

SEISMOLOGIC BULLETINS RECEIVED

1

JANUARY

1924

International
Seismological
Centre

A list of the seismologic bulletins received each month will hereafter be sent out with each monthly group from the Dominion Observatory, Ottawa, Canada. These bulletins are much appreciated and the data therefrom are incorporated in the series of publications of the Observatory--"The Location of Epicentres."

STATIONS	BULLETINS FOR THE MONTHS OF	RECEIVED
Sitka.....	Nov. '23.....	January 2, '24
Porto Rico.....	Nov. '23.....	" 2. '24
Cheltenham.....	Nov. '23.....	" 2. '24
Tucson.....	Nov. '23.....	" 2. '24
Honolulu.....	Nov. '23.....	" 2. '24
Manchuria, Darien.....	?	" 7. '24
U.S. Weather Review.....	Oct. '23.....	" 9. '24
Cartuja.....	Nov. '23.....	" 11. '24
Cornell University.....	June-Oct. '23.....	" 14. '24
Parc St. Maur.....	Nov. '23.....	" 14. '24
Strasbourg.....	Nov. '23.....	" 14. '24
Strasbourg University.....	Nov. '23.....	" 14. '24
Georgetown University.....	Sep.-Oct. '23.....	" 14. '24
Georgetown " Press.....	Oct.-Nov. '23.....	" 14. '24
Jensen, Korea.....	April-Nov. '23.....	" 14. '24
Athens.....	Aug.-Sep. '23.....	" 14. '24
Nagasaki.....	Nov. '23.....	" 15. '24
Fordham.....	Oct-Dec. '23.....	" 18. '24
Taihoku, Japan.....	Nov.-Dec. '23.....	" 18. '24
Besançon.....	Jan.-Dec. '23.....	" 21. '24
Stoneyhurst.....	Nov.-Dec. '23.....	" 23. '24
Ekaterinburg.....	Jan.-May. '23.....	" 23. '24
Oxford.....	Summary for 1918.....	" 25. '24
Cornell University.....	Nov.-Dec. '23.....	" 26. '24
Wellington, N.Z.....	Report Apia, Samoa--1921.....	" 28. '24
Wellington, N.Z.....	Two separates-Magnetic Storm.....	" 28. '24
Toronto.....	November 1923.....	" 29. '24
Algiers.....	December 1923.....	" 30. '24
Victoria.....	December 1923.....	" 30. '24
Domodossola, Italy.....	July-Dec. '23+Report for 1923.....	31. '24

The bulletins from Ottawa are sent regularly to a mailing list of 220 stations. It is requested that one receipt form be returned each year in order that it may be known that the bulletins are being received. It is the practice of this station to discontinue the sending of receipt forms in the bulletin envelopes as soon as one has been received. Any changes of address desired will be made on receipt of notice.

Ernest A. Hodgson,
Seismologist.

W. W. Doxsee,
Assistant Seismologist.

OTTAWA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

$\phi = 45^{\circ} 23' 38''$ N. $\lambda = 75^{\circ} 42' 57''$ W. $h = 83$ m.

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	r	v	ε	COMP.	DETERMINED
I.....	5.5		120	2:1	NS	Apr. 4, 1923.
II.....	5.4		120	15:1	EW	Aug. 21, 1923.
17.....	12.0		250	20:1	EW	Jan. 9, 1924.
23.....	12.0		250	20:1	NS	Jan. 9, 1924.
D.....	37.6		---	13:10	EW	Jan. 7, 1924.
D.....	36.9		---	13:10	NS	Jan. 7, 1924.
W.....	5.5		160	4:1	Vert	Aug. 22, 1923.

From January 1, 1924 to January 31, 1924 No. 1

No.	DATE	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1677	Jan. 4	i	22-01-35					
		e	22-02-22	12	1			
		eL	22-04	22	3			
		M	22-05.2	12	7			
		L	22-09	irreg.				
1678	" 7	e	10-20.9					
		eL	10-25	irreg.				
		F	10-35 ca					
1679	" 11	e	0-07-14		Sinusoidal L waves.			
		i	0-07-49					
		eL	0-27.5			Micros.		
		L	0-32 to	22	1			
		L	0-37					
1680	" 11	(eL)	21-00					Small sinusoidal L waves.
		L	21-02	18	1	1		
		F	21-30 ca					
Strasbourg wireless received as follows:								
02994 70856 37086 00788								
No trace of this earthquake was registered at Ottawa.								

Ernest A Hodgson

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



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From January 11, 1924. to January 21, 1924. No. 2

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1681	Jan, 12	e? eL L F	(13-35) (14-35) (14-50) (15-00)					
					Time marks uncertain. Quake occurs about the time of changing the sheets and is much disturbed.			
1682	" 14	O eP PR ₁ iS i eL ₁₇ M ₁₇ M ₂₃ L L L L F	20-51-07 21-03-35 21-07-35 21-14-00 21-14.6 21-31.5 21-45 21-47 21-58 22-20 22-45 23-00 23-50 ca					9300
					Press reports from Japan.			
					52			Tokio and Yokohama shaken.
						49		
					8	8		
					5	4		
					3	2.5		
					1.5	1		
Strasbourg wireless received as follows:								
14993 52103 00617 09120								
Quake on 14th, azimuth undetermined. P at Strasbourg 21-03-00								
S sharply marked, Δ for Strasbourg 9120 Km.								
S-P = 61.7 sec.								
Ottawa records also show an eP and iS. Computed O for Strasbourg 20-50-41								
1683	" 15	eL M L F	3-31 3-58 4-10 4-20					
					Preliminary phases lost in microseisms.			
					20	3		
					15	1		
1684	" 16	e e _E e eL? F	(22-02.4) (22-03.5) (22-06.4) (22-14) (23-05)					
					Irregular waves with sharp disturbances. May not be seismic.			
Strasbourg wireless received as follows:								
18993 51502 19208, 02040								
No trace of this record was registered at Ottawa.								
1685	" 20	i eL L F _E	22-51-58 22-58.5 23-02 23-10	5 ? 16	2.5 1	1 		
					Very small.			

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From January 21, 1924 to January 29, 1924 No. 3

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1686	Jan. 21	Strasbourg wireless received as follows: 21993 60204 00545 07700 Quake Jan. 21. Azimuth undetermined. P, S and SR ₁ were recorded. P for Strasbourg 2-04-00 S-P = 545 sec. Δ = 7700 Km.						
1686	" 21	O	1-55-22					5980
		eP	2-04-52					
		PR ₁	2-07-26					
		eS	2-12-27					
		i	2-14-32					
		eL	2-23					
		M _E	2-26	24	20			
		L _N	(2-35)	18		8		
		L _E	2-37	15	5.5			
		L _N	2-40	12		3		
		L _E	2-54	14	2			
		F	3-20 ca					
1687	" 25	e	6-14-00					
		e	6-22.8					
		(eL)	6-27.8					
		M _N	6-29.8	6		(1)		
		L	6-33.5	6				
		F	6-40					
1688	" 29	Strasbourg wireless received as follows: 29993 60213 09555 07900 Quake on 29th. Azimuth not determined. P, S, and SR ₁ recorded. P at Strasbourg 2-13-09 S-P = 555 sec. Δ for Strasbourg 7900 Km.						
1688	" 29	O	1-55-02					8120
		iP _N	2-06-29					
		iS	2-15-55					
		eSR _{2E}	2-25.0					
		eL _N	2-30.5					
		M _N	2-42	19		25		
		M _E	2-39	19	12			
		F	3-00 ca					
Owing to work being done on the vaults housing the Milne-Shaw seismographs, these were not in operation from Jan. 21 to the end of the month.								

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From January 29, 1924. to January 31, 1924. No. 4.

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
Strasbourg wireless received as follows: 29994 60840 46075 00680								
Quake was not recorded at Ottawa.								
1689	Jan. 30	O eP _N (ePR _{1N}) eS eL M _N M _E F	(20-53-29) (20-59-50) 21-00-21 (21-04-52) 21-08.5 21-11.5 21-11 21-30 ca					(3270)
1690	" 31	e _N e i eL _E ? F	1-09.6 1-13.4 1-17-50 1-20.2 1-30 ca					Poorly defined with the exception of the impetus at 1-17-50 which was sharply defined.
<p>NOTE Quake No. 1676, Dec. 28'23 was inadvertently reported in Eastern Standard Time instead of Greenwich Civil Mean Time. The hour should be 23 instead of 18 as reported.</p>								

SEISMOLOGIC BULLETINS RECEIVED

FEBRUARY

1924



The following bulletins and other seismologic publications have been received during the month of February. The data is being used in the work of this station. We take this opportunity of thanking all those cooperating with us in this way. We shall be glad to add to our mailing list any station not already receiving our bulletins.

STATIONS	BULLETINS FOR THE MONTHS OF	REC'D
Parc St. Maur.....	December 1923.....	Feb 1'24
Strasbourg.....	" 1923.....	" 1'24
Strasbourg University	" 1923.....	" 1'24
Tucson.....	" 1923.....	" 1'24
Honolulu.....	" 1923.....	" 1'24
Porto Rico.....	" 1923.....	" 1'24
Hamburg.....	July-December 1923.....	" 8'24
Port-au-Prince.....	Aug. 1922 to Nov. 30, 1923.....	" 11'24
Csaka.....	August - October 1923.....	" 11'24
Nagasaki.....	December 1923.....	" 11'24
Dairen.....	To January 14'1924.....	" 11'24
Eskdalemuir.....	July-December 1923.....	" 11'24
Wien.....	Oct. Nov. Dec. 1923.....	" 13'24
Washington, M.W.R.....	November 1923.....	" 13'24
Helwan.....	December 1923.....	" 15'24
Zürich.....	Sam. Bul. Nos. 30,31. Jan. 20 and Jan. 22, 1924	" 16'24
Chicago.....	January 1924.....	" 21'24
Eger.....	Yearly reports, 1912, 1913.....	" 22'24
Algiers.....	January 1924.....	" 22'24
Zürich.....	Sam. Bul. No. 32. Feb. 11'24..	" 27'24
Belgrade.....	October - December 1924.....	" 27'24
Oxford.....	Int. Seis. Summ. Jan-Mar. 1919	" 29'24
Cartuja.....	December 1923.....	" 29'24

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Lithologic foundation: boulder clay over limestone (Ordovician). Time: Mean Greenwich, midnight to midnight.
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Milne Shaw.....	17	Photographic	Magnetic	8 mm. per min.	1 lb.
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23.....	12.0		250	20:1	NS	Jan. 9, 1924
D.....	37.6		---	13:10	EW	Jan. 7, 1924
D.....	36.9		---	13:10	NS	Jan. 7, 1924
W.....	5.5		160	4:1	Vert	Aug. 22, 1923

From February 1, 1924. to February 14, 1924 No. 5

No.	DATE	Phase	Time	Period	AMPLITUDE			DISTANCE
					A_E	A_N	A_Z	
NOTE:	Quake No 1672		h m s	occurred on	December	22 ^h	1923 ^h	km.
1691	Feb. 9	eL ₁₇ L ₁₇ F	23-50 23-51.5 23-57 ca.	19	Very faint record of sinusoidal Small L waves			
1692	" 11	0 eP ₁₇ eS ₁₇ eL ₁₇ L ₁₇ L ₁₇ F	(6-13.5) 6-29-39 6-43-18 7-09.5 7-23 7-36 8-10	20 19	3.5 2.5	Beyond the tables. Values of (14200) 0 and Δ obtained by extrapolation eP and eS were quit indistinct. P may be read at 6-29-09 and S at 6-43.6 ca. Micros mask the record. Evidently a distant quake.		
1693	" 13	e ₁₇ (eL ₁₇)	23-29.3 23-49					
	" 14	L ₁₇ L ₁₇ L ₁₇ F	23-59 0-15 0-42 1-10	25 18 18	4.5 2. 2.	Sinusoidal L waves.		

E.A.H.
W.W.D.

OTTAWA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

From February 14 '24.

to February 24 '24.

No. 6



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No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE km.
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	
1694	Feb. 14	eL F	8-04-00 8-09	15	1			
1695	" 15	e F	13-27 13-32		Faint irregular traces on M-S No. 17, EW comp. only.			
1696	" 16	O eP ₁₇ eS ₁₇ eL ₁₇ L ₁₇ F	0-32-56 0-46.0 0-57.0 1-17 1-25 1-50	30 19	very 1.5	small.	Very faintly defined record.	10040
1697	" 17	e ₁₇ (eL ₁₇) L ₁₇ F	20-41.4 21-08 21-30 21-45	14	1			
1698	" 18	e ₁₇ (eL ₁₇) L F	17-26 17-42.5 17-52 18-25	15	2		Sinusoid L waves.	
1699	" 19	i ₁₇ e ₁₇ (eL ₁₇) L ₁₇ L ₁₇ F	7-22-27 7-26.5 7-33-30 7-54 8-13 8-40	15 22	1.5 small			
1700	" 21	e(L) _N LE _V	13-35 13-40	14	Irregular traces of small magnitude in heavy micros			
1701	" 22	e F	11-11 11-20		Irregular faint record on No. 17 only.			
1702	" 24	O eP? ePR _{2E} eS SR ₁ eL M _E L _E L _E F	(5-41-01) 5-50-36 5-53-39 5-58-16 6-02.8 (6-07) 6-08.2 6-10 6-24 6-52	12 8 8	14 4 1		Irregular L waves. Phases difficult to identify. Recorded on all three components.	(6080)
Wireless report from Strasbourg as follows:					22994	71535	04090	00830
No trace of this record on the Ottawa seismograms.								
								E.A.H. W.W.D.

