1953

THE PENNSYLVANIA STATE UNIVERSITY

MINERAL INDUSTRIES EXPERIMENT STATION

GEOPHYSICAL LABORATORY

Seismograph Report XX

1 January to 31 August 1953

College of Mineral Industries
Department of Geophysics and Geochemistry
State College, Penna., U. S. A.

Locality: The station is located in a vault under the central wing of the College of Mineral Industries Building. The instruments are mounted on a concrete pillar separated from the foundations and anchored to bedrock (dolomite). The geographic coordinates are:

ϕ - 40° 48' N λ - 77° 52' W H - 354 m

The geocentric coordinates are (according to Gutenberg and Richter):

Λ - 40° 36' N γ - 77° 52' W H - + 3 km.

Please address all communications to:

Geophysical Laboratory
Mineral Sciences Bldg.
State College, Pennsylvania

From 1 January to 31 August 1953 three seismographs were in operation. The vertical and north - south components were recorded photographically, the east - west motion was recorded by a pen galvanometer. The recording rate was 1.55 cm. per minute on the photographic recorder, 1.7 cm. per minute on the pen recorder. The free periods of the instruments were checked on January 14 and found to be:

Component	Seismometer Period	Galvanometer Period
North - South	16.7 sec.	2.6 sec.
East - West	17.0 sec.	Not measured
Vertical	1.86 sec.	4.8 sec.

The east - west instrument was checked on January 22 and found to have a damping ratio of 2.3:1.

The period of the vertical component was changed on May 5, and has not been checked since. The damping and sensitivity of the recorders underwent frequent adjustment.

The time is controlled by a Stromberg clock, which is compared daily with signals from radio station WWV. The time accuracy of the records is estimated to be about $\pm$ 1 second.

Date	Phase and component		G.M.C.T.	Remarks
2 Jan. '53	iP	Z	11:31:41	Epicenter: 6°S, 81°W Near Coast of Peru 0=11:23:00 Δ=5,200 km Courtesy U.S.C.G.S.
5 Jan. '53	iP	N,Z	07:59:36	Epicenter: 54°N, 170° E Commander Is. region 0:07:48:17 Δ=7650 km Courtesy U.S.C.G.S.
5 Jan. '53	iP	Z	10:18:35	Epicenter: 49°N, 156°E
	ePP	Z	10:21:33	Kurile Island
	eS	N,Z	10:28:23	0:10:06:25 Δ=8700 km Courtesy U.S.C.G.S.
6 Jan. '53		E		Seismic activity between the hours of 23:48:-and 23:56:-
7 Jan. '53		E		Seismic activity observed between 06:38:-and 06:46:-
7 Jan. '53	iP	Z	12:06:59	Epicenter: 9.5°N, 83°W Costa Rica 0=12:00:30 Δ=3400 km Courtesy U.S.C.G.S.
7 Jan. '53		E		Seismic activity recognizable at 15:15:-
11 Jan. '53	iP	E,Z	23:01:02	Epicenter: 65°N, 133°W
	iPP	Z	23:02:25	Yukon, Canada
	iPPP	Z	23:03:00	0=22:53:30
	eS	E,Z	23:07:00	Δ=4350 km Courtesy U.S.C.G.S.
12 Jan. '53	iP	E,Z	17:35:37	Epicenter: 49.5°N, 156°E
	iS	E	17:45:20	Kurile Islands
	iSS	E	17:50:21	0=17:23:39 Depth = about 60 km Δ=8650 km Courtesy U.S.C.G.S.

15 Jan. '53		E		Seismic activity between the hours 12:41 and 13:37
21 Jan. '53	iI	N,Z	01:54:54	Epicenter: 50°N, 156°E
	i	N,Z	01:55:04	Kurile Islands
	eI	Z	01:57:54	O=01:43:00
	iS	N	02:04:40	Depth about 60 km
	i	N	02:05:12	Δ=8,600 km
				Courtesy U.S.C.G.S.
25 Jan. '53	iI	S	19:53:02	Epicenter: 19°N, 73 1/2°W
	eS	E	19:57:12	off Coast of Haiti
				O=19:47:58
				Courtesy U.S.C.G.S.
				Δ=2600 km
27 Jan. '53		E		Seismic activity between the hours 03:50 and 04:45
29 Jan. '53		E		Seismic activity observed at 08:53:-
30 Jan. '53		E		Seismic activity between the hours 22:16 and 23:05
31 Jan. '53	iI	N	22:04:17	Epicenter: 15°S, 18°W
	i	Z	22:04:49	Mid-Atlantic Ocean
				O=21:52:25
				Δ=8,700 km
				Courtesy U.S.C.G.S.
6 Feb. '53	eI	Z	13:25:58	Epicenter: 42 1/2°N,
	iS	E	13:36:44	144 1/2°E
				Near S.E. Coast Nokkaido,
				Japan
				O: 13:12:59
				Δ=9900 km
				Courtesy U.S.C.G.S.
7 Feb. '53		E		Seismic activity between hours 19.07 and 19:22:-
9 Feb. '53		E		Seismic activity between hours 22:03 and 22:32:-
10 Feb. '53		E		Seismic activity between hours 08:28 and 08:47:-
12 Feb. '53		N,Z		Seismic activity observed at 01:47:5-
12 Feb. '53		N,Z		Seismic activity observed at 04:51:39

