DEPARTMENT OF MINES AND TECHNICAL SURVEYS

DOMINION OBSERVATORIES BRANCH

SEISMOLOGICAL SERVICE OF CANADA

Eastern Division

Seismological Bulletin

January - April

1952

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DOMINION OBSERVATORY

OTTAWA - CANADA

SEISMOLOGICAL SERVICE OF CANADA
DOMINION OBSERVATORY, OTTAWA

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S T A T I O N S

OTTAWA

ϕ = 45°23'38" N. λ = 75°42'57" W. h = 83m.

Time correction within 0.10s.

Foundation: boulder clay over limestone

Instruments: Milne-Shaw NS and EW components, designated 23 and 17, respectively, each with photographic registration, magnetic damping, paper speed of 15 mm. per min., mass 1 lb.

Benioff Vertical, short and long period, designated BS and BL, respectively, photographic registration, BS a paper speed of 60 mm. per min., BL a paper speed of 30 mm. per min., mass 235 lbs.

HALIFAX

Dalhousie University

ϕ = 44°38' N. λ = 63°36' W. h = 46m.

Time correction from recorded radio time signals

Foundation: Carbonaceous slate

Instruments: Bosch NS and EW components, designated HN and HE, respectively, each with photographic registration, magnetic damping, paper speed of 15 mm. per min., mass 200 g.

SEVEN FALLS

Quebec Power Company

ϕ = 47°07!4 N. λ = 70°49!6 W. h = 232m. ca.

Time correction from recorded radio time signals

Foundation: Solid granite of Canadian Shield

Instruments: Wood-Anderson and Milne-Shaw, both EW components, designated SF and SM, respectively, each with photographic registration, magnetic damping, SF a paper speed of 60 mm. per min. and mass 15g., SM a paper speed of 8 mm. per min. and mass 1 lb.

S T A T I O N S (Cont'd)

SHAWINIGAN FALLS

Shawinigan Water and Power Company
φ = 46°33!1 N. λ = 72°45!8 W. h = 60 m. ca.

Time correction from recorded radio time signals

Foundation: Precambrian basement rocks of Canadian Shield

Instrument: Wood-Anderson NS component, designated SA, photographic registration, magnetic damping, paper speed of 60 mm. per min., mass 15g.

KIRKLAND LAKE

φ = 48°08'41" N. λ = 80°01'45" W. h = 310 m.

Time correction from recorded radio time signals

Foundation: Precambrian basement rocks (Timiskaming Tuff)

Instrument: Sprengnether Vertical, short-period, designated No. 1130, galvanometric registration on photographic paper, paper speed 60 mm. per min.

DETERMINED CONSTANTS

INSTRUMENT	Ts	Tg	V	ε	DISPLACEMENT FOR 1" ARC TILT
17 (Ottawa)	12.0		300	20:1	50 mm.
23 (Ottawa)	12.0		300	20:1	50 mm.
BS (Ottawa)	1.0	0.1			
BL (Ottawa)	1.0	48			
HN (Halifax)	5.0		125	20:1	
HE (Halifax)	5.0		125	20:1	
SA (Shawinigan)	1.0		2200		
SF (Seven Falls)	1.0		2200		
SM (Seven Falls)	12.0		300	20:1	50 mm.
S1130 (Kirkland Lake)	1.4	1.4			

NOTE:- Universal Time used throughout

SEISMOLOGICAL SERVICE OF CANADA
Eastern Division
DOMINION OBSERVATORY, OTTAWA

STATIONS:

O - Ottawa
H - Halifax
SF - Seven Falls
SH - Shawinigan Falls
KL - Kirkland Lake

January, 1952

DATE	STN.	PHASE	h m s	REMARKS
1	O	iP	07 14 12 c	USCGS: Δ = 6100 km.
		PcP	07 15 10	3 1/2°S., 105°W.
		S	07 22 06	Pacific Ocean, west of
		ScS	07 24 04	Galapagos
		SS	07 25 55	H = 07:04:36
		SSS	07 28 23	
	SF	eP	07 14 42	
		PcP	07 15 40	
		S	07 22 53	
		iScS	07 24 32	
		L	07 33.5	
1	SH	e	21 44 21	
3	SF	eP	06 15 28	USCGS: Δ = 8650
		S	06 25.2	40 1/2°N., 41 1/2°E.
		G	06 34.3	Turkey
	O	iP	06 15 50 c	H = 06:03:52
		S	06 25.8	
		ScS	06 26.3	
		G	06 36	
3	O	iP	10 12 02 d	USCGS: Δ = 3900 km.
		PP	10 13 25	16°N., 99°W.
		PPP	10 13 49	South coast of Mexico
		S	10 17 34	H = 10:05:05
		SS	10 19 54	
		L	10 23.5	
	KL	eP	10 12 05	
		iP	10 12 07 c	
		i	10 12 14	
		F	10.4	
	SF	eP	10 12 35	
		PP	10 14 12	
		e	10 15 28	
		S	10 18 45	
		SS	10 21.5	
		SSS	10 22 00	
		L	10 25.0	
	SH	eP	10 12 22	
		PP	10 14 03	
		PPP	10 14 37	
		S	10 18 02	
		ScS	10 22.5	
4	O	iP'	06 06 29 d	USCGS: Ottawa Δ = 13,600
		PPP	06 10 20	22°S., 169 1/2°E.
	SF	eP'	06 06 44	Loyalty Island
		SS	06 26.4	H = 05:47:31
6	O	iP	15 53 46 d	USCGS: Δ = 2900
		PP	15 54 29	19°N., 72°W.
				Haiti
				H = 15:48:01

DATE	STN.	PHASE	h m s	REMARKS
10	O	eP	11 49 08	Foreshock of Fox Island quake
		eZ	11 50 47	H = 11:39:23
11	KL	iP	04 19 30 d	USCGS: 7°S., 145 1/2°E.
		F	04.5	Eastern New Guinea
				H = 04:00:35
12	O	iP	20 21 16 c	USCGS: Δ = 6200 km.
		eNEZ	20 21 22	53°N., 167°W.
		PcP	20 22 15	Fox Island, Aleutians
		PP	20 23 29	H = 20:11:38
		S	20 29 11	
		ScS	20 31 10	
		SS	20 33 00	
		SSS	20 35 28	
		L	20 40.3	
	KL	eP	20 20 54	Very small disturbance
		e	20 20 58 c	
		F	21.4	
	SH	eP	20 21 24	
		PcP	20 22 23	
		PP	20 23 44	
		S	20 29.4	
	SF	eP	20 21 35	
		PcP	20 22 41	
		PP	20 23 44	
		S	20 29 29	
		ScS	20 31 20	
		SS	20 33 40	
		e	20 34 16	
		SSS	20 35 54	
		L	20 39.3	
	H	e	20 30 35	
		e	20 34.5	
		e	20 37.9	
		L	20 43.0	
13	O	eZ	04 22 36	USCGS: Δ = 12,100
		ePP	04 22 59	22°N., 124 1/2°E.
		eZ	04 23 46	East coast of Formosa
		SKS	04 29 02	H = 04:03:37
		PS	04 32 14	
		PPS	04 33 20	
		SS	04 38 10	
		SSS	04 42.0	
		G	04 49.5	
	SF	PS	04 32 14	
		PPS	04 33 14	
		SS	04 38 14	
		SSS	04 42 26	
		G	04 50.7	
14	O	iZ	21 10 41	
		iZ	21 10 47	
		F	21 11 06	
15	O	eZ	05 09 19	
		eZ	05 09 24	
		eZ	05 10 38	
	SF	e	05 08 49	
		e	05 16 19	
	SH	e	05 09 05	

DATE	STN.	PHASE	h m s	REMARKS
15	O	iP	07 09 44 c	USCGS: 4°S., 81°W.
		iZ	07 10 31	Near coast of Peru
		iZ	07 11 22	H = 07:00:53
		PPS	07 17 04	
		ScS	07 19 28	
		SS	07 20.3	
		SSS	07 21.5	
	SH	eP	07 09 56	
	SF	eP	07 10 03	
		S	07 17 21	
		SSS	07 22.9	
16	KL	e	06 04 14 c	
		F	06 05.5	
16	O	iP	06 18 55 d	
		iZ	06 19 02	
	SH	eP	06 18 49	
	SF	eP	06 18 45	
18	O	iP	11 48 57 d	
		i	11 49 04	
18	O	iP	12 53 00 d	USCGS: Ottawa Δ = 5350
		S	13 00.1	1/2°S., 92°W.
	KL	iP	12 53 13 d	Galapagos Isl.
		F	13.0	H = 12:44:18
	SH	eP	12 53 13	
	SF	eP	12 53 23	
18	O	eP	23 01 06	
	SH	eP	23 01 38	
19	O	S	07 33.0	
		SS	07 37.3	
		L	07 42.5	
	SF	S	07 33 40	
		L	07 45.8	
19	SF	eP	21 14 34	
		S	21 19 45	
19	O	iP	23 18 29 d	
		S	23 23.5	
		SS	23 25.4	
	SF	eP	23 17 59	
		e	23 24.7	
21	KL	iP	03 52 11 d	USCGS: Ottawa Δ = 6200
		F	04.0	53°N., 166 1/2°W.
	O	iP	03 52 40 d	Fox Islands, Aleutians
		S	04 00 32	h = 60 km.
		PPS	04 01 00	H = 03:43:04
		ScS	04 02 30	
		SS	04 04 18	
		SSS	04 07 00	
		L	04 09.2	
	SH	eP	03 52 45	

DATE	STN.	PHASE	h m s	REMARKS
21 (cont'd)	SF	eP	03 52 50	
		PcP	03 53 42	
		PP	03 55 01	
		PPP	03 56 24	
		S	04 00 44	
		ScS	04 02 40	
		SS	04 04 57	
		SSS	04 07 09	
		L	04 10.1	
	H	eS	04 01 57	
		L	04 12.9	
22	KL	e	11 29 55	
22	O	eP'	16 00 05	
		eZ	16 03 05	
23	O	iP	03 42 48 c	
	SH	eP	03 42 41	
	SF	eP	03 42 41	
24	KL	eP	09 23 20	
	O	iP	09 23 49 c	
		eS	09 31.6	
	SF	eP	09 24 01	
24	O	P_n	09 30 21	Local Δ = 195 km.
		i	09 30 26	H = 09:29:51
		S_n	09 30 42	
		S_2	09 30 46	
		i	09 30 51	
	SH	e	09 31 17.5	
	SF	e	09 32 00.5	
25	O	e	05 55 12	
	SH	e	05 54 01	
	SF	e	05 52.6	
		e	05 55.6	
28	O	eP	06 32 22	
	SF	eP	06 31 39	
		eL	06 40.4	
29	O	eP'	01 14 29	
		PS	01 26.1	
30	O	eP	07 14 44	
31	O	eP'	08 39 02	
31	O	iP	20 23 20	USCGS: Ottawa Δ = 3700
		i	20 23 41	15 1/2°N., 93 1/2°W.
		PP	20 24 31	Chiapas, Mexico
		iPcP	20 26 04	h = 60 km.
		S	20 28 40	H = 20:16:43
		SS	20 31.1	
		ScS	20 33.3	
	KL	eP	20 23 28	
		ipP	20 23 51 d	
		isP	20 24 04 d	
		esPP	20 25 16	

DATE	STN.	PHASE	h m s	REMARKS
31 cont'd	SH	eP	20 23 38	
		e	20 23 59	
		PP	20 25 02	
		PPP	20 25 31	
		PcP	20 26 16	
		S	20 29 32	
		SS	20 32 09	
		SSS	20 32 35	
	SF	eP	20 23 48	
		PP	20 25 18	
		PPP	20 25 38	
		PcP	20 26 15	
		S	20 29 40	
		SS	20 32 48	
		ScS	20 34 25	
		L	20 37 06	
	H	e	20 33.0	
		L	20 36.9	
31	O	PP	21 13 39	USCGS: 4°S., 30 1/2°E.
		PPS	21 23 29	Tanganyika
		SS	21 28 12	H = 20:55:12
		G	21 36.2	Ottawa Δ = 11,550
	SF	e	21 19.9	
		e	21 22.2	
		SS	21 28 51	
		G	21 38.8	
	H	e	21 30.9	
		L	21 42.0	

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SEISMOLOGICAL SERVICE OF CANADA
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STATIONS:
O - Ottawa
H - Halifax
SF - Seven Falls
SH - Shawinigan Falls
KL - Kirkland Lake

February, 1952 No. 6

DATE	STN.	PHASE	h m s	REMARKS
2	SH	e	00 41 40	
2	SF	eP_1	06 20 43.5	Δ = 55 km.
		eS_1	06 21 50	H = 06:20:35
		e	06 21 55.5	
2	KL	eP	10 30 02	USCGS: Ottawa Δ = 7000
		F	10.6	51 1/2°N., 179°W.
	O	eP	10 30 26	Andreanof Islands, Aleutians
		S	10 38 50	H = 10:20:06
		e	10 46.0	
		L	10 50.2	
	SH	eP	10 30 30	
	SF	eP	10 30 39	
		S	10 39 56	
2	SF	eP_1	10 56 02.5	Δ = 45 km.
		eS_1	10 56 08.5	H = 10:55:54.5
2	SF	eP_1	11 08 41	Δ = 70 km.
		eS_1	11 08 49.5	H = 11:08:30
		e	11 09 04	
2	SF	eP_1	11 15 59	Δ = 55 km.
		eS_1	11 16 05.5	H = 11:15:50.5
2	O	eP	12 30 13	
		e	12 37.3	
	SF	e	12 35 30	
		e	12 36 39	
3	SF	eP_1	02 33 53.5	Δ = 40 km.
		eS_1	02 33 58.5	H = 02:33:47
	SH	e	02 34 38	
	O	e	02 35 50	
		F	02 36 20	
3	KL	e	23 27 49	
		F	23.6	
4	O	eP	19 16 47	USCGS: Southern Gulf of California
		e	19 27.6	H = 19:09:30
	KL	e	19 26 47	
	SH	e	19 28 48	
	SF	e	19 29 31	
	H	e	19 32 23	
6	O	iP	05 40 35 d	USCGS: Kansu Prov., China
	KL	eP	05 40 23	H = 05:27:10
		F	06.0	
	SH	eP	05 40 16	

DATE	STN.	PHASE	h m s		REMARKS
6	O	eP	16 45 20		
		e	16 45 40		
		e	16 47 01		
	SH	eP	16 45 56		
8	O	e_Z	18 41 32		
10	O	e_N	06 25 00		
11	KL	eP'	07 19 12		USCGS: Ottawa Δ = 15,600 km.
		i	07 19 18	d	6°S., 110°E.
		eSKP	07 21 46		Java Sea
		ipP'	07 21 50	d	H = 07:01:04
		iPP	07 21 58	c	
		ipPP	07 24 19	c	
		F	07.6		
	O	iP'	07 19 17		
		iZ	07 19 24		
		pP'	07 21 50		
		eZ	07 22 12		
		PP	07 22 32		
		PKS	07 23 01		
		pPP	07 24 40		
		SKS	07 25 20		
		PPP	07 25 46		
		i_{NE}	07 28 14		
		SKSP	07 31 04		
		sPP	07 34 00		
		sPS	07 36 40		
		SS	07 40 00		
		sSS	07 44 00		
		SSS	07 45 32		
	SH	eP'	07 19 17		
		e	07 19 55		
		e	07 21 55		
		PP	07 22 57		
		pPP	07 25 13		
		pPPP	07 28 09		
		SKKP	07 30 59		
	SF	eP'	07 19 15		
		SKP	07 21 56		
		pPP	07 25 06		
		PPP	07 26 04		
		pPPP	07 28 08		
		PPS	07 35 45		
		SS	07 39 46		
		sSS	07 43 39		
		SSS	07 45 18		
	H	e	07 40 01		
11	KL	iP	16 45 58	d	
		i	16 46 44	d	
		F	17.0		
	O	iP	16 46 04		
		i	16 46 28		
		e_N	16 49 32		
	SH	e	16 49 16		
12	O	eP	02 07 29		
12	O	iP	20 34 18	c	
	KL	eP	20 34 10		
		F	20.7		

February, 1952 No. 8

DATE	STN.	PHASE	h m s	REMARKS
14	O	eP'	03 57 27	USCGS: Ottawa Δ = 15,350
		PP	04 00 20	8°S., 125°E.
		PKS	04 01 20	Flores Sea
		PPP	04 03 33	H = 03:38:06
		SKS	04 04 36	
		e	04 13 16	
		SS	04 19.0	
		L	04 34.0	
	KL	eP'	03 57 33	
		ePP	03 59 58 c	
		ePKS	04 01 06	
		iPPP	04 02 50 c	
		iSKS	04 04 43 d	
		F	05.0	
	SH	eP'	03 57 42	
		e	03 58 40	
		PP	04 00 35	
		PKS	04 01 26	
		PPP	04 03 29	
		SKS	04 04 58	
		SKKS	04 07 25	
		PPS	04 12 42	
		SS	04 19 18	
	SF	eP'	03 57 43	
		PP	04 00 41	
		SKS	04 05 08	
		SKKS	04 07 21	
		SS	04 18 55	
		G	04 35 58	
	H	ePP	04 01 00	
		SKKS	04 07 50	
		e	04 10 36	
		PS	04 11 26	
		SS	04 19 30	
14	O	iP	21 09 58	USCGS: Ottawa Δ = 4200
		PcP	21 12 12	7 1/2°N., 76 1/2°W.
		S_E	21 15 54	Northwestern Columbia
		ScS	21 20 06	H = 21:02:35
		L	21 23.0	
	KL	iP	21 10 22 d	
		i	21 10 30 c	
		F	21.4	
	SH	eP	21 10 08	
		PP	21 11 46	
		S	21 15 43	
	SF	eP	21 10 21	
		PP	21 11 47	
		S	21 16 22	
		SS	21 19 10	
	H	e	21 20 10	
15	O	P_n	18 46 36	Δ = 310 km.
		i	18 46 37.5	H = 18:45:52
		i	18 46 39	
		S	18 47 09	
		i	18 47 10	
		L	18 47 32	
	SH	e	18 46 51.5	

DATE	STN.	PHASE	h m s	REMARKS
16	O	eP	07 32 28	USCGS: Oaxaca, Mexico
		S	07 38 08	H = 07:25:15
	KL	eP	07 32 31	
		F	07.7	
	SF	e	07 39 07	
17	O	eP	17 42 46	
		e_{NE}	17 46 36	
		L	17 53 42	
	KL	e	17 54.0	Trace only
		F	18.2	
	SH	e	17 54 52	
	SF	e	17 49 12	
		e	17 51 57	
		L	17 55 44	
17	SF	eP_1	18 50 40	Δ = 50 km.
		eS_1	18 50 46	H = 18:50:32
		e	18 51 14	
18	O	e	20 58 26.5	
		F	20 59.1	
	SH	e	20 57 14	
		e	20 57 31	
		F	20 58 23	
	SF	iP_1	20 56 29.0	Δ = 130 km.
		S_1	20 56 45.0	H = 20:56:07.5
20	O	eP	09 20 07	USCGS: Ottawa Δ = 6800
	KL	eP	09 20 26 d	16°S., 74°W.
		i	09 20 26.5 c	Southern Peru
		ipP	09 20 48	h = 150
		F	09.5	H = 09:10:06
	SH	eP	09 20 42	
	SF	eP	09 20 53	
20	O	e	22 41 47	
	KL	e	22 41 51	
		F	22.8	
	SH	e	22 42 59	
	SF	e	22 43 48	
21	O	eP	23 51 45	USCGS: 23 1/2°N., 109°W.
		ScS	00 02 10	H = 23:44:49
		L	00 02 52	
22	O	iP	11 47 34 c	USCGS: 61 1/2°N., 151°W.
		L	12 01 10	H = 11:39:20
23	O	e	21 44 51	
		e_N	21 51.0	
	SF	e	21 49 28	
24	O	e_N	12 57 30	
		L	12 58 06	

DATE	STN.	PHASE	h m s	REMARKS
25	KL	eP	01 31 12	Probably d
		F	01.8	
	O	eP'	01 35 30	USCGS: Ottawa Δ = 12,000
		i_Z	01 36 31	17°S., 173 1/2°W.
		SKS	01 42 00	Tonga Islands
		SKKS	01 42 50	H = 01:17:00
		S	01 43 27	
		PS	01 45 12	
		PPS	01 46 13	
		SS	01 51 00	
		SSS	01 55 00	
		G	02 00 20	
		L	02 07 20	
	SF	ePP	01 36 23	
		SKS	01 42 17	
		SKKS	01 43 12	
		PS	01 45 30	
		PPS	01 46 38	
		SS	01 51 53	
		SSS	01 55 53	
		G	02 02 53	
	H	SKS	01 42 43	
		SKKS	01 43 53	
		PS	01 46 39	
		SS	01 53 17	
		SSS	01 57 16	
25	O	e(P)	01 46 45	
		i	01 47 02	
26	SF	eP_1	00 57 07.5	Felt at Seven Falls
		S_1	00 58 14.5	Δ = 55 km.
	SH	eP_n	00 57 31.5	H = 00:56:58.5
		eP_1	00 57 36	
		S_n	00 57 55.5	Δ = 220 km.
	O	eP_n	00 58 11.5	
		S_n	00 59 05	Δ = 535 km.
	KL	e	01 00 27	
		e	01 00 31	
		F	01.1	
26	O	iP	11 40 42 c,N,W	USCGS: Ottawa Δ = 6650
		PcP	11 41 35	15°S., 69°W.
		PP	11 42 55	Peru-Bolivia border
		e	11 45 06	h = 300 km.
		S	11 48 30	H = 11:31:04
		ScS	11 50 06	
		SSS	11 55 20	
	KL	iP	11 41 03 c	
		ePcP	11 41 35 Prob. d	
		ipP	11 41 59 d	
		isP	11 42 42 d	
		ePP	11 43 24	
		epPP	11 44 33	
		ePPP	11 45 16	
		eS	11 49 09	
		F	12.0	
	SH	eP	11 40 50	
		PcP	11 41 34	
		PP	11 43 05	
		S	11 48 46	
		e	11 50 12	

DATE	STN.	PHASE	h m s		REMARKS
26 cont'd	SF	eP	11 40 54		
		PcP	11 41 57		
		S	11 48 51		
		ScS	11 50 37		
		SS	11 52 53		
	H	eP	11 40 41		
		PcP	11 41 39		
		PP	11 42 56		
		S	11 48 27		
		ScS	11 50 06		
		SS	11 52 03		
		e	11 54 03		
26	O	e(P)	12 09 21		
		e_Z	12 10 11		
	SF	e	12 10 02		
26	O	iP	15 46 12	c,N	USCGS: 11 1/2°N., 86 1/2°W.
		i_{NEZ}	15 47 24		Near coast of Nicaragua
		PP	15 47 36		h = 100 km.
		sS	15 52 14		H = 15:39:23
		G	15 54 16		Ottawa Δ = 3850 km.
		L	15 57 20		
	KL	eP	15 46 28	c	
		iP	15 46 29	d	
		epP	15 46 54		
		i	15 46 56	d	
		ePP	15 47 58		
		F	16.0		
	SH	eP	15 46 28		
		PP	15 48 00		
		G	15 55 40		
	SF	eP	15 46 37		
		PP	15 48 21		
		S	15 52 49		
		G	15 55 20		
		L	15 57.3		
	H	e	15 48 19		
		L	15 59.5		
27	KL	e	06 15 00		
27	O	eP	17 07 02		
	SH	eP	17 07 06		
28	O	eP	18 57 32		

