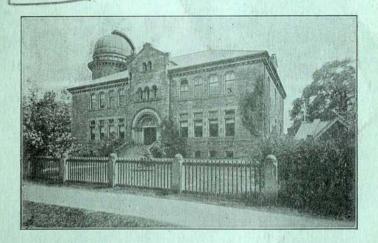
DEPARTMENT OF MARINE AND FISHERIES

TORONTO OBSERVATORY



Results of Meteorological, Magnetical and Seismological Observations, 1923.

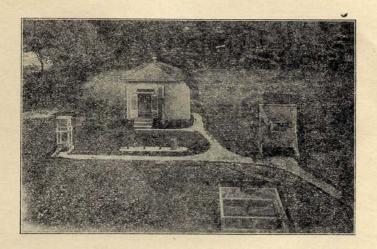
Published under the direction of Sir Frederic Stupart, F.R.S.C., Director of the Meteorological Service, Toronto.

PRÍNTED BY THE OBSERVATORY PRESS, TORONTO, 1925.

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TORONTO OBSERVATORY.

Lat. 43° 40′ 0″.8 N. Long. 5h. 17m. 35.6s. W. The observations are taken at 75th meridian time. Height of barometer cistern 379 feet above sea level. Height at the old Observatory 350 feet.

BAROMETER—Readings given, are taken from the photographic barograph, and are the means of the 24-hour readings of each day. A correction has been employed to reduce these readings to the original height of the standard barometer in the old observatory building, so as to make them comparable with previous Toronto registers. Capillarity and gravity corrections have been omitted.

TEMPERATURE - Adopted means are taken from the max. and min. of the thermometers in the Stevenson Screen. Extremes are also from the same screen. The 24-hour means are taken from the photographic thermograph, where the tubes are four feet above the ground.

On August 31st, 1922, after 8 p.m., the thermometers were removed from the old Stevenson shed and placed in a similar shed on the lower lawn some 70 feet further from the stone building and subsequent readings are from this shed.

Humidity. - Means are taken from a Julien Friez Hygrometer and are from the 24-hour readings.

WIND—Direction and velocity are from the anemometer at the Eastern Gap on the Island, where the cups revolve at a height of 50 feet above the lake level.

GALE-A velocity of 32 miles and over.

CLEAR DAY—When the mean from six observations is below 0.2.

CLOUDY DAY—When the mean from six observations is above 0.8.

AURORA—Observations have been rendered doubtful owing to the large number of electric lights in the city.

Weather Synopsis for 1923.

JANUARY. Daily mean temperatures were very irregular, cold and warm waves following one another rapidly. The mean daily temperature on the 17th was 20° below normal but on the next day 13.4° above. Maximums of 42° and 43° were recorded on the 1st and 18th and 38° or over on the 19th, 20th and 21st. Minimums of -1° and -2° were noted on the 6th and 7th and -12° on the 17th.

Rainfall was light and 19 days of snow gave a total of 11 inches above normal. The heaviest fall was 7½ inches on the 11th with an easterly gale of 46 miles. Winds were strong and gales were recorded on 9 days chiefly from the East and Northwest. There were many cloudy days and bright sunshine was 8% below the usual amount. Twelve inches of snow remained on the ground at the end of the month.

FEBRUARY. The monthly mean was 3.7° below the normal. The first two days were mild, then, except on the 8th, mean daily temperatures were well below normal, the greatest departures being 17° on the 4th, 13° on the 5th and 6th, 17° on the 17th and 19° on the 23rd. It was milder during the last four days of the month, temperature rising to 43° on the 26th. Minimums of -5.4°, zero, -3° were noted on the 4th, 23rd and 24th.

Light rainfall fell on only one day, and snowfall showed a deficiency of six inches. The heaviest fall was 3.8 inches on the 12th, the barometer falling rapidly at 20h, 15m followed by a 48 mile S.E. wind. The winds as in January were strong throughout and gales occurred on four days, with a maximum velocity of 55 miles west on the 14th. Bright sunshine was 12 hours below the normal. Snow on the ground at the end of the month, 9 inches.



MARCH. The first four days were mild, followed by alternate cold and warm waves to the 23rd. Maximums of 50° and over were recorded on the 3rd, 16th, 21st and 23rd, and minimums of 8° on the 19th and 20th. The last eight days of the month were very cold, in fact for the time of the year it was the coldest period ever recorded here. Daily means on the 26th, 28th, 29th and 31st were respectively, 17°, 25°, 18° and 25.2° below normals, with absolute minimums of 4° and 3° on the 26th and 31st. This steady cold was accompanied by N.W. gales on the 27th, 28th and 31st. Rainfall was slightly below the usual and snowfall 9 inches above. The heaviest falls were on the 6th and 25th with 5.6 and 4.5 inches, attended by E. and N.E. gales. Eleven gales were recorded, maximum velocity on the 16th of 54 miles West. Total wind mileage was 1,755 miles greater than March, 1922. Bright sunshine about normal. Depth of snow on the ground at the end of the month was about six inches.

APRIL. Temperature rose rapidly on the 1st and daily means were generally above normal to the 6th. A period of cold. unseasonable weather then set in extending to the 18th with many strong easterly and N.W. winds and much cloud during the day hours. More seasonable weather followed from the 19th to 29th but the 30th was colder. The monthly mean was 1.3° above normal. Maximums of 81° and 78° were recorded on the 20th and 21st, but on the morning of the 12th the temperature fell to 22°. Rainfall which varied little from normal was fairly well distributed, 1.06 inch fell on the 5th. Snow was measurable on 4 days with 1.4 inches on the 15th. Maximum wind velocity was 44 miles west on the 8th and gales from N.E. and E. were recorded on the 13th, 14th and 15th. Bright sunshine was about normal.

MAY. Monthly mean was slightly below normal. Temperatures during the first week were well above, but from the 8th to the morning of the 24th, cold, raw, unseasonable weather prevailed with many strong N.E., E. and N.W. winds, and vegetation made but little progress. On the 9th and 10th daily means were 13° and 17° below normals, the minimum on the latter morning falling to 27°. On the morning of the 18th the terrestrial thermometer fell to 28°. During the afternoon of the 24th temperature rose to 69° and then to the end of the month, day

readings were generally above 70° and the nights cold. Maximums of 79° and 83° were recorded on the 25th and 26th. Bright sunshine was 15% above normal. Rain fell every few days from the 8th to the 20th, with the greatest on the 15th and 20th measuring 1.44 and 0.79 inches. The monthly total was somewhat in excess of normal. 1.3 inches of snow fell on the 9th and a slight fall was recorded next day. The first thunderstorm of the season occurred on the morning of the 20th.

JUNE. The monthly mean was 4.2° above normal. Excepting the 8th the first 11 days were quite warm, then from the 12th to the 16th, nights and early mornings were decidedly cool with E. and N. winds, followed by a very warm period extending to the 26th, after which it became decidedly cool and unseasonable to the end of the month with strong N. and N.W. winds. From the 18th to the 25th maximum readings were generally above 85° and on four days 90° was exceeded, with 95.6° on the 24th. High vapour tension readings made the heat physically trying but a heavy thunderstorm, which did much damage on the city waterfront on the evening of the 25th, brought relief, the temperature falling from 90° to 70° in two hours, with rapid barometric changes, notably a rise of 0.08 inch in 8 minutes followed by a sharper rise of a similar amount in a few minutes between 17.50 and 18.10 hours. This storm was accompanied by two wind squalls from the N.W. with an average velocity of 75 miles per hour. the winds continuing for some time. Rainfall was 1.48 inches above the usual, a great portion falling during 8 thunderstorms. With the exception of one day none fell between the 9th and 22nd. Heaviest falls were on the 3rd and 25th with 1.20 and 0.76 inches, the latter falling in about 55 minutes.

