DOM. OBS. No. 67
5,000—1-29

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

R. MELDRUM STEWART, *Director*
ERNEST A. HODGSON, *Seismologist*
W. W. DOXSEE, *Assistant Seismologist*

$\varphi = 45° 23' 38''$ N. $\lambda = 75° 42' 57''$ W. h = 83m.

Lithologic foundation: boulder clay over limestone (Ordovician). Time: Mean Greenwich, midnight to midnight.
Time correction: within .25s.

INSTRUMENTS—FIXED CONSTANTS

INSTRUMENT	SYMBOL	REGISTRATION	DAMPING	PAPER SPEED	MASS
Bosch	I	Photographic	Air	15 mm. per min.	200 g.
Bosch	II	Photographic	Magnetic	15 mm. per min.	200 g.
Milne-Shaw	17	Photographic	Magnetic	8 mm. per min.	1 lb.
Milne-Shaw	23	Photographic	Magnetic	8 mm. per min.	1 lb.
Deformation	D	Photographic	Air	17 mm. per min.	20 g. ca.
Spindler-Hoyer	W	Smoked Sheet	Air	15 mm. per min.	80 kgm.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENT	T_0	Γ	V	ϵ	COMP.		DETERMINED
I							
II							
17							
23							
D							
D							
W							

From 1932 *to* ..... *No.* .....

No. and Date	Phase	Time	Period	Amplitude			Distance	Remarks
				A_E	A_N	A_Z		
		h m s	s	μ	μ	μ	km.	

DOM. OBS. No. 68

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OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From January 9, 1932 *to* January 24, 1932 *No.* 2

No. and Date	Phase	Time	Period	Amplitude			Distance	Remarks
				A_E	A_N	A_Z		
		h m s	s	μ	μ	μ	km.	
4407 Jan. 9 (cont'd)	e_E	10-57.5						
	e	11-00.0						
	eL ?	11-05						
	W_2	12-20						
	F^2	13-20						
4408 Jan. 12		20-59 to 21-20						Trace.
4409 Jan. 13	e_E	16-37.4						
	e_N	16-41.0						
	eL	16-47						
	F	17-57						
4410 Jan. 17	e_E	8-21.7						
	e_N	8-29.3						
	eL ?	8-40						
	F	10-10						
4411 Jan. 18		12-11 to 12-18						Trace.
4412 Jan. 18		13-27 to 14-00						L waves of small amplitude.
4413 Jan. 20	e	2-48-14						
	e_E	2-50-01						
	eL ?	2-56						
	F	3-16						
4414 Jan. 21		21-14 to 21-20						Trace.
4415 Jan. 22		0-52 to 1-06						Trace.
4416 Jan. 24	e_E	4-04-40						
	e_E	4-10-08						
	e	4-14-12						
	e_E	4-20.1						
	e_N	4-21.2						
	e_E	4-25.3						
	e	4-29.5						
	e_E	4-34.5						
	eL	4-41						
	W_2	5-50						
	F	6-35						

DOM. OBS. No. 68

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CANADA

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From January 24, 1932 *to* January 30, 1932 *No.* 3

No. and Date	Phase	Time	Period	Amplitude			Distance	Remarks
				A_E	A_N	A_Z		
		h m s	s	μ	μ	μ	km.	
4417 Jan. 24		10-59 to 11-17						Trace.
4418 Jan. 24	e_N e_E L F	15-40-23 15-43-24 15-48 16-01						Period of 6 secs.
4419 Jan. 25		1-03 to 1-08						Trace.
4420 Jan. 25	e_E eL F	2-29-08 2-50 3-52						
4421 Jan. 25		8-49 to 9-11						L waves of small amplitude on EW. Trace on NS.
4422 Jan. 27	e eL F	19-52-15 19-55 20-32						
4423 Jan. 29	e e_E e_N e_N e_E e e e_E eL W_2 W_3 F	14-01-36 14-07-21 14-08.7 14-10.3 14-11.6 14-18.3 14-22.4 14-28.6 14-32 16-14 17-35 ca 18-20						
4424 Jan. 29		20-04 to 20-24						Trace. May be W phase of previous quake.
4425 Jan. 30	e_E ? e_E e_N e e_E eL F	3-25-42 3-30-45 3-32-35 3-35-15 3-41.8 3-59 5-27						

DOM. OBS. No. 68

5,000—7-31

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OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From January 30, 1932 to January 31, 1932 No. 4

No. and Date	Phase	Time	Period	Amplitude			Distance	Remarks
				A_E	A_N	A_Z		
		h m s	s	μ	μ	μ	km.	
4426 Jan. 30	e_E eL_F	7-43-09 8-10 9-20						
4427 Jan. 30		22-24 to 22-29						Trace.
4428 Jan. 31		2-22 to 2-47						L waves of small amplitude.
4429 Jan. 31		5-37 to 6-25						L waves of small amplitude.
4430 Jan. 31	e_E eL_F?	9-36-49 9-45 10-09						
4431 Jan. 31	e_E e_E e_E eL_F	16-28-33 16-40-20 16-43-10 17-01 17-51						
4432 Jan. 31		20-39 to 20-49						Trace on NS only.

W. W. Doxsee

DOM. OBS. No. 67
5,000—4-29

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

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Time correction: within .25s.

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Bosch	II	Photographic	Magnetic	15 mm. per min.	200 g.
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Milne-Shaw	23	Photographic	Magnetic	8 mm. per min.	1 lb.
Deformation	D	Photographic	Air	17 mm. per min.	20 g. ca.
Spindler-Hoyer	W	Smoked Sheet	Air	15 mm. per min.	80 kgm.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENT	T_o	r	V	ϵ	COMP.	1" tilt	DETERMINED
I	5.2		120	2:1	NS	displ'nt	Dec. 3, 1930
II	6.4		120	10:1	EW		Dec. 3, 1930
17	12.0		250	20:1	EW	45 mm.	Dec. 30, 1930
23	12.0		250	20:1	NS	46 mm.	Nov. 9, 1931
D							
D							
W	6.0		160	10:1	Vert.		Dec. 12, 1930

From February 1, 1932 *to* February 12, 1932 *No* 5

No. and Date	Phase	Time	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Distance	Remarks
		h m s	s	μ	μ	μ	km.	
4433 Feb. 3	0	6-15-55					2770	
	eP_{NZ}	6-21-29						
	ePR_{1Z}?	6-22-07						
	e_E	6-24-24						
	eS_{EZ}	6-25-55						
	eSR_{1EZ}	6-27-04						
	eL	6-28						
	W_2	9-30						
	F	10-18						
4434 Feb. 3	e_N	12-40-30						Small amplitude.
	e_N	12-46-44						
	e_E	12-47-20						
	eL	12-50						
	F	13-36						
4435 Feb. 4		8-20 to 8-41						Trace.
4436 Feb. 12	e_N	1-28-20						No. 17 not operating.
	e_N	1-32-40						
	eL_N?	1-48						
	F	2-27						

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OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From February 12, 1932 *to* February 22, 1932 *No.* 6

No. and Date	Phase	Time	Period	Amplitude			Distance	Remarks
				A_E	A_N	A_Z		
		h m s	s	μ	μ	μ	km.	
4437 Feb. 13		8-27 to 8-40						Trace.
4438 Feb. 14		12-51 to 13-36						L waves of small amplitude.
4439 Feb. 14	e eL_N? F	23-54.1 0-13 1-00						
4440 Feb. 16		13-41 to 14-10						L waves of small amplitude.
4441 Feb. 16	e_E e_E e eL_N F	14-14-05 14-17-28 14-23.6 14-36 16-32						Operator in vault.
4442 Feb. 17	e L F	11-34.1 12-02 12-07						
4443 Feb. 17	e_N e eL F	16-13-39 16-19-02 16-24 17-17						
4444 Feb. 17		23-23 to 23-58						L waves of small amplitude
4445 Feb. 18		14-53 to 15-02						Trace on NS only.
4446 Feb. 21		12-37 to 12-56						L waves of small amplitude on EW. Trace on NS
4447 Feb. 22		4-54 to 5-06						Trace.

DOM. OBS. No. 68

5,000—7-31

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OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From February 22, 1932 to February 29, 1932 No. 7

No. and Date	Phase	Time	Period	Amplitude			Distance	Remarks
				A_E	A_N	A_Z		
		h m s	s	μ	μ	μ	km.	
4448 Feb. 23	0	0-13-21					13,100	Interpretation with Gutenberg's curves. These times fit the curves exceptionall well.
	ePR_1	0-33-43						
	ePS	0-43-20						
	eSR_1	0-49.7						
	eSR_{2E}	0-54.5						
	eL	1-03						
	W_{2N}	2-21						
	F	2-54						
4449 Feb. 23	e_E	20-48.5						
	eL ?	21-10						
	F	22-18						
4450 Feb. 27		1-12 to 1-47						Trace.
4451 Feb. 29		5-09 to 5-15						Trace.

W H Cox sec

SEISMOLOGICAL BULLETINS RECEIVED

1932

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

STATIONS	BULLETINS	RECEIVED	
Paris) Strasbourg) Bureau Central)	November, 1931	January	4
Manila	October, 1931	"	4
Batavia	July, August and September, 1931	"	4
Rome	November 26 - December 9, 1931	"	7
Sydney	October, 1931	"	7
Riverview	Provisional for November, 1931	"	7
La Paz	November and December, 1930 and January, 1931	"	7
Wellington	Preliminary for November, 1931	"	7
Zi-Ka-Wei	July 23 - August 7, 1931	"	7
Cartuja	August and September, 1931	"	11
Osaka	January, February and March, 1931 and November, 1931	"	11
Rome	December 10 - 23, 1931	"	16
Zi-Ka-Wei	August 10- 16, 1931	"	19
La Plata	October and November, 1931	"	19
Richmond	December, 1931	"	19
Oxford	January, February and March, 1928	"	22
Algiers	December, 1931	"	26
Rome	December 24, 1931 - January 7, 1932	"	27
Pasadena	December, 1931	"	27
Fordham	October, November and December, 1931	"	30
San Fernando	November, 1931	"	30
Tananarive	March and April, 1931	"	30

DOMINION OBSERVATORY
OTTAWA - CANADA

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Deformation	D	Photographic	Air	17 mm. per min.	20 g. ca.
Spindler-Hoyer	W	Smoked Sheet	Air	15 mm. per min.	80 kgm.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENT	T_o	r	V	ϵ	COMP.	1" tilt	DETERMINED
I	5.6		120	2:1	NS	displ'nt	March 25, 1932
II	8.0		120	15:1	EW		March 25, 1932
17	12.0		250	20:1	EW	44.5 mm.	March 22, 1932
23	12.0		250	20:1	NS	45 mm.	March 24, 1932
D							
D							
W	6.0		160	8:1	Vert.		March 7, 1932