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SEISMOLOGICAL SERVICE OF CANADA
Eastern Division
DOMINION OBSERVATORY, OTTAWA

STATIONS:
O - Ottawa
H - Halifax
SF - Seven Falls
SH - Shawinigan Falls
KL - Kirkland Lake

March, 1952 No. 12

DATE	STN.	PHASE	h m s	REMARKS
1	O	eP'	06 23 24 c	USCGS: Celebes Islands
		e_Z	06 23 41	H = 06:04:05
1	O	eP	15 43 40	USCGS: Hokkaido, Japan
				H = 15:31:02
2	O	eP	18 59 47	USCGS: Ottawa Δ = 3900 km.
		i	18 59 57	11°N., 86 1/2°W.
		PP	19 01 02	Nicaragua
		sS	19 05 40	h = 100 km.
		ScS	19 09 20	H = 18:52:56
	KL	iP	19 00 04 d	
		ipP	19 00 13.5 d	
	SH	eP	19 00 01	
	SF	eP	19 00 11	
3	O	e_N	07 39 46	
		e_N	07 47 25	
		e_N	07 51.5	
		eL_N	08 03.5	
3	O	eP	17 48 57	USCGS: Ottawa Δ = 3900 km.
		i	17 49 08	11°N., 86 1/2°W.
		PP	17 50 32	Nicaragua
		S	17 55 05	h = 100 km.
		L	18 01 20	H = 17:42:07
	KL	eP	17 49 15	
		iP	17 49 17 d	
		epP	17 49 23	
		F	18.2	
	SH	eP	17 49 13	
	SF	eP	17 49 22	
		L	18 01 53	
4	O	eP	01 35 23 d	USCGS: 42 1/2°N., 143 1/2°E.
		i	01 35 34	Hokkaido, Japan
		e_{EZ}	01 41 40	H = 01:22:41
		e_Z	01 44 36	Ottawa Δ = 9500 km.
		S	01 45 50	
		PS	01 46 53	
		PPS	01 47 08	
		SS	01 51 40	
		G	01 57 50	
	KL	eP	01 35 15	Very confused record
		iP	01 35 17 d	
		eS	01 44 35	
		L	02.0	
		F	04.0	
	SH	eP	01 35 35	
		PPP	01 41 03	
		S	01 46 05	
		SS	01 52 30	
		G	01 57 55	

DATE	STN.	PHASE	h m s	REMARKS
4 cont'd	SF	eP	01 35 33	
		i	01 36 49	
		S	01 46 04	
		G	01 59 11	
	H	eP	01 36 13	
		PP	01 40 25	
		PPP	01 42 13	
		SKS	01 46 29	
		SKKS	01 46 58	
		S	01 47 25	
		PS	01 48 45	
		G	02 02 29	
4	O	eP	02 52 25 d	Hokkaido aftershock
		i	02 52 36	
	SH	eP	02 52 40	
	SF	eP	02 52 41	
4	O	eP	04 06 10 d	Hokkaido aftershock
		i	04 06 21	
	KL	iP	04 05 51 d	
		F	04.3	
	SH	eP	04 06 11	
4	O	eP	04 23 55	Hokkaido aftershock
4	O	eP	07 22 51	
	KL	eP	07 22 41	
4	O	eP	16 43 35	Hokkaido aftershock
	KL	eP	16 43 15	
	SH	eP	16 43 35	
4	O	eP'	19 49 20 c	USCGS: 10°S., 161 1/2°E.
	KL	eP'	19 49 14	Solomon Islands
	SH	eP'	19 49 24	H = 19:30:28
4	O	eP	20 08 54 c	USCGS: Ottawa Δ = 9400
		S	20 19 20	42°N., 146°E.
		PS	20 20 12	Hokkaido, Japan
		e	20 21 22	H = 19:56:10
		SSS	20 28 16	
	SH	eP	20 08 53	
	SF	eP	20 08 58	
		S	20 19 22	
4	O	eP	21 01 55 c	Hokkaido aftershock
	KL	eP	21 01 44	
	SH	eP	21 02 03	
5	SH	e	02 34 25	
5	O	eP	04 01 44	USCGS: Hokkaido aftershock
		S	04 12 12	H = 03:49:03
		PS	04 13 05	
		SS	04 17 53	
	KL	eP	04 01 24	
		e	04 01 55	
		FF	04.2	
	SH	eP	04 01 45	
	SF	eP	04 01 46	
		S	04 12 15	

March, 1952 No. 14

DATE	STN.	PHASE	h m s	REMARKS
5	O	eP	09 29 45	
		S	09 40 12	
	KL	eP	09 29 31	
	SF	eS	09 40 14	
5	O	iP	09 34 52 d	
		e_Z	09 35 01	
5	O	iP	11 03 28 d	
		e	11 14.6	
5	O	iP	15 53 01 d	USCGS: Ottawa Δ = 3700
		e_{NE}	15 55 12	24 1/2°N., 108 1/2°W.
		S	15 58 22	Gulf of California
		ScS	16 03 26	H = 15:46:08
	KL	eP	15 52 51	
		F	16.0	
	SH	e	16 04 50	
		F	16 19	
	H	e	16 03 29	
5	KL	iP	16 03 29 c	
		i	16 03 47 c	
		e	16 04 51	
		L	16 06 45	
		F	16.5	
	O	e	16 06 55	
5	O	eP	20 56 44	
	KL	eP	20 56 43	
		F	21.0	
5	O	iP	22 58 45 d	
6	O	eP	03 45 05	
6	O	iP	09 53 15 d	
6	O	eP	18 09 36 d	
7	O	eP	04 05 15	
7	O	iP	07 45 56 d	USCGS: Ottawa Δ = 10,350
		e_Z	07 47 16	36°N., 136 1/2°E.
		PP	07 49 44	Honshu, Japan
		SKS	07 56 33	H = 07:32:38
		S	07 57 07	
		PS	07 58 20	
		SS	08 03 16	
		G	08 10 40	
	KL	iP	07 45 39 d	
		i	07 45 43 d	
		F	07.9	
	SH	eP	07 45 54	
	SF	eP	07 46 05	
		SKS	07 56 36	
		e_E	08 03 25	
7	O	eP	09 57 22	
7	O	iP	11 57 09 d	
		e	11 57 19	

DATE	STN.	PHASE	h m s		REMARKS
7	O	eP	18 28 35		USCGS: 43°N., 146°E.
		S_N	18 39 02		Hokkaido, Japan
	SF	eS	18 39 03		H = 18:16:02
7	O	eP	19 56 31		USCGS: Aftershock of above
		eZ	19 56 41		H = 19:43:58
8	O	eP	10 43 54		
8	O	e_{NZ}	11 49 42		
		L	11 54 30		
8	O	eP	11 57 56		
8	O	eP	19 00 19		
8	O	eP	19 35 46		USCGS: 11°N., 88 1/2°W.
		L	19 48.3		Off coast of Nicaragua
	KL	eP	19 36 02		H = 19:28:50
	SH	eP	19 36 03		
9	O	eP	05 51 52		USCGS: 70 1/2°N., 15°W.
		L	06 02 00		H = 05:44:29
9	KL	eP	17 16 08	c	USCGS: 42°N., 143 1/2°E.
		e	17 16 38		Hokkaido, Japan
		L	17.8		H = 17:03:43
		F	18.2		Ottawa Δ = 9550
	O	iP	17 16 27	c	
		PP	17 20 07		
		PPP	17 21 52		
		S	17 26 52		
		PS	17 28 20		
		PPS	17 29 09		
		SS	17 33.5		
		SSS	17 36 20		
		L	17 42.0		
	SH	eP	17 16 27		
		PP	17 20 04		
		PPP	17 21 46		
		S	17 26 50		
		PPS	17 28 50		
		SS	17 32 52		
		L	17 40 47		
	SF	eP	17 16 23		
		iS	17 26 58		
		e	17 32 19		
	H	SKS	17 27 21		
		PS	17 29 13		
		SSS	17 37 21		
		G	17 40 29		
		L	17 45.3		
9	KL	iP	20 07 06	c	USCGS: Ottawa Δ = 4200
		eS	20 12 41		59 1/2°N., 136°W.
		e	20 17 03		Alaska-Canada border
		ScS	20 18.0		H = 20:00:17
		L	20 18.5		
		F	20.8		

March, 1952

DATE	STN.	PHASE	h m s	REMARKS
9 cont'd	O	eP	20 07 39	
		PP	20 09 09	
		PPP	20 09 24	
		PcP	20 09 53	
		S	20 13 30	
		SS	20 16 04	
		ScS	20 18 00	
		L	20 20 13	
	SH	eP	20 07 46	
		PP	20 09 19	
		S	20 13 48	
		e	20 18 41	
		L	20 19 20	
	SF	eP	20 07 52	
		PP	20 09 29	
		S	20 13 52	
		SS	20 16 24	
		L	20 19 23	
	H	eP	20 08 29	
		PcP	20 10 15	
		PP	20 10 33	
		S	20 15 19	
		SS	20 18 33	
		L	20 22 13	
9	O	eP	22 05 51	
10	O	eP	18 13 38 d	
	SH	eP	18 13 38	
10	O	eP	18 47 17	
11	O	eP	20 50 01	
		e	20 50 11	
14	O	eP	21 08 03	
15	KL	eP'	11 35 14	
		ePP	11 37 45	
		F	11.8	
	O	eP'	11 35 19	
		PP	11 38 08	
		SS	11 56 00	
	SH	eP'	11 35 32	
16	O	eP	22 22 03	
17	O	Pn	04 15 11	Δ = 205 km.
		Sn	04 15 34	H = 04:14:40
	KL	eSn	04 15 55	
		F	04.4	
	SH	Pn	04 15 16.5	Δ = 270
		P_1	04 15 27.5	
		Sn	04 15 46.5	
		e	04 15 57.0	
		S_1	04 16 00	
	SF	eP_2	04 15 41	Δ = 410 km.
		P_1	04 15 47	
		Sn	04 16 18	
		S_2	04 16 35	

March, 1952 No. 17

DATE	STN.	PHASE	h m s	REMARKS
18	O	i(PP)	11 15 11 d	
		e	11 16 16	
	SH	e(PP)	11 15 14	
	SF	e(PP)	11 15 14	
19	O	iP	01 38 47 d	
	KL	iP	01 38 50 c	
		F	01.8	
19	KL	eP'	11 16 00	Probably c
		iPP	11 17 14	d
		ePPP	11 19 30	
		SKS	11 23 09	
		iPS	11 26 57	Probably c
		iSS	11 33 42	
		F	11 13.2	
	O	iP'	11 16 07	d
		PP	11 17 33	USCGS: OttawaΔ = 13,500
		PPP	11 20 03	9 1/2°N., 127°E.
		e	11 21 10	Mindanao, Philippine Isl.
		SKS	11 22 48	H = 10:57:09
		SKKS	11 24 22	
		PS	11 27 33	
		SS	11 34 12	
		SSS	11 38 40	
		G	11 48.0	
	SH	eP'	11 16 06	
		PP	11 17 35	
		PPP	11 20 04	
		SKS	11 23 08	
		SKKS	11 24 30	
		PS	11 27 19	
		PPS	11 28 57	
		SS	11 34 19	
		SSS	11 38 07	
	SF	eP'	11 16 19	
		PP	11 17 45	
		e	11 21 25	
		PS	11 27 46	
		PPS	11 29 23	
		SS	11 34 25	
		G	11 47 50	
	H	ePP	11 18 07	
		SKS	11 23 29	
		SKKS	11 25 01	
		PS	11 28 11	
		PPS	11 29 31	
		SS	11 34 37	
		SSS	11 39 23	
		G	11 47.8	
		L	11 51.6	
19	O	Pn	19 17 33	Δ = 45 km.
		Sn	19 17 44	H = 19:17:18
		L	19 17 52	
19	O	eP	23 18 07	USCGS: Oaxaca, Mexico
	KL	eP	23 18 12	H = 23:11:20
	SH	eP	23 18 40	

March, 1952 No. 18

DATE	STN.	PHASE	h m s	REMARKS
20	O	Pn	18 54 29	Δ = 275 km.
		Sn	18 54 58	H = 18:53:49
	SH	e	18 54 20	
	SF	e	18 55 05	
21	O	eP'	16 29 22	USCGS: Santa Cruz Island
		SKS	16 36 16	11°S., 165°E.
		PS	16 40 26	h = 60
		PPS	16 42 00	H = 16:10:38
		SS	16 47 17	
		G	17 02 10	
	SF	eP'	16 29 28	
		SKS	16 36 29	
		SKKS	16 38 02	
		PS	16 40 55	
		PPS	16 42 19	
		SS	16 47 47	
		e	16 54 55	
		G	17 02.4	
		L	17 08.4	
22	O	iP	18 25 53 d	USCGS: OttawaΔ = 6600
		i	18 26 05	52°N., 173°W.
		PcP	18 26 41	Andreanof Islands, Aleutians
		PP	18 28 09	H = 18:15:43
		S	18 34 05	
		e	18 34 40	
		ScS	18 35 44	
		SS	18 38 30	
		L	18 43 20	
	KL	e	18 26 27	Probably c
		e	18 27 09	Well recorded at SF, but time
	SH	eP	18 25 58	corrections uncertain
		e	18 26 10	
		PcP	18 26 51	
	H	e(s)	18 35 24	
23	O	eP'	15 40 55	
24	O	eP	18 23 28	
25	O	iP	03 46 41 c	
25	O	iP'	09 48 44 d	
	SH	e	09 49 54	
26	O	iP	03 49 56 c	
27	O	eP	16 21 56	
	KL	e	16 22 17	
30	SF	iP_1	13 11 17	Time correction at SF inferred from
		e	13 11 23.5	H time determined from Ottawa and
		S_1	13 11 30.0	Shawinigan Falls. Δ = 105 km.
		e	13 11 32.5	Felt at Riviere du Loup
	SH	Pn	13 11 45.5	
		P_1	13 11 50	Δ = 260 km.
		e	13 11 52.5	H = 13:11:08
		Sn	13 12 13.5	
		S_2	13 12 20.5	

March, 1952

DATE	STN.	PHASE	h	m	s	REMARKS
30 cont'd	O	Pn	13	12	18	Δ = 520 km.
		P_2	13	12	26	
		Sn	13	13	10	
		S_1	13	13	39	
	KL	e(P)	13	13	58	
		eS	13	14	39	
31	O	eP	00	59	47	
31	O	eP	06	36	09	
	SH	eP	06	36	22	

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SEISMOLOGICAL SERVICE OF CANADA
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STATIONS:
O - Ottawa
H - Halifax
SF - Seven Falls
SH - Shawinigan Falls
KL - Kirkland Lake

April, 1952 No. 20

DATE	STN.	PHASE	h m s		REMARKS
1	O	e	00 49 47		USCGS: 48°N., 113°8W.
		e	00 51 11		Northwestern Montana
		F	00 58		H = 00:37:41.5
	KL	eP	00 42 40	Prob. d	
		i	00 49 26	d	
		F	01.0		
	SH	e	00 49 37		
		e	00 51 59		
	SF	e	00 50 28		
		e	00 52 38		
1	O	eP'	01 21 23		
2	O	iP	18 41 46	d	USCGS: 16 1/2°N., 99 1/2°W.
		PP	18 43 19		Guerrero, Mexico
		PcP	18 44 13		H = 18:34:50
		S	18 47 16		
		SSS	18 50 24		
		L	18 53 48		
	KL	eP	18 41 46	Prob. d	
		F	19.1		
	SH	eP	18 42 13		
		L	18 56 06		
4	KL	iP	03 03 56	c	USCGS: 52°N., 159 1/2°E.
		F	03.2		East coast of Kamchatka
	O	eP	03 04 20	c	H = 02:52:55
		PP	03 07 02		
		PPP	03 08 48		
		S	03 13 40		
		e	03 15 05		
		SS	03 18 30		
		SSS	03 21 45		
		G	03 23 30		
	SH	eP	03 04 22		

Note: The lower vault, which houses the Benioff vertical seismometer, became flooded on April 5. The long-period galvanometer was broken as a result, and the short-period registration was valueless until about April 25. In addition the time corrections from Seven Falls were untrustworthy for most of the month.

8	KL	iP	00 28 00.5	d	USCGS: 9°S., 70 1/2°W.
		ePcP	00 28 45	Prob. d	Western Brazil
		epP	00 29 56		h = 600 km.
		eScP	00 31 47		H = 00:19:04
		F	00.7		
8	KL	e	03 18 15		
		e	03 18 29		
		F	03.4		
8	O	e(PP)	10 20 50		USCGS: Sulu Sea
		e	10 26.5		H = 10:00:06

DATE	STN.	PHASE	h m s	REMARKS
9	O	eS	08 14 40	USCGS: 1000 miles SW. of Galapagos Isl.
		SS	08 18.5	H = 07:57:10
		L	08 25	
9	KL	eP	16 33 36.5	USCGS: 35°.4 N., 97°.8 W.
		iP	16 33 37 c	Central Oklahoma
		eS	16 36 48	h = 125 km.
		G	16 37 32	H = 16:29:29.5
		F	17.2	
	O	eS	16 37 19	
		L	16 38 54	
	SH	eP	16 34 20	
		pP	16 35 06	
		S	16 38 24	
10	O	e	06 25 20	
		e	06 30 10	
13	KL	e	16 02 00	
		F	16.1	
14	KL	iP	21 28 58 Prob. d	
		F	21.6	
14	O	eP	23 48 24	USCGS: 25°S., 69 1/2°W.
		S	23 57 24	Northern Chile
		PS	23 58 00	h = 100 km.
		PPS	23 58 12	H = 23:37:20
		ScS	23 58 28	
		SS	00 02 05	
		SSS	00 05 04	
		G	00 06 10	
	KL	iP	23 48 42 c	
		i	23 48 42.5 d	
		ipP	23 49 03 d	
		esP	23 49 11 Prob. c	
		F	24.0	
	SH	eP	23 48 30	
		S	23 57 38	
15	O	e	00 12 14	
		e	00 16.7	
		L	00 54.5	
	KL	e	00 08 48	
		e	00 10 20	
15	O	eS	06 23 00	USCGS: Ottawa Δ = 9400
	KL	e	06 12 11	43°N., 143 1/2°E.
		F	06.3	Hokkaido, Japan
				H = 05:59:53
15	O	e	19 21 02	USCGS: Ottawa Δ = 12,300 km.
		PP	19 21 24	56°S., 24°W.
		e	19 25 36	Sandwich Islands region
		SKS	19 27 24	H = 19:02:12
		SKKS	19 28 10	
		PS	19 30 42	
		SS	19 36 44	
		SSS	19 40 42	
		L	19 51 00	
	KL	e	19 21 52	
		F	19.5	

DATE	STN.	PHASE	h m s	REMARKS
16	KL	e	06 04 37	
		i	06 05 56	
		F	06.2	
17	KL	e	11 54 24	
		e	11 54 52	
19	SH	ePn	02 51 23.8	Δ = 220 km.
		e	02 51 26.3	H = 02:50:51
		Sn	02 51 47.8	
		e	02 51 50.3	
	SF	Time correction doubtful		Δ = 40 km.
	KL	e	02 53 38	
		i	02 54 11	
		e	02 54 33	
		F	03.0	
19	O	iP	10 06 13 N	USCGS: Ottawa Δ = 4250
		i	10 06 21	7°N., 71 1/2°W.
		PP	10 07 41	Colombia-Venezuela border
		PPP	10 08 09	h = 60 km.
		S	10 12 11	H = 09:58:53
		SS	10 14 20	
		SSS	10 15 28	
	KL	iP	10 06 40 c	
		ipP	10 06 49 d	
		ePP	10 08 10	
		sPP	10 08 43	
		iS	10 12 26	
		L	10 22.0	
		F	10.8	
	SH	eP	10 06 22	
		epP	10 06 32	
		S	10 12 31	
		e	10 14 47	
19	O	e(PP)	19 45 10	USCGS: Sandwich Islands region
		(PS)	19 54 50	H = 19:26:12
	KL	e	19 45 27	
19	KL	e	21 57 18	
		i	21 57 29	
		F	22.0	
20	SH	ePn	09 05 31.5	Δ = 210 km.
		Sn	09 05 54.5	H = 09:05:09.5
	SF	Time correction in question		Δ = 40 km.
	KL	e	09 09 17	
		F	09.2	
20	KL	e	09 56 29	
		F	10.0	
20	KL	e	21 13 20	
		F	21.3	
21	O	e(PP)	23 24 03	USCGS: 7 1/2°N., 83°W.
		S	23 28 24	Off coast of Panama
		SSS	23 32.0	H = 23:15:07
		L	23 35	

DATE	STN.	PHASE	h m s	REMARKS
22	KL	e	16 58 33	USCGS: 46°N., 111 1/2°W.
		e(PP)	17 00 18 Prob. d	Western Montana
		iS	17 06 42	H = 16:54:42.5
		F	17.3	
	O	e	17 07 20	
		e	17 08 20	
	SH	e	17 05 45	
		e	17 08 13	
25	O	iP	06 09 19 d	S.P. Benioff back in operation
		S	06 15 16	USCGS: 8°N., 83°W.
		L	06 22.3	Near coast of Costa Rica
	KL	eP	06 09 38	H = 06:02:00
		F	06.2	
	SH	eP	06 09 29	
26	KL	e	02 07 27	
		F	02.2	
26	O	Pn	05 00 29	Δ = 205 km.
		Sn	05 00 52	H = 04:59:58
	KL	e	05 00 10	Felt at Temiskaming, Que.
		eS	05 00 29	
		iS	05 00 30.5	
		F	05.1	
	SH	e	05 01 39	
		e	05 01 52	
		e	05 01 58	
26	KL	e	16 34 44	
		F	16.6	
28	KL	iP	11 06 39	USCGS: Ottawa Δ = 9600
	O	iP	11 06 59	42 1/2°N., 143°E.
		iZ	11 07 14	Hokkaido, Japan
		SKS	11 71 20	H = 10:54:18
		PPS	11 19 10	
		G	11 30 20	
		L	11 34	
	SH	eP	11 06 55	
29	O	ePP	02 53 50	SP Benioff again inoperative
		SKS	02 59 33	USCGS: Ottawa Δ = 11,900
		S	03 00 52	26°N., 122 1/2°E.
		e	03 01 38	Formosa
		PS	03 03 00	H = 02:35:00
		SS	03 08 18	
		G	03 18 00	
		L	03 23.5	
29	KL	iP	19 54 57 c	USCGS: Central Chile
		i	19 54 14 c	H = 19:42:25
		i	19 54 24 c	
		F	20.0	

J. L. O'Connor
F. Lombardo
J. H. Hodgson

SEISMOLOGICAL BULLETINS RECEIVED

January, 1952

We acknowledge, with thanks, the receipt of the following seismological publications and bulletins:-