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



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From February 24, 1924. to February 29, 1924.

No. 7

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
1703	Feb. 26	e eL F	h m s 12-29-12 12-31 12-40	s	Irregular L waves of short periods and small amplitudes.			km.
1704	" 29	(c) ₁₇ eL ₁₇ L ₁₇ F ₁₇	9-01 9-40 9-55 10-10	18	Very small			

Ernest H. Hodgson

~~SEISMOLOGICAL BULLETINS RECEIVED~~

MARCH

1924.



We wish to convey our thanks for the following seismologic bulletins and publications which have been received during the month of March.

STATION	BULLETINS FOR THE MONTHS OF	REC'D
Zi-ka-wei	Nos 11-19 Apr. 23 - Aug. 3, 1923	Mar. 1, 1924.
Taihoku	Sept. 7 rec. Mukiayama	Mar. 3, 1924.
Nagasaki	January, 1924	Mar. 3, 1924.
Tucson	" 1924	Mar. 3, 1924.
Honolulu	" 1924	Mar. 3, 1924.
Cheltenham	" 1924	Mar. 3, 1924.
Sitka	" 1924	Mar. 3, 1924.
Jena	Report Deutsch Seismologisch Gesellschaft Meeting in Jena Oct. 1923, with three reprints of papers by Dr. Sieberg.	Mar. 4, 1924.
Helwan	January, 1924	Mar. 4, 1924.
Toronto	December 1923 and January 1924	Mar. 6, 1924.
Victoria	January 1924	Mar. 6, 1924.
Georgetown	Special of Mar. 4, 1924	Mar. 6, 1924.
Perth	November and December 1923	Mar. 7, 1924.
Athens	October and November 1923	Mar. 7, 1924.
Strasbourg	January 1924	Mar. 8, 1924.
Central Bureau		
Uccle	Sept. 17- Dec. 31, 1923	Mar. 14, 1924.
Mizusawa	Yearly Report 1922	Mar. 18, 1924.
St. Regis College	Oct. - Dec. 1923, January and February 1924	Mar. 18, 1924.
Denver		
Weather Bureau	Sept. 1923 and Feb. 1924	Mar. 20, 1924.
Chicago		
Osaka	Oct. 31, 1923 to Feb. 1, 1924	Mar. 24, 1924.
Algiers	February 1924	Mar. 27, 1924.
Toronto	" 1924	Mar. 27, 1924.
Honolulu	" 1924	Mar. 29, 1924.
Sitka	" 1924	Mar. 29, 1924.
Victoria	" 1924	Mar. 29, 1924.
Taihoku	Dec. 11-1923 to Feb. 25, 1924	Mar. 31, 1924.
Tyesi	Jan. 5, 1923 to Apr. 29, 1923	Mar. 31, 1924.
Zurich	Bulletin 33 Jan. 30-Mar. 4, 1924 and yearly report for 1922	Mar. 31, 1924.

Ernest A. Hodgson
Seismologist.

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INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENT	T ₀	r	v	ε	COMP.	DETERMINED
I.....	5.5		120	9:5	NS	March 5, 1924.
II.....	5.8		120	13:4	EJ	March 5, 1924.
17.....	12.0		250	20:1	EJ	Feb. 21, 1924.
23.....	12.0		250	20:1	NS	Jan. 7, 1924.
D.....	37.6			13:10	EW	Jan. 7, 1924.
D.....	36.9			13:10	NS	Jan. 7, 1924.
W.....	5.5		160	4:1	V	Aug. 22, 1923.

From March 1, 1924 to March 4, 1924 No. 8

No.	DATE	Phase	Time	Period	AMPLITUDE			DISTANCE
					AE	AN	AZ	
			h m s	s	μ	μ	μ	km.
			Strasbourg wireless report received March 4, as follows:-					
			29991	70851	32662	10080		
			Imperfectly recorded at Ottawa as No. 1704.					
			Strasbourg wireless report received March 4, as follows:-					
			02003	60646	48059	15540		
			No trace of this earthquake recorded here.					
			Strasbourg wireless report received March 6, as follows:-					
			04993	61020	15627	09330		
			Recorded at Ottawa as No. 1706.					
			Strasbourg wireless report received March 7, as follows:-					
			04994	71156	04632	09440		
			Recorded at Ottawa as No. 1707.					
								E. A. H.
								W. W. D.

OTTAWA

SEISMOLOGIC STATION, DOMINION OBSERVATORY



From March 4, 1924 to March 4, 1924 No. 9

No.	Date	Phase	Time h m s	Period s	AMPLITUDE			DISTANCE km.
					A _E μ	A _N μ	A _Z μ	
Strasbourg wireless report received March 6, as follows:- 05993 60444 18573 08260 Recorded at Ottawa as No. 1709.								
1705	Mar. 4	eL ₁₇ L ₁₇ F ₁₇	2-26 2-29 2-35	22 14	2 Small			
1706	Mar. 4	O P PR _{1N} iS _E eL? ME LE LE F	10-07-40 10-14-51 10-16-24 10-20-32 10-24 10-29 10-37 11-10.5 Merges into 1707.				3900	San Jose, Costa Rica destroyed.
HALIFAX RECORD								
		O P PR _{1N} S eL	10-07-31 10-15-17 10-16-48 10-21-26 10-26.8				4380	Much better marked on NS than on EW component.
Strasbourg wireless report received March 13, as follows:- 11994 61053 45625 09300 Recorded at Ottawa as No. 1715.								
Strasbourg wireless report received March 14, as follows:- 12993 61358 10269 02810 Recorded at Ottawa as No. 1719.								
1707	Mar. 4	O PI iI iI S eL M ₁₇ MI L ₁₇ eL ₁₇ eL ₁₇ eLR ₁ F	11-43-54 11-50-56 11-52-15 11-52-46 11-56-30 12-00 12-03.5 12-03.5 12-13 13-02 13-59 14-14 ca Lost in changing sheets.		131 58 11 May be another quake. " " " "		3780	
E. A. H. W. W. D.								

OTTAWA

SEISMOLOGIC STATION, DOMINION OBSERVATORY



From March 4, 1924 to March 11, 1924 No. 10

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1708	Mar. 4	eL ₁₇ cL ₁₇ L ₁₇ F	17-30.4 17-32 17-34 to 17-40 Micros.	12	Small			
1709	Mar. 5	PR ₁ ? S? SR ₁ ? cL L F	4-47-19 4-53-23 4-58-37 5-05 5-22 6-26	26	9			
1710	Mar. 5	eL ₁₇ M ₁₇ L ₁₇ F ₁₇	12-23 12-27 13-06 13-25	15 15	5 3			
1711	Mar. 6	i ₁₇ F	9-39-04 9-54					
1711A	Mar. 6	eL ₁₇ F ₁₇	12-38 12-53ca		Small			
1712	Mar. 7	eL ₁₇ L ₁₇ F ₁₇	8-11.5 8-20 8-45ca	15	Small			
1713	Mar. 7	eL ₁₇ eL ₁₇ M ₁₇ L ₁₇	18-21.7 18-26 18-29	24 15	Small 4			
1714	Mar. 10	i ₁₇ eL ₁₇ F	(18-16.5) (18-21) (18-35)	18	Small			
1715	Mar. 11	O eP? ePR ₁ ? S SR ₁ ? SR ₁ ? eL ₂ M L F	(10-39-27) (10-47-30) (10-49-12) (10-53-52) (10-56-34) (10-57-22) (10-59-00) (11-01-23) (11-40) (13-25)	15 12	68 3			(4630)

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



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From March 11, 1924 to March 15, 1924 No. 11

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1715A	Mar. 11	eL ₁₇ L ₁₇ L ₁₇ F ₁₇	(17-42) (18-25) (18-30) (19-00)	30	6			
1716	Mar. 11	eL ₁₇ M ₁₇ F ₁₇	(20-07) (20-57) (21-35)	30	18			
1717	Mar. 11	eL ₁₇ F ₁₇	(22-11) (22-35)	15	4			
1718	Mar. 12	eL ₁₇ M ₁₇ F ₁₇	(3-14) (3-16) (3-30)	15	9			
1719	Mar. 12	eL ₁₇ F ₁₇	14-16 Micros.					
1720	Mar. 13	e ₁₇ oL ₁₇ L ₁₇ F ₁₇	11-04-19 11-11 11-28 Micros		Small			
1721	Mar. 14	e? ₁₇ e ₁₇ oL ₁₇ L ₁₇ F ₁₇	2-43-34 2-51-45 2-56 3-03 3-30ca	15	4			
<p>Strasbourg wireless report received March 27, as follows:- 25094 71419 18631 09410 Recorded at Ottawa as No. 1731.</p> <p>Strasbourg wireless report received March 28, as follows:- 26992 61709 03032 08320 Not recorded at Ottawa.</p>								
1722	Mar. 15	O iP eS SR ₂ eL M L L F	10-45-16 10-53-31 11-00-02 11-04-11 11-07-45 11-19 11-30 11-58 13-10ca	16 15 15	40 4 4			4800

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



From March 16, 1924 to March 25, 1924 No. 12

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1723	Mar. 16	e [?] ₁₇	1-31-44	20	6			
		S [?] ₁₇	1-37-53					
		SR [?] ₁₇	1-38-53					
		eL ₁₇	1-40-45					
		L ₁₇	1-44					
		F ₁₇	2-05					
1724	Mar. 16	eL ₁₇	10-46		Small			
		F	11-00ca.					
1725	Mar. 20	eL ₁₇	10-12	17	9			
		L ₁₇	10-17					
		L ₁₇	10-21					
		F ₁₇	10-35					
1726	Mar. 22	eL ₁₇	13-07	20	6			
		L ₁₇	13-21.5	30	18			
		M	13-24	16	18			
		F	13-45					
1727	Mar. 24	e ₁₇	11-57.7	15	4			
		eL ₁₇	12-00					
		F	12-20ca.					
1728	Mar. 24	eL ₁₇	20-09.5		Small			
		F	20-19					
1729	Mar. 24	O	20-28-16	15	29			4300
		eP	20-35-56					
		PR ₁	20-37-28					
		S	20-42-00					
		SR ₁	20-44-20					
		SR ₂	20-45-08					
		eL	20-47					
		M	20-49-28					
		L	21-00					
		L	21-14					
		F	22-15ca.					
1730	Mar. 25	eL ₁₇	12-36	15	Small			
		L ₁₇	12-41					
		L ₁₇	12-50.5					
		F	13-05					

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



From March 25, 1924 to March 27, 1924 No. 13

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1731	Mar. 25	O	14-06-49					3900
		eP	14-14-00					
		PR ₂	14-15-20					
		eS	14-19-41					
		SR ₁	14-21-52					
		SR ₂	14-22-24					
		eL	14-24-20					
		M ₁	14-27	15	29			
		M ₂	14-32.5	15	18			
		L ₂	14-38	12	4			
		L	14-57	12	4			
F	Lost in next quake.							
1732	Mar. 25	O	15-03-00					4060
		iP	15-10-23					
		PR ₁	15-11-30					
		eS	15-16-14					
		SR ₁	15-18-15					
		SR ₂	15-19-00					
		eL ₁₇	15-21-00					
		M	15-23-45	15	23			
		L	15-36	15	3			
		L	16-00	15	3			
F	16-40ca.							
1733	Mar. 26	eL ₁₇	1-18	15	Small			
		F	1-29					
1734	Mar. 26	eL ₁₇	15-41.5	16	Small			
		F	16-00					
1735	Mar. 26	O	20-23-28				4450	
		eP	20-31-18					
		e	20-32-18					
		eS	20-37-30					
		SR?	20-40-30					
		eL	20-42					
		M ₁	20-56	28	16			
		M ₂	21-01.5	20	9			
		L	21-08	18	5			
		L	21-14	16	4			
		F	22-30ca.					
1736	Mar. 27	e ₁₇	8-45					
		L ₁₇	8-50	18	6			
		L ₁₇	8-55	10	Small			
		F ₁₇	9-15ca					

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



From March 27, 1924 to March 31, 1924 No. 14

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1737	Mar. 28	e? ¹⁷ L ¹⁷ F	5-11 5-15 5-30	15	4			
1738	Mar. 30	O eP? eS eL M L L F	(0-12-30) (0-17-38) 0-21-44 0-23-26 0-28-30 0-31.5 0-55 2-00ca	12 12 12	58 23 Small			(2510)
1739	Mar. 30	eL ¹⁷ F	12-28 12-43		Small			

Ernest A Hodgson
Seismologist.

W. W. Doxsee
Assistant
Seismologist.

SEISMOLOGIC BULLETINS RECEIVED

APRIL 1924



The following seismologic bulletins have been received during April. We wish to thank all those who are cooperating with us in this way.