From March 1, 1932 *to* March 10, 1932 *No.* 8

No. and Date	Phase	Time	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Distance	Remarks
		h m s	s	μ	μ	μ	km.	
4452 Mar. 2		18-00 to 18-18						Period of 11 seconds
4453 Mar. 8	e_N? eL F	4-27-25 4-59 5-34						Micros mask.
4454 Mar. 8	e eL F	18-36-52 18-50 19-46						
4455 Mar. 9		3-09 to 3-24						Period of 9 seconds.
4456 Mar. 9	i F	5-24-12 5-24-34						Felt in Ottawa.
4457 Mar. 10	e_N eL F	5-53-08 6-13 7-20						

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OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From March 10, 1932 *to* March 20, 1932 *No.* 9

No. and Date	Phase	Time	Period	Amplitude			Distance	Remarks
				A_E	A_N	A_Z		
		h m s	s	μ	μ	μ	km.	
4458 Mar. 14	e_E	4-18-38						
	e_N	4-21-00						
	eL	4-24						
	F	5-11						
4459 Mar. 14	0	22-42-50					3970	
	iP_N	22-50-06						
	ePR_{1N}	22-51-23						
	eS	22-55-51						
	eSR_2	22-58.6						
	eL	23-00						
	F	0-21						
4460 Mar. 15	e_N	5-08.4						
	e_E?	5-10.5						
	eL	5-22						
	F	6-21						
4461 Mar. 16		21-41 to 21-59						Trace.
4462 Mar. 16		23-21 to 23-25						Period of 10 seconds.
4463 Mar. 18		6-30 to 6-52						Trace.
4464 Mar. 19	e	11-24-44						Small amplitude.
	e_N	11-28-12						
	e_E	11-29.0						
	eL	11-47						
	F	13-21						
4465 Mar. 19	e_N	23-38.6						
	e	23-47.0						
	eL	0-01						
	F	0-57						
4466 Mar. 20	i	13-34-30						Slight local disturbance.. Possibly non-seismic.
	F	13-34-46						
4467 Mar. 20	i	15-19-05						Do.
	F	15-19-25						

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5,000—7-31

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OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From March 20, 1932 *to* March 29, 1932 *No.* 10

No. and Date	Phase	Time	Period	Amplitude			Distance	Remarks
				A_E	A_N	A_Z		
		h m s	s	μ	μ	μ	km.	
4468 Mar. 23	e	12-31-00						
	eL	12-47						
	F	13-15						
4469 Mar. 24		3-47 to 4-03						Trace.
4470 Mar. 25		22-07 to 22-22						Trace.
4471 Mar. 25 to 26	0	23-58-33					4910	Very slight tremors at 0-05 probably foreshock. Saskatoon Record: 0 = 23-57-41 P = 0-03-38 S = 0-08-21 Δ = 3000 km.
	eP	0-06-55						
	ePR_1	0-08-45						
	eS	0-13-32						
	eSR_1	0-17-05						
	eL	0-20						
	F	2-20 +						
4472 Mar. 26	e	2-24-36						
	L	2-33						
	F	3-02						
4473 Mar. 26	e	10-08-22						
	e	10-15-08						
	e	10-24-17						
	e_N	10-37.3						
	eL	10-49						
	F	12-42						
4474 Mar. 28	e	1-17.0						
	L_E?	1-36						
	L_N	1-50						
	F	2-35						
4475 Mar. 29		0-43 to 0-56						Period of 8 seconds
4476 Mar. 29		4-05 to 4-20						Do
4477 Mar. 29		17-00 to 17-07						Do

DOM. OBS. No. 68
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OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From March 29, 1932 *to* March 31, 1932 *No.* 11

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4478 Mar. 30		16 - 01 to 16 - 37		L waves of small amplitude.
4479 Mar. 31		19 - 10 to 19 - 29		Period of 7 seconds.

W. W. Doxsee.

SEISMOLOGICAL BULLETINS RECEIVED

1932

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DeBilt	Year 1929	February	1
Toronto	July and August, 1930, and December, 1931	"	1
Victoria	July and August, 1930	"	1
Manila	November, 1931	"	1
Reykjavik	July, August and September, 1931	"	2
Sydney	November, 1931	"	3
Zurich	Year 1930	"	3
Wellington	Preliminary for December, 1931	"	3
Paris, Strasbourg, Bureau Central	December, 1931	"	5
Zi-Ka-Wei	August 16 - 24, 1931	"	10
Georgetown	December, 1931 and January, 1932 and Seismological Despatches	"	10
Rome	January 8 - 21, 1932	"	11
Balboa, Columbia, Pittsburg, San Juan, Sitka, Honolulu, Bozeman, Charlottesville, Chicago, Seattle, Tucson	July, August and September, 1931	"	12
Apia	October, 1931	"	16
Riverview	Provisional for December, 1931	"	18
Sydney	December, 1931	"	19
La Paz	February, March and April, 1931	"	19
Zi-Ka-Wei	August 27 - September 16/31	"	20
Zagreb	July, August and September, 1931	"	20
Richmond	January, 1932	"	23
Uccle	July 6 - December 31, 1931	"	25
Algiers	January, 1932	"	26

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17	12.0		250	20:1	EW	44.5 mm.	March 22, 1932
23	12.0		250	20:1	NS	45 mm.	March 24, 1932
D							
D							
W	6.0		160	8:1	Vert.		March 7, 1932

From April 1, 1932 *to* April 4, 1932 *No.* 12

No. and Date	Phase	Time	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Distance	Remarks
		h m s	s	μ	μ	μ	km.	
4480 Apr. 1		23-21 to 23-33						Trace of short period waves.
4481 Apr. 3	e_E	21-04-37						
	e_N	21-07-05						
	e_E	21-09-04						
	e	21-15.3						
	e_N	21-20.3						
	eL_N	21-30						
	W_2	22-42						
	F	23-13						
4482 Apr. 4	e	15-29-03						
	e_N	15-32-25						
	L_N	16-02						
	F	16-16						
4483 Apr. 4	e_N	19-33-35						Small amplitude.
	i	19-39-25						May be two quakes.
	i	19-40-15						
	eL_N	19-45						
	e_E	19-47-34						
	F	20-51						

Correction.- Milne-Shaw paper speed 15 mm. per minute for both 17 and 23.

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SEISMOLOGIC STATION, DOMINION OBSERVATORY

From April 4, 1932 to April 16, 1932 No. 13

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4484 Apr. 5		2 - 48 to 2 - 55		Trace.
4485 Apr. 5		12 - 09 to 12 - 21		L waves of small amplitude.
4486 Apr. 5		22 - 14 to 22 - 34		Do
4487 Apr. 6		2 - 23 to 2 - 30		Trace.
4488 Apr. 6		10 - 12 to 10 - 30		Do
4489 Apr. 6		14 - 23 to 14 - 31		Period of 8 seconds.
4490 Apr. 8	e_N e_E e_E eL F	12 - 21.0 12 - 22.1 12 - 28.4 12 - 52 14 - 14		Small amplitude.
4491 Apr. 8		22 - 59 to 23 - 08		Period of 8 seconds.
4492 Apr. 13	e e e_N eL W_2? F	0 - 18 - 18 0 - 19 - 48 0 - 29.5 0 - 44 1 - 45 2 - 17		Δ probably about 14,000 km.
4493 Apr. 14	e eL ? F	1 - 49 - 26 1 - 54 2 - 32		
4494 Apr. 16	e_E L F	3 - 11 - 10 3 - 16 3 - 58		Period of 9 seconds.

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SEISMOLOGIC STATION, DOMINION OBSERVATORY

From April 16, 1932 *to* April 26, 1932 *No.* 14

No. and Date	Phase	Time h m s	Distance km.	Remarks
4495 Apr. 16	e_E L_E F	11 - 04 - 32 11 - 18 11 - 29		
4496 Apr. 18		12 - 19 to 12 - 45		L waves of small amplitude.
4497 Apr. 18		20 - 59 to 21 - 05		Trace.
4498 Apr. 18		22 - 28 to 22 - 33		Period of 9 seconds.
4499 Apr. 20		11 - 13 to 11 - 21		Trace on EW only.
4500 Apr. 21		12 - 36 to 12 - 42		Period of 8 seconds.
4501 Apr. 21		21 - 53 to 22 - 03		Trace.
4502 Apr. 22	e_E L_E F	5 - 21 - 07 5 - 39 5 - 47		No indication on NS.
4503 Apr. 22	e_N eL F	6 - 03.4 6 - 07 7 - 04		
4504 Apr. 24	eS ? eL F	6 - 23 - 19 6 - 27 7 - 24		
4505 Apr. 25		8 - 04 to 8 - 39		Trace.
4506 Apr. 26	e_N e eL F	8 - 06 - 01 8 - 15 - 10 8 - 28 9 - 04		

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OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From April 26., 1932 *to* April 30, 1932 *No.* 15

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4507	e	18 - 37 - 12		
Apr.	eL	18 - 47		
29	F	20 - 10		
4508	e_N	1 - 28 - 07		
Apr.	eL	1 - 41		
30	F	2 - 06		

W W Doxsee

SEISMOLOGICAL BULLETINS RECEIVED

1932

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

STATIONS	BULLETINS	RECEIVED	
Zi-Ka-Wei	September 19 - 26, 1931	March	1
Pasadena	January, 1932	"	2
Wellington	Preliminary for January, 1932	"	3
Melbourne	October and November, 1931	"	4
Gottingen	July, August and September, 1931	"	4
Rome	January 22 to February 4, 1932	"	4
Perth	October, November and December, 1931	"	4
Riverview	January, February and March, 1930	"	9
Riverview	Provisional for January, 1932	"	9
Georgetown	February, 1932	"	9
Georgetown	Seismological Despatches	"	9
Jinsen	November and December, 1931	"	10
Bureau Central) Paris) Strasbourg)	January, 1932	"	10
Ksara	Year 1926	"	11
Osaka	Years 1882 - 1929	"	12
Osaka	April - June, 1931, and December/31	"	12
Osaka	Meteorological Report for Year 1930	"	12
Rome	February 5 - 18, 1932	"	14
Zi-Ka-Wei	September 26 to October 10, 1931	"	14
Manila	December, 1931	"	14
Toronto	September/30, and January and February, 1932	"	16
Richmond	February, 1932	"	17
Sydney	January, 1932	"	17
Hamburg	October 5/31 to February 19, 1932	"	19
Lemberg	September 26 to December 31, 1931	"	19
Wien	June 24 to November 2, 1931	"	19
Graz	September 5 to December 31, 1931	"	19
Pasadena	February, 1932	"	21
Tananarive	May and June, 1931	"	23
Stuttgart) Hohenheim) Ravensburg)	July to December, 1931	"	23
Scoresby-Sund	August to December, 1928	"	23
Lund	June, 1927, to December, 1928	"	23
Kobenhavn	October, 1929, to June, 1931	"	23
Barcelona	March 19 to August 14, 1931	"	24
Nagoya	May to August, 1931	"	24
Almata) Frunse)	Year 1928	"	24

(Continued on Page 2)

SEISMOLOGICAL BULLETINS RECEIVED

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STATIONS	BULLETINS	RECEIVED
Pulkova) Baku) Irkutsk) Kucino)	March, April, May and June, 1931	March 24
Sverdlovsk) Tachkent) Vladivostok)		
Algiers	February, 1932	March 26
Helwan	December, 1931, and January and February, 1932	March 29
Rome	February 19 to March 3, 1932	March 29
Zi-Ka-Wei	October 10 - 24, 1931	March 29
Perth	January, 1932	March 29

DOMINION OBSERVATORY
OTTAWA - CANADA

R. Meldrum Stewart,
Director.

Ernest A. Hodgson,
Seismologist.