STATION	BULLETINS
Tacubaya	November, 1951
Toledo	September, October, 1951
Perth	July-September, 1951
Tananarive	January-March, 1951
Brisbane	January-June, 1951
Riverview	1950
Columbia	December, 1951
Almeria	February, 1950
Saint Louis and Aux. Sns.	May 6, 10, 11, 13, 14, 1951
South Africa	October, 1951
Richmond	November, 1951
Tortosa	November, 1951
Weston	November, 1951
Stara Dala	October, 1951
Hautes Tatra	October, 1951
Prague	October, 1951
Bogota	December, 1950
Chinchina	December, 1950
Galerazamba	December, 1950
Santa Clara	December, 1951
Athens	November, 1951
India	January-June, 1951
Rome	October, 1951
Columbia	December 28, 1951 - January 11, 1952
Lisbon	October, 1951
Japan	June, 1951
Toledo	October, November, 1951
Portugal	January, 1951
Jena	January-December, 1950

February, 1952

Algiers	September, 1951
Tamanrasset	September, 1951
Pennsylvania	September-December, 1950
Brisbane	July, August, 1951
Tortosa	December, 1951
Apia	July-September, 1951
De Bilt	December, 1951
Bureau Central	October, 1951
Bureau Central (BCIS)	August, 1951
Strasbourg	December, 1951, January 1-10, 1952
Rome	November, 1951
Zi-ka-wei	October, 1948 - December, 1950
Columbia	January 15-28, 1952
Wellington	July-September, 1949, August, 1951
Weston	December, 1951
Zurich	November, 1951
Athens	December, 1951
Santa Clara	January, 1952
Lisbon	November, December, 1951
Toledo	November, December, 1951
Hautes Tatra	November, 1951
Stara Dala	November, 1951
Prague	November, 1951
South Africa	November, December, 1951
Richmond	December, 1951

SEISMOLOGICAL BULLETINS RECEIVED

February, 1952 (cont'd)

Bureau Central	November, 1951
Bureau Central (BCIS)	September, 1951
Strasbourg	January 11-21, 1952
Algiers	October, 1951
Tamanrasset	October, 1951
Kalocsa	July-September, 1951
Budapest	August-October, 1951
Beograd	November, 1951
Reykjavik	1946, May, June, 1947
Cleveland	October, 1951 - January 1952
Columbia	January, February, 1952
Tacubaya	December, 1951
Cartuja	November, December, 1951
Pennsylvania	1945
Stuttgart	January, 1952
De Bilt	January, 1952
Athens	January, 1952
Columbia	May-August, 1951
Helwan	October, 1951, November, 1951
Reykjavik	1951
Djakarta	October, 1950 - March, 1951
Saint Louis and Auxiliary Stations	Preliminaries May 15, 16, 19, 21, 25, 27, 28, 30, 31, June 1, 2
USCGS	1949
Stuttgart	January-June, 1951
Ksara	October-December, 1951
Helsinki	October-December, 1951

March, 1952

Saint Louis and Aux. Stns.	May 29, June 5, 6, 13, 18, 24, 25
Harvard	July 1 to December 31, 1951
Coimbra	October-December, 1951
Bermuda	March, 1952
Columbia	March 3 - April 2, 1952
Weston	January, 1952
Tortosa	January, 1952
Istanbul	December, January, 1952
Beograd	December, 1951, January, 1952
Richmond	January, 1952
Algiers	November, 1951, December
Tamanrasset	November, December, 1951
Portugal	1951
Hong Kong	December, 1951
Rathfarnham	October - December, 1951
Zurich	January, 1952
Rome	December, 1951
South Africa	January, 1952
Strasbourg	February, 1952
Bureau Central	December, 1951
Bureau Central (BCIS)	October, 1951
Edinburgh	1950
Wellington	September, 1951
Pittsburgh	1951
De Bilt	February, 1952
Galerzamba	January-May, 1951
Chinchina	January-May, 1951
Bogota	January-May, 1951
De Bilt	1946
Toledo	December, 1951, January, 1952
Tortosa	February, 1952
I.G.G.U.	October-December, 1940

SEISMOLOGICAL BULLETINS RECEIVED

April, 1952

Rome	January, 1952
USCGS	July-September, 1949
Kalocsa	October-December, 1951, January, February, 1952
Budapest	December, 1951, January, February, 1952
Pasadena	March-July, 1951; Preliminaries November-March, 1952
Weston	February, 1952
Columbia	February 20-March 3, 1952
Bermuda	February 2 - 26, 1952
Richmond	February, 1952
Helwan	January, 1952
Hermanus	January-June, 1951
Kecskemet	January, February, 1952
Szeged	January, 1952
Hong Kong	February, 1952
Cartuja	January, 1952
Santa Clara	February, March, 1952
Beograd	February, 1952
Tananarive	April-June, 1951
Helwan	December, 1951
Stuttgart	February, 1952
Toledo	January, February, 1952
Trieste	1951
Athens	1950; February, 1952
Columbia	Sept. 1 - Dec. 31, 1951
Tacubaya	January, 1952
Pasadena	Locals, October-December, 1951
Perth	October-December, 1951
Zurich	February, March, 1952
De Bilt	March, 1952
Strasbourg	March, 1952
Bureau Central	January, 1952
Bureau Central (BCIS)	November, 1951

DEPARTMENT OF MINES AND TECHNICAL SURVEYS

DOMINION OBSERVATORIES BRANCH

SEISMOLOGICAL SERVICE OF CANADA

Eastern Division

Seismological Bulletin

May - July

1952

000

DOMINION OBSERVATORY

OTTAWA - CANADA

SEISMOLOGICAL SERVICE OF CANADA
DOMINION OBSERVATORY, OTTAWA

C. S. Beals, Dominion Astronomer
Ernest A. Hodgson, Chief, Seismological Division

S T A T I O N S

OTTAWA

ϕ = 45°23'38" N. λ = 75°42'57" W. h = 83m.

Time correction within 0.10s.

Foundation: boulder clay over limestone

Instruments: Milne-Shaw NS and EW components, designated 23 and 17, respectively, each with photographic registration, magnetic damping, paper speed of 15 mm. per min., mass 1 lb.

Benioff Vertical, short and long period, designated BS and BL, respectively, photographic registration, BS a paper speed of 60 mm. per min., BL a paper speed of 30 mm. per min., mass 235 lbs.

HALIFAX

Dalhousie University

ϕ = 44°38' N. λ = 63°36' W. h = 46m.

Time correction from recorded radio time signals

Foundation: Carbonaceous slate

Instruments: Bosch NS and EW components, designated HN and HE, respectively, each with photographic registration, magnetic damping, paper speed of 15 mm. per min., mass 200 g.

SEVEN FALLS

Quebec Power Company

ϕ = 47°07'4 N. λ = 70°49'6 W. h = 232m. ca.

Time correction from recorded radio time signals

Foundation: Solid granite of Canadian Shield

Instruments: Wood-Anderson and Milne-Shaw, both EW components, designated SF and SM, respectively, each with photographic registration, magnetic damping, SF a paper speed of 60 mm. per min. and mass 15g., SM a paper speed of 8 mm. per min. and mass 1 lb.

S T A T I O N S (Cont'd)

SHAWINIGAN FALLS

Shawinigan Water and Power Company
φ = 46°33!1 N. λ = 72°45!8 W. h = 60 m. ca.

Time correction from recorded radio time signals

Foundation: Precambrian basement rocks of Canadian Shield

Instrument: Wood-Anderson NS component, designated SA, photographic registration, magnetic damping, paper speed of 60 mm. per min., mass 15g.

KIRKLAND LAKE

φ = 48°08'41" N. λ = 80°01'45" W. h = 310 m.

Time correction from recorded radio time signals

Foundation: Precambrian basement rocks (Timiskaming Tuff)

Instrument: Sprengnether Vertical, short-period, designated No. 1130, galvanometric registration on photographic paper, paper speed 60 mm. per min.

DETERMINED CONSTANTS

INSTRUMENT	Ts	Tg	V	ε	DISPLACEMENT FOR 1" ARC TILT
17 (Ottawa)	12.0		300	20:1	50 mm.
23 (Ottawa)	12.0		300	20:1	50 mm.
BS (Ottawa)	1.0	0.1			
BL (Ottawa)	1.0	48			
HN (Halifax)	5.0		125	20:1	
HE (Halifax)	5.0		125	20:1	
SA (Shawinigan)	1.0		2200		
SF (Seven Falls)	1.0		2200		
SM (Seven Falls)	12.0		300	20:1	50 mm.
S1130 (Kirkland Lake)	1.4	1.4			

NOTE:- Universal Time used throughout

SEISMOLOGICAL SERVICE OF CANADA
Eastern Division

DOMINION OBSERVATORY, OTTAWA

STATIONS: O - Ottawa SH - Shawinigan Falls
H - Halifax KL - Kirkland Lake
SF - Seven Falls

NOTE: Records during this month from Seven Falls and Halifax have doubtful time corrections. Readings have not been included.

May, 1952

DATE	STN.	PHASE	h m s	REMARKS
1	O	eS	16 22 06	U.S.C.G.S.
		e	06 23 12	28°N, 43 1/2°W
		L	16 26 20	North Atlantic Ocean
				H = 16:10:41
3	KL	eP	12 24 36	U.S.C.G.S.
	O	eP_Z	12 24 40	15°S, 76 1/2°W
		L_N	12:47:25	Off coast of Southern Peru
				H=12:14:09
4	KL	e	14:04:47	
	O	PS	14:44:00	Ottawa readings from Milne-Shaw. Benioff seismometer in operation only part of the time during May due to flooding of vault.
		PPS	14:45:08	
		SS	14:51:08	
		G	15:01:40	
				U.S.C.G.S.
				24 1/2° S, 177 1/2°W
				Tonga Islands region
				H = 14:15:16
6	KL	e(P)	17:27:34	U.S.C.G.S
	O	S	17:33:36	41 1/2N, 125°W
		SSS	17:36:36	Off coast of northern California
		ScS	17:38:10	H = 17:21:02
6	KL	iP	22:33:49 d	
				U.S.C.G.S.
	O	iP	22:33:51	Off coast of Colima, Mexico
		PP	22:35:10	H = 22:26:40
		S	22:39:44	
		L	22:46:02	
7	KL	e	16:31.6	
8	KL	e(P?)	01:11:35	U.S.C.G.S.
				35 1/2 N, 140°E
				Honshu, Japan
				h=60
				H=00:58:40
8	KL	eP'	21:29:46	U.S.C.G.S,
		e	21:30:03	2 1/2°N 127°E
		e	21:30:09	Molucca Passage
	O	eP'	21:29:53	H=21:10:40
		PP	21:32:02	Ottawa Δ=14,200 km.
		PKS	21:33:18	
		SKKS	21:38:48	
		PS	21:41:30	
		PPS	21:44:00	
		SS	21:49:16	
		SSS	21:54:03	
		G	22:02:10	

DATE	STN.	PHASE	h m s	REMARKS
8	0	eP'	22 08 23	
9	KL	eP'	18 06 31	
		F	19.1	
	0	e_N	18 06 48	S.P.Benioff inoperative
		PP	18 08 06	U.S.C.G.S.
		PPP	18 10 43	6 1/2 S, 155°E
		SKS	18 13 40	Solomon Islands
		SKKS	18 15 00	h = 60 km
		PS	18 17 48	H = 17:47:40
		PPS	18 19 25	Ottawa Δ = 13, 450
		SS	18 24 40	
		G	18 37 00	
		L	18 44 15	
9	SH	eP'	18 06 35	
		PP	18 08 27	
13	0	iP	19 38 40 c	
		e	19 40 03	U.S. C. G. S.
		e	19 40 20	10 1/2°N, 85°W
		PcP	19 41 10	Costa Rica
		S	19 44 08	h = 100km
		e	19 46 08	H = 19:31:45
		SS	19 46 32	Ottawa Δ=3950
		ScS	19 49 00	
		L	19 51 16	
	KL	iP	19 38 58 c	
		i	19 39 01 c	
		i	19 39 07 c	
		i	19 39 13 c	
		i	19 39 17 c	
		ePP	19 40 29	
		F	20.2	
	SH	eP	19 38 55	
		PP	19 40 26	
		PPP	19 40 58	
		e	19 43 12	
		S	19 44 50	
		ScS	19 49 37	
		L	19 51 58	
14	0	iP	00 49 36 c	U.S.C. G. S.
		PP	00 52 55	43°N 145 1/2E
		S	01 00 00	Near east coast of Hokkaido, Japan
		PS	01 00 51	H=00:36:59
		PPS	01 01 09	
14	0	iP	21 17 47 c	U.S.C. G. S.
		PP	21 18 45	16 1/2°N 86 1/2°W
		PPP	21 19 15	Off north coast of Honduras
		S	21 22 44	
		L	21 26.0	H= 21:11:36
				Ottawa Δ = 3300km.
	KL	eP	21 18 02	
		i	21 18 27 c	
	SH	eP	21 18 05	
		PP	21 19 11	
		e	21 22 41	
		S	21 23 39	
		SS	21 25 46	

DATE	STN.	PHASE	h m s	REMARKS
15	0	iP	18 50 40 c	U.S.C.G.S.
		PPP	18 52 26	Foreshock of Guatemala 'quake
		S	18 56 04	H=18:43:52
		SSS	18 58 41	
		e	18 59 40	
		L	19 02 18	
	KL	eP	18 50 50	
15	0	eP	21 17 52	U.S.C.G. S.
		i	21 18 17	Northern Chile
	KL	iP	21 18 11 d	h = 100 km
		ipP	21 18 36 d	H=21:06:50
15	0	eP	21 45 50	
16	0	iP	05 48 54 c	
		PP	05 50 19	U.S.C.G.S.
		PPP	05 50 30	14°N 92 1/2°W
		PcP	05 51 32	Near coast of Guatemala
		S	05 54 22	H = 05:42:09
		e	05 56 09	Ottawa Δ = 3750
		SSS	05 56 54	
		e	05 57 55	
		L	06 00	
	KL	iP	05 49 04 c	
		e	05 49 26	
		e	05 50 30	
16	0	iP	10 58 55	U.S.C.G.S.
		S	11 04 24	16 1/2N 96 1/2W
		L	11 12	Oaxoca, Mexico
				h = 100 km
	KL	eP	10 59 00	H = 10 52 18
		i	10 59 10	
16	0	eP	20 53 07	U.S.C.G.S.
		PP	20 54 41	6 1/2N 79°W
		PPP	20 55 05	off coast of Panama
		PcP	20 55 18	H=20:45:40
		S	20 59 04	Ottawa Δ=4350 km
		SS	21 02 07	
		ScS	21 03 18	
	KL	eP	20 53 29 c	
		iPP	20 55 05	
		eS	20 59 42	
	SH	eP	20 53 20	
		e	20 54 48	
		PP	20 55 03	
		e	20 58 53	
		S	20 59 28	
		ScS	21 03 28	
19	KL	eP	18 44 43	U.S.C.G.S.
		F	19.6	43°N 144 1/2°E
	0	eP	18 45 01 c	near east coast of Hokkaido, Japan
		PP	18 48 14	H = 18:32:24
		S	18 55 28	Ottawa Δ = 9350 km.
		PS	18 56 20	
		PPS	18 57 08	
		SS	19 00 42	
		G	19 07 40	
		L	19 11 30	
	SH	eP	18 45 01	
		PP	18 48 21	

DATE	STN.	PHASE	h m s	REMARKS
21	KL	e(P)	11 52 07 c	
22	O	e_N	23 35 35	
		G	23 42 48	
23	KL	eP	22 28 30	U.S.C.G.S.
	O	S	22 32 50	20°N 156° W
		SS	22 37 06	Hawaii , H=22:12:26
		L	22 46 00	Ottawa Δ = 7650
24	O	eP	02 10 06	U.S.C.G.S.
		S	02 18 41	21 1/2 S 71°W
		SS	02 23 16	near coast of northern Chile
		SSS	02 26 02	H = 01:59:05
		G	02 26 44	
	KL	eP	02 10 17	
		iP	02 10 26 c	
	SH	eP	02 10 04	
		PP	02 12 27	
		PPP	02 14 08	
		S	02 18 33	
		ScS	02 19 56	
24	SH	e	16 07 30	Apparently local shock
		F	16 07 42	
24	KL	eP'	16 25 12	U.S.C.G.S.
		e	16 27.6	Off west coast of Sumatra
				H = 16:05:53
	O	ePP	16 27 51	
		PKS	16 28 46	
		e	16 30 11	
		SKKS	16 34 28	
		PS	16 38 10	
		PPS	16 39 52	
		SS	16 45 25	
		SSS	16 51 18	
		G	17 02 20	
	SH	e	16 28 03	
25	KL	e(P)	21 52 33	
26	O	e_N	03 11 24	
28	KL	iP	08 11 33 d	U.S.C.G.S.
		iPP	08 15 11 d	35 1/2°N 136°E
		eS	08 21 52	Central Honshu, Japan
	O	iP	08 11 50 d	h = 400 km
		PP	08 15 40	H = 07:59:09
		PPP	08 17 40	
		SKS	08 21 47	
		S	08 22 24	
		SP	08 23 40	
		pS	08 24 20	
		e	08 26 12	
		SS	08 28 50	
		sSS	08 31 12	
		SSS	08 33 14	
		G	08 37.6	
	SH	eP	08 11 49	Earth to N
		sP	08 14 05	
		PP	08 15 30	
		PPP	08 17 39	
		SKS	08 21 47	

DATE	STN.	PHASE	h m s	REMARKS
28	O	P Sn	14 33 33 14 33 51.5	Δ=155 km H=14:33:08
31	KL	e	05 14 22	

J. H. Hodgson

J. L. O'Connor

SEISMOLOGICAL SERVICE OF CANADA
Eastern Division

DOMINION OBSERVATORY, OTTAWA

STATIONS: O - Ottawa
H - Halifax
SF- Seven Falls
SH - Shawinigan Falls
KL - Kirkland Lake

NOTE: Difficulties have continued with the Seven Falls time corrections. Most Seven Falls readings have been omitted.

June, 1952

DATE	STN.	PHASE	h : m. s	REMARKS
3	KL	e(P)	12 31 40	
4	O	iP	21 38 17 d	
		i	21 38 22	U.S.C.G.S.
		PPP	21 40 30	Foreshock of Columbia 'quake
		S	21 44 30	H=21 30 52
		SS	21 47 12	
		L	21 51.0	
	KL	eP	21 38 40 probably c	
		i	21 38 46 d	
	SH	e	21 43 41	
		L	21 53 34	
5	O	eP	06 04 04	U.S.C. G. S.
		PPP	06 06 12	6°N, 77 1/2 W
		S	06 10 07	Near west coast of Columbia
		SS	06 13 12	h = 60 km
		L	06 16	H=05:56:35
	KL	eP	06 04 28	
		i	06 04 32 d	
	SH	eP	06 04 16	
		PP	06 06 00	
		PPP	06 06 20	
		S	06 10 27	
10	O	e_N	10 25 20	U.S.C.G.S.
		PS	10 27 00	15 1/2°S 178 1/2W
		SS	10 33 08	Fiji Isl. Region
		G	10 43.5	H=09:58:27
	H	e(PS)	10 28 46	
		G	10 48 25	
11	O	iP	00 43 31 c	U.S.C. G.S.
		PP	00 46 20	32°S 67 1/2W
		e_{NE}	00 48 00	San Juan Prov. Argentina
		S	00 53 18	H=00:31:32
		PS	00 54 00	
		PPS	00 54 12	
		SS	00 58 10	
		e_{NE}	01 01 00	
		SSS	01 02 20	
		G	01 03.5	
		L	01 08.3	
	KL	iP	00 43 49 c	
		F	0:52	
	SH	eP	00 43 38	
		PP	00 46 36	
		S	00 53 29	
	SF	eP	00 43 44	
		iS	00 53 38	
		SS	00 58 40	
		G	01 04 51	

'quake cont'd on next page

DATE	STN.	PHASE	h m s		REMARKS
11	H	eP	00 43 26		
		PP	00 46 22		
		S	00 53 12		
		ScS	00 53 42		
		G	01 03 24		
		L	01 06 54		
11	O	iP	03 12 26	c	Aftershock of above
					H= 03:00:28
	KL	eP	03 12 44	c	
	SF	eP	03 12 40		
	SH	eP	03 12 32		
13	KL	eP	21 31 26		Possibly a local disturbance
		i	21 31 31		
14	KL	eP	02 13 28	d	U.S.C.G.S.
	O	iP	02 13 59	d	58°N 153 1/2 W
	SF	eP	02 14 10		near coast of Alaska Peninsula
		PP	02 16 13		h = 60 km
		PPP	02 17 05		H = 02:05:33
		S	02 21 08		
		ScS	02 23 59		
		L	02 30 39		
	SH	eP	02 14 04		
15	KL	eP	15 19 20	probably c	
		i	15 29 55		U.S.C.G.S.
	O	eP	15 19 54		66°N 134°W
		e_{NE}	15 31 45		Yukon, Canada
		L	15 34.0		H = 15:12;41
	SF	e	15 27 37		
		G	15 32 17		
		L	15 34 35		
	SH	eP	15 20 01		
		e	15 31 23		
		L	15 34 44		
17	O	e_E	04 36 40		
		e_E	04 43 16		
		L	05 03.0		
	SF	e	04 37 03		
		e	04 43 58		
		L	05 06.8		
17	KL	e(P)	19 58 58		
17	KL	e	23 01 24		
18	KL	eP_1	19 00 03		Blast at Matachewan, Ontario
		iS_1	19 00 11		52 tons of explosive
19	O	ePP	12 32 21		U.S.C.G.S.
		PPP	12 34 50		23°N 100°E
		SKS	12 38 17		Southern Yunnan Prov. China
		SKKS	12 39 22		H = 12:12:56
		PS	12 42 02		
		PPS	12 43 03		
		e	12 46 44		
		SS	12 48 04		
		SSS	12 52 00		
		G	12 59.2		
	H	e	12 58 47		

DATE	STN.	PHASE	h m s	REMARKS
19	O	SKKS	21 23 40	U.S.C.G.S.
		e	21 30 08	Tonga Isl. Region
		SS	21 32 40	H = 20:57:01
		SSS	21 36 50	
		e	21 38 10	
	H	e	21 29 40	
		e	21 37 43	
		L	21 51 37	
20	KL	e(PP)	06 04 50	
		ePP	06 05 18	U.S.C.G.S.
		eZ	06 05 41	25 1/2°N 122°E
		PS	06 14 32	North coast of Formosa
		PPS	06 15 37	
		SS	06 20 14	
		SSS	06 24 16	
20	KL	eP	09 41 43	
		eS	09 42 31	
	O	iP	09 40 14	
		S	09 41 45	
	SH	eS	09 42 23	
21	KL	eP	06 40 38 c	U.S.C.G.S. Foreshock of Kurile 'quake H=06:28:57
	O	e(S)	06 50 52	
		SSS	06 59.6	
		L	07 09.3	
	SF	eS	06 50 56	
		SSS	07 00 02	
	SH	eS	06 50 53	
21	KL	eP	16 42 14 c	
22	O	iP	04 16 26	U.S.C.G.S.
	KL	eP	04 16 48prob.c	1 1/2°S, 80 1/2° W
	SH	eP	04 16 41	near coast of Ecuador H = 04:07:57
22	O	eP	10 20 14	U.S.C.G.S.
		S	10 30 04	Kurile foreshock
	KL	eP	10 19 55	Probably c
	SF	S	10 30 15	H = 10:08:14
		SSS	10 39 18	
		L	10 44 28	
	SH	eP	10 20 19	
		S	10 30 08	
22	KL	eP	21 53 35	Small c followed by large d
		F	23.0	
	O	iP	21 53 55	U.S.C.G.S.
		PP	21 57 00	46°N 153 1/2E
		PPP	21 58 50	Kurile Islands
		S	22 03 48	H = 21:41:53
		PS	22 04 32	
		e	22 07 22	
		SS	22 09 06	
		SSS	22 12 22	
		L	22 24 40	
	SF	eP	21 54 06	
		PP	21 57 09	
		PPP	21 59 03	
		S	22 03 57	
		SS	22 09 06	
		SSS	22 13 03	

'quake cont'd on next page

DATE	STN.	PHASE	h m s	REMARKS
22	SF	L	22 17 04	
	SH	eP	21 53 59	
		PP	21 57 04	
		PPP	21 58 57	
		S	22 03 50	
		SS	22 09 03	
		L	22 26 30	
22	KL	eP	22 11 46	
24	O	eS	16 51 00	
24	O	e	21 17 04	
25	O	e	23 48 38	
		e(SSS)	23 57 14	
		L	24 13 30	
26	O	e	15 46 20	
		L	15 50.2	
28	O	iP	05 12 39 d	U.S.C.G.S.
	KL	eP	05 12 28 probably d	55 1/2°N 165°E
	SH	eP	05 12 40	Kamchatka
				H = 05:01:43
28	O	iP	16 34 34 c	U.S.C.G.S.
		iZ	16 34 37	16 1/2°N 97 1/2°W
		PP	16 35 47	Oaxaca, Mexico
		PPP	16 36 07	H = 16:27:47
		S	16 40 03	
	KL	eP	16 34 39	Possible small d, followed by c
	SH	e	16 34 57	
28	KL	eP'	19 24 58	
	O	eP'	19 25 05	
29	O	iP	10 03 36 c	U.S.C.G.S.
		PP	10 05 04	8 1/2 N, 72 1/2W
		S	10 09 14	Columbia-Venezuela Border
	KL	iP	10 04 03 c	h=150
		epP	10 04 38 Probably c	H=09:56:36
	SH	eP	10 03 46	
		PP	10 05 18	
29	KL	eP	16 54 22 Probably c	
30	O	e(P)	06 13 33	

J. H. Hodgson

J. L. O'Connor

SEISMOLOGICAL SERVICE OF CANADA
Eastern Division

DOMINION OBSERVATORY, OTTAWA

STATIONS:
O - Ottawa
H - Halifax
SF - Seven Falls
SH - Shawinigan Falls
KL - Kirkland Lake

Note: Seven Falls time corrections continue doubtful. Readings have not been included.