12 Feb. '53	iP	Z	08:28:47	Epicenter: 35°N, 54.5°E Northern Iran O=08:15:29 Δ=10,300 km Courtesy U.S.C.G.S.
16 Feb. '53		E		Seismic activity observed at 10:27:-
19 Feb. '53	iP	Z	15:28:43	Epicenter: 0°, 18°W Mid-Atlantic Ocean O=15:17:40 Courtesy U.S.C.G.S. Δ=7,600 km.
	i	Z	15:31:41	
	iS	N,E	15:37:40	
25 Feb. '53	iP	N,Z	21:25:19	Epicenter: 56°N, 156.5°W Off South Coast of Alaska Peninsula. O=21:16:18 Depth=about 60 km Δ=5800 km Courtesy U.S.C.G.S.
	i	N	21:25:32	
	iPcP	Z	21:26:27	
	e	Z	21:26:55	
	iS	N	21:32:32	
	i	Z	21:33:00	
26 Feb. '53	iP	N,Z	00:44:00	Epicenter: 51°N, 156 1/2°E Near South Coast of Kamchatka O=00:32:07 Δ=8650 km Courtesy U.S.C.G.S.
26 Feb. '53	iPP	Z	12:02:31	Epicenter: 11°S, 164 1/2°E Santa Cruz Is. Region O=11:42:26 Δ=13,200 km Courtesy U.S.C.G.S.
	i(PS?)	E	12:12:21	
	iSS	E	12:18:39	
26 Feb. '53	iPP	N	16:14:30	Epicenter: 19°N, 73 1/2°W Gulf of Gonaives, Haiti O=16:09:25 Δ=2350 km Courtesy U.S.C.G.S.
27 Feb. '53				Seismic activity observed at 21:09:-
28 Feb. '53				Seismic activity observed at 05:42 to 05:50
28 Feb. '53				Seismic activity observed at 22:11 to 22:21:-

3 March '53		E		Seismic activity recognizable at 11:57:-
4 March '53	iP	Z	01:08:10	Epicenter:28°S, 68.5°W
	ipP	Z	01:10:08	Santiago del Estero province,
	isP	Z	01:11:08	Argentina
	iS	E	01:16:29	O=00:57:52
				Depth = about 600 Km
				Δ = 7650 Km.
				Courtesy U.S.C.G. S
5 March '53	iP	N,Z	21:13:10	Epcienter: 51°N, 158° E
	eS	E	21:22:46	Near South Coast of Kamchatka.
	i	N	21:23:11	O = 21:01:23.
				Depth - about 60 Km
				Δ = 8550 Km
				Courtesy U.S.C.G.S.
9 March '53		E		Seismic activity recognizable between 11:05:- and 11:27:-
18 March '53	i	Z	15:51:03	Seismic?
	i	Z	15:52:23	
18 March '53	iP	N,Z	19:17:58	Epicenter: 40° N, 27.5° E
	i	Z	19:19:24	West Turkey
	iS	N	19:27:33	O = 19:06:11
	e	N	19:28:07	Courtesy U.S.C.G.S.
	e	N	19:28:44	Δ = 8400 Km
	i	N	19:30:27	
19 March '53	iP	N,Z	08:33:53	Epicenter: 14°N, 61° W
	ipP	N,Z	08:34:20	Windward Islands
	isP	N,Z	08:34:41	O = 08:27:57
	i S	N,E	08:38:51	Depth = about 200 Km
				Δ = 3400 Km
				Courtesy U.S.C.G.S.
20 March '53		E		Seismic activity between 15:03:- and 15:10:-
23 March '53		E		Seismic Activity between 13:05:- and 13:50:-
25 March '53		E		Seismic activity between 06:21:- and 07:07:-

1 April '53		E		Seismic activity between 11:07:- and 11:54:-
1 April '53		E		Seismic activity between 22:55:- and 23:06:-
2 April '53		E		Seismic activity between 05:15:- and 05:51:-
6 April '53	iP'	N,Z	00:55:43	Epicenter : 7°S, 132° E Banda Sea O = 00:36:12 Δ = 15,200 Km Courtesy U.S.C.G.S.
	iPKS	N	00:59:16	
14 April '53	iP	N,Z	13:37:22	Epcienter:7.5° S, 71.5°W Western Brazil O = 13:29:26 Depth = About 650 Km Δ = 5,300 Km Courtesy U.S.G.G.S.
	iPcP	Z	13:38:29	
	iPcS	N	13:42:27	
	iS	N,E,Z	13:43:39	
17 April '53	iP	N	00:11:15	Epicenter: 5°S, 77°W Northern Peru O = 00:02:50 Courtesy U.S.C.G.S. Δ = 5,100 Km
17 April '53		E		Seismic activity observed from 12:19:- to 23:31
19 April '53		E		Seismic activity observed from 23:25:- to 23:43:-
23 April '53	ePP	Z	16:44:51	Epicenter: 4° S, 154°E New Britain region O = 16:24:17 Δ = 13,400 Km Courtesy U.S.C.G.S.
29 April '53		E		Seismic activity observed from 04:34:- to 05:12:-