STATION	BULLETINS	RECEIVED
Innsbrück	Nos. 4-6; Aug. 1--Nov. 5, 1923	2/4/24
Lemberg	Nos. 39-53; Sep. 24--Dec. 31, '23	2/4/24
Dairen	No. 2; March, 1924	7/4/24
La Paz	Nos. 34-52; Aug. 14--Nov. 23, 1923	9/4/24
La Paz	Special for Mar 3 '24 and Mar 11 '24	9/4/24
Strasbourg	February 1924	9/4/24
Ekaterinburg	June, July, August 1923	10/4/24
Fulkowa	June, July, and August, 1923	10/4/24
Belgrade	January 1924	11/4/24
Helwan	February 1924	14/4/24
Königsberg	Zeitschrift für das Gesamt- gebiet der Geologie.	15/4/24
Barcelona	Nos. 94-97 Jul. 19--Dec. 31 '23	16/4/24
Denver	March, 1924	19/4/24
Oxford	International Seismological Summary Apr. May, June, 1919	22/4/24
Manila	Nov. Dec. 1921	22/4/24
Chicago	March, 1924	22/4/24
Berkley-Lick	Oct 1 '21--Mar. 31 '22	23/4/24
Santiago	Reports 1916, 1917, 1918	24/4/24
Toronto	March, 1924	25/4/24
Nagasaki	February, March, 1924	26/4/24
Strasbourg	Bul. Bib. to Apr. 1. 1924	29/4/24
Sydney	June--Sept. 1919	29/4/24
Sydney	Nov--Dec. 1921	29/4/24
Sydney	Mar--Apr. 1923	29/4/24
Sydney	Jan.--Feb. 1924	29/4/24
Perth	Jan.--Feb. 1924	29/4/24
Zürich	Sammel Bul. Apr. 14, 1924.	30/4/24

Ernest A. Hodgson,
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W. W. Doxsee
Assistant Seismologist.

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SEISMOLOGIC STATION, DOMINION OBSERVATORY

$\phi = 45^{\circ} 23' 38''$ N. $\lambda = 75^{\circ} 42' 57''$ W. $h = 83$ m.

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 hour	20 g. ca.
Spindler-Hoyer.....	W	Smoked Sheet	Air	15 mm. per min.	80 Kgm.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENT	To	τ	V	ϵ	COMP.	I	DETERMINED
I.....	5.5		120	9:5	NS		March 5, 1924.
II.....	5.8		120	13:4	EW		March 5, 1924.
17.....	12.0		250	20:1	EW		February 21, 1924.
23.....	12.0		250	20:1	NS		January 7, 1924.
D.....	37.6			13:10	EW		January 7, 1924.
D.....	36.9			13:10	NS		January 7, 1924.
W.....	5.5		120	4:1	Vert		August 22, 1923.

From April 1, 1924. to April 11, 1924. No. 15

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A_E	A_N	A_Z	
			h m s	s	μ	μ	μ	km.
1740	Apr. 6	e17	21-50.4					
		eL	21-56	22	Small			
		L	22-02	18	5			
		L	22-20	16	3			MS No. 17 only
		F	22-37					
1741	" 8	eL17	9-58	15	Small			
		F	10-05					MS No. 17 only
1742	" 10	e?	20-15-38					
		e?	20-18-28					
		eL17	20-28					MS No. 17 only
		L	20-36	15	Small			
		L	20-45	15	Small			
1743	" 11	eL17	14-08					
		L17	14-12-30	15	Small			
		F	14-28 ca.					

NOTE: "Small" applied to amplitudes in this bulletin, indicates that the true half-amplitude of the earth particle is less than one micron.

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



From April 11, 1924 to April 14, 1924. No. 16

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1744	Apr. 12	eL ₁₇ F	22-58 23-03					
					May not be seismic.			
1745	" 13	eL ₁₇ L ₁₇ i i L _{NE} L ₁₇ L F	14-27 14-48 15-10-00 15-10-40 15-11-16 15-12-45 15-38 15-51					
					May be another quake.			
1746	" 14	eL ₁₇ L ₁₇ L ₁₇ F	9-53.5 10-05 10-17.5 10-46					
					Small			
<p>Strasbourg wireless report received April 16/24 as follows: 14993 61634 35643 09660 R4 Recorded at Ottawa as No. 1747.</p>								
1747	Apr. 14	O eP _y * ₁ i * ₂ i PR ₁ i e e S eL M ₁ L M ₂ M ₃ L L LR ₁ F	(16-25-33) (16-39-31) 16-41-25 16-42-36 16-43-49 16-46-41 (16-48.5) 16-58.5 16-51-19 17-15 17-16 17-24 17-27 17-32 17-40 18-01 18-31 21 hr ca.					(11180)
					<p>This earthquake was very difficult to read. There seems to be some evidence of an earlier value for P -- between 16-36 and 16-37 but the Ottawa records do not admit of a definite reading. The extra phases seem to indicate one, or perhaps two, quakes about 5000 km. to the south of Ottawa. The Halifax record is stronger on the NS than on the EW component but with the</p>			
<p>exception of L the phases recorded are those of the secondary quakes. *₁ and *₂: corresponding phases on the seismograms from Ottawa and Halifax. The Halifax readings follow:</p>								
		* ₁ i * ₂ i i e e eL	16-41-48 16-43-04 (16-46-51) 16-48.7 16-59-18 17-20					
								E.A.H.

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



From April 14, 1924. to April 21, 1924. No. 17

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1748	Apr. 15	e eL ₁₇ L ₁₇ F ₁₇	12-12 12-15.5 12-20 12-40	15	Small			
Strasbourg wireless report received April 17 as follows: 15893 61249 10030 00245 Not recorded at Ottawa.								
1749	" 15	eL ₁₇ L ₁₇ F ₁₇	22-00 22-09 22-35	15	Small			
Strasbourg wireless report received April 23 as follows: 20001 61435 55429 05490 Recorded at Ottawa as No. 1752.								
Strasbourg wireless report received April 24 as follows: 21993 62013 48642 09650 Recorded at Ottawa as No. 1753.								
1750	Apr. 17	eL ₁₇ F ₁₇	21-56-40 22-13	16	Small			
1751	" 18,	eL ₁₇ L ₁₇ L ₁₇ F ₁₇	12-04-30 12-09 to 12-15 12-25	15	Small			
1752	" 20	e ₁₇ e ₁₇ eL ₁₇ L ₁₇ L ₁₇ F ₁₇	14-55-26 15-00-19 15-15 15-36.5 15-40 micros	30 18 15	Small 5 Small			
1753	" 21	O eP PR ₂ i S SR ₂ eL ₂ M ₁₇ L ₁₇ L ₁₇ F ₁₇	20-01-09 20-07-45 20-08-53 20-09-16 20-12-58 20-14-40 20-16-40 20-20 20-24 20-33 21-40	30 20 10	73 29 5			3440
								E.A.H.

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From April 21, 1924. to April 30, 1924. No. 18

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A_E	A_N	A_Z	
					μ	μ	μ	
			h m s	s				km.
1754	Apr. 25	eL L L L F	18-47 18-52.6 19-05 19-22 19-40	(19) (15)				Irregular L waves of very small amplitude.
1755	" 28	e ¹⁷ e ¹⁷ F ¹⁷	17-46-30 17-51-45 18-07 ca					
1756	" 28	e? e S? L L L F	21-22-25 21-25-45 21-31-53 21-53-00 21-57 22-03 22-12 23-30 ca					
						6 7 4		
1757	" 29	e eL ¹⁷ L ¹⁷ F ¹⁷	9-29.4 9-32.6 9-42 9-52	15			Small	
1758	" 29	e eL L F	10-05-32 10-09-18 10-11-30 11-05 ca	13			Small	
1759	" 29	O P? e S? eL L L F	(21-04-14) 21-13-10 21-16-38 21-20-16 21-27 21-30+ 21-43 22-30 ca					(5440)
						4 15	Sinusoidal L waves. Small	
1760	" 30	O eP PR ₁ eS SE ₂ eL L L L or S L L F	(4-12-13) 4-25-30 4-29-30 4-36-41 4-53-32 5-03 5-12 5-34 5-45 6-17 6-25 7-35					(10300)
						5 3.5 4 6.5	Remarkable for long continued sinusoidal L waves of small and constant amplitude. May be second quake.	

E.A.H.

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



From April 30, 1924 to April 30, 1924. No. 19

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1761	Apr. 30	eL	10-18					
		L	10-25.5					
		L	10-31					
		F	10-50					
<p>Note. A rather severe earthquake was registered at the Dominion Observatory, Thursday, May 1. The preliminary reading from the Wiechert Vertical Seismograph only, is as follows:</p> <p style="margin-left: 150px;"> O? 19-54-27 iP 20-01-15 es? 20-06-39 eL 20-11.5 Δ (3600 km) </p> <p style="margin-left: 100px;">Azimuth from Ottawa presumably south approx.</p>								

Ernest A. Hodgson

SEISMOLOGIC BULLETINS RECEIVED

MAY, 1924

oo



The Dominion Observatory acknowledges with thanks the receipt of the following valued contributions to data during the month of May.

STATIONS	BULLETINS FOR THE MONTHS OF	RECEIVED
Georgetown Press Des.	February, 1924.....	May 3, 1924
Georgetown Seis. Rep.	January, 1924.....	" 3, "
Algiers.....	March, 1924.....	" 3, "
Porto Rico.....	March, 1924.....	" 5, "
Sitka.....	March, 1924.....	" 5, "
Tucson.....	March, 1924.....	" 5, "
Honolulu.....	March, 1924.....	" 5, "
Cheltenham.....	March, 1924.....	" 5, "
Csaka.....	February--March, 1924.....	" 5, "
Helwan.....	March, 1924.....	" 5, "
Tyosi, Japan.....	May, 1923.....	" 6, "
Lomodossola.....	January--March, 1924.....	" 6, "
Strassbourg.....	March, 1924.....	" 6, "
Victoria.....	March, 1924.....	" 8, "
Georgetown Press Des.	March--April, 1924.....	" 9, "
Georgetown Seis. Rep.	February, 1924.....	" 9, "
Dairen.....	April, 1924.....	" 13, "
Zi-ka-wei.....	August--September, 1923.....	" 14, "
Gartuja.....	January--February, 1924.....	" 14, "
Rio de Janeiro.....	July--December, 1923.....	" 14, "
Zi-ka-wei.....	October 5--November 11, 1923	" 17, "
Denver.....	April, 1924.....	" 19, "
Chicago.....	April, 1924.....	" 19, "
Hamburg.....	January--March, 1924.....	" 23, "
Parth.....	March, 1924.....	" 23, "
Algiers.....	April, 1924.....	" 26, "
Uccle.....	January--March, 1924.....	" 26, "
Athens.....	December, 1923--January, 1924	" 26, "
Osaka.....	April, 1924.....	" 27, "
Jinsen.....	December 1923--April, 1924..	" 27, "
Nagasaki.....	April, 1924.....	" 28, "
Toronto.....	April, 1924.....	" 30, "
Helwan.....	April, 1924.....	" 30, "
Victoria.....	April, 1924.....	" 30, "
Sitka.....	April, 1924.....	" 31, "
Honolulu.....	April, 1924.....	" 31, "
Porto Rico.....	April, 1924.....	" 31, "
Cheltenham.....	April, 1924.....	" 31, "
Tucson.....	April, 1924.....	" 31, "

Ernest A. Hodgson,
Seismologist.

W. W. Doxsee,
Assistant Seismologist.

OTTAWA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

$\phi = 45^\circ 23' 38''$ N. $\lambda = 75^\circ 42' 57''$ W. $h = 83$ m.

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 hour	20 g. ca.
Spindler-Hoyer.....	W	Smoked Sheet	Air	15 mm. per min.	80 Kgm.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENT	To	r	v	ε	COMP.	I	DETERMINED
I.....						1" tilt	
II.....	5.3		120	2:1	NS	=	May 7, 1924.
17.....	6.0		120	15:1	EW	displ't	May 7, 1924.
23.....	12.0		250	20:1	EW	51.0mm	May 7, 1924.
D.....	12.0		250	20:1	NS	44.6mm	May 5, 1924.
D.....	37.6		---	13:10	EW		Jan. 7, 1924.
W.....	36.9		---	13:10	NS		Jan. 7, 1924.
	5.5		160	4:1	Vert		Aug. 22, '23.

From May 1, 1924 to May 1, 1924. No. 20

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1762	May 1	eL	4-40					
		L	4-42	17	Small sinusoidal L waves.			
		L	4-49	15				
		F	5-18 ca					
1763	" 1	O	19-54-20					3690
		P	20-01-15					
		PR ₁	(20-02-06)					
		PR ₂	(20-02-24)					
		MN	20-02-52		Peculiar rise to a maximum on I only			
		S	20-06-44					
		SR ₂	20-09-00					
		eL	20-10-30					
		M ₁	20-15	15	57			
		M ₂	20-17	15	57			
		L	20-41 to	11	8			
			22-20	11				
		F	23-20 ca					
		Halifax record reads as follows;						
		O	19-54-22					4140
		eP	20-01-50					
		i	20-05-24					
		iS	20-07-45					
		i	20-11-00					
		eL	20-12-0					

E.A.H.
W.W.D.