JULY. Mean daily temperature during the first half of the month varied little from normal, the nights generally being cool. The warmest period was from the 17th to the 21st, with maximums on the 19th, 20th and 21st of 90°, 92° and 89°. On the 21st the minimum never fell below 72°. From the 23rd to the 29th the weather was generally quite cool, temperature falling to 51° on the morning of the 26th, the daily range being 30.4°. The last two days of the month were much warmer, although the minimum on the morning of the 30th fell to 55°. The monthly mean was 1.1° above normal. There were only 9 completely clouded days and bright sunshine was 6% above normal. A



marked deficiency in the rainfall amounted to 1.32 inches. The largest portion of the monthly total fell during six thunderstorms. Prevailing winds were N.E. and East.

AUGUST. The weather was quite warm up to the 12th with the exception of the 8th and 9th. 90° was recorded on the 7th and 86° was noted on four days. Cool and unseasonable from the 13th to the 29th, but decidedly so from the 21st to the 27th. Minimums of 45° were frequently recorded and 42° was recorded on the 23rd. Fresh north and northwest winds generally prevailed during this latter period with good percentage of clear weather. The 30th and 31st were much warmer. Vapour tension was generally high during the early part of the month, but notably so on the morning and afternoon of the 12th. Relative humidity was 7% below the normal, and bright sunshine 6% above. Rainfall was fairly well distributed, the total being 0.8 inch above normal. A heavy fall of 0.73 inch between 20h, 40m and 24hrs. of the 7th occurred with a strong northerly wind, 0.9 and 0.57 inch fell on the 18th and 21st. Six thunderstorms contributed considerably to the total and hail fell during that on the afternoon of the 24th.

SEPTEMBER. From the 9th to 20th, mean daily temperatures were considerably below the normals, otherwise except on the last day of the month, the weather was quite warm, the monthly mean being 1.9° above normal. Maximum readings were observed, of 85° on the 1st and 82° on the 27th; minimums fell to 37° on the 14th and 38° on the 17th. Bright sunshine was deficient 4% and rainfall was likewise well below normal by half an inch. Rain fell from the 7th to the 13th every day except one. The heaviest fall was 0.52 inch on the 28th. No gales were recorded, prevailing wind direction was N.E.

OCTOBER. Generally fine and pleasant with mean temperature of 2.2° above normal. Daily means to the 9th, excepting the 3rd, averaged 5° below normal, then followed much warmer weather to the 29th (excepting the 21st and 22nd). The maximum was 69° on the 13th and the daily mean temperatures on the 17th, 18th and 19th were about 10° above the normals with maximums of 65°, 62° and 63° respectively. Minimums fell to 32° on the 6th and 22nd. The 30th and 31st were quite cool, minimum on the latter day falling to 31.8°. Relative humidity was 6% below normal and an unusual, low reading of 27 was noted on the after-

noon of the 23rd rising to 94 by 9 a.m. next morning. Barometric changes were unusually rapid from 5h to 13:50 of the 24th, some of the surges being the largest we have recorded. Bright sunshine was 6% above normal, the rainfall was considerably below, and there were comparatively few rainy days. Winds generally light, with prevailing direction from the West.

NOVEMBER. Remarkably fine and very mild, there being only eight days on which the mean daily temperature was below normal. The largest departure was 8.4° on the 1st. There were many spring-like days. Maximum readings of 58° and 56° were recorded on the 10th and 21st. Not until the 19th when the minimum temperature fell to 22° did the first cold weather occur. Only one gale was recorded and the rainfall was only 0.6 inch above average. The heaviest fall 1.35 inches occurred on the 29th and 30th, and no rain fell from the 7th to the 15th. Snowfall was light with the heaviest fall on the 23rd of 1.8 inches.

DECEMBER. The warmest on record, with a mean temperature of 9.9° above normal. On only one day, the 30th, did the mean temperature fall slightly below normal. Temperatures of 45° and over were recorded on eight days, and maximum readings were noted of 50° on the 9th and 19th, and 53° on the 12th. The minimum for the month was 18.4° on the 24th. Grass on the 22nd was as green as in May. Bright sunshine was 5% above the normal. There were many clear, pleasant days. 7 gales were recorded, the maximum velocity being 45 miles from the West on the 28th. Heaviest rains occurred on the 6th and 13th with 0.92 and 0.56 inches respectively. Snowfall was 8 inches below normal, and at the end of the month there was 1½ inches of snow on the ground.

Meteorological Report.

January, 1923.

Results of Obs	ervations Taken During the Me	onth	Mean for 70 years.
		9.665	29.647
BAROMETER -	Highest on 23rd at 9.38h.	80.405	30.271
**	Lowest on 18th at 13.35h	29.103	28.913
**	Lowest on 18th at 15.55h	1.302	1.358
	Range		11.0
TO MENT AND AND AND THE RE	Highest (S) (1st)	42.2	44.9
TEMPRICATOR	Lowest (S) (17th)	-12.0	-6.8
	Range for the month (S),	54.2	51.7
	Mean from max. and min. (S)	21.8	*21.9
	Mean from 24 hourly		:21.8
	observations (P)	21.5	+21.0
44	Mean of highest readings (P)	28.6	
	Mean of lowest readings (P)	13.8	
	Mean daily range (P)	14.8	
"	Warmest day (P) (18th)	31.8	
"	Coldest day (P) (17th)	1.1	
	Range between warmest an	d	
	coldest (P)	33.7	32 - 21
	Highest solar (black bulb in		Alexander in
	vacuum (25th)	88.7	DIT BY
	Lowest radiation (17th)	- 12.5	RAIL DATE
	Monthly range	101.2	83
HUMIDITY	- Mean	79	88
	- Total (inches)	0.31	1.14
RAINFALL.	Heaviest fall (20th) "	0.21	
	No. of days on which rain f	ell 2	4.9
		23.5	17.3
SNOWFALL		7.5	
	Heaviest fall (11th) " No. of days on which snow	feli 19	14.2
64		.78	.74
CLOUD	- Mean amount of (0-10)	.18	.,.

Results of Observations-January, (Continued)

WINDS - I	Mear	velo	city						14.2	mile
	fre High Lowe	om ea lest di est	aily .	aver	ige v	elocit " (2 curre	y (11t		46 21.0 5.4 9	
No. of hours in the month in which the	N.	N. IE.	E.	S. 12.	8.	s. w.	w.	n. w.	c.	Totals
wind was	104	128	101	52	15	53	151	138	2	744
No of miles regis- tered from each direction.	905	1893	2183	868	219	632	1812	2024	_	10536

Rain on 20th and 21st. Snow on 2nd, 3rd, 4th, 5th, 7th, 8th, 9th, 10th, 11th, 12th, 14th, 15th, 16th, 19th, 22nd, 24th, 26th, 27th, 28th. Clear days 1. Cloudy days 18.

Extreme Readings

	DURING 84 YEARS.		
Baromete	er - Highest reading, 1866 (8th)	30.940	inch
	Lowest reading, 1870 (2nd)	28.166	**
Temperat	ure—Highest, 1874 (4th). 1876 (1st)	57.5°	
	Lowest 1859 (10th)	-26.5°	
0	Highest daily mean (during 43 yrs)	-20.5	
	1906, (22nd)	49.6°	
***	Lowest daily mean, (during 43 yrs)	10.0	
	1914 (13th)	-15.2°	
0.0	Highest monthly mean, 1880	32.7°	
**	Lowest monthly mean, 1857	12.8°	
Rainfall	- Greatest fall, 1843	OR JUNE	20
**	Least fall, 1852-56, 1918-20	4.30	in.
4.6	Greatest fall for one day 1843 (31st)	0	"
360	Greatest number of days rain fell, 1890	2.50	
Snowfall	Create the Harmoer of days rain fell, 1890	14	
SHOWIAH	- Greatest fall, 1871	43.6	in.
"	Least fall, 1916	3.1	**
	Greatest for one day, 1873 (5th)	15.3	
	Greatest No. days snow fell, 1861-71-93	. 23	
	Least No. days snow fell, 1847	5	

February, 1923.