W. W. Doxsee,
Assistant Seismologist.

DOM. OBS. No. 67
5,000—4-29

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

R. MELDRUM STEWART, *Director*
ERNEST A. HODGSON, *Seismologist*
W. W. DOXSEE, *Assistant Seismologist*

$\varphi = 45° 23' 38''$ N. $\lambda = 75° 42' 57''$ W. h = 83m.

Lithologic foundation boulder clay over limestone (Ordovician). Time: Mean Greenwich, midnight to midnight.
Time correction: within .25s.

INSTRUMENTS—FIXED CONSTANTS

INSTRUMENT	SYMBOL	REGISTRATION	DAMPING	PAPER SPEED	MASS
Bosch	I	Photographic	Air	15 mm. per min.	200 g.
Bosch	II	Photographic	Magnetic	15 mm. per min.	200 g.
Milne-Shaw	17	Photographic	Magnetic	8 mm. per min.	1 lb.
Milne-Shaw	23	Photographic	Magnetic	8 mm. per min.	1 lb.
Deformation	D	Photographic	Air	17 mm. per min.	20 g. ca.
Spindler-Hoyer	W	Smoked Sheet	Air	15 mm. per min.	80 kgm.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENT	T_o	r	V	ϵ	COMP.	1" tilt	DETERMINED
I	5.6		120	2:1	NS	displ'nt	March 25, 1932.
II	8.0		120	15:1	EW		March 25, 1932.
17	12.0		250	20:1	EW	44.5 mm.	March 22, 1932.
23	12.0		250	20:1	NS	45 mm.	March 24, 1932.
D							
D							
W	6.0		160	8:1	Vert.		May 29, 1932.

From May 1, 1932 *to* May 6, 1932 *No.* 16

No. and Date	Phase	Time	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Distance	Remarks
		h m s	s	μ	μ	μ	km.	
4509 May 1		5-09 to 5-59						L waves of small amplitude.
4510 May 1		19-21 to 20-05						Period of 8 seconds.
4511 May 3		0-20 to 0-56						Trace.
4512 May 4	e_E $L^?$ F	7-01-42 7-04 7-24						Period of 8 to 10 seconds.
4513 May 5		9-29 to 10-30						L waves of small amplitude.
4514 May 6		4-53 to 5-20						Do.

DOM. OBS. No. 68
3,000—12-31

CANADA

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From May 6, 1932 *to* May 21, 1932 *No.* 17

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4515 May 7		11 - 31 to 11 - 39		Period of 8 seconds.
4516 May 8		9 - 01 to 9 - 10		Trace.
4517 May 14		5 - 47 to 6 - 09		Trace.
4518 May 14		9 - 28 to 10 - 05		L waves of small amplitude on EW. Trace on NS.
4519 May 14	0	13 - 10.7	14,460	Interpretation based on Gutenberg's curves.
	ePʹ	13 - 30 - 13		
	ePR_1	13 - 32 - 27		
	iP_cP_cS	13 - 33 - 40		
	$eS_cP_cS_N$	13 - 37 - 40		
	$eS_cP_cP_cS$	13 - 39 - 18		
	$eS_cP_cSP_E$	13 - 42 - 36		
	$ePPS_N$	13 - 44.1		
	ePR_2^N	13 - 45.7		
	eSR_1^2	13 - 50.3		
	$ePSS_E^1$	13 - 51.0		
	eSR_{3N}^E	13 - 59.5		
	eL^{3N}	14 - 06		
	W_{2N}	15 - 13		
	W_{3E}^{2N}?	17 - 15		
	F^{3E}	17 - 45		
4520 y 6		14 - 14 to 14 - 20		Trace. May not be seismic.
4521 May 18	e_E	19 - 18 - 16		Probably two quakes.
	e_N	19 - 26 - 12		
	e_E	19 - 27 - 05		
	L_E ?	19 - 42		
	eL_E	20 - 13		
	F_E	21 - 18		
4522 May 21	0	10 - 10 - 02	3590	P phase well defined on all components.
	iP	10 - 16 - 49		
	iPR_2	10 - 18 - 06		
	iS_N	10 - 22 - 12		
	eSR_{1E}	10 - 23.9		
	eL	10 - 27		
	W_2	12 - 55		
	W_{3N}	13 - 34		
	F_{3N}	13 - 59		

DOM. OBS. No. 68
3,000—12-31

CANADA

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From May 21, 1932 *to* May 26, 1932 *No.* 18

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4523 May 21		16 - 02 to 16 - 30		Trace.
4524 May 22		1 - 59 to 2 - 11		Trace.
4525 May 22	e E e e e E e N eL F	11 - 48 - 12 11 - 56 - 08 11 - 58 - 54 12 - 03 - 39 12 - 27 14 - 25		May be two quakes.
4526 May 22	e N e E eS ? e eL F	22 - 46 - 36 22 - 46 - 56 22 - 52 - 00 22 - 54 - 27 22 - 58 23 - 42		Δ probably about 3600 km.
4527 May 23		17 - 59 to 18 - 06		Trace.
4528 May 26		6 - 06 to 6 - 29		Trace.
4529 May 26	e E e N e E e E e N i e N e E e eL W2 ? F	16 - 24 - 03 16 - 27 - 40 16 - 28 - 20 16 - 31 - 44 16 - 36 - 03 16 - 37.8 16 - 39 - 45 16 - 41 - 17 16 - 44.5 16 - 45.0 16 - 47.8 16 - 54 18 - 08 20 - 15		Δ probably about 13,000 km.
4530 May 26	e E ? e E e N e E e N F	22 - 43 - 44 22 - 47 - 01 22 - 48 - 09 22 - 53 - 23 22 - 56 - 36 23 - 18		Small amplitude.

DOM. OBS. No. 68
3,000—12-31

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SEISMOLOGIC STATION, DOMINION OBSERVATORY

From May 26, 1932 *to* May 31, 1932 *No.* 19

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4531 May 28	e_N	2 - 45 - 45		
	e_E	2 - 47 - 04		
	eL	3 - 13		
	F	4 - 09		
4532 May 30		19 - 39 to 19 - 43		Short period trace on EW only.
4533 May 31	e	8 - 53.4		
	L	8 - 59		
	F	9 - 20		

W W Dobson

SEISMOLOGICAL BULLETINS RECEIVED

1932

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

STATIONS	BULLETINS	RECEIVED	
United States Coast and Geodetic Survey	United States Earthquakes 1930	April	1
Karlsruhe	October,November and December/31	"	2
Toledo, Almeria, Malaga, Alicante	January and February, 1931	"	4
Rome	March 4 - 17, 1932	"	7
Manila	January, 1932	"	7
Bozeman, Charlottesville, Chicago, Columbia, Honolulu, Pittsburg, San Juan, Seattle, Sitka, Tucson, Ukiah	October and November, 1931	"	8
Tyosi	Year 1930; January to August/31	"	8
La Paz	April to September, 1931	"	8
Zi-Ka-Wei	October 26 to December 26, 1931	"	8
Batavia	October,November and December/31	"	9
Riverview	Provisional for February, 1932	"	13
Sydney	February, 1932	"	13
Bureau Central, Strasbourg, Paris	February, 1932	"	14
Georgetown	March,1932 and Seismological Despatches	"	14
Wellington	February, 1932	"	14
Pasadena	March, 1932	"	20
Richmond	March, 1932	"	21
Tananarive	July and August, 1931	"	21
Toledo, Almeria, Malaga, Alicante	March,April,May and June, 1931	"	23
Cartuja	September,October,November and December, 1931	"	25
Rome	March 18 - 31, 1932	"	25
Zi-Ka-Wei	August 4 to October 29, 1931	"	27
Belgrade	Year 1931; August to December/31	"	27
Toronto	March, 1932; October, November and December, 1930	"	27

DOMINION OBSERVATORY
OTTAWA - CANADA

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SEISMOLOGIC STATION, DOMINION OBSERVATORY

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$\varphi = 45° 23' 38''$ N. $\lambda = 75° 42' 57''$ W. h = 83m.

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INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENT	T_o	r	V	ϵ	COMP.	1" tilt	DETERMINED
I	5.6		120	2:1	NS	displ'nt	March 25, 1932.
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17	12.0		250	20:1	EW	44.5 mm.	March 22, 1932.
23	12.0		250	20:1	NS	45 mm.	March 24, 1932.
D							
D							
W	6.0		160	8:1	Vert.		May 29, 1932.