July, 1952

DATE	STN.	PHASE	h m s	REMARKS
3	O	iP	00 59 59 c	U.S.C.G.S.
		PP	01 01 40	5 1/2°N 78°W
		PPP	01 02 05	near west coast of Colombia
		S	01 06 05	H = 00:52:23
		SS	01 09 05	Ottawa Δ = 4400 km
		SSS	01 09 34	
		ScS	01 10 06	
	KL	eP	01 00 22 c	
	SH	eP	01 00 11	
5	KL	eP	17 32 34 d	U.S.C.G.S.
		iP	17 32 35 c	36 1/2N 71°E
	O	iP	17 32 40 probably d	Hindu Kush
		pP	17 33 32	h = 200 km
		PP	17 36 23	H=17:19:47
		PS	17 44 26	
	SH	eP	17 32 31	
5	KL	e(P)	23 18.3	
6	O	eP	06 21 49	U.S.C.G.S.
		S	06 31 06	Mid-Atlantic Ocean 600 miles southwest of Liberia
	KL	eP	06 22 14	H = 06:10:45
7	O	iP	03 02 28 d	U.S.C.G.S.
		i	03 03 03	54°N, 164°W
		PcP	03 03 32	Unimak Island
		PP	03 04 44	H = 02:53:01
		PPP	03 05 46	
		S	03 10 06	
		PS	03 10 23	
		PPS	03 10 37	
		ScS	03 12 16	
		SS	03 14 05	
		SSS	03 16 14	
		e	03 18 30	
		L	03 21.3	
	KL	eP	03 01 58	
	SH	eP	03 02 34	
7	KL	eP	08 05 03 d	
8	KL	eP	01 11 04	U.S.C.G.S.
	O	iP	01 11 20	42°N 131°E
				h = 600 km
				H = 00:59:23

July, 1952

DATE	STN.	PHASE	h m s	REMARKS
9	0	iP	18 22 41 c	U.S.C.G.S.
		PP	18 24 22	7 1/2°N 82°W
		PPP	18 24 34	off coast of Panama
		PcP	18 25 16	H = 18:15:18
		S	18 28 38	
		SS	18 31 10	
		SSS	18 31 40	
		ScS	18 33 20	
		L	18 35 00	
	KL	iP	18 23 00 c	
		i	18 23 03.2 d	
	SH	eP	18 22 54	
		PP	18 24 32	
		PPP	18 24 51	
		S	18 28 53	
		SS	18 31 44	
		SSS	18 32 08	
		ScS	18 33 26	
9	0	iP	20 44 11 c	U.S.C.G.S.
		PP	20 45 47	Aftershock of above 'quake
		S	20 50 04	H = 20:36:48
		L	20 56 20	
	KL	iP	20 44 30 c	
	SH	eP	20 44 24	
10	KL	eP'	16 02 46	U.S.C.G.S.
	0	iP'	16 02 50	18 1/2S 180°
				Fiji Islands
	SH	eP'	16 03 11	h = 700 km
				H = 15:45:28
11	0	iP	04 44 04 d	U.S.C.G.S.
	KL	iP	04 44 24 d	Northern Argentina
	SH	eP	04 44 08	H = 04:33:00
12	KL	e(P)	00 17 43	
		e	00 19 54	
12	0	eP	02 55 15 c	followed by an id
12	KL	e(P)	15 25.3	
13	KL	eP'	12 16 49 d	followed by an i c
		i(pP)	12 18 02 c	U.S.C.G.S.
		F	12 32	18 1/2 S, 169 1/2E
	0	iP'	12 16 54 c	New Hebrides
		PP	12 18 24	h=300 km
		sPP	12 20 08	H=11:58:34
		PPP	12 21 05	Ottawa Δ=13,350
		SKS	12 23 26	
		SS	12 34 30	
		G	12 48 20	
	SH	eP'	12 16 58	
		PP	12 18 33	
		SKS	12 23 40	
13	KL	eP'	17 53 38	U.S.C.G.S.
	0	iP'	17 53 47 c	3°S, 128E
		PP	17 56 14	Ceram Sea
		PKS	17 57 13	H=1734:26
		PPP	17 59 06	Ottawa Δ = 14,800 km
		SKS	18 00 51	
		SKKS	18 03 04	
		PS	18 06 05	

'quake cont'd on next page

DATE	STN.	PHASE	h m s	REMARKS
13	O	PPS	18 07 42	
		e	18 09 10	
		SS	18 14 20	
		SSS	18 19 00	
		G	18 29 00	
	SH	eP'	17 53 37	
		e	17 56 40	
		PKS	17 57 10	
		PPP	17 58 34	
		SKS	18 00 40	
		SKKS	18 02 42	
14	O	iP	22 00 50.5	local
		i	22 00 51.5	
		e	22 00 55.5	
15	O	iP	06 13 05 d	U.S.C.G.S.
		PP	06 14 34	14 1/2°N, 92 1/2°W
		PcP	06 15 50	Near coast of Guatemala
		S	06 18 33	H=06:06:20
		SS	06:20:30	Ottawa Δ=3750
		SSS	06 21 24	
		ScS	06 23 30	
	KL	eP	06 13 15 d followed by i c	
	SH	eP	06 13 22	
		PP	06 14 52	
		PPP	06 15 17	
		ScS	06 23 55	
15	O	eP	19 11 13	U.S.C.G.S.
		e	19 12 38	350 Miles South of Colima, Mexico
		S	19 17 16	H=19:03:35
		SSS	19 20 42	
		ScS	19 21 33	
		L	19 23 37	
16	O	eP	01 38 02	U.S.C.G.S.
		PcP	01 40 41	29 1/2 N, 113 1/2W
		S	01 43 40	near coast of lower California
		ScS	01 48 22	H=01:31:14
		L	01 49 17	
	KL	e	01 48.2	
17	O	iP	04 53 16 d	
	KL	iP	04 53 36 d	
17	KL	eP	16 22 48 d	
		iP	16 22 49 c	
		ipP	16 23 14 d	
		e	16 33.8	
	O	eP	16 23 09 d followed by i c	
		pP	16 23 29	
		PP	16 27 06	U.S.C.G.S.
		PPP	16 29 05	34 1/2°N 136°E
		e	16 32 17	Southern Honshu, Japan
		SKS	16 33 36	h = 100 km
		S	16 34 14	H=16:09:52
		PS	16 35 43	Ottawa Δ = 10,500 km.
		PPS	16 36 13	
		SS	16 40 51	
		G	16 49 16	
	SH	eP	16 23 28	
		PP	16 27 19	
		PPP	16 29 20	
		e	16 33 35	

quake cont'd on next page

DATE	STN	PHASE	h m s	REMARKS
17	SH	S	16 34 17	
		e	16 34 42	
		e	16 35 32	
		PS	16 35 47	
	H	SKS	16 33 58	
		S	16 34 33	
		SS	16 41 42	
		SSS	16 45 36	
		G	16 49 37	
18	O	eP	18 51 35 d	U.S.C.G.S.
		e	18 53 53	23°S, 114 1/2°W
		PP	18 54 30	Eastern Island region
		PPP	18 56 20	H=18:39:40
		S	19 01 18	Ottawa Δ=8500
		PS	19 02 06	
		SS	19 06 16	
		SSS	19 09 36	
		G	19 11 30	
	KL	eP	18 51 37	Probably c, followed by i d
	SH	eP	18 51 45	
		PPP	18 56 36	
	H	eP	18 52 05	
		S	19 02 16	
		SS	19 07 48	
19	O	iPn	01 16 43	Δ=160 km
		Sn	01 17 02	H=01:15:17.5
	KL	ePn	01 17 07	Δ=352 km
		eSn	01 17 43	H=01:16:17.5
		S_2	01 17 55	
	SH	ePn	01 16 53	Δ=235
		e	01 16 59	H=01:16:18
		Sn	01 17 18.5	
		e	01 17 21.5	Epicentre 46°50'N 75°40'W H=01:16:17.5 Felt at Maniwaki, Lochiel and Orlo, Quebec.
19	KL	e(P)	02 14 02	
20	SH	e	12 55 41	
		F	12 58 05	
20	KL	e(P)	17 54 26	
21	KL	eP	11 58 40 c	Galvanometer jammed
		iP	11 58 42 c	at about 12:13
	O	iP	11 59 02 c	U.S.C.G.S.
		PP	12 00 13	35.1°N, 118.9W
		PPP	12 00 34	Tulare Valley, California
		PcP	12 01 40	H=11:52:11.5
		S	12 04 38	Ottawa Δ = 3800 km
		SS	12 06 32	
		SSS	12 07 04	
		ScS	12 09 20	
	SH	eP	11 59 20	
		PP	12 00 56	
		PPP	12 01 09	
		PcP	12 01 43	
		S	12 05 11	
		SS	12 07 43	
		ScS	12 09 37	
		L	12 10 12	

'Quake cont'd on next page

DATE	STN	PHASE	h m s	REMARKS
21cont'd	H	iP	12 00 19	Earth to N
		PP	12 02 01	
		PPP	12 02 45	
		S	12 06 49	
		SS	12 10 01	
		L	12 12.1	
21	O	iP	19 48 09 d	Aftershock of California 'quake
		PP	19 49 28	H=19:41:18
		S	19 53 38	Note: Kirkland Lake Seismograph
		SS	19 56 08	out of operation from main
		SSS	19 57 08	shock.
		ScS	19 58 34	
		L	19 59 32	
	SH	e	19 57 59	
		L	20 00 21	
22	KL	e	09 43.7	
22	O	Pn	15 31 52.5	Δ=315 km
		Sn	15 32 25.5	H=15:31:07.5
	SH	Pn	15 31 43.5	Δ=245 km
		Sn	15 32 09	H=15:31:07.5
		e	15 32 26	
22	O	Pn	19 33 02	Δ=170 km
		Sn	19 33 21	H=19:32:35
	SH	eP_1	19 32 54.5	Δ=115 km
		S_1	19 33 09	H=19:32:35.5
		i	19 33 14	
		e	19 33 16.5	
22	O	Pn	20 05 11	Δ=350
		Sn	20 05 47	H=20:04:22
23	KL	eP	00 44 52 d	U.S.C.G.S.
		iP	00 44 54 c	Aftershock of California 'quake
	O	eP	00 45 16 c,E	H=00:38:33
		PP	00 46 34	
		PPP	00 47 01	
		iPcP	00 47 55	
		S	00 50 42	
		SS	00 53 02	
		SSS	00 53 26	
		ScS	00 55 48	
	SH	eP	00 45 36	
		PP	00 47 05	
		PcP	00 48 04	
		S	00 51 03	
		SSS	00 54 23	
		ScS	00 55 51	
		L	00 56 44	
23	O	iP	01 06 07 c	U.S.C.G.S.
	KL	iP	01 06 18 c	14°N, 91 1/2W
	SH	eP	01 06 25	near coast of Guatemala
				H=00:59:17
				Ottawa Δ=3750
23	O	eP	03 26 07	
		L	03 37 06	

DATE	STN	PHASE	h m s	REMARKS
23	KL	eP	07 59 39	probably c U.S.C.G.S.
	O	eP	08 00 02	Southern California aftershock
		L	08 11 28	H=07:53:17
	SH	eP	08 00 27	
		L	08 12 24	
23	KL	iP	13 23 31	Ottawa sheets being changed
	SH	eP	12 23 59	U.S.C.G.S.
		PP	13 25 19	Southern California aftershock
		L	13 35 21	H=13:17:02
24	O	iP_1	18 45 44	Δ=150 km
		iS_1	18 46 01	
		L	18 46 11	
24	KL	iP	22 21 33	c
		epP	22 21 46	probably c U.S.C.G.S.
	O	iP	22 21 53	c 42 1/2 N, 145 1/2E
		e	22 24 49	Hokkaido Japan
		PP	22 25 08	h=60 km
		S	22 32 14	H=22:09:20
		PPS	22 33 48	Ottawa Δ = 9400 km
		SS	22 37 43	
		SSS	22 41 22	
		G	22 44 19	
	SH	eP	22 21 51	
		S	22 32 20	
25	KL	eP	14 37 15	probably c
	O	eP	14 37 16	
		e	14 39 48	
		e	14 42 40	
25	KL	eP	19 16 08	c, followed by i d
	O	iP	19 16 30	U.S.C.G.S.
		PcP	19 19 10	Southern California aftershock
		S	19 21 50	H=19:09:42
		SS	19 24 06	
		SSS	19 24 28	
		ScS	19 27 00	
		L	19 27 40	
	SH	eP	19 16 52	
		PcP	19 19 17	
		S	19 22 28	
		L	19 27 31	
25	KL	iP	19 49 45	c U.S.C.G.S.
	O	eP	19 50 07	Southern California aftershock
		L	20 01 00	H=19:43:20
	SH	eP	19 50 30	
		PcP	19 53 06	
		ScS	20 01 00	
		L	20 01 30	
27	KL	e(P↓)	08 41 22	
		i(PP)	08 42 47	d
	O	ePP	08 42 04	Short-period Benioff not operating
		e	08 44 30	for this 'quake
		SKS	08 47 06	U.S.C.G.S.
		SP	08 51 00	20 1/2°S, 179°W
		sPS	08 54 06	Fiji Islands
		e	08 56 38	h=500km
		e	09 00 03	H=08:23:22
	SH	eP↑	08 41 09	

'QUAKE CONT'D ON NEXT PAGE

DATE	STN	PHASE	h m s	REMARKS
27 cont'd	SH	PP	08 42 18	
		pPP	08 44 16	
		pPP	08 45 01	
		S	08 49 28	
	H	ePP	08 43 03	
		SKS	08 47 38	
		SP	08 52 22	
		PPS	08 54 35	
		SS	08 59 04	
		sSS	09 02 01	
27	O	iP	23 30 35 c	
29	KL	iP	07 10 09 d	
		F	07 50	U.S.C.G.S.
	O	iP	07 10 32 d	35°N 119°W
		PP	07 11 47	Southern California
		PPP	07 12 14	H = 07:03:45
		PcP	07 13 12	
		S	07 16 03	
		e	07 17 27	
		SS	07 18 23	
		SSS	07 19 02	
		ScS	07 21 08	
		L	07 21 30	
	SH	eP	07 10 48	
		e	07 11 34	
		PPP	07 12 44	
		PcP	07 13 20	
		S	07 15 10	
		SSS	07 19 11	
		L	07 21 24	
	H	e	07 21 20	
		L	07 23 28	
29	O	iP	20 04 39 d	U.S.C.G.S.
	SH	eP	20 04 42	53 1/2 N, 175°W
				Andreanof Islands, Aleutian
				H=19:54:27
30	O	eP	03 44 16	

Note: The Bosch seismographs, which have been the complete instrumentation of the Halifax station for many years and which were the original seismographs in use at Ottawa, were removed from operation on July 30. The station has been replaced by a new one, in a new vault, equipped with Benioff vertical, short-and long-period, and long-period Sprengnether horizontals. The new station was placed in operation late in July. Details will be found in next issue of these bulletins.

31	KL	iP	12 15 28 c	followed by stronger i d
	O	iP	12 15 52 c	U.S.C.G.S.
		PP	12 17 07	35 1/2 N, 118 1/2 W
		PcP	12 18 31	Southern California
		S	12 21 17	H=12:09:08
		ScS	12 26 26	
		L	12 27.3	
	SH	eP	12 16 09	
		L	12 27 44	
31	O	eP	12 28 34	U.S.C.G.S.
		i	12 28 42	34°S 72 1/2°W
	KL	iP	12 28 49 c	Central Chile
		iP	12 28 56 c	h=100 km
		i(pP)	12 29 03 c	H=12:16:35
				Ottawa Δ=8800 km

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DEPARTMENT OF MINES AND TECHNICAL SURVEYS

DOMINION OBSERVATORIES BRANCH

SEISMOLOGICAL SERVICE OF CANADA

Eastern Division

Seismological Bulletin

August - September

1952

000

DOMINION OBSERVATORY

OTTAWA - CANADA

SEISMOLOGICAL SERVICE OF CANADA
DOMINION OBSERVATORY, OTTAWA

C. S. Beals, Dominion Astronomer
John H. Hodgson, Chief, Seismological Division

S T A T I O N S

OTTAWA

ϕ = 45°23'38" N. λ = 75°42'57" W. h = 83m.

Time correct within 0.02s.

Foundation: boulder clay over limestone

Instruments: Milne-Shaw NS and EW components, designated 23 and 17, respectively, each with photographic registration, magnetic damping, paper speed of 15 mm. per min., mass 1 lb.

Benioff Vertical, short and long period, designated BS and BL, respectively, photographic registration, BS a paper speed of 60 mm. per min., BL a paper speed of 30 mm. per min., mass 235 lbs.

Leet-Blumberg, 3-component, pen-recording seismograph. Final adjustments of the instruments have not been made, the inertial elements are currently operating at a period of about 2 seconds.

HALIFAX

Dalhousie University

ϕ = 44°38' N. λ = 63°36' W. h = 46m.

Time correction from recorded radio time signals

Foundation: Carbonaceous slate

Instruments: Sprengnether NS and EW long period horizontals, damping critical, photographic registration, paper speed of 30 mm. per minute.

Benioff Vertical, short and long period, designated BS and BL, photographic registration, BS a paper speed of 60 mm. per minute, BL a paper speed of 30 mm. per minute.

SEVEN FALLS

Quebec Power Company

ϕ = 47°07'4 N. λ = 70°49'6 W. h = 232m. ca.

Time correction from recorded radio time signals

Foundation: Precambrian Basement rock of Canadian Shield

S T A T I O N S (Cont'd)

Instruments: Wood-Anderson and Milne-Shaw, both EW components, designated SF and SM, respectively, each with photographic registration, magnetic damping, SF a paper speed of 60 mm. per min. and mass 15g., SM a paper speed of 8 mm. per min. and mass 1 lb.

SHAWINIGAN FALLS

Shawinigan Water and Power Company

$\varphi = 46^{\circ}33\frac{1}{2}1$ N. $\lambda = 72^{\circ}45\frac{1}{2}8$ W. h = 60 m. ca.

Time correction from recorded radio time signals

Foundation: Precambrian basement rock of Canadian Shield

Instruments: Wood-Anderson NS component, designated SA, photographic registration, magnetic damping, paper speed of 60 mm. per min., mass 15g.

KIRKLAND LAKE

$\varphi = 48^{\circ}08'41''$ N. $\lambda = 80^{\circ}01'45''$ W. h = 310 m.

Time correction from recorded radio time signals

Foundation: Precambrian basement rock (Timiskaming Tuff)

Instrument: Sprengnether Vertical, short-period, designated No. 1130, galvanometric registration on photographic paper, paper speed 60 mm. per min.

