DEPARTMENT OF MINES AND RESOURCES

MINES, FORESTS AND SCIENTIFIC SERVICES BRANCH

SEISMOLOGICAL SERVICE OF CANADA

# SEISMOLOGICAL BULLETIN

January and February

1949

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DOMINION OBSERVATORY

OTTAWA - CANADA

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SEISMOLOGICAL SERVICE OF CANADA
DOMINION OBSERVATORY, OTTAWA

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## S T A T I O N S

### OTTAWA

$\varphi$ = 45°23'38" N. $\lambda$ = 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

$\varphi$ = 44°38' N. $\lambda$ = 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

$\varphi$ = 47°07!4 N. $\lambda$ = 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 component, 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)

### VICTORIA

Dominion Astrophysical Observatory

φ = 48°31'14" N. λ = 123°24'56" W. h = 197m.

Time correction from recorded radio time signals

Foundation: rock

Instruments: Milne-Shaw NS and EW components, designated 21 and 20, respectively, each with photographic registration, magnetic damping, paper speed of 8 mm. per min., mass 1 lb.

Benioff Vertical, short-period, designated B 5705, photographic registration, paper speed of 60 mm. per min., mass 235 lbs., installed June, 1948.

### SHAWINIGAN FALLS

Shawinigan Water and Power Company

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

Time correction from recorded radio time signals

Foundation: solid granite of Canadian Shield

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

### SASKATOON

University of Saskatchewan

φ = 52'08' N. λ = 106°38' W. h = 515m.

Time correction from radio time signals

Foundation: clay and sand

Instrument: Milne-Shaw NE and NW components, designated 18 and 22, respectively, each with photographic registration, magnetic damping, paper speed of 8 mm. per min., mass 1 lb.

### 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 | | |
| B 5705 (Victoria) | 1.0 | 0.1 | | | |
| 20 (Victoria) | 12.0 | | 300 | 20:1 | 50 mm. |
| 21 (Victoria) | 12.0 | | 300 | 20:1 | 50 mm. |
| SF (Seven Falls) | 1.0 | | 2200 | | |
| SM (Seven Falls) | 12.0 | | 300 | 20:1 | 50 mm. |
| 18 (Saskatoon) | 10.0 | | 150 | 20:1 | 18 mm. |
| 22 (Saskatoon) | 10.0 | | 150 | 20:1 | 18 mm. |

NOTE:- Universal Time used throughout

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Victoria | |
| 1 Jan. 2 | $P_Z$ | 9 01 40 |
| | i | 9 10 35 |
| | F | 9 35 |
| | Victoria | |
| 2 Jan. 2 | L | 13 40 |
| | F | 14 16 |
| | Ottawa (Z) | |
| 3 Jan. 2 | e | 18 13 21 |
| | F | 18 15 |
| | Victoria (Z) | |
| 4 Jan. 4 | e | 2 33 56 |
| | F | 2 35 |
| | Victoria (Z) | |
| 5 Jan. 4 | e | 7 41 58 |
| | F | 7 43 |
| | Victoria (Z) | |
| 6 Jan. 4 | e | 8 00 22 |
| | F | 8 02 |
| | Ottawa (Z) | |
| 7 Jan. 4 | e | 19 58 30 |
| | F | 20 00 |
| | Ottawa (Z) | |
| 8 Jan. 5 | e | 9 15 17 |
| | F | 9 16 |
| | Ottawa (Z) | |
| 9 Jan. 5 | H | 17 00 45 |
| | $P_n$ | 17 01 07.5 |
| | $P_2$ | 17 01 09.0 |
| | $S_n$ | 17 01 24.0 |
| | $S_2$ | 17 01 27.7 |
| | F | 17 01.8 |
| | $\Delta$ | 135 km. |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 10 Jan. 7 | H | 16 21 31 |
| | $\Delta$ | 150 km. |
| | $P_n$ | 16 21 54.8 |
| | $P_2$ | 16 21 56.6 |
| | $S_n$ | 16 22 12.5 |
| | $S_2$ | 16 22 15.5 |
| | e | 16 22 20 |
| | F | 16 22.5 |
| | Seven Falls | |
| 11 Jan. 7 | L | 18 29 |
| | F | 19 26 |
| | Ottawa (Z) | |
| 12 Jan. 8 | e | 23 40 39 |
| | F | 23 41.5 |
| | USCGS | |
| 13 Jan. 9 | $\varphi$ = 15° N. | |
| | $\lambda$ = 82 1/2° W. | |
| | H = 07 48.1 | |
| | Pacific Ocean off southern coast of Panama | |
| | Ottawa | |
| | e | 7 55 45 |
| | i | 7 55 47.5 |
| | L | 8 05 |
| | F | 8 14 |
| | Victoria | |
| | e | 7 57 43 |
| | F | 7 59 |
| | Seven Falls | |
| | e | 7 56 08 |
| | F | 7 57 |
| | Ottawa | |
| 14 Jan. 9 | e | 10 45 26 |
| | e | 10 46 16 |
| | e | 10 54 14 |
| | F | 10 59 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria (Z)** | |
| 14 Jan. 9 | e | 10 47 10 |
| | F | 10 49 |
| | **Seven Falls** | |
| | e | 10 45 38 |
| | F | 10 46 |
| 15 Jan. 10 | **Victoria (Z)** | |
| | e | 5 18 29 |
| | F | 5 19 |
| 16 Jan. 10 | **Ottawa (Z)** | |
| | e | 18 34 04 |
| | F | 18 35 |
| | **Ottawa (Z)** | |
| 17 Jan. 10 | e | 20 25 05 |
| | F | 20 26 |
| | **Victoria (Z)** | |
| 18 Jan. 12 | e | 1 47 57 |
| | F | 1 50 |
| | **Victoria (Z)** | |
| 19 Jan. 12 | e | 4 23 07 |
| | F | 4 25 |
| | **Ottawa (Z)** | |
| 20 Jan. 12 | H | 13 37 43 |
| | Δ | 112 km. |
| | $P_2$ | 13 38 01.5 |
| | e | 13 38 07 |
| | $S_2$ | 13 38 14.5 |
| | $S_1$ | 13 38 17.6 |
| | F | 13 38.6 |
| | **Ottawa (Z)** | |
| 21 Jan. 12 | e | 21 32 59 |
| | F | 21 34 |
| 22 Jan. 13 | **USCGS** | |
| | φ = 25° S. | |
| | λ = 179° E. | |
| | H = 08 47.5 | |
| | d = 600 km. | |
| | **South of Fiji Islands** | |
| | **Ottawa** | |
| | i | 9 05 10 |
| | e | 9 07 45 |
| | e | 9 13.6 |
| | L | 9 25 |
| | F | 9 41 |
| | **Victoria** | |
| | e | 8 59 29 |
| | e | 9 09 38 |
| | e | 9 13 42 |
| | F | 9 28 |
| | **Saskatoon** | |
| | e | 9 09 30 |
| | e | 9 11 12 |
| | L | 9 25 |
| | F | 9 50 |
| | **Ottawa (Z)** | |
| 23 Jan. 13 | e | 10 09 04 |
| | F | 10 10 |
| | **Ottawa (Z)** | |
| 24 Jan. 13 | H | 17 01 54 |
| | Δ | 142 km. |
| | $P_2$ | 17 02 17.0 |
| | $S_n$ | 17 02 33.8 |
| | $S_2$ | 17 02 37.5 |
| | F | 17 03.0 |
| | **Ottawa (Z)** | |
| 25 Jan. 14 | e | 1 22 16 |
| | F | 1 24 |
| | **Victoria (Z)** | |
| | e | 1 16 21 |
| | F | 1 19 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria** | |
| 26 Jan. 14 | e | 2 29 58 |
| | L | 3 03 |
| | F | 3 14 |
| | **Seven Falls** | |
| | L | 3 12 |
| | F | 3 25 |
| | **Ottawa (Z)** | |
| 27 Jan. 14 | e | 3 51 10.5 |
| | e | 3 52 24 |
| | F | 3 55 |
| | **Shawinigan Falls** | |
| | e | 2 53 33 |
| | F | 2 55 |
| | **Ottawa (Z)** | |
| 28 Jan. 14 | e | 12 27 14 |
| | F | 12 28 |
| | **Victoria (Z)** | |
| | e | 12 23 43 |
| | F | 12 28 |
| | **Victoria (Z)** | |
| 29 Jan. 14 | e | 21 07 17 |
| | F | 21 09 |
| | **Ottawa (Z)** | |
| 30 Jan. 14 | e | 23 09 40 |
| | F | 23 11 |
| | **Victoria (Z)** | |
| 31 Jan. 15 | e | 9 43 41 |
| | e | 9 43 46.5 |
| | e | 9 44 44.5 |
| | F | 9 45 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **USCGS** | |
| 32 Jan. 18 | $\varphi$ = 41° S. | |
| | $\lambda$ = 92° W. | |
| | H = 4 43.7 | |
| | Pacific Ocean approx. 1000 miles off coast of Chile. | |
| | **Ottawa (Z)** | |
| | e | 4 56 21 |
| | F | 4 58 |
| | **Victoria (Z)** | |
| 33 Jan. 19 | e | 13 51 08 |
| | F | 13 53 |
| | **Victoria** | |
| 34 Jan. 19 | e | 15 12 59 dil. |
| | e | 15 23 36 |
| | L | 15 42 |
| | F | 16 28 |
| | **Seven Falls** | |
| | L | 15 47 |
| | F | 16 50 |
| | **Victoria** | |
| 35 Jan. 20 | L | 8 05 |
| | F | 8 07 |
| | **Shawinigan Falls** | |
| 36 Jan. 22 | e | 5 26 11 |
| | F | 5 27 |
| | **Ottawa** | |
| 37 Jan. 23 | L | 1 29 |
| | F | 1 43 |
| | **Victoria** | |
| | L | 1 36 |
| | F | 1 55 |
| | **Saskatoon** | |
| | L | 1 32 |
| | F | 1 42 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Seven Falls | |
| 37 Jan. 23 (cont'd) | L | 1 28 |
| | F | 1 37 |
| | USCGS | |
| 38 Jan. 23 | φ = 9° S. λ = 94° E. H = 6 31.2 d = 100 km. Indian Ocean approx. 600 miles southwest of Sumatra. | |
| | Ottawa | |
| | e | 6 51 38 R |
| | e | 6 52 40 |
| | e | 7 13 20 |
| | L | 7 44 |
| | F | 8 48 |
| | Victoria | |
| | e | 6 52 49 |
| | e | 6 53 53 |
| | e | 7 02 57 |
| | e | 7 04 54 |
| | e | 7 11 04 |
| | e | 7 15.9 |
| | e | 7 25 |
| | L | 7 37 |
| | F | 9 04 |
| | Saskatoon | |
| | H | 6 30.9 |
| | Δ | 15,500 km. |
| | PP | 6 53 22 |
| | e | 6 54 57 (?) |
| | SS | 7 11 22 |
| | e | 7 12 16 (?) |
| | SSS | 7 16 27 |
| | L | 7 31 |
| | F | 8 47 |
| | Halifax | |
| | e | 7 12 34 |
| | L | 7 43.0 |
| | F | 8 25 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Seven Falls | |
| 38 Jan. 23 (cont'd) | e | 6 50 45 |
| | e | 6 52 05 |
| | e | 7 12.3 |
| | L | 7 29 |
| | F | 9 03 |
| | Shawinigan Falls | |
| | e | 6 50 55 |
| | F | 6 53 |
| | Ottawa (Z) | |
| 39 Jan. 24 | e | 5 15 05 |
| | F | 5 16 |
| | USCGS | |
| 40 Jan. 24 | φ = 22° S. λ = 176° W. H = 09 15.7 d = 100 km. Tonga Islands region | |
| | Ottawa | |
| | e | 9 34 12 |
| | e | 9 42 45 |
| | e | 9 43 28 |
| | e | 9 45.8 |
| | L | 9 50.6 |
| | F | 10 44 |
| | Victoria | |
| | H | 9 15 53 |
| | Δ | 9180 km. |
| | P | 9 28 14 |
| | PP | 9 28 50 |
| | S | 9 38 32 |
| | SS | 9 39 17 |
| | F | 10 40 |
| | Saskatoon | |
| | PP | 9 32 54 |
| | S | 9 40 21 |
| | sS | 9 41 05 |
| | L | 9 53 |
| | F | 10 41 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 40 Jan. 24 (cont'd) | Halifax | |
| | e | 9 43 42 |
| | L | 9 53 |
| | F | 10 01 |
| | Seven Falls | |
| | e | 9 45.3 |
| | L | 9 55 |
| | F | 11 01 |
| | Ottawa (Z) | |
| 41 Jan. 24 | e | 9 45 01 |
| | F | 9 46 |
| | Ottawa | |
| 42 Jan. 25 | e | 8 00 03 |
| | L | 8 12 |
| | F | 8 20 |
| | Seven Falls | |
| | L | 8 13 |
| | F | 8 27 |
| | Ottawa (Z) | |
| 43 Jan. 25 | H | 18 15 28 |
| | Δ | 220 km. |
| | $P_2$ | 18 16 01.8 |
| | $S_n$ | 18 16 23.3 |
| | $S_2$ | 18 16 25.8 |
| | F | 18 16.6 |
| | USCGS | |
| 44 Jan. 27 | φ = 3° S. | |
| | λ = 152° E. | |
| | H = 07 18.2 | |
| | New Britain region | |
| | Ottawa | |
| | e | 7 37 04 |
| | e | 7 46 42 |
| | e | 7 55 10 |
| | L | 8 09.4 |
| | F | 9 15 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 44 Jan. 27 (cont'd) | Victoria | |
| | H | 7 18 12 |
| | Δ | 10.800 km. |
| | P | 7 31 26 |
| | SKS | 7 41 50 |
| | e | 7 42 05 |
| | S | 7 43 14 |
| | L | 7 55.4 |
| | F | 9 06 |
| | Saskatoon | |
| | L | 8 02 |
| | F | 8 42 |
| | Halifax | |
| | L | 8 16 |
| | F | 8 50 |
| | Seven Falls | |
| | L | 8 10 |
| | F | 8 16 |
| | USCGS | |
| 45 Jan, 27 | φ = 55° N. | |
| | λ = 164° E. | |
| | H = 11 00.0 | |
| | Off east coast of Kamchatka | |
| | Ottawa | |
| | e | 11 11 03 |
| | e | 11 13 38 |
| | L | 11 36 |
| | F | 12 10 |
| | Victoria | |
| | L | 11 19 |
| | F | 12 02 |
| | Saskatoon | |
| | L | 11 27 |
| | F | 11 42 |
| | Seven Falls | |
| | L | 8 16 |
| | F | 9 03 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa (Z)** | |
| 54 Feb. 1 | e | 6 44 45 |
| | F | 6 45.2 |
| | **USCGS** | |
| 55 Feb. 1 | φ = 2°5 S. | |
| | λ = 138° E. | |
| | H = 18 15.9 | |
| | Northern New Guinea | |
| | **Ottawa** | |
| | e | 18 35.1 |
| | e | 18 47.5 |
| | L | 19 23 |
| | F | 20 30 |
| | **Victoria** | |
| | 19 03 to 19 43 | |
| | **Saskatoon** | |
| | e | 18 44 22 |
| | L | 19 14 |
| | F | 19 47 |
| | **Seven Falls** | |
| | 19 09 to 10 33 | |
| | **Ottawa (Z)** | |
| 56 Feb. 2 | H | 17 12 08 |
| | Δ | 137 km. |
| | $P_2$ | 17 12 31 |
| | $S_n$ | 17 12 47 |
| | $S_1$ | 17 12 51.5 |
| | F | 17 13.1 |
| | **USCGS** | |
| 57 Feb. 2 | φ = 53° N. | |
| | λ = 172°5 W. | |
| | H = 17 41.5 | |
| | d = 200 km. | |
| | Aleutians region | |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa** | |
| 57 Feb. 2 (cont'd) | H | 17 41 26 |
| | Δ | 6370 km. |
| | P | 17 51 11.5 C |
| | $P_cP$ | 17 51 58 |
| | PP | 17 53 23 |
| | S | 17 59 02 |
| | $S_cS$ | 17 59 42 |
| | SSS | 18 05 04 |
| | L | 18 12.4 |
| | F | 18 33 |
| | **Victoria** | |
| | H | 17 41 38 |
| | Δ | 3235 km. |
| | P | 17 47 38 C |
| | PP | 17 48 48 |
| | S | 17 52 36 |
| | SS | 17 54.8 |
| | F | 18 17 |
| | **Saskatoon** | |
| | H | 17 41 31 |
| | Δ | 4145 km. |
| | iP | 17 48 42 |
| | PP | 17 50 19 |
| | S | 17 54 29 |
| | i | 17 58 26 |
| | L | 18 03 |
| | F | 18 21 |
| | **Halifax** | |
| | 18 13 to 18 21 | |
| | **Seven Falls** | |
| | H | 17 41 24 |
| | Δ | 6520 km. |
| | P | 17 51 19 |
| | S | 17 59 21 |
| | L | 18 06.8 |
| | F | 18 41 |
| | **Shawinigan Falls** | |
| | e | 17 51 06 |
| | F | 18 06 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria** | |
| 46 Jan. 27 | e | 15 22.4 |
| | L | 15 34 |
| | F | 16 26 |
| | **Seven Falls** | |
| | L | 15 51 |
| | F | 16 41 |
| | **USCGS** | |
| 47 Jan. 28 | φ = 27°3 N. | |
| | λ = 47°4 W. | |
| | H = 08 18.4 | |
| | Atlantic Ocean approx. 1100 miles east of Bermuda | |
| | **Ottawa** | |
| | e | 8 24 16 |
| | e | 8 29.5 |
| | L | 8 33 |
| | F | 9 05 |
| | **Victoria** | |
| | PP | 8 28 45 |
| | S | 8 37 09 |
| | L | 8 51 |
| | F | 9 20 |
| | **Halifax** | |
| | H | 8 18 17 |
| | Δ | 2420 km. |
| | P | 8 23 10 |
| | PPP | 8 23 31 |
| | S | 8 27 10 |
| | L | 8 30 |
| | F | 8 39 |
| | **Seven Falls** | |
| | e | 8 24 00 |
| | L | 8 26 |
| | F | 9 02 |
| | **Seven Falls** | |
| 48 Jan. 29 | e | 6 20 06 |
| | F | 6 21 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa (Z)** | |
| 49 Jan. 29 | i | 9 12 34 |
| | e | 9 13 00 |
| | F | 9 13.2 |
| | **Ottawa (Z)** | |
| 50 Jan. 29 | i | 22 49 33 |
| | F | 22 50 |
| | **Ottawa (Z)** | |
| 51 Jan. 30 | e | 23 58 13 |
| | F | 23 59 |
| | **Victoria** | |
| | e | 23 59 27 |
| | F | 0 04 |
| | **Seven Falls** | |
| | e | 0 11 47 |
| | F | 0 13 |
| | **Ottawa (Z)** | |
| 52 Jan. 31 | e | 15 03 56 |
| | F | 15 04 |
| | **Ottawa (Z)** | |
| 53 Jan. 31 | H | 19 21 54 |
| | Δ | 140 km. |
| | $P_n$ | 19 22 17.0 |
| | $P_2$ | 19 22 18.8 |
| | $P_1$ | 19 22 21.8 |
| | $S_n$ | 19 22 34.2 |
| | $S_2$ | 19 22 37.8 |
| | e | 19 22 42 |
| | F | 19 22.9 |

W. H. Wilson

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 58 Feb. 3 | Local quake approx. 5 miles from station | |
| | i | 1 31 47.5 |
| | i | 1 31 49.0 |
| | e | 1 31 49.2 |
| | F | 1 32 |
| | Ottawa (Z) | |
| 59 Feb. 5 | i | 15 06 37.5 |
| | e | 15 07 24 |
| | i | 15 08 30 |
| | L | 15 09 22 |
| | F | 15 13 |
| | Ottawa (Z) | |
| 60 Feb. 5 | e | 15 35 19 |
| | F | 15 36 |
| | USCGS | |
| 61 Feb. 5 | φ = 19° N. | |
| | λ = 70° W. | |
| | H = 20 18.4 | |
| | Near northeast coast of the Dominion Republic | |
| | Ottawa (Z) | |
| | e | 20 24 02 |
| | F | 20 26 |
| | Ottawa (Z) | |
| 62 Feb. 5 | e | 20 29 05 |
| | F | 20 31 |
| | Ottawa (Z) | |
| 63 Feb. 5 | e | 20 46 51 |
| | F | 20 49 |
| | Ottawa (Z) | |
| 64 Feb. 7 | e | 6 16 11.0 |
| | F | 6 16.5 |
| | Ottawa (Z) | |
| 65 Feb. 8 | e | 4 37 25.5 |
| | e | 4 42 37 |
| | F | 4 46 |
| | Seven Falls | |
| 65 Feb. 8 (cont'd) | e | 4 43 13 |
| | F | 4 45 |
| | Ottawa (Z) | |
| 66 Feb. 8 | i | 19 50 20.5 |
| | e | 19 50 29 |
| | F | 15 50.6 |
| | Ottawa (Z) | |
| 67 Feb. 8 | $P_2$(?) | 21 02 51 |
| | e | 21 03 10 |
| | e | 21 03 15 |
| | F | 21 03.5 |
| | Ottawa (Z) | |
| 68 Feb. 9 | H | 17 11 44 |
| | △ | 148 km. |
| | $P_2$ | 17 12 08.5 |
| | $S_n$ | 17 12 26.5 |
| | $S_1$ | 17 12 28.6 |
| | F | 17 12.8 |
| | Ottawa (Z) | |
| 69 Feb. 9 | e | 17 49 31 |
| | F | 17 53 |
| | USCGS | |
| 70 Feb. 10 | φ = 16° S. | |
| | λ = 173° W. | |
| | H = 21 56.6 | |
| | Samoa Islands | |
| | Victoria | |
| | 21 12 to 21 19 | |
| | Seven Falls | |
| | 21 48 to 22 23 | |
| | Saskatoon | |
| 71 Feb. 11 | e | 17 14 27 |
| | F | 17 20 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 72 Feb. 11 | USCGS | |
| | φ = 37°0 N. | |
| | λ = 117°8 W. | |
| | H = 21 05 22 | |
| | Souther California | |
| | Ottawa | |
| | 22 45 to 23 26 | |
| | USCGS | |
| 73 Feb. 13 | φ = 33°5 S. | |
| | λ = 177°5 W. | |
| | H = 18 24.3 | |
| | Kermadec Islands region | |
| | Ottawa | |
| | i | 18 43 09 |
| | i | 18 43 23 |
| | i | 18 43 34 |
| | e | 18 44 49 |
| | S(?) | 18 54 26 |
| | e | 18 55 09 |
| | e | 19 01 16 |
| | L | 19 21 |
| | F | 20 47 |
| | Victoria | |
| | e | 18 37 44 |
| | L | 18 48.4 |
| | F | 19 50 |
| | Saskatoon | |
| | e | 18 50 30 |
| | e | 18 52 10 |
| | L | 19 18 |
| | F | 20 03 |
| | Halifax | |
| | i | 18 46 47 |
| | L | 19 28 |
| | F | 19 48 |
| | Seven Falls | |
| | e | 18 43 17 |
| | e | 18 45 16 |
| | e | 18 55 20 |
| | e | 19 02.2 |
| | L | 19 22 |
| | F | 21 03 |
| 74 Feb. 13 | Ottawa (Z) | |
| | i | 20 53 52 C |
| | e | 20 54 21 |
| | F | 20 58 |
| | Ottawa (Z) | |
| 75 Feb. 14 | e | 16 43 11 |
| | F | 16 46 |
| | USCGS | |
| 76 Feb. 14 | φ = 18°5 N. | |
| | λ = 105° W. | |
| | H = 18 07.5 | |
| | Off coast of Mexico | |
| | Ottawa | |
| | H | 18 07 32 |
| | Δ | 4125 km. |
| | P | 18 14 43 R |
| | PP | 18 16 05 |
| | S | 18 20 30 |
| | SS | 18 23.6 |
| | L | 18 27.8 |
| | F | 19 13 |
| | Victoria | |
| | e | 18 15.0 |
| | i | 18 19 48 |
| | L | 18 24.5 |
| | F | 19 18 |
| | Saskatoon | |
| | H | 18 07 24 |
| | Δ | 3920 km. |
| | P | 18 14 55 |
| | S | 18 20 28 |
| | SS | 18 23 12 |
| | L | 18 26.5 |
| | F | 19 17 |
| | Halifax | |
| | e | 18 23 28 |
| | e | 18 25.8 |
| | L | 18 32 |
| | F | 18 50 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA

No. 10

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Seven Falls** | |
| 76 Feb. 14 (cont'd) | H | 17 07 36 |
| | Δ | 4510 km. |
| | P | 18 15 15 |
| | PP | 18 17 03 |
| | S | 18 21 23 |
| | SS | 18 24 33 |
| | LR | 18 26.4 |
| | F | 19 31 |
| | **Shawinigan Falls** | |
| | e | 18 28.5 |
| | F | 18 37 |
| | **Ottawa (Z)** | |
| 77 Feb. 14 | e | 19 31 37 |
| | F | 19 32 |
| | **Saskatoon** | |
| | 19 46 to 19 52 | |
| | **Ottawa (Z)** | |
| 78 Feb. 14 | e | 22 35 38 |
| | F | 22 37 |
| | **Ottawa** | |
| 79 Feb. 15 | e | 3 59 16 |
| | L | 4 12 |
| | F | 4 30 |
| | **Victoria** | |
| | 4 12 to 4 21 | |
| | **Saskatoon** | |
| | 4 11 to 4 24 | |
| | **Ottawa (Z)** | |
| 80 Feb. 15 | e | 6 49 36 |
| | F | 6 52 |
| | **Victoria** | |
| | 7 05 to 7 15 | |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Saskatoon** | |
| 80 Feb. 15 (cont'd) | 7 05 to 7 13 | |
| | **Ottawa** | |
| 81 Feb. 15 | e | 7 44 42 |
| | F | 7 46 |
| | **Victoria** | |
| | 8 00 to 8 10 | |
| | **Saskatoon** | |
| | 8 00 to 8 08 | |
| | **USCGS** | |
| 82 Feb. 15 | φ = 19° N. | |
| | λ = 70° W. | |
| | H = 14 09.0 | |
| | Near north coast of Dominican Republic | |
| | **Ottawa (Z)** | |
| | e | 14 14 38 |
| | F | 14 18 |
| | **Ottawa (Z)** | |
| 83 Feb. 15 | e | 14 19 31 |
| | F | 14 22 |
| | **Saskatoon** | |
| 84 Feb. 17 | 4 33 to 4 39 | |
| | **Ottawa (Z)** | |
| 85 Feb. 17 | H | 19 35 10 |
| | Δ | 176 km. |
| | $P_2$ | 19 35 39 |
| | $S_2$ | 19 35 59 |
| | e | 19 36 03 |
| | F | 19 36.2 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 86 Feb. 17 | e | 21 10 53 |
| | F | 21 12 |
| | Ottawa (Z) | |
| 87 Feb. 18 | e | 5 03 47 |
| | F | 5 04 |
| | USCGS | |
| 88 Feb. 18 | φ = 19° N. | |
| | λ = 69°.5 W | |
| | H = 09 01.6 | |
| | Near north coast of Dominican Republic | |
| | Ottawa (Z) | |
| | e | 9 07 39 |
| | F | 9 10 |
| | Ottawa (Z) | |
| 89 Feb. 18 | e | 9 12 07 |
| | F | 9 16 |
| | Victoria | |
| 90 Feb. 19 | 1 35 to 1 55 | |
| | Ottawa (Z) | |
| 91 Feb. 20 | e | 10 22 47 |
| | F | 10 25 |
| | Ottawa (Z) | |
| 92 Feb. 21 | e | 11 48 19 |
| | F | 11 50 |
| | Ottawa (Z) | |
| 93 Feb. 21 | H | 17 11 52 |
| | Δ | 150 km. |
| | $P_2$ | 17 12 16.0 |
| | $S_n$ | 17 12 34 |
| | $S_1$ | 17 12 36.5 |
| | F | 17 12.8 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 94 Feb. 22 | H | 14 34 39 |
| | Δ | 148 km. |
| | $P_n$ | 14 35 03.0 |
| | e | 14 35 04.5 |
| | $P_1$ | 14 35 07 |
| | $S_n$ | 14 35 20.0 |
| | $S_1$ | 14 35 23.0 |
| | e | 14 35 28 |
| | F | 14 35.6 |
| | Seven Falls | |
| 95 Feb. 23 | e | 9 29.8 |
| | L | 9 42 |
| | F | 10 01 |
| | Ottawa (Z) | |
| 96 Feb. 23 | e | 15 40 07.5 |
| | F | 15 42 |
| | USCGS | |
| 97 Feb. 23 | φ = 39°.5 N. | |
| | λ = 85° E. | |
| | H = 16 07.9 | |
| | Eastern Turkestan | |
| | Ottawa | |
| | H | 16 09 15 |
| | Δ | 8725 km. |
| | P | 16 21 15.0 C |
| | e | 16 22 34 |
| | S | 16 31 56 |
| | SKS | 16 32 22 |
| | PPS | 16 33 30 |
| | SSS | 16 38.5 |
| | L | 16 51 |
| | F | 18 18 |
| | Victoria | |
| | H | 16 08 00 |
| | Δ | 9980 km. |
| | P | 16 21 02 |
| | S | 16 31 30 |
| | PS | 16 38.0 |
| | SS | 16 51 |
| | L | 17 02 |
| | F | 18 20 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Saskatoon** | |
| 97 Feb. 23 (cont'd) | H | 16 08 04 |
| | Δ | 9735 km. |
| | P | 16 20 50 |
| | S | 16 31 26 |
| | PS | 16 32 26 |
| | SS | 16 37.4 |
| | LQ | 16 45 |
| | LR | 16 53 |
| | F | 18 20 |
| | **Seven Falls** | |
| | H | 16 07 57 |
| | Δ | 10,150 km. |
| | P | 16 21 03 |
| | SKKS | 16 31 42 |
| | PS | 16 32 58 |
| | SS | 16 38 36 |
| | L | 16 49 |
| | F | 19 10 |
| | **Shawinigan Falls** | |
| | e | 16 21 07 |
| | F | 16 25 |
| | **Ottawa (Z)** | |
| 98 Feb. 23 | e | 17 02 34 |
| | F | 17 03 |
| | **Ottawa (Z)** | |
| 99 Feb. 23 | e | 20 13 41 |
| | F | 20 17 |
| | **Ottawa (Z)** | |
| 100 Feb. 24 | e | 3 00 26 |
| | F | 3 02 |
| | **Ottawa (Z)** | |
| 101 Feb. 24 | e | 5 41 12 |
| | F | 5 42 |
| | **Ottawa (Z)** | |
| 102 Feb. 24 | e | 10 34 53 |
| | F | 10 36 |
| | **Seven Falls** | |
| 103 Feb. 26 | | 4 50 to 5 07 |
| | **Ottawa** | |
| 104 Feb. 26 | e | 18 14 23 |
| | L | 18 30.3 |
| | F | 18 47 |
| | **Saskatoon** | |
| | | 18 20 to 18 27 |
| | **Seven Falls** | |
| | | 18 30 to 18 45 |
| | **Ottawa (Z)** | |
| 105 Feb. 26 | H | 20 52 55 |
| | Δ | 148 km. |
| | $P_n$ | 20 53 19.2 |
| | $P_2$ | 20 53 20.6 |
| | $S_n$ | 20 53 37.0 |
| | e | 20 53 45 |
| | F | 20 54.0 |
| | **USCGS** | |
| 106 Feb. 28 | φ = 58° S. | |
| | λ = 27° W. | |
| | H = 00 12.8 | |
| | **South Atlantic Ocean** | |
| | **Ottawa** | |
| | e | 0 31 58 |
| | e | 0 38.5 |
| | e | 0 47 12 |
| | L | 0 55 |
| | F | 1 45 |
| | **Victoria** | |
| | | 1 17 to 1 42 |
| | **Saskatoon** | |
| | | 1 07 to 1 39 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 13

| NO. AND DATE | PHASE | TIME | NO. AND DATE | PHASE | TIME |
|---|---|---|---|---|---|
| | | h m s | | | h m s |
| | Seven Falls | | | | |
| | e | 0 47.0 | | | |
| | L | 0 58 | | | |
| | F | 1 45 | | | |

W S Wilson

# SEISMOLOGICAL BULLETINS RECEIVED

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

| STATION | BULLETINS | RECEIVED |
|---|---|---|
| | **January, 1949** | |
| Berkeley | July - December, 1941 | |
| | July - December, 1947 | January 6 |
| Saint Louis and Auxiliary Stations | Nos. 116 - 120, 122 - 124; March, 1945; November, December, 1942; Year 1943 | " 6 |
| De Bilt | November, 1948 | " 7 |
| Berkeley | July - December, 1947 | " 7 |
| Bogota | March - August, 1947 | " 8 |
| Toledo | July, August, October, November, 1948 | " 11 |
| Pasadena | January - March, 1948 | " 17 |
| Uccle | September, 1948 | " 17 |
| Rome | November, 1948 | " 18 |
| Belgrade | November, 1948 | " 18 |
| Richmond | October, 1948 | " 19 |
| Santa Clara | December, 1948 | " 19 |
| Saint Louis and Auxiliary Stations | Nos. 125-127, 129, 130; April, 1945; Supplement October, 1948 | " 19 |
| Pasadena | Preliminaries August - December, 1948 | " 19 |
| Ksara | November, 1948 | " 20 |
| Almeria | July, August, 1947 | " 20 |
| Brisbane | October, November, 1948 | " 21 |
| Wellington | September, October, 1948 | " 21 |
| Apia | October - December, 1948 | " 21 |
| Ksara | Years 1941-1945 | " 25 |
| Saint Louis and Auxiliary Stations | May - July, 1945 | " 26 |
| Strasbourg | December 10-20, 1948; January 1-10, 1949 | " 26 |
| Bureau Central | September, November, 1948 | " 26 |
| Prague | December, 1948 | " 27 |
| De Bilt | December, 1948 | " 28 |
| Lisbon | Year, 1945 | " 28 |
| Tananarive | Years 1946, 1947 | " 28 |
| | **February, 1949** | |
| Helsinki | July - September, 1948 | February 2 |
| Almeria | June, 1948 | " 5 |
| Weston | Preliminary January, 1949 | " 5 |
| Istanbul | September, October, 1948 | " 7 |
| Zurich | November, December, 1948 | " 7 |
| Richmond | December, 1948 | " 7 |
| Zurich | Year 1947 | " 7 |
| Prague | November, December, 1948 | " 9 |
| Santa Clara | January, 1949 | " 15 |
| Almeria | April, May, 1948 | " 16 |
| Russian Stations | Years 1940-1943, 1945, August - December, 1947, January - August, 1948 | " 16 |
| Belgrade | January, 1948 | " 17 |
| Brisbane | December, 1948 | " 17 |
| Tortosa | July - December, 1946 | " 19 |
| Tananarive | Year, 1948 | " 19 |
| USCGS | Year, 1946 | " 21 |
| Toledo | September, October, December, 1948 | " 21 |
| Uccle | October, 1948 | " 21 |
| Saint Louis and Auxiliary Stations | August, November, December, 1945; Nos. 131-138, 1-3, 5-7 | " 21 |

# SEISMOLOGICAL BULLETINS RECEIVED

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

| STATION | BULLETINS | RECEIVED |
|---|---|---|
| | February, 1949 (cont'd) | |
| Prague | January, 1949 | February 21 |
| Wellington | November, 1948; Year 1946 | " 25 |
| Ksara | December, 1948 | " 25 |
| La Paz | January - March, 1948 | " 25 |
| Wellington | November, 1948 | " 25 |
| Nanking | July - December, 1948 | " 28 |
| Rome | December, 1948 | " 28 |
| Bureau Central | October, 1948 | " 28 |
| Strasbourg | December, 1948; January 21-31,1949 | " 28 |

Dominion Observatory,
Ottawa - Canada,
March 23, 1949.


DEPARTMENT OF MINES AND RESOURCES

MINES, FORESTS AND SCIENTIFIC SERVICES BRANCH

SEISMOLOGICAL SERVICE OF CANADA

# SEISMOLOGICAL BULLETIN

March and April

1949

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DOMINION OBSERVATORY

OTTAWA - CANADA

000

# SEISMOLOGICAL SERVICE OF CANADA
## DOMINION OBSERVATORY, OTTAWA

C. S. Beals, Dominion Astronomer
Ernest A. Hodgson, Chief, Seismological Division
W. G. Milne, Station Superintendent

## S T A T I O N S

### OTTAWA

$\varphi = 45°23'38"$ N. $\lambda = 75°42'57"$ 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

$\varphi = 44°38'$ N. $\lambda = 63°36'$ 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

$\varphi = 47°07!4$ N. $\lambda = 70°49!6$ 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 component, 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)

## VICTORIA

Dominion Astrophysical Observatory

φ = 48°31'14" N. λ = 123°24'56" W. h = 197m.

Time correction from recorded radio time signals

Foundation: rock

Instruments: Milne-Shaw NS and EW components, designated 21 and 20, respectively, each with photographic registration, magnetic damping, paper speed of 8 mm. per min., mass 1 lb.

Benioff Vertical, short-period, designated B 5705, photographic registration, paper speed of 60 mm. per min., mass 235 lbs., installed June, 1948.

## SHAWINIGAN FALLS

Shawinigan Water and Power Company

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

Time correction from recorded radio time signals

Foundation: solid granite of Canadian Shield

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

## SASKATOON

University of Saskatchewan

φ = 52'08' N. λ = 106°38' W. h = 515m.

Time correction from radio time signals

Foundation: clay and sand

Instrument: Milne-Shaw NE and NW components, designated 18 and 22, respectively, each with photographic registration, magnetic damping, paper speed of 8 mm. per min., mass 1 lb.