Results of Obs	ervations Taken During the Month	for 70 years.
	Mean reading, 32 F. inches 29.718	29.638
BAROMETER -	Highest on 6th at 7.16h. 30.225	30.226
"	Lowest on 3rd at 2.18h. 29.106	28.945
**	Lowest on ord at 2.120	1.281
**	Range	44.0
The second A SCHIPT	:—Highest (S) (26th) 42.7	44.3
TEMPERATOR	Lowest (S) (4th)	-7.1
- 16	Range for the month (S), 48.1	51.4
	Mean from max. and min. (S) 18.8	*22.5
	Mean from 24 hourly	401.0
R. III PR.	observations (P) 18.4	
date sand the	Mean of highest rendings (P) 25.8	
	Mean of lowest readings (P) 10.8	
	Mean daily range (P) 15.0	
	Warmest day (P) (26th) 37.0	
	Coldest day (P) (4th) 2.6	3
	Range between warmest and	
	coldest (P) 34.	1
		many sum.
	Highest solar (black bulb in	
	vacuum (22nd) 102.	
	Lowest radiation (4th) -9.	3077
	Monthly range	0.4
HUMIDITY	- Mean	4 81
	01	0 0.93
RAINFALL		.0
	Heaviest fall (26th) " 0.1 No. of days on which rain fell	1 4.7
		- 10-
SNOWFALL	- Total fall inches 10	
BROWERE	Lion vingt. Tall (12011)	.8
- 11	No. of days on which snow fell	12.4
CLOUD	- Mean amount of (0-10)	.76

Results of Observations-February, (Continued)

WINDS - N	Jean	veloc	ity					1	4.7	miles
" I	ligh	est ve	locit	y, 14	th a	t 18 h	irs			
	fre	m we	st						55	- 66
.,]	ligh	est da	ily a	vera	ge v	elocit	y (14t	h) 3	6.8	· ·
And I have I	Lowe	est	"		6	" (2	8th)		5.9	
	Days	on w	hich	gale	s oc	curre	1		4	
No. of hours in the	N.	N. IE.	1C.	8. IE.	s.	s. w.	w.	N. W.	c.	Totals
month in which the	74	90						125		
No of miles regis- tered from each direction.	665	801	693	258	136	1320	4055	1973	_	9,901

Rain on 26th. Snow on 1st, 2nd, 3rd, 6th, 7th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 20th, 21st, 22nd and 24th. Fog on 21st and 26th. Clear days 2. Cloudy days 9.

Extreme Readings

	DURING 84 YEARS.		
Barometer	- Highest reading, 1887 (4th)	30.522	inch
	Lowest reading, 1918 (25th)	28.346	**
Temperati	re-Highest, 1890 (4th)	53.8°	
	Lowest 1855 (5th)	-25.4°	
18.8	Highest daily mean (during 43 yrs)		
	1906, (24th)	44.1°	
	Lowest daily mean, (during 43 yrs)		
	1895 (6th)	-11.9°	
	Highest monthly mean, 1882	30.3°	
	Lowest monthly mean, 1875	10.2°	
Rainfall	- Greatest fall, 1842	3.63	in:
445	Least fall, 1841-46-56-73-77, 1901-16	0	**
	Greatest fall for one day 1855 (13th)	1.71	**
"	Greatest number of days rain fell, 183	57, 11	
Snowfall	- Greatest fall, 1846	46.1	in.
66	Least fall, 1851	2.4	46
**	Greatest for one day, 1863 (5th)	16.0	
100	Greatest No. days snow fell, 1843,	21	
**	Least Nc. days snow fell, 1851	4	



March, 1923.

	Mean reading, 52 F. mones	0.603	00.000
Diries	Mean reading, 32 F. menes		29.609
**	- 15th at 7 04h. 3	0.245	30.129
	Highest on 15th at 7.04h. 30	8.792	28.919
**	Lowest on 12th at 13.37h.	1.453	1.210
and the same of	Range	×0.0	52.1
THE ATTURE	-Highest (S) (23rd)	50.8	-2.6
TEMPERATORS	Lowest (S) (31St)	3.2	54.7
	Penge for the month (S),	54.0	*28.7
me and	Mean from max. and min. (5)	27.1	20.1
**	Mean from 24 hourly	26.2	129.1
	observations (P)	35.0	and the second
	Mean of highest readings (P)	18.2	
	Mean of lowest readings (F)	16.8	
**	Mean daily range (P)	41.9	
ii.	Warmest day (P) (22nd)	7.7	
**	Coldest, day (P) (28th)	4.200	
100	Range between warmest an	34.2	
	coldest (P)	04.2	
	Highest solar (black bulb in		
**	vacuum (26th)	119.0	
	Lowest radiation (26th)	1.5	
"	Monthly range	117.5	
	— Mean	73	78
HUMIDITY	and the A	1.05	1.50
RAINFALL	100001	0.40	
"	Heaviest fall (10th)	The state of the s	6.7
	No. of days on which rain f	00.5	11.5
SNOWFALL	- Total fall inches	20.5	11.5
SNOWFALL	Honriget fall (6th) "	5.6	10.4
	No. of days on which snow	fell 13	0.0
Crond	- Mean amount of (0-10)	.56	.67

Results of Observations-March, (Continued)

		velo			SEAL O			1	6.1	miles
" I				ly, 10	ith a	t noo	n		54	**
		m we		vera	ge ve	elocity	7 (121)	h) 3	0.4	
	owe					" (1	st)		5.5	11
orane de l	Days	on w	hich	gale	s oc	currec	1 _		11	113
No. of hours in the	N.	N.16.	E.	S.E.	s.	s. w.	w.	N. W.	c.	Totale
month in which the wind was	65_	57	87	41	42	117	159	176	0	744
No of miles regis-	1							1		la .
No of miles regis- tered from each direction.	619	924	1731	576	369	1466	2762	3541	_	1198

Rain on 4th, 10th, 12th, 15th, 16th and 22nd. Snow on 1st, 4th, 6th, 7th, 9th, 10th, 12th, 19th, 20th, 25th, 27th, 28th and 29th. Fog on 1st and 22nd. Solar halo on 31st. Clear days 4. Cloudy days 7.

Extreme Readings

	DURING 84 YEARS.		
Baromete	r — Highest reading, 1906 (24th)	30.508	inch
**	Lowest reading, 1859 (19th)	28.286	**
Temperat	ure-Highest, 1910 (28th)	75.2°	
1.0	Lowest 1868 (3rd)	-15.6°	
11	Highest daily mean (during 43 yrs)		
	1910, (30th)	58.1*	
	Lowest daily mean, (during 43 yrs)		
	1885 (17th)	-0.4*	
SE 19	Highest monthly mean, 1903	38.9	
	Lowest monthly mean, 1885	18.5*	KEST.
Rainfall	- Greatest fall, 1859	4.05	in.
14	Least fall, 1856, 1889.	- 0	4.6
4.	Greatest fall for one day 1881 (19th)	1.72	**
8.8 4	Greatest number of days rain fell, 18'	78,	
	1921	17	
	Least No. days rain fell, 1856-89	0	
Snowfall	- Greatest fall, 1870	62.4	in.
4.6	Least fall, 1858, 1903	0.2	"
46	Greatest for one day, 1876 (28th)	16.2	
	Greatest No. days snow fell, 1877,	21	
	Least No. days snow fell, 1895-98.	1	

7

April, 1923.