DETERMINED CONSTANTS

INSTRUMENT	Ts	Tg	V	ϵ	DISPLACEMENT FOR 1" ARC TILT	SYNCHRONOUS MAGNIFICATION
17 (Ottawa)	12.0		300	20:1	50 mm.	
23 (Ottawa)	12.0		300	20:1	50 mm.	
BS (Ottawa)	1.0	0.1				
BL (Ottawa)	1.0	48				
SA (Shawinigan)	1.0		2200			
SF (Seven Falls)	1.0		2200			
SM (Seven Falls)	12.0		300	20:1	50 mm.	
S1130 (Kirkland Lake)	1.4	1.4				10,000 ca.
NS (Halifax)	20.	20.				6,000
EW (Halifax)	20.	20.				6,000
BS (Halifax)	1.0	0.2				
BL (Halifax)	1.0	60				

NOTE:- Universal Time used throughout

SEISMOLOGICAL SERVICE OF CANADA
Eastern Division

DOMINION OBSERVATORY, OTTAWA

STATIONS:
O - Ottawa
KL - Kirkland Lake
SH - Shawinigan Falls
SF - Seven Falls
H - Halifax

August, 1952

DATE	STN.	PHASE	h m s	REMARKS
2	O	iPn	09:49:15	Δ = 220 km.
		iSn	09:49:39	H = 09:48:42
		i	09:49:51	
3	O	iP	13:23:41 d	U.S.C.G.S.
		PcP	13:24:44	12 1/2° S, 78° W
		e	13:25:24	Near Coast of Peru
		PP	13:25:46	H = 13:13:48
		S	13:31:36	Ottawa Δ = 6350 km.
		SS	13:35:40	
	SH	eP	13:23:48	
		e	13:25:24	
	H	eP	13:23:46	
5	O	e_z	22:05:31	
		i_z	22:05:44	
6	O	eP	05:16:25	U.S.C.G.S.
		i	05:16:30	Mid-Atlantic Ocean, 800 mi. Northeast of Brazil
	KL	eP	05:16:51	H = 05:06:10
	H	eP	05:15:34	
6	KL	e(P)	22:01:21	Probably d
7	KL	e(P)	22:06:1	U.S.C.G.S. 43° N, 144 1/2° E Near east coast of Hokkaido, Japan H = 21:53:31 Note: Ottawa sheets were put on upside down
9	O	Pn	14:02:52	Δ = 150 km.
		Sn	14:03:09	
		L	14:03:18	
10	O	iP	00:31:44 c	
		i	00:32:09	
10	KL	e(P)	10:39:47	
12	O	eP'	06:50:11	U.S.C.G.S.
		e	06:50:31	Off northwest coast of Sumatra
		PP	06:52:15	H = 06:31:03
	KL	eP'	06:50:07	
13	O	iP	12:02:46 d	U.S.C.G.S.
		e	12:12:00	6° N, 83° W South of Panama
	KL	eP	12:02:55 d	H = 11:55:50

DATE	STN.	PHASE	h m s	REMARKS
13	H	iP	14:42:55 c	
13	H	eP	21:19:17	U.S.C.G.S.
		i	21:19:23	North Atlantic Ocean,
		PP	21:19:47	about 900 miles southwest
		PPP	21:20:00	of Azores
		S	21:23:20	H = 21:14:11
		L	21:24.7	
14	O	ePP	16:22:27	U.S.C.G.S.
		PKS	16:23:41	Near South coast of
		SS	16:40:06	Indo-China
				H = 16:01:07
	KL	eP'	16:20:14 d	
		e	16:22:23	
		e	16:23:33	
	SF	e(SS)	16:39:37	
		e	16:42:08	
		L	16:59:41	
	H	eP'	16:20:15	
		i	16:20:34	
		PP	16:22:29	
		PKS	16:23:35	
		SS	16:39.9	
		SSS	16:44.9	
14	O	Pn	18:10:12.5	Δ = 170 km.
		e	18:10:16.5	H = 18:09:45.5
		Sn	18:10:32	
		S_1	18:10:35.5	
		e	18:10:39	
		L	18:10:41	
14	O	e(P)	21:51:23	
	KL	e Possible	21:49.8	
		e	21:50:50	
14	O	iP'	23:35:37 d	
		i	23:35:51	U.S.C.G.S.
		i	23:35:56	6° S, 155° E
		PP	23:37:05	Solomon Islands
		SKS	23:42:30	H = 23:16:42
		SKKS	23:44:03	
		PS	23:47:04	
		PPS	23:48:23	
		e	23:52:08	
		SS	23:53:38	
		SSS	23:58:15	
		G	24:06.6	
		L	24:12.0	
	KL	eP'	23:35:31	
		e	23:35:44	
		e	23:36:45	
	SF	ePP	23:37:44	
		SKS	23:42:57	
		SKKS	23:44:39	
		PS	23:47:33	
		PPS	23:49:06	

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DATE	STN.	PHASE	h m s	REMARKS
14	SF	SS	23:54:29	
		SSS	23:58:29	
		G	24:06:34	
		L	24:12:54	
	H	eP'	23:35:52 c	
		i	23:36:07	
		e	23:37:14	
		PKS	23:39:39	
		SKKS	23:44:54	
		PS	23:47:09	
		PPS	23:49:50	
		SS	23:54.9	
		L	24:15	
14	O	i(P)	23:45:39	
15	KL	e(P)	23:34:39	
16	SF	ePP	14:12:26	U.S.C.G.S.
		PPP	14:15:12	Solomon Islands Region
		SKS	14:17:44	H = 13:51:35
		SKKS	14:19:25	
		PS	14:22:10	
		SS	14:29:36	
		SSS	14:34:16	
		G	14:41:20	
		L	14:46:15	
17	H	eP'	04:43:37 d	
17	H	eP'	11:08:04 d	
17	KL	eP	16:16.1	
		e	16:19:31	
		e	16:20.2	
		F	17:35	
	O	eP	16:16:16	U.S.C.G.S.
		i	16:19:04	30 1/2° N, 91 1/2° E
		i	16:19:46	Eastern Tibet
		i	16:20:24	H = 16:02:05
		PP	16:20:35	
		PPP	16:22:48	
		SKS	16:27:00	
		S	16:28:00	
		SS	16:35:14	
		SSS	16:39:00	
		G	16:45:20	
	SF	eP	16:15:58	
		PP	16:20:10	
		e	16:22:57	
		SKS	16:26:37	
		S	16:27:42	
		PS	16:29:19	
		SS	16:34:39	
		SSS	16:38:29	
		G	16:42:56	
		L	16:45:29	
	SH	e	16:19:12	
		ePP	16:20:15	
		PPP	16:22:56	

'quake cont'd on next page

DATE	STN.	PHASE	h m s	REMARKS
17	SH	SKS	16:26:50	
		S	16:27:52	
		PPS	16:30:48	
		L	16:50.5	
	H	eP	16:16:06	
		PP	16:20:13	
		PPP	16:22:31	
		e	16:24:05	
		SKS	16:26:41	
		SKKS	16:27:11	
		S	16:27:26	
		Ps	16:29:24	
		PPS	16:30:01	
		SS	16:34:51	
		SSS	16:38:36	
18	KL	e(P)	05:39:15	
18	0	eP	13:16:51	U.S.C.G.S. Central Chili
	KL	eP	13:16:58	Argentina Border H = 13:04:50
	H	iP	13:16:40 c	
		S	13:26:17	
18	0	P_1	16:27:22	Δ = 95 km.
		S_1	16:27:34	
19	0	iP	00:01:11 d	
		PcP	00:03:41	
		S	00:06:52	
	KL	eP	00:01:14 probably c	
19	0	iP	14:09:30 c	U.S.C.G.S.
		SSS	14:16:20	16° N, 60 1/2° W Leeward Islands
	KL	iP	14:10:05 c	H = 14:03:00
		e	14:10:20	Ottawa Δ = 3500
	SF	eS	14:14:40	
	SH	eP	14:09:32	
	H	iP	14:09:03 c	
19	KL	eP	22:08:37	
20	0	iP	05:55:44 c, followed by id	
		pP	05:56:24	U.S.C.G.S.
		sP	05:56:44	16°N, 92°W
		PP	05:57:07	Mexico-Guatemala Border
		PcP	05:58:15	h = 200 km.
		sS	06:02:06	H = 05:49:28 Ottawa Δ = 3600
	KL	eP	05:55:55 d, possibly an earlier weak c	
	SH	eP	05:56:01	
	H	iP	05:56:27 c	
20	KL	eP	15:31:37	
		F	16:25	

'quake cont'd on next page

DATE	STN.	PHASE	h m s	REMARKS
20	O	iP	15:32:08 d	
		i	15:33:13	U.S.C.G.S.
		PP	15:33:35	43° N, 127° W
		PPP	15:33:56	Off coast of Oregon
		PcP	15:34:42	H = 15:24:59
		e	15:37:05	
		S	15:37:56	
		e	15:39:04	
		e	15:40:36	
		SSS	15:41:00	
		ScS	15:42:30	
		L	15:43:35	
	SH	eP	15:32:21	
		PP	15:33:49	
		PPP	15:34:26	
		PcP	15:34:48	
		e	15:35:25	
		S	15:38:09	
		e	15:38:48	
		e	15:39:43	
		SS	15:40:53	
		SSS	15:41:27	
		ScS	15:42:35	
		L	15:44:23	
	SF	eP	15:32:32	
		e	15:32:38	
		ePP	15:34:05	
		i	15:34:11	
		PPP	15:34:43	
		PcP	15:34:47	
		iS	15:38:37	
		ISS	15:41:14	
		ScS	15:42:51	
		L	15:43.9	
	H	eP	15:33:18	
		i	15:33:27	
		PcP	15:35:05	
		PP	15:35:16	
		PPP	15:35:48	
		S	15:40:03	
		PS	15:40:10	
		PPS	15:40:16	
		SS	15:43:16	
		L	15:46:20	
20	KL	e(P)	23:39:14 c	
21	O	iP	04:29:50 d	
	H	iP	04:29:06	
21	O	P_1	20:52:10	Δ= 120 km.
		S_1	20:52:25	
		e	20:52:30	
22	H	iPn	19:14:26	Δ = 320 km.
		P_2	19:14:29.5	H = 19:13:40
		i	19:14:36.5	
		Sn	19:14:59	
		S_2	19:15:09	

'quake cont'd on next page

DATE	STN.	PHASE	h m s	REMARKS
22	KL	eP	22:47:50 Probably d	
	O	eP	22:48:11	U.S.C.G.S.
		PP	22:49:31	35°.3 N, 119°.0 W
		PPP	22:49:51	Near Bakersfield, California
		S	22:53:42	H = 22:41:22
		SSS	22:56:12	
		ScS	22:58:31	
		L	22:59:10	
	SH	eP	22:48:30	
		PcP	22:50:56	
		S	22:54:25	
		SSS	22:57:28	
		L	22:59:53	
23	O	e_E	10:22:18	
		L	10:27:08	
23	O	eP	14:30:01 c	Sheets being changed
	KL	eP	14:30:19	
	SH	eP	14:30:15	U.S.C.G.S.
		e	14:31:24	7° N, 82° W
		e	14:31:40	Off coast of Panama
		PP	14:32:08	H = 14:22:33
		PPP	14:32:40	
		L	14:42:43	
	SF	eP	14:30:15	
		S	14:36:33	
		SS	14:39:29	
		L	14:41:49	
	H	e(PPP)	14:32:35	
		S	14:36:39	
		SS	14:39:27	
		L	14:41:27	
24	O	eP	15:06:43 d	U.S.C.G.S.
		i	15:06:46	Near mouth of Orinoco River Venezuela
	SH	eP	15:06:43	H = 14:59:28
		e	15:06:46	
	H	iP	15:06:20 d	
24	H	iP	20:55:12	
27	O	iP	11:36:54 c	U.S.C.G.S.
		i	11:37:05	55 1/2° N, 160° W
		PcP	11:38:13	Alaska Peninsula
		sPP	11:39:27	h = 60 km.
		S	11:44:11	H = 11:27:54
		sSS	11:48:16	Ottawa Δ = 5700 km.
		L	11:51:16	
	KL	iP	11:36:23 c	
		i(pP)	11:36:34 Probably c	
	SH	eP	11:37:00	
		e	11:37:10	
		PP	11:38:59	
		e	11:44:39	

'quake cont'd on next page

DATE	STN.	PHASE	h m s	REMARKS
27	SF	eP	11:37:02	
		e	11:37:12	
		PcP	11:38:08	
		PP	11:39:08	
		S	11:44:21	
		PS	11:44:29	
		PPS	11:44:48	
		e	11:47:04	
	H	iP	11:37:42 c	
		i	11:37:53	
	O	eP	17:06:51	U.S.C.G.S.
		e	17:07:31	18 1/2° N, 66 1/2° W
		L	17:15:20	Puerto Rico
				h = 100 km.
	KL	Traces only		H = 17:01:00
	SH	e	17:07:26	
	SF	e	17:11:38	
		e	17:13:33	
	H	eP	17:06:26	
		PP	17:07:14	
		eS	17:10:52	
27	O	eP	22:08:24 c followed by id	
	H	iP	22:07:26 d	
28	O	iP	11:01:50 c	U.S.C.G.S.
		PcP	11:02:56	55° N, 160° W
		PP	11:03:49	Alaska Peninsula
		S	11:09:09	H = 10:52:41
		PPS	11:09:31	
		SS	11:12:40	
		e	11:13:20	
		L	11:16:14	
	KL	iP	11:01:20 c	
		i(pP)	11:01:32 Probably d	
	SH	eP	11:01:55	
		e	11:02:06	
		PcP	11:03:05	
		e	11:08:55	
		S	11:09:17	
	H	iP	11:02:37	
		i	11:02:48	
		PcP	11:03:20	
		PP	11:04:46	
		S	11:10:35	
		PS	11:10:58	
		ScS	11:12:20	
		SS	11:14:27	
		L	11:20	
28	O	eP	13:09:44	Sheets being changed
		L	13:34:00	during 'quake
	KL	eP	13:09:43	

'quake cont'd on next page

DATE	STN.	PHASE	h m s	REMARKS
28	H	eP	13:09:54	U.S.C.G.S.
		PP	13:13:13	34°S, 106°W
		PPP	13:15:24	Easter Island Region
		SKS	13:20:21	H = 12:57:04
		S	13:20:41	Ottawa Δ = 9350 km.
		PS	13:21:42	
		PPS	13:22:07	
		SS	13:26:25	
		G	13:33:45	
	O	iP	15:29:34 c	U.S.C.G.S.
				16°N, 91 1/2°W
	KL	iP	15:29:45 c	Mexico - Guatemala Border
		ipP	15:30:10 c	h = 150 km.
				Ottawa Δ = 3600 km.
	SH	eP	15:29:51	H=15:23:15
		e	15:30:20	
	H	eP	15:30:14 c	
29	O	eP	16:25:07 d	
		e	16:27:04	U.S.C.G.S.
		PP	16:27:14	Fox Islands, Alentians
		L	16:43:12	h = 60 km.
				H = 16:15:05
	SH	eP	16:25:11	
	SF	eS	16:33:10	
		SS	16:37:51	
		L	16:42:27	
	H	iP	16:25:51 c	
30	O	eS	15:10:30	U.S.C.G.S.
		L	15:15	32°N, 41°W
				North Atlantic Ocean
	H	eP	15:04:10	H = 14:59:13
		i	15:04:19	
		S	15:08:19	
		L	15:10	
31	O	iP	16:22:18 d	U.S.C.G.S.
		i	16:22:40	42°N, 142 1/2°E
		S	16:32:43	Hokkaido, Japan
		SS	16:38:14	H = 16:09:33
		SSS	16:42:32	
	KL	iP	16:21:59 d	
	SH	eP	16:22:18	
	SF	S	16:32:39	
		e	16:33:17	
		SS	16:38:28	
		G	16:45:27	
		L	16:50.1	
	H	iP	16:22:38 d	
		e	16:26:40	
		SKS	16:33:16	
		e	16:34.0	

'quake cont'd on next page

DATE	STN.	PHASE	h m s	REMARKS
31	0	Pn	18:24:10	
		Sn	18:24:27.5	Δ = 150 km.
		L	18:24:36	

J. H. Hodgson

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SEISMOLOGICAL SERVICE OF CANADA
Eastern Division

DOMINION OBSERVATORY, OTTAWA

STATIONS:
O - Ottawa
KL - Kirkland Lake
SH - Shawinigan Falls
SF - Seven Falls
H - Halifax

September, 1952

DATE	STN.	PHASE	h m s	REMARKS
2	O	iP	13:18:33.5	
		S	13:18:55.5	Δ = 150 km.
		L	13:19:05	
2	SH	e	21:03:38	A local shock, distant
		F	21:03:47	55 km. from Seven Falls.
				No time correction at
				Seven Falls
5	O	eP	05:37:18 d	U.S.C.G.S.
				6°S, 155°E
	SH	e	05:38:37	Solomon Islands
				H = 05:18:25
	H	iP	05:37:32 c	
5	O	ePn	20:14:55.5	Δ = 485 km.
		P_2	20:15:04	H = 20:13:49
		Sn	20:15:45	
		e	20:16:04	
		S_1	20:16:06	
6	O	iP	15:39:49	Δ = 150 km.
		iS	15:40:06	
		L	15:40:14	
7	KL	eP	04:40:09	U.S.C.G.S.
				51 1/2°N, 173°W
	O	iP	04:40:21 c	Andreanof Islands, Aleutians
		ipP	04:40:34	h = 60 km.
		PP	04:42:34	H = 04:30:17
		L	05:05:10	Ottawa Δ = 6650 km.
	SH	eP	04:40:25	
		e	04:40:38	
	H	iP_Z	04:41:04	
		eS_N	04:49:54	
		L_Z	05:01:29	
7	O	eP	09:42:42	U.S.C.G.S.
		ipP	09:42:56	Aftershock of Andreanof
				'quake
	SH	eP	09:42:52	H = 09:32:39
	H	eP	09:43:26 d	
8	O	ePn	01:51:49	Δ = 265 km.
		P_2	01:51:52	H = 01:51:10
		Sn	01:52:17	
		e	01:52:21	
		S_1	01:52:29	
	SH	e	01:51:04	
		e	01:51:16	'quake cont'd on next page

DATE	STN.	PHASE	h m s	REMARKS
9	O	iP	13:01:51 d	U.S.C.G.S.
		PP	13:03:26	9°N, 84 1/2°W
		PPP	13:03:55	Near coast of Costa Rica
		PcP	13:04:22	H = 12:54:42
		e	13:07:04	Ottawa Δ = 4100 km.
		S	13:07:40	
		SS	13:10:18	
		SSS	13:10:55	
	KL	iP	13:02:12 d	
		F	13:35	
	SH	eP	13:02:07	
		PP	13:03:42	
		PPP	13:04:00	
		PcP	13:04:37	
		S	13:07:58	
		SS	13:10:41	
		SSS	13:11:11	
		ScS	13:11:32	
		L	13:13:18	
	H	iP	14:02:16 c	
		i	14:03:34	
		PP	14:03:52	
		PPP	14:04:27	
		e	14:05:47	
		S	14:08:19	
		SS	14:11:05	
		SSS	14:11:37	
		ScS	14:12:27	
		L	14:13:47	
11	O	eP	05:35:31 c	U.S.C.G.S.
		PP	05:37:02	9°N, 85 1/2°W
		S	05:41:21	Near coast of Costa Rica
				H = 05:28:22
	KL	e	05:35.8	
	O	Pn	15:42:47	Δ = 150 km.
		i	15:42:48.5	
		Sn	15:43:04.5	
		L	15:43:13	
11	KL	eP'	22:22:38	U.S.C.G.S.
				Celebes Sea
				H = 22:03:44
11	O	eP'	22:45:29	U.S.C.G.S.
		SKS	22:52:21	29°S, 177°W
		SKKS	22:53:43	Kermadic Islands
		e	22:54:43	H = 22:26:41
		PS	22:56:42	
		SS	23:03:00	Δ = 13,150 km.
		SSS	23:07:30	
	H	eP'	22:45:45	
		e_z	22:45:57	
		PKS	22:49:06	
		SKS	22:52:50	
		SKKS	22:54:41	
		PS	22:57:26	
		PPS	22:58:56	
		SS	23:04:46	

'quake cont'd on next page

DATE	STN.	PHASE	h m s	REMARKS
12	H	iP_1	12:03:56	Δ = 70 km.
		iS_1	12:04.04.5	H = 12:03:44.5
13	O	eP	17:47:09	
		i	17:47:28	
		iS	17:48:07	
		i	17:48:12	
15	O	eP	11:13:45 c	U.S.C.G.S.
				Central Chile - Argentina
	KL	eP	11:14:00	border
				h = 100 km.
				H = 11:01:27
15	O	eP	14:12:42	
16	O	iP	16:10:34	
		S	16:10:50	Δ = 150 km.
		i	16:10:58	
		L	16:11:03	
16	O	eP	17:44:38 d	U.S.C.G.S.
				West Central Argentina
	KL	eP	17:44:54 Prob.c	H= 17:32:35
		e	17:45:03 Prob.c	
18	KL	eP	06:20:42 d	
	O	eP	06:20:53 d	
19	O	iP	13:54:31	
		iS	13:54:49	Δ = 150 km.
		L	13:54:58	
20	O	e	13:17:41	
		L	14:06:10	
	KL	e	13:17:38	
21	O	iP	02:41:09 c, n, w.	
		pP	02:42:13	
		i	02:42:28	U.S.C.G.S.
		i	02:42:42	22 1/2°S, 65°W
		PP	02:43:42	Argentina - Bolivia border
		PPP	02:45:06	h = 250 km.
		e	02:46:50	H = 02:30:30
		e	02:47:52	
		S	02:49:45	
		PS	02:50:28	
		PPS	02:50:44	
		e	02:51:33	
		SS	02:53:56	
		SSS	02:57:22	
		e(P'P*)	03:09:28	
	KL	iP	02:41:29 c	
		ipP	02:42:32 c	
		i	02:42:48 c	
		isP	02:43:05 d	
		iPPP	02:45:41 c	
		eS	02:50:17	
		F	03:15	

'quake cont'd on next page

DATE	STN.	PHASE	h m s	REMARKS
21	SH	eP	02:41:14 n	
		pP	02:42:18	
		PP	02:43:52	
		PPP	02:45:28	
		S	02:49:55	
		ScS	02:50:41	
		e	02:51:40	
	H	iP	02:41:01 c	
		ipP	02:42:02	
		i	02:42:32	
		PPP	02:45:03	
		e	02:49:06	
		S	02:49:28	
		SS	02:53:30	
		SSS	02:57:02	
21	O	e(PP)	23:06:16	U.S.C.G.S.
	SH	e	23:07:42	Celebes Sea
	H	eP	23:03:49 c	H = 22:44:33
		iPP	23:06:29	
22	KL	eP	09:35:44	U.S.C.G.S.
		epP	09:36:03	55 1/2°N, 162 1/2°E
				Near east coast of Kamchatka
	O	eP	09:36:08 d	h = 60 km.
		ipP	09:36:26	H = 09:25:15
	H	eP	09:36:39 d	
22	KL	e	11:48.0	U.S.C.G.S.
		eL	11:58.6	40 1/2°N, 124°W
	O	eP	11:48:26	Cape Mendocino, California
		e	11:51:22	H = 11:41:27
		S	11:54:03	
		SS	11:56:17	Ottawa Δ = 3900
		e	11:58:06	
		e	11:59:06	
		L	12:00:16	
	SH	e	11:49:09	
	H	eP	11:49:37 d	
		i	11:49:51	
		S	11:58:21	
		L	12:04:29	
22	H	iP	17:33:29 c	U.S.C.G.S.
				20 1/2°S, 67°W
	O	eP	17:33:34 d	Southwestern Bolivia
		epP	17:34:04	h = 150 km.
				H = 17:22:57
	KL	eP	17:33:55	
23	O	eP	02:18:04	U.S.C.G.S.
		e	02:18:16	San Juan Prov., Argentina
				H = 02:06:00
	KL	eP	02:18:18	
	H	iP	02:18:03 d	

'quake cont'd on next page

DATE	STN.	PHASE	h m s	REMARKS
24	O	eP	07:25:51 d	
24	O	iP	17:47:57 d	
	KL	e	17:48.4	
24	O	iP	20:38:12 d	
		PcP	20:39:35	U.S.C.G.S.
		PP	20:40:08	56 1/2°N, 157°W
		sPP	20:40:38	Near south coast of Alaska
		PPP	20:41:10	Peninsula
		S	20:45:18	h = 100 km.
		sS	20:45:50	H = 20:29:30
		SS	20:48:30	Ottawa Δ = 5450 km.
		sSS	20:49:17	
	KL	iP	20:37:40 d	
		epP	20:37:59 Prob.	c
		e	20:39:30	
	SH	eP	20:38:16	
		e	20:39:54	
		PPP	20:41:40	
		S	20:45:36	
		SS	20:49:37	
		G	20:51:12	
	H	iP	20:39:00 d	
		PcP	20:39:59	
		PP	20:41:19	
		PPP	20:42:30	
		S	20:46:45	
		PPS	20:47:14	
		ScS	20:48:42	
		SS	20:50:45	
25	H	eP	09:02:02 d	U.S.C.G.S.
		S	09:06:31	44 1/2°N, 28°W
		L	09:08:57	North Atlantic Ocean
				H = 08:56:30
25	O	iPn	15:08:21.5	
		i	15:08:22.5	Δ = 150 km.
		Sn	15:08:39.5	
		L	15:08:48	
27	O	eP	06:43:44	U.S.C.G.S.
		i	06:44:27	Andreanof Islands, Aleutians
				H = 06:33:20
27	KL	eP	19:16:51 Prob.	c
		ipP	19:17:06 c	
	O	eP	19:17:13 c	U.S.C.G.S.
		i	19:18:39	50 1/2°N, 157°E
		PP	19:20:01	Near coast of Kamchatka
		PPP	19:22:02	h = 100 km.
		S	19:26:38	H = 19:05:46
		ScS	19:27:02	
		SS	19:31:11	
		SSS	19:35:04	

'quake cont'd on next page

DATE	STN.	PHASE	h m s	REMARKS
27	SH	eP	19:17:16	
		e	19:18:33	
		S	19:26:41	
	H	iP	19:17:42 d	
30	KL	e(P)	13:10.3	U.S.C.G.S.
		e	13:22.0	28 1/2°N, 102°E Szechwan Prov., China
	O	ePP	13:10:41	H = 12:52:00
		SKS	13:16:52	Ottawa Δ = 11,750 km.
		SKKS	13:17:36	
		S	13:18:20	
		PS	13:19:56	
		PPS	13:21:02	
		SS	13:25:46	(Recorded at Halifax, but time correction doubtful)
	SH	ePP	13:10:39	
		SKS	13:16:47	
30	KL	i	18:50:38 c	May be local disturbance

J. H. Hodgson

J. L. O'Connor

DEPARTMENT OF MINES AND TECHNICAL SURVEYS

DOMINION OBSERVATORIES BRANCH

SEISMOLOGICAL SERVICE OF CANADA

EASTERN SECTION

SEISMOLOGICAL BULLETIN

October - December

1952

000

DOMINION OBSERVATORY

OTTAWA - CANADA

SEISMOLOGICAL SERVICE OF CANADA
DOMINION OBSERVATORY, OTTAWA

C. S. Beals, Dominion Astronomer
John H. Hodgson, Chief, Seismological Division

S T A T I O N S

OTTAWA

ϕ = 45°23'38" N. λ = 75°42'57" W. h = 83m.