## 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 | | |
| B 5705 (Victoria) | 1.0 | 0.1 | | | |
| 20 (Victoria) | 12.0 | | 300 | 20:1 | 50 mm. |
| 21 (Victoria) | 12.0 | | 300 | 20:1 | 50 mm. |
| SF (Seven Falls) | 1.0 | | 2200 | | |
| SM (Seven Falls) | 12.0 | | 300 | 20:1 | 50 mm. |
| 18 (Saskatoon) | 10.0 | | 150 | 20:1 | 18 mm. |
| 22 (Saskatoon) | 10.0 | | 150 | 20:1 | 18 mm. |

NOTE:- Universal Time used throughout

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | USCGS | |
| 107 Mar. 2 | φ = 72° N.<br>λ = 3° W.<br>Arctic Ocean west of Greenland | |
| | Ottawa | |
| | e | 7 02 29 |
| | L | 7 17 |
| | F | 7 30 |
| | Victoria | |
| | L | 7 23 |
| | F | 7 37 |
| | Saskatoon | |
| | L | 7 11 |
| | F | 7 26 |
| | Victoria | |
| 108 Mar. 2 | L | 19 32 |
| | F | 19 41 |
| | Ottawa (Z) | |
| 109 Mar. 3 | e | 6 48 41 |
| | F | 6 49 |
| | Victoria | |
| 110 Mar. 4 | L | 2 20 |
| | F | 3 38 |
| | Saskatoon | |
| | L | 2 24 |
| | F | 2 46 |
| | Seven Falls | |
| | L | 2 32 |
| | F | 3 10 |
| | USCGS | |
| 111 Mar. 4 | φ = 37° N.<br>λ = 70° E.<br>H = 10:19.4<br>d = 200 km.<br>Afghanistan | |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Victoria | |
| 111 Mar. 4 (cont'd) | H | 10 19.1ß |
| | Δ | 92.6° |
| | iP | 10 32 30 |
| | ipP | 10 33 28 |
| | PP | 10 36 20 |
| | SKKS | 10 43 14 |
| | S | 10 43 26 |
| | sS | 10 44 21 |
| | PS | 10 44 59 |
| | PPS | 10 45 48 |
| | SS | 10 49.0 |
| | L | 11 04 |
| | F | 13 08 |
| | Saskatoon | |
| | H | 10 19.ß |
| | Δ | ß3.2° |
| | P | 10 32 22 |
| | pP | 10 33 14 |
| | PPP | 10 36 58 |
| | S | 10 42 30 |
| | PS | 10 43 48 |
| | PPS | 10 44 05 |
| | e | 10 45 13 |
| | SSS | 10 51.ß |
| | L | 10 57 |
| | F | 12 46 |
| | Halifax | |
| | H | 10 19.6 |
| | Δ | ß1.0° |
| | P | 10 32 00 |
| | pP | 10 32 56 |
| | PP | 10 35.4 |
| | S | 10 42 0ß |
| | sS | 10 42 34 |
| | PS | 10 43 3ß |
| | e | 10 44 10 |
| | SSS | 10 49.9 |
| | L | 10 56 |
| | F | 11 36 |
| | Seven Falls | |
| | H | 10 19.4 |
| | Δ | ß7.4° |
| | P | 10 32 05 |
| | pP | 10 33 02 |
| | PP | 10 35 00 |
| | SKS | 10 42 11 |
| | S | 10 42 32 |
| | PS | 10 44 17 |
| | L | 10 53 |
| | F | 11 30 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Shawinigan Falls | |
| 111 Mar. 4 (cont'd) | H | 10 19.4 |
| | Δ | 87°9 |
| | P | 10 32 10 |
| | pP | 10 33 08 |
| | PP | 10 35 47 |
| | SKS | 10 42 18 |
| | S | 10 42 48 |
| | PS | 10 43 57 |
| | F | 11 27 |
| | Victoria | |
| 112 Mar. 7 | e | 11 53.8 |
| | F | 12 01 |
| | Saskatoon | |
| | L | 11 55 |
| | F | 12 04 |
| | Seven Falls | |
| | L | 12 05 |
| | F | 12 12 |
| | Shawinigan Falls | |
| | e | 11 50 28 |
| | F | 11 51 |
| | USCGS | |
| 113 Mar. 9 | φ = 37°1 S. | |
| | λ = 121°3 W. | |
| | H = 12 28 39 | |
| | Central California | |
| | Ottawa | |
| | L | 12 47 |
| | F | 12 55 |
| | Victoria | |
| | L | 12 35 |
| | F | 12 42 |
| | Saskatoon | |
| | L | 12 38 |
| | F | 12 42 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 114 Mar. 10 | e | 0 16 38 |
| | e | 0 17 02 |
| | F | 0 18 |
| | Ottawa (Z) | |
| 115 Mar. 10 | e | 21 38 04 |
| | F | 21 38.5 |
| | Ottawa (Z) | |
| 116 Mar. 10 | e | 22 50 04.5 |
| | F | 22 51 |
| | Ottawa (Z) | |
| 117 Mar. 11 | H | 17 02 08 |
| | Δ | 140 km. |
| | $P_2$ | 17 02 31.0 |
| | $S_n$ | 17 02 48.0 |
| | $S_2$ | 17 02 51.5 |
| | F | 17 03.2 |
| | Ottawa (Z) | |
| 118 Mar. 12 | e | 19 36 01 |
| | F | 19 39 |
| | Shawinigan Falls | |
| | e | 19 36 05 |
| | F | 19 37 |
| | USCGS | |
| 119 Mar. 13 | φ = 21°5 S. | |
| | λ = 68° W. | |
| | H = 18 43.0 | |
| | d = 100 km. | |
| | Northern Chile | |
| | Ottawa (Z) | |
| | i | 18 53 47 |
| | i | 18 54 01 |
| | e | 18 54 18 |
| | F | 18 58 |
| | Shawinigan Falls | |
| | i | 18 52 54 |
| | F | 18 56 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa | |
| 120 Mar. 14 | L | 1 07 |
| | F | 1 19 |
| | Victoria | |
| | e | 0 48 35 |
| | L | 0 53 |
| | F | 1 08 |
| | Ottawa | |
| 121 Mar. 14 | e | 3 16 24 |
| | L | 3 37 |
| | F | 3 54 |
| | Victoria | |
| | L | 3 17 |
| | F | 4 06 |
| | Seven Falls | |
| | e | 3 39 02 |
| | F | 4 03 |
| | USCGS | |
| 122 Mar. 16 | φ = 6° S. | |
| | λ = 151 1/2 E. | |
| | H = 22 15.1 | |
| | New Britain | |
| | Ottawa | |
| | e | 22 42 55 |
| | e | 22 52 19 |
| | L | 23 07 |
| | F | 0 32 |
| | Victoria | |
| | H | 22 15 05 |
| | Δ | 92°4 |
| | P | 22 28 14 |
| | PP | 22 32.0 |
| | SKKS | 22 38 49 |
| | iS | 22 39 09 |
| | SS | 22 45.0 |
| | L | 22 56 |
| | F | 1 03 |
| | Halifax | |
| | L | 23 27 |
| | F | 23 41 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Seven Falls | |
| 122 Mar. 16 (cont'd) | e | 22 35 09 |
| | e | 22 43.4 |
| | L | 23 09 |
| | F | 0 37 |
| | Ottawa | |
| | Aftershock of No. 122 | |
| 123 Mar. 17 | e | 21 31 14 |
| | e | 21 42 12 |
| | L | 21 56 |
| | F | 23 10 |
| | Victoria | |
| | H | 21 05.0 |
| | Δ | 92°4 |
| | P | 21 18 08 |
| | SKKS | 21 28 43 |
| | S | 21 28 59 |
| | SS | 21 35 |
| | L | 21 46 |
| | F | 22 44 |
| | Seven Falls | |
| | e | 21 35.7 |
| | e | 21 43.3 |
| | L | 21 57 |
| | F | 23 18 |
| | Victoria | |
| 124 Mar. 21 | L | 11 23 |
| | F | 11 30 |
| | Ottawa (Z) | |
| 125 Mar. 22 | i | 20 04 34 |
| | e | 20 05 11 |
| | F | 20 06 |
| | Ottawa (Z) | |
| 126 Mar. 23 | e | 9 35 57 |
| | e | 9 41 34 |
| | F | 9 48 |
| | USCGS | |
| 127 Mar. 24 | φ = 42° N. | |
| | λ = 126 1/2 W. | |
| | H = 20 56.8 | |
| | Pacific Ocean off coast of Cape Mendocino, California | |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa** | |
| 127 Mar. 24 (cont'd) | H | 20 56.8 |
| | Δ | 36°7 |
| | P | 21 03 56 d |
| | PP | 21 05 15 |
| | S | 21 09 40 |
| | SS | 21 12.1 |
| | L | 21 14.5 |
| | F | 23 10 |
| | **Victoria** | |
| | H | 20 56.8 |
| | Δ | 917 km. |
| | iP | 20 58 40 d |
| | i | 20 59 16 |
| | S | 21 00 13 |
| | i | 21 00 50 |
| | i | 21 02 51 |
| | F | 22 03 |
| | **Saskatoon** | |
| | H | 21 56.8 |
| | Δ | 17°2 |
| | P | 21 00 51 |
| | PP | 21 01 04 |
| | PPP | 21 01 12 |
| | S | 21 04 07 |
| | SS | 21 04 41 |
| | L | 21 05.7 |
| | F | 22 38 |
| | **Halifax** | |
| | Δ | 46° |
| | PP | 21 06 52 |
| | S | 21 11.8 |
| | SS | 21 14 52 |
| | L | 21 19.3 |
| | F | 22 18 |
| | **Seven Falls** | |
| | H | 20 56.8 |
| | Δ | 40°0 |
| | P | 21 04 21 |
| | PP | 21 05 50 |
| | PPP | 21 06 35 |
| | S | 21 10 30 |
| | SS | 21 13 42 |
| | L | 21 18.0 |
| | F | 23 10 |
| | **Shawinigan Falls** | |
| 127 Mar. 24 (cont'd) | e | 21 04 11 |
| | L | 21 16 |
| | F | 21 39 |
| | **Ottawa (NS)** | |
| 128 Mar. 25 | L | 0 55 |
| | L | 0 59 |
| | **Ottawa** | |
| 129 Mar. 26 | e | 2 35 49 |
| | L | 2 45.5 |
| | F | 2 53 |
| | **Saskatoon** | |
| | e | 2 42.0 |
| | F | 2 51 |
| | **Seven Falls** | |
| | L | 2 47.5 |
| | F | 2 49 |
| | **Ottawa (Z)** | |
| 130 Mar. 26 | e | 16 31 43 |
| | i | 16 31 50 |
| | F | 16 33 |
| | **USCGS** | |
| 131 Mar. 27 | φ = 4° N. | |
| | λ = 127°5 E. | |
| | H = 6 34.1 | |
| | Celebes Sea, off southern coast of Mindanoa | |
| | **Ottawa** | |
| | H | 6 33.7 |
| | Δ | 142°1 |
| | P' | 6 53 06 d |
| | e | 6 55 00 |
| | PP | 6 56 22 |
| | SKS | 7 00 14 |
| | PS | 7 06 52 |
| | e | 7 12 20 |
| | SS | 7 15.0 |
| | SSS | 7 21.8 |
| | L | 7 35.5 |
| | F | 8 58 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria** | |
| 131 Mar. 27 (cont'd) | e | 6 58 44 |
| | e | 7 02.4 |
| | L | 7 22 |
| | F | 8 08 |
| | **Saskatoon** | |
| | e | 6 59 10 |
| | e | 7 07 37 |
| | e | 7 15 |
| | L | 7 21 |
| | F | 8 55 |
| | **Halifax** | |
| | Δ | 151° |
| | PPP | 7 00 25 |
| | PP | 6 56 53 |
| | e | 7 07 01 |
| | e | 7 13 25 |
| | F | 8 40 |
| | **Seven Falls** | |
| | Δ | 127°9 |
| | H | 6 34.1 |
| | P | 6 53 07 |
| | PP | 6 55 08 |
| | SKKS | 7 01 55 |
| | e | 7 03 25 |
| | PS | 7 05 22 |
| | e | 7 07 55 |
| | e | 7 10 49 |
| | SS | 7 12 27 |
| | e | 7 15 11 |
| | L | 7 28 |
| | F | 9 07 |
| | **Shawinigan Falls** | |
| | e | 6 54 07 |
| | F | 7 00 |
| | **Ottawa** | |
| 132 Mar. 27 | e | 7 06 18 |
| | F | 7 07 |
| | **Seven Falls** | |
| 133 Mar. 27 | L | 21 41 |
| | F | 21 56 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa** | |
| 134 Mar. 28 | L | 19 56 |
| | F | 20 24 |
| | **Victoria** | |
| | L | 19 46 |
| | F | 20 12 |
| | **Saskatoon** | |
| | L | 19 48 |
| | F | 20 14 |
| | **Seven Falls** | |
| | L | 19 57 |
| | F | 20 29 |
| 135 Mar. 29 | **Shawinigan Falls** | |
| | L | 2 46 |
| | F | 2 51 |
| 136 Mar. 30 | USCGS | |
| | φ = 16° S. | |
| | λ = 176° W. | |
| | H = 14 47.2 | |
| | Fiji Islands | |
| | **Victoria** | |
| | L | 15 10 to |
| | F | 15 40 |
| | **Seven Falls** | |
| | L | 15 46 |
| | F | 16 29 |
| | **Ottawa (Z)** | |
| 137 Mar. 30 | e | 20 35 19 |
| | F | 20 37 |
| | **Victoria** | |
| | L | 20 30 |
| | F | 20 36 |
| | **Saskatoon** | |
| | L | 20 36 |
| | F | 20 40 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 19

| NO. AND DATE | PHASE | TIME h m s | NO. AND DATE | PHASE | TIME h m s |
|---|---|---|---|---|---|
| | Ottawa (Z) | | | | |
| 138 Mar. 31 | e | 21 58 58 | | | |
| | F | 22 00 | | | |
| | Seven Falls | | | | |
| | L | 22 44 | | | |
| | F | 23 01 | | | |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa (Z)** | |
| 139 Apr. 2 | e | 9 34 05 |
| | F | 9 36 |
| | **Victoria** | |
| | L | 9 19 |
| | F | 9 24 |
| | **Saskatoon** | |
| | L | 9 23.2 |
| | F | 9 25 |
| | **Seven Falls** | |
| | L | 9 34.7 |
| | F | 9 37 |
| | **Shawinigan Falls** | |
| | e | 9 34.0 |
| | F | 9 37 |
| | **Seven Falls** | |
| 140 Apr. 2 | L | 17 15 |
| | F | 17 14 |
| | **Ottawa (Z)** | |
| 141 Apr. 2 | H | 17 22 48 |
| | Δ | 140 km. |
| | $P_2$ | 17 23 11.3 |
| | $S_n$ | 17 23 28.5 |
| | $S_2$ | 17 23 31.5 |
| | F | 17 23.8 |
| | **Seven Falls** | |
| 142 Apr. 3 | L | 7 34 |
| | F | 8 11 |
| | **USCGS** | |
| 143 Apr. 5 | φ = 43° N. | |
| | λ = 131° E. | |
| | H = 09 27.1 | |
| | d = 550 km. | |
| | Near Vladivostok, USSR | |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa** | |
| 143 Apr. 5 (cont'd) | $i_Z$ | 9 39 07 c |
| | $i_Z$ | 9 41 10 |
| | e | 9 42 56 |
| | e | 9 49 11 |
| | F | 10 15 |
| | **Victoria** | |
| | e | 9 45 43 |
| | e | 9 49 01 |
| | F | 9 59 |
| | **Saskatoon** | |
| | e | 9 46 36 |
| | e | 9 50 07 |
| | L | 9 59 |
| | **Seven Falls** | |
| | e | 9 39 05 |
| | e | 9 49 03 |
| | e | 9 52 42 |
| | F | 10 07 |
| | **Shawinigan Falls** | |
| | e | 9 39 06 |
| | F | 9 44 |
| | **Victoria** | |
| 144 Apr. 6 | L | 3 51 |
| | F | 3 57 |
| | **Saskatoon** | |
| | L | 3 52 |
| | F | 3 56 |
| | **Victoria** | |
| 145 Apr. 6 | L | 9 32 |
| | F | 9 39 |
| | **Saskatoon** | |
| | L | 9 32 |
| | F | 9 34 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA

No. 21

| NO. AND DATE | PHASE | TIME |
|---|---|---|
| | | h m s |
| | **Ottawa (Z)** | |
| 146 Apr. 7 | H | 19 35 06 |
| | Δ | 150 km. |
| | $P_2$ | 19 35 30.0 |
| | $P_1$ | 19 35 32 |
| | $S_n$ | 19 35 47.0 |
| | $S_2$ | 19 35 50.5 |
| | F | 19 36.1 |
| | **Ottawa (Z)** | |
| 147 Apr. 9 | L | 4 27 45 |
| | F | 4 29 |
| | **Seven Falls** | |
| | L | 4 39 |
| | F | 4 53 |
| | **Seven Falls** | |
| 148 Apr. 9 | L | 22 47 |
| | F | 23 04 |
| | **Ottawa (Z)** | |
| 149 Apr. 10 | e | 5 01 15 |
| | F | 5 04 |
| | **Ottawa** | |
| 150 Apr. 11 | L | 0 40 |
| | F | 1 27 |
| | **Victoria** | |
| | L | 0 31 |
| | F | 0 44 |
| | **Seven Falls** | |
| | e | 0 24.9 |
| | L | 0 50 |
| | F | 1 48 |
| | **Ottawa (Z)** | |
| 151 Apr. 12 | e | 5 13 34 |
| | i | 5 13 37 |
| | F | 5 14.5 |

| NO. AND DATE | PHASE | TIME |
|---|---|---|
| | | h m s |
| | **Seven Falls** | |
| 151 Apr. 12 | e | 5 28.2 |
| | F | 5 31 |
| | **Shawinigan Falls** | |
| | e | 5 13 40 |
| | F | 5 15 |
| | **Victoria** | |
| 152 Apr. 12 | e | 17 43.4 |
| | F | 17 55 |
| | **Victoria** | |
| 153 Apr. 13 | L | 15 54 |
| | F | 16 04 |
| | **USCGS** | |
| 154 Apr. 13 | φ = 47°.1 N. | |
| | λ = 122°.7 W. | |
| | H = 19 55 41 | |
| | Between Tacoma and Olympia in Washington State, U.S.A. | |
| | **Victoria** | |
| | iP | 19 56 08.5 C |
| | S | 19 56 27 |
| | F | 21 15 |
| | **Halifax** | |
| | H | 19 55 41 |
| | Δ | 4410 km. = 39°.7 |
| | P | 20 03 14 |
| | e | 20 03 48 |
| | PP | 20 04 48 |
| | S | 20 09 19 |
| | SSS | 20 12 24 |
| | L | 20 15.2 |
| | F | 21 30 |
| | **Seven Falls** | |
| | H | 19 55 41 |
| | Δ | 34°.3 |
| | P | 20 02 26 |
| | PP | 20 03 36 |
| | S | 20 07 52 |
| | SS | 20 10 54 |
| | L | 20 12.9 |
| | F | 23 29 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Shawinigan Falls** | |
| 154 Apr. 13 (cont'd) | H | 19 55 45 |
| | Δ | 32°6 |
| | P | 20 02 17 |
| | PP | 20 03 20 |
| | S | 20 07 37 |
| | L | 20 11.3 |
| | F | 20 39 |
| | **Temiskaming** | |
| | Δ | 28°9 |
| | P | 20 01 40 |
| | PP | 20 02 18 |
| | S? | 20 06 18 |
| | L | 20 10.7 |
| | F | 20 53 |
| | **Rolphton** | |
| | P | 20 01 32 |
| | PP | 20 02 20 |
| | L | 20 09.5 |
| | F | 20 56 |
| | **Hamilton, Ont.** Readings courtesy of E. Mantle | |
| | S | 20 06 48 |
| | L | 20 11.0 |
| | F | 20 30 |
| | **Seven Falls** | |
| 155 Apr. 14 | L | 16 40 |
| | F | 18 36 |
| | **Victoria (Z)** | |
| 156 Apr. 15 | $P_n$ | 15 47 36.5 |
| | $S_n$ | 15 48 06.5 |
| | e | 15 48 12.5 |
| | F | 15 49.5 |
| | **Ottawa (Z)** | |
| 157 Apr. 17 | e | 23 20 26 |
| | F | 23 22 |
| | **Seven Falls** | |
| | e | 23 18 26 |
| | e | 23 18 36 |
| | F | 23 21 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Shawinigan Falls** | |
| 157 Apr. 17 (cont'd) | e | 23 19 17 |
| | F | 23 21 |
| | **Ottawa (Z)** | |
| 158 Apr. 18 | e | 16 04 16 |
| | 'e' | 16 04 40 |
| | F | 16 05 |
| | **Seven Falls** | |
| 159 Apr. 18 | L | 22 30 |
| | F | 22 45 |
| | **USCGS** | |
| 160 Apr. 19 | φ = 48° N. | |
| | λ = 154° E. | |
| | H = 15 19.2 | |
| | d> normal | |
| | **Kurile Islands region** | |
| | **Ottawa** | |
| | e | 15 31 04 |
| | e | 15 31 18 |
| | L | 15 57 |
| | F | 16 21 |
| | **Victoria** | |
| | L | 15 36 |
| | F | 15 57 |
| | **Saskatoon** | |
| | L | 15 37.2 |
| | F | 15 50 |
| | **Shawinigan Falls** | |
| | P | 15 31 06 |
| | pP | 15 31 18 |
| | F | 15 34 |
| | **USCGS** | |
| 161 Apr. 20 | φ = 38° S. | |
| | λ = 72°5 W. | |
| | H = 3 29.0 | |
| | d = 70 km. | |
| | **Chile, province of Bio-Bio.** | |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa** | |
| 161 Apr. 20 | Δ | 81.6° |
| | P | 3 41 26 d |
| | pP | 3 41 44 |
| | PP | 3 44 38 |
| | S | 3 51 38 |
| | sS | 3 52 02 |
| | PS | 3 52 36 |
| | SS | 3 56.3 |
| | L | 4 05 |
| | F | 6 15 |
| | **Victoria** | |
| | Δ | 97.0° |
| | P | 3 42 33 |
| | e | 3 42 55 |
| | PP | 3 46 33 |
| | PPP | 3 49 43 |
| | SKS | 3 53 11 |
| | S | 3 54 21 |
| | PS | 3 55 15 |
| | SS | 4 00 13 |
| | L | 4 08.8 |
| | F | 7 17 |
| | **Saskatoon** | |
| | Δ | 93.9° |
| | P | 3 42 15 |
| | e | 3 42 34 |
| | e | 3 42 46 |
| | PP | 3 46 04 |
| | PPP | 3 48 01 |
| | SKS | 3 52 46 |
| | SKKS | 3 53 09 |
| | S | 3 53 28 |
| | PPS | 3 55 36 |
| | SS | 4 00 11 |
| | SSS | 4 03.9 |
| | L | 4 14 |
| | F | 6 14 |
| | **Halifax** | |
| | Δ | 81.8° |
| | P | 3 41 23 |
| | e | 3 41 42 |
| | PP | 3 44 46 |
| | S | 3 51 38 |
| | PS | 3 52 26 |
| | SS | 3 56 56 |
| | L | 4 14 |
| | F | 4 50 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Seven Falls** | |
| 161 Apr. 20 (cont'd) | Δ | 84.0° |
| | P | 3 41 38 |
| | pP | 3 41 54 |
| | S | 3 51 54 |
| | sS | 3 52 19 |
| | PS | 3 53 11 |
| | SS | 4 03.6 |
| | L | 4 15.6 |
| | F | 6 44 |
| | **Shawinigan Falls** | |
| | Δ | 82.1° |
| | P | 3 41 31 |
| | pP | 3 41 48 |
| | PP | 3 44 57 |
| | S | 3 51 43 |
| | F | 4 03 |
| | **Victoria (Z)** | |
| 162 Apr. 20 | iP | 6 48 53.5 |
| | e | 6 48 59.0 |
| | i | 6 48 04.5 |
| | iS | 6 49 15.0 |
| | F | 6 51 |
| | **Victoria (Z)** | |
| 163 Apr. 21 | e | 20 30 30 |
| | F | 20 32 |
| | **Victoria (Z)** | |
| 164 Apr. 22 | P | 6 47 35.0 |
| | i | 6 47 39.5 |
| | S | 6 47 44.5 |
| | iS | 6 47 46.0 |
| | e | 6 47 53 |
| | F | 6 49 |
| | **Ottawa** | |
| 165 Apr. 22 | P | 17 30 01 |
| | SKKS | 17 40 38 |
| | SS | 17 46.4 |
| | L | 18 00 |
| | F | 18 24 |
| | Δ | 96.3° |
| | H | 17 16 33 |
| | **Victoria** | |
| | P | 17 29 40 |
| | L | 17 58 |
| | F | 18 13 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME |
|---|---|---|
| | | h m s |
| | **Victoria (Z)** | |
| 166 Apr. 23 | e | 0 41 41 |
| | F | 0 43 |
| | **USCGS** | |
| 167 Apr. 23 | φ = 8° S. | |
| | λ = 120° E. | |
| | H = 11 15.5 | |
| | Flores Sea | |
| | **Ottawa** | |
| | Δ | 138°6 |
| | P' | 11 35 00 |
| | PP | 11 37 56 |
| | PKS | 11 38 34 |
| | PS | 11 48.2 |
| | PPS | 11 50 20 |
| | SS | 11 55.5 |
| | L | 12 31 |
| | F | 13 21 |
| | **Victoria** | |
| | e | 11 34 05 |
| | e | 11 34 55 |
| | e | 11 44 35 |
| | L | 12 09 |
| | F | 12 59 |
| | **Saskatoon** | |
| | e | 11 35 29 |
| | e | 11 44 37 |
| | L | 12 07.8 |
| | F | 13 39 |
| | **Seven Falls** | |
| | L | 11 57 |
| | F | 13 33 |
| | **USCGS** | |
| 168 Apr. 24 | φ = 27° N. | |
| | λ = 56° E. | |
| | H = 04 22.1 | |
| | Persian Gulf | |
| | **Ottawa** | |
| | Δ | 95°1 |
| | P | 4 35 37 d |
| | PP | 4 39 25 |
| | SKS | 4 46 16 |
| | PS | 4 48 16 |
| | SS | 4 52.8 |
| | L | 5 08 |
| | F | 6 09 |
| | **Victoria** | |
| | e | 4 40.7 |
| | e | 4 43.8 |
| | e | 4 47 07 |
| | L | 5 14 |
| | F | 5 54 |
| | **Seven Falls** | |
| | Δ | 90°6 |
| | P | 4 35 15 |
| | SKKS | 4 45 55 |
| | SS | 4 51.0 |
| | L | 5 08 |
| | F | 6 11 |
| | **USCGS** | |
| 169 Apr. 25 | φ = 20° S. | |
| | λ = 69°5 W. | |
| | d = 100 km. | |
| | H = 13 55.0 | |
| | Coast of northern Chile | |
| | **Ottawa** | |
| | Δ | 65°4 |
| | P | 14 05 33 |
| | pP | 14 06 04 |
| | PP | 14 08 43 |
| | PPP | 14 10 02 |
| | S | 14 14 08 |
| | sS | 14 14 52 |
| | PS | 14 16 03 |
| | SS | 14 18.5 |
| | SSS | 14 21.8 |
| | L | 14 32 |
| | F | 16 14 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 169 Apr. 25 (cont'd) | **Victoria** | |
| | Δ | 83°6 |
| | iP | 14 07 20 d |
| | pP | 14 07 53 |
| | iS | 14 17 37 |
| | PS | 14 18 24 |
| | PPS | 14 19 43 |
| | L | 14 29 |
| | F | 16 00 |
| | **Saskatoon** | |
| | Δ | 47°2 |
| | P | 14 06 56 |
| | S | 14 16 42 |
| | PS | 14 17 34 |
| | SS | 14 22 01 |
| | L | 14 33 |
| | F | 16 10 |
| | **Seven Falls** | |
| | Δ | 65°8 |
| | P | 14 05 45 |
| | i | 14 05 47 |
| | pP | 14 06 15 |
| | S | 14 14 26 |
| | sS | 14 15 11 |
| | PS | 14 16 14 |
| | L | 14 23.4 |
| | F | 16 56 |
| | **Shawinigan Falls** | |
| | Δ | 64°4 |
| | P | 14 05 42 |
| | pP | 14 06 06 |
| | S | 14 14 16 |
| | sS | 14 15 03 |
| | SS | 14 21.6 |
| | F | 14 30 |
| | **Ottawa** | |
| 170 Apr. 25 | L | 20 25 |
| | F | 20 59 |
| | **Seven Falls** | |
| | L | 20 27 |
| | F | 20 53 |
| | **Victoria (Z)** | |
| 171 Apr. 26 | $P_n$ | 7 03 19.0 |
| | $S_n$ | 7 03 23.4 |
| | F | 7 04.5 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria** | |
| 172 Apr. 26 | P | 10 24 14 |
| | L | 10 51 |
| | F | 11 04 |
| | **Saskatoon** | |
| | L | 10 52 |
| | F | 11 10 |
| | **Seven Falls** | |
| | L | 11 12 |
| | F | 11 21 |
| | **Seven Falls** | |
| 173 Apr. 29 | Δ | 60 km. |
| | $P_1$ | 23 15 01.0 |
| | $S_1$ | 23 15 08.0 |
| | F | 23 16 |
| | **USCGS** | |
| 174 Apr. 30 | φ = 6° N. | |
| | λ = 126° E. | |
| | d = 100 km. | |
| | H = 01 23.4 | |
| | Near southern coast of Mindanoa | |
| | **Ottawa** | |
| | Δ | 124°8 |
| | eZ | 1 39 33 |
| | iP' | 1 42 20 |
| | i | 1 42 24 |
| | PP | 1 44 15 |
| | i | 1 44 40 |
| | SKS | 1 49 15 |
| | SKKS | 1 51 24 |
| | PS | 1 53 50 |
| | PPS | 1 55 30 |
| | SS | 1 59 25 |
| | eL | 2 15 |
| | F | 4 04 |
| | **Victoria** | |
| | Δ | 97°0 |
| | P' | 1 37 07 |
| | PP | 1 40 45 |
| | SKS | 1 47 00 |
| | S | 1 47 28 |
| | PS | 1 48 31 |
| | PPS | 1 49 55 |
| | SS | 1 55.0 |
| | L | 2 09 |
| | F | 3 32 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s | NO. AND DATE | PHASE | TIME h m s |
|---|---|---|---|---|---|
| | Saskatoon | | | | |
| 174 Apr. 30 (cont'd) | Δ | 107°0 | | | |
| | P' | 1 42 08 | | | |
| | SKS | 1 48 14 | | | |
| | SKKS | 1 48 58 | | | |
| | PS | 1 51 11 | | | |
| | SS | 1 57 07 | | | |
| | SSS | 2 01 28 | | | |
| | F | 4 04 | | | |
| | Seven Falls | | | | |
| | Δ | 137°6 | | | |
| | P' | 1 42 26 | | | |
| | PP | 1 44 37 | | | |
| | SKS | 1 49 39 | | | |
| | SKKS | 1 52 02 | | | |
| | PS | 1 56.0 | | | |
| | i | 2 01 00 | | | |
| | e | 2 02 19 | | | |
| | i | 2 03 43 | | | |
| | SS | 2 05 47 | | | |
| | L | 2 21 | | | |
| | F | 4 18 | | | |
| | Shawinigan Falls | | | | |
| | e | 1 42 21 | | | |
| | i | 1 42 25 | | | |
| | F | 2 12 | | | |
| | Victoria (Z) | | | | |
| 175 Apr. 30 | Pn | 23 59 13.0 | | | |
| | i | 23 59 16.0 | | | |
| | e | 23 59 18.5 | | | |
| | F | 0 00 | | | |

# SEISMOLOGICAL BULLETINS RECEIVED

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

| STATION | BULLETINS | RECEIVED |
|---|---|---|
| Prague | January, 1949 | March 1 |
| Budapest | November, December, 1948; January, 1949 | " 2 |
| Kalocsa | " " " | " 2 |
| Almeria | Years 1936-1941; January-June 1942 | " 2 |
| Trieste | October-December, 1948 | " 2 |
| Almeria | January-September, 1946 | " 7 |
| Santa Clara | February, 1949 | " 9 |
| Weston | Preliminary February, 1949 | " 10 |
| Wellington | December, 1948 | " 14 |
| De Bilt | January, 1949 | " 15 |
| Belgrade | January, 1949 | " 15 |
| India | October-December, 1942 | " 17 |
| Bergen | 1939 - 1941 | " 17 |
| Richmond | January, 1949 | " 17 |
| Tacubaya | January, February, 1949 | " 22 |
| Strasbourg | November, 1948 | " 22 |
| Bureau Central | January, 1949 | " 22 |
| Uccle | December, 1948 | " 23 |
| De Bilt | February, 1949 | " 24 |
| Perth | July-September, 1948 | " 24 |
| Cleveland | December, 1948 - February, 1949 | " 28 |
| Prague | February, 1949 | " 31 |

## April, 1949

| | | |
|---|---|---|
| Pasadena | April - June, 1948 | April 1 |
| Stuttgart | January, February, 1948 | " 2 |
| Saint Louis and Auxiliary Stations | January-March, 1946 Preliminaries November, 1948, December, 1948, January 24, February 2, 11, 13, 14, 15, 18, 23 | " 2 |
| Eger | February, 1949 | " 4 |
| Zurich | January, February, 1949 | " 4 |
| Budapest, Kalocsa | February, 1949 | " 4 |
| Istanbul | November, December, 1948 | " 4 |
| Rome | January, 1949 | " 4 |
| Istanbul | Year, 1943 | " 4 |
| Toledo | November 1948-February 1949 | " 7 |
| La Plata | Years 1934, 1935 | " 7 |
| Saint Louis and Auxiliary Stations | April 1946; Preliminaries February 10, 28, March 2, 13, 16, 17 | " 9 |
| Richmond | February, 1949 | " 12 |
| Ksara | January, February, 1949 | " 16 |
| Cleveland | March, 1949 | " 19 |
| Santa Clara | March, 1949 | " 19 |
| Zagrab | Years 1937, 1946, 1947 | " 19 |
| Rome | February, 1949 | " 21 |
| Helwan | January, 1949 | " 21 |
| Copenhagen | Year, 1938 | " 23 |
| Bureau Central | December, 1948 | " 25 |
| Strasbourg | March 1-10, February, 1949 | " 25 |
| Warsaw | Years 1940 - 1942 | " 25 |
| Prague | March, 1949 | " 27 |
| Eger, Stara Dala, Hautes Tatra | March, 1949 | " 27 |
| USCGS | April-June, 1945 | " 28 |

Dominion Observatory,
Ottawa - Canada,
June 15, 1949.

DEPARTMENT OF MINES AND RESOURCES

MINES, FORESTS AND SCIENTIFIC SERVICES BRANCH

SEISMOLOGICAL SERVICE OF CANADA

# SEISMOLOGICAL BULLETIN

May and June
1949

0000

DOMINION OBSERVATORY

OTTAWA - CANADA

0 0 0 0

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

$\varphi = 45°23'38''$ N. $\lambda = 75°42'57''$ 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

$\varphi = 44°38'$ N. $\lambda = 63°36'$ 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

$\varphi = 47°07'.4$ N. $\lambda = 70°49'.6$ 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 component, 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)

## VICTORIA

Dominion Astrophysical Observatory

φ = 48°31'14" N. λ = 123°24'56" W. h = 197m.

Time correction from recorded radio time signals

Foundation: rock

Instruments: Milne-Shaw NS and EW components, designated 21 and 20, respectively, each with photographic registration, magnetic damping, paper speed of 8 mm. per min., mass 1 lb.

Benioff Vertical, short-period, designated B 5705, photographic registration, paper speed of 60 mm. per min., mass 235 lbs., installed June, 1948.

## SHAWINIGAN FALLS

Shawinigan Water and Power Company

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

Time correction from recorded radio time signals

Foundation: solid granite of Canadian Shield

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

## SASKATOON

University of Saskatchewan

φ = 52°08' N. λ = 106°38' W. h = 515m.

Time correction from radio time signals

Foundation: clay and sand

Instrument: Milne-Shaw NE and NW components, designated 18 and 22, respectively, each with photographic registration, magnetic damping, paper speed of 8 mm. per min., mass 1 lb.