30 April '53		E,Z		Seismic activity observed from 06:42:- to 00:14:-
2 May '53		E		Seismic activity observed between 19:15 :- and 19:40:-
4 May '53		N		Seismic activity observed between 15:11 and 15:15 :-
4 May '53	iP	N	15:36:47	Epicenter: 28°S, 62 1/2°W
	fpP	N	15:38:42	0 - 15:26:30
	iS	N,E	15:45:13	Santiago del Estero, Argentina
				Depth: about 600 Km
				Δ = 7650
				Courtesy U.S.C.G.S.
6 May '53	iP	N,Z	17:28:40	Epicenter: 36.5°S. 73°W
	i	N,Z	17:31:40	Central Chile
	iS	N,E	17:38:21	0 = 17:16:48
				Depth = about 100 Km
				Δ = 8,600 Km
				Courtesy U.S.C.G.S.
11 May '53		E,Z		Seismic activity observed from 10:54:- to 12:13:-
13 May '53		E		Seismic activity observed from 12:55:-to 13:18:-
14 May '53		N,E,Z		Seismic activity observed from 08:01:- to 08:06:-
14 May '53		N,E,Z		Seismic activity observed from 18:47:-to 18:56:-
18 May '53		E		Seismic activity observed from 09:05:- to 09:35:-
19 May '53	iP	N,Z	03:22:54	Epicenter: 51°N, 159°E
	i	Z	03:23:24	Off S. Coast of Kamchatka
	iS	N	03:32:31	0 = 03:11:06
	IScS	N	03:33:11	Δ = 8400 Km
				Courtesy U.S.C.G.S.

20 May '53		N,Z		Seismic activity beginning at 23:34:-
21 May '53		N,Z		Seismic activity beginning at 12:49:-
24 May '53		E		Seismic activity recognizable between 02:10:- and 02:30:-
31 May '53	iP'	Z	05:19:45	Epicenter: 9°S, 118°E Flores Sea O = 05:00:15 Depth = about 100 Km Courtesy U.S.C.G.S. Δ = 16,200 Km
31 May '53	iP	N,Z	20:03:32	Epicenter:20°N, 70.5° W Near northcoast of Dominican Republic O = 19:58:35 Δ = 2400 km. Courtesy U.S.C.G.S.
	i	Z	20:03:35	
	iPP	Z	20:04:08	
	iS	E,Z	20:07:43	
	e	Z	20:08:05	
2 June '53		N,Z		Seismic activity recognizable between the Hours of 22:25:- and 22:38:-
7 June '53	iP	N,Z	12:28:56	Epicenter:20°N, 70° W Near Northcoast of Dominican Republic O = 12:23:56 Courtesy U.S.C.G.S. Δ = 2450 Km
	ePP	Z	12:29:31	
	e	Z	12:29:47	
	eS	N	12:32:56	
8 June '53	eP	N,Z	11:52:10	Epicenter: 52°N, 159.5°E Near east coast of Kamachatka O = 11:40:25 Δ = 8350 Km Courtesy U.S.C.G.S.
	e	Z	11:52:27	
	e	Z	11:52:49	
	eS	N	12:01:44	
9 June '53	eP	Z	01:50:41	Epicenter:53°N, 160°E Near east coast of Kamchatka O = 01:39:00 Δ = 8350 Km Courtesy U.S.C.G.S.
	e	N	01:51:05	
	eS	N	01:00:10	