Results of Obs	servations Taken During the Mon	nth	Mean for 70 years.
BAROMETER -	Mean reading, 32 F. inches 29	.560	29.600
BAROMETER	Highest on 1st at 9.34h. 30	0.238	30.073
**	Lowest on 8th at 6.12h. 28	.859	29.040
.,	Range	1.379	1.033
m	E—Highest (S) (20th)	80.8	68.3
TEMPERATUR	Lowest (S) (1st)	5.2	19.6
	Range for the month (S),	75.6	48.7
	Mean from max. and min. (S)	42.5	*41.2
-	Mean from 24 hourly		
	observations (P)	41.9	‡42.1
	Mean of highest readings (P)	51.1	
0	Mean of lowest readings (P)	33.7	
	Mean daily range (P)	17.4	
**	Warmest day (P) (20th)	64.8	
	Coldest day (P) (1st)	19.4	
	Range between warmest and		The same of
	coldest (P)	45.4	
**	Highest solar (black bulb in		
	vacuum (21st)	127.4	E P
a	Lowest radiation (1st)	2.2	
- 44	Monthly range	125.2	
HUMIDITY	- Mean	66	70
RAINFALL	- Total (inches)	2.07	2.1
10 AINDADD	Heaviest fall (5th) "	1.06	
	No. of days on which rain fe	10	9.
SNOWFALL	- Total fall inches	2.5	2.
DROWBALL	Heaviest fall (15th) "	1.4	2015
"	No. of days on which snow f	ell 4	3.
Crond	- Mean amount of (0-10)	.53	.5

Results of Observations-April, (Continued)

WINDS - M	Iean Iigh	velo	city eloci	ty, 8	th at	9 & 1	l0hrs.		3.7	miles
	fre	m we	est						44	**
	ligh	est di	rily a	vera	ge v	elocit	y (14t	h) {	31.5	**
		est				" (2 curre	6th)		5.4	41
No. of hours in the month in which the wind was	N. 78	N. 16.	Е.	S. 1¢.	s.		w.	N. W.	c. 0	Totale 720
No of miles regis- tered from each direction.	953	697	1884	183	251	2168	1987	1724	_	9847

Rain on 3rd, 5th, 8th, 11th, 15th, 19th, 22nd, 28th, 29th and 30th. Snow on 5th, 10th, 15th and 16th. Thunderstorm on 19th Solar halo on 26th. Lunar halo on 27th. Heavy dew on 29th. Clear days 8. Cloudy days 7.

Extreme Readings

	DURING 84 YEARS.		
Barometer	- Highest reading, 1897 (20th)	30.308	inch
"	Lowest reading, 1863 (2nd), 1887 (28th)		
Temperature	e-Highest, 1842 (22nd)	89.8*	
**	Lowest 1923 (1st)	5.2	
	Highest daily mean (during 43 yrs)		
	1915, (25th)	70.4	
	Lowest daily mean, (during 43 yrs)		
	1923 (1st)	19.4*	
10-10	Highest monthly mean, 1921	49.3°	
	Lowest monthly mean, 1874	34.2*	
Rainfall -	Greatest fall, 1910	4.90	in.
	Least fall, 1881,	0.08	**
"	Greatest fall for one day 1850 (3rd)	2.35	
	Greatest number of days rain fell, 1871	. 17	
	Least No. days rain fell, 1841-81	3	
Snowfall -	- Greatest fall, 1857	12.9	in.
**	Least fall, 1843-56-58-70-87-88-90-91	0.1	"
"	Greatest for one day, 1901 (20th)	8.3	
	Greatest No. days snow fell, 1857,	11	
**	Least No. days snow fell, 1878-95-1900.	0	



May, 1923.

Results of Obse	rvations Taken During the Month	Mean for 70 years.
lesaits of over		29.577
BAROMETER -	Mean reading, 02 1	29.967
"	Highest on Zoru at on.	29.153
"	Lowest on 16th at 13h. 28.961	0.814
	Range	55.0
The second A TRUE TO	-Highest (S) (26th) 83.3 26.9	77.9
TEMPERATURE	Lowest (S) (10th)	30.9
	Range for the month (S), 50.4	47.9
	Mean from max. and min. (S) 51.6	*52.4
	Moon from 24 hourly	:53.4
	observations (P) 52.1	The state of the s
100	Mean of highest readings (P) 62.1	
	Moon of lowest readings (F) 41.4	
"	Mean daily range (P) 20.7	
	Warmest day (P) (26th) 69.8	3
"	Coldest day (P) (10th) 34.7	
	Range between warmest and	A CONTRACTOR
1	coldest (P) 35.	1
	Mean of dew point 4	0
"	Highest solar (black bulb in	
	vacuum (26th) 138.	0
	Lowest radiation (10th) 25.	0
"	Lowest radiation (2002)	0
"	Monthly range 0.24	5 0.28
FORCE OF VA	POUR—Mean	34 7
HUMIDITY	- Mean	-
RAINFALL	- Total	
"	Heaviest fall (19th)	8 12
	No. of days on which rain fell	.5 0
SNOWFALL	- Total fall	.3
	Hogyiost tall (901)	2 0
- "	No. of days on which snow len	4
CLOUD	- Mean amount of (0-10)	35
OLOUD	A STATE OF THE STA	

Results of Observations-May, (Continued)

		veloc est ve		y, 17	th a	t 8hr	s.		9.9	miles
	fre	m we	est						34	
	High	est de		vera	ge v	elocity	y (17t		0.5	.61
	Lowe		hich			" (2			3.5	**
No. of hours in the month in which the wind was	N.	N. 10.	E.	S. E.	8.	s. w.	w.	N. W.	c.	Totals
	93	141	133	65	46	89	106	67	4	744
No of miles regis- tered from each direction.	931	1546	1256	319	280	885	1076	1089	_	7373

Rain on 8th, 9th, 11th, 12th, 15th, 16th, 17th and 20th. Snow on 9th and 10th. Heavy dew on 1st, 2nd, 4th, 19th, 22nd, 25th and 30th. Hoar frost on 3rd, 13th, 14th, and 18th. Fog on 8th, 15th, 16th and 17th. Thunderstorms on 15th and 20th. Clear days 16. Cloudy days 7.

Extreme Readings

	WORLD OF TEARS.		
Baromete	r - Highest reading, 1849 (2nd)	30.241	incl
**	Lowest reading, 1861 (6th)	28.644	**
Temperate	ure-Highest, 1895 (30th)	93.4	
	Lowest 1867 (3rd)	24.6	
	Highest daily mean (during 43 yrs)		
	1895, (30th)	80.9	
	Lowest daily mean, (during 43 yrs)		
	1911 (2nd)	34.1	
**	Highest monthly mean, 1911	61.3*	
	Lowest monthly mean, 1867	46.6	
Rainfall	- Greatest fall, 1894	9.37	in.
	Least fall, 1920,	0.39	**
15 4	Greatest fall for one day 1894 (21st)	2.70	**
**	Greatest number of days rain fell, 1890,	23	
	Least No. days rain fell, 1920	4	
Snowfall	- Greatest fall, 1875	3.1	in.
**	Least fall, 1910 & 1913 to 1922	0	66
**	Greatest for one day, 1875 (1st)	3.0	
- THE REAL PROPERTY.	Greatest No. days snow fell, 1905	5	

June, 1923.