## 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 | | |
| B 5705 (Victoria) | 1.0 | 0.1 | | | |
| 20 (Victoria) | 12.0 | | 300 | 20:1 | 50 mm. |
| 21 (Victoria) | 12.0 | | 300 | 20:1 | 50 mm. |
| SF (Seven Falls) | 1.0 | | 2200 | | |
| SM (Seven Falls) | 12.0 | | 300 | 20:1 | 50 mm. |
| 18 (Saskatoon) | 10.0 | | 150 | 20:1 | 18 mm. |
| 22 (Saskatoon) | 10.0 | | 150 | 20:1 | 18 mm. |

NOTE:- Universal Time used throughout

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa** | |
| 176 May 2 | i | 11 42 20 |
| | e | 11 43 45 |
| | $e_N$ | 11 44 20 |
| | L | 11 44.8 |
| | F | 12 11 |
| | **Victoria** | |
| | $e_Z$ | 11 29 35 |
| | $e_Z$ | 11 29 40 |
| | e | 11 34.4 |
| | F | 11 41 |
| | **Saskatoon (N)** | |
| | i | 11 30 21 |
| | i | 11 34 02 |
| | e | 11 36 10 |
| | L | 11 39.3 |
| | F | 12 45 |
| | **Seven Falls** | |
| | L | 11 45 |
| | F | 12 13 |
| | **Shawinigan Falls** | |
| | e | 11 43.6 |
| | F | 11 50 |
| | **Victoria (Z)** | |
| 177 May 3 | Δ | 25 km. |
| | $P_2$ | 4 44 33.5 |
| | $S_2$ | 4 44 37.5 |
| | $S_1$ | 4 44 38.5 |
| | F | 4 45.4 |
| | **USCGS** | |
| 178 May 3 | φ = 49° N. | |
| | λ = 153°5 E. | |
| | H = 5:56.7 | |
| | d = 100 km. | |
| | **Kurile Islands** | |
| | **Ottawa** | |
| | Δ | 75°6 |
| | P | 6 08 23 |
| | $eP_cP$ | 6 08 58 |
| | S | 6 17 57 |
| | SKS | 6 18 23 |
| | L | 6 27 |
| | F | 7 02 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria** | |
| 178 May 3 (cont'd) | iP | 6 05 44 d. |
| | e | 6 12.9 |
| | F | 6 26 |
| | **Saskatoon** | |
| | Δ | 56°4 |
| | P | 6 06 34 |
| | e | 6 07 00 |
| | S | 6 14 30 |
| | SS | 6 18 15 |
| | SSS | 6 20.2 |
| | L | 6 23.3 |
| | F | 7 14 |
| | **Seven Falls** | |
| | L | 6 20 |
| | F | 7 10 |
| | **Shawinigan Falls** | |
| | e | 6 07 25 |
| | e | 6 18 01 |
| | F | 6 20 |
| | **Victoria (Z)** | |
| 179 May 4 | e | 20 32 39 |
| | F | 20 44 |
| | **Victoria (Z)** | |
| 180 May 6 | e | 8 41 56 |
| | F | 8 44 |
| | **Victoria (Z)** | |
| 181 May 6 | e | 12 58 32 |
| | F | 13 00 |
| | **Victoria (Z)** | |
| 182 May 6 | e | 14 36 33 |
| | F | 14 38 |
| | **Victoria (Z)** | |
| 183 May 8 | e | 1 33 24 |
| | F | 1 35 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA

No. 28

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria (Z)** | |
| 184 May 6 | Δ | 170 km. |
| | Pn | 4 26 18.5 |
| | i | 4 26 20.5 |
| | Sn | 4 26 36.0 |
| | e | 4 25 39.0 |
| | F | 4 27.5 |
| | **Ottawa (Z)** | |
| 185 May 7 | e | 13 12 40 |
| | F | 13 15 |
| | **Seven Falls** | |
| | e | 13 12 50 |
| | F | 13 14 |
| | **Ottawa (Z)** | |
| 186 May 7 | e | 15 02 37 |
| | F | 15 04 |
| | **Victoria (Z)** | |
| 187 May 8 | e | 19 35 56 |
| | e | 19 36 17 |
| | F | 19 37 |
| | **USCGS** | |
| 188 May 8 | φ = 20° S. | |
| | λ = 71° W. | |
| | H = 21 24.6 | |
| | d = 120 km. | |
| | Off coast of northern Chile | |
| | **Ottawa** | |
| | e | 21 35 05 |
| | i | 21 35 35 |
| | e | 21 44.8 |
| | L | 21 51 |
| | F | 22 06 |
| | **Victoria** | |
| | i | 21 36 51 d |
| | i | 21 37 22 |
| | e | 21 47 07 |
| | F | 21 50 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Seven Falls** | |
| 188 May 8 | e | 21 35 47 |
| | i | 21 43 53 |
| | i | 21 44 49 |
| | L | 21 52 |
| | F | 22 15 |
| | **USCGS** | |
| 189 May 9 | φ = 5° N. | |
| | λ = 95° E. | |
| | H = 13:36.3 | |
| | Near coast of northwestern Sumatra. | |
| | **Ottawa** | |
| | i | 13 55 29d |
| | e | 13 58 51 |
| | L | 14 38 |
| | F | 15 51 |
| | **Victoria (Z)** | |
| | e | 13 55 06 |
| | F | 13 57 |
| | **Seven Falls** | |
| | L | 14 14 |
| | F | 16 10 |
| | **USCGS** | |
| 190 May 10 | φ = 19° N. | |
| | λ = 106 1/2° W. | |
| | H = 00:24.7 | |
| | Off west coast of Mexico | |
| | **Ottawa** | |
| | Δ | 36°3 |
| | P | 0 31 52 |
| | PP | 0 33 02 |
| | S | 0 37 30 |
| | L | 0 40.3 |
| | F | 1 16 |
| | **Victoria** | |
| | L | 0 43 |
| | F | 0 55 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Saskatoon** | |
| 190 May 10 (cont'd) | ePPP? | 0 32 54 |
| | S | 0 36 43 |
| | SS | 0 39.1 |
| | L | 0 42 |
| | F | 1 25 |
| | **Seven Falls** | |
| | e | 0 38 29 |
| | L | 0 47 |
| | F | 1 28 |
| | **Shawinigan Falls** | |
| | L | 0 45.5 |
| | F | 0 49 |
| | **USCGS** | |
| 191 May 10 | φ = 17° N. | |
| | λ = 109° W. | |
| | H = 3:12.2 | |
| | **Off west coast of Mexico** | |
| | **Ottawa** | |
| | L | 3 32 |
| | F | 3 45 |
| | **Saskatoon** | |
| | L | 3 31 |
| | F | 3 45 |
| | **Seven Falls** | |
| | L | 3 36 |
| | F | 3 48 |
| | **Victoria (Z)** | |
| 192 May 10 | e | 22 24 29 c |
| | F | 22 33 |
| | **Victoria (Z)** | |
| 193 May 11 | Δ | 85 km. |
| | $P_2$ | 20 26 37.5 |
| | $S_2$ | 20 26 48.0 |
| | $S_1$ | 20 26 51 |
| | F | 20 28 |
| | **Victoria (Z)** | |
| 194 May 13 | e | 20 27 00 |
| | F | 20 28 |
| | **Seven Falls** | |
| 194 May 13 (cont'd) | L | 20 53 |
| | F | 21 11 |
| | **Victoria (Z)** | |
| 195 May 14 | e | 2 25 59 |
| | F | 2 28 |
| | **Victoria (Z)** | |
| 196 May 14 | e | 23 40 21 |
| | e | 23 41 40 |
| | i | 23 42 02 |
| | i | 23 42 33 |
| | F | 23 45 |
| | **Ottawa** | |
| 197 May 15 | L | 5 47 |
| | F | 6 00 |
| | **Saskatoon** | |
| | L | 5 44 |
| | F | 6 05 |
| | **Seven Falls** | |
| | e | 5 52 |
| | F | 6 04 |
| | **Seven Falls** | |
| 198 May 15 | L | 7 28 |
| | F | 7 51 |
| | **Ottawa** | |
| 199 May 16 | e | 4 51 45 |
| | L | 5 43 |
| | F | 6 27 |
| | **Seven Falls** | |
| | L | 5 31 |
| | F | 6 55 |
| | **Ottawa (Z)** | |
| 200 May 16 | e | 15 14 14 |
| | F | 15 15 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 30

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 201 May 16 | e | 18 25 54 |
| | e | 18 26 18 |
| | F | 18 26.6 |
| | USCGS | |
| 202 May 17 | φ = 48° N. | |
| | λ = 155° E. | |
| | H = 2:29.8 | |
| | Kurile Islands region | |
| | Ottawa (Z) | |
| | e | 2 41 41 |
| | e | 2 41 55 |
| | L | 3 12 |
| | F | 3 27 |
| | Victoria (Z) | |
| | e | 2 38 58 |
| | F | 2 41 |
| | Seven Falls | |
| | L | 3 09 |
| | F | 3 32 |
| | Victoria (Z) | |
| 203 May 17 | e | 4 38 34 |
| | F | 4 42 |
| | Victoria (Z) | |
| 204 May 19 | Δ | 65 km. |
| | $P_1$ | 0 16 28.5 |
| | $S_1$ | 0 16 37.0 |
| | F | 0 17.2 |
| | Ottawa (Z) | |
| 205 May 20 | e | 0 45 37 |
| | F | 0 47 |
| | Victoria (Z) | |
| 206 May 20 | e | 8 24 35 |
| | e | 8 25 29 |
| | F | 8 26 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Victoria (Z) | |
| 207 May 20 | e | 22 29 11 |
| | F | 22 40 |
| | Victoria (Z) | |
| 208 May 21 | e | 7 55 38 |
| | F | 7 57 |
| | USCGS | |
| 209 May 21 | φ = 37° N. | |
| | λ = 142° E. | |
| | H = 21:40.0 | |
| | Off east coast of Honshu Island, Japan. | |
| | Ottawa | |
| | e | 21 53 09 |
| | e | 22 04.0 |
| | L | 22 27 |
| | F | 23 02 |
| | Victoria (Z) | |
| | e | 21 50 52 |
| | F | 21 58 |
| | Saskatoon | |
| | e | 21 56 16 |
| | e | 21 59 46 |
| | i | 22 01 01 |
| | F | 23 09 |
| | Seven Falls | |
| | e | 21 53 15 |
| | e | 22 04 03 |
| | L | 22 16 |
| | F | 23 12 |
| | Ottawa (Z) | |
| 210 May 21 | Δ | 150 km. |
| | $P_n$ | 22 33 19.0 |
| | e | 22 33 20.0 |
| | $S_n$ | 22 33 37.7 |
| | e | 22 33 40.0 |
| | e | 22 33 42 |
| | F | 22 34.5 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa (Z)** | |
| 211 May 22 | e | 15 15 00 |
| | F | 15 15.5 |
| | **USCGS** | |
| 212 May 23 | φ = 31° S. | |
| | λ = 178° W. | |
| | H = 4 17.4 | |
| | Kermadec Islands region | |
| | **Ottawa (Z)** | |
| | e | 4 36 14 |
| | F | 4 37 |
| | **Victoria (Z)** | |
| | e | 4 30 37 |
| | F | 4 33 |
| | **Seven Falls** | |
| | L | 5 19 |
| | F | 5 43 |
| | **Ottawa (Z)** | |
| 213 May 23 | e | 5 43 07 |
| | F | 5 44 |
| | **Ottawa (Z)** | |
| 214 May 23 | e | 9 19 38 |
| | F | 9 20 |
| | **Ottawa (Z)** | |
| 215 May 23 | e | 11 39 34 |
| | F | 11 40 |
| | **Ottawa** | |
| 216 May 24 | L | 3 29 |
| | F | 4 07 |
| | **Victoria** | |
| | e | 2 41 09 |
| | L | 3 13 |
| | F | 3 32 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Saskatoon** | |
| 216 May 24 | L | 3 18 |
| | F | 4 15 |
| | **Seven Falls** | |
| | L | 3 30 |
| | F | 4 11 |
| | **Victoria (Z)** | |
| 217 May 24 | e | 12 03 26 |
| | F | 12 05 |
| | **USCGS** | |
| 218 May 24 | φ = 17° N. | |
| | λ = 106° W. | |
| | H = 16:20.0 | |
| | Off west coast of Mexico | |
| | **Ottawa** | |
| | e | 16 27 19 |
| | L | 16 40.2 |
| | F | 16 59 |
| | **Saskatoon** | |
| | e | 16 32 27 |
| | e | 16 35 07 |
| | L | 16 38 |
| | F | 17 23 |
| | **Seven Falls** | |
| | L | 16 42 |
| | F | 17 16 |
| | **Ottawa (Z)** | |
| 219 May 24 | e | 19 12 24 |
| | F | 19 14 |
| | **Victoria (Z)** | |
| | e | 19 11 06 |
| | F | 19 12 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA

No. 32

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Victoria (Z) | |
| 220 May 25 | Δ | 545 km. |
| | Pn | 2 44 43.0 |
| | e | 2 44 50 |
| | Sn | 2 45 35.0 |
| | e | 2 45 38 |
| | F | 2 47 |
| | USCGS | |
| 221 May 25 | φ = 42° N. | |
| | λ = 83° E. | |
| | H = 8:23.8 | |
| | Eastern Turkistan | |
| | Ottawa | |
| | e | 8 36 52 |
| | e | 8 45.2 |
| | L | 9 15 |
| | F | 9 47 |
| | Victoria | |
| | P | 8 36 32 d |
| | S | 8 47 07 |
| | L | 9 13 |
| | F | 9 36 |
| | Saskatoon | |
| | e | 8 47 00 |
| | L | 9 15 |
| | F | 9 48 |
| | Seven Falls | |
| | e | 8 47 37 |
| | L | 9 04 |
| | F | 9 56 |
| | Seven Falls | |
| 222 May 26 | L | 6 40 |
| | F | 6 49 |
| | Ottawa (Z) | |
| 223 May 26 | e | 23 44 0.6 |
| | F | 23 45 |
| | Victoria (Z) | |
| | e | 23 45 46 |
| | F | 23 48 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 224 May 27 | e | 9 13 45 |
| | F | 9 15 |
| | Victoria (Z) | |
| 225 May 27 | e | 11 11 13 |
| | F | 11 13 |
| | Ottawa (Z) | |
| 226 May 28 | e | 1 06 32 |
| | F | 1 01 |
| | Ottawa (Z) | |
| 227 May 30 | e | 0 09 11 |
| | F | 0 10 |
| | USCGS | |
| 228 May 30 | φ = 20° S. | |
| | λ = 69 1/2° W. | |
| | H = 01:32.9 | |
| | d = 100 km. | |
| | Off coast of northern Chile | |
| | Ottawa | |
| | Δ | 65°0 |
| | P | 1 43 28 d |
| | e | 1 43 55 |
| | e | 1 44 10 |
| | PP | 1 46 15 |
| | PPP | 1 47 30 |
| | iS | 1 52 08 |
| | PS | 1 52 50 |
| | SS | 1 59.6 |
| | F | 2 30 |
| | Victoria | |
| | Δ | 83°7 |
| | P | 1 45 13 |
| | e | 1 45 52 |
| | S | 1 55 28 |
| | SS | 1 56.3 |
| | F | 2 25 |
| | Saskatoon | |
| | i | 1 54 42 |
| | e | 1 55 24 |
| | F | 2 38 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s | NO. AND DATE | PHASE | TIME h m s |
|---|---|---|---|---|---|
| | | Seven Falls | | | |
| 228 May 30 (cont'd) | e | 1 43 39 | | | |
| | i | 1 52 29 | | | |
| | e | 1 53 09 | | | |
| | L | 2 00 | | | |
| | F | 2 21 | | | |
| | | Shawinigan Falls | | | |
| | e | 1 43 34 | | | |
| | F | 1 47 | | | |
| | | Victoria (Z) | | | |
| 229 May 30 | e | 21 51 44 | | | |
| | F | 21 54 | | | |
| | | Ottawa (Z) | | | |
| 230 May 31 | e | 2 45 48 | | | |
| | F | 2 46.5 | | | |
| | | Ottawa (Z) | | | |
| 231 May 31 | e | 2 49 02 | | | |
| | F | 2 50 | | | |
| | | Ottawa (Z) | | | |
| 232 May 31 | Δ | 235 km. | | | |
| | $P_n$ | 14 08 52.0 | | | |
| | $S_n$ | 14 09 18.5 | | | |
| | e | 14 09 23.0 | | | |
| | F | 14 10 | | | |
| | | Shawinigan Falls | | | |
| | e | 14 09 06 | | | |
| | F | 14 10 | | | |
| | | Ottawa (Z) | | | |
| 233 May 31 | e | 19 44 14 | | | |
| | F | 19 45 | | | |

W. G. Milne
Assistant Seismologist

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA

No. 34

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria** | |
| 234 June 1 | e | 8 23 39 d. |
| | L | 8 25.1 |
| | F | 8 30 |
| | **Saskatoon** | |
| | e | 8 30 40 |
| | F | 8 33 |
| | **Seven Falls** | |
| | L | 8 43 |
| | F | 8 51 |
| | **Ottawa (Z)** | |
| 235 June 1 | e | 18 38 47 |
| | F | 18 40 |
| | **Victoria (Z)** | |
| 236 June 3 | e | 11 56 25 |
| | F | 11 59 |
| | **Victoria (Z)** | |
| 237 June 4 | e | 1 06 48 |
| | F | 1 08 |
| | **Victoria (Z)** | |
| 238 June 4 | e | 4 03 35 |
| | F | 4 06 |
| | **Victoria (Z)** | |
| 239 June 4 | e | 23 35 50 |
| | F | 23 38 |
| | **Seven Falls** | |
| | L | 23 40 |
| | F | 23 56 |
| | **Victoria (Z)** | |
| 240 June 5 | e | 19 37 32 |
| | F | 19 40 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Seven Falls** | |
| 241 June 6 | L | 8 00 |
| | F | 8 26 |
| | **Ottawa (Z)** | |
| 242 June 6 | i | 20 05 38.5 |
| | i | 20 05 40.5 |
| | F | 20 06 |
| | **Ottawa (Z)** | |
| 243 June 6 | $P_2$ | 22 03 13.0 |
| | $S_n$ | 22 03 29.5 |
| | $S_2$ | 22 03 33 |
| | F | 22 03.8 |
| | **Ottawa (Z)** | |
| 244 June 7 | P | 5 35 11 d. |
| | PP | 5 37 37 |
| | F | 5 39 |
| | **Ottawa** | |
| 245 June 8 | e | 5 09 09 |
| | L | 5 24.3 |
| | F | 5 30 |
| | **Victoria** | |
| | i | 5 05 44 d. |
| | e | 5 10.0 |
| | L | 5 14.0 |
| | F | 5 23 |
| | **Seven Falls** | |
| | e | 5 24 32 |
| | F | 5 28 |
| | **Shawinigan Falls** | |
| | e | 5 09 12 |
| | L | 5 23 |
| | F | 5 28 |
| | **Victoria (Z)** | |
| 246 June 8 | e | 16 00 50 |
| | F | 16 03 |
| | **Victoria (Z)** | |
| 247 June 8 | e | 18 47 33 |
| | F | 18 50 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 35

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa (Z)** | |
| 248 June 9 | e | 10 55 45 |
| | F | 10 58 |
| | **Victoria (Z)** | |
| | i | 10 57 06 c. |
| | F | 11 00 |
| | **Victoria (Z)** | |
| 249 June 9 | e | 15 16 16 |
| | F | 15 18 |
| | **USCGS** | |
| 250 June 9 | φ = 14° S. | |
| | λ = 176° W. | |
| | H = 21:18.5 | |
| | Samoa Islands | |
| | **Victoria (Z)** | |
| | i | 21 30 34 c. |
| | F | 21 34 |
| | **USCGS** | |
| | φ = 12 1/2° N. | |
| | λ = 87 1/2° W. | |
| | H = 7:34.8 | |
| | d greater than normal | |
| | Near west coast of Nicaragua | |
| | **Ottawa** | |
| | e | 7 41 35 |
| | L | 7 47 |
| | F | 8 16 |
| | **Victoria (Z)** | |
| | i | 7 43 18 d. |
| | F | 7 46 |
| | **Seven Falls** | |
| | L | 7 48 |
| | F | 8 23 |
| | **Shawinigan Falls** | |
| | e | 7 41 51 |
| | F | 7 43 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **USCGS** | |
| 252 June 12 | φ = 27° S. | |
| | λ = 64° W. | |
| | d = 600 km. | |
| | H = 1) 17:52.4 | |
| | 2) 17:55.8 | |
| | North Argentina | |
| | **Ottawa** | |
| | Δ | 62°3 |
| | P | 18 03 00 d. |
| | PP | 18 04 35 |
| | i(P) | 18 06 27 d. |
| | S | 18 11 22 |
| | i(S) | 18 15 21 |
| | L | 18 18 |
| | F | 18 35 |
| | **Victoria** | |
| | P | 18 04 37 d. |
| | i(P) | 18 08 03 |
| | F | 18 10 |
| | **Seven Falls** | |
| | P | 18 03 07 |
| | i(P) | 18 06 36 |
| | S | 18 11 56 |
| | e(S) | 18 15 35 |
| | F | 18 35 |
| | **Shawinigan Falls** | |
| | P | 18 03 04 d. |
| | e | 18 06 32 |
| | F | 18 13 |
| | **USCGS** | |
| 253 June 13 | φ = 27° S. | |
| | λ = 64° W. | |
| | H = 1:58:55 | |
| | d = 600 km. | |
| | Argentina | |
| | **Ottawa (Z)** | |
| | i | 2 09 32 d. |
| | F | 2 10 |
| | **Shawinigan Falls** | |
| | e | 2 09 36 |
| | F | 2 12 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 36

| NO. AND DATE | PHASE | TIME |
|---|---|---|
| | | h m s |
| | Ottawa (Z) | |
| 254 June 13 | e | 14 25 02 |
| | F | 14 25.5 |
| | Seven Falls | |
| 255 June 14 | L | 1 14 |
| | F | 1 55 |
| | Ottawa (Z) | |
| 256 June 14 | e | 5 58 58 |
| | F | 6 01 |
| | Ottawa (Z) | |
| 257 June 14 | e | 13 11 16 |
| | e | 13 11 22 |
| | F | 13 12 |
| | Victoria (Z) | |
| 258 June 14 | Δ | 370 km. |
| | $P_n$ | 16 31 15.5 d. |
| | i | 16 31 20.5 |
| | i | 16 31 26.0 |
| | $S_n$ | 16 31 51.0 |
| | F | 16 35 |
| | USCGS | |
| 259 June 15 | φ = 52° N. | |
| | λ = 178° W. | |
| | H = 1:47.3 | |
| | Aleutian Islands | |
| | Ottawa (Z) | |
| | e | 1 57 47 |
| | F | 1 59 |
| | Victoria (Z) | |
| | i | 1 54 16 |
| | F | 1 56 |
| | Seven Falls | |
| | L | 2 20 |
| | F | 2 46 |

| NO. AND DATE | PHASE | TIME |
|---|---|---|
| | | h m s |
| | Victoria (Z) | |
| 260 June 16 | Δ | 185 km. |
| | $P_n$ | 10 04 25.5 |
| | e | 10 04 29.5 |
| | e | 10 04 32.6 |
| | $S_n$ | 10 04 45.0 |
| | e | 10 04 50 |
| | F | 10 06 |
| | Ottawa (Z) | |
| 261 June 16 | e | 16 02 15 |
| | F | 16 03 |
| | Seven Falls | |
| 262 June 16 | L | 18 50 |
| | F | 19 35 |
| | Ottawa (Z) | |
| 263 June 16 | Δ | 150 km. |
| | $P_2$ | 22 09 47.0 |
| | $S_n$ | 22 10 04.5 |
| | $S_2$ | 22 10 07 |
| | F | 22 10.5 |
| | Ottawa (Z) | |
| 264 June 17 | i | 1 46 24 |
| | F | 1 47 |
| | Ascension Islands | |
| | USCGS | |
| 265 June 17 | H = 04:21:00 | |
| | Eastern Mediterranean | |
| | Ottawa (Z) | |
| | i | 4 32 39 |
| | F | 4 36 |
| | Seven Falls | |
| | e | 4 32 16 |
| | F | 4 36 |
| | Victoria (Z) | |
| 266 June 17 | e | 14 14 48 |
| | F | 14 17 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 37

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Victoria (Z) | |
| 267 June 18 | Δ | 190 km. |
| | $P_2$ | 11 51 26.5 |
| | $S_n$ | 11 51 37.0 |
| | e | 11 51 41 |
| | F | 11 52.5 |
| | Victoria (Z) | |
| 268 June 19 | Δ | 180 km. |
| | $P_n$ | 14 08 15.6 |
| | $S_n$ | 14 08 34.5 |
| | F | 14 09.5 |
| | Ottawa (Z) | |
| 269 June 18 | e | 23 57 10 |
| | F | 23 59 |
| | Victoria (Z) | |
| | e | 23 59 34 |
| | F | 0 01 |
| | Seven Falls | |
| | L | 0 07 |
| | F | 0 14 |
| | Ottawa | |
| 270 June 19 | e | 9 02 08 |
| | F | 9 04 |
| | USCGS | |
| 271 June 19 | φ = 25° N. | |
| | λ = 45° W. | |
| | H = 12:24.3 | |
| | North Atlantic Ocean | |
| | Ottawa (Z) | |
| | e | 12 30 53 |
| | F | 12 35 |
| | Victoria (Z) | |
| | e | 12 34 58 |
| | F | 12 37 |
| | Shawinigan Falls | |
| | e | 12 30 44 |
| | F | 12 33 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | USCGS | |
| 272 June 19 | φ = 61° N. | |
| | λ = 150° W. | |
| | H = 22:04:24 | |
| | South Alaska | |
| | Ottawa (Z) | |
| | i | 22 13 33 |
| | e | 22 13 45 |
| | e | 22 27 40 |
| | F | 22 29 |
| | Victoria | |
| | e | 22 08 57 |
| | F | 22 20 |
| | Saskatoon | |
| | e | 22 17.5 |
| | F | 22 21 |
| | Seven Falls | |
| | e | 22 12 53 |
| | L | 22 28 |
| | F | 22 36 |
| | Shawinigan Falls | |
| | e | 22 12 49 |
| | F | 22 15 |
| | Ottawa (Z) | |
| 273 June 20 | Δ | 290 km. |
| | $P_n$ | 18 43 01.5 |
| | $P_2$ | 18 43 03 |
| | $S_n$ | 18 43 32.0 |
| | $S_2$ | 18 43 34 |
| | F | 18 44 |
| | Ottawa (Z) | |
| 274 June 20 | $P_1$ | 19 43 22.0 |
| | $S_1$ | 19 43 24.5 |
| | F | 19 44 |
| | USCGS | |
| 275 June 20 | H = 21:02:40 | |
| | Panama region | |
| | Ottawa (Z) | |
| | e | 21 10 33 |
| | F | 21 12 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria** | |
| 276 June 22 | Slight tremors registered as follows: | |
| | e | 19 07 54 |
| | e | 19 29 07 |
| | e | 19 31 17 |
| | e | 20 52 24 |
| | e | 21 02 37 |
| | **Ottawa (Z)** | |
| 277 June 23 | Δ | 167 km. |
| | $P_2$ | 21 49 56.0 |
| | $S_n$ | 21 50 15.0 |
| | $S_2$ | 21 50 17.5 |
| | F | 21 51 |
| | **USCGS** | |
| 278 June 23 | φ = 16° S. | |
| | λ = 168° E. | |
| | d = 180 km. | |
| | H = 22:27.2 | |
| | **New Hebrides Islands** | |
| | **Ottawa** | |
| | P | 22 45 43 |
| | e | 23 04 24 |
| | L | 23 29.5 |
| | F | 23 41 |
| | **Victoria (Z)** | |
| | e | 22 40 36 |
| | F | 22 45 |
| | **Seven Falls** | |
| | L | 23 05 |
| | F | 23 52 |
| | **USCGS** | |
| 279 June 24 | φ = 7° S. | |
| | λ = 105° E. | |
| | H = 22:38.6 | |
| | **Southwest coast of Java** | |
| | **Ottawa** | |
| | i | 22 58 10 |
| | i | 23 01 11 |
| | e | 23 01 55 |
| | L | 23 34 |
| | F | 0 56 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria** | |
| 279 June 24 (cont'd) | e | 22 57 37 |
| | F | 23 00 |
| | **Halifax** | |
| | e | 23 03 38 |
| | L | 00 01 |
| | F | 00 37 |
| | **Seven Falls** | |
| | e | 22 58 12 |
| | e | 23 01 09 |
| | i | 23 19 13 |
| | L | 23 38 |
| | F | 1 01 |
| | **Shawinigan Falls** | |
| | e | 22 58 11 |
| | e | 23 01 05 |
| | F | 23 10 |
| | **USCGS** | |
| 280 June 25 | H = 19:17:05 | |
| | **Tonga Islands** | |
| | **Ottawa** | |
| | L | 20 14 |
| | F | 20 57 |
| | **Victoria** | |
| | e | 19 29 39 |
| | L | 20 08 |
| | F | 20 18 |
| | **Halifax** | |
| | L | 20 25 |
| | F | 20 44 |
| | **Seven Falls** | |
| | L | 20 17 |
| | F | 21 10 |
| | **Victoria (Z)** | |
| 281 June 26 | e | 5 55 09 |
| | F | 5 58 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 39

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | USCGS | |
| 282 June 26 | H = 8:41:16 Celebes Islands | |
| | Ottawa | |
| | e | 9 00 33 |
| | e | 9 03 52 |
| | e | 9 20.5 |
| | L | 9 43 |
| | F | 10 48 |
| | Victoria (Z) | |
| | e | 8 55 25 |
| | e | 8 59 42 |
| | e | 9 11 31 |
| | F | 9 15 |
| | Seven Falls | |
| | e | 9 03 53 |
| | L | 9 21 |
| | F | 10 54 |
| | Shawinigan Falls | |
| | e | 9 00 07 |
| | e | 9 04 48 |
| | F | 9 07 |
| | Victoria (Z) | |
| 283 June 27 | $iP_n$ | 21 53 03.5 |
| | F | 21 55 |
| | Victoria (Z) | |
| 284 June 27 | $P_n$ | 21 55 30.5 |
| | $S_n$ | 21 55 49.0 |
| | F | 21 59 |
| | Ottawa (Z) | |
| 285 June 27 | e | 23 26 36 |
| | F | 23 28 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | USCGS | |
| 286 June 28 | $\varphi$ = 24° N. $\lambda$ = 45° W. H = 20:08:29 North Atlantic Ocean | |
| | Ottawa (Z) | |
| | e | 20 15 05 |
| | F | 20 16 |
| | Victoria (Z) | |
| | e | 20 19 10 |
| | F | 20 22 |
| | Seven Falls | |
| | L | 20 20 |
| | F | 20 34 |
| | Seven Falls | |
| 287 June 30 | L | 2 25 |
| | F | 2 54 |

W. G. Milne
Assistant Seismologist

# SEISMOLOGICAL BULLETINS RECEIVED

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

| STATION | BULLETINS | RECEIVED |
|---|---|---|
| | **May, 1949** | |
| Tokyo | January, 1949 | May 2 |
| Tacubaya | March, 1949 | " 3 |
| Brisbane | January, February, 1949 | " 5 |
| Pittsburgh | Year, 1948 | " 10 |
| Belgrade | February, 1949 | " 10 |
| Richmond | March, 1949 | " 11 |
| Santa Clara | April, 1949 | " 11 |
| Wellington | January, 1949 | " 11 |
| De Bilt | March, 1949 | " 11 |
| Pasadena | October - December, 1948 | " 14 |
| Saint Louis and Auxiliary Stations | Preliminaries March 4, 9, 27, 1949; May, 1946 | " 14 |
| Toledo | March, 1949 | " 16 |
| Helwan | February, March, 1949 | " 16 |
| Tokyo | February, 1949 | " 18 |
| Helsinki | October - December, 1948 | " 21 |
| Trieste | March 23 - April 19, April 27 - May 3, 1949 | " 21 |
| Brisbane | March, 1949 | " 26 |
| Bureau Central | January, 1949 | " 26 |
| Strasbourg | March, April, 1949 | " 26 |
| Cleveland | April, 1949 | " 26 |
| Tacubaya | April, 1949 | " 26 |
| Zurich | March, April, 1949 | " 27 |
| Cartuja | January - June, 1946 | " 28 |
| Wellington | January - December, 1941; February, 1949 | " 28 |
| Belgrade | March, 1949 | " 28 |
| Apia | January - March, 1949 | " 30 |
| Trieste | January - April, 1949 | " 30 |
| | **June, 1949** | |
| De Bilt | April, 1949 | June 1 |
| Rome | March, 1949 | " 1 |
| Bogota | January - April, 1948 | " 3 |
| Prague | April, 1949 | " 3 |
| Stara Dala | April, 1949 | " 3 |
| Eger | April 1-15, 1949 | " 3 |
| La Plata | Year 1943 | " 4 |
| Santa Clara | May, 1949 | " 4 |
| Japan | March, 1949 | " 8 |
| Malaga | November, 1948 - February, 1949 | " 8 |
| Almeria | July - December, 1942 | " 8 |
| Rome | April, 1949 | " 9 |
| Saint Louis and Auxiliary Stations | Supplement January, 1949; Preliminaries March 30, April 5, 13, 18, 19 | " 10 |
| Mexico | Year 1948 | " 10 |
| Sofia | Years 1940 - 1944 | " 14 |
| Stuttgart | January - March, 1949 | " 14 |
| Richmond | April, 1949 | " 15 |
| Wellington | February - March, 1949 | " 16 |
| Hautes Tatra | April, 1949 | " 16 |

# SEISMOLOGICAL BULLETINS RECEIVED

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

| STATION | BULLETINS | RECEIVED |
|---|---|---|
| | June, 1949 (cont'd) | |
| Toledo | February, April, 1949 | June 16 |
| Cleveland | May, 1949 | " 20 |
| Saint Louis and Auxiliary Stations | Preliminaries April 13, 20, 23, 24, 25, May 3 | " 23 |
| Helwan | April, 1949 | " 23 |
| Bureau Central | February, April, 1949 | " 24 |
| Strasbourg | May, 1949 | " 24 |
| Kalocsa | March - May, 1949 | " 24 |
| Budapest | March - May, 1949 | " 24 |
| Belgrade | April, 1949 | " 24 |
| Istanbul | January - March, 1949 | " 28 |
| De Bilt | May, 1949 | " 28 |
| Prague | May, 1949 | " 28 |
| Hautes Tatra | May, 1949 | " 28 |
| Saint Louis and Auxiliary Stations | Preliminaries May 10, 17, 21, April 30, May 8, 9, 23, 24, 25, 30; Supplements | " 29 |
| | February, March, 1949 | " 30 |
| La Paz | March - June, 1949 | |

Dominion Observatory,
Ottawa - Canada,
September 8, 1949.

DEPARTMENT OF MINES AND RESOURCES

MINES, FORESTS AND SCIENTIFIC SERVICES BRANCH

SEISMOLOGICAL SERVICE OF CANADA

# SEISMOLOGICAL BULLETIN

July and August

1949

))((

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

$\varphi$ = 45°23'38" N. $\lambda$ = 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

$\varphi$ = 44°38' N. $\lambda$ = 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

$\varphi$ = 47°07!4 N. $\lambda$ = 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 component, 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)

## VICTORIA

Dominion Astrophysical Observatory

φ = 48°31'14" N. λ = 123°24'56" W. h = 197m.

Time correction from recorded radio time signals

Foundation: rock

Instruments: Milne-Shaw NS and EW components, designated 21 and 20, respectively, each with photographic registration, magnetic damping, paper speed of 8 mm. per min., mass 1 lb.

Benioff Vertical, short-period, designated B 5705, photographic registration, paper speed of 60 mm. per min., mass 235 lbs., installed June, 1948.

## SHAWINIGAN FALLS

Shawinigan Water and Power Company

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

Time correction from recorded radio time signals

Foundation: solid granite of Canadian Shield

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

## SASKATOON

University of Saskatchewan

φ = 52°08' N. λ = 106°38' W. h = 515m.

Time correction from radio time signals

Foundation: clay and sand

Instrument: Milne-Shaw NE and NW components, designated 18 and 22, respectively, each with photographic registration, magnetic damping, paper speed of 8 mm. per min., mass 1 lb.

## 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 | | |
| B 5705 (Victoria) | 1.0 | 0.1 | | | |
| 20 (Victoria) | 12.0 | | 300 | 20:1 | 50 mm. |
| 21 (Victoria) | 12.0 | | 300 | 20:1 | 50 mm. |
| SF (Seven Falls) | 1.0 | | 2200 | | |
| SM (Seven Falls) | 12.0 | | 300 | 20:1 | 50 mm. |
| 18 (Saskatoon) | 10.0 | | 150 | 20:1 | 18 mm. |
| 22 (Saskatoon) | 10.0 | | 150 | 20:1 | 18 mm. |