14 June '53		N		Seismic activity recognizable at 04:32:-
15 June '53	eP	N,Z	17:56:16	Epicenter:56.5°N, 154°W
	i	Z	17:56:26	Near South coast of
	e	Z	17:56:40	Kodiak
	e	Z	17:57:26	O = 17:47:14
	eS	N,E,Z	18:03:19	Δ = 5500 Km
				Courtesy U.S.C.G.S.
18 June '53		E		Seismic activity recognizable between the hours of 11:06:- and 11:43:-
25 June '53	iP'	N,Z	11:04:29	Epicenter: 8.5°S, 123.5°E
	ePP	N,E,Z	11:07:41	Off east coast of Flores Island
				O = 10:44:57
				Δ = 15,800 Km
				Courtesy U.S.C.G.S.
26 June '53	eP'	N,Z	06:02:28	Epicenter: 8°S, 124°E
	ePP	N,Z	06:06:08	Flores Island region
				O = 05:42:50
				Δ = 15,750 Km
				Courtesy U.S.C.G.S.
9 July '53	eP	N	21:30:00	Epicenter: 30°N, 42.5°W
	eS	N,E	21:34:53	North Atlantic Ocean
				O = 21:23:48
				Δ = 3,350 Km
				Coutesy U.S.C.G.S.
10 July '53		N		Seismic activity recognizable at 13:08:-
12 July '53	eP'	N,Z	07:02:19	Epicenter: 2°S, 139.5°E
	ePP	N,Z	07:04:27	Near North Coast of
	ePKS	Z	07:05:41	New Guinea
	e	N	07:05:45	O = 06:43:05
	e	Z	07:05:55	Δ = 14,300 Km
	eSKS	N	07:09:25	Courtesy U.S.C.G.S.
	e	N	07:11:17	
	e	N	07:14:31	
20 July '53		N,E		Seismic activity beginning at 09:06:-

22 July '53	eS	N	18:01:56	Epicenter:26.5°N, 44.5°W North Atlantic Ocean O = 18:04:30 Δ = 3450 Km Courtesy U.S.C.G.S.
26 July '53	eSKS	N	17:17:37	Epicenter: 17.5°N, 145°E Marianas Islands O = 16:53:16 Depth = about 200 Km Δ = 12,100 Km Courtesy U.S.C.G.S.
	eSKKS	N	17:18:29	
	e S	N	17:19:13	
	e PS	N	17:20:23	
	eSP	Z	17:21:00	
	e	N	17:22:05	
	eSS	N	17:27:00	
	eSSS	N	17:31:16	
28 July '53		N		Seismic activity recognizable at 19:00.-
29 July '53	e S	E	18:26:58	Epicenter: 13°N, 90.5°W Off Coast of Guatemala O = 18:15:34 Δ = 3300 Km Courtesy U.S.C.G.S.
31 July '53		N		Seismic activity recognizable at 00:06:-
31 July '53	eP	N,Z	23:08:16	Epicenter: Mendoza Province, Argentina. O = 22:57:30 Courtesy U.S.C.G.S. Δ = 7400 Km
	e	N	23:08:36	
	eS	N	23:16:58	
2 Aug. '53		N,E		Seismic activity observed between the hours of 1900 and 2000
4 Aug. '53		N		Seismic activity recognizable at 11:44:-
9 Aug. '53	ePP	N,Z	06:04:11	Epicenter:22°S, 68.5°W Northern Chile O = 05:53:24 Depth = about 150 Km Δ = 7000 Km Courtesy U.S.C.G.S.
	esP	N,Z	06:04:26	
	eS	N	06:11:59	
	esS	N	06:12:57	

11 Aug. '53	eP	N,Z	03:43:47	Ep:38.5°N,21°E
	ePP	Z	03:46:16	Near West coast of
	ePPP	Z	03:48:02	Greece
	eS	N	03:53:06	O = 03:32:24
				Δ = 7950 Km
				Courtesy U.S.C.G.S.
12 Aug. '53	iP	N,Z	09:35:20	Ep: 38.5°N,21°E
	ePP	N,Z	09:37:42	Near West coast
	eS	N	09:44:37	of Greece
	iScS	E	09:45:38	O = 09:23:55
				Δ = 7950 Km
				Courtesy U.S.C.G.S.
12 Aug. '53	iP	Z	12:16:46	Ep: 38°N,21°E
	iS	N	12:26:09	Off West coast of
	i -	N	12:28:58	Greece
	eSS	N	12:30:44	O = 12:05:22
				Δ = 7900 Km
				Courtesy U.S.C.G.S.
12 Aug. '53		N,Z		Seismic activity
				recognizable at
				14:20:05
12 Aug. '53	iS	N	17:20:25	
	eSS	N	17:27:53	
13 Aug. '53	eP'	Z	09:42:06	Ep: 21.5°S, 170°E
	iPP	Z	09:43:30	Loyalty Islands
	eS	N	09:51:18	O = 09:23:23
	eSS	N	09:59:42	Depth = about 150 Km
	esSS	N	10:00:22	Δ = 13,400 Km
				Courtesy U.S.C.G.S.
17 Aug. '53		N,E,Z		Seismic activity
				between 22:06:-
				and 22:10:-
21 Aug. '53	iP	N	13:37:00	Ep: 18°N, 67°W
	i	N,Z	13:37:22	Near West coast of
	iS	N	13:41:12	Puerto Rico
				O = 13:31:30
				Courtesy U.S.C.G.S.
				Δ = 2800 Km
23 Aug. '53	i	Z	07:29:46	Ep: 1°S, 14°W
	eS	N	07:38:51	Mid Atlantic Ocean
				O = 07:18:06
				Δ = 7850 Km
				Courtesy U.S.C.G.S.