Results of Obse	rvations Taken During the M	onth	Mean for 70 years.
		29.532	29.572
BAROMETER -	Highest on 18th at 8h.	29.768	29.909
"	Lowest on 26th at 15.55h.	28.984	29.165
	Range	0.784	0.744
	Range		
	H: -boot (9) (24th)	95.6	86.4
	-Highest (S) (24th) Lowest (S) (13th)	44.2	40.1
	Range for the month (S),	51.4	46.3
**	Mean from max. and min. (S	66.6	*62.4
mus de Wall	Mean from 24. Thourly	h ist	100
	observations (P)	66.6	‡64.0
"	Mean of highest readings (P)	77.9	
	Mean of lowest readings (P)	56.3	
	Mean daily range (P)	21.6	
	Warmest day (P) (20th)	80.5	
-".	Coldest day (P) (8th)	56.0	
	Range between warmest an	ad.	
1000	coldest (P)	24.0	
**	Mean of dew point	56	
	Highest solar (black bulb in	-	
	vacuum (25th)	140.1	
- 41	Lowest radiation (13th)	40.7	2
	Monthly range	105.4	T. ESET
FORCE OF V	APOUR—Mean	0.468	0.418
FORCE OF		71	73
HUMIDITY	— Mean		0.70
RAINFALL	- Total (inches)	4.24	2.76
RAINFALL	Heaviest fall (3rd) "	1.20	
	No. of days on which rain	fell 10	11.7
CLOUD	- Mean amount of (0-10)	.39	.53

Results of Observations-June, (Continued)

		velo		l vr. 81	h at	13h1	NC.		8.7	miles
	fre	m no	rthw	est		elocity		, 9	34	40
*	OWE	est	"	-	(F)	" (6	th)&	(15th)		a
No. of hours in the	N.	N. 16.	E.	S. E.	s.	s. w.	w.	N. W.	c.	Total.
month in which the	54	68	110	27	29	165	156	93	18	720
No of miles regis- tered from each direction.	378	570	717	158	166	1298	1370	1585	_	6242

Rain on 3rd,4th, 5th, 7th, 8th, 14th, 23rd, 25th, 26th and 28th-Thunderstorms on 3rd, 4th, 5th, 7th, 14th, 19th, 23rd and 25th-Lightning alone on 2nd. Heavy dew on 11th, 13th, 15th, 17th, 18th, 19th, 22nd, 25th and 30th. Thunder alone on 24th. Clear days 9. Cloudy days 5.

Extreme Readings

	DUMING OF TEAMS.		
Barometer		30.160	inch,
The second	Lowest reading, 1902 (25th)	28.875	**
Temperati	rre—Highest, 1901 (27th)	97.1	
**	Lowest 1842 (10th)	28.1	
1	Highest daily mean (during 43 yrs)		
	1901, (27th)	82.0°	
**	Lowest daily mean, (during 43 yrs)		
	1910 (5th)	44.8°	
**	Highest monthly mean, 1919	72.4°	
	Lowest monthly mean, 1842	56.5	
Rainfall	- Greatest fall, 1870	8.09	in.
	Least fall, 1864,	0.57	**
	Greatest fall for one day 1892 (19th)	2.42	"
	Greatest fall (short duration) 1918		
	(11th), 0.74 inch in 15 minutes;		
	0.84 inch in half an hour.		
	Greatest number of days rain fell, 1869,	22	
	Least No. days rain fell, 1864	5	
Snowfall	- Flurries on two days, 1859.		

July, 1923.

Results of Obs	ervations Taken During the Month	1	Mean for o years.
	- Mean reading, 32 F. inches 29.63	. 1	29.585
BAROMETER -	Highest on 2nd at 8.28h 29.96	33	29.889
"	Lowest on 24th at 17.37h. 29.30	07	29.420
	Range 0.6	56	0.469
	The second second		
(I)	E-Highest (S) (20th) 91	.8	80.8
TEMPERATURE	Lowest (S) (26th) 51	.0	47.5
**	Range for the month (S), 40	0.8	42.3
	Mean from max. and min. (S) 69	0.0	*67.8
THE REAL PROPERTY.	Mean from 24 hourly		
		0.1	‡68.9
	ODSELVATIONS (1)	9.5	
	Ment of highest readings (-)	9.4	
6.6	Mean or lowest readings (-)	0.1	
	Mean daily range (1)	9.8	
44	Warmest day (1) (2001)	1.9	
	Coldest day (1) (2001)	1.0	
.,	Range between warmest and	7.9	
	coldest (1)	58	
4.6	Mean of dew point	50	
16	Highest solar (black bulb in	10	
	vacuum (2150)	4.0	
21	Lowest radiation (2001)	7.4	
46	Monthly range	96.6	
FORCE OF V	APOUR-Mean 0	.483	0.488
HUMIDITY	— Mean	69	75
HUMIDILL		1.72	3.0
RAINFALL	- Total (money	0.35	0.0
**	Heaviest Ian (1901)	10	11.
	No. of days on which rain fell	10	33.
CLOUD	— Mean amount of (0-10)	.43	.4

Results of Observations-July, (Continued)

		velo							7.2	miles
	fre	m no	rthw	rest		at 16h			23	
	High	est di	aily a	vera	ge v	elocity	7 (25t	h)	13.5	**
N.VIII.	Lowe	est	44			" (10	Oth)		4.3	- 0
	Days	on w	hich	gale	s oc	curred	i		0	
No. of hours in the	N.	N. 16.	16.	8. E.	s.	s. w.	w.	N. W.	c.	Totals
month in which the	70	178	129	20	52	125	102	63	5	744
No of miles registered from each direction.	502	1466	866	124	356	848	642	597	_	5401

Rain on 2nd, 3rd, 5th, 6th, 9th, 14th, 15th, 16th, 24th and 27th, Thunderstorms on 2nd, 3rd, 9th, 14th, 15th and 21st. Heavy dew on 1st, 7th, 8th, 11th, 12th, 13th, 14th, 17th, 19th and 25th. Fog on 29th. Clear days 8. Cloudy days 5.

Extreme Readings

DURING OF YEARS.		
- Highest reading, 1892 (7th)	30.192	inch.
Lowest reading, 1911 (24th)	29.006	
- Highest, 1911 (3rd)	103.2°	
Lowest 1843 (12th)		
Highest daily mean (during 43 yrs)		
	91.3°	
Lowest daily mean, (during 43 yrs)		
1891 (7th)	56.4*	
Highest monthly mean, 1921	77.9°	
Lowest monthly mean, 1884	64.0	
Greatest fall, 1841	8.15	in.
Least fall, 1916,	0.36	**
Greatest fall for one day 1897 (27th)		**
Greatest number of days rain fell, 186		
	16	
Least No. days rain fell, 1849	4	
	- Highest reading, 1892 (7th) Lowest reading, 1911 (24th) - Highest, 1911 (3rd) Lowest 1843 (12th) Highest daily mean (during 43 yrs) 1911, (3rd) Lowest daily mean, (during 43 yrs) 1891 (7th) Highest monthly mean, 1921 Lowest monthly mean, 1884 Greatest fall, 1841 Least fall, 1916, Greatest fall for one day 1897 (27th)	Highest reading, 1892 (7th) 30.192 Lowest reading, 1911 (24th) 29.006 Highest, 1911 (3rd) 103.2° Lowest 1843 (12th) 38.7° Highest daily mean (during 43 yrs) 1911, (3rd) 91.3° Lowest daily mean, (during 43 yrs) 1891 (7th) 56.4° Highest monthly mean, 1921 77.9° Lowest monthly mean, 1884 64.0° Greatest fall, 1841 8.15 Least fall, 1916, 0.36 Greatest fall for one day 1897 (27th) 3.88 Greatest number of days rain fell, 1861, 1866-70-80 1902, 1917 16



August, 1923.