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



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From May 1, 1924 to May 6, 1924 No. 21

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1764	May 2	eL L F	2-35 2-52 3-06	15 15	Small "			
1765	" 3	eL? L L F	(12-14.5) 12-24 12-33 12-49 ca.	24	Small		M. S. 17 only.	
1766	" 4	O e ₁₇ P PR ₂ ? e S? i iSR ₁ ? iSR ₂ ? eL L L L F	(16-57-55) 17-05-37 17-07-36 17-10-24 17-13-33 17-15-22 17-16-28 17-19-20 17-20-30 17-22-49 17-29 17-37 17-55 18-13 19-40	irreg " 15 13	5 3		Very difficult to read. Interpretation of phases doubtful.	(6180)
1767	" 5	e eL F	6-21-30 6-29 7-00 ca.				Small sinusoidal L waves.	
<p>Strasbourg wireless report received May 6th as follows 04(9)91 7171(0) (37)311 03410 This was recorded at Ottawa as No. 1766.</p>								
1768	" 6	eL L L F	3-45 3-53 4-17 4-46	20 15	Small "		M. S. 23 was replaced in service after experimental work on May 6th.	
1769	" 6	e e e eL F	6-39-47 6-43-47 6-47 6-51 7-20					
1770	" 6	e eL? L F	10-48-41 10-59-45 11-03 11-35	15	Small			

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



From May 6, 1924. to May 10, 1924. No. 22

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE km.
					Δ_E μ	Δ_N μ	Δ_Z μ	
1771	May 6	P	h m s 16-29-26					
		e ₁₇	16-37-11					
		e ₁₇	16-39-14					
		e ₁₇	16-44-58					
		e	16-48-45					
		eL?17	16-57.5					
		L	17-00	45	50	?		
		L	17-08	30	25	11		
		L	17-20	18	7	4		
		L	17-22	16	6			
		L	17-30	20	9			
L	17-39	14	3	Small				
F	18-40							
<p>Strasbourg wireless report received May 8 as follows: 06994 71622 34635 09500 This was recorded at Ottawa as No. 1771.</p>								
1772	May 7	eL	1-37					
		L	1-39.5	20	Small sinusoidal L waves			
		F	2-22		Barely discernible			
1773	" 7	e ₁₇	13-10-45		Small L waves-irregular.			
		e ₂₃	13-10-23					
		F	13-16					
1774	" 8	e	6-05-45					
		e	6-12-30					
		e	6-20					
		L	6-39	20	Small sinusoidal L waves.			
		L	6-49	18				
		L	6-53	18				
		F	8-03					
1775	" 10	e ₁₇	3-13-15					
		e ₁₇	3-15-53					
		e ₁₇	3-20-08					
		eL ₁₇	3-27					
		L	3-54	20	4.5	3		
		L	4-07.5	17	3.5			
		L	4-18	15	2.5	2		
		F	5-20 ca					
<p>E.A.H. W.W.D.</p>								

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



From May 10, 1924 to May 18, 1924 No. 23

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1776	May 11	e	4-52-00					
		e	4-55-30					
		eL	4-58-30					
		L	5-00-00	20	Small			
		F	5-09 ca					
1777	" 11	LE	16-44.5		All phases show a trifle later on N-S than on E-W. Max. diff = 1 min.			
		L	16-48					
		L	16-52					
		L-	16-54	18				
		F	17-10 ca					
1778	" 12	e?	13-37-28		Small amplitude sinusoidal L waves.			
		L	13-43	12				
		L	14-13	20				
		F	14-25 ca					
1779	" 13	eL	2-37.8		Very small L waves.			
		L	2-39-32					
		L	2-42					
		F	2-52					
1780	" 17	e?	4-13-40					
		S?	4-22-10					
		eL	4-39					No. 17 only.
		L	4-44	21				
		L	4-50	18	5			
		L	4-55	17	2			
		L	5-01	16	Small			
		F	5-30 ca					
1781	" 18	Earlier phases lost in coda of No. 1780						
		e	5-36-30					
		e	5-38-45					
		eL	5-54.5	Irreg.				No. 17 only.
		M	6-24	24	8			
		L	6-26	20	3			
		L	7-00	16	Small			
		F	7-45ca					
1781	" 18	e	10-51		Very small sinusoidal L waves			
		L	10-57					
		F	11-09					

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



From May 18, 1924. to May 27, 1924. No. 24.

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1783	May 21	eL L F	1-46 1-48-12 2-00 ca	12	small			
1784	" 21	0 eP PR ₂ N iS eL L L F	10-12-48 10-19-36 10-20-40 10-25-00 10-29 10-32-33 10-36 11-07	30 12	11 2.5	18 2.5		3600
1785	" 22	e eE eLN L L L F	17-54-58 18-07-45 18-13 18-22 18-28 19-14 19-26	50 23 19	small small	small very small		
1786	" 23	eL L F	2-54.5 2-58 3-04	15	small on 17 and barely visible on 23.			
1787	" 23	eL F	15-37.5 15-50 ca.	15	small sinusoidal L waves of irreg. nature. May not be seismic.			
1788	" 24	e eL L L L F	2-46-45 2-52 3-04 3-11 3-21.5 4-40 ca.	16 21	2 3.5	2 3.5		
1789	" 27	e? eL L L F	3-03 3-20 3-26.4 3-34.5 4-02 ca.	23	small	small		
<p>Trouble with the timing shutter prevents reading of preliminary phases on both components N-S and E-W for quakes 1789-1790. There was no record of either on the vertical.</p>								
1790	May 27	eL L F	10-25.5 10-28 Lost in broken record.	30 20	small 3.5	small 3.5		

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From May 27, 1924. to May 31, 1924. No. 25

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE	
					A _E	A _N	A _Z		
			h m s	s	μ	μ	μ	km.	
1791	May 27	eLE	20-44.5						
		LE	20-47.5	15	small				
		LN	20-48.6	?		small			
		L	20-54						
		F	21-07 ca						
1792	" 28	O	9-52-00					7960	
		PN	10-03-19						
		SE	10-12-37						
		e	10-14-45		L waves	mostly irregular			
		e	10-15-28		until about	10-40. Then			
		SR ₂ ?E	10-20-23			sinusoidal and			
		eI?	10-24			small. P well			
		L	10-35	15	small	small	marked on		
		MN	10-40	15		2.5	No. 23 and		
F	11-50 ca				S on No. 17.				
1793	" 31	eLE	12-55		E-W component	better marked.			
		L	13-00	15	small	Early phases lost			
		F	Lost in changing records.			in micros.			

Ernest G. Hodgson

SEISMOLOGIC BULLETINS RECEIVED

JUNE 1924



The following seismologic bulletins have been received in June. We wish to thank all those who have cooperated with us in this way.

STATION	BULLETINS	RECEIVED.
Dairen.....	May 6, 1924.....	June 4.
Sydney.....	April 14, 1924.....	" 4.
Strasbourg.....	April, 1924.....	" 4.
San Fernando.....	March, April, 1924.....	" 4.
La Paz.....	November 1923--March, 1924.....	" 4.
Strasbourg.....	Report for 1922.....	" 5.
Manila.....	September, October, 1923.....	" 9.
Karafuto.....	1921--1922.....	" 9.
Tyosi.....	June, 1923.....	" 9.
Manila.....	November, December, 1923.....	" 9.
Taihoku.....	February 26--April 30, 1924.....	" 9.
Rome.....	1920--1921.....	" 10.
Eskdalemuir.....	January--April, 1924.....	" 11.
Georgetown.....	March, 1924.....	" 13.
Georgetown Press Desp.	May, 1924.....	" 13.
Pulkova.....	October 1923--January, 1924.....	" 13.
Ekaterinburg.....	October--December, 1923.....	" 13.
Denver.....	May, 1924.....	" 16.
Spring Hill.....	1923.....	" 18.
Athens.....	February,--March, 1924.....	" 20.
Zürich.....	April--May, 1924.....	" 20.
Manila.....	March, 1922.....	" 23.
Georgetown.....	Report for 1923.....	" 23.
Chicago.....	May, 1924.....	" 23.
Algiers.....	May, 1924.....	" 25.
Wellington.....	October--December, 1923.....	" 27.
Zi-ka-wei.....	November 11--December 29, 1923.....	" 27.
Cartuja.....	March--April, 1924.....	" 27.
Wien.....	January 1--April 14, 1924.....	" 28.
Lemberg.....	March 16--April 20, 1924.....	" 28.

Ernest A. Hodgson.
Seismologist.

W. W. Doxsee,
Assistant Seismologist.

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



$\phi = 45^{\circ} 23' 38''$ N. $\lambda = 75^{\circ} 42' 57''$ W. $h = 83$ m.

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	r	v	ϵ	COMP.	1" tilt	DETERMINED
I.....	5.3		120	2:1	NS	=	May 7, 1924
II.....	6.0		120	15:1	EW	displ't	May 7, 1924
17.....	12.0		250	20:1	EW	51.0mm	May 7, 1924
23.....	12.0		250	20:1	NS	44.6mm	May 5, 1924
D.....	37.6			13:10	EW		Jan 7, 1924
D.....	36.9			13:10	NS		Jan 7, 1924
W.....	5.5		160	4:1	Vert		Aug. 22'23.

From June 1, 1924 to June 14, 1924 No. 26

No.	DATE	Phase	Time	Period	AMPLITUDE			DISTANCE
					AE	AN	AZ	
			h m s	s	μ	μ	μ	km.
1794	June 4	e eL F	3-01 3-06 3-15	15	small	small		
1795	" 4	eN eE e eL M F	16-16-24 16-17-56 16-22 16-26 16-34 17-40	15	After the maximum the record becomes quite small but continues to record for over an hour.			
1796	" 7	e e eLE eLN LN F	19-30 19-35.4 19-41 19-42 19-54 20-26 ca	15	Sinusoidal L waves on N N-S comp.			
1797	" 14	e?N eN M F	12-31-42 12-33 12-35.2 12-45	20	3	6		

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From June 14, 1924 to June 24, 1924 No. 27

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
1798	June 15	eL F	h m s 11-04.6 11-18	s 12	Very small	sinusoidal	L	km.
1799	" 17	e(S) eL L F	21-11-00 21-21 21-25 21-40	20 20	3.5 2.0			
1800	" 18	e? eL L _E M _N M F _E	17-32 17-47.3 17-48 17-48 17-52.8 18-20	12 20 8	2. 4.	8.	Remarkably different record on the two components.	
1801	" 20	e eL L F	16-40.7 16-47.5 16-51 to 16-57 17-05 ca.	20	Small	Small	Sinusoidal L waves.	
1802	" 22	e? eL L F	14-08 14-13.5 14-24.5 Lost in changing.	20	Small	Small		
1803	" 22	O P ₂₃ PR _{1N} S SR _{2N} eL L F	22-29-04 22-36-45 (22-38.3) 22-42-50 22-45-51 22-49 22-54 23-30	20	6	3	No trace on vertical 4320	
1804	" 24	e? _N e _N e _N eL _N M F	13-58.5 14-00.5 14-03-56 14-09 14-13 14-44 ca.	30 18	3.6	6 2.5		

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From June 24, 1924 to June 29, 1924 No. 28

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1805	June 26	O	(1-44-48)					(9080)
		iP	1-57-05					
		PR ₁ ?	2-00-38					
		PR ₂ ?I	(2-02-40)					
		S?	2-07-20					
		i	2-10-40					
		i	2-19-44					
		eL?	2-24-20					
		M ₁₇	2-48-38	30	28			
		M ₂₃	2-51	20		16		
		M ₁₇	2-56	20	24			
		M	3-05	15	6	5		
		M	3-14	15	7	4		
		M ₁₇	3-21	15	4			
		M ₂₃	3-23	15		4		
		M ₁₇	3-38	15	3			
		M ₂₃	3-40	15		2.5		
		LR ₁₇	4-03	60				
		L	4-29	60				
		L	4-31 to	12				
			5-00	19				
		F	7-00 ca					
		HALIFAX RECORD						
		O	(1-45-03)					(9250)
		P	1-57-28					
		PR ₁ N?	2-01-13					
		S?E	2-07-51					
		i	2-11-04					
		i	2-20-25					
		eL?	2-25-31					
		M	2-57					
1806	" 28	e	23-04.5	Small sinusoidal L waves, more pronounced on No. 17 than on No. 23.				
		eL	23-06	20				
		L	23-18					
		F	23-45					
1807	" 29	eN	15-27					
		eL	15-32.5					
		LE	15-40	20	small			
		F	16-00 ca					
1808	" 29	e	17-01					
		eL	17-08	8	small on both components.			
		F	17-22					

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From June 29, 1924 to June 30, 1924 No. 29

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
					μ	μ	μ	
			h m s	s				km.
1809	June 29	e?E	18-46.5					
		e?E	18-50.6					
		eL	18-55.4					
		L	(19-36)		Time signals failed to register during this quake and the next-- both on the same sheet.			
		L	(19-47)					
		L	(20-06)					
	" 30	F	o hrs.					
1810	" 30	eL	(4-20)					
		F	(4-50)					
1811	" 30	eL	(12-17)		Times approximate.			
		F	(12-45)					
1812	" 30	O	15-44-30					8780
		iP	15-56-31					
		iS	16-06-30					
		SR _{1N}	(16-12-08)					
		SR _{2N}	(16-15-53)					
		eL	16-22					
		M _{1E}	16-26	26	6.5			
		M _{1N}	16-28	26		4.5		
		M _{2E}	16-39	15	2.5			
		M _{2N}	16-40	15		1.		
		F	20 hr. ca.					

Ernest J. Hodgson

SEISMOLOGIC BULLETINS RECEIVED

JULY 1924

The following seismologic bulletins have been received in July. We wish to thank all those who have cooperated with us in this way.