NOTE:- Universal Time used throughout

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 288 July 1 | USCGS<br>H = 3 27 00<br>d = 100 km,<br>Near coast of northern Chile | |
| | Ottawa (Z) | |
| | e | 3 37 42 |
| | F | 3 39 |
| | Seven Falls | |
| | e | 3 37 50 |
| | F | 3 40 |
| | Shawinigan Falls | |
| | e | 3 37 49 |
| | F | 3 40 |
| | Shawinigan Falls | |
| 289 July 1 | e | 22 03 25 |
| | F | 22 04 |
| | Ottawa (Z) | |
| 290 July 1 | e | 22 30 35 |
| | F | 22 31 |
| | USCGS | |
| 291 July 2 | H = 11 27 35<br>φ = 52° S<br>λ = 162°E<br>Auckland Islands | |
| | Ottawa | |
| | e | 11 47 19 |
| | e | 11 50.5 |
| | L | 12 33 |
| | F | 13 21 |
| | Victoria | |
| | L | 12 31 |
| | F | 12 52 |
| | Seven Falls | |
| | e | 11 47 22 |
| | F | 11 49 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Shawinigan Falls | |
| 291 July 2 (cont'd) | e | 11 47 2.5 |
| | F | 11 50 |
| | USCGS | |
| 292 July 2 | φ = 16°N<br>λ = 148° E<br>H = 19 57 10<br>Marianas Islands region | |
| | Ottawa | |
| | Δ = 103° | |
| P diff. | ? = 20 11 29 | |
| | P' | 20 15 02 |
| | e | 20 15 43 |
| | e | 20 15 54 |
| | PP | 20 16 26 |
| | SKS | 20 22 07 |
| | PS | 20 25 13 |
| | SS | 20 32.8 |
| | L | 20 40.4 |
| | F | 22 34 |
| | Victoria | |
| | Δ = 78°8 | |
| | P | 20 09 08 |
| | S | 20 18 58 |
| | SS | 20 23.9 |
| | SSS | 20 28 |
| | L | 20 34 |
| | F | 22 05 |
| | Saskatoon | |
| | Δ = 83°2 | |
| | P | 20 09 58 |
| | S | 20 20 20 |
| | L | 20 35.0 |
| | F | 22 36 |
| | Halifax | |
| | Δ = 114° | |
| | PP | 20 16 41 |
| | SKP? | 20 18 09 |
| | PPP | 20 19 17 |
| | SKS | 20 22 39 |
| | PS | 20 26 07 |
| | SSS | 20 36.5 |
| | L | 20 49.3 |
| | F | 22 04 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Seven Falls** | |
| 292 July 2 (cont'd) | Δ = 110°7 | |
| | P'? | 20 15 19 |
| | PP | 20 15 50 |
| | e | 20 21 28 |
| | SKS | 20 22 03 |
| | S? | 20 23 44 |
| | PS | 20 25 22 |
| | PPS | 20 26 31 |
| | SS | 20 30.0 |
| | SSS | 20 35.8 |
| | L | 20 41.7 |
| | F | 23 08 |
| | **Shawinigan Falls** | |
| | e | 20 13 28 |
| | e | 20 16 01 |
| | F | 20 31 |
| | **Seven Falls** | |
| 293 July 3 | L | 6 37 |
| | F | 6 48 |
| | **USCGS** | |
| 294 July 3 | φ = 12° S | |
| | λ = 76° W | |
| | H = 21 46 04 | |
| | **Central Peru** | |
| | **Ottawa (Z)** | |
| | e | 21 55 53 |
| | F | 21 57 |
| | **USCGS** | |
| 295 July 4 | φ = 27 1/2° N | |
| | λ = 56° E | |
| | H = 3 04 40 | |
| | **Persian Gulf** | |
| | **Ottawa (Z)** | |
| | e | 3 54 06 |
| | F | 3 55 |
| | **Seven Falls** | |
| | e | 4 04.4 |
| | L | 4 24 |
| | F | 5 16 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria (Z)** | |
| 296 July 5 | i | 18 32 14 |
| | F | 18 35 |
| | **Victoria (Z)** | |
| 297 July 5 | i | 18 47 46 |
| | F | 18 49 |
| | **Victoria (Z)** | |
| 298 July 5 | i | 18 50 09 |
| | e | 18 50 12 |
| | F | 18 52 |
| | **Ottawa (Z)** | |
| 299 July 6 | e | 1 26 14 |
| | F | 1 27 |
| | **Shawinigan Falls** | |
| 300 July 7 | e | 16 06 14 |
| | F | 16 07 |
| | **Victoria (Z)** | |
| 301 July 7 | i | 20 36 48 C |
| | F | 20 38 |
| | **Seven Falls** | |
| | L | 20 48 |
| | F | 21 12 |
| | **Seven Falls** | |
| 302 July 7 | L | 4 46 |
| | F | 5 15 |
| | **Ottawa (Z)** | |
| 303 July 8 | e | 7 20 10 |
| | F | 7 21 |
| | **Victoria (Z)** | |
| | e | 8 15 29 |
| | F | 8 17 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Seven Falls** | |
| 303 July 8 (cont'd) | L | 8 53 |
| | F | 9 18 |
| | **Victoria (Z) local origin** | |
| 304 July 8 | P | 10 42 40.0 |
| | S | 10 42 58.5 |
| | F | 10 44 |
| | **Ottawa** | |
| 305 July 8 | Δ = 36°2 | |
| | H | 12 40 23 |
| | P | 12 47 24 |
| | S | 12 53 05 |
| | L | 12 55.8 |
| | e | 13 00.0 |
| | F | 13 40 |
| | **Victoria** | |
| | Δ = 45°7 | |
| | P | 12 48 43 |
| | S | 12 55 22 |
| | SS | 12 58 47 |
| | L | 13 04.5 |
| | e | 13 08.4 |
| | F | 13 39 |
| | **Saskatoon** | |
| | e | 12 58 30 |
| | L | 13 07.2 |
| | F | 13 35 |
| | **Halifax** | |
| | e | 12 48 39 |
| | L | 13 03.0 |
| | F | 13 20 |
| | **Seven Falls** | |
| | e | 12 49 27 |
| | L | 12 56.7 |
| | F | 14 00 |
| | **USCGS** | |
| 306 July 8 | φ = 72° N<br>λ = 0°<br>H = 18 18 06<br>Arctic Ocean 200 miles east of Juan Mayen Islands. | |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa** | |
| 306 July 8 (cont'd) | P | 18 26 09 |
| | L | 18 42 |
| | F | 18 55 |
| | **Victoria (Z)** | |
| | e | 18 27 27 |
| | F | 18 30 |
| | **Seven Falls** | |
| | L | 18 35 |
| | F | 18 56 |
| | **Victoria (Z)** | |
| 307 July 9 | e | 0 56 13 |
| | F | 1 00 |
| | **USCGS** | |
| 308 July 9 | φ = 33 N<br>λ = 71 W<br>H = 18 44 50<br>North Atlantic Ocean 350 miles east of Bermuda | |
| | **Ottawa** | |
| | Δ = 13°0 | |
| | P | 18 47 57.0 C |
| | S | 18 50 24 |
| | L | 18 50 48 |
| | F | 19 30 |
| | **Victoria** | |
| | P | 18 52 40 |
| | L | 19 08 |
| | F | 19 32 |
| | **Seven Falls** | |
| | Δ = 14°3 | |
| | P | 18 48 26 |
| | PP | 18 48 45 |
| | S | 18 51 05 |
| | L | 18 53.3 |
| | F | 19 51 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Shawinigan Falls** | |
| 308 July 9 (cont'd) | Δ = 14°.3 | |
| | P | 18 48 08 |
| | PP | 18 48 19 |
| | S | 18 50 50 |
| | L | 18 51.3 |
| | F | 19 07 |
| | **USCGS** | |
| 309 July 10 | φ = 39° N. | |
| | λ = 71° E. | |
| | H = 03:53:36 | |
| | **Eastern Turkistan** | |
| | **Ottawa** | |
| | Δ = 91°.7 | |
| | P | 04 06 42 d |
| | i | 04 06 49 |
| | e | 04 08 40 |
| | PP | 04 10 18 |
| | e | 04 15 32 |
| | e | 04 15 56 |
| | e | 04 16 38 |
| | SKKS | 04 17 13 |
| | S | 04 17 39 |
| | e | 04 18 17 |
| | PS | 04 18 49 |
| | SS | 04 23 50 |
| | SSS | 04 27.6 |
| | L | 04 32.5 |
| | F | 08 20 |
| | **Victoria** | |
| | Δ = 93°.0 | |
| | P | 4 06 45 |
| | PP | 4 10 37 |
| | SKKS | 4 17 20 |
| | S | 4 17 49 |
| | PS | 4 18 29 |
| | SS | 4 24.2 |
| | SSS | 4 28.4 |
| | L | 4 31 |
| | F | 7 16 |
| | **Saskatoon** | |
| | Δ = 93° | |
| | P | 4 06 42 |
| | PP | 4 10 12 |
| | SKKS | 4 17 08 |
| | S | 4 18 00 |
| | PS | 4 18 54 |
| | L | 4 34.0 |
| | F | 8 30 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Halifax** | |
| 309 July 10 (cont'd) | Δ = 88°.5 | |
| | P | 4 06 28 |
| | PP | 4 10 04 |
| | PPP | 4 12 00 |
| | e | 4 16 58 |
| | S | 4 17 11 |
| | e | 4 17 50 |
| | PS | 4 18 06 |
| | SS | 4 23 20 |
| | SSS | 4 27.0 |
| | L | 4 35 |
| | F | 6 54 |
| | **Seven Falls** | |
| | Δ = 87°.9 | |
| | P | 4 06 27 |
| | PP | 4 09 54 |
| | SKS | 4 16 56 |
| | S | 4 18 12 |
| | PS | 4 19 09 |
| | SS | 4 23.9 |
| | L | 4 28.4 |
| | F | 8 30 |
| | **Shawinigan Falls** | |
| | Δ = 89°.1 | |
| | P | 4 06 31 |
| | i | 4 06 39 |
| | PP | 4 09 58 |
| | PPP | 4 12 02 |
| | SKS | 4 16 52 |
| | SKKS | 4 17 22 |
| | S | 4 18 20 |
| | SS | 4 23 15 |
| | L | 4 29.7 |
| | F | 5 36 |
| | **Victoria (Z)** | |
| 310 July 10 | e | 14 26 21 |
| | F | 14 28 |
| | **Ottawa (Z)** | |
| 311 July 10 | e | 15 32 03 |
| | F | 15 34 |
| | **Victoria (Z)** | |
| | i | 15 32 08 |
| | e | 15 43.3 |
| | F | 15 49 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 308 July 9 (cont'd) | Shawinigan Falls | |
| | Δ = 14°.3 | |
| | P | 18 48 08 |
| | PP | 18 48 19 |
| | S | 18 50 50 |
| | L | 18 51.3 |
| | F | 19 07 |
| | USCGS | |
| 309 July 10 | φ = 39° N. | |
| | λ = 71° E. | |
| | H = 03:53:36 | |
| | Eastern Turkistan | |
| | Ottawa | |
| | Δ = 91°.7 | |
| | P | 04 06 42 d |
| | i | 04 06 49 |
| | e | 04 08 40 |
| | PP | 04 10 18 |
| | e | 04 15 32 |
| | e | 04 15 56 |
| | e | 04 16 38 |
| | SKKS | 04 17 13 |
| | S | 04 17 39 |
| | e | 04 18 17 |
| | PS | 04 18 49 |
| | SS | 04 23 50 |
| | SSS | 04 27.6 |
| | L | 04 32.5 |
| | F | 08 20 |
| | Victoria | |
| | Δ = 93°.0 | |
| | P | 4 06 45 |
| | PP | 4 10 37 |
| | SKKS | 4 17 20 |
| | S | 4 17 49 |
| | PS | 4 18 29 |
| | SS | 4 24.2 |
| | SSS | 4 28.4 |
| | L | 4 31 |
| | F | 7 16 |
| | Saskatoon | |
| | Δ = 93° | |
| | P | 4 06 42 |
| | PP | 4 10 12 |
| | SKKS | 4 17 08 |
| | S | 4 18 00 |
| | PS | 4 18 54 |
| | L | 4 34.0 |
| | F | 8 30 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 309 July 10 (cont'd) | Halifax | |
| | Δ = 88°.5 | |
| | P | 4 06 28 |
| | PP | 4 10 04 |
| | PPP | 4 12 00 |
| | e | 4 16 58 |
| | S | 4 17 11 |
| | e | 4 17 50 |
| | PS | 4 18 06 |
| | SS | 4 23 20 |
| | SSS | 4 27.0 |
| | L | 4 35 |
| | F | 6 54 |
| | Seven Falls | |
| | Δ = 87°.9 | |
| | P | 4 06 27 |
| | PP | 4 09 54 |
| | SKS | 4 16 56 |
| | S | 4 18 12 |
| | PS | 4 19 09 |
| | SS | 4 23.9 |
| | L | 4 28.4 |
| | F | 8 30 |
| | Shawinigan Falls | |
| | Δ = 89°.1 | |
| | P | 4 06 31 |
| | i | 4 06 39 |
| | PP | 4 09 58 |
| | PPP | 4 12 02 |
| | SKS | 4 16 52 |
| | SKKS | 4 17 22 |
| | S | 4 18 20 |
| | SS | 4 23 15 |
| | L | 4 29.7 |
| | F | 5 36 |
| | Victoria (Z) | |
| 310 July 10 | e | 14 26 21 |
| | F | 14 28 |
| | Ottawa (Z) | |
| 311 July 10 | e | 15 32 03 |
| | F | 15 34 |
| | Victoria (Z) | |
| | i | 15 32 08 |
| | e | 15 43.3 |
| | F | 15 49 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Seven Falls** | |
| 311 July 10 (cont'd) | e | 15 42 32 |
| | F | 16 00 |
| | **Shawinigan Falls** | |
| | e | 15 31 53 |
| | F | 15 36 |
| | **Ottawa** | |
| 312 July 10 | P | 16 02 18 |
| | S | 16 13 50 |
| | **Victoria** | |
| | Δ = 95°3 | |
| | P | 16 02 23 |
| | PP | 16 05 49 |
| | SKKS | 16 12 58 |
| | S | 16 13 30 |
| | PS | 16 14 37 |
| | **Halifax** | |
| | P | 16 02 08 |
| | S | 16 12 28 |
| | **Seven Falls** | |
| | e | 16 02 04 |
| | e | 16 12 30 |
| | e | 16 12 50 |
| | L | 16 30 |
| | **Shawinigan Falls** | |
| | e | 16 02 09 |
| | e | 16 12 36 |
| | F | 16 15 |
| | **Ottawa** | |
| 313 July 10 | P | 16 37 04 |
| | S | 16 47 42 |
| | F | 18 30 |
| | **Victoria** | |
| | Δ = 94°8 | |
| | P | 16 37 10 |
| | PP | 16 40 39 |
| | SKKS | 16 47 51 |
| | S | 16 48 18 |
| | PS | 16 49 17 |
| | SSS | 16 56.0 |
| | F | 18 20 |
| | **Halifax** | |
| | P | 16 36 50 |
| | S | 16 47 32 |
| | L | 17 00.0 |
| | F | 18 02 |
| | **Seven Falls** | |
| | e | 16 36 50 |
| | e | 16 47 25 |
| | e | 16 47 33 |
| | e | 16 52.6 |
| | L | 17 01 |
| | F | 19 04 |
| | **Shawinigan Falls** | |
| | e | 16 36 55 |
| | e | 16 39 24 |
| | e | 16 46 29 |
| | F | 16 52 |
| | **USCGS** | |
| 314 July 11 | φ = 34° N. | |
| | λ = 132° E. | |
| | H = 16:10:44 | |
| | Honshu, Japan | |
| | **Ottawa** | |
| | P | 16 24 16 |
| | L | 17 01 |
| | F | 18 01 |
| | **Victoria** | |
| | i | 16 22 20 |
| | i | 16 22 35 |
| | e | 16 31 50 |
| | F | 16 40 |
| | **Seven Falls** | |
| | L | 16 45 |
| | F | 18 30 |
| | **Ottawa** | |
| 315 July 11 | e | 16 47 14 |
| | F | 16 48 |
| | **Shawinigan Falls** | |
| | e | 16 50 37 |
| | F | 16 53 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND NAME | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 316 July 11 | Δ = 150 km. | |
| | $P_2$ | 19 01 23.0 |
| | $S_2$ | 19 01 40.0 |
| | 'e' | 19 01 48 |
| | F | 19 02 |
| | Ottawa (Z) | |
| 317 July 12 | e | 4 52 47 |
| | i | 4 55 29 |
| | i | 4 55 51 |
| | e | 4 57 25 |
| | F | 5 02 |
| | Seven Falls | |
| | Δ = 16°4 | |
| | P | 4 51 54 |
| | S | 4 54 55 |
| | SS | 4 55 08 |
| | F | 5 00 |
| | Shawinigan Falls | |
| | e | 4 52 02.0 |
| | e | 4 54 53 |
| | F | 4 57 |
| | Ottawa (Z) | |
| 318 July 12 | e | 8 12 40 |
| | F | 8 14 |
| | Ottawa (Z) | |
| 319 July 12 | Δ = 145 km. | |
| | $P_2$ | 16 04 37 |
| | $S_2$ | 16 04 53 |
| | 'e' | 16 05 05 |
| | F | 16 05.3 |
| | Ottawa (Z) | |
| 320 July 12 | Δ = 205 km. | |
| | $P_2$ | 19 58 51.5 |
| | $S_2$ | 19 59 16 |
| | 'e' | 19 59 27 |
| | F | 19 59.8 |
| | Ottawa (Z) | |
| 321 July 13 | e | 9 13 31 |
| | F | 9 15 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 322 July 13 | e | 10 05 58 |
| | F | 10 07 |
| | USCGS | |
| 323 July 13 | H = 9:59:40 | |
| | Off coast of Ecuador | |
| | Ottawa (Z) | |
| | e | 10 08 00 |
| | F | 10 10 |
| | Ottawa (Z) | |
| 324 July 13 | e | 10 27 03 |
| | F | 10 28 |
| | Ottawa (Z) | |
| 325 July 13 | e | 16 45 45 |
| | F | 16 46 |
| | Ottawa (Z) | |
| 326 July 14 | Δ = 150 km. | |
| | $P_n$ | 22 04 21.0 |
| | $P_2$ | 22 04 22.5 |
| | $S_n$ | 22 04 38.0 |
| | $S_2$ | 22 04 41 |
| | 'e' | 22 04 51 |
| | F | 22 05 |
| | USCGS | |
| 327 July 14 | H = 03:02:00 | |
| | Near coast of Guatemala | |
| | Ottawa (Z) | |
| | e | 3 08 11 |
| | F | 3 09 |
| | Victoria (Z) | |
| | e | 3 09 49 |
| | F | 3 12 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 46

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 328 July 14 | Δ = 150 km. | |
| | $P_n$ | 14 55 14.5 |
| | $P_2$ | 14 55 16 |
| | $S_n$ | 14 55 33.5 |
| | 'e' | 14 55 40 |
| | F | 14 56 |
| | Ottawa (Z) | |
| 329 July 14 | $P_2$ | 17 38 01.5 |
| | $S_n$ | 17 38 20.5 |
| | 'e' | 17 38 26 |
| | F | 17 38.6 |
| | Seven Falls | |
| 330 July 14 | L | 19 15 |
| | F | 20 20 |
| | Ottawa (Z) | |
| 331 July 14 | Δ = 150 km. | |
| | $P_2$ | 20 58 02.5 |
| | $S_2$ | 20 58 18 |
| | 'e' | 20 58 24 |
| | F | 20 59 |
| | Victoria (Z) | |
| 332 July 14 | i | 23 31 57 |
| | e | 23 33 26 |
| | F | 23 36 |
| | Ottawa (Z) | |
| 333 July 15 | e | 12 30 22 |
| | F | 12 30.5 |
| | USCGS | |
| 334 July 16 | H = 9:57:20 Off coast of Guatemala | |
| | Ottawa | |
| | P | 10 04 09 |
| | e | 10 04 17 |
| | S | 10 09.8 |
| | L | 10 14 |
| | F | 10 30 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Victoria | |
| | e | 10 11.9 |
| | L | 10 25 |
| | F | 10 36 |
| | Saskatoon | |
| | L | 10 14.3 |
| | F | 10 40 |
| | Seven Falls | |
| | e | 10 06.2 |
| | e | 10 11.1 |
| | L | 10 20 |
| | F | 10 48 |
| | Ottawa (Z) | |
| 335 July 16 | e | 16 10 35 |
| | F | 16 11 |
| | Victoria (Z) | |
| 336 July 16 | e | 18 20 40 |
| | F | 18 22 |
| | Ottawa (Z) | |
| 337 July 16 | e | 18 58 31 |
| | F | 18 59 |
| | Ottawa (Z) | |
| 338 July 16 | e | 19 07 17 |
| | F | 19 08 |
| | Ottawa (Z) | |
| 339 July 16 | e | 23 56 28 |
| | F | 23 57 |
| | Ottawa (Z) | |
| 340 July 17 | e | 23 24 02 |
| | F | 23 27 |
| | Ottawa (Z) | |
| 341 July 18 | e | 0 32 00 |
| | F | 0 32.5 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA

No. 47

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | USCGS | |
| 342 July 18 | φ = 5 1/2° N.<br>λ = 126° E.<br>H = 4:41:5[illegible]<br>Off southern coast of Mindanao | |
| | Ottawa (Z) | |
| | e | 5 00 54 |
| | F | 5 06 |
| | Seven Falls | |
| | e | 5 00 53 |
| | F | 5 03 |
| | Victoria (Z) | |
| 343 July 18 | e | 7 14 24 |
| | e | 7 14 41 |
| | F | 7 16 |
| | USCGS | |
| 344 July 18 | H = 7:34:05<br>Kermadec Islands | |
| | Victoria (Z) | |
| | e | 7 47 09 |
| | F | 7 49 |
| | USCGS | |
| 345 July 18 | φ = 42°5 N.<br>λ = 142°5 E.<br>Hokkaido, Japan | |
| | Victoria (Z) | |
| | e | 10 03 28 |
| | F | 10 06 |
| | Ottawa (Z) | |
| 346 July 18 | e | 16 34 47 |
| | F | 16 35 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Victoria (Z) | |
| 347 July 18 | Two locals superimposed. | |
| | i | 19 35 36 |
| | i | 19 35 38 |
| | e | 19 35 41.0 |
| | i | 19 35 48.5 |
| | i | 19 35 54 |
| | F | 19 37 |
| | USCGS | |
| 348 July 19 | H = 9:41:58<br>Near south coast of Mexico | |
| | Ottawa (Z) | |
| | e | 9 49 52 |
| | F | 9 51 |
| | Ottawa (Z) | |
| 349 July 19 | e | 15 21 13 |
| | F | 15 22 |
| | Ottawa (Z) | |
| 350 July 19 | e | 16 42 09 |
| | F | 16 43 |
| | Ottawa (Z) | |
| 351 July 19 | e | 16 46 53 |
| | F | 16 47 |
| | USCGS | |
| 352 July 19 | φ = 36° N.<br>λ = 70° E.<br>H = 17:41:57<br>North-east Afghanistan | |
| | Ottawa | |
| | e | 17 55 17 d |
| | L | 18 30 |
| | F | 19 03 |
| | Victoria | |
| | e | 17 55 02 |
| | L | 18 38 |
| | F | 18 51 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 355 July 19 | Ottawa (Z) | |
| | Δ = 150 km. | |
| | Pn | 22 07 08.0 |
| | P2 | 22 07 09.5 |
| | Sn | 22 07 25.5 |
| | S2 | 22 07 30 |
| | F | 22 08 |
| | USCGS | |
| 356 July 20 | H = 22:20:20 | |
| | Java Sea | |
| | Ottawa | |
| | i | 22 39 43 C |
| | L | 23 43 |
| | F | 0 10 |
| | Victoria | |
| | e | 22 39 08 |
| | F | 22 41 |
| | Seven Falls | |
| | e | 23 01.4 |
| | L | 23 21 |
| | F | 0 33 |
| | USCGS | |
| 357 July 21 | φ = 16° S. | |
| | λ = 74° W. | |
| | H = 8:01:34 | |
| | d = 100 km. | |
| | Near south coast of Peru | |
| | Ottawa | |
| | Δ = 58°8 | |
| | P | 8 11 38 d |
| | e | 8 12 07 |
| | S | 8 19 47 |
| | i | 8 20 37 |
| | i | 8 22 10 |
| | F | 8 41 |
| | Victoria | |
| | i | 8 13 24 C |
| | i | 8 13 53 |
| | e | 8 23 15 |
| | e | 8 23 53 |
| | F | 8 27 |
| | Saskatoon | |
| | e | 8 13 03 |
| | i | 8 22 35 |
| | i | 8 23 09 |
| | F | 8 28.5 |
| | Seven Falls | |
| | e | 8 11 50 |
| | e | 8 20.9 |
| | F | 8 40 |
| | Shawinigan Falls | |
| | e | 8 11 46 |
| | F | 8 23 |
| 358 July 21 | Ottawa (Z) | |
| | e | 17 17 54 |
| | F | 17 18 |
| 359 July 22 | Ottawa (Z) | |
| | e | 17 24 29 |
| | F | 17 25 |
| 360 July 23 | Ottawa (Z) | |
| | e | 9 00 39 |
| | F | 9 02 |
| 361 July 23 | Ottawa | |
| | eP | 9 06 17 |
| | S | 9 09 41 |
| | e | 9 11 01 |
| | L | 9 11.8 |
| | F | 9 25 |
| | Victoria | |
| | e | 9 08 55 |
| | L | 9 09.5 |
| | F | 9 38 |
| | Saskatoon | |
| | e | 9 03 10 |
| | e | 9 05 50 |
| | i | 9 06 11 |
| | e | 9 09 05 |
| | F | 9 34 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 361 July 23 (cont'd) | **Halifax** | |
| | e | 9 10 54 |
| | e | 9 11 06 |
| | F | 9 25 |
| | **Seven Falls** | |
| | e | 9 05 53 |
| | e | 9 09 05 |
| | e | 9 09 14 |
| | F | 9 26 |
| | **Shawinigan Falls** | |
| | e | 9 04 01 |
| | F | 9 15 |
| | **USCGS** | |
| 362 July 23 | φ = 18 1/2° S. | |
| | λ = 169° E. | |
| | d = 200 km. | |
| | H = 10:26:49 | |
| | **New Hebrides Islands** | |
| | **Ottawa** | |
| | Δ = 97°8 | |
| | P | 10 45 19 C |
| | e | 10 46 48 |
| | PPP | 10 51 56 |
| | e | 10 53 28 |
| | S | 10 56 42 |
| | PS | 10 57 40 |
| | PPS | 11 00.5 |
| | L | 11 20 |
| | F | 12 10 |
| | **Victoria** | |
| | Δ = 91°7 | |
| | P | 10 39 31 c |
| | i | 10 40 09 |
| | pP | 10 40 53 |
| | PP | 10 43 05 |
| | S | 10 49 47 |
| | e$_{1}$S | 10 50 07 |
| | PS | 10 51 34 |
| | PPS | 10 52.5 |
| | SS | 10 56.5 |
| | L | 11 04.5 |
| | F | 11 45 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Saskatoon** | |
| | Δ = 98° | |
| | P | 10 40 25 |
| | PP | 10 44 35 |
| | SKKS | 10 50 43 |
| | S | 10 51 51 |
| | PS | 10 53 10 |
| | PPS | 10 53 36 |
| | SS | 10 58 55 |
| | SSS | 11 02.5 |
| | L | 11 06.4 |
| | F | 12 16 |
| | **Seven Falls** | |
| | Δ = 103°8 | |
| | P | 10 45 24 |
| | e | 10 47 09 |
| | PPP | 10 47 57 |
| | S | 10 57 05 |
| | PS | 10 58 09 |
| | e | 11 01 15 |
| | L | 11 13 |
| | F | 12 29 |
| | **Shawinigan Falls** | |
| | e | 10 45 25 |
| | F | 10 48 |
| | **Victoria (Z)** | |
| 363 July 23 | e | 11 05 05 |
| | F | 11 06 |
| | **USCGS** | |
| 364 July 23 | φ = 38°5 N. | |
| | λ = 26°5 E. | |
| | H = 15:03:30 | |
| | **Near west coast of Turkey** | |
| | **Ottawa** | |
| | Δ = 71°8 | |
| | P | 15 14 52 |
| | e | 15 16 27 |
| | PPP | 15 19 10 |
| | S | 15 24 14 |
| | PS | 15 24 59 |
| | SBS | 15 31.5 |
| | L | 15 36 |
| | F | 16 40 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 364 July 23 (cont'd) | Victoria | |
| | Δ = 88°1 | |
| | M = 7.0 | |
| | P | 15 16 27 |
| | PP | 15 19 52 |
| | S | 15 27 03 |
| | i | 15 27 27 |
| | PPS | 15 29.2 |
| | L | 15 44 |
| | F | 16 40 |
| | Saskatoon | |
| | Δ = 81° | illegible |
| | P | 15 15 50 |
| | PP | 15 19 01 |
| | PPP | 15 20 42 |
| | S | 15 26 01 |
| | PS | 15 26 43 |
| | L | 15 40.4 |
| | F | 16 58 |
| | Halifax | |
| | Δ = 62°1 | |
| | P | 15 14 43 |
| | e | 15 15 09 |
| | PPP | 15 17 23 |
| | S | 15 22 15 |
| | PS | 15 22 45 |
| | e | 15 24 07 |
| | e | 15 25 55 |
| | L | 15 33.2 |
| | F | 16 27 |
| | Seven Falls | |
| | Δ = 66°8 | |
| | M = 7.0 | |
| | P | 15 14 33 |
| | S | 15 23 23 |
| | SKS | 15 24 28 |
| | SS | 15 28 01 |
| | L | 15 34.6 |
| | F | 17 01 |
| | Ottawa (Z) | |
| 365 July 24 | e | 14 58 11 |
| | F | 14 59 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | USCGS | |
| 366 July 25 | H = 3:50:03 | |
| | Marianas Islands | |
| | Victoria (Z) | |
| | e | 4 02 15 |
| | F | 4 03 |
| | USCGS | |
| 367 July 25 | φ = 32° S. | |
| | λ = 111° W. | |
| | H = 11 24 40 | |
| | Pacific Ocean, south of Easter Island | |
| | Ottawa | |
| | i | 11 37 07 |
| | e | 11 47.5 |
| | L | 12 10 |
| | F | 12 20 |
| | Victoria | |
| | Δ = 84°1 | |
| | P | 11 36 53 |
| | S | 11 47 17 |
| | F | 12 05 |
| | Victoria (Z) | |
| 368 July 25 | Δ = 55 km. | |
| | P | 18 40 02.6 d |
| | $P_n$ | 18 40 04.1 |
| | e | 18 40 05.4 |
| | S | 18 40 09.5 |
| | $S_n$ | 18 40 12.3 |
| | F | 18 42 |
| | Victoria (Z) | |
| 369 July 25 | Δ = 55 km. (?) | |
| | $P_1$ | 18 44 29.5 |
| | e | 18 44 32.5 |
| | $S_1$ | 18 44 36.3 |
| | $S_n$ | 18 44 40.2 |
| | F | 18 47 |
| | Ottawa (Z) | |
| 370 July 25 | Δ = 150 km. | |
| | $P_2$ | 22 05 30 |
| | $S_n$ | 22 05 47.5 |
| | $S_2$ | 22 05 50.5 |
| | F | 22 06 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 371 July 26 | e | 7 38 21 |
| | F | 7 40 |
| | USCGS | |
| 372 July 27 | φ = 29° S. | |
| | λ = 177° W. | |
| | H = 15:11:35 | |
| | Kermadec Islands | |
| | Ottawa | |
| | △ = 117°0 | |
| | P' | 15 30 12 |
| | PP | 15 31 30 |
| | PPP | 15 34 01 |
| | e | 15 39 24 |
| | PS | 15 41 08 |
| | SS | 15 48.0 |
| | L | 16 05 |
| | F | 17 30 |
| | Victoria | |
| | △ = 90°6 | |
| | P | 15 24 39 d |
| | e | 15 25 00 |
| | PP | 15 28 21 |
| | SKKS | 15 35 12 |
| | L | 15 54 |
| | F | 16 48 |
| | Halifax | |
| | △ = 126° | |
| | PP | 15 32 25 |
| | e | 15 38 27 |
| | S | 15 40 45 |
| | PS | 15 42 25 |
| | PPS | 15 43 55 |
| | SS | 15 49.5 |
| | L | 16 07.7 |
| | Seven Falls | |
| | PP | 15 31.7 |
| | PS | 15 41 43 |
| | SS | 15 48 51 |
| | L | 16 12 |
| | F | 17 48 |
| | Ottawa (Z) | |
| 373 July 27 | e | 15 40 51 |
| | F | 15 45 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | USCGS | |
| 374 July 28 | φ = 16° S. | |
| | λ = 76° W. | |
| | H = 3:36:28 | |
| | Near coast of Peru | |
| | Ottawa (Z) | |
| | e | 3 46 42 |
| | F | 3 49 |
| | Victoria (Z) | |
| 375 July 28 | e | 19 58 10 |
| | F | 20 00 |
| | Ottawa | |
| 376 July 28 | e | 20 33 35 |
| | L | 20 36.5 |
| | F | 20 45 |
| | Victoria | |
| | △ = 10° | |
| | H = 20:13:44 | |
| | P | 20 16 08 |
| | i | 20 16 27 |
| | S | 20 17 56 |
| | i | 20 18 11 |
| | i | 20 18 34 |
| | L? | 20 18.8 |
| | F | 20 30 |
| | Saskatoon | |
| | e | 20 22 45 |
| | L | 20 23.4 |
| | F | 20 30 |
| | Seven Falls | |
| | L | 20 35 |
| | F | 20 52 |
| | Ottawa (Z) | |
| 377 July 29 | e | 7 20 33 |
| | F | 7 22 |
| | Ottawa (Z) | |
| 378 July 29 | e | 7 23 46 |
| | F | 7 26 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 52

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria (Z)** | |
| 379 July 29 | Δ = 290 km. | |
| | Pn | 11 09 20.0 |
| | e | 11 09 22.2 |
| | P1 | 11 09 27 |
| | e | 11 09 35 |
| | Sn | 11 09 48.6 |
| | e | 11 09 51 |
| | e | 11 09 55.5 |
| | F | 11 14 |
| | **USCGS** | |
| 380 July 29 | H = 21:47:06 Gulf of California | |
| | **Ottawa (Z)** | |
| | L | 22 06 |
| | F | 22 15 |
| | **Seven Falls** | |
| | L | 22 08 |
| | F | 22 32 |
| | **USCGS** | |
| 381 July 30 | φ = 45 1/2° N. λ = 149° E. H = 6:29:34 Kurile Islands | |
| | **Ottawa (Z)** | |
| | e | 6 41 51 |
| | L | 6 47 |
| | **Victoria (Z)** | |
| | i | 6 39 20 c |
| | F | 6 41 |
| | **Victoria (Z)** | |
| 382 July 30 | e | 13 29 06.5 |
| | e | 13 29 24.5 |
| | F | 13 30 |
| | **Ottawa (Z)** | |
| 383 July 30 | e | 15 32 39 |
| | F | 15 34 |
| 384 July 30 | **Ottawa (Z)** | |
| | e | 16 08 32 |
| | F | 16 10 |
| | **Victoria (Z)** | |
| | e | 16 35 10 |
| | F | 16 36 |
| | **Ottawa (Z)** | |
| 385 July 30 | Δ= 305 km. | |
| | Pn | 17 58 33 |
| | P2 | 17 58 36 |
| | Sn | 17 59 05 |
| | S1 | 17 59 18 |
| | F | 18 00 |
| | **Ottawa (Z)** | |
| 386 July 31 | e | 0 02 53 |
| | F | 0 04 |
| | **Victoria** | |
| | e | 0 03 04 |
| | L | 0 21 |
| | F | 0 30 |
| | **Seven Falls** | |
| | L | 0 22 |
| | F | 0 42 |
| | **Ottawa (Z)** | |
| 387 July 31 | e | 7 13 51 |
| | F | 7 15 |

W. G. Milne
Assistant Seismologist

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 53

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | USCGS | |
| 388 Aug. 1 | φ = 19° N. | |
| | λ = 96° W. | |
| | H = 8:03:47 | |
| | Near east coast of Mexico | |
| | Ottawa | |
| | e | 8 10 02 |
| | L | 8 20 |
| | F | 8 40 |
| | Victoria | |
| | L | 8 25 |
| | F | 8 35 |
| | Seven Falls | |
| | e | 8 23 |
| | F | 9 02 |
| | Ottawa (Z) | |
| 389 Aug. 1 | e | 15 38 45 |
| | F | 15 40 |
| | Ottawa (Z) | |
| 390 Aug. 2 | Δ = 150 km. | |
| | $P_n$ | 17 16 05.0 |
| | $P_2$ | 17 16 06.5 |
| | $S_n$ | 17 16 22.0 |
| | e | 17 16 29 |
| | F | 17 17 |
| | Ottawa (Z) | |
| 391 Aug. 3 | e | 20 42 44 |
| | F | 20 44 |
| | Ottawa (Z) | |
| 392 Aug. 3 | Δ = 150 km. | |
| | $P_n$ | 22 10 35.5 |
| | $P_2$ | 22 10 36.5 |
| | $S_n$ | 22 10 53.0 |
| | $S_2$ | 22 10 56.5 |
| | e | 22 11 05 |
| | F | 22 11.5 |
| | Ottawa | |
| 393 Aug. 3 | e | 8 10 15 |
| | L | 8 54 |
| | F | 9 10 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 394 Aug. 4 | e | 7 58 37 |
| | F | 8 02 |
| | Seven Falls | |
| | L | 8 53 |
| | F | 9 18 |
| | Ottawa (Z) | |
| 395 Aug. 5 | Δ = 150 km. | |
| | $iP_n$ | 15 56 57.0 |
| | $iP_2$ | 15 56 59.5 |
| | $iS_n$ | 15 57 14.5 |
| | $iS_2$ | 15 57 18.5 |
| | $iS_1$ | 15 57 21 |
| | F | 15 58 |
| | USCGS | |
| 396 Aug. 5 | H = 19:02:56 | |
| | Central Equador | |
| | Ottawa | |
| | P | 19 11 26 |
| | PP | 19 13 18 |
| | S? | 19 18 38 |
| | Victoria | |
| | iP | 19 13 26 c |
| | F | 19 17 |
| | Seven Falls | |
| | P | 19 11 46 |
| | F | 19 13 |
| | Shawinigan Falls | |
| | P | 19 11 37 |
| | F | 19 13 |
| | USCGS | |
| 397 Aug. 5 | φ = 1° S. | |
| | λ = 78° W. | |
| | H = 19:08:47 | |
| | Central Equador | |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 397 Aug. 5 (cont'd) | **Ottawa** | |
| | Δ = 48°.1 | |
| | M = 7.1 | |
| | iP | 19 17 16 c |
| | i | 19 17 21 |
| | PP | 19 19 12 |
| | S | 19 24 28 |
| | SS | 19 27 36 |
| | L | 19 32.5 |
| | F | 21 10 |
| | **Rolphton** | |
| | Compression; no time | |
| | **Victoria** | |
| | Δ = 64°.0 | |
| | iP | 19 19 16 c |
| | e | 19 21 23 |
| | e | 19 27 40 |
| | S | 19 27 49 |
| | PS | 19 27 59 |
| | e | 19 29 14 |
| | e | 19 31 05 |
| | L | 19 40 |
| | F | 20 39 |
| | **Saskatoon** | |
| | Δ = 58°.8 | |
| | P | 19 18 47 |
| | PP | 19 21 01 |
| | PPP | 19 22 20 |
| | e | 19 26 46 |
| | SNW | 19 26 58 |
| | eNE | 19 27 08 |
| | PS | 19 27 38 |
| | SS | 19 30 58 |
| | L | 19 38.0 |
| | F | 20 50 |
| | **Halifax** | |
| | Δ = 49°.0 | |
| | P | 19 17 25 |
| | e | 19 18 51 |
| | PP | 19 19 25 |
| | S | 19 23 25 |
| | e | 19 27 17 |
| | SS | 19 28 09 |
| | L | 19 32.1 |
| | F | 20 46 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Seven Falls** | |
| | Δ = 49°.2 | |
| | P | 19 17 33 |
| | PP | 19 19 47 |
| | S | 19 24 38 |
| | e | 19 25 33 |
| | L | 19 29.2 |
| | F | 21 56 |
| | **Shawinigan Falls** | |
| | Δ = 48°.1 | |
| | M = 7.1 | |
| | P | 19 17 27 |
| | e | 19 17 32 |
| | PP | 19 19 15 |
| | S | 19 24 24 |
| | F | 19 38 |
| | **Victoria (Z)** | |
| 398 Aug. 5 | Δ = 435 km. | |
| | H = 20:46:38 | |
| | Pn | 20 47 38.0 |
| | i | 20 47 44 |
| | i | 20 47 51 |
| | Sn | 20 48 19.5 |
| | i | 20 48 21.6 |
| | i | 20 48 29 |
| | F | 20 51 |
| | **Victoria (Z)** | |
| 399 Aug. 5 | e | 22 45 04 |
| | F | 22 47 |
| | **Victoria (Z)** | |
| 400 Aug. 5 | Δ = 90 km. | |
| | H = 22:46:43 | |
| | P1 | 22 46 59.0 |
| | S1 | 22 47 09.5 |
| | i | 22 47 13.0 |
| | i | 22 47 15.5 |
| | F | 22 48 |
| | **USCGS** | |
| 401 Aug. 6 | φ = 19° S. | |
| | λ = 174 1/2° W. | |
| | H = 00:35:27 | |
| | Tonga Islands | |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 407 Aug. 7 (cont'd) | Ottawa | |
| | e | 8 22 21 |
| | L | 8 34.5 |
| | F | 8 45 |
| | Saskatoon | |
| | e | 8 22 12 |
| | i | 8 23 31 |
| | F | 8 34 |
| | Saskatoon | |
| 408 Aug. 7 | e | 10 52 27 |
| | L | 11 15 |
| | F | 11 38 |
| | Victoria (Z) local ? | |
| 409 Aug. 7 | iP | 21 55 43 |
| | iS | 21 55 48 |
| | F | 21 56 |
| | USCGS | |
| 410 Aug. 8 | H = 7:05:05<br>Indian Ocean<br>1100 miles east of Madagascar | |
| | Ottawa | |
| | e | 7 28 41 |
| | L | 8 22 |
| | F | 8 40 |
| | Victoria (Z) | |
| | e | 7 29 00 |
| | F | 7 31 |
| | Seven Falls | |
| | L | 8 20 |
| | F | 8 40 |
| | USCGS | |
| 411 Aug. 8 | H = 13:11:42<br>Tonga Islands | |
| | Victoria (Z) | |
| | e | 13 24 11 |
| | F | 13 25 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | USCGS | |
| 412 Aug. 8 | φ = 15° N.<br>λ = 93° W.<br>H = 14:10:29<br>Near south-west coast of Mexico | |
| | Ottawa | |
| | e | 14 17 19 |
| | L | 14 29 |
| | F | 14 45 |
| | Victoria | |
| | e | 14 18 19 |
| | L | 18 36 |
| | F | 14 44 |
| | Seven Falls | |
| | L | 14 32 |
| | F | 14 45 |
| | USCGS | |
| 413 Aug. 8 | φ = 16° S.<br>λ = 75 1/2° W.<br>H = 19:07:18<br>Off coast of southern Peru | |
| | Ottawa (Z) | |
| | e | 19 17 31 |
| | F | 19 19 |
| | Victoria (Z) | |
| | e | 19 18 14 |
| | F | 19 20 |
| | Victoria (Z) | |
| 414 Aug. 8 | Δ = 250 km.<br>H = 23 17 47 | |
| | $P_n$ | 23 17 24.0 |
| | e | 23 17 26.5 |
| | e | 23 17 30.0 |
| | $iS_n$ | 23 17 48.5 |
| | i | 23 17 52 |
| | e | 23 17 56 |
| | e | 23 18 06 |
| | F | 23 19 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 401 Aug. 6 (cont'd) | **Ottawa** | |
| | △ = 104°.2 | |
| | M = 7.4 | |
| | P | 00 49 57 |
| | PP | 00 [illegible] 30 |
| | e | 00 [illegible] 22 |
| | SKS | [illegible] 30 |
| | SKKS | 1 01 02 |
| | S | 1 01 57 |
| | PS | 1 03 55 |
| | PPS | 1 04 12 |
| | e | 1 05 18 |
| | SS | 1 08 35 |
| | SSS | 1 14 |
| | L | 1 26 |
| | F | 3 30 |
| | **Victoria** | |
| | △ = 81°.6 | |
| | iP | 0 47 45 c |
| | PP | 0 50 50 |
| | S | 0 57 52 |
| | e | 0 58 16 |
| | PS? | 0 59 21 |
| | L | 1 12 |
| | F | 2 32 |
| | **Saskatoon** | |
| | △ = 89° | |
| | P | 0 48 46 |
| | PP | 0 52 22 |
| | SKS | 0 59 15 |
| | i | 0 59 38 |
| | i | 1 00 08 |
| | iPS | 1 00 55 |
| | PPS | 1 01 20 |
| | SS | 1 05 40 |
| | L | 0 18.0 |
| | F | 3 25 |
| | **Halifax** | |
| | △ = 117°.5 | |
| | PP | 0 54 30 |
| | PPP | 0 58 02 |
| | SKS | 1 01 06 |
| | SKKS | 1 02 26 |
| | e | 1 03 02 |
| | PS | 1 05 10 |
| | SS | 1 11 14 |
| | SSS | 1 15.2 |
| | L | 1 33.3 |
| | F | 3 54 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Seven Falls** | |
| | △ = 110°.4 | |
| | P diff. | 0 50 16 |
| | P' | 0 53 52 |
| | PP | 0 54 54 |
| | SKS | 1 00 46 |
| | e | 1 01 20 |
| | SKKS | 1 01 50 |
| | S | 1 02 19 |
| | PS | 1 04 24 |
| | PPS | 1 06 04 |
| | SS | 1 09.0 |
| | L | 1 28 |
| | F | 4 29 |
| | **Victoria** | |
| 402 Aug. 6 | P | 1 14 32 |
| | F | 1 27 |
| | **Victoria (Z)** | |
| 403 Aug. 6 | e | 12 09 10 |
| | F | 12 11 |
| | **Victoria (Z)** | |
| 404 Aug. 6 | e | 16 03 20 |
| | F | 16 04 |
| | **Ottawa (Z)** | |
| 405 Aug. 6 | △ = 150 km. | |
| | $P_2$ | 16 27 19.5 |
| | $S_n$ | 16 27 36.5 |
| | e | 16 27 47 |
| | F | 16 28 |
| | **Ottawa (Z)** | |
| 406 Aug. 6 | e | 18 59 51 |
| | F | 19 02 |
| | **USCGS** | |
| 407 Aug. 7 | φ = 50 1/2° N. | |
| | λ = 130° W. | |
| | Off coast of British Columbia | |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 57

