H A R V A R D U N I V E R S I T Y

Division of Geological Sciences

S E I S M O G R A P H S T A T I O N

Oak Ridge Observatory

Bulletin Number 14

January 1, 1940 through June 30, 1940

Paper No. 79, published under the auspices of the Committee on Research in Experimental Geology and Geophysics under the Division of Geological Sciences at Harvard University

Constants of the station:

Latitude: 42° 30' 36" North
Longitude: 71° 33' 45" West
Altitude: 130 meters

Mail address for the station:

Seismograph Station
c/o L. D. Leet
Harvard, Massachusetts, U. S. A.

Time:

All determinations are reduced to Universal Time. Clock rated daily by time signals from Arlington, Virginia. Accurate within 0.1 second unless otherwise specified.

Instruments:

Three Benioff 112.7 kg. long and short period combinations, (one vertical, and two horizontals oriented respectively north-south and east-west), with galvanometric registration and magnetic damping.

Normal Operating Constants

Instrument	T_o	T_g	e	Drum speed	Displacement for acceleration of 10^{-6} gravity
ZSP	1.0	0.2	20:1	60 mm/min	15 mm
NSP	1.0	0.2	20:1	60 mm/min	15 mm
ESP	1.0	0.2	20:1	60 mm/min	15 mm
ZLP	1.0	14.0	20:1	30 mm/min	12 mm
NLP	1.0	14.0	20:1	30 mm/min	12 mm
ELP	1.0	14.0	20:1	30 mm/min	12 mm

Displacements of the ground upward or toward the north or east are designated by +, down or toward the south or west by -.

Tables used:

For teleseisms, Jeffreys-Bullen 1939
For local earthquakes and blasts, Harvard travel times (Reference: Bulletin Seismological Society of America, Vol. 31, No. 4, October 1941)

Date 1940	Phase		Time (U.T.) h m s	Remarks
Jan. 2	iP$_2$	ZE	03-05-45.6	Reported felt in Littleton, Massachusetts. H=03-05-44.5
	iS$_1$		46.6	Epicenter at 43°31' N, 71° 28'W Δ = 3.2 km.
Jan. 3	i	Z.NE	20-00-47.8	Blast
	iN	ZNE	48.3	
Jan. 6	iP'	Z	14-28-17	$\Delta_{PP-P'}$=184° H=14-03-16
	iPP	ZE	34-05	USCGS: H= 14-03.4; Epicenter
	iPPS	ZE	35-43	at 22° S, 170° E; Δ = 125°5
	i	E	38-05	JSA: H = 14-03-38; Epicenter
	eSS	N	40-55	at 21.8 S, 169.4 E; depth
	iPSPS	N	41-37	of focus 80-90 km.
	eL	ZNE	15-05	
Jan. 7	i	Z	21-43-29.0	Initial trace amplitude -11.5
	i	NE	30.0	mm. Deep focus
Jan. 9	i (P$_2$)	ZNE	19-45-44.5	Dilatation to southwest.
	i	N	46-21.3	Δ about 360 km.
	i (S$_2$)		27.6	
Jan. 17	eSP	N	01-43-25	USCGS: H = 01-14-53; epicenter
	eScSP	E	44-27	at 17°N, 148°E; depth near
	e	N	45-31	normal; Δ=110°3
	e	E	02-00	JSA: H = 01-14-57; epicenter
	eL	N	05	at 17°2 N, 147.3 E
Jan. 26	eL	ZNE	07-44	
Jan. 26	eL	ZE	18-04	
Jan. 27	eL$_R$	ZE	10-35	
Jan. 28	e	N	08-51	
Jan. 30	eP$_1$	Z	10-45-00.5	Local. Δ = 109 km.
	iS$_1$	NE	13.9	H = 10-44-48.4
	i (S$_2$)	E	14.2	
	i	N	15.5	
	i	Z	16.2	
Jan. 30	i (S$_2$)	Z	12-28-14.2	Local
	i	N	15.4	
	iS$_1$	ZE	16.2	
Feb. 7	iP	Z	17-34-14	Δ_{S-P} = 69°5; H=17-18-07
	iS	E	36-18	USCGS: H = 17-15-56; epi-
	iScS	N	37-14	center at 52°N, 174°5 E
	eL$_Q$	NE	48	JSA: H = 17-16-16; epi-
	eL$_R$	Z	55	center at 52°N, 177°1 E;
				depth 60- km.