STATION	BULLETINS	RECEIVED
Strasbourg.....	May, 1924.....	July 2.
Osaka.....	May, 1924.....	July 2.
Nagasaki.....	May, 1924.....	" 2.
Helwan.....	May, 1924.....	" 2.
Tyosi.....	July-August, 1923.....	" 2.
Toronto.....	May, 1924.....	" 3.
Porto Rico.....	May, 1924.....	" 3.
Cheltenham.....	May, 1924.....	" 3.
Tucson.....	May, 1924.....	" 3.
Sitka.....	May, 1924.....	" 3.
Honolulu.....	May, 1924.....	" 3.
Berkeley-Lick.....	Index to Vol. 1 Seis. Pub.....	" 4.
Sydney.....	March, 1924.....	" 4.
Königsberg.....	January-March, 1923.....	" 11.
Denver.....	June, 1924.....	" 17.
Georgetown.....	April, 1924 and Seismological Dispatches of June, 1924.....	" 17.
Coimbra.....	October-November, 1923.....	" 17.
Apia.....	Report for 1922.....	" 18.
Chicago.....	June, 1924.....	" 21.
Oxford.....	Seis. Sumn. Oct.-Dec. 1919.....	" 21.
Rio de Janerio.....	January-March, 1924.....	" 23.
Nagasaki.....	Report for 1923.....	" 23.
Zi-ka-wei.....	Jan. 7-April 11, 1924.....	" 24.
Algiers.....	June, 1924.....	" 26.
Strasbourg.....	Bulletin Bibliographique.....	" 26.
Cartuja.....	May, 1924.....	" 28.
Barcelona.....	January 1-May 13, 1924.....	" 28.
Manila.....	April, 1922.....	" 28.
Victoria.....	May, 1924.....	" 28.
LaPaz.....	Special for May and June 1924.	" 31.
LaPaz.....	March, 11-May 4, 1924.....	" 31.

Ernest A. Hodgson,
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W. W. Doxsee,
Assistant Seismologist.

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



$\phi = 45^{\circ} 23' 38''$ N. $\lambda = 75^{\circ} 42' 57''$ W. $h = 83$ m.

Lithologic foundation: boulder clay over limestone (Ordovician). Time: Mean Greenwich, midnight to midnight.
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INSTRUMENTS—FIXED CONSTANTS

INSTRUMENT	SYMBOL	REGISTRATION	DAMPING	PAPER SPEED	MASS
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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	r	v	ϵ	COMP.	1" tilt	DETERMINED
I.....	5.3		120	2:1	NS	=	May 7, 1924.
II.....	6.0		120	15:1	EW	displ't	" 7, 1924.
17.....	12.0		250	20:1	EW	51.0 mm	" 7, 1924.
23.....	12.0		250	20:1	NS	44.6 mm	" 5, 1924.
D.....	37.6			13:10	EW		Jan. 7, 1924.
D.....	36.9			13:10	NS		" 7, 1924.
W.....	5.5		160	4:1	Vert		Aug. 22, 1923.

From July 1, 1924 to July 1, 1924 No. 30

No	DATE	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1813	July 1	e	3-22-40					
		e(S)	3-39					
		eL	3-46					
		M	3-48.6	12	4	4		
		L	3-50 to					
			4-09					
		F	4-25					
Small period and amplitude.								
Strasbourg wireless received as follows July 2, 1924								
30001 515(6)6 17599 08780								
This was recorded at Ottawa as No. 1812, June 30.								
Strasbourg wireless received as follows July 4, 1924;								
03003 50449 43468 06220								
This was recorded at Ottawa as No. 1815, July 3.								
E.A.H. W.W.D.								

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SEISMOLOGIC STATION, DOMINION OBSERVATORY

July 1, 1924

July 6, 1924



From..... to..... No.....

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE (3780)
					A _E	A _N	A _Z	
1814	July 2	O P? S? eL M F	(18-04-36) 18-11-38 18-17-12 18-22 18-27 19-20					
			Long continued	15				km.
			sinusoidal L waves.					
1815	July 3	O iP PR ₁ PR ₂ N S SR ₁ E SR ₂ E eL M _E M _N L F	4-40-57 4-53-38 4-57-30 4-59-38 5-04-16 5-10-36 (5-14-36) 5-24 5-34 5-41 7-45 9-00ca					9560
				22 19	104	84		
1816	July 5	eL F	15-53 16-13					
								Faintly recorded sinusoidal L waves.
1817	July 5	e e eL LN LN LE L F	22-59-30 23-06 23-26 23-29 23-33 23-42 23-48 0-30					
				20 15 20	Small Small Small			
	July 6							
1818	July 6	O iP PR ₁ N PR ₂ N SN SR ₁ E SR ₂ E iLN M _E M _N L F	14-18-32 14-26-06 14-27-18 14-27-36 14-32-08 14-34-18 14-35-04 14-36-15 14-40 14-43.5 14-50 to 15-55 17-30 ca.					4220
				22 17	52	40		
								Sinusoidal L waves of diminishing period and amplitude.
								E. A. H. W. W. D.

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



From July 6, 1924 to July 8, 1924 No. 32

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE	
					A _E	A _N	A _Z		
			h m s	s	μ	μ	μ	km.	
1818	July 6	Halifax Record							4400
		O	14-18-33						
		P	14-26-20						
		S	14-32-30						
		eL	14-37.3						
		M	14-42.8						
		F	15-15						
1819	July 6	c	18-32						
		c _N	18-55-19						
		c	19-05-37						
		cL	19-15						
		M _N	19-24	20		12			
		L	19-30 to 20-05	Small sinusoidal L waves.					
		F	20-25						
1820	July 7	O	2-53-50					7500	
		P _E	3-04-45						
		PR _{1E}	3-07-45						
		S	3-13-40						
		cL	3-26						
		L	3-38 to 3-49	17		9			
		L	3-50 to 4-11	15		1			
		F	5-17 ca						
1821	July 7	c _E	9-48.5						
		cL _E	9-53						
		L _N	10-01	Small sinusoidal L waves.					
		F	10-12						
1822	July 7	O	(17-20-50)					(7220)	
		cP _N	(17-31-30)						
		cS _N	(17-40-10)						
		eL	17-51						
		L	17-54 to 18-04	20	Sinusoidal L waves of very small amplitude.				
		F	18-05						
1823	July 8	e	11-15-15						
		eL	11-18-30		Very small sinusoidal L waves				
		F	11-50						

E. A. H.
W. W. D.

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



From July 8, 1924 to July 14, 1924 No. 33

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE km.
					A _E μ	A _N μ	A _Z μ	
1824	July 8	c L L F	^h 21- ^m 38 ^s 21-43 21-48 to 21-56 22-30	s				Small sinusoidal L waves.
1825	July 9	c cL L F	21-01.6 21-06.5 21-07 to 21-35 21-55					Irregular periods, very small amplitude.
1826	July 11	O P _N PR _{1N} PR _{2N} S c c cL M _E M _N M _E M _N M _V L	19-45-31 19-58-12 20-02-02 20-04-10 20-08-50 20-11-04 20-16-02 20-29.5 20-39.5 20-44.5 20-46.5 20-47.5 20-47 20-50 to 21-30					9560
	July 12	F	0-20					Sinusoidal L waves of diminishing amplitude.
1827	July 12	C P _N PR _{1N} S SR _{1N} SR _{2N} cL M _E L _N L	15-12-38 15-25-35 15-29-08 15-36-28 15-42-32 15-46-12 15-54 16-02 16-05 16-05 to 16-17 17-50 ca					9890
1828	July 13	cL _N L _N F	23-49.4 23-52 to 23-57 0-10					Sinusoidal L waves of small amplitude.
1829	July 14	eL F	3-13 3-22					Sinusoidal L waves of small amplitude.

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From July 15, 1924 to July 21, 1924 No. 34

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE		
					A _E	A _N	A _Z			
			h m s	s	μ	μ	μ	km.		
1830	July 15	P	0-10-19		Local earthquake. Felt along Ottawa Valley; more strongly toward Renfrew and Pembroke, Ontario.					
		i _E	0-10-25							
		L	0-10-41							
		F	0-15							
1831	July 16	c [?] _N	6-16.5		Very small amplitude. Sinusoidal L waves.					
		c _L	6-20							
		L	6-25 to 7-16							
		F	7-30							
1832	July 17	e	11-55-53		Small sinusoidal L waves after M.					
		c(S)	12-04-00							
		c _E	12-09							
		c _L	12-16							
		M	12-18	35					8.5	8.5
		L	12-24 to 12-34	18						
		L	12-37 to 12-55							
F	13-15									
1833	July 19	c _N	3-05-06		Small sinusoidal L waves.					
		c _L	3-14							
		F	3-25							
1834	July 20	c _N	0-31		Sinusoidal waves of small amplitude					
		c _L	0-38.5							
		L	0-43 to 0-51							
		F	1-06							
1835	July 20	c [?]	9-48.3		Small Small					
		c [?] _N	9-55							
		c _L	10-08							
		L	10-13 to 10-21	irreg.						
		L	10-25 to 10-48	18						
		F	11-12							
1836	July 21	e _L	1-43		Faint traces on M.S. only.					
		L	1-53 to 2-04							
			2-04							
		F	2-13							

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



July 22, 1924

July 31, 1924

35

From.....to.....No.....

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
1837	July 22	O	h 4-10-04 s 04	s	μ	μ	μ	4800
		Pv	4-12-24					
		PR ₂ N	4-14-28					
		S _N	4-19-00					
		SR ₁ E	4-22-08					
		SR ₂ E	4-22-48					
		eL	4-25					
		M _N	4-25.5	23		16		
		M _E	4-25.5	26	92			
		L	4-37 to 4-50					
		F	6-00 ca					
1838	July 22	eL	11-06					Very small waves.
		L	11-10	22				
		L	11-51	20				
		L	12-06	18				
		L	12-38	18				
		F	13-15					
1839	July 22	e	14-49					Small sinusoidal L waves more heavily marked on NS.
		eL	14-59					
		L	15-15					
		LN	15-28	24		8		
		F	16-40					
1840	July 23	eL	17-59					Very small L? waves. May not be seismic.
		F	18-05					
1841	July 24	O	5-02-57					8550
		P	5-14-47					
		PR ₁	5-18-04					
		PR ₂ E	5-20-07					
		S	5-24-35					
		SR ₁	5-30-12					
		eL	5-36-52					
		L	5-55					
		M _N	5-58	34		109		
		M _E	5-59	36	93			
		M _E	6-15	20	47			
		M _N	6-15.5	20		35		
		L	6-05 to 6-25					
		LN	6-36 to 7-08	18		10		
		F	8-30ca.					
1842	July 29	e	5-41					Small sinusoidal L waves.
		eL	5-57					
		M _E	6-26.5	30	12			
		M _N	6-33.5	26		14		
		L	6-34 to 7-25					
		F	8-02ca.					

SEISMOLOGIC BULLETINS RECEIVED

AUGUST 1924

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

STATION	BULLETINS	RECEIVED
Nagasaki.....	June, 1924.....	Aug. 5, 1924
Osaka.....	June 1-July 5, 1924.....	" 7, "
Strasbourg.....	June, 1924.....	" 8, "
Paris.....	June, 1924.....	" 8, "
Helwan.....	June, 1924.....	" 8, 1924
Tai-oku.....	Apr. 30-July 2, 1924.....	" 9, "
Lemberg.....	Jan. 1-June 1, 1924.....	" 11, "
Zürich.....	Seism. Bull. No 36.....	" 11, "
Hamburg.....	April, May, June, 1924.....	" 12, "
LaPaz.....	May 4-June 10, 1924.....	" 13, "
Toledo.....	Jan.-May, 1924.....	" 15, "
Georgetown.....	April, May, 1924 and Seismol Dispatches of July, 1924.....	" 15, "
Perth.....	April-May, 1924.....	" 18, "
Manila.....	Weather Bureau -May, 1922.....	" 19, "
Chicago.....	July, 1924.....	" 21, "
Ithaca.....	Jan. and Mar.-June, 1924.....	" 26, "
Rio de Janeiro.....	April, May, June, 1924.....	" 27, "
Toronto.....	June, 1924.....	" 27, "
Victoria.....	May-June, 1924.....	" 27, "
Helwan.....	July, 1924.....	" 29, "
DeBilt.....	Report for year 1921.....	" 29, "
Athens.....	April-May, 1924.....	" 29, "

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



$\varphi = 45^{\circ} 23' 38''$ N. $\lambda = 75^{\circ} 42' 57''$ W. $h = 83$ m.

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.....	5.3		120	2:1	NS	1" tilt equals May 7, 1924
II.....	6.0		120	15:1	EW	displmt May 7, 1924
17.....	12.0		250	20:1	EW	51.0mm May 7, 1924
23.....	12.0		250	20:1	NS	44.6mm May 5, 1924
D.....	37.6			13:10	EW	Jan. 7, 1924
D.....	36.9			13:10	NS	Jan. 7, 1924
W.....	5.5		160	4:1	V	Aug 22, 1924

From August 1, 1924 to August 6, 1924 No. 36

No.	DATE	Phase	Time	Period	AMPLITUDE			DISTANCE
					AE	AN	AZ	
1843	Aug 1	e	h m s 1-23	s	μ	μ	μ	km.
		eL	1-30					
		L	1-31.5 to					
		F	1-50					
		F	2-02					
1844	Aug 2	eL	18-21					Very small sinusoidal L waves.
		L	18-24 to					
		F	18-41					
		F	18-53					
1845	Aug 5	e	1-39	12	Small	Small		
		L	1-41					
		L	1-45 to					
		F	1-55					
		F	2-10					
1846	Aug 6	e	0-39-11	18	Small	Small		
		eN	0-49-11					
		eN	0-56-45					
		L	1-12					
		L	1-19					
		L	1-30 to					
		F	1-55					
F	2-50							

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From August 6, 1924 to August 13, 1924 No. 37

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1847	Aug. 6	cL L F	3-36 3-37.5 4-08 4-30	to 20	Small sinusoidal L waves.			
1848	" 6	e cL L L F	14-46 (15-09) 15-13 15-21 15-30		Small	Small		
1849	" 7	e e cL F	13-26-33 13-33-03 13-41 Lost changing sheets.					
1850	" 7	cL L F	15-53 16-56 17-10		Small sinusoidal L waves.			
1851	" 10	eN eLN LN LN LN LN F	6-32 6-40 6-48 7-01 7-19 8-17 9-00	52 15 23		Small	May be another quake.	
1852	" 11	eN LN F	(2-47) 2-56 3-27		Small sinusoidal L waves.			
1853	" 13	eN eLN LN LN F	(10-10) 10-36 10-49 10-55 11-46	20 18		Small "		
1854	" 13	First phases lost changing sheets. e L MN L F	13-49-08 13-56 14-07.5 14-12 to 14-50 15-50	15		11	Sinusoidal L waves of small amplitude.	
								E. A. H. W. W. D.