Results of Obs	ervations Taken During the A	1onth	Mean for 70 years.
- THE RESERVE	- Mean reading, 32 F. inches	29.587	29.617
BAROMETER -	Highest on 9th at 9.00h	20.815	29.909
	Lowest on 21ts at 15.38h.	29.081	29.257
	Range	0.734	0.652
	*** 1 4 (C) (7th)	89.8	87.0
	E-Highest (S) (7th)	42.6	45.7
	Lowest (S) (23rd)	47.2	41.3
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Range for the month (S), Mean from max. and min. (S)		*66.3
		3) 00.0	
Territoria III	In Carr	65.3	‡66.¥
	observations (P)	250000000000000000000000000000000000000	
THE PERSON NAMED IN	Mean of highest readings (F		
66:	Mean of lowest readings (P	21.4	
	Mean daily range (P)	75.6	
u	Warmest day (P) (7th)	53.0	
	Coldest day (P) (23rd)		
	Range between warmest a	22.6	
	coldest (P)	55	-Mari
- "	Mean of dew point	177	70
- 11	Highest solar (black bulb in	147.0	
	vacuum (3rd)	39.0	Traille and
	Lowest radiation (23rd)	108.0	
16	Monthly range	100.0	
Hange OF V	APOUR-Mean	0.441	0.48
FORCE OF V2		69	7
HUMIDITY	- Mean	00	
	- Total (inches	3.58	2.
RAINFALL	Heaviest fall (18th) "	0.90	
***	No. of days on which rain	fell 10	10
CLOUD	— Mean amount of (0-10)	.38	

*1840-1898 ‡1881-1908 (S) Stevenson (P) Photographic

Results of Observations-August, (Continued)

Winds -	High	velo est v	city eloci	ty, 2	4th	at 171	rs. fr	com	8.7	miles
	We	est							29	44
**	and 2	est da	ally a	vera	ge v	elocity	7 (21s			
	Lowe	st	" hich	gale	s oc	" (3)	Oth)		16.4 3.3 0	"
No. of hours in the	N.	N. 10.	1c.	8.19.	s.	s. w.	w.	N. W.	C.	Totals.
month in which the wind was	122	57	110	53	35	124	96	126	21	744
No of miles regis- tered from each direction.	813	473	755	298	269	1192	882	1766	-	6448

Rain on 2nd, 6th, 7th, 8th, 14th, 18th, 19th, 21st, 24th, 28th. Thunderstorms 2nd, 4th, 6th, 14th, 18th, 24th. Heavy dew on 1st, 4th, 9th, 10th, 11th, 12th, 16th, 17th, 20th, 23rd, 24th, 26th, 27th, 29th, 30th, 31st. Thunder alone on 28th. Fog on 30th and 31st. Hail on 24th. Eclipse of moon, 27th. Clear days 10. Cloudy days 1.

Extreme Rendings

	DOMING OF YEARS.		
	- Highest reading, 1918 (19th) Lowest reading, 1912 (22nd)	30.104 29.028	inch.
Temperature	-Highest, 1918 (13th)	102.2°	
	Lowest, 1855 (18th), 1870 (27th)	40.0	
**	Highest daily mean (during 43 yrs)		
	1900 (8th), 1916 (21st)	84.8°	
	Lowest daily mean, (during 43 yrs)		
	1912 (30th)	52.4°	
"	Highest monthly mean, 1900	72.5	
"	Lowest monthly mean, 1866	60.8°	
Rainfall -	Greatest fall, 1915	8.14	In.
	Least fall, 1876	0	**
	Greatest fall for one day 1905 (15th)	3.68	
**	Greatest fall for any 24 hours 8 a.m.		
- 11	3rd, to 8 a.m. 4th, Greatest fall, short duration, 1918 (21s	4.26	. 6
	.50 inches in 5 min., .70 in. in 10 min.,	1 95	
	m. in 40 min., 1.95 in. in 2 hrs.		
***	Greatest number of days rain fell, 1872	19	
	Least No. days rain fell, 1876	0	



September 1923.

12.00			Mean
Results of Obser	rvations Taken During the M	Ionth	for 70 years.
		29.707	29.667
BAROMETER -	Mean reading, 32 F. inches	30.173	30.037
"	Highest on 17th at 7.52h	29.356	29.187
**	Lowest on 8th at 1.09h.	0.817	0.850
* = HI	Range	0.01.	
	Himboot (S) (1et)	84.6	82.7
	-Highest (S) (1st) Lowest (S) (14th)	37.4	35.7
	Range for the month (S)	47.2	47.0
- M	Mean from max. and min. (S	-	*58.8
"	AND INCOME.	,	
u	Mean IIIII	60.0	±60.5
	observations (P)		******
The state of the state of	Mean of highest readings (P)		
"	Mean of lowest readings (P)	17.3	
**	Mean daily range (P)	70.1	
	Warmest day (P) (7th)	47.2	
"	Coldest day (P) (14th)		
	Range between warmest a	na 22.9	
	coldest (P)	53	To all Inch
"	Mean of dew point	The state of the s	er recomme
**	Highest solar (black bulb in	100.0	
	vacuum (9th)	138.0	A PERSON
"	Lowest radiation (14th)	33.2	
"	Monthly range	104.8	
FORCE OF VAL		0.425	0.393
I Olion of		78	78
HUMIDITY	- Mean	10	
-	Total (inches)	2.67	3.18
RAINFALL .	Heaviest fall (28th) "	0.52	
the sen .	No. of days on which rain	fell 12	11.4
	No. of days on will	1111	
CLOUD -	Mean amount of (0-10)	.48	,50
*1840—1898	‡1881—1908 (S) Stevenson	(P) Pho	tographic

Results of Observations-September (Continued)

WINDS - M	Iean	veloci	ity	240					8.3	miles
" В		st vel		7, 20t	h at	16hr	s. Iro	m	28	
. 1	ligh	est da	ily a	vera	ge ve	elocity	(13t	h) 1	6.2	"
a 1	Lowe	st	**			" (25	th)		2.0	14
1	Days	on wl	hich	gale	s oc	curred			0	
No. of hours in the	N.	N. 19.	16.	8. 15.	s.	s. w.	w.	N. W.	c.	Totals.
month in which the	111	166	87	35	33	s. w. 95	87	92	14	720
No of miles regis- tered from each	767	1258	755	242	295	867	878	939	-	6001
direction.	- OF	1		1	1					

Rain on 3rd, 7th, 8th, 9th, 11th, 12th, 13th, 18th, 20th, 21st, 27th and 28th. Thunderstorms on 3rd, 7th, 21st, 28th. Heavy dew on 1st, 2nd, 4th, 5th, 10th, 11th, 13th, 14th, 16th, 19th, 20th, 22nd, 23rd, 24th, 25th, 26th, 28th, 30th. Hoar frost on 17th. Fog 18th, 23rd. Clear days 8. Cloudy days 5.

Extreme Readings

Paramate	r — Highest reading, 1904 (22nd)	30.243	inch.
Daromete	Lowest reading, 1848 (29th)	28.863	**
Temperat	ure—Highest, 1898 (2nd)	97.1°	
**	Lowest, 1896 (23rd)	27.6°	
	Highest daily mean (during 43 yrs)		
	1881 (6th)	81.3°	
100	Lowest daily mean, (during 43 yrs)		
	1883 (30th), 1888 (30th)	41.4°	
ELE SVI	Highest monthly mean, 1921	67.7°	
- 11	Lowest monthly mean, 1848	53.4°	
Rainfall	- Greatest fall, 1843	9.76	In.
Rainian	Least fall, 1897	0.40	
	Greatest fall for one day 1843 (14th)	3.46	- 61
"	Greatest number of days rain fell, 190	7 19	
A STATE OF THE STA	Least No. days rain fell, 1840, 1844	4	

October, 1923.