Date 1940	Phase	Time (U.T.) h m s	Remarks
Feb. 8	eL	ZNE 08-38	JSA: H = 08-05-50; epicenter at 30°S ?, 121°5 W
Feb. 10	e	ZNE 21-(0-09	
Feb. 12	iP	ZN 00-12-37	JSA: H=00-01-37; epicenter
	i	E 39	at 30°0 S, 71°0 W
	eL	ZNE 42	
Feb. 12	iP	ZNE 09-37-53	JSA: H=09-17-57; epicenter
	eL	ZNE 51	at 34°0 N, 160°0 W; depth 100 km.
Feb. 13	iP	ZE 20-54-02.5	Local, probably blast in
	iS	ZNE 33	New York State. Δ=174 km. H=20-53-34.6
Feb. 20	ePP	Z 02-37-41	USCGS: H=02-18-09; epicenter
	eSP	Z 49-15	at 13°S, 167°E.
	eL	ZNE 03-20	
Feb. 20	e	Z 04-04-57	
Feb. 22	i	Z 21-37-16.6	Local
	i	Z 17.6	
Feb. 24	eL	ZNE 15-08	
Feb. 29	i	Z 16-19-07	
Mar. 2	iP_1	ZNE 14-15-59	$\Delta(S_1-P_1)$ = 135 km.
	iF	ZNE 16-14	H = 14-15-36.5
	iS_2	Z 15	Woodus, Connecticut
	iS_1	Z 15.5	
Mar. 3	eL	ZNE 01-07	
Mar. 4	eL	ZNE 20-15	JSA: H = 19-58-58; epicenter at 13°6 N, 46°2 W
Mar. 6	e	NE 00-19.5	
	e	Z 20	
Mar. 6	eL	Z 19-44	
Mar. 7	eL	Z 07-49	
Mar. 13	iP_1	ZNE 01-29-22.1	$\Delta(S_1-P_1)$ = 140 km.
	eF	NE 37.3	H = 01-28-58.8
	iS_2	ZN 38.0	Woodus, Connecticut?
	iS_1	ZE 39.2	
	i	N 40	
	i	Z 47	

Date 1940	Phase	Time (U.T.)	h m s	Remarks
Mar. 14	e	Z	18-42-37	
Mar. 14	eL	Z	21-40	
Mar. 14	eL	Z	27-52	
Mar. 18	eL	ZNE	00-40	
Mar. 19	i	Z	00-45-45	Caribbean?
	e	Z	49-38	
	e	Z	01-07-52	
Mar. 20	eL	ZNE	00-07	
Mar. 20	eL	ZNE	06-07	
Mar. 23	eL	ZNE	21-19	
Mar. 27	iP	Z	18-42-16.5	JSA: H=18-41-31; epicenter
	eL	Z	18-12	51°5 N, 17°5 W
Mar. 28	eL	ZNE	21-39	
Mar. 29	iP_1	ZN	11-43-18.5	H=11-42-34.5; Δ=270 km.
	i	E	37	Felt in vicinity of
	eS_1	ZNE	44	44°47'N, 70°W (Stark and
	eS_2	E	47	New Vineyard, Maine)
	iS_1	ZNE	53	
Mar. 29	i	Z	16-07-22	
	e	Z	08-55	
	e	Z	09-50	
	e	Z	14-32	
Mar. 30	eL	Z	00-43	
Mar. 30	eL	Z	05-07	
Mar. 31	eL	Z	17-28	
Apr. 1	ePP	ZE	11-41-34	JSA: H=11-18-53; epicenter
	ePS	Z	50-48	at 5°5 S, 137°5 E
	eL	Z	18-32	
Apr. 8	i	Z	09-01-04	
	eL	Z	36	
Apr. 10	eL	Z	21-00	
Apr. 11	eL	Z	09-58	

Date 1940	Phase		Time (U.T.) h m s	Remarks
Apr. 11	iP_1	ZE	11-39-28.5	Compression to east
	iS_1	ZN	29.1	H = 11-39-27.7
	i	E	29.4	Δ = 5 km.
Apr. 11	eP_2	ZNE	14-59-00.5	Blast at North Branford,
	iP_1	ZNE	01.1	Connecticut.
	eS_2	N	19.2	H = 14-58-33.3
	i	E	20.2	Δ = 165.3 km
	iS_1	ZNE	21.9	
Apr. 11	eL	Z	18-47-20.5	Nearby blasting?
Apr. 12	eP_1	E	01-58-40	H = 01-58-10.5
	eF	ZE	59-15.1	Δ = 230 km.
	eS_1	NE	16.1	
Apr. 12	iS_2	ZN	02-00-25.9	Local
	iS_1	E	27.4	
Apr. 15	iP_1	ZE	18-34-11.6	H = 18-34-04.3
	iS_1	ZNE	16.1	Δ = 45 km.
	iL	ZE	18.1	Probably blast
Apr. 15	e	ZNE	19-30-54.6	Local or blast
Apr. 15	iL	ZE	20-43-14.6	Blast
Apr. 15	eL	ZE	22-01-42	Blast?
Apr. 16	eS_1	Z	00-05-42	Local or blast
Apr. 16	iP	ZNE	06-13-55	Compression to southeast, trace amplitudes +6.3 mm, 2.5 mm S, 2.5 mm.E.
	i	E	19-17	Δ(S-P) = 70°;H=06-07-45
	eS	NE	28-02	USCGS: H=06-07.7; epicenter
	eL_Q	NE	45	at 52°.6 N, 173°.3 E
	eL_R	ZNE	47	JSA: Two shocks from the
	eP'P'	Z	47-11	same epicenter at 52°.6 N, 175°.6 E; H^1=06-07-56 H^2= 06-43-16
Apr. 16	iP	ZNE	06-54-15	See above.
	eP'P'	Z	07-22-10	
Apr. 18	eP or P'	Z	20-02-27	
	eL	ZE	45	
Apr. 19	eP or P'	Z	00-18-01	
	eL	ZE	45	
Apr. 19	e	Z	11-23-34	