Time correct within 0.02s.

Foundation: boulder clay over limestone

Instruments: Milne-Shaw NS and EW components, designated 23 and 17, respectively, each with photographic registration, magnetic damping, paper speed of 15 mm. per min., mass 1 lb.

Benioff Vertical, short and long period, designated BS and BL, respectively, photographic registration, BS a paper speed of 60 mm. per min., BL a paper speed of 30 mm. per min., mass 235 lbs.

Leet-Blumberg, 3-component, pen-recording seismograph. Final adjustments of the instruments have not been made, the inertial elements are currently operating at a period of about 2 seconds.

HALIFAX

Dalhousie University

ϕ = 44°38' N. λ = 63°36' W. h = 46m.

Time correction from recorded radio time signals

Foundation: Carbonaceous slate

Instruments: Sprengnether NS and EW long period horizontals, damping critical, photographic registration, paper speed of 30 mm. per minute.

Benioff Vertical, short and long period, designated BS and BL, photographic registration, BS a paper speed of 60 mm. per minute, BL a paper speed of 30 mm. per minute.

SEVEN FALLS

Quebec Power Company

ϕ = 47°07'4 N. λ = 70°49'6 W. h = 232m. ca.

Time correction from recorded radio time signals

Foundation: Precambrian Basement rock of Canadian Shield

S T A T I O N S (Cont'd)

Instruments: Wood-Anderson and Milne-Shaw, both EW components, designated SF and SM, respectively, each with photographic registration, magnetic damping, SF a paper speed of 60 mm. per min. and mass 15g., SM a paper speed of 8 mm. per min. and mass 1 lb.

SHAWINIGAN FALLS

Shawinigan Water and Power Company

φ = 46°33'1 N. λ = 72°45'8 W. h = 60 m. ca.

Time correction from recorded radio time signals

Foundation: Precambrian basement rock of Canadian Shield

Instruments: Wood-Anderson NS component, designated SA, photographic registration, magnetic damping, paper speed of 60 mm. per min., mass 15g.

KIRKLAND LAKE

φ = 48°08'41" N. λ = 80°01'45" W. h = 310 m.

Time correction from recorded radio time signals

Foundation: Precambrian basement rock (Timiskaming Tuff)

Instrument: Sprengnether Vertical, short-period, designated No. 1130, galvanometric registration on photographic paper, paper speed 60 mm. per min.

DETERMINED CONSTANTS

INSTRUMENT	Ts	Tg	V	ϵ	DISPLACEMENT FOR 1" ARC TILT	SYNCHRONOUS MAGNIFICATION
17 (Ottawa)	12.0		300	20:1	50 mm.	
23 (Ottawa)	12.0		300	20:1	50 mm.	
BS (Ottawa)	1.0	0.1				
BL (Ottawa)	1.0	48				
SA (Shawinigan)	1.0		2200			
SF (Seven Falls)	1.0		2200			
SM (Seven Falls)	12.0		300	20:1	50 mm.	
S1130 (Kirkland Lake)	1.4	1.4				10,000 ca.
NS (Halifax)	20.	20.				6,000
EW (Halifax)	20.	20.				6,000
BS (Halifax)	1.0	0.2				
BL (Halifax)	1.0	60				

NOTE:- Universal Time used throughout

SEISMOLOGICAL SERVICE OF CANADA
Eastern Network
DOMINION OBSERVATORY, OTTAWA

STATION:

O - Ottawa
H - Halifax
SF - Seven Falls
SH - Shawinigan Falls
KL - Kirkland Lake

October, 1952

DATE	STN.	PHASE	h m s	REMARKS
3	O	eP	07 44 18 d	U.S.C.G.S.
		PP	07 45 54	6 1/2°N 83°W
		PcP	07 46 30	off south coast of Panama
		S	07 50 18	H = 07:36:45
		SS	07 53 00	Ottawa Δ = 4250 km
		SSS	07 53 40	
		L	07 56 00	
	KL	eP	07 44 38	
		i	07 44 46 d	
		e	07 46.4	
	SH	eP	07 44 33	
		PP	07 46 08	
		PPP	07 46 36	
		S	07 50 30	
		L	07 57 41	
5	O	iP	11 06 04 c	U.S.C.G.S.
		S	11 15 04	near west coast of Greece
	KL	e(P)	11 06.2	H = 10:55:00
5	O	eP	22 18 09	U.S.C.G.S.
				37°N 93°E
				Chunghai Province, China
				H = 22:04:28
6	O	eP	14 16 45 c	U.S.C.G.S.
	KL	eP	14 17 05	Central Peru
		e(pP)	14 17 17	h = 100 km
	SH	eP	14 16 53	H = 14:07:01
	H	eP	14 16 49	
6	O	iPn	15 26 08.5	Δ = 150 km
		i	15 26 10	
		S	15 26 26	
		L	15 26 33	
6	KL	eP	22 40 26	U.S.C.G.S.
	O	eP	22 40 50	53 1/2 N, 161°E
	SH	eP	22 40 50	off east coast of Kamchatka
	H	iP	22 41 20 d	H = 22:29:35
		S	22 50 50	Ottawa Δ = 7750
10	O	eSKS	16 20 46	U.S.C.G.S.
		SKKS	16 21 24	Samoa Isl. Region
		PS	16 23 44	H = 15:55:35
		PPS	16 24 30	
		SS	16 29 40	
		G	16 38 42	
		L	16 42 20	

October, 1952

DATE	STN.	PHASE	h m s	REMARKS
10	KL	eP	19 01 15	U.S.C.G.S.
	H	eP	19 00 55	30 1/2 N, 69°E
		SKKS	19 11 40	Central Pakistan
		PS	19 13 15	H=18:47:37
		SS	19 18 35	
		SSS	19 22 28	
		G	19 28 33	
10	H	eP'	21 29 00 c	U.S.C.G.S.
		i	21 29 06	Sumatra
		PP	21 31 54	H=21:09:38
		PKS	21 32 44	
11	O	iPn	15 32 36	Δ = 150 km
		i	15 32 38	
		S	15 32 53	
		L	15 33 02	
13	KL	e(P)	07 07 31	
13	H	ePn	12 42 22	Δ = 235 km
		i	12 42 23	
		Sn	12 42 47	
		F	12 55 25	
13	O	e	16 53 26	
		F	16 54 22	
	H	e	16 52 52	
		F	16 53 55	
13	KL	ePn	17 30 33	Δ = 285 km
		e	17 31 09	H = 17:29:52
		eS_2	17 31 12	
13	KL	e(P)	19 36 49	
13	H	eP	20 58 00 c	
13	O	ePP	23 43 09	
		PS	23 52 42	
		SS	23 59 16	
		e	24 01 14	
		L	24 16 20	
14	SF	iP	22 04 04.8	Δ = 135.5 km
		iPn	22 04 06.8	
	SH	iPn	22 04 22.9	Δ = 286.0 km
		iSn	22 04 53.9	
	O	ePn	22 04 55.0	Δ = 547.0 km
		iSn	22 05 49.0	
	H	iPn	22 05 03.5	Δ = 608.8 km
		iSn	22 05 58.5	
	KL	ePn	22 05 22.6	Δ=767.4 km
		iSn	22 06 35.3	

Our epicentre
48° 05!5 N
69° 44!0 W
H = 22:03:41.3

NOTE: A paper on this shock will be published in the Publications of the Dominion Observatory.

DATE	STN.	PHASE	h m s	REMARKS
14	O	eP	24 03 20	U.S.C.G.S.
		e	24 04 44	8 1/2°N 83°W
		eS	24 09 18	near south coast of Costa Rica
	KL	eP	24 03 40	H = 23:56:03
	H	eP	24 03 37	
		S	24 10 00	
15	O	iP	02 23 27c	U.S.C.G.S.
				Northern Chile
				h = 100 km
				H = 02:12:29
15	●	iP	19 16 34 d	U.S.C.G.S.
	H	iP	19 16 57 d	43°N, 145 1/2°E
				near east coast of Hokkaido, Japan
				H = 19:04:00
15	O	iPn	20 51 22	Δ = 210 km
		i	20 51 26	
		Sn	20 51 45	
		S_1	20 51 52	
16	O	iP	10 00 34 d	U.S.C.G.S.
				41 1/2N 142E
				h=60 km
				H=09:47:51
17	H	i(P)	14 04 52	Apparently a series of blasts
		i(S)	14 04 56	
		i	14 34 43	
		i	14 35 14	
		i	14 35 35	
		i	14 36 09	
		i	14 36 40	
18	O	eP'	05 41 27 c	U.S.C.G.S.
		PP	05 43 02	16°S, 168°E
		SKS	05 48 40	New Hebrides
		SKKS	05 50 02	H = 05:22:32
		PS	05 52 39	Ottawa Δ = 13,250
		PPS	05 54 20	
		e	05 56 04	
		SS	06 00 00	
		SSS	06 05 18	
18	O	iP_1	09 54 54	Δ = 120 km
		iS_1	09 55 09	H = 09:54:34
		iSn	09 55 11	
18	O	iP	12 05 18 d	U.S.C.G.S.
		PP	12 06 46	13°N, 46°W
		PPP	12 07 23	Atlantic Ocean
		S	12 11 29	H = 11:57:36
		SS	12 14 27	
		SSS	12 14 44	Ottawa Δ = 4500
		L	12 15 36	
	KL	iP	12 05 50 d	
	SH	eP	12 05 12	
	H	eP	12 04 25 d	
		S	12 09 55	
		SSS	12 11 35	
		L	12 13 21	
20	H	iP	01 07 40 d	U.S.C.G. S.
		PP	01 07 52	
		PPP	01 07 57	'quake cont'd on next page

DATE	STN.	PHASE	h m s	REMARKS
20	H	S	01 09 56	57°N 57°W
		SS	01 10 28	off coast of Labrador
		i	01 11 15	H = 01:04:35
		L	01 11 53	Ottawa Δ = 1800 km
	SH	eP	01 07 52	
		PP	01 08 03	
		PPP	01 08 13	
		S	01 10 18	
		SS	01 10 38	
		SSS	01 10 51	
	0	eP	01 08 21 c	
		PP	01 08 30	
		PPP	01 08 43	
		S	01 11 13	
		SS	01 11 31	
		SSS	01 11 55	
		i	01 12 45	
		L	01 12 52	
	KL	iPn	01 18 21 c	
		eSn	01 11 09	
		Lg	01 12 55	
20	0	eP	16 29 14 c	
21	0	eP	02 18 36	Foreshock of next 'quake H = 02:11:25
21	0	eP	02 37 57 d	U.S.C.G.S.
	KL	eP	02 38 15	9 1/2°N 84 1/2°W near coast of Costa Rica H = 02:30:46
21	0	iP	06 16 15 c	Aftershock of above H = 06:09:05
21	0	eP	06 42 54	Aftershock of above H = 06:35:44
21	0	iPn	19 34 17	Δ = 205 km
		Sn	19 34 40	H = 19:33:46
		S_1	19 34 47	
22	H	eP	17 12 00	
22	0	e(P)	19 53 10	
		L	20 04 12	
25	0	eP	03 29 18 d	
25	KL	eP	14 37 54	U.S.C.G.S.
		eScS	14 48 35	26°N, 112°W
		eL	14 51 41	Lower California
	0	eP	14 38 06 Prob. c	H= 14:31:09
		PP	14 39 33	
		S	14 43 50	
		L	14 48 08	
25	0	iP	18 15 45 d	

DATE	STN.	PHASE	h m s	REMARKS
26	KL	eP	08 53 38	U.S.C.G.S.
		epP	08 54 50	34 1/2 N, 137° E
	0	iP	08 53 54 d	near south coast of Honshu, Japan
		pP	08 55 06	H = 08:41:03
		sS	09 06 48	Ottawa Δ = 10,500
		sPS	09 08 08	
26	0	eP	15 59 09	U.S.C.G.S.
				Foreshock of next
				H = 15:46:14
26	0	eP	18 14 56	U.S.C.G.S.
		SKS	18 25 22	39°N, 143°E
		SKKS	18 25 40	off east coast of Honshu, Japan
		G	18 38 16	H=18:02:00
				Ottawa Δ = 9800 km
26	KL	eP	19 32 03	U.S.C.G.S.
	0	iP	19 32 11 d	38 1/2 N 143 1/2 E
				H = 19:19:12
				Ottawa Δ = 9800 km
26	0	eP	20 40 29 d	
27	KL	eP	03 29 54	U.S.C.G.S.
	0	eP	03 30 08	Aftershock of Honshu 'quake
		PP	03 33 41	H = 03:17:12
		S	03 40 51	
		SSS	03 50 30	
		G	03 53 30	
		L	04 02 30	
	SH	e(P)	03 30 18	
28	0	eP	04 35 39	U.S.C.G.S.
		PP	04 36 22	18 1/2 N 73 1/2 W
		PPP	04 36 31	Haiti
		S	04 40 22	H = 04:29:51
		SS	04 41 35	Ottawa Δ = 2950 km
		SSS	04 41 55	
		L	04 42 22	
	KL	eP	04 36 06	
		F	05.1	
	SH	eP	04 35 51	
	H	eP	04 35 41 d	
		i	04 36 14	
		PP	04 36 35	
		PPP	04 36 49	
		S	04 40 23	
		L	04 43 01	
28	0	eP	06 43 56	U.S.C.G.S.
		PP	06 47 30	40°N 144°E
		S	06 54 40	off east coast of Honshu, Japan
				H = 06:31:04

October, 1952

DATE	STN.	PHASE	h	m	s	REMARKS
29	KL	eP'	19	52	30 d	U.S.C.G.S.
	O	eP'	19	52	49	17°S 174°W
		SKS	19	59	00	Tonga Islands
		SKKS	19	59	42	H = 19:34:14
		S	20	00	20	h = 150
		PS	20	02	12	Ottawa Δ = 11,900
		PPS	20	03	02	
		SS	20	07	40	
		SSS	20	12	20	

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SEISMOLOGICAL SERVICE OF CANADA
Eastern Network
DOMINION OBSERVATORY, OTTAWA

STATION: O - Ottawa, H - Halifax, SF - Seven Falls, SH - Shawinigan Falls, KL - Kirkland Lake

November, 1952

DATE	STN.	PHASE	h m s	REMARKS
1	O	e	23 53 52	
1	O	eP'	24 04 00	U.S.C.G.S.
		SKS	24 10 38	23 1/2 S 178 W
		SKKS	24 11 42	Fiji Islands Region
		S	24 12 42	h = 150 km
		PS	24 14 34	H = 23:45:36
		SS	24 20 42	
		SSS	24 25 24	
3	O	iP	13 16 13	Δ = 150 km
		i	13 16 15	
		S	13 16 30	
		L	13 16 38	
4	KL	eP	17 09 19	
		F	21.0	
	O	iP	17 09 44 d,n,w	U.S.C.G.S.
		PP	17 12 22	52 1/2 N 159E
		PPP	17 14 05	near east coast of Kamchatka
		S	17 19 02	Seismic Sea Wave
		PS	17 19 30	H = 16:58:20
		PPS	17 19 42	Ottawa Δ = 7950 km
		SS	17 23 48	
	SH	eP	17 09 43	
		e	17 09 59	
		PP	17 12 27	
		PPP	17 14 11	
		S	17 18 55	
		PS	17 19 41	
		PPS	17 19 50	
		G	17 27 57	
	SF	eP	17 09 48	
		e	17 09 58	
		e	17 10 24	
		PP	17 12 41	
		PPP	17 14 17	
		S	17 19 11	
		SSS	17 27 41	
	H	eP	17 10 12	
4	O	eP	18 40 04 c	U.S.C.G.S
		i	18 40 14	52 1/2N 160E
	SH	eP	18 40 19	near east coast of Kamchatka
		e	18 40 55	H = 18:28:52
		PP	18 43 14	
		PPP	18 44 42	

November, 1952

DATE	STN.	PHASE	h m s	REMARKS
4	KL	eP	19 30 39	
	O	iP	19 31 03 c	
	SH	eP	19 31 06	
4	O	iP	19 43 41 c	
4	KL	eP	19 51 39	U.S.C.G.S.
	O	iP	19 52 03 d	52 1/2N 159 1/2E
	SH	eP	19 52 05	near east coast of Kamchatka
				H = 19:40:41
4	O	iP	20 01 57 d	
4	O	iP	20 33 01 c	
4	O	eP	20 39 36	
4	O	eP	20 48 54	
		i	20 51 27	
		i	20 51 44	
4	KL	eP	20 51 15	
	H	iP	20 51 56 d	
4	KL	iP	20 59 59 d	U.S.C.G.S.
	O	iP	21 00 22 d	50°N 157°E
		PP	21 03 04	near south coast of Kamchatka
				H = 20:48:53
	SH	eP	21 00 24	
	H	iP	21 00 50	
4	KL	iP	21 11 50 c	U.S.C.G.S.
	O	iP	21 12 13 c	52 1/2 N, 159 1/2E
		PP	21 14 40	Kamchatka after shock
	SH	eP	21 12 15	H = 21:00:53
	H	iP	21 12 42 c	
4	O	eP	21 26 59	
4	O	eP	21 55 46	
4	KL	iP	22 04 03 d	U.S.C.G.S.
	O	iP	22 04 26 d	50°N 158 1/2 E
		i	22 06 01	off south coast of Kamchatka
		PP	22 07 08	H = 21:52:50
	SH	eP	22 04 28	
	H	iP	22 04 54 d	
4	KL	iP	22 24 51 c	U.S.C.G.S.
	O	iP	22 25 14 c	52°N, 161°E, Kamchatka aftershock
	SH	eP	22 24 18	H = 22:12:54 ,
	H	iP	22 24 45 c	
4	H	iP	22 29 54 c	
4	KL	eP	22 30 16	
	O	iP	22 30 41 d	
	SH	eP	22 30 43	
	H	iP	22 31 09 c	
4	O	iP	22 43 33 c	
	H	iP	22 44 01 c	

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DATE	STN.	PHASE	h m s	REMARKS
4	KL	eP	22 48 14	
	O	iP	22 48 37 d	
		PP	22 51 21	
4	KL	iP	23 40 14 d	U.S.C.G.S.
		i(pP)	23 40 20 c	50°N 158°E
	O	iP	23 40 35 d	off south coast of Kamchatka
		PP	23 43 20	H = 23:28:58
	SH	eP	23 40 37	
	H	iP	23 41 03 d	
4	O	iP	23 52 53 c	
	H	iP	23 53 23 d	
5	O	eP	00 01 00	
5	O	iP	00 22 16 c	
5	O	iP	00 27 54 d	
		PP	00 30 35	
5	O	iP	00 33 03 c	
	SH	eP	00 33 05	
5	O	iP	00 42 23 c	
5	O	iP	00 55 40 c	
	SH	eP	00 55 42	
5	O	eP	01 34 54 c	
5	O	eP	02 07 18	
5	KL	iP	02 31 13 c	U.S.C.G.S.
		i	02 31 29	50 1/2N 157E
	O	iP	02 31 36 c	near south coast of Kamchatka
		e	02 32 12	H = 02:19:58
		PP	02 34 21	
		PPP	02 36 03	
		eS	02 40 50	
		PS	02 41 32	
		PPS	02 41 51	
		SS	02 45 32	
	SH	eP	02 31 38	
		e	02 31 54	
	H	eP	02 32 04	
		S	02 41 59	
5	O	eP	02 50 26 c	
5	KL	iP	03 40 53 c	U.S.C.G.S.
	O	iP	03 41 11 c	51°N 159°E
		PP	03 43 54	near southeast coast of Kamchatka
		i	03 45 12	H = 03:29:44
		e(S)	03 50 44	
	SH	eP	03 41 19	
	H	iP	03 41 39 c	
5	H	iP	04 27 50	

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DATE	STN.	PHASE	h m s	REMARKS
5	KL	iP	06 09 09 c	U.S.C.G.S.
	O	iP	06 09 30 d	49°N 156°E
		S	06 19 10	Kurile Islands
		SSS	06 28 03	H = 05:57:43
		L	06 34 05	
	SH	eP	06 09 33	
	H	iP	06 10 00 d	
5	O	eP	06 46 59	
5	KL	iP	07 17 17 d	
	O	iP	07 17 40 c	
		i	07 18 15	
		PP	07 20 27	
		PPP	07 22 06	
	SH	eP	07 17 42	
	H	iP	07 18 10 c	
5	KL	eP	07 34 28	
	O	iP	07 34 51 c	
5	KL	eP	07 50 30	
	O	eP	07 50 57 c	
	H	iP	07 51 41	
5	O	iP	08 34 10 c	
5	KL	eP	08 49 30	
	O	iP	08 49 53 c	
5	O	eP	09 14 07	
5	O	iP	09 16 23 c	
5	O	iP	09 22 57 c	
5	O	eP	09 41 22	
		i	09 41 28	
5	O	eP	10 26 30	
5	O	eP	11 30 00	
5	KL	eP	11 45 40	U.S.C.G.S.
	O	iP	11 46 04 c	51 1/2N 159E
		PP	11 48 46	off southeast coast of Kamchatka
	SH	e(P)	11 46 14	H = 11:34:37
	H	iP	11 46 33	
5	KL	eP	11 57 52	U.S.C.G.S.
	O	iP	11 58 12 d	50°N, 157°E
	SH	eP	11 58 14	off south coast of Kamchatka
	H	iP	11 58 41 c	H = 11:46:34
5	KL	eP	13 17 25 d	U.S.C.G.S.
	O	iP	13 17 48 c	52°N, 159 1/2°E
		i	13 18 25	Kamchatka aftershock
		PP	13 20 20	H = 13:06:24
		PPP	13 22 09	
		S	13 27 00	