Results of Ob	servations Taken During the I	Ionth	Mean for 70 years
BAROMETER	- Mean reading, 32 F. inches	29.731	29.651
"	Highest on 8th at 10h	30.097	80.112
"	Lowest on 19th at 13hrs.	29.032	29.066
	Range	1.065	1.046
TEMPERATUR	RE—Highest (S) (13th)	68.8	70.3
"	Lowest (S) (6th)	31.8	25.5
	Range for the month (S)	37.0	44.8
	Mean from max. and min. (S	48.8	*46.6
	Mean from 24 hourly	,	20.0
the base was	observations (P)	48.0	:48.1
***	Mean of highest readings (P)	56.6	
	Mean of lowest readings (P)	40.4	
"	Mean daily range (P)	16.2	
	Warmest day (P) (17th)	57.7	
"	Coldest day (P) (31st)	34.6	
	Range between warmest and	1	
	coldest (P)	23.1	
"	Highest solar (black bulb in		
	vacuum (2nd)	126.0	
	Lowest radiation (22nd)	26.0	
	Monthly range	100.0	
FORCE OF VAP	our-Mean	0.260	0.258
HUMIDITY -	- Mean	73	79
RAINFALL -	Total (inches)	1.65	
**	Heaviest fall (24th) "	0.65	2.40
	No. of days on which rain fel		12.4
dwarm		25	12.4
SNOWFALL -	Total fall inches	0.1	0.6
	No. of days on which snow fe	11 1	1.6
Drond -	Mean amount of (0-10)	.47	,61

Results of Observations-October (Continued)

Hestires of		loo	:+		-	1000		1	0.5	miles
WINDS - M	lean	veloc	luy	004		4 10h	ne fre	m		
· H	lighe	est ve	locit	y, 201	in a	t 10h	15. 11.	,,,,	29	
	manufacture with the	at							7.7	41
F	ligh	est da	ily a	vera	geve	elocity	0+h	.,	3.6	4.8
T						1.44	JULK!		()	
" I	ays	on w	hich	gale	s oc	curre		-	-	
	N.	N. 10.	ю.	S.E.	-	1		N. W.	c.	Totals.
No. of hours in the month in which the wind was	90	87	117	2	29	65	207	148	9	744
No of miles regis- tered from each	669	880	135	1 16	216	524	2430	1722	-	7808
direction.		1			1000					31st

Rain on 3rd, 13th, 14th, 24th, 25th, 28th, 30th. Snow on 31st. Heavy dew on 1st, 2nd, 3rd, 15th, 17th, 18th, 19th. Aurora IV. on 15th. Hoar frost on 5th, 6th, 8th, 9th, 22nd, 23rd, 27th, 29th. Fog on 12th, 13th, 16th, 17th, 30th. Clear days 6. Cloudy days 5.

Extreme Readings

	Extreme Heading		
	DURING 84 YEARS.	0.396	inch-
Barometer	- Highest reading, 1847 (28th) 3 Lowest reading, 1893 (14th) 2	8.227	**
	Wink act 1997 (15th)	85.7°	
	re—Highest, 1897 (15th)	15.9	
	Lowest, 1844 (31st)		
	Highest daily mean (during 43 yrs) 1897 (15th)	71.0°	
	Lowest daily mean, (during 43 yrs)		
	1887 (30th)	27.8	
	1887 (500H)	55.7°	
	Highest monthly mean, 1900 Lowest monthly mean, 1841	41.8°	
		5.97	in.
Rainfall	- Greatest fall, 1849	0.56	**
**	Least fall, 1901	3.16	**
	Greatest fall for one day 1849 (6th)		
- 11	Greatest number of days rain leil, 100	- 44	
Caral Della Caral	Least No. days rain fell, 1841	6	
		12.0	in.
Snowfall	- Greatest fall, 1844	0) "
"	Least fall, 1916-18-19-21-22	3.3	
**	Greatest for one day, 1875 (17th)	7	
1	Greatest No. days snow fell, 1869		



November, 1923.

BAROMETER -			70 years.
DARUMETER -	- Mean reading, 32 F, inches 2	9.660	29.627
"	Highest on 12th at 10.27h 3	0.141	30.169
"		9.142	28.975
	Range	0.999	1.194
TEMPERATURE	-Highest (S) (10th)	57.9	57.9
-11	Lowest (S) (19th)	21.8	13.5
	Range for the month (S)	36.1	44.4
	Mean from max. and min. (S)	39.0	*36.0
10. 11. 1500	Mean from 24 hourly	THE	
	observations (P)	39.1	‡37. *
"	Mean of highest readings (P)	44.4	
	Mean of lowest readings (P)	33.5	
"	Mean daily range (P)	10.9	
"	Warmest day (P) (21st)	48.4	
"	Coldest day (P) (19th)	30.5	
	Range between warmest and	west.	
	coldest (P)	17.9	
"	Highest solar (black bulb in		
		102.8	
0	Lowest radiation (19th)	17.2	
	Monthly range	85.6	
FORCE OF VAP	our-Mean	0.195	0.178
HUMIDITY -	- Mean	77	80
RAINFALL -	- Total (inches)	3.10	2.49
"	Heaviest fall (30th) "	1.35	
· ·	No. of days on which rain fell	10	10.3
SNOWFALL -	- Total fall inches	2.0	4.6
	Heaviest fall (23rd) "	1.8	
"	No. of days on which snow fel	1 2	7.3
CLOUD —	Mean amount of (0-10)	.66	.74

^{*1840-1898 ‡1881-1908 (}S) Stevenson (P) Photographic.



Results of Observations—November, (Continued)

resures or	CIN	or ve				01	, ,	,		
WINDS - N	Iean	veloc	eity		Pun	100		1	0.8	miles
" 1	light		elocit	y, 23	rd a	t 16h	rs. fr	om	35	
46	High	est d	aily s	vera	ge v	elocit	v (231	d) 2	2.3	"
		st	**		•	" (1	6th)		3.1	16
						curred			1	edo:
o, of hours in the	N.	N. 15.	E.	8. E.	s.	s. w.	w.	N. W.	c.	Totals
onth in which the	85	79	103	25	23	142	106	147	10	720
o of miles regis- tered from each	720	589	1230	253	182	1728	1182	1928	_	7812

Rain on 4th, 5th, 6th, 7th, 16th, 18th, 23rd, 26th, 29th, 30th.

Snow on 7th, 23rd. Fog on 5th, 15th, 16th, 26th, 30th. Heavy
dew on 16th. Clear days 2. Cloudy days 14.

Extreme Readings

	DURING OF TEARS.		
	Tighest retains, 100 (com	592 .327	inch.
William !	Lowest reading, 1913 (9th) 28.	321	
Temperatu	16- Highest, 1000 (ora)	0.2	
**	Lowest, 1875 (30th)	5.0°	
	Highest daily mean (during 43 yrs)		
	1882 (11th) 5	8.0°	
	Lowest daily mean, (during 43 yrs)		
	1891 (29th)	1.4°	
	Highest monthly mean, 1902 4	2.9°	
		7.6°	
Raiofall	- Oreatest ian, 1010	5.80	in.
**	Least fall, 1904	0.08	**
**	Office Cost Italian of the title	3.13	"
- 10	Greatest number of days rain fell, 1877	16	
	Least No. days rain fell, 1904	4	
Snowfall		19.6	in.
"	Least fall, 1847 and 1850 not mea	sur	able
	Greatest for one day, 1873 (27th)	9.5	-
	Greatest No. days snow fell, 1869-73-92	18	
	Least No. days snow fell, 1850, 1899	1	



December, 1923.