Date 1940	Phase	Time (U.T.) h m s	Remarks
Apr. 20	iP_1	ZNE 14-43-18.3	Rarefaction to southwest
	iS_1	ZNE 32.0	Blast. H = 14-12-59.8
	iL	ZNE 39.5	$\Delta(S_1-P_1)$ = 112 km.
Apr. 20	iP_2	ZE 14-49-43	H = 14-49-30; Δ = 187 km.
	iS_2	ZNE 50-05	Probably blast in New York
Apr. 26	eL	ZNE 10-35	
Apr. 26	i	Z 10-43-32.7	
Apr. 26	i	ZNE 13-28-45	Deep focus
Apr. 27	eL	ZNE 19-03	
May 2	e	ZNE 16-07-44	
May 3	i	ZNE 21-47-36	Local or blast
	i	ZNE 48-29	
	i	ZNE 50	
May 4	iP	Z 07-35-21	Rarefaction. Δ(S-P)=70°3
	iS	NE 44-30	H = 07-24-09
	eL	ZNE 58	USCGS: H = 07-24.1; epicenter at 53° N, 173° E
			JSA: H = 07-24-22; epicenter at 52°6 N, 175°8 E
May 4	iP_2	ZNE 16-16-24.3	Blast. H = 15-15-58.8
	iS_2	ZNE 42.9	Δ = 156 km.
May 4	eL	ZE 21-32	USCGS: H = 21-01-55; epicenter at 35°5 N, 58°9 E
May 5	iP	Z 02-12-24	Compression
	eS	E 19-28	JSA: H=02-03-54; epicenter
	eSS	E 22-12	5°9 S, 81°4 W; depth about
	eL	ZE 24	40 km.
May 7	i	ZN 22-35-27	42° N, 34° E (Zurich)
	eL	ZNE 23-00	
May 8	iP_2	ZNE 20-59-23.4	Blast. Δ=152.5 km.
	iS_2	ZNE 41.6	H = 20-58-58.7
May 9	eP_1	Z 03-23-02	Tentative solution:
	eS_n	N 23-58	Δ = 940 km.
	eS_2	NE 24-32	H = 03-20-29
	iS_1	ZNE 25-01	
	i	E 25-15	

Date 1940	Phase	Time (U.T.) h m s	Remarks
May 10	eL	ZNE 01-44.0	USCGS: H = 01-25.1; epicenter at 22 1/2° N±, 109 1/2°W±
May 10	iP'	ZNE 13-19-09	Felt in central Java. USCGS: H=13-59-46; epicenter at 9°.2 S, 107°.7 E; depth 140 km.
May 11	iP	Z 14-05-54	Δ(S-P)=69°.5, H=13-54-47
	eS	NE 14-58	USCGS: H=13-54-37; epicenter
	eScS	NE 15-48	53°.2 N, 172°.0 E
	eL_Q	NE 30	JSA: H=13-54-56; epicenter
	eL_R	Z 34	at 52°.5 N, 175°.6 E
May 12	eL	ZNE 21-05	USCGS: H=20-43.8; epicenter at 19 1/2° N, 106 1/2° W
May 12	i(P)	ZNE 17-13-40	Probably in the Caribbean
	i(S)	ZNE 17-40	Δ = 22°.5
May 13	i	NE 16-30-13.5	Local or blast
	i	NE 59.5	
May 14	iP	Z 20-00-41.2	Local or blast
	iS	Z 54.3	
May 16	e	N 14-01-22	St. Lawrence River near
	e	N 43	L'Assomption, P.Q.
	e	Z 49	Δ = 398 km.
	e	E 59	
	iS_1	ZNE 02-02	
May 17	iP	Z 02-06-46	Δ(S-P)=36°7; H=01-59-39
	ePP	Z 08-04	JSA: H=01-59-40; epicenter
	eS	E 12-27	at 7°.9 N, 82°.1 W
	eS	N 12-36	Reported felt in Balboa,
	eL	ZN 18	P.C.Z.
May 18	eL	ZNE 05-22	Pasadena: H = 05-04-02; epicenter 34°03'N, 116°17' W
May 18	iP_1	ZNE 20-01-01.4	Rarefaction; trace amplitudes: Z,-4.0mm; N,-2.5mm; E,-3.5mm
	iS_1	ZNE 14.0	Δ=103 km; H=20-00-44.6. Blast
May 19	eP	Z 04-43-46	Δ(S-P)=37°.5; H=04-36-33
	eS	N 49-32	JSA: H=04-36-49; epicenter at
	eS	E 34	33°.0 N, 115°.0 W
	iL	ZNE 55-19	Pasadena: 32°.8 N, 115°.5 W