24 Aug. '53	eP	Z	13:27:15	Ep: 14.5°N, 91.9°W
	eSP	N	13:27:35	Guatemala
	eSP	Z	13:28:06	O = 13:21:00
	eS	N	13:31:42	Depth = about 100 Km
	eSoP	N,Z	13:33:21	Δ = 3150 Km
				Courtesy U.S.C.G.S.
25 Aug. '53		N,Z		Seismic activity begins at 02:32:- and continues for about two hours.

We acknowledge with thanks receipt of the following bulletins and other publications between 5 November 1953 and 1 June 1954.

Bulletin	Date
Apia Observatory, Preliminary Seis. Bull.	September 1953
Arkansas, Seismic Bull.	December '53 Jan., Feb., Mar., '54
Australia, Geophy. Obs. Report	Oct., Nov., Dec. '53, Jan. '54
Barcelona, Seis. Bull.	Sept., Oct. '53
Boulder, Quarterly Bull.	Jan. '54
Buenos Aires. Seis. Bull.	March '54
Cartuja, Provisional Seismic Bull.	Nov., Dec., '53, Jan., Feb., March '54
Cleveland, Seis. Bull.	April '52, Dec. '53, Jan. '54
Coimbra, Seis. Bull.	1949, Jan. - March '54
Copenhagen, Seis. Bull.	Jan. - Dec. '46
Djakarta, Seis. Bull.	May, June, July, Aug., Nov., Dec. '53
Harvard, Seis. Bull.	July 1 to Dec. 31, '52
Iceland, Seis. Bull.	1953
Istanbul, Seis. Bull.	April, May, June '53
Liban, Annales	1953
Madagascar, Seis. Bull.	April, May 31, '53

Manila, Seis. Bull.	Aug., Sept., Dec. '53, Jan., Feb. '54
Melbourne, Prov. Seis. Bull.	April - Dec. '53, Jan. '54
Milan, Revista Di Geofisica Applicata	Vol. 14 No. 2
Morgantown, Seis. Report	1 July - 31 Dec. '53
Ottawa, Seis. Bull.	Jan. - June '53
Pasadena, Prelim. Bull.	May '53 - Feb. '54
Perth, Seis. Bull.	July - Sept. '53
Pittsburgh, Seis. Bull.	Jan. - Dec. '53
Prague, Prel. Seis. Bull.	1952, Nov. '53, Dec., '53 Jan., Feb., March '54
Quetta, Seis. Bull.	Oct. '53, Dec. '53, Jan. '54
Rabaul, Seis. Bull.	Oct. 1 - Dec. 31, '53 Jan., Feb., March '54
Rathfarnham Castle, Seis. Bull.	July 1 to Sept. 30, '53
Riverview College, Seis. Bull.	Jan. 1 to June 30, '52 July 1 to Dec. 30, '52
Rome, Seis. Bull.	Sept., Oct., Nov., Dec. '53
St. Georges, Seis. Bull.	June '52 to May 31, '53
Santa Clara, Seis. Bull.	Nov. '53
Schweizerisches, Erdbebenbulletin	Sept., Oct., Dec. '53
Strasbourg, Seis. Bull.	Sept., Oct., Nov., Dec. '53 Jan. '54
Tacubaya, Seis. Bull.	Nov., Dec. '53, Jan., Feb., March '54
Tokyo Central Meteorological Observatory, Seis. Bull.	April '52 to April '53 Aug., Sept., Oct. '53 Jan. '54
Geophysical Magazine	
Tokyo, Meteorological Research Institute Physics, Papers in Meteorology	Vol. 4, No. 1

U. S. Coast and Geodetic Survey, Seis. Bull,	July, Aug., Sept., '50 Jan., Feb., March '54
U. S. Coast and Geodetic Survey, Seis. Bull. Preliminary determination of epicenter	142-53 to 176-53 S42-53 to S53-53 1-54 to 101-54 S1-54 to S20-54
Universidad de Chile, Seis. Bull,	April, May, June, July, '53
Uppsala, Seis. Bull,	Dec. '52
Washington, Seis. Bull.	February '54
Wellington, Seis. Bull. Prow Bull.-June '53	1952, April, May, June '51
Zurich, Seis. Bull.	1952, Jan. - June '51 May, June '53

The Geophysical Laboratory
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THE MINERAL INDUSTRIES EXPERIMENT STATION

College of Mineral Industries

THE PENNSYLVANIA STATE UNIVERSITY

DEPARTMENT OF GEOPHYSICS AND GEOCHEMISTRY

SEISMOGRAPH REPORT XXII

1 September to 31 December 1953

University Park, Pennsylvania

THE PENNSYLVANIA STATE UNIVERSITY
MINERAL INDUSTRIES EXPERIMENT STATION
GEOPHYSICAL LABORATORY
Project C-19

Seismograph Report XXII

1 September to 31 December 1953

College of Mineral Industries
Department of Geophysics and Geochemistry
University Park, Penna., U.S.A.