From June 1, 1932 *to* June 3, 1932 *No.* 20

No. and Date	Phase	Time	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Distance	Remarks
		h m s	s	μ	μ	μ	km.	
4534 June 2		18-34 to 18-39						Trace with period of 6 seconds.
4535 June 3	0	10-35.9					4460	Very severe.
	eP	10-43-43					Saskatoon	Halifax
	iPR_{2z}	10-45-28					0 = 10-36.0	0 = 10-35.9
	eS	10-49-57					P = 10-43-37	P = 10-44-53
	eL	10-56					PR_2 = 10-45-13	PR_1 = 10-46-59
	W_{2n}	13-15					S = 10-49-37	S = 10-52-00
	W_3	14-09					L = 10-55	L = 10-59
	F	lost in aftershocks					Δ = 4220	Δ = 5450
4536 June 3		15-15 to 15-30 ca						Aftershock.
4537 June 3		15-28 to 16-00						Do
4538 June 3		16-35 to 17-10 ca						Do

DOM. OBS. No. 68
3,000—12-31

CANADA

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From June 3, 1932 *to* June 4, 1932 *No.* 21

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4539 June 3		17 - 12 to 17 - 43		Aftershock.
4540 June 3		17 - 45 to 19 - 14		Do
4541 June 3		19 - 17 to 19 - 30		Do
4542 June 3		20 - 17 to 20 - 30 ca		Do
4543 June 3		20 - 30 to 21 - 14		Do
4544 June 3		21 - 37 to 21 - 48		Do
4545 June 3		22 - 06 to 22 - 27		Do
4546 June 3		22 - 32 to 23 - 50		Do
4547 June 4		0 - 24 to 1 - 15		Do Probably two quakes.
4548 June 4		2 - 50 to 3 - 22		Aftershock.
4549 June 4		4 - 11 to 4 - 21		Do
4550 June 4		5 - 33 to 6 - 15		Do
4551 June 4		10 - 58 to 11 - 15		Do

DOM. OBS. No. 68
3,000—12-31

CANADA

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From June 4, 1932 to June 6, 1932 No. 22

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4552 June 4		14 - 09 to 14 - 25		Aftershock.
4553 June 4		16 - 19 to 16 - 30		Do
4554 June 4		19 - 20 to 19 - 42		Do
4555 June 4		21 - 47 to 22 - 55		Do May be two quakes.
4556 June 5		4 - 00 to 4 - 06		Aftershock.
4557 June 5	e e_E eL F	9 - 11 - 37 9 - 17 - 20 9 - 24 10 - 58		Do
4558 June 5		14 - 05 to 14 - 30		Trace. Period of 18 seconds.
4559 June 5		18 - 58 to 19 - 17		Aftershock of No. 4535.
4560 June 6	0 eP_E eP eS eS_E eSR_2 eL F	8 - 44.4 8 - 51 - 24 8 - 51 - 36 8 - 56 - 56 8 - 57 - 17 8 - 59 - 13 9 - 01 11 - 29	3840	Apparently two distinct shocks.
4561 June 6	0 eP_N eS^N eL F	11 - 49.8 11 - 55 - 27 11 - 59 - 55 12 - 02 13 --11	2800	
4562 June 6		14 - 47 to 14 - 58		Probably aftershock of No. 4535.

DOM. OBS. No. 68
3,000—12-31

CANADA

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From June 6, 1932 *to* June 9, 1932 *No.* 23

No. and Date	Phase	Time h m s	Distance km.	Remarks
4563 June 7		1 - 26 to 1 - 35		Probably aftershock of No. 4535.
4564 June 7		11 - 18 to 11 - 25		Do
4565 June 7		23 - 54 to 23 - 59		Do
4566 June 8		1 - 51 to 1 - 52		Do
4567 June 8		3 - 39 to 4 - 13		L waves of small amplitude.
4568 June 8	e_N ? e eL F	5 - 06 - 21 5 - 12 - 08 5 - 17 5 - 45		L period of 10 seconds.
4569 June 8		7 - 43 to 7 - 55		Probably aftershock of No. 4535.
4570 June 8	e_N ? e e eL F	8 - 03 - 14 8 - 07 - 43 8 - 11 - 05 8 - 16 9 - 21		Do
4571 June 8		10 - 22 to 10 - 24		Do
4572 June 8	e_E e_N eL ? F	10 - 45 - 12 10 - 49 - 46 10 - 56 11 - 40		Do
4573 June 9		3 - 44 to 4 - 10		Do
4574 June 9	e_E e_N eL F	4 - 43 - 40 4 - 48 - 20 4 - 54 5 - 48		Do

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From June 9, 1932 ... to June 14, 1932 No.24

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4575 June 9	e_E	6 - 51 - 26		Probably two quakes.
	L	7 - 13		
	F	7 - 19		
4576 June 9		15 - 07 to 15 - 35		Trace.
4577 June 9		22 - 12 to 22 - 26		Probably aftershock of No. 4535
4578 June 10		3 - 31 to 3 - 39		Do
4579 June 10		12 - 49 to 13 - 00		Do
4580 June 10		20 - 00 to 20 - 06		Do
4581 June 10		21 - 19 to 21 - 48 ca		L waves of small amplitude and 20 seconds period.
4582 June 10		21 - 49 to 22 - 20		Probably aftershock of No. 4535
4583 June 10		23 - 27 to 23 - 51		Trace. Period about 12 seconds.
4584 June 11	e	17 - 26 - 06		
	e	17 - 34 - 20		
	eL	17 - 48		
	F	18 - 25		
4585 June 13	e_E	21 - 33.3		
	e_E	21 - 37.5		
	eL_E ?	21 - 49		
	L_N	22 - 00		
	F	22 - 45		
4586 June 14	e_N	6 - 19 - 03		Small amplitude.
	e_N	6 - 25 - 26		
	e	6 - 28.6		
	eL	6 - 55		
	F	7 - 30		

OTTAWA, CANADA

Seismologic Station, Dominion Observatory

From June 14, 1932 to June 20, 1932 No. 25

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4587 June 16	e_N	1 - 40 - 10		
	e	1 - 41 - 10		
	e_N	1 - 47.0		
	e_E	1 - 57.5		
	eL	2 - 19		
	F	3 - 15		
4588 June 18	e_N	0 - 26 - 23		
	e_E	0 - 32 - 53		
	e_N	0 - 33 - 17		
	eL_E ?	0 - 44		
	F	1 - 03		
4589 June 18	0	10 - 12.5	3680	Very severe. Halifax Readings: 0 = (10-12.1) P = (10-20-29) S = (10-27-08) Δ = 4940
	iP	10 - 19 - 25		
	iPR_2	10 - 20 - 46		
	e_N	10 - 22 - 38		
	iS	10 - 24 - 53		
	eSR_{2E}	10 - 27 - 15		
	e_N	10 - 27 - 40		
	eL ?	10 - 30		
	F	14 - 59		
4590 June 18		22 - 14 to 22 - 48		Period of 10 seconds.
4591 June 19		9 - 01 to 9 - 12		Period of 8 seconds.
4592 June 20	e_E	4 - 16 - 20		
	e_N	4 - 39 - 40		
	L	4 - 45		
	F	5 - 36		
4593 June 20		6 - 37 to 7 - 14		Trace.
4594 June 20	e_N	9 - 08 - 34		Small amplitude.
	e	9 - 10 - 14		
	e	9 - 14 - 13		
	eL	9 - 20		
	F	lost in next quake		
4595 June 20	i	9 - 35 - 00		
	e_E	9 - 39 - 20		
	eL	9 - 45		
	F	10 - 59		

OTTAWA, CANADA

Seismologic Station, Dominion Observatory

From June 20, 1932 to June 24, 1932 No. 26.

No. and Date	Phase	Time h m s	Distance km.	Remarks
4596 June 21	e	4 - 31 - 32		May be two quakes.
	e	4 - 46 - 01		
	eN	4 - 49 - 35		
	eL	4 - 55		
	F	5 - 35		
4597 June 21		23 - 56 to 0 - 15		Trace.
4598 June 22	eE	1 - 00 - 08		
	eL	1 - 25		
	F	1 - 52		
4599 June 22	0	12 - 58.9	4150	
	eP	13 - 06 - 24		
	eS	13 - 12 - 20		
	eSR2	13 - 14 - 46		
	eL	13 - 18		
	F	16 - 42		
4600 June 22		17 - 06 to 17 - 44		Period of 10 seconds.
4601 June 22		19 - 53 to 19 - 59		Trace.
4602 June 23		3 - 13 to 4 - 15		L waves of small amplitude.
4603 June 23		20 - 28 to 20 - 34		Trace.
4604 June 23		22 - 18 to 22 - 30		Period of 8 seconds.
4605 June 24		7 - 27 to 7 - 32		Do
4606 June 24		9 - 56 to 10 - 24		Trace.
4607 June 24		19 - 44 to 19 - 52		Trace. May not be seismic.

OTTAWA, CANADA

Seismologic Station, Dominion Observatory

From June 24, 1932 to June 30, 1932 No. 27.

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4608 June 25	e_E	2 - 48 - 21		
	L	2 - 55		
	F	3 - 06		
4609 June 25		12 - 03 to 12 - 25		L waves of small amplitude.
4610 June 25		21 - 13 to 21 - 28		Period of 8 seconds.
4611 June 26	e	19 - 41.1		
	e_E	19 - 50.5		
	e_N	19 - 52.8		
	L	20 - 02		
	F	21 - 20		
4612 June 27		9 - 15 to 9 - 26		Period of 7 seconds.
4613 June 27		10 - 25 to 10 - 30		Do
4614 June 28		17 - 27 to 18 - 03		Trace.
4615 June 29	e	2 - 31 - 44		Period of 5 seconds.
	F	2 - 51		
4616 June 29	e	18 - 39 - 03		
	L	18 - 59		
	F	20 - 07		
4617 June 29		22 - 34 to 23 - 04		L waves of small amplitude.
4618 June 30		17 - 35 to 17 - 48		Period of 8 seconds.

Ernest A. Hodgson

SEISMOLOGICAL BULLETINS RECEIVED

1932

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

STATIONS	BULLETINS	RECEIVED
Jena	Year 1931	May 2
Rome	April 1 - 14, 1932	" 3
Hukuoka	Year 1931	" 4
Rome (Central Bureau)	Years 1927 and 1929	" 7
Nagoya	September to December, 1931	" 9
Manila	February, 1932	" 9
Algiers	March, 1932	" 10
Riverview	Provisional for March, 1932	" 11
Strasbourg Bureau Central Paris	March, 1932	" 12
Wellington	Preliminary for March, 1932	" 12
Zurich	October,1931 to May 1, 1932	" 12
Bergen	Year 1931	" 14
Zi-Ka-Wei	January 3 to February 22, 1932	" 16
Zi-Ka-Wei	October, 1931	" 16
Apia	January to March, 1932	" 16
Osaka	January and February, 1932	" 18
Richmond	April, 1932	" 20
Gottingen	October,November and December/31	" 23
Pasadena	April, 1932	" 23
United States Coast and Geodetic Survey	Earthquakes in 1930	" 23
Fordham	January,February,March and April/32	" 23
Sydney	March, 1932	" 25
Rome	April 15 - 28, 1932	" 25
Pulkova Baku Irkutsk Kucino Sverdlovsk Tachkent Vladivostok	October to December, 1929 April to December, 1930 January and February, 1931	" 25 " 25 " 25
Theodosia Yalta Simferopol Sebastopol	Year 1929 April to December, 1930	" 25 " 25
Almata Frunse Kourday	October to December, 1927	" 25
Almata Frunse Samarkand Andijan	January, 1929 to June, 1930	" 25
San Fernando	March, 1932	" 31
Algiers	April, 1932	" 31

DOMINION OBSERVATORY
O T T A W A - C A N A D A

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OTTAWA

R. MELDRUM STEWART, *Director*
ERNEST A. HODGSON, *Seismologist*
W. W. DOXSEE, *Assistant Seismologist*

$\varphi = 45° 23' 38''$ N. $\lambda = 75° 42' 57''$ W. h = 83m.

Lithologic foundation: boulder clay over limestone (Ordovician). Time: Mean Greenwich, midnight to midnight.
Time correction: within .25s.