'quake cont'd on next page

DATE	STN.	PHASE	h m s	REMARKS
5	O	PS	13 27 46	
		PPS	13 28 04	
		SS	13 31 40	
		SSS	13 35 16	
	SH	eP	13 17 49	
	H	iP	13 18 17 c	
5	O	eP	14 13 10	
5	O	iP	14 22 29 d	
		PP	14 25 12	
5	O	iP	14 37 48 d	
	SH	eP	14 37 49	
5	O	iP	14 59 39 d	
5	KL	eP	14 59 58	U.S.C.G.S.
	O	iP	15 00 21 d	50°N, 156 1/2E
		PP	15 03 10	off south coast of Kamchatka
		PPP	15 04 07	H = 14:48:41
	SH	eP	15 00 21	
	H	iP	15 00 48	
5	O	iP	15 13 27 c	
5	O	iP	15 18 43 d	
	SH	eP	15 18 44	
5	O	iP	15 47 05 c	
		PP	15 49 46	
5	O	iP	16 46 27 d	
5	O	iP	16 53 34 d	
	SH	e	16 53 49	
	H	iP	16 54 09 d	
5	O	eP	19 19 42	U.S.C.G.S.
	H	eP	19 20 05	53 1/2N 161 1/2E
				off east coast of Kamchatka
				H = 19:08:26
5	KL	eP	20 41 44	U.S.C.G.S.
	O	eP	20 41 57 c	49°N 159°E
	SH	eP	20 41 57	off south coast of Kamchatka
	H	iP	20 43 04 c	H = 20:30:22
5	O	iP	21 20 11 d	
	H	iP	21 20 39 c	
5	O	iP	21 57 41 c	U.S.C.G.S.
	SH	eP	21 57 43	49 1/2 N 157E
				off south coast of Kamchatka
				H= 21:46:00

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DATE	STN.	PHASE	h m s	REMARKS
5	O	iP	22 05 47 c	
	SH	eP	22 05 47	
5	KL	eP	22 57 05	
	O	eP	22 57 28	
		PP	23 00 12	
	H	eP	22 57 56	
6	O	eP	01 07 30	
6	O	eP	01 09 53	
6	O	eP	02 35 12 d	
6	O	eP	04 05 56 d	U.S.C.G.S. 50°N 158 1/2E off south coast of Kamchatka H = 03:54:21
6	O	eP	04 46 57	
6	O	eP	05 08 07	
6	O	eP	05 24 27 d	
6	O	eP	05 53 32 d	
6	O	eP	06 00 27 c	
	H	eP	06 00 54 c	
6	O	eP	08 17 10 c	
6	O	iP	10 49 15 c	
6	O	eP	11 08 35 c	U.S.C.G.S. 52°N 159 1/2E Kamchatka aftershock H = 10:57:11
		PP	11 11 15	
6	O	eP	11 23 23 c	
6	O	eP	14 18 07	
6	O	eP	18 01 20	
6	KL	iP	19 57 10 c	U.S.C.G.S. 51 1/2°N 159 1/2E off southeast coast of Kamchatka H = 19:45:57
	O	eP	19 57 27 d	
	H	eP	19 57 53 c	
		S	20 07 41	
6	H	iP	20 03 36 d	

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DATE	STN.	PHASE	h m s	REMARKS
6	0	eP'	20 06 27	U.S.C.G.S.
		PP	20 08 22	5°S 145 1/2°E
		PPP	20 11 17	near north coast of New Guinea
		SKKS	20 15 16	H=19:47:20
		PS	20 18 18	Ottawa Δ = 13,950
		PPS	20 19 50	
		SSS	20 30 00	
	KL	eP'	20 06 36	
	H	eP'	20 06 52	
6	0	iP	20 50 34 d	
7	0	eP	02 33 38	
7	0	eP	04 06 52	
7	KL	eP	12 20 06	U.S.C.G.S.
	0	eP	12 20 29	52°N 161°E
		i	12 21 05	off south east coast of Kamchatka
		PP	12 23 12	H = 12:09:09
	SH	eP	12 20 36	
7	KL	eP	13 52 41	U.S.C.G.S.
	0	eP	13 52 55	52°N 161°E, off southeast coast of
	SH	e(P)	13 53 05	H=13:41:45 Kamchatka.
7	KL	eP	14 19 45	U.S.C.G.S.
	0	iP	14 20 07 probably c	49°N 157°E
	SH	eP	14 20 09	off south coast of Kamchatka
		e	14 20 18	H=14:08:25
7	0	iP	15 52 29 d	
	SH	eP	15 52 29	
7	0	eP	17 05 57	
7	KL	eP	21 01 33	U.S.C.G.S.
		eL	21 12 15	26°N 110 1/2°W
	0	iP	21 01 48 d	Lower Gulf of California
		PP	21 03 19	H= 20:54:58
		PcP	21 04 30	
		S	21 07 16	
		SS	21 09 43	
		SSS	21 10 08	
		ScS	21 12 36	
		eL	21 12 44	
7	0	eP	22 17 11	U.S.C.G.S.
		S	22 27 02	47°N 155°E
	SH	eP	22 17 22	Kurile Islands
				H = 22:05:19
7	0	eP'	23 30 59 d	U.S.C.G.S.
				31°S 177°W
				Kermadec Islands
				H=23:12:04
				Δ=13,250 km.

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DATE	STATION	PHASE	h m s	REMARKS
8	O	e(P)	00 52 22	
8	O	e(P)	09 01 31 c	
8	O	iP	12 19 40 d	
		PP	12 22 23	
8	O	e(P)	15 48 12 c	
8	O	e(P)	17 16 09	
	H	iP	17 16 07 d	
8	O	eP	18 07n09	
8	O	e(P)	18 46 42	
8	KL	e(P)	19 45 00	U.S.C.G.S.
	O	eP	19 45 07 c	48 1/2°N 156°E
		S	19 54 48	Kurile Islands
		SSS	20 03 40	H = 19:33:18
	SH	eP	19 45 10	
	H	eP	19 45 37	
8	O	eP	20 26 38	
8	KL	e	22 21 58	
		e	22 25 44	
		i	22 26 05	
	O	e	22 24 08	
		i	22 25 42	
		e	22 27 14	
		e	22 27 27	
		e	22 27 54	
	SH	e	22 23 63	
		e	22 24 55	
		e	22 25 45	
		e	22 26 24	
		e	22 26 53	
		e	22 27 39	
		e	22 27 59	
9	O	eP	00 04 37 c	
	SH	eP	00 04 38	
9	KL	eP	00 33 43	U.S.C.G.S.
	O	iP	00 34 06 d	48 1/2 N 155 1/2E
		i	00 34 20	Kurile Islands
		PP	00 36 46	H = 00:22:15
	SH	eP	00 34 07	
	H	eP	00 34 34 c	
9	KL	eP	01 28 37	U.S.C.G.S.
	O	eP	01 29 00	52 1/2 N 160E
	SH	eP	01 29 01	near east coast of Kamchatka
	H	eP	01 29 31	H = 01:17:39

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DATE	STN.	PHASE	h m s	REMARKS
9	O	iP	01 48 21 c	
	SH	eP	01 48 21	
9	O	eP	01 50 35	
		PP	01 53 18	
	SH	eP	01 50 36	
9	O	iP	04 46 50 c	U.S.C.G.S.
	SH	eP	04 46 50	49°N 158°E
	H	iP	04 47 16 c	off south coast of Kamchatka
				H=04:35:05
9	O	eP	05 10 11	
9	KL	eP	05 17 21	U.S.C.G.S.
	O	iP	05 17 45 d	53 1/2 N 159 1/2E
		PP	05 20 23	near east coast of Kamchatka
	SH	eP	05 17 45	H = 05:06:29
	H	iP	05 18 13 d	
9	KL	iP	05 43 34 c	U.S.C.G.S.
		i	05 43 50 c	49 1/2N 156 1/2E
	O	iP	05 43 57 c	off south coast of Kamchatka
	SH	eP	05 43 58	H=05:32:15
	H	iP	05 44 25 c	
9	KL	eP	06 08 14 Prob. d	U.S.C.G.S.
		i	06 08 26 d	49N 157E
	●	iP	06 08 37 d	off south coast of Kamchatka
	SH	eP	06 08 41	H = 05:56:54
	H	iP	06 09 05 d	
9	O	iP	12 34 33 c	
	SH	eP	12 34 33	
	H	eP	12 35 01	
9	O	eP	14 50 03 c	
	H	iP	14 50 32 c	
9	O	iP	15 20 04 d	
	SH	eP	15 20 05	
	H	iP	15 20 33 c	
9	KL	eP	15 33 52	
	O	iP	15 34 15 c	
	SH	eP	15 34 17	
	H	eP	15 34 44	
9	KL	eP	15 43 00	U.S.C.G.S.
	O	iP	15 43 21 c	45N, 151 1/2E
	SH	eP	15 43 23	Kurile Islands
	H	eP	15 43 46 c	H = 15:31:06
9	O	eP	20 53 44	
	SH	eP	20 53 47	
	H	iP	20 54 13 c	

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DATE	STN.	PHASE	h m s	REMARKS
10	KL	eP	01 06 17	U.S.C.G.S.
	O	eP	01 06 34	50°N 158 1/2E
	SH	eP	01 06 37	off south coast of Kamchatka
	H	eP	01 07 07 c	H=00:55:00
10	KL	eP	06 17 12	
	SH	eP	06 17 34	
10	H	iPn	19 24 43	Δ = 220 km
		Sn	19 25 07	
10	KL	eP	20 37 40	U.S.C.G.S.
	O	eP	20 37 55	53 1/2 N 160°E
	SH	eP	20 37 53	near east coast of Kamchatka
	H	eP	20 38 26 d	H = 20:26:40
10	KL	iP	22 05 07 c	
	O	eP	22 05 31	
	SH	eP	22 05 33	
	H	iP	22 06 01 d	
10	C	eP	23 23 43	
11	O	iP	01 21 36 c	
11	O	eP	02 38 23 c	
11	O	eP	03 30 22 c	
11	KL	eP	05 38 06	
	O	eP	05 38 29 d	
	SH	eP	05 38 31	
	H	iP	05 38 58 c	
11	KL	iP	12 03 43 c	
	C	eP	12 03 24 d	
	SH	eP	12 03 27	
	H	iP	12 03 17 d	
11	KL	eP	14 21 36	
	O	eP	14 22 00	
		PP	14 24 41	
	SH	eP	14 22 01	
	H	iP	14 22 29 c	
11	O	iP	19 32 10 c	
	H	eP	19 32 38	
11	O	iP	21 59 31 c	
12	O	eP	00 52 42	
	H	iP	00 53 05 d	
12	H	iP	07 09 17 d	

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DATE	STN.	PHASE	h m s	REMARKS
12	O	eP	08 15 23 c	
	H	iP	08 15 53 c	
12	H	eP	12 41 35 d	
12	O	eP	13 50 09 c	
12	KL	e	16 05.6	
		i	16 06 48 c	
	O	e	16 06 28	
		e	16 08 06	
	SH	e	16 06 17	
		e	16 06 43	
		e	16 07 05	
		e	16 07 36	
		e	16 07 50	
		F	16 09 43	
12	O	eP	20 10 53 c	
13	O	eP	04 41 55 c	
13	KL	iP	08 09 50 c	U.S.C.G.S.
		i	08 09 51 d	50 1/2N 157E
	O	iP	08 10 22 c	near south coast of Kamchatka
		i	08 10 58	H = 07:58:45
		PP	08 13 02	Ottawa Δ = 8200 km
		PPP	08 14 44	
		S	08 19 42	
		SS	08 24 24	
		SSS	08 28 06	
	SH	eP	08 10 24	
		e	08 10 34	
	H	iP	08 10 50 c	
13	O	eP	10 49 18	
13	O	eP	15 33 56	
13	KL	eP	22 36 47 d	U.S.C.G.S.
		iP	22 36 48 c	50°N 158°E
	O	iP	22 37 10 d	off south coast of Kamchatka
		PP	22 39 52	H = 22:25:34
	SH	eP	22 37 11	
		e	22 37 21	
	H	eP	22 37 40 d	
14	O	eP	05 01 48	
		PP	05 04 28	
14	O	eP	05 21 30 c	U.S.C.G.S.
		(PP)	05 24 05	20 1/2 N, 73W
				H = 05:16:00
				Windward Passage
				Ottawa Δ = 2800 km
14	O	eP	11 49 53	U.S.C.G.S.
				6° S 77°W , Northern Peru,
				H = 11:40:45
				Ottawa Δ = 5650

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DATE	STN.	PHASE	h m s	REMARKS
15	O	eP	01 15 59	
	SH	e	01 16 18	
		e	01 16 32	
15	O	P_1	02 17 28	Δ = 40 km
		S_1	02 17 33	
15	KL	eP	05 10 46	
	O	iP	05 11 13 c	
	SH	eP	05 11 18	
	H	eP	05 11 57	
15	O	e(P)	05 34 39	
	SH	eP	05 34 44	
16	KL	eP	01 59 11	U.S.C.G.S.
	O	iP	01 59 34 d	50 1/2 N 157°E
		PP	02 02 19	near south coast of Kamchatka
	SH	eP	01 59 35	H=01:47:54
	H	eP	02 00 02	
16	O	eP	04 22 05 d	
		PP	04 24 47	
	SH	eP	04 22 07	
	H	eP	04 22 28	
16	H	eP_1	06 42 56	probably rockburst at
		S_1	06 43 10	Springhill coal mine
16	O	iP'	07 57 28 c	U.S.C.G.S.
	H	eP'	07 57 44	near northeast coast of New Guinea
		PKS	08 01 08	H = 07:38:25
16	KL	e	12 41.4	
	O	eP	12 41 34	
		e	12 41 44	
		e	12 44 26	
	SH	e	12 41 55	
	H	eP	12 42 03	
		i	12 42 14	
16	O	eP	15 15 09 c	
		PcP	15 16 05	U.S.C.G.S.
		S	15 23 31	2°N 29 1/2 W
		SSS	15 30 12	Mid-Atlantic Ocean
	H	iP	15 14 19	H=15:05:02
		PcP	15 15 29	
		PPP	15 17 25	
		S	15 21 46	
		ScS	15 24 20	
		SSS	15 27.5	
17	O	iP	12 15 19 d	
18	O	eP	07 54 09	

DATE	STN.	PHASE	h m s	REMARKS
18	KL	iP	08 24 45 c	
		i(pP)	08 24 57 c	followed by strong d
		e	08 27 24	
	0	iP	08 25 10 c	U.S.C.G.S.
		PP	08 27 40	49 1/2 N 156 1/2E
		PPP	08 29 27	off south coast of Kamchatka
		L	08 52 30	H=08:13:25
	SH	eP	08 25 10	
		e(pP)	08 25 19	
	H	iP	08 25 38 c	
18	0	eP	08 54 12 d	U.S.C.G.S.
		PP	08 56 42	50 1/2N 156E
				near south coast of Kamchatka
				H=08:42:30
19	0	eP	10 38 35	U.S.C.G.S.
				29 1/2N 86 1/2E
				Southern Tibet
				H=10:23:28
20	0	eP	11 37 36	
	SH	eP	11 37 38	
		e	11 37 47	
20	0	iP	15 44 04 c	
		PP	15 45 24	U.S.C.G.S.
		PPP	15 45 50	12 1/2N 88W
		PcP	15 46 50	off coast of Nicaragua
		S	15 49 24	h=60 km
		SS	15 51 30	H=15:37:17
		SSS	15 52 08	Ottawa Δ=3800 km
		ScS	15 54 18	
	KL	iP	15 44 19 c	
		F	16.2	
	SH	eP	15 44 20	
		PP	15 45 40	
		PPP	15 46 01	
		PcP	15 47 05	
		S	15 49 49	
	H	iP	15 44 37 c	
21	KL	eP	02 39 14	Small d followed by large c
	0	iP	02 39 37 d	
		PP	02 42 16	
	SH	eP	02 39 39	
	H	iP	02 40 06 c	
		i	02 40 18	
		PP	02 43 08	
21	0	eP	03 31 05	
21	H	iP	06 16 08 c	U.S.C.G.S.
		S	06 20 52	18°N 63°W
		i	06 20 58	Mona Passage
	0	eP	06 16 24	h=100 km
		S	06 21 18	H=06:10:38
		i	06 21 28	
	KL	e	06 23.1	

DATE	STN.	PHASE	h m s	REMARKS
21	KL	eP	07 37 22	
	O	iP	07 37 45 d	
	H	iP	07 38 14	
21	O	eP	07 57 14	
	H	iP	07 57 27 c	
21	KL	eP	07 59 56 Prob. c	
	O	iP	08 00 07 c	
	SH	eP	08 00 08	
	H	iP	08 00 17	
		i	08 00 43	
21	O	eP	09 20 31	
		(PP)	09 23 12	
	H	eP	09 21 04	
21	KL	eP	17 35 14	U.S.C.G.S.
	O	eP	17 35 43	66°N 166°W
		L	17 52 40	Western Alaska
	SH	eP	17 35 44	H=17:26:50
21	H	iP_1	19 29 31	Local
		S_1	19 29 35	
22	O	eP	05 30 44	
	SH	eP	05 30 46	
		e(pP)	05 30 55	
	H	eP	05 31 13 c	
22	KL	eP	07 53 10 c possibly preceded by a small d	
		eL	08 03 47	
		F	08 25	
	O	eP	07 53 33 d	U.S.C.G.S.
		PcP	07 56 09	35.8N, 121.1W
		S	07 59 02	San Luis Obispo County, California
		e	08 01 04	H=07:46:37
		SSS	08 02 04	
		L	08 03 40	
	SH	e	08 02 02	
		L	08 05 00	
	H	eP	07 54 51	
22	O	eP	16 25 17 c	
	SH	eP	16 25 18	
24	O	iP	00 25 39 c	
	SH	eP	00 25 40	
	H	iP	00 26 08 c	
24	O	eP	08 00 05 c	
	SH	eP	08 00 06	
	H	iP	08 00 33 c	
24	O	eP	17 09 43	
24	O	iP	21 47 07 d	
	SH	eP	21 47 09	

DATE	STN.	PHASE	h m s	REMARKS
24	O	iP	22 26 55 c	
	SH	eP	22 26 57	
	H	iP	22 27 25 c	
25	O	eP	05 42 32 d	
25	O	eP	16 29 55	
	H	iP	16 29 13	
		i	16 29 24	
25	SH	e	23 55 21	
		F	23 56 32	
26	SH	e	00 00 43	

Note: The following four entries are for disturbances, all probably from the same source, but not definite enough to allow for interpretation. One possible interpretation places the source at a distance of 640 km from Kirkland Lake, with a P-H time of 1:26. However, the early arrivals at Ottawa are inconsistent with this.

26	O	e	00 12 06	
		P	00 14 59	
		S	00 16 42	
	KL	eP	00 13 52	
		eS_1	00 15 19	
	SH	e	00 15 14	
		e	00 15 50	
		e	00 16 11	
		e	00 16 24	
		F	00 18 35	
	H	e	00 18 24	
26	KL	eP	00 20 19	See Note, above
		eS_1	00 21 46	
	O	eP	00 21 26	
		eS	00 23 15	
	SH	e	00 21 40	
		e	00 22 22	
		e	00 22 47	
	H	e	00 25 03	
26	KL	eS	00 33 03	See Note, above
	O	e	00 29 51	
		P	00 32 46	
		S	00 34 30	
	SH	e	00 32 26	
		e	00 32 48	
		e	00 34 05	
	H	e	00 36 07	

DATE	STN.	PHASE	h m s	REMARKS
26	KL	eP	07 51 46	See Note, above
		e	07 53 10	
		eS_1	07 53 13	
	O	e	07 50 00	
		P	07 52 53	
		S	07 54 36	
		F	07 57	
	SH	e	07 52 39	
		e	07 53 05	
		F	07 57 03	
	H	e	07 54 27	
26	KL	eP	13 36 10	
		i(pP)	13 36 21 c	
	O	iP	13 36 35 d	
		i	13 36 45	
	SH	eP	13 36 37	
		e(pP)	13 36 41	
	H	iP	13 37 07 c	
27	H	iP	01 38 14 c	
27	O	e	04 36 19	Same type as those described
		P	04 39 07	in above Note.
		S	04 40 50	
	SH	e	04 38 39	
		e	04 39 02	
		e	04 39 23	
		e	04 39 54	
		e	04 40 18	
		e	04 40 23	
27	KL	eP	07 34 03 Prob.d	U.S.C.G.S.
	O	eP	07 34 10	37°N 70°E
	SH	eP	07 34 00	Northern Afghanistan
	H	eP	07 33 40	H = 07:20:13
				Ottawa Δ=10,250
27	O	iP	07 42 10 d	
	SH	eP	07 42 12	
	H	iP	07 42 40 c	
27	O	eP	15 28 54 d	
	SH	eP	15 28 56	
	H	iP	15 29 22 d	
28	O	iP	01 20 22 d	U.S.C.G.S.
		S	01 26 26	7°N 79°W
	KL	eP	01 20.8	off south coast of Panama
	SH	e(P)	01 20 34	H=01:12:56
				Ottawa Δ = 4200 km.
28	O	eP	08 16 56	U.S.C.G.S.
		S	08 26 16	52°N 160°E
		L	08 42 20	near east coast of Kamchatka
	SH	eP	08 16 57	H=08:05:30
	H	iP	08 17 25 c	

November, 1952

DATE	STN.	PHASE	h m s	REMARKS
28	O	iPn	18 51 06	
		Sn	18 51 23	Δ = 150 km
		L	18 51 31	
28	O	eP'	21 20 12	U.S.C.G.S.
		i	21 20 42	6 1/2°S 155°E
		i	21 21 14	Solomon Islands
		PP	21 21 44	h=100 km
		SKS	21 27 05	H=21:01:27
		PS	21 31 40	
		SS	21 38 14	
	H	iP'	21 20 30 c	
		PP	21 22 40	
		SKKS	21 29 38	
29	KL	iP	08 33 38 d	U.S.C.G.S.
		eS	08 42 32	53°N 160°E
		F	09 20	near east coast of Kamchatka
	O	eP	08 33 57	H = 08:22:34
		e	08 35 19	Ottawa Δ = 7850 km
		PP	08 36 41	
		e	08 37 29	
		PPP	08 38 09	
		S	08 43 06	
		PS	08 43 41	
		ScS	08 44 04	
		SS	08 48 01	
		SSS	08 51 24	
		L	08 56 02	
	SH	eP	08 34 01	
		e	08 34 10	
		e	08 35 20	
		PP	08 36 32	
		PPP	08 38 22	
		S	08 43 11	
		PS	08 44 06	
	H	eP	08 34 25	
		PP	08 37 25	
		S	08 44 16	
29	O	eP	08 44 58	
		PP	08 47 37	
	SH	eP	08 45 02	
	H	eP	08 45 31	
29	KL	eP	23 54 37 prob. c	
		i(PP)	23 56 38 c	
		eS	24 01 06	
		F	24.8	U.S.C.G.S.
	O	iP	23 55 09 c	56°N 155°W
		PcP	23 56 32	off south coast of Alaska Peninsula
		PP	23 57 04	H;23:46:25
		PPP	23 57 53	Ottawa Δ = 5400 km
		S	24 02 06	
		PS	24 02 22	
		PPS	24 02 36	
		ScS	24 05 00	
		SS	24 05 44	
		SSS	24 07 16	
		L	24 08 43	'quake cont'd on next page