Date 1940	Phase		Time (U.T.) h m s	Remarks
May 19	iP	ZN	15-29-10	Rarefaction to north; trace amplitudes: Z, -14mm; N, +2.5mm
	ipP	Z	31-15	Δ=80°; depth 600 km;
	e	E	32-10	H = 15-17-48
	iS	ZE	38-30	USCGS: H=15-17-55; epicenter
	e	Z	39-11	at 51°N, 148°E; depth 580 km.
	esS	E	41-56	JSA: H=15-18-00; epicenter at
	e	Z	42-55	50°3N, 148°2E; depth 600 km.
May 23	eL	ZE	06-39	
May 24	iP	ZN	16-43-14	Compression to north.
	ipP	Z	43-34	Δ(S-P)=54°; H=16-33-51
	iS	E	50-46	USCGS: H=16-33-46; epicenter
	iScS	E	53-06	at 12°S, 78°W; depth 40 km.
	eSS	E	54-40	Destructive in western Peru.
	eL	ZNE	57	
	F		21-35	
May 24	eP	Z	22-07-14	Δ(S-P)=54°; H=21-57-51
	eS	E	14-46	USCGS: H=21-57-40; epicenter
	eScS	E	16-58	at 12°S, 78°W; depth about
	eSS	E	18-36	40 km.
	eL	ZE	26	
May 28	ePP	Z	09-59-45	USCGS: H=09-40-41; epicenter
	ePP	Z	02-12	at 2°3 S, 139°1 E
	ePKS	Z	03-25	Δ = 135°
	eL	ZE	40	
May 29	eP	ZNE	02-05-38	USCGS: H=01-57-53; epicenter
	e(ScS)	ZNE	15-20	at 66°2 N, 134°W
	e	ZNE	19-06	
May 31	eL	ZE	01-39	
May 31	eL	ZE	03-30	
May 31	eL	ZE	05-56	
June 2	iP_1	ZNE	23-58-52.8	Rarefaction to southeast
	iS_1	ZNE	53.9	Azimuth 127° (E 37°S)
				$\Delta(S_1-P_1)$=9 km.
June 3	iP	ZE	18-12-20	Δ(S-P)=35°9; H=18-05-16
	eS	NE	17-58	USCGS: H=18-05.4; epicenter
	e	NE	20-33	at 25°N, 110°W
	eL_Q	E	23	JSA: H=18-05-11; epicenter
	eL_R	Z	24.8	at 24°4 N, 110°4 W; depth 50 km.

Date 1940	Phase	Time (U.T.) h m s	Remarks
June 5	iP	ZNE 11-09-02.5	Δ(S-P)=41°5; H=11-01-13
	iS	E 15-20	USCGS:H=11-01-00;epicenter
	eSS	E 17-36	at 68°N, 138°W
	eScS	E 18-20	
	eL	ZNE 19	
June 7	eL	ZNE 08-24	
June 7	eP	ZNE 17-28-53	Local; Δ(S-P) = 215 km.
	eS	ZNE 29-18	Probably blast in New York state
June 8	eL	ZNE 04-58	
June 10	i	ZNE 21-05-31	
June 10	iP_a	ZNE 21-24-51	Local, probably blast;
	iS_a	ZNE 25-13	Δ(S-P)=188 km;H=21-24-21
June 11	eL	ZNE 19-19	
June 12	eL	ZNE 09-42	
June 12	eL	ZNE 13-02	
June 12	eL_Q	NE 14-52	
	eL_R	Z 57	
June 13	iS_a	ZNE 19-01-57	Local, possibly blast.
June 17	iP	ZE 10-38-09	Δ(S-P) = 72°7
	ePP	Z 40-41	H = 10-26-37
	e	Z 42-15	
	eS	ZE 47-35	
June 18	i	ZN 14-13-13	
	e	Z 14-52	
June 18	eP	Z 18-50-15	Δ(S-P)=69°;H=18-39-06
	eS	E 59-20	JSA:H=18-39-17;epicenter
	eL	ZNE 19-15	at 54°0 N, 175°4 E
June 20	e	ZNE 16-01-32	Blast?
	e	ZNE 03-02	
	e	ZNE 14	
June 20	e	ZNE 17-34-46	