Locality: The station is located in a vault under the central wing of the College of Mineral Industries Building. The instruments are mounted on a concrete pillar separated from the foundations and anchored to bedrock (dolomite). The geographic coordinates are:

ϕ - 40° 48' N λ - 77° 52' W H - 354 m

The geocentric coordinates are (according to Gutenberg and Richter):

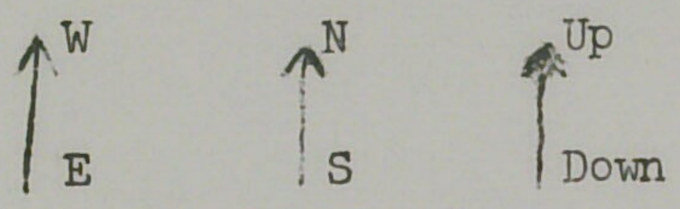
A - 40° 36' N γ - 77° 52' W H - + 3 km.

Please address all communications to:

Geophysical Laboratory
College of Mineral Industries
University Park, Pennsylvania, U.S.A.
(Formerly State College, Pennsylvania.
Please note change of address.)

During the period covered by this report, the three seismometers (Galitzem type) were in operation. From 1 September to 4 December 1953, the vertical and north-south components were recorded photographically. From 5 December onwards a photographic record was made of all three components. The east-west motion was also recorded by a pen glavanometer throughout the period of this report. The recording rate was 1.55 cm. per minute on one photographic recorder, 1.7 cm. per minute on the pen recorder.

The directions of another of the traces on the record corresponding to that of the ground were checked on. October 14, and were found to be



The free periods of the instruments were checked on January 14, 1953, and found to be:

Component	Seismometer Period	Galvanometer Period
North - South	16.7 sec.	2.6 sec.
East - West	17.0 sec.	Not measured
Vertical	Changed from 1.86 see prior to 1 Sept.	4.8 sec.

The east-west instrument was checked on January 22 and found to have a damping ratio of 2:3:1.

The period of the vertical component was changed on May 5, and has not been checked since. The damping and s ensitivity of the recorders underwent frequent adjustment.

The time is controlled by a Stromberg clock, which is compared daily with signals from radio station WWV. The time accuracy of the records is estimated to be about ± 1 second.

Date	Phase and component		G.M.C.T.	Remarks
10 Sept. '53	iP	N	04:18:15	Epicenter: 35°N, 32°E
	iS	N,E	04:28:29	O = 04:06:00
	i	N	04:48:11	Near west coast of Cyprees
				Δ = 8950 km.
				Courtesy U.S.C.G.S.
14 Sept. '53	e S?	N	00:53:54	Epicenter: 18.5°S, 178.5° E
	i PKKP	N	00:56:09	O = 00:26:36
	e	N	00:57:18	Depth about 60 km.
	i	N	00:58:02	Fiji Islands
	i SS?	N	01:01:44	Δ = 12,450 km.
				Courtesy U.S.C.G.S.
17 Sept. '53	e S	N	21:38:14	Epicenter: 20 1/2°S, 174°W
	e	N	22:01:40	O = 21:11:48
				Depth about 100 km.
				Tonga Islands
				Δ = 12,200 km.
				Courtesy U.S.C.G.S.
23 Sept. '53	iP	N,Z	02:26:33	Epicenter: 50.5°N, 156°E
	ePP	N	02:29:31	O = 02:14:36
	i S	N,E	02:36:16	Depth about 60 km.
	e SS	N	02:41:14	Northern Kurile Islands
	i	N	02:43:08	Δ = 8400 km.
	i SSS(?)	N	02:44:23	Courtesy U.S.C.G.S.
27 Sept. '53	eP	N,Z	06:12:03	Epicenter: 14°N, 58°W
	eS	N	06:17:12	O = 06:05:27
	i	N	06:18:27	Windward Islands region
				Courtesy U.S.C.G.S.
				Δ =
29 Sept. '53	eP'	Z	01:55:08	Epicenter: 36.5°S, 177°E
	ipP'	Z	01:56:25	O = 01:36:45
	ePP	E,N,Z	01:56:58	Depth 300 km.
	eSKS	Z	01:58:06	Off North Coast of North
				Islands, New Zealand
	iepPPP	Z,N	02:00:49	Courtesy U.S.C.G.S.
	i ?	N	02:03:23	
	i ?	N	02:06:45	Δ = 13,800 km.
	i SS	N	02:13:29	
	isSS	N	02:15:23	
30 Sept. '53	iP	N,Z	23:10:34	Epicenter: 22°N, 107.5°W
	e	Z	23:11:13	O = 23:04:08
	ePP	Z	23:11:37	Off coast of Sinaloa
	ePPP	Z	23:11:50	Mexico
	i	N	23:12:39	Courtesy U.S.C.G.S.
	iS		23:15.36	Δ = 3550 km.
6 Oct. '53		N,E		Seismic activity recognizable at 22:16:__