INSTRUMENTS—FIXED CONSTANTS

INSTRUMENT	SYMBOL	REGISTRATION	DAMPING	PAPER SPEED	MASS
Bosch	I	Photographic	Air	15 mm. per min.	200 g.
Bosch	II	Photographic	Magnetic	15 mm. per min.	200 g.
Milne-Shaw	17	Photographic	Magnetic	8 mm. per min.	1 lb.
Milne-Shaw	23	Photographic	Magnetic	8 mm. per min.	1 lb.
Deformation	D	Photographic	Air	17 mm. per min.	20 g. ca.
Spindler-Hoyer	W	Smoked Sheet	Air	15 mm. per min.	80 kgm.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENT	T_o	r/T_o^2	V	ϵ	COMP.	1" tilt	DETERMINED
	5.6		120	2:1	NS	displ'nt	March 25, 1932.
I	8.0		120	15:1	EW		March 25, 1932.
II	12.0		250	20:1	EW	44.5 mm.	March 22, 1932.
17	12.0		250	20:1	NS	45 mm.	March 24, 1932.
23							
D							
D	6.0		160	8:1	Vert.		July 18, 1932.
W							

From July 1, 1932 To July 5, 1932 No. 28

No. Date	PHASE	TIME	DISTANCE	REMARKS
		h m s	km.	
4619 July 2		1 - 36 to 1 - 45		Period of 9 seconds.
4620 July 2	e e_E L F	2 - 34 - 14 2 - 51 - 04 3 - 18 4 - 05		
4621 July 2		12 - 31 to 13 - 01		L waves of small amplitude.
4622 July 2		16 - 51 to 16 - 59		Trace.
4623 July 3	e L F	17 - 49.2 18 - 00 18 - 18		
4624 July 5		10 - 26 to 10 - 40		Period of 9 seconds.

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Seismologic Station, Dominion Observatory

From July 5, 1932 to July 13, 1932 No. 29

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4625 July 5		12 - 09 to 12 - 45		Trace.
4626 July 6	e eL_E F	15 - 17 - 06 15 - 19 15 - 40		
4627 July 7	O eP eS eSR_{2E} eL W_{3E}? F	16 - 15.7 16 - 22 - 34 16 - 28 - 02 16 - 30 - 45 16 - 33 20 - 00 20 - 07	3670	
4628 July 8		20 - 00 to 20 - 02		Trace.
4629 July 9	e_N ? e_E e L F	13 - 24.0 13 - 25 - 04 13 - 32.3 13 - 50 15 - 12		Operator in vault.
4630 July 10	e_E e_N L ? F	1 - 05.0 1 - 25.9 1 - 31 2 - 04		
4631 July 10	e_E L ? F	8 - 08 - 44 8 - 21 9 - 28		
4632 July 12		14 - 07 to 14 - 28		Period of 8 seconds.
4633 July 12	O eP eS eSR_{2N}? eL W_{2E} F	19 - 24.1 19 - 30 - 51 19 - 36 - 13 19 - 38.5 19 - 41 22 - 20 23 - 05	3580	
4634 July 13		2 - 44 to 2 - 55		Period of 8 seconds.

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Seismologic Station, Dominion Observatory

From July 13, 1932 to July 20, 1932 No. 30

No. and Date	Phase	Time	Distance	Remarks
		h m s	kms.	
4635 July 13		4 - 20 to 5 - 02		Period of 8 seconds.
4636 July 13		7 - 21 to 7 - 32		Do.
4637 July 14	e_E e_N e_N L F	9 - 13 - 27 9 - 24 - 45 9 - 30.5 9 - 49 10 - 33		Small amplitude
4638 July 16		23 - 43 to 23 - 53		Period of 8 seconds.
4639 July 17		18 - 19 to 18 - 33		Trace.
4640 July 18		0 - 50 to 1 - 02		Period of 8 seconds.
4641 July 18		6 - 19 to 6 - 23		Do Trace.
4642 July 19		17 - 08 to 17 - 23		Trace.
4643 July 20		5 - 31 to 5 - 39		Trace.
4644 July 20		8 - 10 to 8 - 20		Period of 8 seconds.
4645 July 20	e_E e_E e_N e_E L F	20 - 25 - 22 20 - 30 - 51 20 - 33 - 06 20 - 35 - 02 20 - 56 22 - 00		

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Seismologic Station, Dominion Observatory

From July 20, 1932 to July 28, 1932 No. 31

No. and Date	Phase	Time	Distance	Remarks
		h m s	kms.	
4646 July 21		0 - 24 to 0 - 34		Short period waves.
4647 July 21	e ? e eL W_2? F	13 - 00 - 47 13 - 08 - 00 13 - 40 14 - 37 15 - 21		Operator in vault.
4648 July 21	e_N e eL ? F	16 - 48 - 09 16 - 55.1 17 - 04 18 - 55		Small amplitude.
4649 July 23		1 - 31 to 2 - 14		L waves of small amplitude.
4650 July 23		6 - 45 to 6 - 52		Trace.
4651 July 25	e_N L F	8 - 47 - 12 9 - 03 9 - 19 ca.		
4652 July 25	eP i eS ? e e_E W_{2E} F	9 - 19 - 43 9 - 21 - 10 9 - 25 - 16 9 - 27.4 9 - 29.8 12 - 03 13 - 15 ca.		Δ approximately 4000 km.
4653 July 26		7 - 12 to 7 - 14		Short period trace on EW only.
4654 July 27	e L F	21 - 41.3 22 - 01 23 - 19		Small amplitude.
4655 July 28		17 - 25 to 17 - 32		Trace.
4656 July 28		19 - 56 to 20 - 20		L waves of small amplitude.

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Seismologic Station, Dominion Observatory

From July 28, 1932 to July 31. 1932 No. 32

No. and Date	Phase	Time	Distance	Remarks
		h m s	kms.	
4657 July 29		1 - 04 to 1 - 28		Trace.
4658 July 29	e L F	21 - 20.6 21 - 37 21 - 51		Small amplitude.
4659 July 30		12 - 42 to 12 - 59		L waves of small amplitude.
4660 July 31	e_E $eL_?$ F	6 - 37.3 6 - 40 6 - 56		Sinusoidal L waves of small amplitude.

W. W. Doxsee

SEISMOLOGICAL BULLETINS RECEIVED

1932

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

STATIONS	BULLETINS	RECEIVED	
Helwan	March and April, 1932	June	2
Berkeley	October/30 to March 31, 1931	"	2
Manila	March, 1932	"	6
Rome	April 29 - May 12, 1932	"	6
Melbourne	January,February and March, 1932.	"	7
Georgetown	April and May, 1932	"	8
"	Seismological Despatches	"	8
Bureau Central) Strasbourg) Paris)	April, 1932	"	9
Riverview	April, May and June, 1930	"	10
Riverview	Provisional for April, 1932	"	10
Sydney	April, 1932	"	10
Firenze	Year, 1931	"	10
Oxford	International Seismological Summary April, May and June, 1928	"	13
Rome	May 13 - 26, 1932	"	15
Kobe) Sumoto) Toyooka)	July 1, 1931 to September 30, 1931	"	18
Gottingen	January, February and March, 1932	"	20
Sydney	April, 1932	"	22
Zurich	May 1 to June 6, 1932	"	22
Richmond	May, 1932	"	22
Reykjavik	January,February,March and April/32	"	22
Toronto	April and May, 1932	"	23
Batavia	January, February and March, 1932	"	23
Osaka	July to September, 1931	"	28
Kobe) Sumoto) Toyooka)	October, 1931 to December 31, 1931	"	29
La Paz	October,November and December, 1931	"	29
Stonyhurst	January to June, 1929	"	29
Tananarive	September and October, 1931	"	29
Rome	May 27 to June 9, 1932	"	29

DOMINION OBSERVATORY
OTTAWA - CANADA

R. Meldrum Stewart,
Director.

Ernest A. Hodgson,
Seismologist.

W. W. Doxsee,
Assistant Seismologist.

DOM. OBS. No. 67
3,000—12-31

CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY
OTTAWA

R. MELDRUM STEWART, *Director*
ERNEST A. HODGSON, *Seismologist*
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$\varphi = 45° 23' 38''$ N. $\lambda = 75° 42' 57''$ W. h = 83m.

Lithologic foundation: boulder clay over limestone (Ordovician). Time: Mean Greenwich, midnight to midnight.
Time correction: within .25s.

INSTRUMENTS—FIXED CONSTANTS

INSTRUMENT	SYMBOL	REGISTRATION	DAMPING	PAPER SPEED	MASS
Bosch	I	Photographic	Air	15 mm. per min.	200 g.
Bosch	II	Photographic	Magnetic	15 mm. per min.	200 g.
Milne-Shaw	17	Photographic	Magnetic	8 mm. per min.	1 lb.
Milne-Shaw	23	Photographic	Magnetic	8 mm. per min.	1 lb.
Deformation	D	Photographic	Air	17 mm. per min.	20 g. ca.
Spindler-Hoyer	W	Smoked Sheet	Air	15 mm. per min.	80 kgm.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENT	T_o	r/T_o^2	V	ϵ	COMP.	1" tilt	DETERMINED
I	5.6		120	2:1	NS	displ'nt	March 25, 1932.
II	8.0		120	15:1	EW		March 25, 1932.
17	12.0		250	20:1	EW	44.5 mm.	March 22, 1932.
23	12.0		250	20:1	NS	43 mm.	July 14, 1932.
D							
D							
W	6.0		160	8:1	Vert.		July 18, 1932.

From August 1, 1932 *To* August 4, 1932 *No.* 33

DATE	PHASE	TIME h m s	DISTANCE km.	REMARKS
4661 Aug. 1		8 - 08 to 8 - 14		Trace.
4662 Aug. 1	e eL ? L F	11 - 08.3 11 - 18 11 - 28 11 - 41		
4663 Aug. 2	e eL_E ? L F	4 - 46.9 5 - 29 5 - 34 6 - 28		L waves of 30 second period.
4664 Aug. 4	e_N e L F	6 - 48 - 27 6 - 57.4 7 - 05 7 - 35		
4665 Aug. 4	e L F	17 - 55 18 - 04 18 - 28		

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From August 4, 1932 to August 11, 1932 No. 34

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4666 Aug. 5		1 - 53 to 2 - 10		Trace on NS component only.
4667 Aug. 5		4 - 13 to 4 - 22		L waves of small amplitude.
4668 Aug. 5	e_N ? L F	12 - 13.3 12 - 22 13 - 10		
4669 Aug. 5		18 - 15 to 18 - 35		Trace.
4670 Aug. 5	e L F	21 - 37 21 - 44 22 - 03		Sinusoidal L waves of 15 second period.
4671 Aug. 6		9 - 24 to 9 - 53		L waves of small amplitude.
4672 Aug. 8		15 - 31 to 15 - 51		Trace.
4673 Aug. 10		1 - 27 to 1 - 45		Trace of short period waves.
4674 Aug. 10	e eL_E F	1 - 52.0 2 - 00 2 - 57		Small amplitude. May be two quakes.
4675 Aug. 10	e_E eL ? F	3 - 53 - 47 4 - 06 5 - 05		
4676 Aug. 10		17 - 31 to 18 - 04		L waves of small amplitude
4677 Aug. 11		1 - 37 to 1 - 46		Period of 8 seconds.