Date 1940	Phase	Time (U.T.)	h m s	Remarks
June 22	iP'	Z	11-55-32	Δ about 135°; depth about 300 km.
	epP'	Z	56-26	
	iSKP	Z	58-59	
	esSKP	Z	12-00-16	
	eSKKS	Z	04-58	
	eL	N	10	
June 23	eL	ZNE	07-13	
June 23	eL	ZNE	21-58	
June 24	iP_1	N	20-42-02.7	Blast. H = 20-41-58.5
	iS_1	N	06.0	Δ = 27 km.
	iL	N	08	

L. Don Leet
Mary P. Collin s

Cambridge, Massachusetts
August 20, 1942

HARVARD UNIVERSITY

Division of Geological Sciences

SEISMOGRAPH STATION

Oak Ridge Observatory

Bulletin Number 15

July 1, 1940 through December 31, 1940

Paper No. 80, published under the auspices of the Committee on Research in Experimental Geology and Geophysics under the Division of Geological Sciences at Harvard University

Constants of the station:

Latitude: 42° 30' 26" North
Longitude: 71° 33' 45" West
Altitude: 180 meters

Mail address for the station:

Harvard Seismograph Station
Geological Museum
Cambridge, Massachusetts, U.S.A.

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All determinations are reduced to Universal Time. Clock rated daily by time signals from Arlington, Virginia. Accurate within 0.1 second unless otherwise specified.

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Instrument	T_o sec.	T_g sec.	e	Drum speed	Displacement for acceleration of 10^{-6} gravity
ZSP	1.0	0.2	20:1	60 mm/min	15 mm
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Displacements of the ground upward or toward the north or east are designated by +, down or toward the south or west by -.

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July 1	iP_1	Z	19-36-30.0	Blast. H = 19-36-01
	iS_1	Z	51.7	Δ = 178 km.
July 1	i	Z	19-48-58.8	
July 1	iP	Z	21-36-03.2	Δ(S-P)=32°; H=21-29-33
	iS	E	41-14	
	eL	ZE	45	
July 2	e	Z	19-28.0	
	e	Z	37-18	
	e	E	43-44	
	eL	ZE	20-03-50	Rayleigh waves from west
July 3	e	Z	16-22-41	
	eL	ZE	25-54	
July 3	i	Z	18-34-48	Compression
July 5	i	ZNE	18-29-21.2	Blast
	iL	ZNE	22.5	
July 5	iP_1	ZN	21-16-16.2	Local. H=21-16-06.7
	i	Z	17.2	Δ=58 km.
	eS_1	NE	23.3	
	e	Z	23.9	
	eL_Q	E	25.2	
	eL_R	ZN	28.7	
July 6	iP	Z	03-46-19	USCGS: H=03-40-00; epi-
	epP	Z	49	center at 11°N, 61°W;
	iS	ZE	51-09	depth 175 km.
				JSA: H=03-40-24; epicenter at 12°.3 N, 64°.4 W; depth 160 km.
July 6	eP	Z	07-32-54	Ksara: H= 07-21.2; Δ(P-H) = 75°
July 6	e	E	18-14-20	
	e	ZE	15-13	
	e	Z	26	
	e	ZE	18-16	
July 6	iP	ZNE	21-07-29	Deep focus
July 7	i	ZNE	23-03-35.7	
	i	Z	57.6	

Date 1940	Phase		Time (U.T.) h m s	Remarks
July 10	iP	ZN	06-02-02.7	From Brunner chart, Δ=92°6;
	i	ZE	11	H=05-49-53; depth=600 km.
	ipP	Z	04-11	USCGS:H=05-50-30; epicenter
	ePP	Z	05-07	at 45°N, 128°E; depth
	e	Z	52	400-500 km.
	e	Z	07-31	JSA:H=05-49-50; epicenter
	e	Z	08-34	at 45°6N,128°6E; depth
	eSKS	E	11-29	500-600 km.
	iS	E	12-09	
	isS	E	15-53	
	eSS	E	18.5	
July 11	iP_a	ZNE	21-20-48.2	Compression to northeast.
	iP_1	ZNE	48.9	Blast at North Branford,
	iF	ZNE	21-06	Connecticut. Δ=165 km.
	iS_a	ZNE	07.7	H=21-20-21.8
	iS_1	ZNE	09.7	
July 12	eL	ZE	19-23.5	
July 13	iP	Z	16-54-30	Δ(S-P)=35°7; H=16-47-28;
	eS	E	17-00-06	USCGS:H=16-47-30; epicenter
	eL	ZE	02	7°1 N, 83° W
July 14	iP	ZNE	06-03-49	Compression to southeast.
	iS	E	12-42	Δ(S-P)=67°; H=05-53-52
	eL_Q	E	24	USCGS:H=05-52-48; epicenter
	eL_R	ZN	29	at 52°N,178°E
July 14	e	Z	09-05-37	
July 16	e	E	00-32	
	eL	Z	36	
July 16	eP	Z	03-29-12	Δ(S-P)=72°; H=03-17-50
	eS	E	38-32	Felt in Hawaiian Islands
	eL	ZE	52.0	
July 16	eP'	Z	05-05-00	Δ of the order of 125°-130°
	e	Z	09-16	
	eSS	E	26-51	
	eL	ZE	58.0	
July 16	iP_1	N	19-40-32.7	Blast. Δ=169 km
	iS_1	N	53.4	H=19-40-05.1
July1 6	eL	ZE	20-14	
July 17	eL	ZE	08-00.0	
July 19	iP_1	Z	20-44-59.2	Blast. H=20-44-37; Δ=136 km.
	iS_1	Z	45-15.8	