Date	Phase and component		G.M.C.T.	Remarks
11 Oct. '53	ipP	N	13:20:37	Epicenter: 50°N, 155.5°E
	isP	N	13:20:51	O = 13:08:34
	epPP	N	13:23:32	Depth about 60 km.
	ipS?	N	13:30:23	Northern Kurile Islands
	iPS?	N	13:30:45	Δ = 8700 km.
				Courtesy U.S.C.G.S.
13. Oct. '53	iP	Z	09:00:18	Epicenter: 30°N, 113.5°W
	iS	N	09:05:21	O = 08:53:45
				Northern Gulf of California
				Δ = 3500 km.
				Courtesy U.S.C.G.S.
17 Oct. '53	iP	N,Z	21:19:10	Epicenter: 52°N, 159° E
	e	N,Z	21:19:37	O = 21:07:22
	iS	N	21:28:42	Near South East Coast of Kamchatka
				Δ = 8500 km.
				Courtesy U.S.C.G.S.
21 Oct. '53	e S	N	12:00:40	Epicenter: 38°N, 20.5°E
				O = 18:39:50
				Near West Coast of Greece
				Courtesy U.S.C.G.S.
				Δ = 8000 km.
26 Oct. '53		N,E		Seismic activity observed at 01:10:-- and 07:43:--
27 Oct. '53	i S		18:38:27	Epicenter: 19°S, 66°W
	e ScS		18:39:38	O = 18:20:48
	i		18:41:42	Depth about 300 km.
				Southern Bolivia
				Courtesy U.S.C.G.S.
				Δ = 6,800 km.
4 Nov. '53	i PP	N,Z	04:09:30	Epicenter: 12.5°S, 166.5°E
	e		04:10:14	O = 03:49:04
	i		04:12:14	New Hebrides Islands
	e PS(?)	N,Z	04:18:56	Δ = 13,200 km.
	e		04:25:36	Courtesy U.S.C.G.S.
4 Nov. '53		N,E,Z		Seismic activity observed at 13:23:--
9 Nov. '53	eP	N,Z	17:37:19	Epicenter: 52.5°N, 159°E
	ePP	N	17:40:01	O = 17:25:42
	eS	N	17:46:51	Depth 60 km.
				Near east coast of Kamchatka
				Courtesy U.S.C.G.S.
				Δ = 8,200 km.

Date	Phase and component		G.M.C.T.	Remarks
10 ~~Oct.~~ Nov. '53	iP	N,E,Z	23:52:14	Epicenter: 50.5°N, 157°E
	esP	N	23:52:57	O = 23:40:20
	ePP(?)	Z	23:55:06	Depth about 60 km.
	e S	N	00:01:56	Near South Coast of
	iScS	N	00:02:16	Kamchatka
	i SP	N	00:02:48	Δ =8,700 km.
	e SS	N	00:07:07	Courtesy U.S.C.G.S.
13 Nov. '53	e	N	19:43:18	Epicenter: 13°S, 166°E
	e SS(?)	N	19:52:22	O = 19:15:37
				New Hebrides Islands
				Δ = 13,200 km.
				Courtesy U.S.C.G.S.
17 Nov. '53	iP	N,Z	13:36:02	Epicenter: 14°N, 92°W
	i	Z	13:36:51	O = 13:29:52
	iS	N,E	13:41:00	Near East Coast of
				Guatemala
				Δ = 3,250 km.
				Courtesy U.S.C.G.S.
25 Nov. '53	iP	N,E,Z	18:02:25	Epicenter: 34°N, 141°E
	i	Z	18:05:48	O = 17:48:49
	e	N	18:06:04	Near South coast of
	i PP	Z	18:06:18	Honshu, Japan
	iS	N,E	18:13:00	Δ = 10,800 km.
				Courtesy U.S.C.G.S.
26 Nov. '53	iS	N	00:27:36	Epicenter: 34°N, 141°E
	i	N	00:32:08	O = 00:03:28
				Off South Coast of
				Honshu, Japan
				Δ = 10,750 km.
				Courtesy U.S.C.G.S.
26 Nov. '53	i S?	N	08:38:34	Epicenter: 34°N, 141°E
				O_1 = 08:14:12
				O_2 = 08:19:49
				O_3 = 08:26:44
				Off South Coast of
				Honshu, Japan
				Δ = 10,700 km.
				Courtesy U.S.C.G.S.
27 Nov. '53		N		Seismic activity recognizable at 23:55:—
29 Nov. '53		N		Seismic activity recognizable at 01:32:—