OTTAWA, CANADA.

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From August 11, 1932 to August 18, 1932 No. 35

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4678	e	9 - 59 - 23		
Aug.	L	10 - 13		
11	F	11 - 15		
4679	O	3 - 23.9	6340	Saskatoon Readings:
Aug.	eP	3 - 33 - 46		O = 3 - 23.7
12	eS	3 - 41 - 40		P = 3 - 31.0
	eL	3 - 54		S = 3 - 36.8
	F	7 - 25		Δ = 4010
4680		23 - 12		Trace.
Aug.		to		
12		23 - 43		
4681	e	21 - 18 - 47		
Aug.	e	21 - 37.2		
13	L_E ?	21 - 43		
	eL	21 - 56		Train of sinusoidal L waves
	F	23 - 29		beginning at 22 - 08.
4682	O	4 - 39.4	12,250	Interpretation with
Aug.	eP ?	4 - 53 - 48		Macelwane tables
14	ePR_1	4 - 58.8		
	$i\overline{S_cP_cS}$	5 - 04 - 15		
	$i\overline{S_cP_cP_cS}$	5 - 05 - 08		
	e_E	5 - 05 - 40		
	e_E	5 - 06 - 30		
	eSR_{1E}	5 - 14 - 07		
	eL_E	5 - 26		
	F	7 - 28		
4683		11 - 20		Period of 7 seconds.
Aug.		to		
14		11 - 33		
4684		15 - 14		L waves of small amplitude.
Aug.		to		
15		16 - 30		
4685	O	8 - 46.6	3620	
Aug.	eP	8 - 53 - 25		
17	e	8 - 55.0		
	eS	8 - 58 - 50		
	e_E	9 - 01.5		
	eL	9 - 06		
	F	9 - 55		
4686	e_N	14 - 12.6		
	e	14 - 17.2		
	eL	14 - 23		
	F	14 - 43		

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SEISMOLOGIC STATION, DOMINION OBSERVATORY

From August 18, 1932 to August 24, 1932 No. 36

No. and Date	Phase	Time h m s	Distance	Remarks
4687 Aug. 18	e	20 - 27.6		
	e	20 - 35.2		
	eL	20 - 40		
	F	21 - 28		
4688 Aug. 19	e_E	13 - 20.8		Trace on NS.
	L_E	13 - 30		
	F	13 - 40		
4689 Aug. 19		15 - 34 to 15 - 52		Trace.
4690 Aug. 19	e_N	18 - 14.0		
	e	18 - 19.4		
	e	18 - 22.0		
	eL	18 - 26		
	F	18 - 36		
4691 Aug. 20		9 - 08 to 9 - 18		Trace.
4692 Aug. 20		9 - 55 to 10 - 01		
4693 Aug. 20	e	17 - 02.7		
	L	17 - 06		
	F	17 - 23		
4694 Aug. 21	e_N	4 - 34.6		Δ probably greater than 100°. Small amplitude.
	e_N	4 - 40.7		
	e_E	4 - 41.8		
	e	4 - 43.8		
	e_N	4 - 51.7		
	eL	5 - 04		
	F	6 - 27		
4695 Aug. 22	e_N	11 - 36.8		
	e_E	11 - 38.6		
	eL	11 - 59		
	F	12 - 52		
4696 Aug. 24	e	3 - 53 - 08		
	L ?	4 - 00		Period of 8 seconds.
	F	4 - 41		
4697 Aug. 24		12 - 46 to 13 - 05		Trace.

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SEISMOLOGIC STATION, DOMINION OBSERVATORY

From August 24, 1932 to August 31, 1932 No. 37

No. and Date	Phase	Time	Distance	Remarks
		h m s	Km.	
4698 Aug. 24		13 - 18 to 13 - 45		Trace.
4699 Aug. 25	e_E	8 - 13 - 25		
	e	8 - 18 - 42		
	e_N	8 - 21 - 24		
	eL	8 - 24		L period of 10 seconds.
	F	9 - 19		
4700 Aug. 28		11 - 51 to 12 - 10		Trace.
4701 Aug. 29		16 - 16 to 16 - 30		Period of 8 seconds.

SEISMOLOGICAL BULLETINS RECEIVED

1932

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

STATIONS	BULLETINS	RECEIVED
Pasadena	May, 1932	July 2
Manila	April, 1932	" 4
Algiers	May, 1932	" 5
Theodosia, Yalta, Simferopol, Sebastopol	January to June, 1931	" 5
Almata, Andijan, Samarkand, Frunse	July to December, 1930	" 5
Pulkova, Baku, Irkutsk, Kucino, Sverdlovsk, Tachkent, Vladivostok	July, 1931	" 5
Strasbourg, Paris, Bureau Central	May, 1932	" 8
Beograd	January 1 to April 11, 1932	" 8
La Plata	December/31; January to March/32	" 8
Fordham	May, 1932	" 9
Helwan	May, 1932	" 9
Georgetown	June, 1932 and Seismological Despatches	" 12
Zi-Ka-Wei	February 22 to March 26/32	" 12
Hamburg	February 19 to June 20/32	" 12
Wien	November 2/31 to March 2/32	" 15
Innsbruck	April 13 to September 14/31	" 15
Graz	January 1 to March 31/32	" 15
Rome	July 10 - 23, 1932	" 16
Richmond	June, 1932	" 18
Wellington	Preliminary for May, 1932	" 19
Uccle	January 1 to March 18, 1932	" 19
Zi-Ka-Wei	March 26 to April 30, 1932	" 22
Sydney	May, 1932	" 22
Sydney	Seismograms of May 14, 26th and June 3/32	" 22
Riverview	Provisional for May, 1932	" 22
Perth	February 2 to April 25/32	" 22
Apia	April 1 to June 30/32	" 23
Madison	October 10 to March 31/32	" 23
Zinsen	January 1 to May 31, 1932	" 24

SEISMOLOGICAL BULLETINS RECEIVED

1932.

STATION	BULLETINS	RECEIVED
Balboa Bozeman Charlottesville Chicago Columbia Honolulu Pittsburg San Juan Seattle Sitka Tucson Ukiah	January, February and March, 1932	July 25
Tananarive	November and December, 1931	" 27
San Fernando	May, 1932	" 28
Osaka	October to December, 1931	" 28
Tokyo	Seismological Bulletins for Years 1925, 1926, 1927 and 1928	" 28
Algiers	June, 1932	" 30

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17	12.0		250	20:1	EW	44.5 mm.	March 22, 1932.
23	12.0		250	20:1	NS	43 mm.	July 14, 1932.
D							
D							
W	6.0		160	8:1	Vert.		July 18, 1932.

From September 1, 1932 *To* September 5, 1932 *No.* 38

No. and Date	PHASE	TIME (h m s)	DISTANCE (km.)	REMARKS
4702 Sept. 2		20 - 28 to 20 - 31		Trace. May not be seismic.
4703 Sept. 3	e_N	5 - 22.0		
	e_E	5 - 23.3		
	L_E ?	5 - 39		
	F	6 - 10		
4704 Sept. 3	O	11 - 59.1	9370	
	eP	12 - 11 - 37		
	ePR_{1N}	12 - 15 - 04		
	eS	12 - 22 - 06		
	eL	12 - 40		
	F	14 - 15		
4705 Sept. 4		20 - 11 to 20 - 31		Trace.
4706 Sept. 5		4 - 00 to 4 - 09		Trace.

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From September 5, 1932 to September 19, 1932 No. 39

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4707 Sept. 5		6 - 44 to 7 - 11		Trace.
4708 Sept. 6		(16 - 55) to (17 - 15)		Small amplitude. Time service temporarily out of order.
4709 Sept. 8	e e L F	1 - 49 - 20 1 - 54 - 02 2 - 00 2 --59		Period of 11 seconds.
4710 Sept. 9		14 - 02 to 15 - 42		Micros mask record.
4711 Sept. 11		15 - 06 to 15 - 18		L waves of small amplitude.
4712 Sept. 13		19 - 28 to 19 - 35		Trace. Period of 9 seconds.
4713 Sept. 14	0 eP_N e_E ePR_2 eS_E eSR_{1N} eL F	8 - 43.2 8 - 51 - 24 8 - 51 - 47 8 - 53 - 32 8 - 57 - 54 9 - 01.0 9 - 05 10 - 08	4780	
4714 Sept. 15	e_N e_E eL_E F	11 - 44.1 11 - 51.4 12 - 09 13 - 22		
4715 Sept. 15	e e_E e e_E e eL_N ? W_{2N} F	14 - 16 - 00 14 - 17 - 36 14 - 21 - 20 14 - 23 - 08 14 - 33.5 14 - 50 16 - 11 17 - 18		Δ approximately 14,000 km.
4716 Sept 19		21 - 26 to 21 - 30		Trace.

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From September 19, 1932 to September 29, 1932 No. 40

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4717 Sept. 20		17 - 56 to 18 - 12		Trace.
4718 Sept. 23	0	14 - 22.3	8740	
	eP	14 - 34 - 18		
	ePR_{2N}	14 - 37.8		
	iS	14 - 44 - 15		
	i	14 - 46 - 02		
	eL ?	15 - 00		
	F	17 - 00		
4719 Sept. 25		9 - 47 to 10 - 22		Trace.
4720 Sept. 26	0	19 - 21.0	7430	
	eP	19 - 31 - 48		
	ePR_{2E}	19 - 34 - 32		
	eS_N	19 - 40 - 39		
	ePS	19 - 40 - 54		
	eSR_1	19 - 45.4		
	eL	19 - 51		
	W_2	22 - 00		
	F	22 - 46		
4721 Sept. 28	e	17 - 12.2		Small amplitude.
	e	17 - 20.3		
	eL	17 - 28		
	F	17 - 54		
4722 Sept. 28		19 - 43 to 20 - 07		Trace.
4723 Sept. 28		21 - 24 to 21 - 42		L waves of small amplitude on EW. Trace on NS.
4724 Sept. 29	0	3 - 57.4	7600	
	eP	4 - 08 - 22		
	eS	4 - 17 - 22		
	eSR_{2N} ?	4 - 22.2		
	eL	4 - 28		
	F	5 - 39		
4725 Sept. 29	e_E ?	14 - 06 - 35		Operator in vault.
	e	14 - 11 - 04		
	L	14 - 20		Period of 8 seconds.
	F	15 - 17		

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From September 29, 1932 to September 30, 1932 No. 41

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4726	e_N ?	17 - 59 - 04		
Sept.	e	18 - 08 - 27		
29	eL ?	18 - 27		
	F	20 - 21		