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From August 14, 1924 to August 17, 1924 No. 38

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1855	Aug. 14	eN	0-33.5					
		e	0-37					
		L	0-43	15	Small	Small		
		L	0-57	15	"	"		
		e	1-02-38					
		L	1-13.5					
		M	1-21	15	7	7		
		L	1-24 to 2-25					
F	3-20				Small sinusoidal	L waves.		
1856	" 14	G	18-02-32					10140
		ePN	18-15-41					
		PR ₁ N	18-19-36					
		PR ₂ N	18-21-45					
		S	18-26-45					
		SR ₁	18-33-10					
		SR ₂ N	18-38-00					
		eL	18-45					
		M ₁ N	19-04.5	18		50		
		M ₂ N	19-10	15		29		
		L	19-13 to 19-44	15		9		
		L	19-44 to 21-15	15				Sinusoidal L waves of small amplitude.
		F	22-35					
		1857	" 14	eN	(23-44.4)			
c(S)	23-51-30							
" 15	cLE		23-57					
	L		0-13	20				
1858	" 17	L	0-24 to 0-50	15			Small sinusoidal L waves.	
		F	2-00					
		cN	2-09-38					
1859	" 17	cE	2-16-08					
		eE	2-34-08					
		LN	2-31.3					
		LE	2-35					
		ME	3-05	18	7			
		L	3-08 to 3-37					Small sinusoidal L waves.
		F	4-45					
		eN	(11-43)					
eE	(11-47.5)							
L	11-51 to 12-17	15				Small sinusoidal L waves.		
F	12-45							

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From August 18, 1924 to August 25, 1924 No. 39

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
1860	Aug. 21	e	15-58.5 ^s	s	μ	μ	μ	km.
		e ^N	16-04					
		e ^L	16-08					
		L	16-14.5	15	Small	Small		
		L	16-51 to 17-09		Small	sinusoidal	L waves.	
		F	17-15 ca					
1861	" 21	e?	19-01-17					
		e(S)	19-09-56					
		e ^L	19-20					
		M ^N	19-30.5	17		8.5		
		M ^E	19-31	20	12			
		L	19-32 to 20-05		Small	sinusoidal	L waves.	
		F	20-57					
1862	" 22	e ^E	0-58.7					
		L	1-01 to 1-09		Small	sinusoidal	L waves.	
		F	1-17					
1863	" 22	e ^L ^N	7-31.6					
		L	7-34 to 8-02		Small	sinusoidal	L waves.	
		F	8-15					
1864	" 25	e	2-44-30					
		e ^E	2-48-45					
		e ^E	2-53+22					
		e	3-01					
		e	3-06					
		L	3-15	30	Small	Small		
		L	3-24	24	"	"		
		L	3-29	20	"	"		
		L	3-50	15	"	"		
		F	4-46					

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From August 25, 1924 to August 29, 1924 No. 40

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
1865	Aug. 25	O	h m s 14-31-27	s	μ	μ	μ	km. 9400
		PN	14-44-00					
		PR ₁	14-47-41					
		S	14-54-50					
		SR ₁	15-00-52					
		SR ₂	15-04-38					
		eL	15-12					
		LE	15-25					
		LN	15-29					
		LE	15-31					
		LN	15-35					
		L	15-44 to 16-40					
		F	17-20					
1866	" 25	O	23-06-58	s	μ	μ	μ	km. 7600
		PN	23-17-58					
		PR _{1N}	23-20-50					
		PR _{2N}	23-22-28					
		S	23-26-58					
		SR _{1N}	23-32-21					
		SR _{2N}	23-34-50					
		eL	23-40					
		ME	23-52					
		M _N	23-52.2					
		L	23-53 to 0-35					
		e	0-55					
		F	1-08					
1867	" 27	cN?	22-38-15	s	μ	μ	μ	
		e	22-46-12					
		eL	22-50.5					
		F	23-30					
1868	" 28	eL	19-05	s	μ	μ	μ	
		F	19-12					
1869	" 29	eL	0-39	s	μ	μ	μ	km. Small sinusoidal L waves.
		L	0-44 to 1-06					
		F	1-20					

Small sinusoidal L waves.

Irregular L waves of small amplitude.

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From August 29, 1924 to August 31, 1924 No. 41

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1870	Aug. 30	O	(3-13-38)					(8600)
		PN	3-25-30					
		S	(3-52-20)					
		i	3-42-15					
		iN	3-46-30					
		eLE	3-51-30					
		ME	4-07.5	30	55			
		MN	4-10.5	22		28		
		ME	4-12.5	22	35			
		MN	4-14.5	22		45		
		MN	4-17.5	22		28		
		ME	4-20.5	20	35			
		MN	4-24	20		32		
		ME	4-31.5	20	26			
		L	4-29 to 4-37	20				
L	4-42 to 5-10	17	Small	sinusoidal	L waves.			
L	5-14.5 to 5-25	17						
F	6-12ca.							

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SEISMOLOGIC BULLETINS RECEIVED

SEPTEMBER

1924



We beg to acknowledge with thanks the receipt of the following seismologic bulletins and publications.

STATIONS	BULLETIN	RECEIVED
Algiers	July, 1924.....	Sep. 2. 1924.
Porto Rico.....	June, 1924.....	" 2. 1924.
Cheltenham.....	June, 1924.....	" 2. 1924.
Honolulu.....	June, 1924.....	" 2. 1924.
Sitka.....	June, 1924.....	" 2. 1924.
Tucson.....	June, 1924.....	" 2. 1924.
Tyosi.....	Sep. 1. Sep. 2. 1923..	" 2. 1924.
Sydney (Riverview College)	May and June, 1923...	" 2. 1924.
Darmstadt.....	Die Seismische Boden- unruhe.....	" 3. 1924.
Sydney (Riverview College)	Specials of June 26, and July 24, 1924.....	" 4. 1924.
Porto Rico.....	July, 1924.....	" 4. 1924.
Cheltenham.....	July, 1924.....	" 4. 1924.
Tucson.....	July, 1924.....	" 4. 1924.
Sitka.....	July, 1924.....	" 4. 1924.
Honolulu.....	July, 1924.....	" 4. 1924.
Uccle.....	Mar. 22, July 6. 1924.	" 4. 1924.
Paris.....	July, 1924.....	" 4. 1924.
Strasbourg.....	July, 1924.....	" 4. 1924.
Chicago.....	August. 1924.....	" 9. 1924.
Toledo.....	June, 1924.....	" 10. 1924.
Coimbra.....	Dec. 1923. June & July 1924.....	" 11. 1924.
Cartuja.....	May, 31-July 1. 1924.	" 12. 1924.
Wellington. N.Z.....	Sep. 1923.....	" 13. 1924.
Apia.....	Meteorological Bulle- tin (1890-1920).....	" 13. 1924.
Manila.....	Jan. Feb. Mar. 1924...	" 15. 1924.
Georgetown.....	June & Aug. 1924.	" 15. 1924.
Zürich.....	Seis. Desp.....	" 15. 1924.
Toledo.....	Sammel. Bulletin No. 37	" 15. 1924.
Perth.....	July 1924.....	" 15. 1924.
Eskdalemuir.....	June - July 1924.....	" 22. 1924.
Algiers.....	May - July 1924.....	" 25. 1924.
Denver.....	August 1924.....	" 25. 1924.
Sydney (Riverview College)	July & August, 1924...	" 25. 1924.
" " "	July 1. Sep. 1. 1923...	" 25. 1924.
" " "	Sup. Jan. Feb. Mar & April. 1924.....	" 25. 1924.
Domodossola.....	April. 1924.....	" 26. 1924.
Nagasaki.....	July. 1924.....	" 30. 1924.

DOMINION OBSERVATORY.
Ottawa, Canada.

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$\phi = 45^{\circ} 23' 38''$ N. $\lambda = 75^{\circ} 42' 57''$ W. $h = 83$ m.

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 hour	20 g. ca.
Spindler-Hoyer.....	W	Smoked Sheet	Air	15 mm. per min.	80 Kgm.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENT	To	r	v	ϵ	COMP.	l	DETERMINED
I.....	5.3		120	2:1	N-S	1" tilt = displm't	May 7, 1924.
II.....	6.0		120	15:1	E-W		May 7, 1924.
17.....	12.0		250	20:1	E-W	51.0 mm.	May 7, 1924.
23.....	12.0		250	20:1	N-S	44.6 mm.	May 5, 1924.
D.....	37.6			13:10	E-W		Jan. 7, 1924.
D.....	56.9			13:10	N-S		Jan. 7, 1924.
W.....	5.5		160	4:1	V		Aug. 22, 1923.

From September 1, 1924..... to September 6, 1924..... No. 42.....

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A_E	A_N	A_Z	
			h m s	s	μ	μ	μ	km.
1871	Sep. 3	ev Lv F	0-10 0-11.5 to 0-17 0-23					
1872	" 4	eE eL L L F	(16-13-48) 16-16-35 16-21 16-24 16-40	15 12	small	small		
1873	" 6	eLE LE LN F	3-14.5 3-21.5 3-27 3-36	20 19	small	small		
1874	" 6	e eLN eLE LN F	5-10-41 5-13 5-14 5-13.5 5-45	15		small		

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



From September 6, 1924 to September 8, 1924 No. 43

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1875	Sep. 6	eE	19-58					Sinusoidal L waves of small amplitude.
		e	20-08					
		eN	20-15					
		eL	20-29.5	40				
		L	20-39	24				
		L	20-43	20				
		F	21-40 ca					
1876	" 7	eLN	2-53					Sinusoidal L waves very small.
		L	2-58	20				
		LN	3-06					
		F	3-30					
1877	" 7	eL	6-33.3					small small
		eL	6-38					
		L	6-40	13				
		F	6-59					
1878	" 7	eLE	9-05					Sinusoidal L waves very small
		L	9-11	18-20				
		LN	9-15.5 to					
		L	9-31	17				
		L	9-15 to	15				
		F	9-48					
		F	10-08					
1879	" 7	eE	13-45-28					small
		eLN	13-49.5					
		eLE	13-51					
		LN	13-51.5	12				
		LE	13-53.5					
		F	14-20					
1880	" 7	eN?	(19-16)					small small
		eE?	19-18					
		eLN	19-40					
		eLE	19-49					
		LN	19-54	15				
		LE	19-56	18				
		L	20-00	15	small			
		LE	20-13 to					
		F	20-33	15				
		F	20-40					
1881	" 8	eE	9-53.6					Few faint sinusoidal traces
		eL	9-59	20				
		F	10-06					

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W.W.D.

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



International
Seismological
Centre

September 8. 1924.

September 13. 1924.

44

From

to

No.

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE	
					A _E	A _N	A _Z		
1882	Sep. 9	eI _N eI _F I _E L _E F	0-44.8 s 0-45 0-52 0-52 to 1-05 1-22	s 18 18	μ μ μ	μ μ μ	km.	Barely discernible on N.E. component. small	
1883	Sep. 9	e _E e _N eI _N L F	10-14-45 10-16-58 10-21 10-23 10-35	 20 10					
1884	Sep. 11	e e eL? L _E L _E L _E F	3-46-28 3-56-12 4-03-38 4-28 4-35 4-43 to 4-55 5-30	 30 20 20				small sinusoidal L waves.	
1885	Sep. 13	O iP PR ₁ iS _N iS _{R-E} eS _{R2E} eL _E M _{1E} M _{2E} M _N M _{3E} L _E L _E L _N LR ₁ L _E L _N F	14-34-23 14-45-22 14-49-23 14-56-19 15-01-26 15-05-00 15-11 15-19.5 15-23 15-25 15-25.5 15-38 16-20 16-46 16-58 17-10 17-12 18-10 ca	 24 19 19 17 15 15 22 19 18	44 26 37 21 6			8740	Press reports indicate a severe earthquake in Armenia. The azimuth of this quake from Ottawa as deduced from the records agree with the azimuth of Armenia from Ottawa.
<p>A good vertical record was obtained as well.</p> <p>Strasbourg wireless received Sep. 15. 1924 as follows:</p> <p style="margin-left: 40px;">13091 51439 45279 02940.</p> <p>This indicates an O. for Strasbourg for quake No. 1885 at 14-33-54</p>									

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From September 13. 1924 to September 18. 1924 No. 45

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
1886	Sep. 13	eL F	^h 20-25 ^m 20-55 ^s	19	^μ small	^μ small	^μ	km.
1887	Sep. 14	O ePE iS _E iSR ₂ eLE M ₁ N M ₁ E M ₂ N M ₃ N LE LN LE F	(13-12-56) (13-23-35) 13-32-14 13-39-38 13-42.8 13-47.5 13-49 13-54 13-56 14-05 14-06.5 15-00 17-05	21 20 15 15 15 13 11	38 11 small	44 24 24 small	(7200)	
1888	Sep. 16	eE iN iE iN eLE LE LN F	2-59-33 2-59-37 3-00-00 3-01-19 3-17.8 3-31 3-40 4-25 ca	13 13	small small	small		
1889	Sep. 17	(e) _N eL F	6-25.4 6-34 6-55 ca	10	small	small		
1890	Sep. 17	O iPN eS eL F	7-04-45 7-10-07 7-14-23 7-16.5 8-00	34			2640	
1891	Sep. 17	eL _N eLE LE LN F	17-16.8 17-17.5 17-25 17-27 18-00 ca	26 26 15 15	small	small		
1892	Sep. 18	eLN LN i L LE F	0-01 0-10 1-32.3 1-57 3-15 to 3-35 3-40	15 ?	These are small groups of sinusoidal L waves unmistakably of seismic origin but very faintly recorded on Milne-Snow seismographs only.			