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 415 Aug. 9 | Victoria (Z) | |
| | Δ = 173 km. | |
| | H = 1:36:17 | |
| | Pn | 1 36 44.5 |
| | e | 1 36 46 |
| | e | 1 36 47.4 |
| | Sn | 1 37 02.5 |
| | e | 1 37 04 |
| | e | 1 37 07.5 |
| | F | 1 37 |
| 416 Aug. 9 | Victoria (Z) | |
| | Δ = 55 km. | |
| | H = 14:28:33 | |
| | P1 | 14 28 43.6 |
| | i | 14 28 44.0 |
| | Pn | 14 28 45.5 |
| | S1 | 14 28 49 |
| | Sn | 14 28 52.5 |
| | F | 14 31 |
| 417 Aug. 10 | Ottawa (Z) | |
| | e | 3 29 13 |
| | F | 3 30 |
| 418 Aug. 10 | USCGS | |
| | φ = 87° N. | |
| | λ = 60° E. | |
| | H = 13:45:15 | |
| | North Polar region | |
| | Victoria (Z) | |
| | e | 13 53 32 |
| | F | 13 55 |
| 419 Aug. 10 | Ottawa (Z) | |
| | Δ = 150 km. | |
| | Pn | 18 48 09 |
| | P2 | 18 48 11 |
| | Sn | 18 48 26 |
| | e | 18 48 34 |
| | F | 18 49 |
| 420 Aug. 10 | USCGS | |
| | φ = 87° N. | |
| | λ = 60° E. | |
| | H = 20:33:47 | |
| | North Polar region | |
| | Ottawa (Z) | |
| | e | 20 42 25 |
| | F | 20 44 |
| | Victoria (Z) | |
| | e e | 20 42 04 |
| | F | 20 42 |
| 421 Aug. 11 | USCGS | |
| | φ = 1° S. | |
| | λ = 78° W. | |
| | H = 3:13:17 | |
| | Central Equador | |
| | Victoria (Z) | |
| | e | 3 23 46 |
| | F | 3 25 |
| 422 Aug. 11 | USCGS | |
| | φ = 15° N. | |
| | λ = 93° W. | |
| | H = 13:49:53 | |
| | Near south-west coast of Mexico | |
| | Ottawa | |
| | e | 13 56 40 |
| | L | 14 10 |
| | F | 14 17 |
| | Victoria (Z) | |
| | e | 13 57 43 |
| | F | 14 01 |
| | Seven Falls | |
| | L | 14 10 |
| | F | 14 21 |
| 423 Aug. 11 | USCGS | |
| | φ = 45° N. | |
| | λ = 29° W. | |
| | H = 14:40:36 | |
| | North Atlantic Ocean. 400 miles north of the Azores | |
| | Ottawa | |
| | e | 14 47 10 |
| | L | 14 58 |
| | F | 15 05 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Seven Falls | |
| 423 Aug. 11 (cont'd) | L | 14 56 |
| | F | 15 01 |
| | USCGS | |
| 424 Aug. 11 | H = 15:00:43 | |
| | Samoa Islands | |
| | Victoria (Z) | |
| | e | 15 12 38 |
| | F | 15 15 |
| | Ottawa (Z) | |
| 425 Aug. 11 | Δ = 150 km. | |
| | Pn | 14 56 01 |
| | P2 | 14 56 02.5 |
| | Sn | 14 56 18 |
| | e | 14 56 26 |
| | F | 14 57 |
| | Victoria (Z) | |
| 426 Aug. 12 | Δ = 134 km. | |
| | iPn | 20 34 44.0 |
| | i | 20 34 45.5 |
| | i | 20 34 48.5 |
| | iSn | 20 34 59.0 |
| | ? | 20 35 04 |
| | F | 20 37 |
| | Victoria (Z) | |
| 427 Aug. 12 | Δ = 110 km. | |
| | Pn | 22 12 49.6 |
| | Sn | 22 13 02.0 |
| | e | 22 13 04.0 |
| | S1 | 22 13 07.5 |
| | F | 22 14 |
| | Ottawa (Z) | |
| 428 Aug. 12 | e | 23 04 23 |
| | F | 23 06 |
| | Victoria | |
| | e | 23 38.6 |
| | F | 23 55 |
| | Seven Falls | |
| | L | 0 16 |
| | F | 0 35 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Victoria (Z) | |
| 429 Aug. 13 | Δ = 127 km. | |
| | P2 | 0 08 34.5 |
| | e | 0 08 39.4 |
| | S2 | 0 08 44 |
| | Sn | 0 08 43.5 |
| | F | 0 10 |
| | Victoria (Z) | |
| 430 Aug. 13 | Δ = 127 km. | |
| | Pn | 0 39 09 |
| | e | 0 39 14.0 |
| | Sn | 0 39 22.5 |
| | F | 0 41 |
| | Ottawa (Z) | |
| 431 Aug. 13 | e | 0 51 06 |
| | F | 0 52 |
| | Ottawa (Z) | |
| 432 Aug. 13 | Δ = 150 km. | |
| | Pn | 16 11 49 |
| | P2 | 16 11 51 |
| | Sn | 16 12 05.5 |
| | S2 | 16 12 09 |
| | F | 16 13 |
| | USCGS | |
| 433 Aug. 13 | φ = 0° | |
| | λ = 146° E. | |
| | H = 18:24:49 | |
| | Admiralty Islands | |
| | Ottawa | |
| | Δ = 118°1 | |
| | P' | 18 43 46 |
| | i | 18 45 12 |
| | e | 18 54 10 |
| | PS | 18 55 05 |
| | SS | 19 01.3 |
| | L | 19 18.5 |
| | F | 20 45 |
| | Victoria | |
| | Δ = 89°5 | |
| | P | 18 37 52 |
| | SKS | 18 48 27 |
| | S | 18 48 52 |
| | PS | 18 49 56 |
| | L | 19 06 |
| | F | 20 01 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s | |
|---|---|---|---|
| | **Halifax** | | |
| 433 Aug. 13 (cont'd) | e | 18 53 42 | |
| | e | 18 56 02 | |
| | L | 19 15.6 | |
| | F | 20 50 | |
| | **Seven Falls** | | |
| | e | 18 48.0 | |
| | e | 18 55 17 | |
| | e | 19 01 34 | |
| | e | 19 07.0 | |
| | L | 19 22 | |
| | F | 21 02 | |
| | **Ottawa (Z)** | | |
| 434 Aug. 14 | e | 20 42 33 | |
| | F | 20 44 | |
| | **Victoria (Z)** | | |
| 435 Aug. 15 | Δ = 355 km. | | |
| | $P_n$ | 16 01 21.3 | |
| | i | 16 01 23.5 | |
| | $S_n$ | 16 01 57.5 | |
| | F | 16 04 | |
| | **Victoria (Z)** | | |
| 436 Aug. 16 | Δ = 100 km. | | |
| | $P_n$ | 3 30 54 | |
| | $P_l$ | 3 30 58.5 | c |
| | $S_n$ | 3 31 06.0 | |
| | e | 3 31 08.0 | |
| | S | 3 31 11.0 | |
| | F | 3 33 | |
| | **Victoria** | | |
| 437 Aug. 16 | Δ = 170 km. | | |
| | iP | 5 46 06.0 | d |
| | iS | 5 46 23.5 | |
| | F | 5 47 | |
| | **USCGS** | | |
| 438 Aug. 17 | φ = 43° N. | | |
| | λ = 146° E. | | |
| | d = 100 km. | | |
| | H = 18:34:07 | | |
| | Near east coast of Hokkaido Japan | | |

| NO. AND DATE | PHASE | TIME h m s | |
|---|---|---|---|
| | **Ottawa** | | |
| | P | 18 46 34 | |
| | S? | 18 56 48 | |
| | **Victoria** | | |
| | Δ = 56° | | |
| | iP | 18 44 09 | c |
| | i | 18 44 27 | |
| | S | 18 52 19 | |
| | e | 18 53 53 | |
| | **Saskatoon** | | |
| | e | 18 51 33 | |
| | i | 18 53 50 | |
| | **Seven Falls** | | |
| | e | 18 46 27 | |
| | F | 18 49 | |
| | **Shawinigan Falls** | | |
| | e | 18 46 36 | |
| | F | 18 49 | |
| | **USCGS** | | |
| 439 Aug. 17 | φ = 39° N. | | |
| | λ = 40° E. | | |
| | H = 18:44:15 | | |
| | Eastern Turkey | | |
| | **Ottawa** | | |
| | P | 18 56 18 | |
| | S | 19 06 10 | |
| | e | 19 06 46 | |
| | L | 19 19 | |
| | F | 21 05 | |
| | **Victoria** | | |
| | Δ = 88° | | |
| | iP | 18 57 24 | c |
| | iS | 19 07 56 | |
| | PPS | 19 09 31 | |
| | SS | 19 14 43 | |
| | L | 19 29.6 | |
| | F | 21 20 | |
| | **Saskatoon** | | |
| | S | 19 07 20 | |
| | PPS | 19 08 58 | |
| | L | 19 28.4 | |
| | F | 21 30 | |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Halifax** | |
| 439 Aug. 17 (cont'd) | Δ = 74° | |
| | P? | 18 55 45 |
| | S | 19 05 05 |
| | SS | 19 09 39 |
| | SSS | 19 13 05 |
| | L | 19 17 |
| | F | 21 00 |
| | **Seven Falls** | |
| | Δ = 74°5 | |
| | P | 18 55 54 |
| | S | 19 05 28 |
| | SS | 19 11.1 |
| | L | 19 21 |
| | F | 22 08 |
| | **Shawinigan Falls** | |
| | e | 18 56 01 |
| | F | 19 00 |
| | **Victoria (Z)** | |
| 440 Aug. 18 | e | 2 33 03 |
| | F | 2 34 |
| | **Victoria (Z)** | |
| 441 Aug. 18 | Δ = 180 km. | |
| | $iP_n$ | 8 04 57.5 d |
| | i | 8 05 01.0 |
| | i | 8 05 11.0 |
| | $S_n$ | 8 05 16.5 |
| | i | 8 05 19 |
| | F | 8 07 |
| | **USCGS** | |
| 442 Aug. 18 | H = 9:57:25 | |
| | Bonin Islands | |
| | **Victoria (Z)** | |
| | i | 10 09 02 c |
| | F | 10 12 |
| | **USCGS** | |
| 443 Aug. 18 | φ = 8 1/2° N. | |
| | λ = 82 1/2° W. | |
| | H = 13:33:25 | |
| | Near southwest coast of Panama | |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa** | |
| | e? | 13 40 39 |
| | S | 13 46.5 |
| | F | 14 20 |
| | **Victoria** | |
| | iP | 13 42 38c |
| | L | 13 59 |
| | F | 14 42 |
| | **Saskatoon** | |
| | e | 13 48 59 |
| | e | 13 52 13 |
| | L | 13 59.4 |
| | F | 14 56 |
| | **Seven Falls** | |
| | Δ = 52°6 | |
| | P | 13 42 46 |
| | e | 13 47 07 |
| | S | 13 50 10 |
| | L | 13 54 |
| | F | 14 47 |
| | **Victoria (Z)** | |
| 444 Aug. 18 | e | 20 37 55 |
| | F | 20 39 |
| | **USCGS** | |
| 445 Aug. 19 | H = 8:25:16 | |
| | Tonga Islands | |
| | **Victoria (Z)** | |
| | i | 8 37 44 c |
| | F | 8 40 |
| | **Victoria (Z)** | |
| 446 Aug. 19 | iP | 19 09 12.5c |
| | i | 19 09 18 |
| | F | 19 12 |
| | **Victoria (Z)** | |
| 447 Aug. 19 | e | 19 23 28 |
| | F | 19 24 |
| | **Victoria (Z)** | |
| 448 Aug. 19 | e | 19 40 11.0 |
| | i | 19 40 16.5 |
| | F | 19 43 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 61

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Victoria (Z) | |
| 449 Aug. 19 | i | 20 25 11.0 |
| | i | 20 25 17.0 |
| | F | 20 28 |
| | Victoria (Z) | |
| 450 Aug. 19 | Δ = 150 km. | |
| | iPn | 20 58 59.0 |
| | i | 20 59 01.5 |
| | e | 20 59 04 |
| | $S_n$ | 20 59 10 |
| | e | 20 59 15 |
| | F | 21 00 |
| | Victoria (Z) | |
| 451 Aug. 19 | iP | 23 24 14.0 c |
| | i | 23 24 19 |
| | e | 23 24 34 |
| | F | 23 27 |
| | Victoria (Z) | |
| 452 Aug. 19 | iP | 23 59 12.5 c |
| | i | 23 59 18.5 |
| | e | 23 59 32 |
| | e | 23 59 34 |
| | F | 0 01 |
| | USCGS | |
| 453 Aug. 21 | H = 8:33:34 Tonga Islands | |
| | Victoria (Z) | |
| | e | 8 45 51 |
| | F | 8 46 |
| | USCGS | |
| 454 Aug. 21 | H = 8:45:52 Tonga Islands | |
| | Victoria (Z) | |
| | e | 8 58 26 |
| | F | 8 59 |
| | Victoria (Z) | |
| 455 Aug. 21 | e | 15 44 26 |
| | F | 15 46 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 456 Aug. 21 | e | 9 11 06 |
| | e | 9 11 15 |
| | F | 9 12 |
| | Ottawa (Z) | |
| 457 Aug. 21 | Δ = 150 km. | |
| | Pn | 17 52 20.0 |
| | $P_2$ | 17 52 22.5 |
| | Sn | 17 52 37.5 |
| | e | 17 52 45 |
| | F | 17 53 |
| | USCGS | |
| 458 Aug. 21 | φ = 10 1/2° N. | |
| | λ = 62 1/2° W. | |
| | H = 20:33:20 | |
| | Near coast of Venezuala | |
| | Ottawa (Z) | |
| | e | 20 40 30 |
| | F | 20 46 |
| | Victoria (Z) | |
| | e | 20 43 49 |
| | F | 20 47 |
| | USCGS | |
| 459 Aug. 21 | H = 20:45:03 Off coast of British Columbia | |
| | Victoria (Z) | |
| | e | 20 50 26 |
| | F | 20 52 |
| | USCGS | |
| 460 Aug. 22 | H = 3:16:33 New Britain region | |
| | Ottawa (Z) | |
| | e | 3 35 26 |
| | F | 3 37 |
| | Victoria (Z) | |
| | e | 3 29 29 |
| | F | 3 31 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 62

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 461 Aug. 22 | USCGS | |
| | φ = 54°.2 N. | |
| | λ = 133°.5 W. | |
| | H = 4:01:12 | |
| | Queen Charlotte Islands | |
| | Ottawa | |
| | Δ = 37°.2 | |
| | M = 8.0 | |
| | iP | 4 08 26c |
| | PP | 4 09 55 |
| | PcP | 4 10 40 |
| | S | 4 14 16 |
| | G | 4 14 18 |
| | F | 9 20 |
| | Victoria | |
| | iP | 4 03 09.5c |
| | i | 4 03 12.0 |
| | S? | 4 04 15 |
| | Saskatoon | |
| | iP | 4 04 57 |
| | i | 4 05 15 |
| | i | 4 06 12 |
| | F | 9 35 |
| | Halifax | |
| | Δ = 46° | |
| | P | 4 09 32 |
| | PP | 4 11 26 |
| | e | 4 12 10 |
| | S | 4 16 10 |
| | PS | 4 16 38 |
| | SS | 4 19 34 |
| | G | 4 20 50 |
| | F | 9 40 |
| | Seven Falls | |
| | Δ = 39° | |
| | P | 4 08 42 d |
| | PP | 4 10 21 |
| | e | 4 11 07 |
| | S | 4 14 39 |
| | SS | 4 17.6 |
| | L | 4 22 |
| | F | 9 50 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Shawinigan Falls | |
| | Δ = 38°.0 | |
| | M = 7.9 | |
| | P | 4 08 35 c |
| | PP | 4 10 01 |
| | PcP | 4 10 36 |
| | e | 4 13 00 |
| | S | 4 14 25 |
| | G | 4 17 32 |
| | ScS? | 4 18 43 |
| | USCGS | |
| 462 | H = 6:16:45 | |
| Aug. | Off British Columbia | |
| 22 | Ottawa (Z) | |
| | e | 6 00 56 |
| | F | 6 02 |
| | Ottawa (Z) | |
| 463 | i | 6 24 06 |
| Aug. | e | 6 24 36 |
| 22 | L | 6 35 |
| | F | 6 40 |
| | Seven Falls | |
| | L | 6 38 |
| | F | 6 43 |
| | Shawinigan Falls | |
| | L | 6 38 |
| | F | 6 43 |
| | USCGS | |
| 464 | H = 6:31:00 | |
| Aug. | Aleutians | |
| 22 | Ottawa (Z) | |
| | e | 6 41 28 |
| | F | 6 47 |
| | USCGS | |
| 465 | H = 7:11:35 | |
| Aug. | Near coast of northern Chile | |
| 22 | Ottawa (Z) | |
| | e | 7 21 56 |
| | F | 7 23 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 63

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 466 Aug. 22 | e | 8 22 34 |
| | F | 8 23 |
| | Ottawa (Z) | |
| 467 Aug. 22 | e | 8 25 53 |
| | F | 8 27 |
| | USCGS | |
| 468 Aug. 22 | H = 8:51:15 South Atlantic Ocean | |
| | Ottawa (Z) | |
| | e | 9 22 36 |
| | F | 9 23 |
| | Shawinigan Falls | |
| | e | 9 35.6 |
| | F | 9 38 |
| | USCGS | |
| 469 Aug. 22 | H = 12:21:43 Off British Columbia | |
| | Ottawa (Z) | |
| | e | 12 29 07 |
| | L | 12 42 |
| | F | 12 46 |
| | Victoria | |
| | S? | 12 28 01 |
| | F | 12 44 |
| | Saskatoon | |
| | i | 12 31 07 |
| | i | 12 31 38 |
| | e | 12 33 35 |
| | F | 12 50 |
| | Shawinigan Falls | |
| | e | 12 42 |
| | F | 12 45 |
| | Victoria | |
| | e | 13 28.8 |
| | F | 13 32 |
| | USCGS | |
| 471 Aug. 22 | H = 13:40:24 Off British Columbia | |
| | Ottawa (Z) | |
| | e | 13 47 38 |
| | L | 14 00 |
| | F | 14 04 |
| | Victoria | |
| | e | 13 44 39 |
| | F | 13 50 |
| | Saskatoon | |
| | e | 13 49 21 |
| | F | 13 58.5 |
| | Seven Falls | |
| | L | 14 01.0 |
| | F | 14 12 |
| | Shawinigan Falls | |
| | e | 14 00 |
| | F | 14 03 |
| | Ottawa (Z) | |
| 472 Aug. 22 | e | 15 04 56 |
| | F | 15 06 |
| | Victoria | |
| 473 Aug. 22 | e | 17 45 22 |
| | F | 17 46 |
| | Ottawa (Z) | |
| 474 Aug. 22 | L | 20 05 |
| | F | 20 10 |
| | Victoria | |
| | P? | 19 48 01 |
| | S? | 19 50 10 |
| | F | 19 55 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 474 Aug. 22 (cont'd) | Saskatoon | |
| | i | 19 54 25 |
| | F | 19 57 |
| | Shawinigan Falls | |
| | e | 20 05 |
| | F | 20 08 |
| | USCGS | |
| 475 Aug. 22 | H = 20:26:00 Ascension Islands | |
| | Ottawa (Z) | |
| | i | 20 38 30 |
| | F | 20 41 |
| | Victoria | |
| 476 Aug. 22 | e | 21 45 |
| | F | 21 47 |
| | Victoria (Z) | |
| 477 Aug. 23 | P? | 0 38 43 |
| | S? | 0 39 16 |
| | L | 0 41 19 |
| | F | 0 43 |
| | Victoria (Z) | |
| 478 Aug. 23 | P? | 1 01 32 |
| | S? | 1 03 16 |
| | F | 1 06 |
| | USCGS | |
| 479 Aug. 23 | H = 2:59:29 Off British Columbia | |
| | Ottawa | |
| | e | 3 06 22 |
| | L | 3 18.6 |
| | F | 3 25 |
| | Victoria | |
| | $P_n$ | 3 01 23 |
| | i | 3 01 27.0 |
| | $S_n$ | 3 03 10.5 |
| | i | 3 03 45 |
| | G | 3 04 32 |
| | F | 3 15 |
| | Saskatoon | |
| | e | 3 22 29 |
| | F | 3 31 |
| | Seven Falls | |
| | L | 3 20 |
| | F | 3 34 |
| | Shawinigan Falls | |
| | L | 3 19 |
| | F | 3 23. |
| | Victoria (Z) | |
| 480 Aug. 23 | P | 10 45 59 |
| | S | 10 47 43 |
| | i | 10 47 58 |
| | F | 10 49 |
| | Victoria (Z) | |
| 481 Aug. 23 | P | 12 59 49 |
| | e | 13 00 16 |
| | S | 13 01 33 |
| | e | 13 01 49 |
| | F | 13 04 |
| | Victoria | |
| 482 Aug. 23 | P | 14 17 05 |
| | e | 14 17 39 |
| | S | 14 18 50 |
| | e | 14 19 29 |
| | F | 14 23 |
| | USCGS | |
| 483 Aug. 23 | H = 15:13:20 Coast of South Peru | |
| | Ottawa | |
| | e | 15 23 46 |
| | e | 15 32 07 |
| | L | 15 40 |
| | F | 16 08 |
| | Victoria | |
| | P | 15 25 31 d |
| | S? | 15 35 31 |
| | e | 15 43 51 |
| | L | 15 55 |
| | F | 16 06 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Saskatoon** | |
| 483 Aug. 23 | e | 15 34 18 |
| | e | 15 45 24 |
| | e | 15 49 54 |
| | L | 15 57 |
| | F | 16 06 |
| | **Seven Falls** | |
| | e | 15 31 30 |
| | L | 15 43 |
| | F | 16 05 |
| | **Victoria** | |
| 484 Aug. 23 | e | 19 41 26 |
| | e | 19 41 42 |
| | F | 19 44 |
| | **Saskatoon** | |
| | e | 19 45 46 |
| | L | 19 47 30 |
| | **USCGS** | |
| 485 Aug. 23 | H = 19:43:35 Off British Columbia | |
| | **Ottawa** | |
| | P | 19 50 46 |
| | S | 19 57 12 |
| | L | 20 03 |
| | F | 20 30 |
| | **Victoria** | |
| | P | 19 46 26 d? |
| | i | 19 47 24 |
| | iS | 19 48 02 |
| | G | 19 48.5 |
| | F | 20 05 |
| | **Saskatoon** | |
| | Δ = 11° | |
| | P | 19 47 57 |
| | PP | 19 48 30 |
| | S | 19 51 45 |
| | G | 19 52.4 |
| | F | 20 05 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Halifax** | |
| | e | 20 00 50 |
| | e | 20 01 16 |
| | L | 20 06 52 |
| | F | 20 25 |
| | **Seven Falls** | |
| | P | 19 57 58 |
| | e | 20 03 44 |
| | S | 20 04 06 |
| | F | 20 28 |
| | **Shawinigan Falls** | |
| | L | 20 03 |
| | F | 20 11 |
| | **USCGS** | |
| 486 Aug. 23 | φ = 53° N. | |
| | λ = 132° W. | |
| | H = 20:24:32 | |
| | **Queen Charlotte Islands** | |
| | **Ottawa** | |
| | Δ = 36°8 | |
| | P | 20 31 41 d |
| | i | 20 31 46 |
| | ePP | 20 33 04 |
| | PcP? | 20 34 03 |
| | eS? | 20 37 30 |
| | iS | 20 37 37 |
| | e | 20 42 00 |
| | L | 20 44 |
| | F | 23 00 |
| | **Victoria** | |
| | iP | 20 26 18 d |
| | i | 20 26 43 |
| | e | 20 27 21 |
| | iS | 20 27 49 |
| | G | 20 28.5 |
| | F | 23 00 |
| | i | 20 28 02 |
| | **Saskatoon** | |
| | Δ = 11° | |
| | P | 20 28 16 |
| | PP | 20 28 28 |
| | S | 20 31 18 |
| | G | 20 32.3 |
| | F | 23 50 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 486 Aug. 23 | **Halifax** | |
| | Δ = 44°5 | |
| | P | 20 32 47 |
| | PP | 20 34 30 |
| | S | 20 39 27 |
| | e | 20 40 53 |
| | SS | 20 42.8 |
| | L | 20 47.0 |
| | F | 22 25 |
| | **Seven Falls** | |
| | Δ = 38°8 | |
| | P | 20 31 59 c |
| | PP | 20 33 26 |
| | S | 20 38 04 |
| | SS | 20 41 06 |
| | L | 20 44.2 |
| | F | 23 30 |
| | **Shawinigan Falls** | |
| | Δ = 38°0 | |
| | P | 20 31 53 |
| | eS | 20 37 15 |
| | iS | 20 37 50 |
| | G | 20 40 31 |
| | F | 20 50 |
| | **Saskatoon** | |
| 487 Aug. 23 | S | 21 42 02 |
| | L | 21 43 41 |
| | F | 21 56 |
| | **Saskatoon** | |
| 488 Aug. 23 | S | 21 42 01 |
| | e | 21 42 54 |
| | L | 21 43.8 |
| | F | 21 51 |
| | **Ottawa (Z)** | |
| 489 Aug. 23 | e | 22 16 58 |
| | F | 22 18 |
| | **Victoria (Z)** | |
| 490 Aug. 23 | e | 22 54 43 |
| | F | 22 56 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria (Z)** | |
| 491 Aug. 23 | e | 23 32 35 |
| | F | 23 35 |
| | **Victoria (Z)** | |
| 492 Aug. 23 | e | 23 46 41 |
| | F | 23 49 |
| | **USCGS** | |
| 493 Aug. 24 | H = 2:37:32 | |
| | Off British Columbia | |
| | **Ottawa** | |
| | L | 2 58.5 |
| | F | 3 03 |
| | **Victoria** | |
| | $P_n$ | 2 39 16 |
| | e | 2 39 33 |
| | $S_n$ | 2 41 00 |
| | F | 2 45 |
| | **Saskatoon** | |
| | S | 2 46 02 |
| | e | 2 46 26 |
| | L | 2 47.7 |
| | F | 2 54 |
| | **Seven Falls** | |
| | L | 2 59 |
| | F | 3 05 |
| | **Victoria (Z)** | |
| 494 Aug. 24 | e | 2 46 08 |
| | F | 2 49 |
| | **Victoria (Z)** | |
| 495 Aug. 24 | e | 3 33 53 |
| | F | 3 35 |
| | **USCGS** | |
| 496 Aug. 24 | φ = 43 1/2° N. | |
| | λ = 127° W. | |
| | H = 6:07:14 | |
| | Off coast of Oregon | |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 496 Aug. 24 (cont'd) | **Ottawa** | |
| | e | 6 14 19 |
| | L | 6 26 |
| | F | 6 46 |
| | **Victoria** | |
| | Δ = 6.80 km. | |
| | P | 6 08 41.0d? |
| | i | 6 08 46.5 |
| | i | 6 08 54.0 |
| | i | 6 09 05.0 |
| | i | 6 09 23.5 |
| | S | 6 09 44 |
| | i | 6 09 48 |
| | i | 6 10 00 |
| | i | 6 10 42 |
| | F | 6 21 |
| | **Saskatoon** | |
| | S | 6 11 06 |
| | e | 6 11 43 |
| | e | 6 14 13 |
| | L | 6 15.9 |
| | F | 6 28 |
| | **Seven Falls** | |
| | e | 6 20 53 |
| | L | 6 28 |
| | F | 6 55 |
| | **USCGS** | |
| 497 Aug. 24 | φ = 22° S. | |
| | λ = 176° W. | |
| | d = 100 km. | |
| | H = 6:25:43 | |
| | Tonga Islands | |
| | **Ottawa (Z)** | |
| | e | 6 44 13 |
| | F | 6 45 |
| | **Victoria (Z)** | |
| | e | 6 38 12 |
| | e | 6 38 37 |
| | F | 6 40 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **USCGS** | |
| | φ = 9° S. | |
| | λ = 109° W. | |
| | H = 19:22:02 | |
| | 1200 miles south of Easter Islands | |
| | **Ottawa (Z)** | |
| | e | 9 27 10 |
| | F | 9 28 |
| | **Victoria** | |
| | P | 9 21 51 |
| | e | 9 24 02 |
| | F | 9 29 |
| | **Saskatoon** | |
| | e | 9 28 28 |
| | L | 9 29.4 |
| | F | 9 32 |
| | **Ottawa** | |
| 499 Aug. 24 | e | 9 32 22 |
| | e | 9 39 25 |
| | L | 9 57 |
| | F | 10 03 |
| | **Victoria** | |
| | e | 9 32 04 |
| | F | 9 34 |
| | **Saskatoon** | |
| | L | 9 52 |
| | F | 10 00 |
| | **Seven Falls** | |
| | e | 9 40 05 |
| | e | 9 40 47 |
| | L | 9 56 |
| | F | 10 07 |
| | **Shawinigan Falls** | |
| | e | 9 32 52 |
| | F | 9 35 |
| | **Victoria (Z)** | |
| 500 Aug. 24 | e | 10 25 00 |
| | F | 10 26 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria (Z)** | |
| 501 Aug. 24 | e | 10 31 04 |
| | e | 10 31 53 |
| | e | 10 32 09 |
| | F | 10 36 |
| | **Victoria (Z)** | |
| 502 Aug. 24 | e | 10 42 44 |
| | F | 10 45 |
| | **Ottawa (Z)** | |
| 503 Aug. 24 | e | 10 58 07 |
| | F | 10 59 |
| | **Victoria (Z)** | |
| 504 Aug. 24 | i | 12 44 31 |
| | i | 12 46 14 |
| | e | 12 47 05 |
| | F | 12 50 |
| | **USCGS** | |
| 505 Aug. 24 | H = 12:52:45 Samoa Islands | |
| | **Victoria (Z)** | |
| | i | 13 04 43 d |
| | F | 13 06 |
| | **Ottawa (Z)** | |
| 506 Aug. 24 | Δ = 150 km. | |
| | $P_n$ | 18 26 51.2 |
| | i | 18 26 53 |
| | $S_n$ | 18 27 09.0 |
| | i | 18 27 12 |
| | e | 18 27 17 |
| | F | 18 27.5 |
| | **Ottawa (Z)** | |
| 507 Aug. 24 | e | 21 58 47 |
| | F | 21 59 |
| | **Victoria (Z)** | |
| | P | 21 53 47 |
| | e | 21 54 14 |
| | S | 21 55 30 |
| | e | 21 56 12 |
| | F | 22 00 |
| | **Shawinigan Falls** | |
| | L | 22 12 |
| | F | 22 14 |
| | **Victoria (Z)** | |
| 508 Aug. 24 | P | 22 13 02 |
| | S | 22 14 45 |
| | F | 22 18 |
| | **USCGS** | |
| 509 Aug. 24 | H = 22:37:13 Off British Columbia | |
| | **Ottawa (Z)** | |
| | e | 22 44 24 |
| | e | 22 46 47 |
| | L | 22 57 |
| | F | 23 06 |
| | **Victoria** | |
| | P | 22 38 57 |
| | i | 22 39 12 |
| | i | 22 39 25 |
| | S | 22 40 55 |
| | i | 22 41 27 |
| | F | 22 49 |
| | **Saskatoon** | |
| | S | 22 45 38 |
| | L | 22 46.7 |
| | F | 22 58 |
| | **Seven Falls** | |
| | L | 22 57.5 |
| | F | 23 12 |
| | **Shawinigan Falls** | |
| | L | 22 56 |
| | F | 23 01 |
| | **Rolphton** | |
| | L | 22 55.8 |
| | F | 23 02 |
| | **Ottawa (Z)** | |
| 510 Aug. 25 | e | 2 34 05 |
| | F | 2 35 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 511 Aug. 25 | USCGS | |
| | φ = 52 1/2° N. | |
| | λ = 178° W. | |
| | H = 4:14:25 | |
| | d greater than normal | |
| | Aleutian Islands | |
| | Ottawa | |
| | iP | 4 24 48 c |
| | L | 4 45 |
| | F | 5 54 |
| | Victoria | |
| | P | 4 21 19 c |
| | e | 4 22 30 |
| | i | 4 23 48 |
| | S | 4 26 56 |
| | e | 4 31 33 |
| | F | 4 44 |
| | Seven Falls | |
| | e | 4 24 55 |
| | L | 4 40.8 |
| | F | 5 10 |
| | Rolphton | |
| | i | 4 24 37 c |
| | Victoria (Z) | |
| 512 Aug. 25 | e | 11 53 48 |
| | F | 11 55 |
| | Ottawa (Z) | |
| 513 Aug 25 | e | 16 53 07 |
| | F | 16 54 |
| | USCGS | |
| 514 Aug 25 | H = 18:33:07 | |
| | Near coast of northern Chile | |
| | Ottawa (Z) | |
| | e | 18 43 44 |
| | F | 18 45 |
| | Victoria (Z) | |
| | e | 18 45 35 |
| | F | 18 47 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 515 Aug. 25 | e | 23 45 02 |
| | e | 23 48 21 |
| | F | 23 58 |
| | Victoria | |
| | P | 23 44 06 |
| | S | 23 50 25 |
| | F | 0 10 |
| | Saskatoon | |
| | e | 23 44 35 |
| | e | 23 51 00 |
| | e | 23 52 15 |
| | F | 0 03 |
| | Shawinigan Falls | |
| | e | 23 48 23 |
| | F | 23 52 |
| | Rolphton | |
| | e | 23 44 57 |
| | i | 23 48 15 |
| | F | 23 54 |
| | Victoria (Z) | |
| 516 Aug. 26 | e | 0 35 15 |
| | F | 0 36 |
| | USCGS | |
| 517 Aug. 26 | H = 5:26:00 | |
| | Off British Columbia | |
| | Ottawa | |
| | e | 5 33 20 |
| | L | 5 46 |
| | F | 6 01 |
| | Victoria | |
| | P | 5 28 30 |
| | e | 5 28 39 |
| | S | 5 30 57 |
| | e | 5 31 27 |
| | e | 5 31 33 |
| | F | 5 38 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 511 Aug. 25 | USCGS | |
| | φ = 52 1/2° N. | |
| | λ = 178° W. | |
| | H = 4:14:25 | |
| | d greater than normal | |
| | Aleutian Islands | |
| | Ottawa | |
| | iP | 4 24 48 c |
| | L | 4 45 |
| | F | 5 54 |
| | Victoria | |
| | P | 4 21 19 c |
| | e | 4 22 30 |
| | i | 4 23 48 |
| | S | 4 26 56 |
| | e | 4 31 33 |
| | F | 4 44 |
| | Seven Falls | |
| | e | 4 24 55 |
| | L | 4 40.8 |
| | F | 5 10 |
| | Rolphton | |
| | i | 4 24 37 c |
| | Victoria (Z) | |
| 512 Aug. 25 | e | 11 53 48 |
| | F | 11 55 |
| | Ottawa (Z) | |
| 513 Aug 25 | e | 16 53 07 |
| | F | 16 54 |
| | USCGS | |
| 514 Aug 25 | H = 18:33:07 | |
| | Near coast of northern Chile | |
| | Ottawa (Z) | |
| | e | 18 43 44 |
| | F | 18 45 |
| | Victoria (Z) | |
| | e | 18 45 35 |
| | F | 18 47 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa (Z) | |
| 515 Aug. 25 | e | 23 45 02 |
| | e | 23 48 21 |
| | F | 23 58 |
| | Victoria | |
| | P | 23 44 06 |
| | S | 23 50 25 |
| | F | 0 10 |
| | Saskatoon | |
| | e | 23 44 35 |
| | e | 23 51 00 |
| | e | 23 52 15 |
| | F | 0 03 |
| | Shawinigan Falls | |
| | e | 23 48 23 |
| | F | 23 52 |
| | Rolphton | |
| | e | 23 44 57 |
| | i | 23 48 15 |
| | F | 23 54 |
| | Victoria (Z) | |
| 516 Aug. 26 | e | 0 35 15 |
| | F | 0 36 |
| | USCGS | |
| 517 Aug. 26 | H = 5:26:00 | |
| | Off British Columbia | |
| | Ottawa | |
| | e | 5 33 20 |
| | L | 5 46 |
| | F | 6 01 |
| | Victoria | |
| | P | 5 28 30 |
| | e | 5 28 39 |
| | S | 5 30 57 |
| | e | 5 31 27 |
| | e | 5 31 33 |
| | F | 5 38 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Saskatoon** | |
| 517 Aug. 26 (cont'd) | e | 5 33 37 |
| | S | 5 35 20 |
| | L | 5 36 57 |
| | F | 6 10 |
| | **Seven Falls** | |
| | L | 5 46.9 |
| | F | 6 18 |
| | **Shawinigan Falls** | |
| | L | 5 45 |
| | F | 5 50 |
| | **Rolphton** | |
| | L | 5 45.0 |
| | **Victoria (Z)** | |
| 518 Aug. 26 | i | 20 51 08 |
| | F | 20 54 |
| | **Victoria (Z)** | |
| 519 Aug. 26 | i | 21 52 03 |
| | F | 21 54 |
| | **Victoria (Z)** | |
| 520 Aug. 26 | i | 22 23 00 |
| | F | 22 25 |
| | **USCGS** | |
| 521 Aug. 26 | H = 22:39:40 Off British Columbia | |
| | **Ottawa** | |
| | e | 22 46 54 |
| | L | 22 59 |
| | F | 23 08 |
| | **Victoria** | |
| | P | 22 41 50 d |
| | S | 22 43 36 |
| | e | 22 44 14 |
| | F | 22 50 |
| | **Saskatoon** | |
| | e | 22 48 28 |
| | L | 22 56 |
| | F | 23 10 |
| | **Seven Falls** | |
| | L | 23 00 |
| | F | 23 15 |
| | **Shawinigan Falls** | |
| | L | 22 59 |
| | F | 23 02 |
| | **Rolphton** | |
| | e | 23 46 40 |
| | L | 23 58.3 |
| | **USCGS** | |
| 522 Aug. 27 | H = 21:30:40 Off British Columbia | |
| | **Ottawa** | |
| | L | 21 50 |
| | F | 21 58 |
| | **Victoria** | |
| | P | 21 32 30 |
| | i | 21 32 56 |
| | S | 21 33 42 |
| | i | 21 33 57 |
| | i | 21 34 03 |
| | e | 21 34 23 |
| | F | 21 42 |
| | **Saskatoon** | |
| | e | 22 38 58 |
| | F | 22 59 |
| | **Seven Falls** | |
| | L | 21 50 |
| | F | 22 09 |
| | **Shawinigan Falls** | |
| | L | 21 50 |
| | F | 21 53 |
| | **Rolphton** | |
| | L | 21 49.2 |
| | **Victoria (Z)** | |
| 523 Aug. 27 | P | 23 19 04 |
| | e | 23 19 54 |
| | F | 23 23 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 71

| NO. AND DATE | PHASE | TIME h m s | NO. AND DATE | PHASE | TIME h m s |
|---|---|---|---|---|---|
| | Victoria (Z) | | | | |
| 524 Aug. 28 | e | 9 50 51 | | | |
| | F | 9 52 | | | |
| | Victoria (Z) | | | | |
| 525 Aug. 28 | e | 19 30 55 | | | |
| | F | 19 35 | | | |
| | Victoria (Z) | | | | |
| 526 Aug. 29 | e | 20 22 31 | | | |
| | F | 20 23 | | | |
| | Ottawa (Z) | | | | |
| 527 Aug. 31 | Δ = 150 km. | | | | |
| | $P_n$ | 4 51 35.0 | | | |
| | e | 4 51 39 | | | |
| | $S_n$ | 4 51 51 | | | |
| | i | 4 51 54.0 | | | |
| | e | 4 51 59.0 | | | |
| | F | 4 52.5 | | | |
| | USCGS | | | | |
| 528 Aug. 31 | H = 13:47:00 Southern Alaska | | | | |
| | Ottawa (Z) | | | | |
| | e | 13 55 17 | | | |
| | e | 13 55 45 | | | |
| | F | 13 57 | | | |
| | Victoria (Z) | | | | |
| | e | 13 51 51 | | | |
| | e | 13 52 08 | | | |
| | F | 13 57 | | | |
| | Victoria (Z) | | | | |
| 529 Aug. 31 | e | 13 59 17 | | | |
| | F | 14 00 | | | |

