\frac{1}{2}^{\circ}$ W
319 Aug. 22	Z	iP	04-08-31	$\Delta(S-P) = 35.5^{\circ} = 3945$ Km
	H	iS	04-14-15	H = 04h 01m 32s GCT U.S.C.G.S. gives H = 04h 01m 12s GCT Lat. 54° N Long. 133° W
	Other phases indiscernible due to overlapping trace.			

GNWCH DATE	COMPNT.	PHASE	GMT	
320 Aug. 23	H	iP	20-31-49	$\Delta(S-P) = 34.2^{\circ} = 3800$ Km
	H	iS	20-37-24	H = 20h 25m 00s GCT U.S.C.G.S. gives H = 20h 24m 32s GCT Lat. 53° N Long. 132° W
Sept. 14	Z	i	20-09-28	U.S.C.G.S. gives
	H	i	20-11-58	H = 19h 50m 15s GCT
	H	i	20-12-24	Lat. 1° N
	H	i	20-12-54	Long. 126° E
	H	i	20-22-00	
321 Sept. 21	Z	iP	13-01-11?	(Station timing equipment functioning improperly)
	H	iPP	13-02-02?	U.S.C.G.S. gives
	H	iS	13-05-51?	H = 12h 55m 05s GCT
	H	iSS	13-06-03?	Lat. 17° N Long. $94\frac{1}{2}^{\circ}$ W
Sept. 24	Seismic activity centering about 05h 10m GCT			
322 Sept. 27	Z	iP	15-39-21	$\Delta(S-P) = 43^{\circ} = 4,780$ km
	H	iS	15-45-53	H = 15h 31m 22s GCT U.S.C.G.S. gives H = 15h 30m 43s GCT Lat. 60° N Long. 149° W
Sept. 30	Seismic activity centering about 04h 10m GCT			
323 Oct. 4	Z	iP	10-31-24	$\Delta(S-P) = 66.2^{\circ} = 7,355$ km
	H	iS	10-40-19	H = 10h 20m 41s GCT U.S.C.G.S. gives H = 10h 20m 23s GCT Lat. 1° S Long. 21° W
324 Oct. 7	Z	iP'(1)	12-21-59	$\Delta = 16,100$ km (Calc.)
	H	iPP	12-25-24	H = 12h 02m 24s GCT
	H	iSKPKP?	12-25-40	U.S.C.G.S. gives
	H	ePPe	12-38-12	H = 12h 02m 19s GCT
	H	iSS	12-44-24	Lat. 33° S Long. $56\frac{1}{2}^{\circ}$ E

GNWCH DATE	COMPNT.	PHASE	GMT	
Oct. 19	Z	e	21-20-01	U.S.C.G.S. gives
	H	e	21-21-22	H = 21h 00m 11s GCT
	H	i	21-27-33	Lat. $5\frac{1}{2}^{\circ}$ S Long. 154° E
Oct. 20	Seismic activity centering about 13h 16m GCT			
Oct. 21	H	e	22-04-45	
Oct. 27	Seismic activity centering about 10h 40m (GCT)			
Oct. 31	H	e	01-48-09	U.S.C.G.S. gives
	H	e	01-54-15	H = 01h 39m 32s (GCT) Lat. 56° N Long. 135° W
Nov. 4	Seismic activity centering about 21h 07m GCT U.S.C.G.S. gives H = 20h 42m 38s GCT Lat. 32° N Long. $116\frac{1}{2}^{\circ}$ W			
Nov. 7	Seismic activity centering about 07h 10m GCT U.S.C.G.S. gives H = 05h 59m 35s GCT Lat. 14° S Long. $166\frac{1}{2}^{\circ}$ E			
Nov. 13	Seismic activity centering about 05h 06m GCT U.S.C.G.S. gives H = 04h 42m 35s GCT Lat. 11° N Long. 86° W			
Nov. 20	H	e	07-15-55	$\Delta(S-P) = 28.1^{\circ} = 3,120$ km
	NW	i	07-20-47	H = 07-10-00 GCT
	NE	i	07-30-43	U.S.C.G.S. gives
	H	i	07-35-22	H = 07h 09m 45s GCT Lat. $28\frac{1}{2}^{\circ}$ N Long. 112° W

GNWCH DATE	COMPNT.	PHASE	GMT	
Nov. 22	NE	i	01-11-14	U.S.C.G.S. gives
	NE	i	01-16-42	H = 00h 51m 32s GCT
	NE	i	01-17-52	Lat. 29° S
	NE	i	01-22-09	Long. 178° W
Nov. 23	Seismic activity centering about 05h 58m GCT U.S.C.G.S. gives H = 06h 14m 39s GCT Lat. 19° N Long. $78\frac{1}{2}^{\circ}$ W			
Nov. 27	NE	e	09-06-57	
Dec. 17	NW	e	06-06-54	
	NW	e	06-10-44	
	NW	i	06-17-37	
	Seismic activity centering about 16h 40m GCT U.S.C.G.S. gives H = 15h 07m 53s GCT Lat. 54° S Long. 71° W			
Dec. 21	Z	e	12-36-49	$\Delta(S-P) = 54.7^{\circ} = 6,080$ km
	NE	e	12-40-53	H = 19h 33m 00s GCT
	Z	iP	19-42-26	U.S.C.G.S. gives
	H	iPPP	19-45-28	H = 19h 33m 00s GCT
	H	iS	19-50-11	Lat. 20° S Long. 64° W
325 Dec. 22	Z	eP?	09-36-25	$\Delta(S-P) = 32.9^{\circ} = 3,665$ km
	Z	i	09-36-58	H = 09h 29m 46s
	H	iS	09-41-51	
Dec. 28	Seismic activity centering about 00h 56m GCT			