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



From September 18.1924. to September 27.1924. No. 46

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1893	Sep. 19	eL _E	7-37	?				May be two quakes N.S. better marked than E.W.
		L _N	7-41	19				
		L _E	7-50	17				
		L _N	8-04	(22)				
		L _E	8-04	15				
		L _N	8-10	15			1	
		F	8-30					
1894	Sep. 24	eL _E	19-31					
		eL _N	19-35					
		L _E	19-39	15	small			
		L _N	19-43	15		small		
		F	20-00					
1895	Sep. 25	e _E	4-31.2					
		e _N	4-39					
		e _N	4-57.8					
		eL	5-02					
		L _E	5-08	15	1			
		L _N	5-11	15		small		
		L _N	5-17	13				
		L _E	5-20	15				
F	6-00							
1896	Sep. 26	eL _E	16-37.5 to 16-55				Faint sinusoidal traces on M.S.17 only.	
		F	17-00					
1897	Sep. 27	eL _E	3-24 to 3-50				May be two quakes very faint traces on Milne-Shaw only.	
		eL _N	5-10					
		L _E	5-10 to 5-55					
		F	6-00					
1898	Sep. 27	eL _E	14-12 to 14-21	19			Sinusoidal L waves E.W. only.	
		F	14-30					
Strasbourg wireless received Sep. 30 as follows:								
		28001	51339	30251	02570			
								E. A. H. W. W. J.

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From September 27.1924 to September 30.1924 No. 47

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1899	Sep. 28	O	13-34-15					3520
		eP _E	13-40-57					
		P _{R1}	13-42-00					
		eS	13-46-15					
		eL	13-50					
		M _N	13-53	18		5		
		M _E	13-53.5	17		9		
F	14-20							
The value of 0 as determined from Strasbourg seismo is 13-34-15.								
1900	Sep. 30	O	(8-54-12)					(240)
		iP	8-54-48					
		eS	8-55-15					
		M _N	8-55-21	(9)		16		
		M _E	8-55-38	9		16		
		F	9-00					
No. 1900 was felt in Ottawa and at many points east to Sherbrooke, Que. and in Northern Maine. The record does not yield a very good determination of distance or time at the origin. Ottawa seems to have been the western limit at which the quake was felt. It was sufficient to waken many, especially those whose houses were built in sandy locations.								

Ernest W. Hodgson

SEISMOLOGIC BULLETINS RECEIVED

OCTOBER, 1924



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

STATIONS	BULLETINS	RECEIVED
Cartuja.....	July, 1924.....	Oct. 2, 1924
San Fernando.....	August, 1924.....	" 2, "
Tucson.....	August, 1924.....	" 3, "
Choltenham--.....	August, 1924.....	" 3, "
Porto Rico.....	August, 1924.....	" 3, "
Sitka.....	August, 1924.....	" 3, "
Honolulu.....	August, 1924.....	" 3, "
Helwan.....	August, 1924.....	" 6, "
Zi-ka-wei.....	April 13 - May 16, 1924.....	" 8, "
Zürich.....	Sammel-Bulletin No. 38.....	" 10, "
Zi-ka-wei.....	April 13 - June 30, 1924.....	" 10, "
Strasbourg.....	August, 1924.....	" 11, "
Taihoku.....	July - August, 1924.....	" 18, "
Perth.....	August, 1924.....	" 20, "
Melbourne.....	April 10'23 - July 31'24.....	" 20, "
Manila.....	June, 1922.....	" 20, "
Chicago.....	September, 1924.....	" 22, "
Darmstadt.....	2 Publications, B. Gutenberg.	" 22, "
Rocca di Papa.....	Publication, G. Agamennone.....	" 23, "
Berkeley and Lick.	April 1, 1922 - Sept. 30, 1922	" 27, "
Toledo.....	August, 1924.....	" 28, "
Malaga.....	August, 1924.....	" 28, "
Domodossola.....	July - September, 1924.....	" 28, "
Georgetown.....	Seis. Desp. Sept., 1924.....	" 29, "
Georgetown.....	July, 1924.....	" 29, "
Algiers.....	September, 1924.....	" 30, "

DOMINION OBSERVATORY

OTTAWA, CANADA

R. Meldrum Stewart,
Director.

Ernest A. Hodgson
Seismologist.

W.W. Doxsee,
Assistant Seismologist

OTTAWA

SEISMOLOGIC STATION, DOMINION OBSERVATORY



$\phi = 45^{\circ} 23' 38''$ N. $\lambda = 75^{\circ} 42' 57''$ W. $h = 83$ m.

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 hour	20 g. ca.
Spindler-Hoyer.....	W	Smoked Sheet	Air	15 mm. per min.	80 Kgm.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENT	To	r	v	ϵ	COMP.	1" tilt displm't	DETERMINED
I.....	5.3		120	2:1	NS	=	May 7.1924.
II.....	6.0		120	15:1	EW	=	May 7.1924.
17.....	12.0		250	20:1	EW	51.0 mm.	May 7.1924.
23.....	12.0		250	20:1	NS	44.6 mm.	May 5.1924.
D.....	37.6			13:10	EW		Jan. 7.1924.
D.....	36.9			13:10	NS		Jan. 7.1924.
W.....	5.5		160	4:1	V		Aug. 22.1923.

From October 1st.1924. to October 8th.1924. No. 48

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A_E	A_N	A_Z	
1901	Oct. 5	eL [?] _E	13-27	s	μ	μ	μ	km.
		LE	13-57					
		LE	14-00	19	small			
		F	14-30					
1902	Oct. 6	eL _N	22-55 to	19		small		
			23-04					
		eL _E	22-56 to	18	small			
		F	23-04					
1903	Oct. 8	O	(20-50-07)					(4050)
		cP _N	20-57-29					
		PR _{LE}	(20-58-38)					
		cS _N	21-03-19					
		cSR _{LN}	21-05-42					
		cL	(21-18.5)					
		LE	21-25	37	20			
		ME	21-27	30	22			
		LN	21-31.5	22		10		
		LN	21-38.5	15		7		
		LE	22-00	14	small			
		LN	22-08	15		small		
F	22-50							

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From October 8, 1924 to October 14, 1924 No. 49

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1904	Oct. 10	eL	9-41		Small micros.		Better	
		L	9-43	18	1	1	marked on	
		L	9-44.5	12	small	small	E-W.	
		F	9-52 ca					
1905	" 10	eL	16-26					
		L _N	16-29	13		small		
		L _E	16-29	18	small			
		F	16-32					
1906	" 10	eL	21-46		Very small sinusoidal L waves			
		L	21-50	15				
		F	22 hr. ca.					
1907	" 12	(eS)	19-52-45				A great L wave	
		eL	19-59-15	30		22	followed by	
		L	20-06	15		3	very small	
		F	21-00				sinusoidal L waves	
1908	" 13	O	(12-41-36)				(4720)	
		eP? _N	12-49-45				Time marks	
		ePR ₁ ?	12-51				failed on EW	
		eS?	12-56-12				All readings	
		eL	13-03.5				taken from NS	
		L	13-06	30		2	EW record very	
		L	13-20	22			similar.	
		L	13-30	16				
F	13-54							
1909	" 13	e? _N	16-30-38					
		eS? _N	16-35-22					
		eL _N	16-40.5				Micros mask the record.	
		M _N	16-44	(20)		12		
		M _E	16-44	(20)	4			
		L _N	16-47			small		
		L _E	17-00	13				
		LR ₁ ? _E	17-08	20				
		F	17-47					
1910	" 14	O	(5-00-36)				(3225)	
		eP	5-06-53					
		ePR ₂	5-07-46					
		eS ²	(5-11-52)					
		eL _N	5-14-10					
		M _N	5-16	16+		12.5		
		M _E	5-17	20	26			
		L	5-30.5		small	small		
		F	6-30 ca.					

E. A. J. P.
W. V. J.

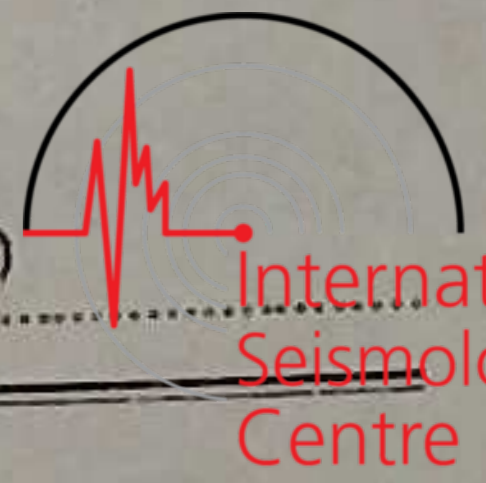
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SEISMOLOGIC STATION, DOMINION OBSERVATORY

From October 14, 1924

to October 20, 1924

No. 50



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No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE km.
					A _E μ	A _N μ	A _Z μ	
1911	Oct. 17	O	(4-23-26)	(9) (9) irr.	(18)	(18)	(3050)	
		eP	(4-29-27)					
		eS	(4-34-14)					
		eL	4-37-17					
		MN	4-42.5					
		ME	4-42.5					
		L	4-51 to 5-07					
		F	6-02 ca					
1912	" 18	O	23-05-17	20 18 15 15	.. 14 small	8	4740	
		iPN	23-13-28					
		iS	23-19-56					
		SR ₁ E	23-23-04					
		eL ₁ E	(23-25)					
		LN	23-30					
		ME	23-27					
		LE	23-36					
		LN	23-39					
		F	0-45					
1913	" 19	e	15-44-15	10 10	11	6	Record spoiled in changing the records.	
		eL	15-47-45					
		MN	15-54					
		ME	15-51					
		F	16-35					
1914	" 19	eL?	23-59.2	20 18	3	2		
		eL	0-05					
		LE	0-07					
		LN	0-00 to 0-16					
		F	0-55					
1915	" 20	eL	5-41.8	Irr.	small	small	Micros mask the record.	
		L	5-43.8					
		F	5-49					
1916	" 20	e?	8-49-34				Very faint record distinguished by a small sharp offset followed immediately by irregular L waves.	
		iL?N	8-58-52					
		iL?E	8-58-48					
		F	9-30					

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From October 20, 1924 to October 31, 1924 No. 51

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1917	Oct. 20	O	19-52-56					7320 Record on No. 23 M-S was spoiled owing to the clock-work failing. The readings are all from No. 17
		eP	20-03-41					
		ePR ₁	20-06-30					
		iS	20-12-26					
		SR ₁	20-17-11					
		SR ₂	20-20-11					
		eL	20-24-38					
		M ₁	20-29	26	42			
		M ₂	20-31	15	18			
		M ₃	20-37.5	15	21			
		L	20-46	15	5			
		L	21-06	15	small			
F	21-55							
1918	" 23	eL?E	12-04.5				Very faint traces only. Better marked on E-W component.	
		L	12-33.5 to					
			12-37					
		F	12-47					
1919	" 25	e	(19-20.6)				Sinusoidal L waves. Much better marked on EW.	
		e	(19-25-56)					
		eL	19-30.5					
		L	19-34.5	30				
		L	19-40	15				
		F	19-56					
1920	" 27	e _N ?	(20-17-51)				Press report a quake in Panama at about this time.	
		e _E	(20-18-06)					
		e	20-28-04					
		eL?	20-35	20				
		L _E	20-55	24				
		L _N	21-06	24				
		M _E	21-06	24	12	small		
		L _E	21-11	20				
		L _N	21-17.5	"				
		F	22-00 ca					

Corrected by Holmson

SEISMOLOGIC BULLETINS RECEIVED

NOVEMBER

1924



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

STATIONS	BULLETINS	RECEIVED
Helwan.....	September 1924.....	Nov. 3, 1924.
Nagasaki.....	September 1924.....	Nov. 4, 1924.
Osaka.....	June 30 - Sept. 16, 1924.....	Nov. 4, 1924.
Athens.....	June, July, August, 1924.....	Nov. 4, 1924.
Strasbourg.....	September, 1924.....	Nov. 6, 1924.
Cheltenham.....	September, 1924.....	Nov. 6, 1924.
Sitka.....	September, 1924.....	Nov. 6, 1924.
Porto Rico.....	September, 1924.....	Nov. 6, 1924.
Honolulu.....	September, 1924.....	Nov. 6, 1924.
Tucson.....	September, 1924.....	Nov. 6, 1924.
Wellington, N.Z....	Report, 1923, 1924.....	Nov. 7, 1924.
Wellington, N.Z....	Jan., Feb., Mar. 1924.....	Nov. 7, 1924.
Fordham.....	October, 1924.....	Nov. 11, 1924.
Strasbourg.....	Bull. Biblio. Oct., 1924.....	Nov. 11, 1924.
Rio de Janeiro.....	June 30-Sep. 14 '24.....	Nov. 12, 1924.
Rio de Janeiro.....	MS Records of June 26, 1924.	Nov. 17, 1924.
Georgetown.....	August, 1924.....	Nov. 17, 1924.
Matsuyama.....	??.....	Nov. 17, 1924.
Georgetown.....	Seis. Des., October, 1924....	Nov. 17, 1924.
Tyosi.....	Sept., Oct., Nov., 1923.....	Nov. 17, 1924.
Toledo.....	September, 1924.....	Nov. 18, 1924.
Zürich.....	Sammel Bull. Nov. 4, 1924....	Nov. 19, 1924.
Perth.....	September, 1924.....	Nov. 19, 1924.
Chicago.....	October, 1924.....	Nov. 21, 1924.
Bergen.....	March - September, 1924.....	Nov. 21, 1924.
Bergen.....	Report for 1921 - 1923.....	Nov. 21, 1924.
Helwan.....	October, 1924.....	Nov. 27, 1924.
Algiers.....	October, 1924.....	Nov. 27, 1924.
Denver.....	September, October, 1924.....	Nov. 27, 1924.
Batavia.....	January - June, 1924.....	Nov. 28, 1924.