W. W. Doxsee

SEISMOLOGICAL BULLETINS RECEIVED

1932

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STATIONS	BULLETINS	RECEIVED
Toledo, Almeria, Malaga, Alicante	November and December, 1931	August 2
Riverview	Provisional for June, 1932	" 3
San Fernando	Year 1931	" 3
Rome	June 24 to July 7, 1932	" 4
Manila	May, 1932	" 4
Wellington	Preliminary for June, 1932	" 4
Toledo, Almeria, Malaga, Alicante	September and October, 1931	" 8
Tananarive	January and February, 1932	" 12
Strasbourg, Paris, Bureau Central	June, 1932	" 12
Taunus (Frankfurt)	May 20, 1931 to December 31, 1931	" 12
Rome	July 8 - 20, 1932	" 12
Oxford	International Summary for July, August and September, 1928	" 15
Osaka	May 16 to June 30, 1932	" 15
Kobe, Sumoto, Toyooka	January 1, 1932 to March 31/32	" 16
Sydney	June, 1932	" 17
Melbourne	April, 1932	" 22
Batavia	April, May and June, 1932	" 22
Zurich	June and July, 1932	" 24
Stuttgart, Hohenheim, Ravensburg	January to June, 1932	" 24
Zi-Ka-Wei	May 2 - 28, 1932	" 25
Rome	July 22 to August 4, 1932	" 25
Firenze	January, February and March, 1932	" 26
Helwan	June, 1932	" 27
Zagreb	October, 1931 to March, 1932	" 29
Algiers	July, 1932	" 29
Göttingen	April, May and June, 1932	" 30
Toronto	June, 1932	" 31

DOMINION OBSERVATORY
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Seismologist.

W. W. Doxsee,
Assistant Seismologist.

DOM. OBS. No. 67
3,000—12-31

CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY
OTTAWA

R. MELDRUM STEWART, *Director*
ERNEST A. HODGSON, *Seismologist*
W. W. DOXSEE, *Assistant Seismologist*

$\varphi = 45° 23' 38''$ N. $\lambda = 75° 42' 57''$ W. h = 83m.

Lithologic foundation: boulder clay over limestone (Ordovician). Time: Mean Greenwich, midnight to midnight.
Time correction: within .25s.

INSTRUMENTS—FIXED CONSTANTS

INSTRUMENT	SYMBOL	REGISTRATION	DAMPING	PAPER SPEED	MASS
Bosch	I	Photographic	Air	15 mm. per min.	200 g.
Bosch	II	Photographic	Magnetic	15 mm. per min.	200 g.
Milne-Shaw	17	Photographic	Magnetic	8 mm. per min.	1 lb.
Milne-Shaw	23	Photographic	Magnetic	8 mm. per min.	1 lb.
Deformation	D	Photographic	Air	17 mm. per min.	20 g. ca.
Spindler-Hoyer	W	Smoked Sheet	Air	15 mm. per min.	80 kgm.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENT	T_o	r/T_o^2	V	ϵ	COMP.	1" tilt	DETERMINED
~~I~~	~~5.6~~		~~120~~	~~2:1~~	~~NS~~	~~displ'nt~~	~~March 25, 1932.~~
I	8.0		120	15:1	EW		March 25, 1932.
II	12.0		250	20:1	EW	44.5 mm.	March 22, 1932.
17	12.0		250	20:1	NS	43 mm.	July 14, 1932.
23							
D							
D	6.0		160	8:1	Vert.		July 18, 1932.
W							

From October 1, 1932 *To* October 8, 1932 *No.* 42

No. and Date	PHASE	TIME h m s	DISTANCE km.	REMARKS
4727 Oct. 1		9 - 01 to 9 - 36		L waves of small amplitude on EW. Trace on NS.
4728 Oct. 2	0	2 - 59.1	3750	
	eP	3 - 06 - 05		
	ePR_2	3 - 07 - 31		
	eS	3 - 11 - 38		
	e_E	3 - 12 - 01		
	eSR_{1E}	3 - 13 - 37		
	eSR_{2N}	3 - 14 - 08		
	eL	3 - 16		
	W_{2N}	5 - 40		
	W_3	6 - 45		
	F	6 - 58		
4729 Oct. 3		4 - 53 to 5 - 13		Trace.
4730 Oct. 8		9 - 35 to 9 - 43		Trace.

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From October 8, 1932 to October 26, 1932 No. 43

No. and Date	Phase	Time	Distance	Remarks
4731 Oct. 9	e_E	1 - 06.4		
	e_N ?	1 - 09.1		
	eL	1 - 13		
	F	1 - 44		
4732 Oct. 9	e_N	13 - 18 - 02		
	eL_E ?	13 - 41		
	F	14 - 20 ca.		Operator in vault.
4733 Oct. 9		23 - 08 to 23 - 13		Period of 7 seconds.
4734 Oct. 10	e_N	14 - 23 - 20		Small amplitude.
	e	14 - 31 - 09		
	eL ?	14 - 40		
	F	15 - 10		
4735 Oct. 11		19 - 24 to 20 - 06		L waves of 9 seconds period with maximum earth amplitude of 23μ .
4736 Oct. 12		20 - 22 to 20 - 37		Trace.
4737 Oct. 15		20 - 03 to 20 - 14		Trace.
4738 Oct. 16	O	12 - 08.0	5620	
	eP	12 - 17 - 08		
	ePR_{1N}	12 - 19 - 18		
	iS	12 - 24 - 24		
	eSR_{1N}	12 - 28.1		
	eSR_{2E}?	12 - 28.8		
	eL	12 - 35		
	F	15 - 12		
4739 Oct. 17	e_N	13 - 52.3		
	e_N	13 - 56.1		
	eL	14 - 25		
	W_{2E}	15 - 39		
	F	15 - 58		
4740 Oct. 23		22 - 28 to 22 - 51		Micros mask record.
4741 Oct. 26		1 - 46 to 1 - 52		Trace.

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From October 26, 1932 to October 31, 1932 No. 44

No. and Date	Phase	Time	Distance	Remarks
4742 Oct. 27		10 - 14 to 10 - 30		Trace of short period waves.
4743 Oct. 28		10 - 26 to 10 - 33		Trace.
4744 Oct. 29	e	3 - 49 - 28		
	e	3 - 54.0		
	eL ?	3 - 57		
	F	4 - 37		
4745 Oct. 29	e_N	11 - 32.3		
	eL	11 - 52		
	F	12 - 30		
4746 Oct. 30	0	20 - 46.9	5620	
	eP_E	20 - 56 - 03		Micros mask record.
	ePR_{1N}?	20 - 58.2		
	eS	21 - 03 - 19		
	eSR_1	21 - 07.4		
	eL	21 - 14		
	F	22 - 31		

W. W. Doxsee

SEISMOLOGICAL BULLETINS RECEIVED

1932

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

STATIONS	BULLETINS	RECEIVED
Cartuja	January, February and March, 1932	Sept. 2
Richmond	July, 1932	" 2
Osaka	July, 1932	" 7
Manila	June, 1932	" 7
Budapest	Years 1930 and 1931	" 8
Bureau Central) Paris) Strasbourg)	July, 1932	" 12
Port-au-Prince	Year 1929	" 12
Pasadena	June, 1932	" 12
Wellington) Suva) Arapum) Takaka) Hastings) New Plymouth)	February, 1931	" 13
Riverview	Provisional for July, 1932	" 14
Riverview	July, August and September, 1930	" 14
Richmond	August, 1932	" 16
Tananarive	March and April, 1932	" 16
Helwan	July, 1932	" 16
Wellington	Preliminary for July, 1932	" 16
Tyosi	September, 1931 to April, 1932	" 16
Moncalieri	Year 1929	" 17
Pasadena	July, 1932	" 20
Zi-Ka-Wei	March 20 to 30, 1930	" 24
Toronto	July and August, 1932	" 26
Georgetown	July, 1932	" 28
Georgetown	Seismological Despatches	" 28
Sydney	July, 1932	" 28
San Fernando	July, 1932	" 30
Madison	April 8 to June 30, 1932	" 30

DOMINION OBSERVATORY,
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STATIONS	BULLETINS	RECEIVED
Cape Town	August, 1932	October 1
Manila	July, 1932	" 1
Rome	August 19 to September 8, 1932	" 1
Osaka	August, 1932	" 5
Osaka	January to March, 1932	" 5
Zi-Ka-Wei	May 28 to June 18, 1932	" 8
La Plata	April, May, June and July, 1932	" 11
Riverview	Provisional for August, 1932	" 12
Barcelona	August 15/31 to May 27/32	" 12
Karlsruhe	January to June, 1932	" 13
Fordham	June to September, 1932	" 14
Wellington	Preliminary for August, 1932	" 14
Sydney	August, 1932	" 17
Perth	April 25/32 to August 12/32	" 18
Pasadena	August and September, 1932	" 18
Zagreb	August and September, 1932	" 18
Ksara	Annales 1922, 1923, 1925 and 1931	" 18
Rome	September 9 - 29, 1932	" 19
Mizusawa	Year 1931	" 19
Paris, Strasbourg, Bureau Central	August, 1932	" 19
Rome	Years 1928 and 1930	" 20
Canton (China)	January and February, 1932	" 20
Georgetown	Seismological Despatches	" 24
Georgetown	September, 1932	" 24
Taunus (Frankfurt)	January to June, 1930	" 26
Algiers	August and September, 1932	" 31

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SEISMOLOGIC STATION, DOMINION OBSERVATORY
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$\varphi = 45° 23' 38''$ N. $\lambda = 75° 42' 57''$ W. h = 83m.

Lithologic foundation: boulder clay over limestone (Ordovician). Time: Mean Greenwich, midnight to midnight.
Time correction: within .25s.