W. G. Milne
Assistant Seismologist

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 71

| NO. AND DATE | PHASE | TIME h m s | NO. AND DATE | PHASE | TIME h m s |
|---|---|---|---|---|---|
| | Victoria (Z) | | | | |
| 524 Aug. 28 | e | 9 50 51 | | | |
| | F | 9 52 | | | |
| | Victoria (Z) | | | | |
| 525 Aug. 28 | e | 19 30 55 | | | |
| | F | 19 35 | | | |
| | Victoria (Z) | | | | |
| 526 Aug. 29 | e | 20 22 31 | | | |
| | F | 20 23 | | | |
| | Ottawa (Z) | | | | |
| 527 Aug. 31 | Δ = 150 km. | | | | |
| | $P_n$ | 4 51 35.0 | | | |
| | e | 4 51 39 | | | |
| | $S_n$ | 4 51 51 | | | |
| | i | 4 51 54.0 | | | |
| | e | 4 51 59.0 | | | |
| | F | 4 52.5 | | | |
| | USCGS | | | | |
| 528 Aug. 31 | H = 13:47:00 Southern Alaska | | | | |
| | Ottawa (Z) | | | | |
| | e | 13 55 17 | | | |
| | e | 13 55 45 | | | |
| | F | 13 57 | | | |
| | Victoria (Z) | | | | |
| | e | 13 51 51 | | | |
| | e | 13 52 08 | | | |
| | F | 13 57 | | | |
| | Victoria (Z) | | | | |
| 529 Aug. 31 | e | 13 59 17 | | | |
| | F | 14 00 | | | |

W. G. Milne
Assistant Seismologist

# SEISMOLOGICAL BULLETINS RECEIVED

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

| STATION | BULLETINS | RECEIVED |
|---|---|---|
| | **July, 1949** | |
| Helwan | June, 1949 | July 1 |
| Saint Louis and Auxiliary Stations | July, August, 1946 | " 6 |
| Richmond | May, 1949 | " 7 |
| Inverview | Year, 1947 | " 10 |
| Brisbane | April, 1949 | " 11 |
| Reykjavik | Year, 1947 | " 12 |
| Prague | 1944, 1945 | " 12 |
| Rome | May, 1949 | " 14 |
| Prague and Chebe | 1944, 1945 | " 14 |
| Japan | April, 1949 | " 14 |
| Toldeo | January - March, 1949 | " 19 |
| Saint Louis University | September, 1946 | " 25 |
| Saint Louis and Auxiliary Stations | Preliminaries June 11, 12, 15, 1949 | " 25 |
| Toledo | May, 1949 | " 25 |
| Istanbul | April, May, 1949 | " 25 |
| Saint Louis and Auxiliary Stations | Supplement for February - April, 1949; preliminaries May 23, 24, 25, 30, 1949 | " 25 |
| Ksara | March - May, 1949 | " 25 |
| De Bilt | June, 1949 | " 25 |
| Malaga | March, 1949 | " 27 |
| Almeria | October, 1948 | " 27 |
| Bureau Central | March, May, 1949 | " 27 |
| Strasbourg | June, 1949 | " 27 |
| Bogota | May - December, 1948 | " 27 |
| Sofia | Year 1945 | " 27 |
| | **August, 1949** | |
| Tacubaya | June, 1949 | Aug. 1 |
| Helwan | May, 1949 | " 3 |
| Budapest | June, 1949 | " 3 |
| Kalocsa | June, 1949 | " 3 |
| Wellington | April, 1949; Supplement to January - December, 1943 and 1944 | " 3 |
| Belgrade | May, 1949 | " 3 |
| Saint Louis and Auxiliary Station | Preliminaries June 19, 23, 24, 28, July 2, 4, 7, 8 | " 3 |
| Hautes Tatra | June, 1949 | " 3 |
| Stara Dala | June, 1949 | " 3 |
| Eger | June, 1949 | " 3 |
| Prague | June, 1949 | " 3 |
| Pasadena | July - September, 1948 | " 3 |
| Richmond | June, 1949 | " 3 |
| Helsinki | January - March, 1949 | " 5 |
| Almeria | November, December, 1948 | " 8 |
| Japan | May, 1949 | " 8 |
| Zurich | May, June, 1949 | " 12 |
| LaPaz | July - October, 1948 | " 12 |
| Toledo | June, 1949 | " 16 |
| Rome | June, 1949 | " 16 |
| Bureau Central | April, June, 1949 | " 18 |
| Strasbourg | July, 1949 | " 18 |

# SEISMOLOGICAL BULLETINS RECEIVED

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

| STATION | BULLETINS | RECEIVED |
|---|---|---|
| | April 1, 1949 (cont'd) | |
| Santa Clara | June - July, 1949 | Aug. 19 |
| Trieste | April - June, 1949 | " 22 |
| Almeria | January, 1949 | " 22 |
| Edinburgh | June, 1949 | " 24 |
| Berkeley | January - September, 1948 | " 29 |
| Hautes Tatra | July, 1949 | " 29 |
| Stara Dala | July, 1949 | " 29 |
| Eger | July, 1949 | " 29 |
| Prague | July, 1949 | " 29 |
| Belgrade | June, 1949 | " 29 |


DEPARTMENT OF MINES AND TECHNICAL SURVEYS

DOMINION OBSERVATORIES BRANCH

SEISMOLOGICAL SERVICE OF CANADA

# SEISMOLOGICAL BULLETIN

September and October

1949

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DOMINION OBSERVATORY

OTTAWA - CANADA

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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

$\varphi$ = 45°23'38" N. $\lambda$ = 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

$\varphi$ = 44°38' N. $\lambda$ = 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

$\varphi$ = 47°07!4 N. $\lambda$ = 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 component, 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)

## VICTORIA

Dominion Astrophysical Observatory

φ = 48°31'14" N. λ = 123°24'56" W. h = 197m.

Time correction from recorded radio time signals

Foundation: rock

Instruments: Milne-Shaw NS and EW components, designated 21 and 20, respectively, each with photographic registration, magnetic damping, paper speed of 8 mm. per min., mass 1 lb.

Benioff Vertical, short-period, designated B 5705, photographic registration, paper speed of 60 mm. per min., mass 235 lbs., installed June, 1948.

## SHAWINIGAN FALLS

Shawinigan Water and Power Company

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

Time correction from recorded radio time signals

Foundation: solid granite of Canadian Shield

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

## SASKATOON

University of Saskatchewan

φ = 52°08' N. λ = 106°38' W. h = 515m.

Time correction from radio time signals

Foundation: clay and sand

Instrument: Milne-Shaw NE and NW components, designated 18 and 22, respectively, each with photographic registration, magnetic damping, paper speed of 8 mm. per min., mass 1 lb.

## 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 | | |
| B 5705 (Victoria) | 1.0 | 0.1 | | | |
| 20 (Victoria) | 12.0 | | 300 | 20:1 | 50 mm. |
| 21 (Victoria) | 12.0 | | 300 | 20:1 | 50 mm. |
| SF (Seven Falls) | 1.0 | | 2200 | | |
| SM (Seven Falls) | 12.0 | | 300 | 20:1 | 50 mm. |
| 18 (Saskatoon) | 10.0 | | 150 | 20:1 | 18 mm. |
| 22 (Saskatoon) | 10.0 | | 150 | 20:1 | 18 mm. |

NOTE:- Universal Time used throughout

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 72

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 530 Sep. 1 | USCGS | |
| | φ = 36° S. | |
| | λ = 97° W. | |
| | South Pacific Ocean | |
| | H = 13:58:44 | |
| | Ottawa (Z) | |
| | e | 14 10 43 |
| | F | 14 12 |
| | Victoria | |
| | P | 14 11 04 |
| | e | 14 21 50 |
| | L | 14 41 |
| | F | 14 49 |
| 531 Sep. 1 | USCGS | |
| | H = 18 26 32 | |
| | Galapagos Islands region | |
| | Ottawa | |
| | L | 18 45 |
| | F | 19 12 |
| | Victoria | |
| 532 Sep. 2 | P | 1 33 24 |
| | S | 1 35 22 |
| | e | 1 35 40 |
| | F | 1 37 |
| | Victoria (Z) | |
| 533 Sep. 2 | i | 19 46 14 d |
| | i | 19 46 25 |
| | e | 19 46 50 |
| | F | 19 50 |
| | Victoria (Z) | |
| 534 Sep. 2 | i | 20 47 32 d |
| | i | 20 47 37 |
| | i | 20 47 47 |
| | F | 20 49 |
| | Victoria (Z) | |
| 535 Sep. 2 | i | 21 10 35 d |
| | i | 21 10 40 |
| | i | 21 10 49 |
| | F | 21 13 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Victoria (Z) | |
| 536 Sep. 2 | i | 21 34 53 d |
| | e | 21 34 58 |
| | i | 21 35 10 |
| | F | 21 37 |
| | USCGS | |
| 537 Sep. 3 | φ = 62° N. | |
| | λ = 148° W. | |
| | d = 100 km. | |
| | H = 3 06 47 | |
| | South Alaska | |
| | Ottawa (Z) | |
| | P | 3 14 43 d |
| | F | 3 16 |
| | Victoria (Z) | |
| | i | 3 11 15 c |
| | F | 3 15 |
| | Shawinigan Falls | |
| | i | 3 14 48 d |
| | F | 3 16 |
| | Victoria (Z) | |
| 538 Sep. 3 | e | 6 21 08 |
| | F | 6 22 |
| | Victoria (Z) | |
| 539 Sep. 3 | e | 7 43 35 |
| | F | 7 45 |
| | Victoria (Z) | |
| 540 Sep. 4 | e | 15 07 26 |
| | F | 15 09 |
| | USCGS | |
| 541 Sep. 5 | H = 2 54 00 | |
| | Luzon, Philippines | |
| | Victoria (Z) | |
| | e | 3 07 19 d |
| | F | 3 09 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 541 Sep. 5 (cont'd) | Seven Falls | |
| | L | 5 56 |
| | F | 4 36 |
| | USCGS | |
| 542 Sep. 5 | φ = 17° N. | |
| | λ = 121° E. | |
| | H = 3 18 09 | |
| | Luzon, Philippines | |
| | Victoria (Z) | |
| | i | 3 31 28 |
| | F | 3 34 |
| | USCGS | |
| 543 Sep. 5 | H = 6 54 15 | |
| | Off British Columbia | |
| | Ottawa | |
| | e | 7 01 23 |
| | L | 7 13 |
| | F | 7 21 |
| | Victoria | |
| | P | 6 56 06 |
| | e | 6 56 15 |
| | S? | 6 57 46 |
| | i | 6 58 04 |
| | i | 6 58 13 |
| | F | 7 04 |
| | Saskatoon | |
| | i | 7 02 39 |
| | F | 7 09 |
| | Seven Falls | |
| | L | 7 14.3 |
| | F | 7 20 |
| | Shawinigan Falls | |
| | L | 7 13 37 |
| | F | 7 18 |
| | Victoria | |
| 544 Sep. 5 | P | 13 51 37 |
| | S | 13 53 23 |
| | e | 13 53 41 |
| | F | 13 55 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 545 Sep. 6 | Victoria | |
| | e | 7 52 30 |
| | e | 7 54 04 |
| | F | 7 56 |
| | Victoria (Z) | |
| 546 Sep. 6 | i | 10 56 55 d |
| | F | 10 57 |
| | Victoria (Z) | |
| 547 Sep. 6 | e | 11 22 26 |
| | F | 11 25 |
| | Ottawa (Z) | |
| 548 Sep. 6 | e | 15 36 54 |
| | F | 15 38 |
| 549,550, 551,552, 553 Sep. 7 | i | 23 09 17 |
| | i | 23 10 27 |
| | i | 23 11 25 |
| | i | 23 13 10 |
| | i | 23 21 47 |
| | All of local origin with about 1/2 minute duration | |
| | Victoria | |
| 554 Sep. 7 | Δ = 112 km. | |
| | P | 23 37 13.0 |
| | i | 23 37 16.5 |
| | i | 23 37 23.5 |
| | Sn | 23 37 26.5 |
| | Sl | 23 37 31.0 |
| | F | 23 39 |
| | USCGS | |
| 555 Sep. 8 | φ = 48° N. | |
| | λ = 154 ° E. | |
| | H = 2 46 52 | |
| | Ottawa (Z) | |
| | i | 2 58 49 c |
| | F | 3 01 |
| | Victoria (Z) | |
| | i | 2 56 07 c |
| | F | 2 57 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 74

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria** | |
| 556 Sep. 8 | P | 14 57 06 |
| | e | 14 57 20 |
| | S | 14 58 16 |
| | i | 14 59 01 |
| | F | 15 03 |
| | **USCGS** | |
| 557 Sep. 8 | φ = 15 1/2° S. | |
| | λ = 76° W. | |
| | H = 16 01 50 | |
| | Near coast of southern Peru | |
| | **Ottawa (Z)** | |
| | e | 16 12 02 |
| | F | 16 14 |
| | **Victoria (Z)** | |
| | e | 16 13 41 |
| | F | 16 14 |
| | **Ottawa (Z)** | |
| 558 Sep. 9 | e | 8 24 39 |
| | F | 8 26 |
| | **USCGS** | |
| 559 Sep. 9 | φ = 17° S. | |
| | λ = 172° W. | |
| | H = 20 26 20 | |
| | Samoa Islands | |
| | **Victoria (Z)** | |
| | e | 20 38 23 |
| | F | 20 39 |
| | **Victoria** | |
| 560 Sep. 11 | P | 5 00 01 |
| | S | 5 00 15 |
| | i | 5 00 18 |
| | F | 5 01 |
| | **Ottawa (Z)** | |
| 561 Sep. 11 | e | 13 49 31 |
| | F | 13 51 |
| | **Victoria (Z)** | |
| | e | 13 46 40 |
| | F | 13 47 |
| | **Ottawa (Z)** | |
| 562 Sep. 11 | e | 14 26 28 |
| | F | 14 27 |
| | **Ottawa** | |
| 563 Sep. 11 | e | 18 01 24 |
| | F | 18 02 |
| | **Victoria (Z)** | |
| 564 Sep. 11 | P | 22 57 22.0 |
| | i | 22 57 24.0 |
| | S | 22 57 36.0 |
| | i | 22 57 40.0 |
| | F | 22 58 |
| | **Victoria (Z)** | |
| 565 Sep. 11 | P | 23 36 40 |
| | e | 23 32 35 |
| | e | 23 32 57 |
| | F | 23 36 |
| | Queen Charlottes? | |
| | **USCGS** | |
| 566 Sep. 12 | H = 8 36 07 | |
| | Queen Charlotte Islands | |
| | **Ottawa (Z)** | |
| | e | 8 43 19 |
| | F | 8 44 |
| | **Victoria** | |
| | P | 8 39 15 |
| | S | 8 40 58 |
| | e | 8 41 39 |
| | F | 8 46 |
| | **Saskatoon** | |
| | i | 8 45 02 |
| | F | 8 47 |
| | **Seven Falls** | |
| | L | 8 57 |
| | F | 8 59 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **USCGS** | |
| 567 Sep. 12 | φ = 22° S. | |
| | λ = 170° E. | |
| | H = 9 17 04 | |
| | Loyalty Islands | |
| | Ottawa | |
| | i | 9 35 59 d |
| | e | 9 39 33 |
| | L | 10 12 |
| | F | 10 43 |
| | Victoria | |
| | e | 9 30 13 |
| | F | 9 35 |
| | Saskatoon | |
| | e | 10 01 |
| | F | 10 49 |
| | Seven Falls | |
| | L | 10 16 |
| | F | 11 44 |
| | USCGS | |
| 568 Sep. 12 | H = 10 53 18 | |
| | South of Fiji Islands | |
| | Victoria (Z) | |
| | e | 11 06 07 c |
| | F | 11 07 |
| | Victoria (Z) | |
| 569 Sep. 12 | P | 12 17 58 |
| | S | 12 19 27 |
| | e | 12 19 38 |
| | F | 12 23 |
| | Queen Charlotte Islands | |
| | USCGS | |
| 570 Sep. 12 | H = 14 37 52 | |
| | Queen Charlotte Islands | |
| | Ottawa | |
| | L | 14 57 |
| | F | 15 01 |
| | Victoria | |
| | P | 14 39 56 |
| | S | 14 40 43 |
| | e | 14 41 15 |
| | F | 14 49 |
| | Saskatoon | |
| | i | 14 46 34 |
| | F | 14 51 |
| | Halifax | |
| | L | 15 01 06 |
| | F | 15 04 |
| | Seven Falls | |
| | L | 14 58.2 |
| | F | 15 07 |
| | Shawinigan Falls | |
| | L | 14 57 |
| | F | 15 01 |
| | Victoria (Z) | |
| 571 Sep. 12 | e | 22 14 39 |
| | F | 22 16 |
| | Ottawa (Z) | |
| 572 Sep. 12 | $P_n$ | 22 27 01.5 |
| | i | 22 27 04 |
| | $S_n$ | 22 27 41 |
| | e | 22 27 46.5 |
| | e | 22 28 01 |
| | F | 22 29 |
| | Victoria (Z) | |
| 573 Sep. 12 | e | 22 30 55 |
| | F | 22 32 |
| | USCGS | |
| 574 Sep. 13 | H = 00 34 30 | |
| | Kurile Island | |
| | Ottawa (Z) | |
| | e | 0 46 22 |
| | F | 0 48 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Victoria (Z) | |
| 574 Sep. 13 (cont'd) | i | 0 43 43 |
| | F | 0 46 |
| | Victoria (Z) | |
| 575 Sep. 13 | P | 1 23 36.0 |
| | S | 1 23 47.5 |
| | e | 1 23 50 |
| | F | 1 24 |
| | Ottawa (Z) | |
| 576 Sep. 13 | e | 7 13 25 |
| | F | 7 15 |
| | Victoria (Z) | |
| | e | 7 06 11 |
| | F | 7 07 |
| | Victoria (Z) | |
| 577 Sep. 13 | i | 13 32 16 |
| | F | 13 33 |
| | Victoria (Z) | |
| 578 Sep. 13 | P | 14 21 12 |
| | S | 22 46 |
| | e | 23 10 |
| | F | 14 26 |
| | Victoria (Z) | |
| 579 Sep. 14 | e | 0 43 32 |
| | F | 0 45 |
| | Ottawa (Z) | |
| 580 Sep. 14 | $P_n$ | 15 57 03.5 |
| | i | 15 57 05.5 |
| | $S_n$ | 15 57 20.0 |
| | e | 15 57 23.6 |
| | F | 15 58 |
| | Ottawa (Z) | |
| 581 Sep. 14 | e | 16 58 04 |
| | F | 17 00 |
| | Ottawa (Z) | |
| 582 Sep. 14 | e | 17 01 20 |
| | F | 17 02 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | USCGS | |
| 583 Sep. 14 | $\varphi$ = 1° N. | |
| | $\lambda$ = 126° E. | |
| | Celebes region | |
| | H = 19 50 15 | |
| | Ottawa | |
| | $\Delta$ = 139° | |
| | eP' | 20 09 17 |
| | i | 20 09 27 |
| | e | 20 09 48 |
| | PP | 20 11 27 |
| | PP | 20 11 35 |
| | PKS | 20 12 56 |
| | PPP? | 20 14 38 |
| | SKKS | 20 18 52 |
| | G | 20 43 |
| | F | 22 30 |
| | Victoria | |
| | $\Delta$ = 108° | |
| | P | 20 04 16 c |
| | PP | 20 08 46 |
| | SKS | 20 14 59 |
| | PS | 20 17 33 |
| | SS | 20 23.7 |
| | G | 20 33.0 |
| | L | 20 37 |
| | F | 21 45 |
| | Sasktoon | |
| | $\Delta$ = 111°5 | |
| | PP | 20 09 31 |
| | PPP | 20 11 49 |
| | SKS | 20 15 31 |
| | e | 20 16 01 |
| | PS | 20 19 01 |
| | PPS | 20 19 11 |
| | SS | 20 25 16 |
| | G | 20 36.0 |
| | L | 20 40.0 |
| | F | 22 41 |
| | Halifax | |
| | $\Delta$ = 136°5 | |
| | P' | 20 09 42 |
| | PP | 20 12 20 |
| | PKS | 20 13 06 |
| | SKS | 20 16 36 |
| | SKKS | 20 19 16 |
| | PS | 20 22 50 |
| | G | 20 29.9 |
| | F | 22 24 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 77

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 583 Sep. 14 | **Seven Falls** | |
| | e | 20 09 39 |
| | e | 20 10 10 |
| | i | 20 11 56 |
| | e | 20 12 51 |
| | e | 20 28 57 |
| | e | 20 . |
| | e | 20 43.0 |
| | L | 20 50.0 |
| | F | 22 30 |
| | **Shawinigan Falls** | |
| | e | 20 09 27 |
| | e | 20 11 39 |
| | e | 20 12 50 |
| | **Victoria (Z)** | |
| 584 Sep. 15 | P | 14 49 14 |
| | e | 14 49 20 |
| | S | 14 50 35 |
| | e | 14 51 17 |
| | F | 14 55 |
| | **Victoria (Z)** | |
| 585 Sep. 15 | e | 16 05 43 |
| | F | 16 06 |
| | **Victoria (Z)** | |
| 586 Sep. 16 | P | 8 04 51 |
| | F | 8 08 |
| | **USCGS** | |
| 587 Sep. 16 | $\varphi$ = 1° N. | |
| | $\lambda$ = 126° E. | |
| | Celebes region | |
| | H = 19 11 27 | |
| | **Ottawa (Z)** | |
| | e | 19 30 21 |
| | F | 19 31 |
| | **Ottawa** | |
| 588 Sep. 16 | L | 21 03 |
| | F | 21 16 |
| | **Seven Falls** | |
| | L | 21 05 |
| | F | 21 29 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria** | |
| 589 Sep. 17 | $\Delta$ = 345 km. | |
| | P | 2 32 39.5 c |
| | i | 2 32 49.5 |
| | i | 2 32 53.7 |
| | e | 2 33 01.0 |
| | e | 2 33 06.3 |
| | S | 2 33 23.0 |
| | e | 2 33 24.5 |
| | e | 2 33 40 |
| | F | 2 38 |
| | **Ottawa** | |
| 590 Sep. 17 | e | 10 50 20 |
| | F | 10 51 |
| | **USCGS** | |
| 591 Sep. 17 | H = 11 30 08 | |
| | Southern Greece | |
| | **Ottawa** | |
| | e | 11 41 21 |
| | F | 11 42 |
| | **Ottawa** | |
| 592 Sep. 17 | e | 14 00 15 |
| | F | 14 01 |
| | **Seven Falls** | |
| 593 Sep. 17 | L | 16 24 |
| | F | 16 58 |
| | **Victoria** | |
| 594 Sep. 17 | P | 17 38 11 |
| | S | 17 38 42 |
| | F | 17 39 |
| | **Victoria** | |
| 595 Sep. 17 | $\Delta$ = 185 km. | |
| | $eP_n$ | 22 20 05.0 |
| | iP | 22 20 06.5 |
| | e | 22 20 12.5 |
| | e | 22 20 17.5 |
| | $S_n$ | 22 20 24.7 |
| | e | 22 20 26.1 |
| | e | 22 20 33.0 |
| | F | 22 22 |

| NO. AND DATE | PHASE | TIME |
|---|---|---|
| | USCGS | |
| 596 Sep. 18 | φ = 14° S. | |
| | λ = 68 1/2° W. | |
| | d = 100 km. | |
| | H = 12 45 58 | |
| | North west Bolivia | |
| | Victoria (Z) | |
| | i | 12 57 59 d |
| | F | 13 00 |
| | Victoria (Z) | |
| 597 Sep. 19 | e | 20 57 49 |
| | F | 21 01 |
| | Victoria (Z) | |
| 598 Sep. 19 | e | 22 01 40 |
| | F | 22 03 |
| | Victoria (Z) | |
| 599 Sep. 20 | e | 2 37 39 |
| | F | 2 39 |
| | USCGS | |
| 600 Sep. 20 | φ = 30° S. | |
| | λ = 178° W. | |
| | H = 11 55 20 | |
| | Kermadic Islands | |
| | Ottawa | |
| | iP | 12 14 08 d |
| | e | 12 37.9 |
| | L | 12 56 |
| | F | 13 20 |
| | Victoria | |
| | i | 12 08 31 c |
| | e | 12 19 01 |
| | e | 12 19 37 |
| | Saskatoon | |
| | L | 12 51 |
| | F | 13 07 |
| | Halifax | |
| | e | 12 39 40 |
| | e | 12 42 00 |
| | L | 13 00 |
| | F | 13 19 |
| | Shawinigan Falls | |
| | L | 12 38 |
| | F | 12 40 |
| | Victoria | |
| 601 Sep. 20 | Δ = 540 km. | |
| | ? | 12 19 40.0 |
| | $P_n$ | 12 19 46.0 |
| | e | 12 19 51.0 |
| | e | 12 19 54.5 |
| | e | 12 20 05.5 |
| | e | 12 20 19 |
| | $S_n$ | 12 20 36.5 |
| | i | 12 20 40 |
| | e | 12 20 53.0 |
| | e | 12 21 21 |
| | F | 12 30 |
| | Saskatoon | |
| | e | 12 26 38 |
| | F | 12 33 |
| | Victoria (Z) | |
| 602 Sep. 20 | P | 16 29 20.0 |
| | S | 16 29 26.5 |
| | F | 16 30 |
| | Victoria (Z) | |
| 603 Sep. 20 | e | 18 45 57 |
| | F | 18 47 |
| | Victoria (Z) | |
| 604 Sep. 20 | e | 18 59 46 |
| | F | 19 01 |
| | Victoria (Z) | |
| 605 Sep. 21 | e | 1 33 21 |
| | F | 1 34 |
| | USCGS | |
| 606 Sep. 21 | φ = 17° N. | |
| | λ = 94 1/2° W. | |
| | H = 12 55 05 | |
| | South Mexico | |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 606 Sep. 21 (cont'd) | **Ottawa** | |
| | Δ = 32°2 | |
| | iP | 13 01 36 c |
| | i | 13 01 57 |
| | PP | 13 02 16 |
| | e | 13 06 29 |
| | S | 13 06 49 |
| | G | 13 09.9 |
| | F | 13 35 |
| | **Victoria** | |
| | Δ = 39° | |
| | iP | 13 02 37 c |
| | i | 13 02 43 |
| | i | 13 02 57 |
| | i | 13 03 08 |
| | PP | 13 04 04 |
| | S | 13 06 43 |
| | L | 13 15.1 |
| | ? | 13 16.9 |
| | F | 13 50 |
| | **Saskatoon** | |
| | Δ = 40° | |
| | P | 13 02 39 |
| | i | 13 04 12 |
| | PPP | 13 04 44 |
| | i | 13 07 53 |
| | e | 13 08 24 |
| | i | 13 09 13 |
| | L | 13 12.4 |
| | F | 14 00 |
| | **Halifax** | |
| | e | 13 02 50 |
| | e | 13 04 01 |
| | L | 13 08.0 |
| | F | 13 43 |
| | **Seven Falls** | |
| | Δ = 36° | |
| | P | 13 02 06 |
| | PP | 13 03 30 |
| | e | 13 07 40 |
| | L | 13 11.0 |
| | i | 13 08 23 |
| | F | 14 14 |
| | **Shawinigan Falls** | |
| | Δ = 33°8 | |
| | P | 13 01 56 |
| | e | 13 02 21 |
| | PP | 13 03 25 |
| | S | 13 07 19 |
| | e | 13 08 02 |
| | e | 13 08 57 |
| | L | 13 10.3 |
| | F | 13 29 |
| | **USCGS** | |
| 607 Sep. 21 | φ = 16° S. | |
| | λ = 173° W. | |
| | Samoa Islands | |
| | H = 18 19 40 | |
| | **Victoria (Z)** | |
| | e | 18 31 41 |
| | F | 18 34 |
| | **Seven Falls** | |
| 608 Sep. 21 | L | 19 15 |
| | F | 19 55 |
| | **USCGS** | |
| 609 Sep. 22 | φ = 42° N. | |
| | λ = 142° E. | |
| | H = 15 38 15 | |
| | Off south coast of Hokkaido, Japan | |
| | **Victoria** | |
| | eP | 15 48 41 |
| | e | 15 48 56 |
| | F | 15 50 |
| | **Victoria (Z)** | |
| 610 Sep. 23 | P | 5 48 19 |
| | S | 5 48 31 |
| | F | 5 49 |
| | **USCGS** | |
| 611 Sep. 23 | H = 8 11 19 | |
| | Vladivostok | |
| | **Victoria** | |
| | e | 8 22 10 |
| | F | 8 24 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 612 Sep. 24 | USCGS | |
| | φ = 6° S. | |
| | λ = 154° E. | |
| | H = 4 17 38 | |
| | Solomon Islands | |
| | Ottawa | |
| | e | 4 36 37 |
| | F | 4 38 |
| | Victoria | |
| | e | 4 30 41 |
| | L | 4 58 |
| | F | 5 43 |
| | Saskatoon | |
| | e | 4 35 39 |
| | e | 4 42 13 |
| | L | 4 54 |
| | F | 6 15 |
| | Halifax | |
| | L | 5 19 |
| | F | 5 59 |
| | Seven Falls | |
| | e | 4 38.7 |
| | L | 5 12 |
| | F | 6 57 |
| | Ottawa | |
| 613 Sep. 25 | L | 16 21 |
| | F | 16 50 |
| | Victoria | |
| | e | 15 28 04 |
| | e | 15 39 35 |
| | L | 15 58 |
| | F | 16 25 |
| | Saskatoon | |
| | L | 16 06 |
| | F | 16 56 |
| | Victoria (Z) | |
| 614 Sep. 26 | e | 3 18 17 |
| | F | 3 19 |
| | Victoria (Z) | |
| 615 Sep. 26 | e | 17 59 57 |
| | e | 18 00 13 |
| | F | 18 00 |
| | Victoria (Z) | |
| 616 Sep. 26 | e | 18 20 51 |
| | e | 18 21 07 |
| | F | 18 22 |
| | Victoria | |
| 617 Sep. 26 | e | 18 24 24 |
| | e | 18 24 38 |
| | F | 18 25 |
| | Victoria | |
| 618 Sep. 26 | i | 21 35 43 d |
| | F | 21 36 |
| | Victoria | |
| 619 Sep. 26 | i | 21 37 11 d |
| | F | 21 38 |
| | Victoria | |
| 620 Sep. 26 | i | 21 40 02 d |
| | F | 21 41 |
| | Victoria | |
| 621 Sep. 26 | i | 21 41 45 d |
| | F | 21 42 |
| | Victoria | |
| 622 Sep. 26 | i | 22 40 28 |
| | i | 22 40 44 |
| | F | 22 41 |
| | Victoria | |
| 623 Sep. 26 | i | 22 44 10 |
| | i | 22 44 28 |
| | F | 22 45 |
| | Ottawa | |
| 624 Sep. 26 | e | 22 50 58 |
| | F | 22 52 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 625 Sep. 27 | USCGS | |
| | φ = 60° N. | |
| | λ = 149° W. | |
| | H = 15 30 43 | |
| | South Alaska | |
| | Ottawa | |
| | Δ = 45°0 | |
| | eP | 15 38 52 d |
| | S | 15 45 26 |
| | G | 15 48.2 |
| | F | 18 55 |
| | Victoria | |
| | Δ = 19° | |
| | iP | 15 35 04 d |
| | PP | 15 35 58 |
| | i | 15 36 55 |
| | S | 15 38 45 |
| | e | 15 40 01 |
| | L | 15 40 36 |
| | F | 17 40 |
| | Saskatoon | |
| | Δ = 25° | |
| | iP | 15 36 04 |
| | PP | 15 36 47 |
| | S | 15 40 26 |
| | e | 15 41 30 |
| | L | 15 43.9 |
| | F | 18 57 |
| | Halifax | |
| | Δ = 51° | |
| | P | 15 39 46 |
| | e | 15 42 28 |
| | S | 15 46 57 |
| | ScS | 15 49 31 |
| | SS | 15 50 34 |
| | G | 15 52 40 |
| | F | 18 44 |
| | Seven Falls | |
| | iP | 15 39 01 d |
| | i | 15 39 43 |
| | PP | 15 40 57 |
| | S | 15 45 41 |
| | e | 15 48 52 |
| | e | 15 51 45 |
| | L | 15 54.4 |
| | F | 19 13 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Shawinigan Falls | |
| | Δ = 44°0 | |
| | eP | 14 39 00 |
| | e | 14 39 14 |
| | PP | 14 40 46 |
| | S | 14 45 33 |
| | PS | 14 45 50 |
| | e | 14 46 39 |
| | SS | 14 48 36 |
| | L | 14 51 09 |
| | F | 15 29 |
| | Victoria | |
| 626 Sep. 27 | e | 19 35 34 |
| | F | 19 36 |
| | Victoria | |
| 627 Sep. 27 | e | 21 07 01 |
| | F | 21 08 |
| | Victoria | |
| 628 Sep. 27 | e | 22 16 36 |
| | F | 22 17 |
| | Victoria | |
| 629 Sep. 27 | e | 23 50 07 |
| | F | 23 51 |
| | Victoria | |
| 630 Sep. 29 | e | 3 57 11 |
| | F | 3 58 |
| | Victoria | |
| 631 Sep. 29 | i | 4 59 58 c |
| | F | 5 01 |
| | Ottawa (Z) | |
| 632 Sep. 29 | P | 13 49 17.0 |
| | e | 13 49 20.5 |
| | S | 13 49 36.5 |
| | e | 13 49 39 |
| | e | 13 49 43 |
| | F | 13 50 |
| | Victoria | |
| 633 Sep. 29 | e | 18 30 00.5 |
| | e | 18 30 06 |
| | F | 18 31 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 82

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria** | |
| 634 Sep. 29 | e | 23 16 33 |
| | F | 23 17 |
| | **USCGS** | |
| 635 Sep. 30 | φ = 23° S. | |
| | λ = 176° W. | |
| | H = 4 09 44 | |
| | **Tonga Islands** | |
| | **Ottawa** | |
| | e | 4 26 14 |
| | e | 4 28.1 |
| | e | 4 35 06 |
| | L | 4 56 |
| | F | 5 48 |
| | **Victoria** | |
| | e | 4 11 34 |
| | e | 4 22 16 |
| | L | 4 42 |
| | F | 5 16 |
| | **Saskatoon** | |
| | e | 4 23 48 |
| | L | 4 45.4 |
| | F | 5 43 |
| | **Halifax** | |
| | L | 5 04.1 |
| | F | 5 39 |
| | **Seven Falls** | |
| | e | 4 28.5 |
| | L | 5 00 |
| | F | 6 18 |
| | **Victoria** | |
| 636 Sep. 30 | L | 9 34 |
| | F | 9 42 |
| | **USCGS** | |
| 637 Sep. 30 | φ = 21° S. | |
| | λ = 170° E. | |
| | **Loyalty Islands** | |
| | **Ottawa** | |
| | e | 15 34 52 d |
| | L | 16 26 |
| | F | 16 35 |
| | **Seven Falls** | |
| | L | 16 20 |
| | F | 16 52 |
| | **Ottawa** | |
| 638 Sep. 30 | L | 19 12 |
| | F | 19 38 |
| | **Seven Falls** | |
| | L | 19 20 |
| | F | 19 57 |
| | **Ottawa** | |
| 639 Sep. 30 | L | 23 10 |
| | F | 23 34 |
| | **Seven Falls** | |
| | L | 23 10 |
| | F | 23 57 |