DOMINION OBSERVATORY,

OTTAWA, CANADA.

R. Meldrum Stewart,
Director.Ernest A. Hodgson
Seismologist.W. W. Doxsee,
Asst. Seismologist



OTTAWA

SEISMOLOGIC STATION, DOMINION OBSERVATORY

$\phi = 45^{\circ} 23' 38''$ N. $\lambda = 75^{\circ} 42' 57''$ W. $h = 83$ m.

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 hour	20 g. ca.
Spindler-Hoyer.....	W	Smoked Sheet	Air	15 mm. per min.	80 Kgm.

INSTRUMENTS—DETERMINED CONSTANTS

INSTRUMENT	To	r	v	e	COMP.	1" tilt	DETERMINED
I.....	5.3		120	2:1	NS	displ't	May 7, 1924
II.....	6.0		120	15:1	EW	=	May 7, 1924
17.....	12.0		250	20:1	EW	51.0 mm	May 7, 1924
23.....	12.0		250	20:1	NS	44.6 mm	May 5, 1924
D.....	37.6			13:10	EW		Jan. 7, 1924
D.....	36.9			13:10	NS		Jan. 7, 1924
W.....	5.5		160	4:1	Vert		Aug, 22' 23

From November 1, 1924 to November 4, 1924 No. 52

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1921	Nov.	1 e or	eL 1-49.8		On M-S No. 17 only.			
		L	1-54.5	20	small			
		F	2-20 ca					
1922	"	1	O 4-55-21					4180
			PN 5-02-52					
			PRIN 5-04-11					
			SN 5-08-49					
			SRN (5-11-05)					
			eL 5-13.5					
			MN 5-17.5	15	11			
			LE 5-17	15	7			
			LE 5-25	15	small			
			F 6-20 ca					
1923	"	4	e?N 4-09-26		Sinusoidal L waves only			
			eL 4-11					
			LE 4-16	20	small			
			LN 4-20	20	small			
			LE 4-36	20				
			F 4-44					

E.A.E.
W.W.D.

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SEISMOLOGIC STATION, DOMINION OBSERVATORY



From November 4, 1924. to November 20, 1924. No. 53.

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1924	Nov. 5	e [?] N	9-21		Much better marked on EW.			
		eLE	9-28		Very small			
		LE	9-30	20	small	sinusoidal		
		LE	9-50			L waves only.		
		F	10-10			Micros on NS obscure.		
1925	" 13	eE	8-54-30					
		e ^N	9-00					
		eE	9-01.5					
		e or eL	9-08			Sinusoidal L waves.		
		L [?] N	9-30	9				
		LE	9-33	20	small			
		L ^N	9-36.5	20		small		
		LE	9-37	20	small			
		LE	9-44.5	15	small			
		M ^N	9-51	15			2	
		M ^E	9-52 to					
		LE	9-54	15	7			
F	10-01	15						
F	11-23 ca							
1926	" 15	e	1-32-33		Two sharp and loud ex-			
		F	1-32-49		plosions were heard at			
<p>Quyon, Quebec. and a rumble was heard at Arnprior No other place in the Ottawa valley reported any disturbance. The sharpness of the noise at Quyon caused people to think that the dynamite in the mine had exploded.</p>								
1927	" 16	e [?] E	(23-30-30)		Faint trace only except			
		e ^N	23-32-08		for one L wave			
		eL	23-38.5		on NS comp.			
" 17	LE	23-45	15	small				
	F	0-00						
1928	" 20	O	(20-27-39)					(8320)
		P	20-39-17					
		S [?]	(20-48-53)					
		e	20-53.5					
		e	20-57					
		eL	21-02.5	30				
		L ^N	21-10	24			4	
		LE	21-12.5	15	3.5			
		L ^N	21-12	15		small		
		LE	21-16	15	small			
F	21-50							

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From November 20th, 1924 to November 30th, 1924 54 No.

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1929	Nov. 28	e [?] E	12-23					
		eL	12-38					
		L	12-49	15	4	3		
		L	13-13	18		7		
		L ^N	13-16	15	8			
		L ^E	13-28	12	small			
		L ^N	13-32					
F	13-50 ca							
1930	Nov. 28	e ^N	22-03					Small sinusoidal
		eL ^N	22-06.5	18	small		L.waves	
		F	22-25					

Completed by [Signature]

SEISMOLOGIC BULLETINS RECEIVED

December, 1924

We acknowledge with thanks the receipt of the following seismologic publications and bulletins for the month of December.

STATIONS	BULLETINS	RECEIVED
Manila.....	April, May, June, 1924.....	Dec. 1, 1924.
Strasbourg.....	October, 1924.....	" 6, "
Taihoku.....	Aug. 30 - Oct. 7, 1924.....	" 6, "
Cartuja.....	Two monographs.....	" 6, "
Hamburg.....	July, Aug., Sep., 1924.....	" 6, "
Toronto.....	July, 1924.....	" 11, "
Victoria.....	July, 1924.....	" 11, "
San Fernando.....	Sep., Oct., 1924.....	" 11, "
Zürich.....	Sammel Bulletin No. 40.....	" 12, "
Manila.....	July, August, 1924.....	" 15, "
Zi-ka-wei.....	June 30 to July 9, 1924.....	" 15, "
Osaka.....	Sep. 24 to Oct. 27, 1924.....	" 15, "
Porto Rico.....	October, 1924.....	" 15, "
Cheltenham.....	October, 1924.....	" 15, "
Tucson.....	October, 1924.....	" 15, "
Sitka.....	October, 1924.....	" 15, "
Honolulu.....	October, 1924.....	" 15, "
Jinsen.....	Jan. 15 to Sep. 18, 1924.....	" 15, "
Manila.....	Monograph re. Bulusan Volcano..	" 15, "
Wien.....	April 14 to October 31, 1924..	" 16, "
Lemberg.....	June 2 to September 24, 1924..	" 16, "
Chicago.....	November, 1924.....	" 22, "
Victoria.....	August, 1924.....	" 22, "
Toronto.....	August, 1924.....	" 22, "
Oxford.....	April, May, June, 1920.....	" 24, "
	Index to Epicentres, 1913-20..	" 24, "
Toledo.....	October, 1924.....	" 24, "
Almeria.....	October, 1924.....	" 24, "
Malaga.....	October, 1924.....	" 24, "
Cartuja.....	August and September, 1924.....	" 24, "
Jinsen.....	September 8 to November 25, 1924	" 26, "
Saskatoon.....	Records Mar. Apr. May. June, 1924	" 27, "
Helwan.....	November, 1924.....	" 27, "
Algiers.....	November, 1924.....	" 29, "
Tyosi.....	January and February, 1924.....	" 29, "
Hamburg.....	Monograph, re Katmai, Dr. Tams.	" 29, "
Manila.....	September, 1924.....	" 30, "
Osaka.....	Yearly Report for 1923.....	" 31, "

DOMINION OBSERVATORY
OTTAWA, CANADA,

R. Meldrum Stewart,
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Seismologist

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$\phi = 45^{\circ} 23' 38''$ N. $\lambda = 75^{\circ} 42' 57''$ W. $h = 83$ m.

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	r	v	ϵ	COMP.	1" tilt	DETERMINED
I.....	5.3		120	2:1	NS	displ't	May 7, 1924
II.....	6.0		120	15:1	EW	=	May 7, 1924
17.....	12.0		250	20:1	EW	44 mm	Nov 28, 1924
23.....	12.0		250	20:1	NS	44 mm	Nov 28, 1924
D.....	37.6		...	13:10	EW		Jan 7, 1924
D.....	36.9		...	13:10	NS		Jan 7, 1924
D.....	5.5		160	4:1	VERT		Aug 22, 1923

From December 1, 1924 to December 11, 1924 No. 55

No.	DATE	Phase	Time	Period	AMPLITUDE			DISTANCE
					A_E	A_N	A_Z	
			h m s	s	μ	μ	μ	km.
1931	Dec 3	e _{LE} e _{LN} F	(9-03) 9-07 9-19	20		small		Faint traces only
1932	Dec 7	e?E e _{LE} L F	15-55-54 15-59 16-02 16-15	22 20	small	small		
1933	Dec 9	e? e _L L L F	(12-15) 12-30.5 12-49 13-09 13-30					Sinusoidal waves. Micros mask.
1934	Dec 11	e e or e _L I _N L _E L L F	18-15 18-20 18-46 18-46 19-07 19-11 19-30	30 30 24 20	5 4 2.5	2.5 4 1		

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From December 11, 1924 to December 17, 1924 No. 56

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1935	Dec 12	cLE	1-35.5	21	1			Micros mask. A few sinusoidal L waves rapidly dimin- ishing in amplitude and period.
		LE	1-38	10	small			
		F	1-40					
1936	Dec 12	eE	9-34					Faintly marked sinusoidal waves.
		eN	9-37					
		F	10-02					
1937	Dec 13	e?	0-04-32					
		e	0-54.5					
		eLN	1-04	28				
		L	1-15	20	small	small		
		F	1-30					
1938	Dec 14	eN	9-21-30					
		eE	9-25					
		eE	9-29					
		e	9-33.5					
		eLE?	9-43					
		eLN	9-47	40		small		
		L	9-50	20	3	1		
		L	9-52	15	small	small		
		F	10-15					
1939	Dec 15	eE	21-16-00					Faintly marked sinusoidal L waves, better seen on NS com- ponent. Micros mask.
		eE	21-19					
		cL	21-26					
		LN	21-40.5	30		4		
		LE	21-45	30	small			
		LE	21-54	20	small			
		LN	21-59	15		small		
		LE	22-03	15	small			
		F	22-25					
1940	Dec 16	cL	21-10	20	9	small		
		F	21-20 ca					
1941	Dec 17	eE	(6-05-49)					Epicentre prob- ably in North America. Character of the waves, short, sharp and irreg- ular on Milne- Shaw.
		eL	6-06-38					
		ME	6-08-15	8	9			
		MN	6-10-08	8		12		
		F	6-18					

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From December 17, 1924 to December 29, 1924 No. 57

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1942	Dec. 24	O	(22-13-09)					(5800)
		PE?	22-22-28		Better recorded on E-W component. Interpretation of phases doubtful.			
		iE	22-28-06					
		iE	22-29-10					
		SN?	22-29-53					
		iE	22-31-45					
		eLN	22-37.5					
		LN	22-49	20		small		
		LE	22-54	20	small			
		F	23-40					
1943	" 26	eE?	(23-36)		Period of L waves difficult to determine. Amplitudes small. Micros mask. NS is better marked than the			
		eN?	(23-37-15)		E-W			
		eN?	(23-47-18)		small			
		eN	23-57-53					
	" 27	iN	00-02-04					
		eLN?	0-04-45					
		LN	0-06					
		LN	0-09.5					
		LE	0-10			small		
		LN	0-14					
		F	1-05 ca					
1944	" 27	O	11-22-10					8900
		iP	11-34-18		Preliminary phases more sharply marked on N-S. M amplitudes greater on E-W. The velocity of the L waves markedly high.			
		iS	11-44-23					
		SR ₂ N	(11-53-53)					
		eLE	11-59.5					
		LN	12-07	20		9		
		M _E	12-12	20	12			
		LE	12-17	15	5			
		F	12-50					
1945	" 28	O	22-54-57					9250
		eP	23-07-22		Press reports a severe quake at Mushiro, Japan at 7-55 a.m. Japan Time.			
		iS	23-17-45					
		eSR ₁ N	23-24-23					
		eLE	23-31.3	60				Note the very early arrival of an unmistakable L wave of 60 sec. period. This appears to be a characteristic of Japanese earthquakes recorded at Ottawa.
		eLN	23-33					
		M ₁ E	23-43.5	24	60			
		M ₁ N	23-44.5	22		42		
		M ₂ E	23-49.3	20	35			
		M ₂ N	23-52.5	16		30		
		LN	23-57	20		12		
		LE	23-55 to					
	" 29		0-36	15	7			
		F	1-30 ca					

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From December 29, 1924 to December 31, 1924 No. 58

No.	Date	Phase	Time	Period	AMPLITUDE			DISTANCE
					A _E	A _N	A _Z	
			h m s	s	μ	μ	μ	km.
1946	Dec. 30	eLN F	3-31 3-39		Faintly marked L waves. Almost lost in microseisms.			
1947	" 30	eLE eLN LN F	13-06 13-07.5 13-10.5 13-29	15		5	Better marked on N-S.	
1948	" 30	eLN eLE LN LN LE LE F	15-39 15-42.2 15-48 16-23 16-35 16-40 17 hrs ca.	20 18 15 13	1 small small	small small	Micros mask L waves of small amplitude	

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