Date 1940	Phase		Time (U.T.) h m s	Remarks
July 20	eP	Z	02-08.2	Δ of the order of 105°-110°
	eP'	Z	10.5	Apia: H=01-53-54; epicenter
	ePP	Z	12.3	between Samoa and Tonga
	ePS	ZE	38-15	Islands
	eSS	E	37.5	
	eL	ZE	47	
July 20	e	ZNE	18-51-35	
	e(L)	ZE	54-28	
July 21	eP'	Z	15-57-45	Δ of the order of 150°
	iPP	ZNE	16-01-12	
	eL	ZE	44	
July 23	iP	Z	14-15-16	Δ of the order of 45°
	eL	Z	28	
July 25	iP_1	Z	17-47-14.3	Blast? H=17-46-26.3;
	iS_1	Z	50.2	Δ=294 km.
July 25	iS_1	Z	19-48-33.5	Blast?
July 26	iP_1	Z	18-05-43.3	Blast. H=18-05-28.0
	iS_1	Z	54.8	Δ=94 km.
July 27	iP	ZNE	13-39-03	Compression to northeast
	eS	E	44-19	Δ(S-P)=32°7; H=13-38-27
	eL	ZE	49	JSA: H=13-38-30; epicenter at 13°7N, 91°3 W; depth 100 km.
July 30	eP	Z	00-23-48	Δ about 75°
	e	Z	24-36	
	eS	Z	33-29	
	eL_R	ZNE	45	
Aug. 1	iP	ZNE	15-21-17	Δ(S-P)=88°6; H=15-08-26
	iPcP	Z	25	
	i	Z	22-13	USCGS: H=15-08-21; epicenter
	iPP	ZN	24-59	44°5 N, 140°0 E
	i	Z	26-13	Δmeas=89°
	iPPP	Z	52	
	eSKS	ZNE	32-04	
	iS	ZNE	09	
	iScSP	ZN	33-28	
	eL	Z	39	
Aug. 3	iP	ZNE	12-12-52.1	Local. Δ=180 km.
	i	Z	56.5	
	iS	ZNE	14.1	
	i	Z	15.1	
	iL	ZNE	21	

Date 1940	Phase	Time (U.T.) h m s	Remarks
Aug. 6	e	ZNE 05-20-10.5	Local
	eL	ZNE 13	
Aug. 6	e	ZNE 09-49-33	
	e	ZNE 35.5	
Aug. 6	e	N 23-56-09	Local
	e	ZNE 19.0	
	e	ZNE 23.4	
Aug. 7	e	ZNE 03-06-30	
	e	ZNE 57	
Aug. 7	eL	ZNE 10-00-07	Local
Aug. 10	i	Z 20-34-40.0	
Aug. 11	eL	ZNE 17-41	Distant
Aug. 12	eL	ZNE 23-46-10	Local
Aug. 13	eP	Z 15-50-28	JSA:H=15-37-49;epicenter
	e	Z 54-30	at 49°0 N, 132°0 E
	eLR	ZNE 16-15	
Aug. 13	iP	ZNE 17-53-33.3	Local or blast
	iS	ZNE 43.2	H=17-53-20.0; Δ=81 km.
	eL	ZNE 47.8	
Aug. 15	eL	ZNE 05-01.5	Distant
	eL	ZNE 30	
Aug. 17	eL	ZNE 20-46-18	Blast
Aug. 18	eL	ZNE 06-57	Distant
Aug. 20	eL	ZNE 18-34	Distant
Aug. 21	i	N 12-24-16.6	Local or blast
	i	N 26.4	
	eL	N 30	
Aug. 22	iP	ZNE 03-37-20	USCGS:H=03-27-18;epicenter
	iP	ZNE 30	at 51°9 N, 164°9 W
	ePP	NE 39-43	JSA:H=03-27-17;epicenter
	ePPP	ZNE 41-05	at 52°2 N, 165°8 W;several
	eS	NE 45-45	weak impulses followed by
	eL	ZNE 57	severe shock about 10 seconds later.
Aug. 24	eL	ZE 14-28.5	