Date	Phase and component		G.M.C.T.	Remarks
1 Dec. '53	eP	Z	05:22:37	Epicenter: 29°N, 128.5° E
	iPP	N,Z	05:27:00	O = 05:08:30
	ipPP	N	05:27:06	Depth about 60 km.
	ePPP	N	05:29:16	Ryukyu Islands
	iSKS	N	05:32:55	Δ = 11,750 km.
	e pS	N	05:34:40	Courtesy U.S.C.G.S.
	e PS	N	05:36:24	
	e SS	N	05:41:29	
1 Dec. '53		N		Seismic activity observed at 20:54:—
2 Dec. '53	i	N,Z	04:47:20	Epicenter: 3.5°S, 141.5°E
	i	N	04:51:12	O = 04:24:50
	i	N	04:51:26	Northern New Guinea
	e	N	04:52:46	Courtesy U.S.C.G.S.
	e	N	04:52:58	Δ = 14,400 km.
	e	N	04:53:13	
	e	N	04:55:45	
	e	N	05:02:54	
4 Dec. '53	iP	N,Z	15:01:57	Epicenter: 49.5°N, 129°W
	iP	Z	15:02:23	O = 14:54:46
	iPP	N,E	15:03:06	Off Coast of Vancouver
	i	Z	15:03:21	Island
	i	N	15:04:18	Courtesy U.S.C.G.S.
	e S	N	15:07:44	Δ = 3,950 km.
7 Dec. '53	iP	N,E,Z	02:15:59	Epicenter: 22°S, 68.5°W
	ipP	Z	02:16:20	O = 02:05:37
	ipPP	Z	02:18:42	Depth about 100 km.
	i S	N,E	02:24:21	Northern Chile
	esS	E	02:25:08	Courtesy U.S.C.G.S.
				Δ = 7,100 km.
12 Dec. '53		N,E,Z		Seismic activity observed at 08:48:—
12 Dec. '53	iP	E,Z	17:39:37	Epicenter: 3.5°S, 81°W
	eS	E	17:46:04	O = 17:31:22
				Near Coast of Peru
				Δ = 4,900 km.
				Courtesy U.S.C.G.S.

We acknowledge with thanks receipt of the following bulletins and other publications between 15 June 1955 and 1 November 1955.

Arkansas Univ. Seis. Bull	April - June, 1955
Australia, Geophysical Obs. Rpt.	February - June, 1955
Bucarest Prov. Seis. Bull.	January - March, 1955
Buenos Aires, Seis. Bull	20 June - Sept. 12, 1955
California Univ., Seis. Bull	July - Dec., 1953
Cartuja, Bull. Prov. Seis. Bull	1954 April - Sept., 1955
Chile, Seis. Bull.	Jan. - March, 1955
Copenhagen, Seis. Bull	1948; 1949; 1950;1951
Czechoslovakia, Seis. Bull. Prague, Cheb. Hurbanova	March - June, 1955
Fordham Univ., Seis. Bull.	June, July, 1955
Istambul, Prelim Seis. Bull.	Aug. - Dec., 1953 Mar. - Sept., 1954
Jerusalem, Seis. Bull.	31 March - 28 Aug. 1955
Jesuit Seis. Assoc. Prel. Bull.	Jan. - April, 1955
Lwire - Uvira I.R.S.A.C., Seis. Bull.	Jan. - June, 1954
Madagascar, Seis. Bull.	July - Sept., 1954
Manila, Seis. Report	March - Aug., 1955
Matsushiro, Seis. Obs. Bull.	March - June, 1955
New Zealand, Seis. Rpt.	April - Dec., 1952
Ottawa, Seis. Bull.	Oct. - Dec., 1953
Pasadena, Preliminary Seis. Bull. Bulletin	Nov., 1954; 29 March - July 31, 1955 1954, April - June, 1955
Perth, Seis. Bull.	Jan. - March, 1955
Potsdam Seismometiesche Buleachtungen	1939 - 1948; 1952
Queensland Univ., Seis. Bull.	Nov. - Dec., 1952
Quetta, Seis. Bull.	Jan. - June, 1955
Rathfarnham Castle, Seis. Rpt.	Jan. - June, 1955
Rivista Di Geofisica Applicata	1954
Rome, Seis. Bull.	April, May, 1955
Santa Clara, Seis. Bull.	April - Sept., 1955
Schweizerisches Erdbebulletin	April, June, July, Aug., 1955

Strasbourg, Seis. Bull.	Jan. - Sept., 1955
Monthly Bull. of Exchange	1955 Jan., Feb.; 1954 Nov. Dec.
Tacubaya Seis. Bull.	April - July, 1955
Geophysical Magazine	1955
Trieste, Geophysics Obs. Rpt.	July 1954 - March 1955
U.S. Coast and Geodetic Survey	April - Dec., 1948
Seis. Bull.	May - Aug., 1955
Prelim. Det. Epicenters	43-55 to 86-55
Uccle, Seis. Bull.	1953
Victoria, Seis. Bull.	Jan. - March, 1955
Wellington, Seis. Bull.	Jan. - June, 1954
West Virginia Univ., Seis. Rpt.	Jan. - June, 1955

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