INSTRUMENTS—FIXED CONSTANTS

INSTRUMENT	SYMBOL	REGISTRATION	DAMPING	PAPER SPEED	MASS
Bosch	I	Photographic	Air	15 mm. per min.	200 g.
Bosch	II	Photographic	Magnetic	15 mm. per min.	200 g.
Milne-Shaw	17	Photographic	Magnetic	8 mm. per min.	1 lb.
Milne-Shaw	23	Photographic	Magnetic	8 mm. per min.	1 lb.
Deformation	D	Photographic	Air	17 mm. per min.	20 g. ca.
Spindler-Hoyer	W	Smoked Sheet	Air	15 mm. per min.	80 kgm.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENT	T_o	r/T_o^2	V	ϵ	COMP.	1" tilt	DETERMINED
I	5.6		120	2:1	NS	displ'nt	March 25, 1932.
II	8.0		120	15:1	EW		March 25, 1932.
17	12.0		250	20:1	EW	44.5 mm.	March 22, 1932
23	12.0		250	20:1	NS	43 mm.	July 14, 1932.
D							
D							
W	6.1		160	7:1	Vert.		Nov. 17, 1932

From November 1, 1932 *To* November 12, 1932 *No.* 45

	PHASE	TIME	DISTANCE	REMARKS
		h m s	km.	
4747 Nov. 1		16 - 58 to 17 - 05		Trace.
4748 Nov. 2	0	11 - 03.4	8500	
	eP	11 - 15 - 12		
	iS	11 - 24 - 57		
	ePS	11 - 25 - 30		
	eSR_1	11 - 29.9		
	eSR_2	11 - 33.3		
	eL	11 - 39		
	F	13 - 25		
4749 Nov. 7		20 - 03 to 20 - 09		Period of ten seconds.
4750 Nov. 8		5 - 56 to 6 - 00		Trace.
4751 Nov. 12	e_N	13 - 42 - 39		
	e	13 - 48 - 28		
	L	14 - 00		
	F	14 - 20		

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From November 12, 1932 to November 29, 1932 No. 46

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4752 Nov. 13	0	4 - 47.0	8920	Interpretation with Macelwane curves.
	iP	4 - 59 - 07		
	ePR_{1N}	5 - 02 - 38		
	e	5 - 09 - 00		
	iS	5 - 09 - 13		
	iPS_N	5 - 10 - 15		
	e_E	5 - 11 - 29		
	eSR_1	5 - 14.6		PPSS and SPS due at nearly the same time.
	e_E	5 - 15.1		
	e	5 - 17.1		
	eL	5 - 26		
	F	6 - 48		
4753 Nov. 13		16 - 50 to 17 - 31		L waves of small amplitude
4754 Nov. 17	e	6 - 11 - 06		
	e	6 - 15 - 40		
	eL	6 - 23		
	F	7 - 55		
4755 Nov. 18	e_E	1 - 12.3		Small amplitude.
	L_E	1 - 22		
	F	2 - 21		
4756 Nov. 19		9 - 18 to 9 - 29		Micros mask record.
4757 Nov. 19		16 - 05 to 16 - 10		Trace.
4758 Nov. 26	e_N	4 - 36 - 51		
	e	4 - 46 - 57		
	eL	5 - 04		
	F	5 - 57		
4759 Nov. 29		2 - 48 to 3 - 08		Trace.
4760 Nov. 29		8 - 53 to 9 - 02		Trace.

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From November 29, 1932 to November 30, 1932 No. 47

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4761 Nov. 29	0	11 - 11.0	8500	
	eP_N	11 - 22 - 49		
	eS	11 - 32 - 34		
	ePS_N	11 - 33 - 18		
	eSR_{1N}	11 - 37.8		
	eSR_{2E}	11 - 41.0		
	eL	11 - 48		
	W_{2N}	13 - 46		
	F	14 - 02		
4762 Nov. 30		4 - 23 to 4 - 48		Trace.

Correction: No. 4717, September 20, 1932, should read

16 - 56 to 17 - 12

W W Doxsee

SEISMOLOGICAL BULLETINS RECEIVED

1932

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Algiers	April 14 to September 29, 1932	December 1
Manila	September, 1932	" 5
Uccle	March 19 to July 11, 1932	" 6
Firenze	April to June, 1932	" 7
Lick	April 1 to September 30, 1931	" 7
Riverview	Provisional for October, 1932	" 7
Sydney	September, 1932	" 7
Cartuja	April and May, 1932	" 7
Chiufeng	September and October, 1932	" 7
Zi-Ka-Wei	September 3 - 26, 1932	" 7
Melbourne	July, August and September, 1932	" 7
Wellington)		
Suva (Fiji))		
Arapum)	April, May and June, 1931	" 7
Takaka)		
Hastings)		
New Plymouth)		
Wellington	Preliminary for October, 1932	" 9
Toronto	September and October, 1932	" 14
Rome	November 11 - 24, 1932	" 15
Paris)		
Strasbourg)	October, 1932	" 15
Bureau Central)		
Zagreb	April, May and June, 1932	" 16
Osaka	October and November, 1932	" 19
Richmond	November, 1932	" 20
Peichiko	July, August and September, 1932	" 21
La Plata	August, 1932	" 21
Sydney	October, 1932	" 21
Georgetown	November, 1932	" 29
Georgetown	Seismological Despatches	" 29
Rome	November 25 to December 8, 1932	" 30
Algiers	November, 1932	" 30

DOMINION OBSERVATOPY
OTTAWA - CANADA

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17	12.0		250	20:1	EW	44.5 mm.	March 22,1932.
23	12.0		250	20:1	NS	43 mm.	July 14,1932.
D							
D							
W	6.1		160	7:1	Vert.		Nov. 17,1932.

From December 1, 1932 *To* December 4, 1932 *No.* 48

No. and Date	PHASE	TIME h m s	DISTANCE km.	REMARKS
4763 Dec. 3	e_E L F	6 - 53.8 7 - 10 8 - 02		
4764 Dec. 3		9 - 07 to 9 - 28		Trace.
4765 Dec. 3		17 - 49 to 17 - 57		Trace. May not be seismic.
4766 Dec. 4		3 - 02 to 3 - 06		Trace on NS only.
4767 Dec. 4	e eL F	4 - 15 - 40 4 - 18 5 - 05		Micros mask record
4768 Dec. 4	0 eP' ePR_1 $ePcPcS$ $eScPcPcS_N$	8 - 10.9 8 - 30 - 24 8 - 32 - 40 8 - 33 - 50 8 - 39.5	14,470	Interpretation with Gutenberg and Macelwane curves. PR_4 on Macelwane curves.

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From December 4, 1932 to December 19, 1932 No. 49

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4768 Dec. 4 (cont'd)	$e\overline{S_cP_cSP}_E$	8 - 42 - 29		
	ePR'_{2N}	8 - 45.9		
	eSR_{1E}	8 - 50.0		
	e_N	8 - 51.2		
	eSR_2	8 - 55.2		
	eL_E	9 - 08		
	F	11 - 00		
4769 Dec. 4	e_N	10 - 55 - 29		Preliminaries lost in preceding quake.
	eL	11 - 33		
	F	12 - 30		
4770 Dec. 7		9 - 21 to 9 - 24		Trace.
4771 Dec. 7	0	16 - 21.7	4060	Saskatoon Record:
	eP	16 - 29 - 06		0 = 16 - 21.8
	iPR_1	16 - 30 - 23		P = 16 - 29.0
	eS	16 - 34 - 57		S = 16 - 34.7
	eSR_1	16 - 37 - 33		△ = 3900 km.
	eL_E ?	16 - 39.4		
	eL_N	16 - 42		
	F	18 - 36		
4772 Dec. 9	0	8 - 35.3	6420	Interpretation with Macelwane tables.
	ePR_{2N}	8 - 48 - 44		
	eS_N	8 - 53 - 11		
	eL_N	9 - 06		
	F	9 - 22		
4773 Dec. 10		11 - 19 to 11 - 50		Trace.
4774 Dec. 11		5 - 40 to 5 - 56		Trace.
4775 Dec. 15		20 - 30 to 21 - 02		L waves of small amplitude.
4776 Dec. 18		6 - 47 to 6 - 52		Period of eight seconds.
4777 Dec. 19	e	6 - 41 - 12		
	e_N	6 - 44.8		
	eL	6 - 48		
	F	7 - 38		

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From December 19, 1932 to December 25, 1932 No. 50

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4778 Dec. 20		2 - 58 to 3 - 11		Period of eight seconds approximately.
4779 Dec. 21	0	6 - 10.0	3410	Halifax Record:
	eP_E	6 - 16 - 33		0 = 6 - 10.1
	ePR_{1N}	6 - 17 - 20		P = 6 - 17 - 42
	eP_cP_E	6 - 19 - 11		S = 6 - 23 - 40
	e_N	6 - 20 - 15		Δ = 4200 km.
	iS_N	6 - 21 - 44		Saskatoon Record:
	eL	6 - 26		0 = 6 - 09.9
	W_2	8 - 55		P = 6 - 13 - 47
	W_3	9 - 38		S = 6 - 16 - 57
	F	9 - 59		Δ = 1850 km.
4780 Dec. 21	e_N	7 - 56 - 13		Masked by No. 4779.
	e_E	7 - 57.4		
	F	8 - 50 ca.		
4781 Dec. 21	e_N	11 - 20 - 16		Slight local tremors.
	i	11 - 20 - 19		Felt in Ottawa.
	F	11 - 20 - 38		
4782 Dec. 21	e_E	11 - 50.2		
	L	11 - 53		Period of eight seconds.
	F	12 - 00		
4783 Dec. 23		19 - 22 to 19 - 26		Trace.
4784 Dec. 24	e	7 - 00.0		Δ approximately 14,500 km.
	e_E	7 - 08.6		
	e_N	7 - 13.7		
	eL	7 - 25		
	W_2	8 - 26		
	F	9 - 00		
4785 Dec. 24	e_N	11 - 59 - 56		
	L	12 - 05		
	F	12 - 20		
4786 Dec. 25		0 - 29 to 0 - 36		Trace.
4787 Dec. 25	0	2 - 04.5	10,420	Interpretation with Gutenberg curves.
	eP	2 - 17 - 53		Saskatoon Record:
	e_E	2 - 18 - 10		0 = 2 - 04.5
	e_N	2 - 20 - 40		P = 2 - 17 - 05
	ePR_1	2 - 21 - 33		S = 2 - 27 - 39
	e_E	2 - 22 - 14		Δ = 9480 km.
	ePR_{2N}	2 - 23 - 45		

OTTAWA, CANADA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From December 25, 1932 to December 31, 1932 No. 51

No. and Date	Phase	Time	Distance	Remarks
		h m s	km.	
4787 Dec. 25 (cont'd)	$\underline{ePR_{3N}}$	2 - 25 - 32		
	$iS_cP_cP_cS_N$	2 - 28 - 37		
	iS_E	2 - 29 - 10		
	$iPPS_N$	2 - 30 - 29		
	e_E	2 - 31 - 11		
	eSR_1	2 - 35.5		
	eSR_{2N}	2 - 39.6		
	eL	2 - 45		
	W_2 ?	4 - 15		
	W_3	6 - 18		
	F	6 - 32		
4788 Dec. 26	e	5 - 17.0		
	eL	5 - 19		L period of eight seconds.
	F	5 - 47		
4789 Dec. 26		21 - 40 to 21 - 50		Trace on NS only.
4790 Dec. 28		20 - 51 to 21 - 10		L waves of small amplitude.
4791 Dec. 29		6 - 38 to 6 - 43		Trace.
4792 Dec. 29		6 - 57 to 7 - 06		Period of ten seconds.
4793 Dec. 30		19 - 03 to 19 - 21		L waves of small amplitude.
4794 Dec. 31		7 - 22 to 8 - 41		L waves with maximum amplitude of 12μ

NOTE: Milne-Shaw 17 E.W. dismantled from December 7 to 12

W. W. Doxsee