November, 1952

DATE	STN.	PHASE	h	m	s		REMARKS
29	SH	eP	23	55	13		
		PcP	23	56	40		
		PP	23	57	15		
		PPP	23	58	09		
		S	24	02	09		
		PS	24	02	29		
		ScS	24	04	57		
		SS	24	05	50		
	H	eP	23	55	59	c	
		PP	23	58	06		
		PPP	23	59	16		
		S	24	03	37		
		PS	24	04	59		
		PPS	24	05	04		
		ScS	24	05	44		
		SS	24	07	24		
30	O	eP	06	13	53	c	
30	O	eP	06	44	01	c	
30	O	eP	12	36	44	c	
30	O	i	16	41	10		
30	KL	e(P)	17	37	18		
30	KL	eP	18	42	39		
	O	eP	18	43	04		
	SH	eP	18	43	06		
	H	eP	18	43	33		
30	KL	e(P)	19	39	43		Might be microseism
		e	19	39	48	d	
	O	iP	19	40	07	c	
		i	19	40	13		
		PP	19	42	47		
		S	19	49	22		
		SS	19	54	04		
		SSS	19	57	22		
		L	20	04	52		
	SH	eP	19	40	09		
	H	eP	19	40	37	c	
30	O	iP	20	40	23	c	
	H	eP	20	40	54	c	

J. L. O'Connor

J. H. Hodgson

SEISMOLOGICAL SERVICE OF CANADA

Eastern Division

DOMINION OBSERVATORY, Ottawa

STATIONS: O - Ottawa, H - Halifax, SF - Seven Falls, SH - Shawinigan Falls, KL - Kirkland Lake

December, 1952

DATE	STN.	PHASE	h m s	REMARKS
1	O	e	12 08 36	
2	O	iPn	20 09 22	Δ = 150 km
		Sn	20 09 39	
		L	20 09 47	
2	O	iPn	20 55 12	Δ = 150 km
		Sn	20 55 29	
		L	20 55 37	
3	KL	eP	00 41 04	
	O	iP	00 41 34 d	
3	O	iP	10 23 56 d	
	KL	eP	10 24 08	
3	O	iP	11 10 34	
		e	11 11 08	
	KL	eP	11 10 45	
3	KL	eP	14 18 59	
	O	eP	14 19 21	
3	O	iPn	15 11 06	Δ =275 km
		Sn	15 11 36	
		L	15 11 59	
3	KL	eP	20 54 50	
3	O	eP	22 37 00	
	KL	eP	22 37 11	
	H	eP	22 37 32	
3	KL	eP	23 29 38	
4	KL	eP	04 01 34 d,followed by i c	
		i(pP)	04 02 13 probably c.	
		F	04.3	U.S.C.G.S.
	O	iP	04 01 59 d	52°N 178°E
		PcP	04 02 40	Rat Islands, Aleutians
		PP	04 04 14	H = 03:51:25
		S	04 10 24	h=100 km
	SH	eP	04 02 02	
		PP	04 04 14	
		PPP	04 05 49	
		S	04 10 28	
	H	iP	04 02 38 d	
		PP	04 05 17	

December, 1952

DATE	STN.	PHASE	h m s	REMARKS
4	KL	e(P)	11 00.9	
	O	eP	11 01 16 c	
	H	iP	11 01 44 c	
4	SH	eP	11 07 18	
4	O	e	11 21 47	
5	O	eP	00 59 44	U.S.C.G.S.
		S	01 04 07	off north coast of Dominican
	H	iP	00 59 32 d	H = 00:54:07 Republic
5	KL	eP	07 06 58	U.S.C.G.S.
	O	eP	07 06 41	Southern Honduras-Nicaragua border
	SH	eP	07 06 45	H = 06:59:59
6	O	e(P)	01 17 18	
6	O	eP	03 46 05	
	H	eP	03 46 33	
6	KL	eP'	11 00 12	U.S.C.G.S.
		e(PP)	11 01 45	8°S 157°E
		F	12.3	Solomon Islands
	O	eP'	11 00 15	H = 10:41:14
		i	11 01 08	Ottawa Δ = 13,500 km
		SKS	11 07 00	
		PS	11 11 30	
		PPS	11 13 10	
		SS	11 18.2	
		SSS	11 23.0	
	SH	eP'	11 00 30	
	H	eP'	11 00 32	
6	O	eP'	21 09 32	Aftershock of above
				H=20:50:35
7	KL	eP	01 00 28	Probably c
		F	01 15	U.S.C.G.S.
	O	eP	01 01 03	53°N 172 1/2°E
		i	01 02 32	Near Islands, Aleutians
		S	01 09 46	H=00:50:12
		PS	01 10 16	
		ScS	01 10 48	
		SS	01 14 07	
		L	01 22.5	
	SH	eP	01 01 05	
	H	eP	01 01 38	
7	KL	eP	16 44 20	
	O	eP	16 44 46	
7	KL	eP	19 45 03	
8	O	Pn	14 29 27	
		Sn	14 29 44	Δ=150 km.
		L	14 29 53	

DATE	STN.	PHASE	h m s	REMARKS
9	0	iP'	09 34 02	U.S.C.G.S.
		i	09 37 20	15 1/2S 168E
				New Hebrides Islands
				H=09:15:12
				Ottawa Δ = 13,200
	H	i	09 37 22	
10	KL	iP	06 05 49 d	U.S.C.G.S.
	0	iP	06 05 53 d	71°N 7°W
		PP	06 07 40	Jan Mayen Islands region
		PcP	06 07 55	H=05:58:06
		PPP	06 08 08	Ottawa Δ = 4500 km
		S	06 12 02	
		SS	06 15.0	
		ScS	06 16.0	
		L	06 16 40	
	SH	eP	06 05 35 n	
	H	iP	06 05 26 d	
		PP	06 06 50	
		PPP	06 07 15	
		PcP	06 08 17	
		S	06 11 27	
		SS	06 13 57	
10	0	eP	12 56 55	U.S.C.G.S.
				Arctic Ocean, north of Nicholas II Land.
				H = 12:47:44
10	0	eP	14 15 45	As above. H=14:06:40
11	KL	iP	09 09 40c	U.S.C.G.S.
	0	iP	09 10 02 c	42°N 155°E
		PP	09 12 55	Kurile Islands
		S	09 19 42	h=60km
		SSS	09 28 12	H=08:58:18
	SH	eP	09 10 03	Ottawa Δ=8350 km
		PP	09 12 57	
		S	09 19 46	
	H	iP	09 10 30 c	
		PP	09 13 38	
		S	09 20 34	
		ScS	09 20 56	
		PS	09 21 12	
		PPS	09 21 42	
		L	09 34 18	
11	0	eP	13 23 23	
	SH	eP	13 23 30	
	H	eP	13 24 10	
11	0	eP	18 00 03	
	SH	eP	18 00 04	

DATE	STN.	PHASE	h m s	REMARKS
12	KL	eP	00 56 04 probably c	
	O	iP	00 56 36 c	U.S.C.G.S.
		PP	00 58 30	56 1/2N 154W
		S	01 03 32	near south coast of Kodiak Island,
		PS	01 03 50	H=00:47:56 Alaska
		ScS	01 06 30	Ottawa Δ = 5300 km
		SS	01 07 18	
		SSS	01 08 20	
		L	01 10 36	
	SH	eP	00 56 41	
	H	eP	00 57 26 c	
		i	00 57 31	
12	H	Pn	14 14 55	Δ=210 km
		Sn	14 15 18	
12	KL	iP	14 39 00.5	Large rockburst at Kirkland Lake
	O	i	14 41 06	
12	KL	e(P)	20 43 08	
	O	e(P)	20 43 28	
	SH	e(P)	20 43 32	
13	KL	eP	21 56 59	very small local
		iS	21 58 11	
	O	e	21 58 28	
14	O	eP	02 25 24	
	SH	eP	02 25 25	
14	KL	eP	07 25 10	
	O	eP	07 25 42	
	SH	eP	07 25 46	
14	KL	eP	10 44 55	U.S.C.G.S.
	O	eP	10 44 25	19°N 69°W
		PP	10 45 17	Dominican Republic
		PPP	10 45 28	H=10:38:39
	SH	eP	10 44 34	Ottawa Δ = 2950 km
	H	iP	10 44 18 c	
14	O	iP	11 02 42 c	
	SH	eP	11 02 56	
	KL	iP	11 03 00 c	
14	O	eP	12 16 19	
	SH	eP	12 16 21	
15	O	iP	05 17 04 d	U.S.C.G.S.
	SH	eP	05 17 10	Northern Chile
	KL	iP	05 17 21 d	h=150 km
	H	iP	05 16 59 d	H=05:06:14

DATE	STN.	PHASE	h m s	REMARKS
				U.S.C.G.S.
15	O	eP'	16 57 23 c	6°S 156°E
		i	16 57 34	Solomon Islands
	H	iP'	16 57 39 c	H = 16:38:35
17	H	iP	05 24 11 c	U.S.C.G.S.
	O	iP	05 24 14 c	Northern Chile, h= 100 km
	KL	eP	05 24 34	H=05:13:15
17	H	iP	23 14 42 c	U.S.C.G.S.
		PP	23 17 22	34 1/2°N 24°E
		PPP	23 19 01	near south coast of Crete
		S	23 23 23	H=23:03:58
		SS	23 27.5	Ottawa Δ=8000 km.
	SF	eP	23 15 05	
		PP	23 17 47	
		S	23 24 10	
		i	23 24 27	
		PPS	23 25 00	
		ScS	23 25 22	
		SS	23 28 27	
		L	23 37 10	
	SH	eP	23 15 13	
		PP	23 17 53	
		S	23 24 23	
		PPS	23 25 14	
		SS	23 28 58	
		SSS	23 31 57	
	O	iP	23 15 27 c	
		PP	23 18 08	
		PPP	23 19 56	
		S	23 24 52	
		PPS	23 25 34	
		SS	23 29 04	
		e	23 30 50	
		SSS	23 32 10	
	KL	eP	23 15 33 probably c	
		iP	23 15 34 c	
		eS	23 25 03	
		F	23.5	
18	KL	eP	09 31 17 c	U.S.C.G.S.
	O	iP	09 31 40 c	53 1/2N 162E
	SH	eP	09 31 43	off east coast of Kamchatka
	SF	eS	09 40 54	H=09:20:28
		SSS	09 48 54	
	H	iP	09 32 11 c	
18	O	eP	10 42 01	
18	O	eP	18 53 42	
19	O	eP	07 03 12	
	SH	e	07 04 53	
	KL	e(P)	07 04 26	

DATE	STN.	PHASE	h m s	REMARKS
19	O	iP	07 43 18 d	
20	KL	iP	04 16 41 c	U.S.C.G.S.
	O	iP	04 17 05 c	53°N, 160°E
	SH	eP	04 17 06	near east coast of Kamchatka
	H	iP	04 17 35 c	H=04:05:48
21	O	eP'	06 10 26	U.S.C.G.S. Banda sea H=05:51:06
21	O	P_1	12 01 37	Probably in Cornwall area
		S_1	12 01 47	
	SH	e	12 02 26	
22	O	eP	06 40 06	
22	KL	iP	22 35 22 d	U.S.C.G.S.
		i	22 35 44 c	54°N 160 1/2°E
	O	iP	22 35 55 d	near east coast of Kamchatka
		PP	22 38 22	H=22:24:42
		PPP	22 40 04	Ottawa Δ = 7750
		S	23 45 00	
		SS	23 49 16	
		SSS	23 52 52	
		L	24 00 26	
	SH	eP	22 35 57	
		S	22 45 03	
	H	iP	22 36 25	
23	O	iP	00 03 06	U.S.C.G.S.
	H	iP	00 02 22	near north coast of Crete H=(22):23:51:37
23	O	iP	23 13 23 d	
	H	iP	23 13 47 d	
24	O	iP'	08 52 23 d	U.S.C.G.S. Foreshock of New Britain 'quake H=08:33:25
24	KL	eP	16 00 49 probably c	U.S.C.G.S.
	O	iP	16 01 11 c	50°N 155 1/2°E
	SH	eP	16 01 12	off south coast of Kamchatka H = 15:49:27
24	O	iP'	18 19 14	U.S.C.G.S. New Britain foreshock H=18:00:13
24	O	eP'	18 34 23 d	U.S.C.G.S. New Britain foreshock H=18:15+25

DATE	STN.	PHASE	h m s	REMARKS
24	KL	eP'	18 58 25	U.S.C.G.S.
	O	iP'	18 58 33	5 1/2°S 151 1/2°E
		PP	19 00 10	New Britain
		e	19 07 22	H = 18:39:33
		PS	19 10 00	Ottawa Δ = 13,550 km
		SS	19 16 44	
		SSS	19 20 42	
		L	19 31 05	
	SH	eP'	18 58 38	
	H	e	18 58 55	
		PP	19 02 29	
		SKS	19 06 48	
		SKKS	19 09 26	
		PS	19 12 52	
24	O	iP'	21 40 10 c	U.S.C.G.S.
				New Britain aftershock
				H=21:21:07
24	O	eP'	21 56 06	U.S.C.G.S.
				New Britain aftershock
				H=21:37:05
25	O	eP'	02 47 38 d	U.S.C.G.S.
				New Britain aftershock
				H = 02:28:39
25	O	eP'	02 58 36	U.S.C.G.S.
				New Britain aftershock
				H=02:39:40
25	O	e(P')	03 38 48 c	
25	O	eP'	04 09 59	U.S.C.G.S.
				New Britain aftershock
				H=03:51:01
25	O	iPn	04 29 33	Δ=475 km
		P	04 29 41	
		P_1	04 29 47	
		Sn	04 30 19	
		S_2	04 30 36	
	KL	e	04 29.9	
		e	04 30 48	
	SH	e	04 30 41	
		e	04 31 48	
		e	04 32 10	
25	O	eP'	15 15 37 c	U.S.C.G.S.
				New Britain aftershock
				H=14:56:42
26	O	eP'	11 32 42	U.S.C.G.S.
				200 miles south of Fiji Islands
				h=600 km
				H=11:15:06

DATE	STN.	PHASE	h m s	REMARKS
27	O	iP	00 06 00 d	
	H	iP	00 05 09 d	
27	KL	eP	01 36 51 c	
	O	iP	01 37 14 c	
	SH	eP	01 37 15	
	H	iP	01 37 43 d	
28	KL	eP	05 03 37 probably d	
	O	eP	05 04 06	U.S.C.G.S.
		i	05 05 44	65 1/2°N 167 1/2°W
		S	05 11 22	near west coast of Seward
		SS	05 15 22	Peninsula, Alaska
		SSS	05 16 24	H=04:55:06
		L	05 18 20	Ottawa Δ = 5550
	SH	eP	05 04 07	
28	KL	eP	05 34 37	U.S.C.G.S.
	O	eP	05 35 06	Alaskan Aftershock
				H = 05:26:08
28	O	eP'	15 20 31	U.S.C.G.S.
	SH	eP'	15 20 44	6°N 127°E
				off east coast of Mirdanao
	H	eP'	15 20 51	H=15:01:19
29	KL	iP	02 20 31 d	
	O	iP	02 20 54 d	
		PP	02 23 43	
		G	02 39 18	
	SH	eP	02 20 55	
	H	eP	02 21 24	
29	KL	e	05 06 33	
	O	e	05 06 27	
	SH	e	05 07 31	
		e	05 08 02	
29	O	eP'	23 39 02 d	U.S.C.G.S. 21°S 178 1/2°W Fiji Islands h=500 km H=23:21:20
30	KL	e	06 51.7	U.S.C.G.S.
	O	iP	06 52 22 d	61°N, 148 1/2°W
	H	iP	06 53 10 d	Kenai Peninsula, Alaska h=100 km H=06:44:22
30	O	iP'	07 59 09 c	U.S.C.G.S. New Britain aftershock H=07:40:11

DATE	STN.	PHASE	h m s		REMARKS
30	O	eP	12 14 02		U.S.C.G.S.
		PP	12 15 29		10 1/2N 84W
		PPP	12 15 54		Costa Rica
		PcP	12 16 26		H=12:07:02
		S	12 19 40		Ottawa Δ=3950
		SS	12 22 24		
		SSS	12 22 54		
		ScS	12 24 24		
	KL	eP	12 14 22	Probably d	
	SH	eP	12 14 18		
	H	iP	12 14 30		
30	O	e(P)	19 56 45		
31	H	iP	01 44 57	d	U.S.C.G.S.
	SH	eP	01 45 27		12°N 59°W
		e	01 45 40		Atlantic Ocean, south of Barbados
	O	iP	01 45 26	d	H=01:38:14
		i	01 45 40		Δ = 4000 km
	SH	eP	01 45 48		
31	H	iP	14 59 28	d	U.S.C.G.S.
	SH	eP	14 59 58		near north coast of Crete
	O	iP	15 00 12	d	H=14:48:41
	O	iP	15 00 12	d	
		i	15 00 18		
	KL	eP	15 00 18		
31	H	iP	17 29 31	d	U.S.C.G.S.
	SH	eP	17 30 01		Near north coast of Crete
	O	iP	17 30 15	c	H=17:18:44
	KL	iP	17 30 20		
31	KL	e	21 55.2		U.S.C.G.S.
	O	iP	21 55 34	c	49°N 156°E
	SH	eP	21 55 36		Kurile Islands
	H	iP	21 56 02	c	H=21:43:49

J. H.Hodgson

J. L. O'Connor

SEISMOLOGICAL BULLETINS RECEIVED

October, 1952

We acknowledge, with thanks, the receipt of the following seismological bulletins:-

STATION	BULLETINS
Rome	June, 1952
Richmond	August, 1952
Santa Clara	September, 1952
Cartuja	June, 1952
Belgrade	July, 1952
Richmond	July, August, September, 1941
Barcelona	Bulletin 1950
Santo Domingo	January-June, 1952
Athens	August, 1952
Tortosa	July, August, 1952
Almeria	May, June, 1952
Wellington	March, 1952
Palisades	September, 1952
Riverview, Australia	January - June, 1951
Hong-Kong	August, 1952
Cartuja	July, 1952
Riverview	July-December, 1951
Apia	October-December, 1951
U.S.C.G.S.	Bulletin January, February, March, 1950
Coimbra	July,August, September, 1952
Toledo	July, 1952
Toledo	Provisional August, 1952
Istanbul	May, 1952
Uppsala	October 2 - October 15, 1952
Kiruna	September 29, October 6, 1952
Belgrade	August, 1952
Bermuda	Provisional Readings, September 7 - October 5, 1952
Lisbon	May-June, 1952
Cartuja	August, 1952
Palisades	Provisional, October 6 - 21, 1952
Harvard	January-June 30, 1952
U.S.S.R.	July-December, 1949
U.S.S.R.	April-June, 1949
Rome	July, 1952
Tacubaya	August, 1952
Richmond	The International Seismological Summary, October, November, December, 1941
Arkansas	July, August, September, 1952
Malaga	February, March, April, 1952
Berkeley	Weekly Air Letters, April 18-October 28,1952

November, 1952

B.C.I.S.	May, 1952
Strasbourg	September 11-20, 1952
Bureau Central	July, 1952
DeBilt	September, 1952
India	July, 1951
Uppsala	October 16 - October 31, 1952
Kiruna	October 6-20, 1952
Apia	April-June, 1952

SEISMOLOGICAL BULLETINS RECEIVED

November, 1952 (cont'd)

Japan	January, 1952, February, 1952
Richmond	September, 1952
South Africa	July, August, 1952
Ksara	July, August, September, 1952
Bermuda	October 15 - October 30, 1952 (provisional)
Tananarive	October - December, 1951
Zurich	August, September, 1952
Belgrade	September, 1952
Athens	September, 1952
Uppsala	October 31 - November 5, 1952
Rome	August, 1952
Szeged	August 17 - 30, 1952
Budapest	August, 1952, September, 1952
Kalocsa	September, 1952
Stuttgart	September, 1952
Bermuda	November 1-15, 1952 (provisional)
Hong Kong	September, 1952
De Angra do Heroismo	July, August, September, 1952
DeBilt	Seismic records at DeBilt, 1947
Uppsala	November 5-20, 1952
Kiruna	October 20 - November 3, 1952
Tacubaya	September, 1952
Perth	April-June, 1952

December, 1952

Pakistan	June, July, 1952
Prague	September, 1952 (microseismic bulletin)
Cheb (Eger)	September, 1952
Skalnate Pleso	September, 1952
Hurbanovo	September, 1952
Prague	September, 1952
Zagreb	January-June, 1950
Richmond	The International Seismological Summary 1942, January, February and March.
Richmond	Catalogue of Epicentres in International Seismological Summary for 1941.
La Paz	January 1951, January - March, 1952.
India	July-September, 1943
Florence	September - October, 1952
Almeria	July, August, 1952
Weston	August, September, October, 1952 (preliminary)
Jamaica	July, 1952
Palisades	October 22 - November 8, 1952, November 9 - 29, 1952
Cartuja	September, 1952
Toledo	August, 1952
Uppsala	November 20 - December 2, 1952
Kiruna	November 4 - 11, 1952
DeBilt	October, 1952
B.C.I.S.	June, 1952
Strasbourg	October 11 - 20, 1952
Bureau Central	August, 1952
Helwan	May, June, July, August, 1952
Richmond	October, 1952
Bermuda	November 16-30, 1952

SEISMOLOGICAL BULLETINS RECEIVED

December, 1952 (cont'd)

Rome	September, 1952
Uppsala	December 3 - 10, 1952
Kiruna	November 11 - 19, 1952
Tortosa	October, 1952
Tacubaya	October, 1952
South Africa	September, 1952
Helvan	Seismological and Magnetic Report for the year 1943
Uppsala	December 11-20, 1952
Kiruna	November 19 - December 8, 1952
Pasadena	Local shocks, April, May, June, 1952 Larger Kern County shocks July 21 - August 30, 1952.
Ireland	July 1 - September 30, 1952
Palisades	December 1 - 7, 1952
South Africa	October, 1952
Pakistan	May, August, 1952
Bermuda	December 3 - 7, 1952.
Uppsala	December 20-31, 1952
Kiruna	December 8-15, 1952
Florence	November, 1952
Rome	October, 1952
Wellington	April, 1952
U.S.C.G.S.	Bulletin, July, August, September, 1946 MSI - 127.
Athens	October, 1952 also Bulletin 1951.
Apia	July-September, 1952
Stuttgart	October, 1952
B.C.I.S.	July, 1952
Bureau Central	September, 1952
Strasbourg	November 11-20, 1952
Apia	July-September, 1952
Algiers	June, July, 1952
Tamanrasset	June, July, 1952
Pakistan	September, 1952
Brisbane	April, May, 1952
Djakarta	April, May, June, 1952
Stuttgart	November, 1952
Wellington	May, 1952
Lisbon	July, August, 1952
Toledo	August, September, October, 1952
Melbourne	September, October, 1952