Date 1940	Phase	Time (U.T.) h m s	Remarks
Aug. 24	iP	ZNE 21-48-39.6	Local.
	i	Z 49-01.2	
	iS	ZNE 04.4	
Aug. 26	i	Z 02-37-17.4	
Aug. 26	eP	ZNE 05-08-53	JSA: H=05-00.8; epicenter
	eS	ZNE 15-42	near 21° N, 90°.5 W
	eL	ZNE 23	
Sept. 6	e	Z 03-03-41	
Sept. 7	e	E 17-17-10.5	
	i	E 34.4	
	i	E 35.7	
Sept. 7	i	NE 17-53-40.0	
	i	E 48.4	
	iL	NE 53.7	
Sept. 8	i	NE 10-26-20.6	
Sept. 11	iS_1	ZNE 01-09-17	Felt at Quebec City and Beaupre.
Sept. 11	e	Z 13-36-14	New Zealand suggests epicen-
	e	Z 38-00	ter in Solomon Islands-
	e	NE 14-09.5	New Guinea region.
Sept. 12	eL_R	ZNE 14-14.5	Period 60 secs. Source NW
Sept. 13	e	Z 15-08-40.5	Local
	e	ZNE 09-01	
Sept. 18	i	ZNE 15-19-38	
Sept. 19	eP'	Z 18-38-36	New Zealand: H=18-19.7;
	e	Z 40-46	epicenter near 23°s,169°E
	eL	N 19-12	
Sept. 22	iP	ZN 23-09-58.4	Δ(S-P)=58°.5;H=22-59-59
	e(PP)	Z 13-13.5	Probably somewhat deeper
	i	ZNE 17.5	than normal
	e	N 13-20	
	e	E 28	
	e	E 14-17	
	e	N 20	
	e	N 18-01	
	e	Z 21-09	
Sept. 29	i	ZNE 01-33-03.5	Deep focus

Date 1940	Phase	Time (U.T.) h m s	Remarks
Sept. 30	eL_R	ZE 12-18.5	Distant; from west
Sept. 30	eL_R	ZE 15-15.5	
Oct. 1	iP	ZNE 10-54-00	Deep focus
Oct. 1	eL	ZNE 28-40	Distant
Oct. 2	eL	ZNE 03-38.5	Distant
Oct. 4	iP	ZN 08-05-12	Δ(S-P)=33°
	ipP	Z 24	JSA:H=07-54-48; epicenter
	e	N 07-34	at 20°8 S, 70°4 W; depth
	e	N 11-04	75 km.
	iS	ZNE 13-56	
Oct. 5	eP	ZNE 14-45-36	JSA:H=14-38-30; epicenter
	ePP	ZNE 46-57	at 3°½ N, 84°3 W
	eS	N 51-00	
	eL	ZNE 56	
Oct. 6	eP	ZN 15-48-43	Δ(S-P)=63°
	e	Z 49-15	JSA:H=15-38.7; epicenter
	eS	E 57-03	near 18°S, 71° W
	eScS	E 58-35	
	eL	ZNE 16-11	
Oct. 7	e	Z 07-02-04	
	e	Z 05-13	
Oct. 11	eP	Z 08-02-00	JSA:H=07-53.3; epicenter
	e	Z 04-11	in region of 61° N, 149° W
	eS	E 09-17	
	eL	ZNE 18	
Oct. 11	iP	ZN 18-53-44	Compression to north
	iS	E 19-04-10	JSA:H=18-41-57; epicenter
	i	N 17	at 40°7 S, 73°6 W
	e	N 05-14	
	eL	ZNE 15	
Oct. 11	iP	ZNE 22-36-25.8	Local, probably blast.
	i	ZNE 29.6	
	i	ZNE 30.8	
Oct. 12	i	Z 02-54-11	
Oct. 13	eL	Z 14-24	
Oct. 13	e	ZNE 19-52-09	One group of short period, amplitudes gradually increasing and then decreasing; duration 3 1/2 min.