W. G. Milne
Assistant Seismologist

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa (Z)** | |
| 640 Oct. 1 | e | 2 36 32 |
| | F | 2 38 |
| | **USCGS** | |
| 641 Oct. 1 | H = 7 03 04 South of Bonin Islands d = 200 km. | |
| | **Victoria (Z)** | |
| | e | 7 14 32 |
| | F | 7 16 |
| | **Victoria (Z)** | |
| 642 Oct. 1 | e | 13 35 03 |
| | e | 13 36 08 |
| | F | 13 37 |
| | **Seven Falls** | |
| 643 Oct. 1 | L | 18 56 |
| | F | 19 11 |
| | **Victoria (Z)** | |
| 644 Oct. 1 | e | 22 47 44 |
| | F | 22 48 |
| | **USCGS** | |
| 645 Oct. 1 | H = 2 29 35 North Atlantic Ocean | |
| | **Victoria (Z)** | |
| | e | 2 40 27 |
| | F | 2 41 |
| | **Victoria (Z)** | |
| 646 Oct. 2 | Δ = 975 km. | |
| | $P_n$ | 22 32 06 d |
| | e | 22 32 14 |
| | e | 22 32 24 |
| | i | 22 32 38 |
| | i | 22 32 51 |
| | $S_n$ | 22 33 34 |
| | i | 22 33 55 |
| | e | 22 34 04 |
| | F | 22 36 |
| | **Victoria (Z)** | |
| 647 Oct. 3 | i | 2 30 20 d |
| | F | 2 31 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa (Z)** | |
| 648 Oct. 3 | e | 9 34 03 |
| | i | 9 34 36 |
| | F | 9 36 |
| | **Victoria** | |
| | i | 9 34 46 c |
| | e | 9 37 06 |
| | i | 9 37 56 c |
| | F | 9 39 |
| | **Shawinigan Falls** | |
| | e | 9 34 36 |
| | F | 9 36 |
| | **USCGS** | |
| 649 Oct. 3 | H = 12 44 17 North-east coast of New Guinea | |
| | **Victoria** | |
| | e | 12 57 57 |
| | F | 13 00 |
| | **Victoria (Z)** | |
| 650 Oct. 3 | e | 13 50 49 |
| | F | 13 52 |
| | **Ottawa** | |
| 651 Oct. 3 | e | 16 05 35 |
| | F | 16 07 |
| | **USCGS** | |
| 652 Oct. 3 | H = 23 51 52 Alaska peninsula | |
| | **Victoria (Z)** | |
| | i | 23 56 51 c |
| | F | 23 58 |
| | **Ottawa (Z)** | |
| | e | 0 00 49 |
| | F | 0 02 |
| | **USCGS** | |
| 653 Oct. 4 | H = 4 28 30 Samoa Islands | |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria (Z)** | |
| 653 Oct. 4 | e | 4 40 31 |
| | F | 4 41 |
| (cont'd) | **Victoria (Z)** | |
| 654 Oct. 4 | $P_n$ | 7 45 52 |
| | $S_n$ | 7 46 29 |
| | F | 7 47 |
| | **Seven Falls** | |
| 655 Oct. 4 | L | 8 02 |
| | F | 8 18 |
| | **USCGS** | |
| 656 Oct. 4 | $\varphi$ = 30° S. | |
| | $\lambda$ = 70° W. | |
| | Northern Chile | |
| | **Ottawa (Z)** | |
| | e | 10 10 04 |
| | F | 10 11 |
| | **USCGS** | |
| 657 Oct. 4 | $\varphi$ = 1° S. | |
| | $\lambda$ = 21° W. | |
| | H = 10 20 23 | |
| | **Mid-Atlantic Ocean** | |
| | **Ottawa** | |
| | $\Delta$ = 65° | |
| | P | 10 31 17 d |
| | e | 10 31 30 |
| | PP | 10 33 33 |
| | S | 10 40 10 |
| | L | 10 47.2 |
| | F | 11 40 |
| | **Victoria** | |
| | P | 10 34 07 |
| | i | 10 44 49 |
| | L | 11 04 |
| | F | 11 30 |
| | **Saskatoon** | |
| | i | 10 44 00 |
| | e | 10 49 52 |
| | L | 11 01 |
| | F | 11 55 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Halifax** | |
| | $\Delta$ = 60° | |
| | P | 10 30 28 |
| | S | 10 38 33 |
| | L | 10 44 42 |
| | F | 11 38 |
| | **Seven Falls** | |
| | $\Delta$ = 62°0 | |
| | eP | 10 31 03 |
| | S | 10 39 40 |
| | L | 10 47.0 |
| | F | 11 53 |
| | **Shawinigan Falls** | |
| | P | 10 31 19 |
| | F | 10 36 |
| | **Ottawa (Z)** | |
| 658 Oct. 4 | e | 10 59 53 |
| | F | 11 01 |
| | **Ottawa (Z)** | |
| 659 Oct. 5 | $\Delta$ = 430 km. | |
| | $eP_n$ | 2 34 42.0 |
| | e | 2 34 48 |
| | $iP_2$ | 2 34 49.0 |
| | $eS_n$ | 2 35 26.0 |
| | i | 2 35 30 |
| | i | 2 35 35.5 |
| | i | 2 35 37.5 |
| | i | 2 35 42.5 |
| | F | 2 41 |
| | **State of Maine** | |
| | **Seven Falls** | |
| | $\Delta$ = 260 km. | |
| | $P_n$ | 2 34 24.1 |
| | $S_n$ | 2 34 51.5 |
| | i | 2 34 55.5 |
| | e | 2 35 08 |
| | F | 2 37 |
| | **Shawinigan Falls** | |
| | $\Delta$ = 270 km. | |
| | $P_n$ | 2 34 24.5 |
| | $P_2$ | 2 34 25.8 |
| | $S_n$ | 2 34 53.8 |
| | F | 2 37 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 660 Oct. 6 | **Victoria** | |
| | e | 2 29 31 |
| | F | 2 30 |
| | **USCGS** | |
| 661 Oct. 7 | φ = 33° S. | |
| | λ = 56 1/2° E. | |
| | H = 12 02 19 | |
| | Indian Ocean | |
| | **Ottawa** | |
| | Δ = 146° | |
| | iP' | 12 21 52 c |
| | PP | 12 25 05 |
| | e | 12 25 32 |
| | SKKS | 12 34 16 |
| | eSS | 12 43 40 |
| | e | 12 45 44 |
| | SSS | 12 48 32 |
| | L | 13 15 |
| | F | 14 00 |
| | **Victoria** | |
| | Δ = 165° | |
| | iP' | 12 22 26 d |
| | i | 12 22 37 |
| | $iP'_2$ | 12 23 24 |
| | i | 12 23 38 |
| | PP | 12 27 12 |
| | PPP | 12 30 54 |
| | e | 12 38 03 |
| | SS | 12 48.7 |
| | SSS | 12 55.0 |
| | L | 13 22 |
| | F | 14 14 |
| | **Saskatoon** | |
| | Δ = 157° | |
| | PP | 12 26 27 |
| | PPP | 12 30 05 |
| | SKKS | 12 33 20 |
| | PPS | 12 39 29 |
| | SSS | 12 52 47 |
| | L | 13 04.3 |
| | F | 13 21 |
| | **Halifax** | |
| | e | 12 25 28 |
| | L | 13 09 |
| | F | 14 09 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Seven Falls** | |
| | e | 12 24.9 |
| | L | 13 09 |
| | F | 14 43 |
| | **USCGS** | |
| 662 Oct. 8 | φ = 36° N. | |
| | λ = 14° E. | |
| | Off coast of northern Sicily | |
| | **Ottawa** | |
| | e | 3 19 37 |
| | F | 3 22 |
| | **Victoria** | |
| | e | 3 21 41 |
| | F | 3 24 |
| | **USCGS** | |
| 663 Oct. 8 | φ = 22° N. | |
| | λ = 121° E. | |
| | H = 20 34 25 | |
| | Near south coast of Formosa | |
| | **Ottawa** | |
| | e | 20 47 20 |
| | F | 20 48 |
| | **Ottawa** | |
| 664 Oct. 9 | e | 22 50 55 |
| | F | 22 52 |
| | **USCGS** | |
| 665 Oct. 11 | φ = 43° N. | |
| | λ = 144° E. | |
| | d = 100 km. | |
| | H = 9 05 18 | |
| | Hokkaido, Japan | |
| | **Ottawa** | |
| | i | 9 17 46 d |
| | e | 9 18 20 |
| | F | 9 19 |
| | **Seven Falls** | |
| 666 Oct. 11 | Δ = 70 km. | |
| | P1 | 9 36 05.8 |
| | S1 | 9 36 14.5 |
| | F | 9 39 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 86

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | USCGS | |
| 667 Oct. 11 | φ = 33° S. | |
| | λ = 179° W. | |
| | H = 11 35 54 | |
| | Kermadec Islands | |
| | Ottawa | |
| | e | 11 55 48 |
| | F | 11 57 |
| | Victoria | |
| 668 Oct. 11 | P | 20 55 34 |
| | S | 20 55 41 |
| | F | 20 56 |
| | Victoria | |
| 669 Oct. 11 | P | 21 57 48 |
| | S | 21 57 55 |
| | F | 21 58 |
| | Saskatoon | |
| 670 Oct. 13 | L | 4 21.0 |
| | F | 4 43 |
| | Seven Falls | |
| | L | 4 33 |
| | F | 5 18 |
| | USCGS | |
| 671 Oct. 13 | φ = 17 1/2° N. | |
| | λ = 100° W. | |
| | H = 12 47 20 | |
| | Near south coast of Mexico | |
| | Victoria | |
| | e | 12 54 26 |
| | F | 12 56 |
| | Ottawa | |
| 672 Oct. 16 | e | 15 22 14 |
| | e | 15 24 50 |
| | F | 15 28 |
| | Seven Falls | |
| | e | 15 23 48 |
| | F | 15 25 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa | |
| 673 Oct. 16 | Δ = 69.0 km. | |
| | $iP_1$ | 23 33 56.0 c |
| | i | 23 33 56.8 |
| | $S_1$ | 23 34 04.7 |
| | i | 23 34 10.7 |
| | F | 23 42 |
| | Near Alexandria, Ontario, Canada | |
| | Seven Falls | |
| | Δ = 325 km. | |
| | $P_n$ | 23 34 40.5 |
| | $P_2$ | 23 34 44 |
| | $eS_n$ | 23 35 13.5 |
| | $S_2$ | 23 35 24.0 |
| | e | 23 35 25.7 |
| | e | 23 35 43 |
| | F | 23 38 |
| | Shawinigan Falls | |
| | Δ = 212 km. | |
| | $P_n$ | 23 34 16.1 |
| | $P_1$ | 23 34 19.1 |
| | $S_n$ | 23 34 39.8 |
| | i | 23 34 41.6 |
| | i | 23 34 42.8 |
| | F | 23 36 |
| | Ottawa | |
| 674 Oct. 17 | e | 19 42 55 |
| | F | 19 44 |
| | Ottawa | |
| 675 Oct. 17 | e | 19 46 08 |
| | F | 19 47 |
| | Victoria | |
| 676 Oct. 19 | $P_n$ | 19 21 33 |
| | e | 19 21 36 |
| | i | 19 21 40 |
| | i | 19 21 43 |
| | $S_n$ | 19 22 14 |
| | e | 19 22 20 |
| | F | 19 24 |
| | USCGS | |
| 677 Oct. 19 | φ = 5 1/2° S. | |
| | λ = 154° E. | |
| | H = 21 00 11 | |
| | Solomon Islands | |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s | |
|---|---|---|---|
| 677 Oct. 19 (cont'd) | Ottawa | | |
| | Δ = 120° | | |
| | P? | 21 15 23 | |
| | P' | 21 19 00 | |
| | i | 21 19 15 | |
| | i | 21 19 35 | |
| | i | 21 19 46 | |
| | PP | 21 21 20 | |
| | e | 21 21 28 | |
| | PPP | 21 22 26 | |
| | SKS | 21 25 58 | |
| | SKKS | 21 27 13 | |
| | PS | 21 30 10 | |
| | PPS | 21 31 26 | |
| | SS | 21 37 12 | |
| | SSS | 21 41.5 | |
| | G | 21 50 | |
| | L | 21 57 | |
| | F | 22 50 | |
| | Victoria | | |
| | Δ = 89° | | |
| | P | 21 13 06 | c |
| | PP | 21 17 33 | |
| | S | 21 23 53 | |
| | e | 21 24 15 | |
| | PS | 21 24 57 | |
| | PPS | 21 25 27 | |
| | SS | 21 30.1 | |
| | L | 21 41 | |
| | F | 23 56 | |
| | Saskatoon | | |
| | Δ = 102° | | |
| | PP | 21 18 32 | |
| | i | 21 19 02 | |
| | i | 21 20 17 | |
| | e | 21 24 27 | |
| | PS | 21 27 27 | |
| | SS | 21 32 57 | |
| | SSS | 21 36 47 | |
| | L | 21 46.8 | |
| | F | 23 59 | |
| | Halifax | | |
| | e | 21 29 24 | |
| | e | 21 39 16 | |
| | L | 21 47.2 | |
| | F | 23 08 | |

| NO. AND DATE | PHASE | TIME h m s | |
|---|---|---|---|
| | Seven Falls | | |
| | Δ = 124° | | |
| | P'? | 21 19 51 | |
| | PP | 21 21 29 | |
| | SKKS | 21 28 07 | |
| | PS | 21 30 53 | |
| | PPS | 21 32.4 | |
| | SS | 21 37 31 | |
| | SSS | 21 42.0 | |
| | G | 21 50.4 | |
| | F | 0 14 | |
| | USCGS | | |
| 678 | H = 2 21 33 | | |
| Oct. 20 | Outer Mongolia | | |
| | Victoria | | |
| | i | 2 33 38 | d |
| | F | 2 39 | |
| | USCGS | | |
| 679 | φ = 5 1/2° S. | | |
| Oct. 20 | λ = 154° E. | | |
| | H = 12 44 54 | | |
| | Solomon Islands | | |
| | Ottawa | | |
| | Δ = 124° | | |
| | eP'? | 13 03 49 | |
| | PP | 13 05 16 | |
| | SKS | 13 10 34 | |
| | SKKS | 13 12 09 | |
| | S | 13 13 12 | |
| | PS | 13 14 44 | |
| | SS | 13 21 50 | |
| | F | 15 01 | |
| | G | 13 36 | |
| | Victoria | | |
| | Δ = 89° | | |
| | P | 12 57 50 | d |
| | e | 12 58 16 | |
| | SKS | 13 08 11 | |
| | S | 13 08 33 | |
| | PS | 13 09 07 | |
| | SS | 13 14.5 | |
| | L | 13 25.7 | |
| | F | 14 07 | |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 679 Oct. 20 (cont'd) | Halifax | |
| | e | 13 07 22 |
| | e | 13 16 08 |
| | e | 13 23 52 |
| | L | 13 43.2 |
| | F | 14 18 |
| | Seven Falls | |
| | e | 13 06.0 |
| | e | 13 10 42 |
| | e | 13 12 30 |
| | e | 13 15 18 |
| | e | 13 20 58 |
| | e | 13 30.5 |
| | G | 13 37.5 |
| | F | 15 12 |
| | Victoria | |
| 680 Oct. 20 | $\Delta$ = 235 km. | |
| | $P_n$ | 16 07 13.5 |
| | e | 16 07 20 |
| | $S_n$ | 16 07 37.5 |
| | e | 16 07 42.0 |
| | F | 16 09 |
| | USCGS | |
| 681 Oct. 20 | $\varphi$ = 19° S. | |
| | $\lambda$ = 178° W. | |
| | Fiji Islands | |
| | H = 18 12 00 | |
| | Victoria | |
| | i | 18 24 27 |
| | F | 18 25 |
| | USCGS | |
| 682 Oct. 21 | $\varphi$ = 54° N. | |
| | $\lambda$ = 169° W. | |
| | H = 3 32 13 | |
| | Aleutian Islands | |
| | Ottawa | |
| | e | 3 42 14 |
| | F | 3 44 |
| | Victoria | |
| | e | 3 38 11 |
| | e | 3 41 49 |
| | F | 3 45 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | USCGS | |
| 683 Oct. 21 | H = 6 09 05 | |
| | Region of Formosa | |
| | Victoria | |
| | e | 6 22 01 |
| | F | 6 23 |
| | Victoria | |
| 684 Oct. 21 | e | 8 58 12 |
| | F | 9 01 |
| | Victoria | |
| 685 Oct. 21 | $\Delta$ = 105° | |
| | P | 21 47 16 |
| | e | 21 47 42 |
| | SKS | 21 57 46 |
| | SKKS | 21 58 21 |
| | L | 22 16 |
| | F | 23 00 |
| | Saskatoon | |
| | L | 22 19 |
| | F | 23 00 |
| | Halifax | |
| | L | 22 31 |
| | F | 23 10 |
| | Seven Falls | |
| | e | 22 04.8 |
| | e | 22 12.1 |
| | L | 22 28 |
| | F | 0 05 |
| | Victoria | |
| 686 Oct. 22 | e | 5 16 17 |
| | F | 5 17 |
| | USCGS | |
| 687 Oct. 23 | $\varphi$ = 4° S. | |
| | $\lambda$ = 144° E. | |
| | d = 150 km. | |
| | H = 5 12 14 | |
| | New Guinea | |
| | Ottawa | |
| | e | 5 31 08 |
| | F | 5 32 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria** | |
| 687 Oct. 23 (cont'd) | i | 5 25 28 c |
| | e | 5 26 03 |
| | F | 5 27 |
| | **Victoria** | |
| 688 Oct. 23 | $P_n$ | 21 00 24.5 |
| | i | 21 00 34.5 |
| | i | 21 00 48.5 |
| | e | 21 01 04 |
| | e | 21 01 20.5 |
| | $S_n$ | 21 02 09.5 |
| | e | 21 02 14 |
| | F | 21 05 |
| | Queen Charlotte region? | |
| | **Victoria** | |
| 689 Oct. 24 | $P_n$ | 2 34 55.5 |
| | e | 2 35 20.5 |
| | $S_n$ | 2 36 38.5 |
| | e | 2 37 16 |
| | F | 2 41 |
| | Queen Charlottes | |
| | USCGS | |
| | $\varphi$ = 36° N. | |
| | $\lambda$ = 140° E. | |
| | d = 100 km. | |
| | H = 13 07 38 | |
| | Honshu, Japan | |
| | **Victoria** | |
| | i | 13 18 30 d |
| | F | 13 20 |
| | **Victoria** | |
| 691 Oct. 25 | $\Delta$ = 115 km. | |
| | $P_n$ | 18 20 45.5c |
| | e | 18 20 49.0 |
| | $S_n$ | 18 20 59 |
| | e | 18 21 03.5 |
| | e | 18 21 10.5 |
| | F | 18 27 |
| | **Victoria** | |
| 692 Oct. 25 | i | 19 58 58 c |
| | e | 19 59 12 |
| | F | 20 01 |
| | **Victoria** | |
| 693 Oct. 25 | i | 22 04 46 c |
| | e | 22 05 03 |
| | F | 22 07 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **USCGS** | |
| 694 Oct. 26 | $\varphi$ = 11° N. | |
| | $\lambda$ = 41° W. | |
| | H = 00 02 35 | |
| | North Atlantic Ocean | |
| | **Victoria** | |
| | e | 0 14 27 |
| | F | 0 17 |
| | **USCGS** | |
| 695 Oct. 26 | H = 9 13 10 | |
| | Solomon Islands | |
| | **Ottawa** | |
| | L | 10 24 |
| | F | 10 41 |
| | **Saskatoon** | |
| | L | 10 03 |
| | F | 10 33 |
| | **Seven Falls** | |
| | L | 10 19 |
| | F | 10 48 |
| | **USCGS** | |
| 696 Oct. 27 | H = 8 24 15 | |
| | Gulf of California | |
| | **Ottawa** | |
| | L | 8 42 |
| | F | 9 02 |
| | **Victoria** | |
| | e | 8 28 48 |
| | L | 8 36 |
| | F | 8 47 |
| | **Saskatoon** | |
| | e | 8 33 46 |
| | L | 8 37.2 |
| | F | 8 50 |
| | **Halifax** | |
| | e | 8 46 35 |
| | F | 8 54 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Seven Falls | |
| 696 Oct. 27 | e | 8 43 15 |
| | F | 9 00 |
| | USCGS | |
| 697 Oct. 27 | φ = 23 1/2° S. | |
| | λ = 180° | |
| | H = 10 02 05 | |
| | South of Fiji Islands | |
| | Victoria | |
| | i | 10 14 56 d |
| | F | 10 16 |
| | USCGS | |
| 698 Oct. 27 | φ = 49° N. | |
| | λ = 155° E. | |
| | H = 18 35 58 | |
| | Kurile Islands | |
| | Ottawa | |
| | e | 18 47 48 |
| | F | 18 49 |
| | Ottawa | |
| 699 Oct. 27 | e | 21 44 01 |
| | F | 21 45 |
| | USCGS | |
| 700 Oct. 28 | φ = 6° S. | |
| | λ = 153° E. | |
| | H = 16 26 13 | |
| | New Britain | |
| | Ottawa | |
| | e | 16 45 11 |
| | F | 16 46 |
| | USCGS | |
| 701 Oct. 30 | H = 5 33 24 | |
| | Aleutians | |
| | Ottawa | |
| | e | 5 44 00 |
| | F | 5 45 |
| | Victoria | |
| | e | 5 40 12 |
| | F | 5 42 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | USCGS | |
| 702 Oct. 30 | H = 5 33 20 | |
| | New Hebrides | |
| | Ottawa | |
| | e | 5 52 06 |
| | F | 5 53 |
| | Victoria | |
| | e | 5 46 23 |
| | F | 5 48 |
| | Ottawa | |
| 703 Oct. 30 | Δ = 170 km. | |
| | $P_n$ | 20 52 01 |
| | $P_1$ | 20 52 06.5 |
| | $S_2$ | 20 52 38 |
| | $S_1$ | 20 52 42.0 |
| | F | 20 53 |
| | Shawinigan Falls | |
| | Δ = 50 km. | |
| | $P_1$ | 20 51 21.8 |
| | $S_1$ | 20 51 28.0 |
| | F | 20 53 |
| | USCGS | |
| 704 Oct. 31 | H = 00 02 44 | |
| | Samoa Islands | |
| | Ottawa | |
| | e | 0 12 53 |
| | F | 0 14 |
| | Victoria | |
| | e | 0 14 55 |
| | F | 0 16 |
| | USCGS | |
| 705 Oct. 31 | φ = 56° N. | |
| | λ = 135° W. | |
| | H = 1 39 32 | |
| | 70 miles south of Sitka | |
| | Ottawa | |
| | Δ = 40° | |
| | P | 1 46 52 c |
| | PP | 1 48 11 |
| | S | 1 52 58 |
| | L | 1 58.3 |
| | F | 2 57 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 705 Oct. 31 (cont'd) | **Victoria** | |
| | Δ = 10°.5 | |
| | eP | 1 42 05 |
| | e | 1 42 12 |
| | e | 1 42 30 |
| | e | 1 44 21 |
| | S | 1 44 57.5 |
| | F | 2 03 |
| | **Saskatoon** | |
| | Δ = 17°.5 | |
| | P | 1 43 38 |
| | e | 1 43 46 |
| | S | 1 46 57 |
| | F | 1 50 |
| | **Halifax** | |
| | Δ = 45°.5 | |
| | P | 1 47 48 |
| | PP | 1 49 44 |
| | S | 1 54 26 |
| | SS | 1 57 52 |
| | L | 2 03.0 |
| | F | 3 00 |
| | **Seven Falls** | |
| | Δ = 41°.5 | |
| | P | 1 47 05 |
| | PP | 1 48 37 |
| | S | 1 53 13 |
| | SS | 1 55.6 |
| | L | 2 00 |
| | F | 2 57 |
| | **Shawinigan Falls** | |
| | Δ = 40°.8 | |
| | P | 1 46 59 |
| | PP | 1 48 30 |
| | S | 1 53 02 |
| | G | 2 00.0 |
| | F | 2 20 |
| | **USCGS** | |
| 706 Oct. 31 | Aftershock of No. 705 | |
| | **Ottawa** | |
| | i | 2 39 33 c |
| | L | 2 52 |
| | F | 2 55 |
| 706 Oct. 31 | **Victoria** | |
| | P | 2 34 50 |
| | S | 2 37 40 |
| | F | 2 43 |
| | **Saskatoon** | |
| | i | 2 41 37 |
| | i | 2 43 20 |
| | F | 2 50 |
| | **Seven Falls** | |
| | L | 2 53 |
| | F | 3 00 |
| | **Victoria** | |
| 707 Oct. 31 | Δ = 320 km. | |
| | $P_n$ | 7 24 57.0 |
| | e | 7 25 02 |
| | e | 7 25 06 |
| | e | 7 25 13 |
| | $S_n$ | 7 25 28.2 |
| | e | 7 25 31.5 |
| | e | 7 25 36 |
| | e | 7 25 39 |
| | F | 7 28 |
| | **USCGS** | |
| 708 Oct. 31 | φ = 49° N. | |
| | λ = 156° E. | |
| | Kurile Islands | |
| | **Victoria** | |
| | i | 7 53 06 c |
| | F | 7 55 |
| | **Ottawa** | |
| 709 Oct. 31 | e | 8 25 51 |
| | F | 8 27 |
| | **USCGS** | |
| 710 Oct. 31 | φ = 5° S. | |
| | λ = 152 1/2° E. | |
| | d = 100 km. | |
| | H = 17 55 35 | |
| | New Britain | |

# SEISMOLOGICAL BULLETINS RECEIVED

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

| STATION | BULLETINS | RECEIVED |
|---|---|---|
| | **September, 1949** | |
| Tacubaya | July, 1949 | Sept. 6 |
| Istanbul | June, 1949 | " 6 |
| Toledo | April, July, 1949 | " 6 |
| Richmond | July, 1949 | " 7 |
| Brisbane | June, 1949 | " 9 |
| India | March, 1949 | " 15 |
| Pasadena | July-September, 1948 | " 19 |
| Japan | June, 1949 | " 19 |
| Wellington | May, June, 1949 | " 20 |
| Santa Clara | August, 1949 | " 21 |
| Saint Louis and Auxiliary stations | Preliminaries June 9, July 9, 10, 11, 18, 21, 23, 25, 27 | " 24 |
| Saint Louis University | October, 1946 | " 24 |
| Tacubaya | August, 1949 | " 24 |
| Cleveland | June, July, 1949 | " 24 |
| Strasbourg | August, 1949 | " 24 |
| Bureau Central | April, May, 1949 | " 24 |
| Apia | April - June, 1949 | " 24 |
| Saint Louis University | November, December, 1946, January, 1947 | " 26 |
| Zurich | July, August, 1949 | " 26 |
| Perth | October, 1948 | " 26 |
| De Bilt | July, August, 1949 | " 28 |
| Brisbane | May, 1949 | " 30 |
| | **October 1949** | |
| Perth | January - March, 1949 | Oct. 5 |
| Prague | August, 1949 | " 5 |
| Eger | August, 1949 | " 5 |
| Stara Dala | August, 1949 | " 5 |
| Hautes Tatra | August, 1949 | " 5 |
| Santa Clara | September, 1949 | " 11 |
| Belgrade | July, 1949 | " 11 |
| Richmond | August, 1949 | " 11 |
| Bucarest | February, 1947; January, February, July-December, 1948; January-August, 1949 | " 11 |
| Stuttgart | April - June, 1949 | " 11 |
| Rome | July, 1949 | " 14 |
| Pasadena | Locals January-March, 1949 | " 14 |
| La Paz | October-December, 1948 | " 14 |
| Malaga | April, 1949 | " 14 |
| Tananarive | Year, 1948 | " 17 |
| Japan | July, 1949 | " 17 |
| Trieste | September 14-20, 1949 | " 18 |
| Almeria | February, March, 1949 | " 18 |
| Malaga | May, 1949 | " 19 |
| Helwan | July, 1949 | " 19 |
| Toledo | April-June, August, 1949 | " 21 |
| Lisbon | January-April, 1949 | " 24 |
| Copenhagen | Year, 1944 | " 26 |
| Bureau Central | June, July, 1949 | " 29 |
| Strasbourg | September 1-10 October, 1949 | " 29 |
| Batavia | January-March, 1949 | " 29 |
| Milan | 1941, 1943-1948 | " 29 |
| Saint Louis and Auxiliary Stations | Supplement June, 1949; Preliminaries August 6, 13, 17, 18, 22, 23 | " 31 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 92

| NO. AND DATE | PHASE | TIME h m s | NO. AND DATE | PHASE | TIME h m s |
|---|---|---|---|---|---|
| | | Ottawa | | | |
| 710 Oct. 31 (cont'd) | e | 18 14 25 | | | |
| | e | 18 32 36 | | | |
| | L | 19 03 | | | |
| | F | 19 24 | | | |
| | | Victoria | | | |
| | e | 18 08 30 | | | |
| | e | 18 08 51 | | | |
| | F | 18 14 | | | |
| | | Seven Falls | | | |
| | e | 18 15 54 | | | |
| | e | 18 25 57 | | | |
| | e | 18 32 33 | | | |
| | e | 18 45.0 | | | |
| | L | 19 02 | | | |
| | F | 20 00 | | | |
| | | Seven Falls | | | |
| 711 Oct. 31 | $\Delta$ = 53 km. | | | | |
| | $iP_1$ | 21 47 47.7 | | | |
| | $iS_1$ | 21 47 48.0 | | | |
| | F | 21 48 | | | |

W. G. Milne
Assistant Seismologist


DEPARTMENT OF MINES AND TECHNICAL SURVEYS

DOMINION OBSERVATORIES BRANCH

SEISMOLOGICAL SERVICE OF CANADA

# SEISMOLOGICAL BULLETIN

November and December

1949

000

DOMINION OBSERVATORY

OTTAWA - CANADA

00000

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

$\varphi$ = 45°23'38" N. $\lambda$ = 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

$\varphi$ = 44°38' N. $\lambda$ = 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

$\varphi$ = 47°07!4 N. $\lambda$ = 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 component, 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)

## VICTORIA

Dominion Astrophysical Observatory

φ = 48°31'14" N. λ = 123°24'56" W. h = 197m.

Time correction from recorded radio time signals

Foundation: rock

Instruments: Milne-Shaw NS and EW components, designated 21 and 20, respectively, each with photographic registration, magnetic damping, paper speed of 8 mm. per min., mass 1 lb.

Benioff Vertical, short-period, designated B 5705, photographic registration, paper speed of 60 mm. per min., mass 235 lbs., installed June, 1948.

## SHAWINIGAN FALLS

Shawinigan Water and Power Company

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

Time correction from recorded radio time signals

Foundation: solid granite of Canadian Shield

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

## SASKATOON

University of Saskatchewan

φ = 52°08' N. λ = 106°38' W. h = 515m.

Time correction from radio time signals

Foundation: clay and sand

Instrument: Milne-Shaw NE and NW components, designated 18 and 22, respectively, each with photographic registration, magnetic damping, paper speed of 8 mm. per min., mass 1 lb.

## 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 | | |
| B 5705 (Victoria) | 1.0 | 0.1 | | | |
| 20 (Victoria) | 12.0 | | 300 | 20:1 | 50 mm. |
| 21 (Victoria) | 12.0 | | 300 | 20:1 | 50 mm. |
| SF (Seven Falls) | 1.0 | | 2200 | | |
| SM (Seven Falls) | 12.0 | | 300 | 20:1 | 50 mm. |
| 18 (Saskatoon) | 10.0 | | 150 | 20:1 | 18 mm. |
| 22 (Saskatoon) | 10.0 | | 150 | 20:1 | 18 mm. |