Date 1940	Phase		Time (U.T.) h m s	Remarks
Oct. 24	iP	ZNE	20-18-29.9	JSA:H=20-07; epicenter
	i	Z	49.5	near 33°5 S, 73°.0 W; depth
	eS	NE	38-07	approximately 100 km.
Oct. 25	iP	NE	20-15-07.5	Blast
	i	NE	03.5	
	iS	E	33.9	
	i	E	37.6	
Oct. 27	iP	ZNE	05-42-26	Compression to northeast; trace amplitudes: Z,+7 mm, N,+8 mm, E,+5 mm.
	iPcP	Z	43-45	Δ(S-P)= 35°7; H=05-35-26
	i	E	47-11	JSA: H=05-35-25; epicenter
	eS	E	48-02	at 10°S N, 84°7 W
	eSS	E	50-05	
	eL	ZNE	52	
Oct. 30	e	Z	03-35-37	
Nov. 8	eP	Z	11-37	
Nov. 10	iP	ZN	01-49-46	Δ=67°; H=01-39-09; depth of
	iS	NE	58-22	focus 150 km.
	i	NE	59-42	JSA:H=01-39-14; epicenter
	eL	ZN	02-04.5	at 45°8 N, 26°1 E; depth 150 km. Destructive in Roumania
Nov. 10	i	ZN	20-46-10.5	Aftershock of above?
	i	E	51-20	
	i	E	54-00	
Nov. 16	eL	ZNE	03-09 ca	
Nov. 17	eL	ZNE	04-19	
Nov. 19	eP	Z	15-14-52	JSA:H=15-01-47; epicenter
	epP	Z	15-08	near 40°7 N, 142°3 E;
	eL	ZNE	52	depth about 50 km.
Nov. 23	eP	ZN	03-55-49	Δ(S-P)=35°6; H=03-48-48
	e	ZNE	57-03	USCGS:H=03-48-52; epicenter
	eS	NE	04-01-25	at 9° N, 84° W.
	eL	NE	04	
Dec. 3	i	ZE	17-35-07	Local or blast
	e	ZNE	27	
	i	ZNE	29.3	

Date 1940	Phase	Time (U.T.) h m s	Remarks
Dec. 3	i	ZE 17-36-08.2	Repetition of previous
	e	ZNE 28.5	shock
	i	ZNE 31	
Dec. 5	iP_1	N 20-07-54.2	Blast. H=20-07-41.1
	e	N 57.0	Δ=80 km.
	iS_1	ZN 08-04	
	i	Z 05.2	
Dec. 8	i	ZN 06-32-36	Deep focus
Dec. 20	iP_a	ZNE 07-27-51.4	Felt widely in New England
	iS_a	ZNE 28-11	H=07-27-36; epicenter at 43°30'N, 72°17' W. See Bull. Seis. Soc. Am., Vol. 32, No. 2, 1942
Dec. 20	iP_1	ZNE 19-10-46.6	Blast. H=19-10-34;
	iP_1P_1	ZNE 47.2	Δ=73.5 km.
	iS_1	ZNE 56.2	
	iS_1S_1	ZNE 58.0	
	iL	ZNE 11-00	
Dec. 20	eL	ZNE 23-59	
Dec. 21	iP_1	ZNE 15-15-37.7	Δ=73.5 km; H=15-15-25.0
	iP_1P_1	ZNE 38.3	Blast
	iS_1	ZNE 47.3	
	iS_1S_1	ZNE 49.3	
	iL	ZNE 51.3	
Dec. 22	eL	ZNE 12-58	USCGS; H=12-31-55; epicenter at 17° S, 178° W
Dec. 22	i	ZN 19-09-21	Deep focus
	i	ZN 10-14	
Dec. 24	iP	ZN 13-00-57.9	Foreshock of 2nd N.H. shock
	iS	ZNE 01-14.5	
	iS	ZNE 16.2	
Dec. 24	iP_a	ZNE 13-44-10.7	2nd shock in Ossipee region
	iS_a	ZNE 28.2	See reference under Dec. 20
Dec. 24	iP	ZNE 14-33-12.2	Aftershock of above
	iS	ZNE 30.5	
Dec. 24	iP	ZNE 18-12-32.5	Aftershock of 13h44m
	iS	ZNE 50.5	
Dec. 25	iP	ZNE 05-04-13.2	Aftershock of 24d, 13h44m
	iS	ZNE 31.7	

Date 1940	Phase		Time (U.T.) h m s	Remarks
Dec. 25	e	Z	06-50-36	
	e	Z	52-43	
Dec. 26	e	ZNE	06-45-09	Confused by microseisms.
	e	ZNE	48-06	Caribbean?
Dec. 27	iP	ZNE	19-56-42.3	Aftershock in Ossipee
	iS	ZNE	57-01.0	region, New Hampshire
Dec. 28	eP'	Z	16-56-48	USCGS:H=16-37.8;epicenter
	e	Z	57-29	at 18°1/2 N, 147° E;depth
	ePP	Z	59-19	probably 100 km.
	e	Z	17-06.5	

Cambridge, Massachusetts
September 24, 1942

L. Don Leet
Mary P. Collins