NOTE:- Universal Time used throughout

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria (Z)** | |
| 712 Nov. 1 | e | 1 57 02 |
| | F | 2 00 |
| | **USCGS** | |
| 713 Nov. 1 | H = 7 32 43 New Britain | |
| | **Ottawa** | |
| | e | 7 51 33 |
| | F | 7 52 |
| | **Victoria (Z)** | |
| | e | 7 46 36 |
| | F | 7 48 |
| | **Victoria (Z)** | |
| 714 Nov. 1 | $P_n$ | 9 42 41.5 |
| | E | 9 42 47.5 |
| | $S_n$ | 9 42 56 |
| | F | 9 44 |
| | **Victoria (Z)** | |
| 715 Nov. 1 | E | 11 57 52 |
| | F | 11 60 |
| | **USCGS** | |
| 716 Nov. 1 | H = 13 04 25 Outer Mongolia | |
| | **Victoria (Z)** | |
| | E | 13 16 31 c |
| | F | 13 20 |
| | **Victoria (Z)** | |
| 717 Nov. 1 | $P_n$ | 15 37 45.5 |
| | $S_n$ | 15 38 23 |
| | F | 15 39 |
| | **Victoria (Z)** | |
| 718 Nov. 1 | P | 18 04 09 |
| | i | 18 04 10.4 |
| | $S_n$ | 18 04 24.5 |
| | F | 18 05 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **USCGS** | |
| 719 Nov. 2 | $\varphi$ = 3° S. $\lambda$ = 134° E. H = 02 32 29 N.W. New Guinea | |
| | **Ottawa (Z)** | |
| | e | 2 51 43 |
| | F | 2 52 |
| | **USCGS** | |
| 720 Nov. 3 | $\varphi$ = 48 1/2° N. $\lambda$ = 154° E. H = 01 12 37 d = 200 km. Kurile Islands | |
| | **Ottawa (Z)** | |
| | $\Delta$ = 75° | |
| | iP | 1 24 12 d |
| | i | 1 24 21 |
| | PP | 1 27 06 |
| | S | 1 33 44 |
| | SS | 1 38 42 |
| | F | 1 55 |
| | **Victoria (Z)** | |
| | $\Delta$ = 53°2 | |
| | iP | 1 21 33 d |
| | i | 1 22 10 |
| | $i_pP$ | 1 22 20 |
| | S | 1 28 49 |
| | i | 1 29 48 |
| | $S_1S$ | 1 31 09 |
| | $S\bar{S}$ | 1 32 20 |
| | F | 1 45 |
| | **Saskatoon** | |
| | iS | 1 30 20 |
| | e | 1 31 22 |
| | i | 1 31 55 |
| | i | 1 33 12 |
| | e | 1 34 12 |
| | F | 1 59 |
| | **Seven Falls** | |
| | $\Delta$ = 73°5 | |
| | e | 1 24 17 |
| | i | 1 33 52 |
| | i | 1 34 54 |
| | L | 1 39 |
| | F | 2 12 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Shawinigan Falls** | |
| 720 Nov. 3 (cont'd) | eP | 1 24 15 |
| | eS | 1 33 48 |
| | F | 1 35 |
| | **Rolphton** | |
| | eP | 1 24 23 d |
| | F | 1 27 |
| | **Ottawa** | |
| 721 Nov. 3 | e | 17 30 31 |
| | F | 17 31 |
| | **Rolphton** | |
| | i | 17 29 40 |
| | **Ottawa** | |
| 722 Nov. 3 | e | 23 33 24 |
| | F | 23 34 |
| | **USCGS** | |
| 723 Nov. 4 | φ = 32° N. | |
| | λ = 116 1/2° W. | |
| | H = 20 42 38 | |
| | California | |
| | **Ottawa** | |
| | Δ = 35° | |
| | P | 20 49 25 |
| | PP | 20 50 44 |
| | PcP | 20 52 02 |
| | S | 20 55 00 |
| | SS | 20 57 15 |
| | L | 20 57 25 |
| | F | 21 38 00 |
| | **Victoria** | |
| | P | 20 46 47 |
| | S(P) | 20 50 59 |
| | L | 20 51 55 |
| | F | 21 06 |
| | **Saskatoon** | |
| | Δ = 22°6 | |
| | P | 20 47 39 |
| | PP | 20 48 07 |
| | PPP | 20 48 29 |
| | S | 20 51 39 |
| | e | 20 54 03 |
| | L | 20 54 22 |
| | F | 21 18 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Halifax** | |
| 723 Nov. 4 (cont'd) | e | 21 04.6 |
| | F | 21 23 |
| | **Seven Falls** | |
| | e | 20 50 57 |
| | L | 21 03 |
| | F | 21 42 |
| | **Shawinigan Falls** | |
| | e | 21 01.3 |
| | F | 21 11 |
| | **Victoria** | |
| 724 Nov. 5 | e | 4 39 21 |
| | F | 4 41 |
| | **USCGS** | |
| 725 Nov. 6 | H = 1 11 33 | |
| | N.W. coast of Guatemala | |
| | **Ottawa** | |
| | e | 1 18 23 |
| | F | 1 19 |
| | **Ottawa** | |
| 726 Nov. 6 | 22 34 55 | |
| | 22 36 | |
| | **USCGS** | |
| 727 Nov. 7 | φ = 14° S. | |
| | λ = 166 1/2° E. | |
| | H = 5 59 35 | |
| | New Hebrides | |
| | **Ottawa** | |
| | Δ = 118° | |
| | P | 6 15 35 |
| | P' | 6 18 27 |
| | PP | 6 19 36 |
| | PPP | 6 22 06 |
| | SKS | 6 25 26 |
| | e | 6 28 24 |
| | PS | 6 29 31 |
| | L | 6 50 00 |
| | F | 8 48 00 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria** | |
| 727 Nov. 7 (cont'd) | Δ = 92° | |
| | P | 6 12 29 d |
| | S | 6 23 17 |
| | PS | 6 24 40 |
| | SS | 6 28 47 |
| | G | 6 35 43 |
| | L | 6 40 |
| | F | 8 50 |
| | **Saskatoon** | |
| | e | 6 23 33 |
| | e | 6 26 24 |
| | e | 6 31 15 |
| | e | 6 34 10 |
| | G | 6 40.3 |
| | L | 6 46.3 |
| | F | 8 50 |
| | **Halifax** | |
| | e | 6 32 38 |
| | e | 6 38 38 |
| | F | 8 32 |
| | **Seven Falls** | |
| | e | 6 20 02 |
| | e | 6 29 40 |
| | e | 6 37 22 |
| | L | 6 58 |
| | F | 9 09 |
| | **Ottawa** | |
| 728 Nov. 8 | e | 18 09 14 |
| | **Ottawa** | |
| 729 Nov. 8 | e | 19 08 11 |
| | **Ottawa** | |
| 730 Nov. 9 | e | 18 53 47 |
| | e | 18 54 16 |
| | e | 18 54 19 |
| | **Ottawa** | |
| 731 Nov. 9 | e | 23 02 47 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **USCGS** | |
| 732 Nov. 9 | H | 23 03 29 |
| | Pacific Ocean 1100 miles N. of Easter Is. | |
| | **Ottawa** | |
| | e | 23 13 43 |
| | **Seven Falls** | |
| | L | 23 35 |
| | **Ottawa** | |
| 733 Nov. 10 | Δ = 82 km. | |
| | P | 0 45 50.5 |
| | S | 0 46 01 |
| | **Ottawa** | |
| 734 Nov. 11 | e | 08 51 03 |
| | **Victoria** | |
| 735 Nov. 11 | i | 11 47 20 c |
| | i | 11 47 33 |
| | F | 11 49 |
| | **Seven Falls** | |
| 736 Nov. 11 | e | 16 42 |
| | **Seven Falls** | |
| 737 Nov. 11 | e | 17 20 |
| | **Ottawa** | |
| 738 Nov. 11 | e | 18 18 |
| | **Ottawa** | |
| 739 Nov. 12 | Δ = 160 km. | |
| | $P_n$ | 16 19 08 |
| | $S_n$ | 16 19 26 |
| | $S_2$ | 16 19 28 |
| | $S_1$ | 16 19 30 |
| | e | 16 19 33 |
| | F | 16 19 50 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 740 Nov. 13 | USCGS | |
| | φ = 11° N. | |
| | λ = 86° W. | |
| | H = 04 42 35 | |
| | Near SW coast of Nicarogua | |
| | Ottawa | |
| | Δ = 38° | |
| | P | 4 49 34 c |
| | PP | 4 51 08 |
| | S | 4 55 32 |
| | L | 5 01.8 |
| | F | 5 55 |
| | Victoria | |
| | e | 4 51 24 d |
| | e | 4 52 46 |
| | e | 4 58 |
| | Saskatoon | |
| | e | 4 52 43 |
| | e | 5 00 37 |
| | L | 5 07.6 |
| | F | 5 57 |
| | Halifax | |
| | L | 5 04.4 |
| | Seven Falls | |
| | Δ = 38° | |
| | P | 4 49 57 |
| | PP | 4 51 35 |
| | S | 4 55 53 |
| | SS | 4 58.7 |
| | L | 5 03.9 |
| | F | 5 44 |
| | Shawinigan Falls | |
| | P | 4 49 51 |
| | Rolphton | |
| | e | 4 49 36 |
| 741 Nov. 13 | Ottawa | |
| | Δ = 155 km. | |
| | $P_n$ | 18 34 31.5 |
| | P | 18 34 33.5 |
| | $S_n$ | 18 34 50 |
| | $S_2$ | 18 34 51 |
| | $S_1$ | 18 34 52 |
| | e | 18 34 58 |
| | F | 18 35.3 |
| | Victoria | |
| 742 Nov. 13 | Δ = 175 km. | |
| | eP | 22 55 44 |
| | $eS_n$ | 22 56 04 |
| | $S_2$ | 22 56 07 |
| | F | 22 57 |
| | USCGS | |
| 743 Nov. 14 | H = 2 10 02 | |
| | Near coast of Equador | |
| | Ottawa | |
| | e | 2 18 42 |
| | e | 2 18 48 |
| | F | 2 21 |
| | Victoria | |
| 744 Nov. 14 | Δ = 137 km. | |
| | iP | 6 21 58.5 |
| | $iS_n$ | 6 22 14.5 |
| | Ottawa | |
| 745 Nov. 14 | e | 14 34 13 |
| | Victoria | |
| 746 Nov. 14 | i | 20 43 28 |
| | i | 20 44 32 |
| | e | 20 44 47 |
| | L | 20 46.7 |
| | Victoria | |
| 747 Nov. 15 | i | 9 25 57 d |
| | i | 9 26 00.5 |
| | F | 9 27 |
| | Ottawa | |
| 748 Nov. 15 | e | 23 15 26 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa | |
| | Δ = 212 km. | |
| 749 Nov. 16 | $iP_n$ | 21 38 31 |
| | $P_1$ | 21 38 34 |
| | $S_n$ | 21 38 55 |
| | $S_2$ | 21 38 59 |
| | $S_1$ | 21 39 02 |
| | e | 21 39 07 |
| | F | 21 40 |
| | Ottawa | |
| 750 Nov. 17 | e | 2 22 41 |
| | Ottawa | |
| 751 Nov. 17 | e | 5 21 22 |
| | Ottawa | |
| 752 Nov. 17 | e | 11 29 27 |
| | Ottawa | |
| 753 Nov. 17 | e | 17 04 39 |
| | Ottawa | |
| 754 Nov. 18 | L | 1 39 |
| | F | 1 42 |
| | Ottawa | |
| 755 Nov. 18 | e | 13 59 52 |
| | Ottawa | |
| 756 Nov. 18 | e | 14 12 58 |
| | Ottawa | |
| 757 Nov. 18 | Δ = 185 km. | |
| | $P_n$ | 17 16 43 |
| | $P_1$ | 17 16 45 |
| | $S_n$ | 17 17 04 |
| | $S_2$ | 17 17 06.5 |
| | $S_1$ | 17 17 09 |
| | L | 17 17 14 |
| | La Cave | |
| 757 Nov. 18 | Δ = 85 km. | |
| | $iP_1$ | 17 16 28.7 |
| | $S_2$ | 17 16 40 |
| | $S_1$ | 17 16 40.4 |
| | Ottawa | |
| 758 Nov. 18 | e | 20 01 24 |
| | Ottawa | |
| 759 Nov. 18 | Δ = 163 km. | |
| | $P_n$ | 20 13 49 |
| | $S_n$ | 20 14 09 |
| | $S_2$ | 20 14 12 |
| | F | 20 15 |
| | Ottawa | |
| 760 Nov. 18 | e | 23 48 10 |
| | Ottawa | |
| 761 Nov. 19 | e | 6 06 38 |
| | Ottawa | |
| 762 Nov. 19 | Δ = 155 km. | |
| | $P_n$ | 16 24 52 |
| | P | 16 24 54 |
| | $S_n$ | 16 25 10 |
| | $S_2$ | 16 25 13 |
| | L | 16 25 18 |
| | F | 16 26 |
| | USCGS | |
| 763 Nov. 20 | φ = 11° S. | |
| | λ = 75° W. | |
| | H = 04 43 56 | |
| | Central Peru | |
| | Ottawa | |
| | P | 4 53 38 |
| | Victoria | |
| | e | 4 55 29 c |
| | Shawinigan Falls | |
| | e | 4 53 48 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 764 Nov. 20 | USCGS | |
| | φ = 28°.5 N. | |
| | λ = 112° W. | |
| | H ; 07 09 45 | |
| | Gulf of California | |
| | Ottawa | |
| | Δ = 33°.5 | |
| | P | 7 16 26 |
| | e | 7 17 43 |
| | S | 7 22 00 |
| | SS | 7 23 52 |
| | SSS | 7 24 36 |
| | L | 7 28 |
| | F | 9 10 |
| | Victoria | |
| | Δ = 34°.0 | |
| | P | 7 14 39 c |
| | PcP | 7 16 17 |
| | S | 7 18 55 |
| | L | 7 22.0 |
| | F | 9 24 |
| | Saskatoon | |
| | Δ = 25°.5 | |
| | P | 7 15 10 |
| | PP | 7 15 55 |
| | i | 7 19 33 |
| | S | 7 19 42 |
| | SS | 7 21 02 |
| | F | 9 18 |
| | Seven Falls | |
| | Δ = 37°.6 | |
| | eP | 7 17 03 |
| | ePP | 7 18 30 |
| | e | 7 19 10 |
| | eS | 7 24 00 |
| | SS | 7 25 56 |
| | L | 7 29 14 |
| | F | 9 31 |
| | Shawinigan Falls | |
| | Δ = 34°.2 | |
| | P | 7 16 59 |
| | Rolphton | |
| | e | 7 16.3 |
| | eL | 7 27 |
| | F | 7 40 |
| 764 Nov. 20 | La Cave | |
| | eP | 7 06.2 |
| | Ottawa | |
| 765 Nov. 20 | Δ = 192 km. | |
| | $P_n$ | 20 16 28 |
| | $P_1$ | 20 16 30 |
| | $S_n$ | 20 16 49 |
| | L | 20 16 54 |
| | Ottawa | |
| 766 Nov. 21 | e | 19 59 05 |
| | USCGS | |
| 767 Nov. 22 | φ = 29° S. | |
| | λ = 178° W. | |
| | H = 00 51 32 | |
| | Kermadec Islands | |
| | Ottawa | |
| | Δ = 119° | |
| | P | 1 10 17 d |
| | e | 1 11 22 |
| | PP | 1 11 38 |
| | PPP | 1 13 40 |
| | SKS | 1 16 56 |
| | SKKS | 1 18 22 |
| | S(?) | 1 19 18 |
| | PS | 1 21 24 |
| | PPS | 1 22.6 |
| | SS | 1 27.6 |
| | SSS | 1 35.5 |
| | L | 1 45 |
| | F | 3 05 |
| | Victoria | |
| | Δ = 90°.0 | |
| | P | 1 04 37 |
| | PP | 1 08 17 |
| | S | 1 14 59 |
| | PS | 1 15 27 |
| | SS | 1 16 57 |
| | L | 1 28.0 |
| | F | 2 03 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Saskatoon | |
| 767 Nov. 22 (cont'd) | Δ = 102° | |
| | PP | 1 09 45 |
| | SKS | 1 15 42 |
| | S | 1 17 00 |
| | PS | 1 18 30 |
| | PPS | 1 19 52 |
| | SS | 1 24 10 |
| | F | 3 15 |
| | Halifax | |
| | e | 1 13 38 |
| | e | 1 18 42 |
| | L | 2 01 |
| | F | 2 23 |
| | Seven Falls | |
| | Δ = 125° | |
| | PP | 1 12 06 |
| | SKS | 1 17 12 |
| | SKKS | 1 18 42 |
| | S(?) | 1 20 14 |
| | PS | 1 21 56 |
| | SS | 1 28 56 |
| | e | 1 30.4 |
| | L | 1 56.9 |
| | F | 3 21 |
| | Rolphton | |
| | e | 1 10 16 c |
| | e | 1 20 42 |
| | Ottawa | |
| 768 Nov. 22 | P | 1 20 35 |
| | Ottawa | |
| 769 Nov. 22 | e | 11 58 13 |
| | Ottawa | |
| 770 Nov. 22 | e | 14 14 04 |
| | Ottawa | |
| 771 Nov. 22 | P | 17 03 14 |
| | S | 17 03 35 |
| | Ottawa | |
| 772 Nov. 22 | e | 18 00 45 |
| | USCGS | |
| 773 Nov. 23 | φ = 19° N. | |
| | λ = 78 1/2° W. | |
| | H = 6 14 39 | |
| | NW coast of Jamaica | |
| | Ottawa | |
| | eP | 6 20 16 c |
| | L | 6 27 00 |
| | F | 6 40 00 |
| | Saskatoon | |
| | e | 6 23 38 |
| | L | 6 35 41 |
| | Seven Falls | |
| | e | 6 28 |
| | Ottawa | |
| 774 Nov. 23 | e | 18 02 16 |
| | Ottawa | |
| 775 Nov. 24 | Δ = 170 km. | |
| | $P_n$ | 17 10 58 |
| | $S_n$ | 17 11 17.5 |
| | $S_2$ | 17 11 19 |
| | $S_1$ | 17 11 21 |
| | L | 17 11 26 |
| | F | 17 11 50 |
| | Rolphton | |
| | Δ = 0.0 km. | |
| | i | 17 10 27.6 |
| | La Cave | |
| | $P_1$ | 17 10 41.5 |
| | $S_1$ | 17 10 52.2 |
| | Ottawa | |
| 776 Nov. 25 | e | 14 03 10 |
| | Ottawa | |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa | |
| 777 Nov. 25 | e | 14 28 50 |
| | Ottawa | |
| 778 Nov. 25 | e | 14 41 52 |
| | Ottawa | |
| 779 Nov. 25 | Δ = 165 km. | |
| | P | 22 25 33 |
| | S | 22 25 50 |
| | $S_2$ | 22 25 54 |
| | $S_1$ | 22 25 56 |
| | F | 22 26 20 |
| | USCGS | |
| 780 Nov. 26 | φ = 16° N. | |
| | λ = 95° W. | |
| | H = 04 24 35 | |
| | Coast of S. Mexico | |
| | Ottawa | |
| | P | 4 31 18 d |
| | Ottawa | |
| 781 Nov. 26 | P | 6 31 29 |
| | USCGS | |
| 782 Nov. 27 | φ = 18° S. | |
| | λ = 173° W. | |
| | H = 8 42 16 | |
| | Tonga Islands | |
| | Ottawa | |
| | cP | 9 00 44 |
| | e | 9 01 02 |
| | e | 9 07.2 |
| | e | 9 10.5 |
| | e | 9 33 |
| | Victoria | |
| | S | 9 03 36 |
| | L | 9 19 |
| | F | 9 41 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Saskatoon | |
| 782 Nov. 27 | S | 9 05 36 |
| | e | 9 06 00 |
| | e | 9 11 57 |
| | e | 9 18 57 |
| | L | 9 24 32 |
| | F | 10 35 |
| | Halifax | |
| | e | 9 09 2 |
| | L | 9 37.1 |
| | F | 10 28 |
| | Seven Falls | |
| | i | 9 01 24 |
| | e | 9 07 20 |
| | e | 9 10 12 |
| | L | 9 34 |
| | F | 11 06 |
| | Ottawa | |
| 783 Nov. 27 | eP | 9 11 56 |
| | e | 9 12 14 |
| | USCGS | |
| 784 Nov. 28 | φ = 8° N. | |
| | λ = 83° W. | |
| | H = 16 53 22 | |
| | South coast of Panama | |
| | Ottawa | |
| | P | 17 00 39 |
| | Ottawa | |
| 785 Nov. 28 | Δ = 185 km. | |
| | $P_n$ | 17 38 23 |
| | $S_n$ | 17 38 51 |
| | Rolphton | |
| | Δ = 0.0 km. | |
| | i | 12 37 59 |
| | La Cave | |
| | $P_1$ | 17 38 13.4 |
| | $S_1$ | 17 38 23.8 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s | NO. AND DATE | PHASE | TIME h m s |
|---|---|---|---|---|---|
| | Ottawa | | | | |
| 786 Nov. 28 | e | 20 03 37 | | | |
| | Ottawa | | | | |
| 787 Nov. 28 | e | 20 29 33 | | | |
| | Victoria | | | | |
| 788 Nov. 29 | e | 13 01 12.5 | | | |
| | Ottawa | | | | |
| 789 Nov. 29 | e | 17 17 23 | | | |
| | Victoria | | | | |
| 790 Nov. 29 | $P_1$ | 18 32 10.5 | | | |
| | $S_1$ | 18 32 15.4 | | | |
| | e | 18 32 16.4 | | | |
| | e | 18 32 19.5 | | | |
| | F | 18 33 | | | |
| | Victoria | | | | |
| 791 Nov. 29 | $P_1$ | 18 34 38.4 | | | |
| | $S_1$ | 18 34 44.0 | | | |
| | F | 18 35.5 | | | |
| | Victoria | | | | |
| 792 Nov. 29 | e | 18 34 37.5 | | | |
| | Victoria | | | | |
| 793 Nov. 29 | e | 18 36 25.0 | | | |
| | e | 18 36 30.6 | | | |
| | e | 18 36 32.5 | | | |
| | F | 18 38 | | | |
| | Victoria | | | | |
| 794 Nov. 30 | e | 16 44 22 | | | |

W. H. Gilmore

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa | |
| 795 Dec. 1 | e | 19 52 18 |
| | Ottawa | |
| 796 Dec. 1 | Δ = 170 km. | |
| | $P_n$ | 12 25 31 |
| | $S_n$ | 12 25 51 |
| | e | 12 25 53 |
| | e | 12 25 55 |
| | Victoria | |
| 797 Dec. 2 | Δ = 532 km. | |
| | $P_n$ | 22 32 41 |
| | e | 22 32 44.5 |
| | e | 22 32 51 |
| | e | 22 33 07 |
| | e | 22 33 13 |
| | $S_n$ | 22 33 31.5 |
| | e | 22 33 35 |
| | e | 22 34 29 |
| | e | 22 34 43.5 |
| | e | 22 35 22 |
| | F | 23 37 |
| | Ottawa | |
| 798 Dec. 2 | eL | 20 40 00 |
| | Seven Falls | |
| | e | 20 40 |
| | Ottawa | |
| 799 Dec. 2 | e | 22 49.4 |
| | Victoria | |
| 800 Dec. 3 | i | (12 13 48) |
| | e | (12 14 24) |
| | Ottawa | |
| 801 Dec. 5 | Δ = 34° | |
| | eP | 11 29 13 c |
| | PP | 11 30 25 |
| | L | 11 42.5 |
| | F | 11 47 |
| | Ottawa | |
| 802 Dec. 5 | Δ = 37° | |
| | eP | 12 49 53 |
| | PP | 12 51 26 |
| | S | 12 55 47 |
| | L | 13 02.0 |
| | F | 13 33 |
| | Saskatoon | |
| | L | 13 07 |
| | F | 13 21 |
| | Seven Falls | |
| | P | 12 50 17 |
| | L | 13 03 |
| | F | 13 25 |
| | Shawinigan Falls | |
| | P | 12 50 08 |
| | Ottawa | |
| 803 Dec. 5 | Δ = 172 km. | |
| | $P_n$ | 17 24 32 |
| | $S_2$ | 17 24 54 |
| | L | 17 25 03 |
| | F | 17 25.3 |
| | Rolphton | |
| | i | 17 24 04 |
| | Ottawa | |
| 804 Dec. 7 | Δ = 185 km. | |
| | $P_1$ | 22 44 39 |
| | e | 22 44 56 |
| | $S_2$ | 22 45 01 |
| | $S_1$ | 22 45 02.5 |
| | F | 22 45.3 |
| | Ottawa | |
| 805 Dec. 8 | e | 17 53 19 |
| | Ottawa | |
| 806 Dec. 8 | Δ = 240 km. (?) | |
| | P | 18 40 56 |
| | $S_2$ | 18 41 28 |
| | $S_1$ | 18 41 31 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa** | |
| 807 Dec. 8 | Δ = 185 km. | |
| | $P_n$ | 23 01 51 |
| | $S_2$ | 23 02 14.5 |
| | $S_1$ | 23 02 16.5 |
| | L | 23 02 22 |
| | F | 23 03 |
| | **Rolphton** | |
| | Δ = 0.0 km. | |
| | i | 23 01 25 |
| | **Ottawa** | |
| 808 Dec. 8 | Δ = 185 km. | |
| | P | 23 25 04 |
| | $S_n$ | 23 25 24.5 |
| | $S_2$ | 23 25 27.5 |
| | L | 23 25 35 |
| | F | 23 26.1 |
| | **Rolphton** | |
| | i | 23 24 38 |
| | **Ottawa** | |
| 809 Dec. 9 | i | 23 17 40 |
| | i | 23 17 44 |
| | **Ottawa** | |
| 810 Dec. 10 | e | 15 27 48 |
| | **Ottawa** | |
| | Δ ≒ 64° | |
| 811 Dec. 10 | iP | 19 26 07 c |
| | PP | 19 26 49 |
| | S | 19 34 36 |
| | eL | 19 45.8 |
| | F | 20 30 |
| | **Victoria** | |
| | iP | 19 23 59 c |
| | e | 19 25 42 |
| | F | 19 30 |
| | **Seven Falls** | |
| | P | 19 26 32 |
| | L | 19 45 |
| | F | 20 38 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **USCGS** | |
| 812 Dec. 11 | H = 11 33 49 | |
| | **Loyalty Islands** | |
| | **Ottawa** | |
| | iP | 11 52 44 d |
| | eL | 12 26.0 |
| | F | 13 00 |
| | **Victoria** | |
| | e | 11 46 57 |
| | F | 11 48 |
| | **Ottawa** | |
| 813 Dec. 13 | Δ = 60 km. | |
| | $P_1$ | 20 04 10 |
| | $P_3$ | 20 04 13 |
| | $S_1$ | 20 04 17 |
| | $S_2$ | 20 04 19 |
| | F | 20 04.8 |
| | **Rolphton** | |
| | Δ = 115 km. | |
| | e | 20 04 21 |
| | $S_2$ | 20 04 33 |
| | **Victoria** | |
| 814 Dec. 13 | e | 20 10 37 |
| | **Victoria** | |
| 815 Dec. 14 | $iP_1$ | 2 26 40 |
| | $iS_1$ | 2 26 45 |
| | F | 2 27 |
| | **Victoria** | |
| 816 Dec. 14 | Δ = 135 km. | |
| | P | 19 44 01.5 |
| | e | 19 44 08 |
| | S | 19 44 16.5 |
| | i | 19 44 17.5 |
| | F | 19 45 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 104

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 817 Dec. 14 | Ottawa | |
| | Δ = 178 km. | |
| | $P_n$ | 23 11 57 |
| | $P_1$ | 23 11 59 |
| | $S_n$ | 23 12 17 |
| | $S_2$ | 23 12 19.5 |
| | $S_1$ | 23 12 22 |
| | L | 23 12 28 |
| | F | 23 12.8 |
| | Rolphton | |
| | i | 23 11 29 |
| | Ottawa | |
| 818 Dec. 14 | Δ = 182 km. | |
| | $P_n$ | 23 13 45 |
| | $S_2$ | 23 14 08.5 |
| | L | 23 14 16.5 |
| | F | 23 14.5 |
| | Rolphton | |
| | i | 23 13 17 |
| | Ottawa | |
| 819 Dec. 15 | Δ = 175 km. | |
| | $P_n$ | 17 28 16 |
| | $P_1$ | 17 28 18 |
| | $S_2$ | 17 28 39 |
| | L | 17 28 47 |
| | F | 17 29.0 |
| | Rolphton | |
| | i | 17 27 48 |
| | Victoria | |
| 820 Dec. 16 | Δ = 112 km. | |
| | iP | 6 35 14 d |
| | e | 6 35 17 |
| | S | 6 35 26.5 |
| | F | 6 36 |
| | Victoria | |
| 821 Dec. 16 | e | 14 19 34 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | USCGS | |
| 822 Dec. 17 | φ = 54° S. | |
| | λ = 71° W. | |
| | H = 6 53 29 | |
| | Southern Magallanes Province 50 miles south of Punta Arenas | |
| | Ottawa | |
| | Δ = 101°.5 | |
| | eP | 7 07 11 |
| | PP | 7 11 10 |
| | SKS | 7 17 40 |
| | S | 7 18.4 |
| | PS | 7 20.3 |
| | PPS | 7 21.2 |
| | L | 7 36.2 |
| | F | 11 00 |
| | Victoria | |
| | Δ = 118° | |
| | e | 7 11 37 |
| | ePP | 7 12 39 |
| | SKS | 7 18 17 |
| | S(?) | 7 20 29 |
| | PS | 7 22 30 |
| | PPS | 7 23 59 |
| | SS | 7 29 18 |
| | G | 7 43.2 |
| | L | 7 49.5 |
| | F | 7 05 |
| | Saskatoon | |
| | Δ = 111°.5 | |
| | PP | 7 12 44 |
| | PPP | 7 15 12 |
| | SKS | 7 18 45 |
| | PS | 7 22 15 |
| | i | 7 26 35 |
| | SS | 7 28 30 |
| | SSS | 7 32.7 |
| | G | 7 40 00 |
| | L | 9 59 |
| | F | 10 45 |
| | Halifax | |
| | Δ = 98° | |
| | PP | 7 11 02 |
| | SKS | 7 17 48 |
| | S | 7 18 52 |
| | PS | 7 20 16 |
| | G | 7 34.5 |
| | F | 9 43 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Seven Falls** | |
| 822 Dec. 17 | Δ = 102°.5 | |
| | PP | 7 11 41 |
| | iS | 7 18 58 |
| | PS | 7 22 02 |
| | SS | 7 25 46 |
| | SSS | 7 30 34 |
| | G | 7 36.3 |
| | L | 7 41.2 |
| | F | 12 29 |
| | **Shawinigan Falls** | |
| | Δ = 107° | |
| | eP | 7 07 34 |
| | ePP | 7 11 38 |
| | PPP | 7 13 27 |
| | e | 7 17 46 |
| | PPS | 7 22 25 |
| | L | 7 42 |
| | F | 8 29 |
| | **Rolphton** | |
| 823 Dec. 17 | i | 11 24 03.5 |
| | **Victoria** | |
| 824 Dec. 17 | $iP_1$ | 13 06 02 c |
| | $iS_1$ | 13 06 06 |
| | i | 13 06 07.5 |
| | F | 13 07 |
| | **USCGS** | |
| 825 Dec. 17 | φ = 54° S. | |
| | λ = 71° W. | |
| | H = 15 07 53 | |
| | **Ottawa** | |
| | F | 19 00 |
| | **Victoria** | |
| | Δ = 114° | |
| | PP | 15 27 31 |
| | SKS | 15 33 18 |
| | PS | 15 36 48 |
| | PPS | 15 38 00 |
| | SS | 15 43.4 |
| | SSS | 15 47.3 |
| | L | 15 54 |
| | F | 18 16 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Saskatoon** | |
| | Δ = 111°.5 | |
| | PP | 15 27 10 |
| | PPP | 15 29 38 |
| | SKS | 15 33 02 |
| | SKKS | 15 34 00 |
| | PS | 15 36 30 |
| | PPS | 15 37 40 |
| | SS | 15 42 24 |
| | SSS | 15 46 45 |
| | G | 15 53.5 |
| | L | 15 58.3 |
| | F | 19 05 |
| | **Halifax** | |
| | Δ = 98° | |
| | PP | 15 25 24 |
| | SKS | 15 32 06 |
| | PS | 15 34 37 |
| | SS | 15 39.8 |
| | SSS | 15 43.5 |
| | L | 15 46.8 |
| | F | 17 58 |
| | **Seven Falls** | |
| | Δ = 102°.5 | |
| | eP | 15 22 00 |
| | e | 15 25 20 |
| | S | 15 33 17 |
| | PS | 15 35 01 |
| | SS | 15 40 03 |
| | SSS | 15 45 09 |
| | G | 15 54.7 |
| | L | 15 56.2 |
| | F | 19 19 |
| | **Shawinigan Falls** | |
| | Δ = 107° | |
| | P | 15 21 46 |
| | PP | 15 25 50 |
| | SKS | 15 32 18 |
| | PS(?) | 15 34 36 |
| | F | 16 44 |
| | **USCGS** | |
| 826 Dec. 18 | φ = 34° S. | |
| | λ = 179 1/2° E. | |
| | H = 5 38 59 | |
| | d = 150 | |
| | Kermadec Islands. | |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | Ottawa | |
| 826 Dec. 18 (cont'd) | (Δ = 72°) | |
| | iP | 5 57 40 c |
| | e | 5 58 30 |
| | e | 6 00 12 |
| | F | 6 05.0 |
| | Seven Falls | |
| | e | 5 57 50 |
| | Ottawa | |
| 827 Dec. 18 | eP | 6 07 31 |
| | Ottawa | |
| 828 Dec. 18 | eP | 9 54 24 |
| | Ottawa | |
| 829 Dec. 18 | P | 17 18 16 |
| | Ottawa | |
| 830 Dec. 18 | P | 19 08 36 |
| | Seven Falls | |
| 831 Dec. 19 | e | 8 30 |
| | USCGS | |
| 832 Dec. 19 | H = 9 39 32 New Guinea | |
| | Ottawa | |
| | eP | 9 58 41 c |
| | e | 9 59 08 |
| | L | 10 10 |
| | F | 10 20.0 |
| | Ottawa | |
| 833 Dec. 20 | L | 1 25.0 |
| | Seven Falls | |
| | e | 1 27 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | USCGS | |
| 834 Dec. 20 | H = 4 16 40 Fiji Islands region d = 600 | |
| | Ottawa | |
| | P | 4 45 05 |
| | Victoria | |
| | iP | 4 28 18 d |
| | pP | 4 30 26 |
| | F | 4 32 |
| | USCGS | |
| 835 Dec. 21 | φ = 18 1/2° N. λ = 67° W. H = 12 31 19 d = 100 Puerto Rico | |
| | Ottawa | |
| | L | 12 42.0 |
| | F | 13 50.0 |
| | Victoria | |
| | P | 12 40 37 |
| | Saskatoon | |
| | L | 12 46.5 |
| | Seven Falls | |
| | P | 12 38 06 |
| | S | 12 42 38 |
| | L | 12 42.5 |
| | F | 13 08 |
| | Victoria | |
| 836 Dec. 21 | P | 13 31 10 c |
| | Victoria | |
| 837 Dec. 21 | Δ = 140 km. | |
| | e | 13 55 51.5 d |
| | e | 13 55 54 |
| | e | 13 55 57 |
| | e | 13 56 06.5 |
| | e | 13 56 10.5 |
| | e | 13 56 16 |
| | F | 13 58 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 838 Dec. 21 | **Ottawa** | |
| | $S_2$ | 17 04 51 |
| | L | 17 04 58 |
| | F | 17 05.3 |
| | **Rolphton** | |
| | i | 17 04 00.5 |
| | **Rolphton** | |
| 839 Dec. 21 | i | 17 25 11.5 |
| | **USCGS** | |
| 840 Dec. 21 | φ = 20° S. | |
| | λ = 64° W. | |
| | H = 19 33 00 | |
| | d = 600 km. | |
| | South Bolivia | |
| | **Ottawa** | |
| | iP | 19 42 51 d |
| | S | 19 50 50 |
| | e | 19 54 26 |
| | L | 20 04.0 |
| | **Victoria** | |
| | Δ = 75° | |
| | P | 19 44 45 |
| | pP | 19 46 53 |
| | PP | 19 48 12 |
| | S | 19 54 26 |
| | sS | 19 58 23 |
| | F | 20 02 |
| | **Saskatoon** | |
| | e | 19 53 34 |
| | e | 19 57 24 |
| | **Halifax** | |
| | Δ = 57° | |
| | P | 19 42 48 |
| | e | 19 44 46 |
| | e | 19 45 40 |
| | S | 19 50 34 |
| | e | 19 51 40 |
| | e | 19 54 06 |
| | F | 20 19 |
| | **Seven Falls** | |
| | P | 19 43 00 |
| | S | 19 51 02 |
| | i | 19 54 36 |
| | **Shawinigan Falls** | |
| | P | 19 42 56 |
| | e | 19 44 04 |
| | i | 19 44 34 |
| | S | 19 50 59 |
| | F | 19 55 |
| | **Rolphton** | |
| | e | 19 42 58.5 |
| | i | 19 42 59.5 |
| | i | 19 43 01 |
| | e | 19 51 03 |
| | **USCGS** | |
| 841 Dec. 22 | φ = 16° N. | |
| | λ = 93° W. | |
| | H = 9 30 47 | |
| | d = 100 | |
| | Chiapos, Mexico | |
| | **Ottawa** | |
| | Δ = 32° | |
| | eP | 9 37 17 |
| | PP | 9 38 20 |
| | PPP | 9 38 34 |
| | eS | 9 42 30 |
| | SS | 9 44.3 |
| | ScS | 9 48.3 |
| | L | 9 49.5 |
| | F | 10 40 |
| | **Victoria** | |
| | P | 9 38 26 |
| | pP | 9 38 56 |
| | S | 9 44 33 |
| | e | 9 47.9 |
| | L | 9 58 |
| | F | 10 31 |
| | **Saskatoon** | |
| | Δ = 37°5 | |
| | P | 9 38 00 |
| | PP | 9 39 30 |
| | PPP | 9 40 00 |
| | PcP | 9 40 19 |
| | S | 9 43 45 |
| | SS | 9 46 50 |
| | SSS | 9 47 12 |
| | L | 9 49 |
| | F | 10 35 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 108

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 841 Dec. 22 (cont'd) | **Halifax** | |
| | Δ = 38°5 | |
| | P | 9 37 57 |
| | e | 9 38 27 |
| | PP | 9 39 35 |
| | S | 9 44 01 |
| | e | 9 44 17 |
| | SS | 9 46 49 |
| | SSS | 9 47 37 |
| | ScS | 9 48 19 |
| | L | 9 50.1 |
| | F | 10 15 |
| | **Seven Falls** | |
| | P | 9 37 44 |
| | e | 9 38 05 |
| | i | 9 38 59 |
| | S | 9 43 28 |
| | e | 9 46 00 |
| | L(?) | 9 47 |
| | F | 10 49 |
| | **Shawinigan Falls** | |
| | e | 9 37 33 |
| | e | 9 37 54 |
| | e | 9 38 43 |
| | e | 9 44 44 |
| | e | 9 47.7 |
| | L | 9 50.5 |
| | F | 10 03 |
| | **Rolphton** | |
| | e | 9 37 15 |
| | **Ottawa** | |
| 842 Dec. 22 | P | 16 12 32 |
| | e | 17 12 34 |
| | eS | 16 12 52 |
| | L | 16 12 58 |
| | F | 16 13.3 |
| | **Ottawa** | |
| 843 Dec. 23 | iS | 10 58 10 |
| | **Ottawa** | |
| 844 Dec. 23 | P | 21 04 45 |
| | L | 21 05 10 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **USCGS** | |
| 845 Dec. 25 | φ = 19 1/2° N. | |
| | λ = 104° W. | |
| | H = 22 40 45 | |
| | Calima, Mexico | |
| | **Ottawa** | |
| | eP | 22 47 08 |
| | e | 22 47 35 |
| | L | 23 02.8 |
| | F | 23 35 |
| | **Saskatoon** | |
| | L | 22 58.5 |
| | **USCGS** | |
| 846 Dec. 25 | φ = 37° N. | |
| | λ = 39° E. | |
| | H = 23 17 31 | |
| | Honshu, Japan | |
| | **Ottawa** | |
| | eP | 23 30 42 |
| | **Victoria** | |
| | e | 23 28 27 |
| | **Rolphton** | |
| | e | 23 30 36 |
| | **USCGS** | |
| 847 Dec. 25 | φ = 37° N. | |
| | λ = 139° E. | |
| | H = 23 24 53 | |
| | Honshu, Japan | |
| | **Ottawa** | |
| | eP | 23 38 04 |
| | L | 00 10.0 |
| | F | 00 40.0 |
| | **Victoria** | |
| | e | 23 35 52 |
| | **Seven Falls** | |
| | e | 23 03.3 |
| | e | 23 05 04 |
| | L | 00 04 |
| | F | 01 03 |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| 847 Dec. 25 (cont'd) | **Rolphton** | |
| | e | 23 37 58 |
| 848 Dec. 26 | **USCGS** | |
| | φ = 14 1/2° S. | |
| | λ = 180° | |
| | H = 6 23 54 | |
| | Fiji Islands | |
| | **Ottawa** | |
| | Δ = 111° | |
| | e | 6 42 04 |
| | ePS | 6 52 36 |
| | ePPS | 6 53 28 |
| | L | 7 15.0 |
| | F | 8 50.0 |
| | **Victoria** | |
| | Δ = 95° | |
| | e | 6 35 21 |
| | e | 6 35 30 |
| | S | 6 46 24 |
| | e | 6 50.3 |
| | L | 7 00 |
| | F | 8 03 |
| | **Saskatoon** | |
| | Δ = 93°5 | |
| | S | 6 48 08 |
| | PS | 6 49 24 |
| | SS | 6 54 26 |
| | SSS | 6 58 10 |
| | G | 7 02 40 |
| | L | 7 06.6 |
| | F | 9 10 |
| | **Halifax** | |
| | e | 7 01.1 |
| | L | 7 13 |
| | **Seven Falls** | |
| | e | 6 43 32 |
| | e | 6 49 16 |
| | e | 6 59 44 |
| | L | 7 14 |
| | F | 9 11 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Ottawa** | |
| 849 Dec. 26 | Δ = 400 km. | |
| | $P_n$ | 7 29 15 |
| | $S_n$ | 7 29 56 |
| | $S_2$ | 7 30 12 |
| | $S_1$ | 7 30 18 |
| | F | 7 30.6 |
| | **Rolphton** | |
| | cP | 7 28 47 |
| | eS | 7 29 19 |
| | **Ottawa** | |
| 850 Dec. 26 | Δ = 80 km. | |
| | P | 14 50 27 |
| | $S_1$ | 14 50 36 |
| | $S_2$ | 14 50 38 |
| | **USCGS** | |
| 851 Dec. 28 | φ = 60° S. | |
| | λ = 22° W. | |
| | H = 23 57 13 | |
| | Sandwish Islands | |
| | **Ottawa** | |
| | Δ = 115° | |
| | eP' | 0 15 45 |
| | PP | 0 16 45 |
| | PPP | 0 19 13 |
| | e | 0 21 20 |
| | SKS | 0 22 38 |
| | SKKS | 0 23 24 |
| | PS | 0 26 21 |
| | SS | 0 32 33 |
| | L | 0 44 00 |
| | **Victoria** | |
| | Δ = 137° | |
| | P' | 0 16 33 |
| | PP | 0 20 17 |
| | SS | 0 37.4 |
| | L | 0 56 |
| | F | 1 50 |
| | **Saskatoon** | |
| | Δ = 131°5 | |
| | PP | 0 18 38 |
| | PKS | 0 19 52 |
| | SKS | 0 23 30 |
| | SKKS | 0 25 38 |
| | SS | 0 41.5 |
| | L | 0 51 |
| | F | 2 22 |

# SEISMOLOGICAL SERVICE OF CANADA

## DOMINION OBSERVATORY, OTTAWA



| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Halifax** | |
| 851 Dec. 28 (cont'd) | e | 0 23 22 |
| | e | 0 32 |
| | L | 0 41.5 |
| | F | 1 23 |
| | **Seven Falls** | |
| | e | 0 16 53 |
| | i | 0 24 25 |
| | i | 0 31 41 |
| | L | 0 40.7 |
| | L | 0 53 |
| | F | 3 19 |
| | **USCGS** | |
| 852 Dec. 28 | H = 6 25 33<br>Atlantic Ocean<br>Azores region | |
| | **Ottawa** | |
| | eL | 6 42.0 |
| | **Seven Falls** | |
| | e | 6 42 |
| | **Victoria** | |
| 853 Dec. 28 | e | 13 47 17 |
| | **USCGS** | |
| 854 Dec. 29 | φ = 18 1/2° N.<br>λ = 121 E.<br>H = 3 03 55<br>North tip of Luzon Philippine | |
| | **Ottawa** | |
| | Δ = 120° | |
| | eP' | 3 22 35 |
| | PP | 3 23 34 |
| | PPP | 3 25 42 |
| | SKKS | 3 30 06 |
| | PS | 3 33 28 |
| | PPS | 3 34.7 |
| | SS | 3 39 50 |
| | L | 3 50.0 |
| | F | 5 30.0 |

| NO. AND DATE | PHASE | TIME h m s |
|---|---|---|
| | **Victoria** | |
| | Δ = 93° | |
| P | P | 3 17 09 d |
| | SKS | 3 27 37 |
| | S | 3 28 06 |
| | SS | 3 33 47 |
| | F | 4 51 |
| | **Saskatoon** | |
| | Δ = 97°5 | |
| | P | 3 17 40 |
| | PP | 3 21 40 |
| | PPP | 3 23 37 |
| | SKS | 3 28 07 |
| | S | 3 28 44 |
| | SKKS | 3 29 03 |
| | SS | 3 36 03 |
| | SSS | 3 39 23 |
| | L | 3 54.3 |
| | F | 5 50 |
| | **Halifax** | |
| | Δ = 121° | |
| | PP | 3 24 18 |
| | e | 3 26 30 |
| | e | 3 32 18 |
| | PS | 3 34 02 |
| | SS | 3 40 36 |
| | G | 3 53.2 |
| | L | 4 05.4 |
| | F | 5 15 |
| | **Seven Falls** | |
| | e | 3 25 38 |
| | i | 3 30 54 |
| | e | 3 40 38 |
| | e | 3 43 18 |
| | e | 3 52 54 |
| | L | 3 55 38 |
| | F | 5 53 |
| | **Shawinigan Falls** | |
| | e | 3 23 35 |
| | **USCGS** | |
| 855 Dec. 29 | φ = 27° S.<br>λ = 176 1/2° W.<br>H = 16 42 56<br>d = 200<br>Kermadec Islands | |

SEISMOLOGICAL SERVICE OF CANADA

DOMINION OBSERVATORY, OTTAWA

No. 111

| NO. AND DATE | PHASE | TIME | NO. AND DATE | PHASE | TIME |
|---|---|---|---|---|---|
| | | h m s | | | h m s |
| | Ottawa | | | | |
| 855 Dec. 29 (cont'd) | eL | 18 03.0 | | | |
| | F | 18 15.0 | | | |
| | Seven Falls | | | | |
| | e | 17 44 | | | |
| | Ottawa | | | | |
| 856 Dec. 29 | eP | 22 24 53 | | | |
| | e | 22 27 40 | | | |

W S Wilson

# SEISMOLOGICAL BULLETINS RECEIVED
## November, 1949

We ackno. edge, with thanks, the receipt of the following seismological publications and bulletins:-

| STATION | BULLETINS |
|---|---|
| Tacubaya | September, 1949 |
| Bucarest | September, 1949 |
| Saint Louis and Auxiliary Stations | Preliminaries - August 8,1,5,11 |
| Belgrade | August, 1949 |
| Almeria | April, 1949 |
| USCGS | July-September, 1945 |
| De Bilt | September, 1949 |
| Japan | August, 1949 |
| Cleveland | August, September, 1949 |
| Saint Louis University | February-May, 1947 |
| Richmond | September, 1949 |
| Wellington | 1947 |
| Bucarest | September, 1949 |
| Pasadena | October-December, 1948 |
| Prague | September, 1949 |
| Stara Dala | September, 1949 |
| Hautes Tatra | September, 1949 |
| Eger | September, 1949 |
| Budapest | June-September, 1949 |
| Kalocsa | June-September, 1949 |
| Brisbane | July, 1949 |
| Rome | August, 1949 |
| Chile | 1948 |
| Perth | April-June, 1949 |
| Fiji | July-December, 1943 |
| Wellington | July, 1949 |
| Tortosa | September, 1949 |
| Ksara | June-September |
| Toledo | June, July, September, 1949 |
| Lisbon | September, 1949 |
| Santa Clara | October, 1949 |
| Tacubaya | October, 1949 |

## December, 1949

| | |
|---|---|
| India | April-June, 1949 |
| South Africa | March-September, 1949 |
| Cleveland | October, 1949 |
| Belgrade | September, 1949 |
| Strasbourg | July, October 11-31, November 1-10, 1949 |
| Bureau Central | August, 1949 |
| Malaga | June, 1949 |
| Budapest | October, 1949 |
| Kalocsa | October, 1949 |
| La Paz | January-March, 1949 |
| Richmond | October, 1949 |
| Chile | January-June, 1949 |
| Rome | September, 1949 |
| De Bilt | October, 1949 |
| Tacubaya | November, 1949 |
| Bogota | January-March, 1949 |
| Cartuja | 1942-1946 |
| Apia | July-September, 1949 |
| Zurich | September, October, 1949 |
| Weston | November, 1949 |
| Hautes Tatra | October, 1949 |
| Stara Dala | October, 1949 |

# SEISMOLOGICAL BULLETINS RECEIVED
December, 1949
(cont'd)

| | |
|---|---|
| Eger | October, 1949 |
| Prague | October, 1949 |
| Tortosa | October, 1949 |
| Santa Clara | November, 1949 |
| Toledo | August, October, 1949 |
| Brisbane | August, 1949 |
| Wellington | August, 1949; Locals for 1947 |
| Trieste | July-September, 1949 |
| Japan | 1939 |

Dominion Observatory,
Ottawa, Canada,
August 2, 1950.