Pagalls of Obser	vations Taken During the M	Ionth	Mean for 70 years.
results of over		29.604	29.644
BAROMETER -	Mean reading, 32 F. inches	30,265	30.226
11	Highest on 14th at 23.07h	28.695	28.936
**	Lowest on 28th at 3.38h.	1.570	1.290
	Range	-	
		53.1	47.5
D-MEDER ATURE	-Highest (S) (13th)	18.4	-2.3
TEMPERATOR		34.7	49.8
- 16	Dange for the month (3),		*26.2
	Moon from max. and min.	0)	
	Mean from 24 nonriy	36.1	±27.6
	absorvations (P)		421.0
14	Man of highest readings i		
	Mean of lowest readings (1)	
4.1	Moan daily range (F)		
	Warmest day (P) (Stn)	47.3	
	= 11 1 dog (P) (30th)	24.1	
	Range between warmest	and	
	anddoct (P)	Contract of the Contract of th	
	Highest solar (black bulb)	n	
	vacuum (24th)	A STATE OF THE STA	
	Lowest radiation (24th)	10.0	-
300	Monthly range	85.4	
**		78	82
HUMIDITY	_ Mean		
	- Total (inches	s) 2.47	1.53
RAINFALL	- 10tai	0.92	
4.6	No. of days on which rais	n fell 9	6.3
			13.0
SNOWFALL	- Total fall inches	2.8	
SNOWBALL	- + f-11 (92rd) "		101
	No. of days on which sn	ow ten .	
	_ Mean amount of (0-10)	.70	3 .77
CLOUD	- Mean amount of the		

Results of Observations-December, (Continued)

		veloc est ve		v. 28	Sth a	t 10	and 1		14.9	miles
	fro	m we	st			elocity			45 30.2	"
66	Lowe	st	41		•	" (2 curre	lst)		4.5	"
No. of hours in the		N. 10.	16.	S. E.	s.	s. w.	w.	n. w.	c.	Totals
month in which the	50	128	47	33	22	197	190	72	5	744
No of miles regis- tered from each direction.	412	2220	948	382	208	2817	2922	1174		11089

Rain on 2nd, 4th, 5th, 6th, 8th, 12th, 13th, 20th, 28th. Snow on 23rd, 27th, 30th, 31st. Fog on 19th. Clear days 1. Cloudy days 17.

Extreme Readings

	DURING 84 YEARS.		
Barometer -	 Highest reading, 1887 (1st) Lowest reading, 1859 (9th), 1856 (14th) 	30.594 28.459	inch
Temperature	- Highest, 1875 (31st)	61.0°	
	Lowest 1871 (21st)	-21.0°	
18	Highest daily mean (during 43 yrs)		
	1911, (11th)	51.9°	
	Lowest daily mean, (during 43 yrs)		
	1917 (29th)	-9.7	
**	Highest monthly mean, 1923	36.1°	
14	Lowest monthly mean, 1876	17.2°	
Rainfall -	Greatest fall, 1841	6.60	in.
	Least fall, 1840, 1845, 1876	0	**
	Greatest fall for one day 1870 (6th)	1.95	- "
	Greatest number of days rain fell, 18	89	
	and 1911	14	
	Least No. days rain fell, 1876	0	
Snowfall -	Greatest fall, 1872	38.0	in.
450	Least fall, 1877	0.3	**
16	Greatest for one day, 1898 (4-5)	16.0	- Cr
	Greatest No. days snow fell, 1872	24	
	Least No. days snow fell, 1895	3	



Summary of Observations, 1923.

Summary of Coservation		Mean for
Results of Observations Taken During the	Year.	70 years
District Control of the Control of t	To any	
READINGS OF BAROMETER IN INCHES.	29.632	29.619
Mean of the year	29.731	
Highest monthly mean, October	29.532	
Lowest	30.405	30.371
The bar of the	28,695	28.707
Dange	1.710	1.664
THERMOMETER, FAHRENHEIT.	The state of	THE RESERVE OF
Highest monthly mean temperature, July	69.0	
Lowest " " February	18.8	
Highest daily mean temperature, June 20th	80.5	
Lowest " " January 17th	1.1	200
Highest temperature, June 24th	95.6	91.2
T 17th	- 12.0	- 12.0
Lowest	107.6	103.2
Range for the year	45.6	*44.2
Mean from max. and min.	45.4	‡45.0
Mean from 24 hourly observations	73	77
Mean humidity		
Highest solar (black bulb in vacuum) Aug. 3rd	-12.5	-
Lowest (radiation) on January 17th	159.5	
Vearly range		26.86
Total fall of rain inche	NAME OF TAXABLE PARTY.	20.00
Greatest monthly rainfall, June	4.24	- 100
Least " " February	0.10	
Greatest rainfall in one day, May 15th	****	
Number of days rain fell	95	112.9
Total fall of snow		
Greatest monthly snowfall, January	20.0	The same of
Greatest snowfall in 24 hrs. Jan. 11th	7.5	40.0
Number of days on which snow fell	63	
Mean amount of cloud (0-10)	.5-	.62
*1840-1898 +1	881-1908	
1040-1000		

Wind Summary, 1923.

Total mileage for year	100,440
Greatest monthly mileage, March	11,988
Greatest mileage in 24 hours, February 14th	882
Greatest mileage in 1 hour (February 14th at 18hrs.)	55
Number of gales	39
Average velocity for year	11.5
Prevailing direction, west. Mileage, 21,989. Total hours	(0.00000

Harbor Notes

The following table gives the dates on which the ice formed and left Toronto harbor for the past 25 years.

(This table has been kindly furnished by the Toronto Harbor Master.)

Winter	Frozen over	Clear of ice	No. of days
1898-99	December 13th	April 8th	116
1899-00	" 28th	" 8th	101
1900-01	" 14th	" 6th	113
1901-02	" 6th	March 20th	104
1902-03	" 15th	" 15th	90
1903-04	" 14th	April 22nd	130
1904-05	" 11th	" 5th	115
1905-06	January 8th	" lst	83
1906-07	December 8th	March 28th	110
1907-08	January 28th	" 29th	61
1908-09	" 7th	" 31st	83
1909-10	December 29th	" 20th	81
1910-11	" 10th	" 31st	111
1911-12	January 6th	April 16th	101
1912-13	" 9th	March 20th	70
1913-14	" 14th	April 2nd	78
1914-15	December 15th	" 2nd	108
1915-16	" 27th	" 3rd	98
1916-17	" 11th	March 28th	107
1917-18	" 11th	April 5th	115
1918-19	January 5th	January 9th	4
• 1919-20	December 17th	March 28th	103
1920-21	" 31st	February 3rd	17*
1921-22	" 22nd	March 10th	52*
1922-23	" 29th	April 9th	87*
Longest tin	ne frozen, 1831-32	Nov. 10th to Apr. 15th	
Shortest "	" 1918-19	January 5th to 9th.	4

*Clear at intervals.



Absolute Extremes.

During 84 Years.

Readings of the barometer, in inches.	00.000
Highest yearly mean, 1849,	29.668
Lowest " " 1864,	29.560
Highest monthly mean, February, 1906,	29.819
Lowest " April, 1920,	29.411
Greatest monthly range January, 1870,	2.046
Least "June, 1841,	0.425
Highest reading, January 8th, 1866,	30.940
Lowest " January 2nd, 1870,	28.166
	2.774
Extreme range	
Temperatures.	103.2
Highest reading on July 3rd, 1911	- 26.5
Lawset reading on January 10th, 1859,	- 20.0
Highest daily mean temperature, (during 43 years)	01.9
Tuly 3rd 1911	91.3
Lowest daily mean temperature (during 43 years)	100
Jan. 13th, 1914	- 15.2
Highest monthly mean, July, 1921,	77.9
Lowest " " February, 1875,	10.2
Highest yearly " 1921,	49.9
Lowest " " 1875,	40.8
Rainfall, in inches.	
Rainian, in inches.	
Greatest fall in one day, July 27th, 1897,	3.8
Greatest rainfall in a month, September, 1843,	9.7
Greatest rainfall in a year, 1843,	43.8
1071	17-5
Greatest number of rainy days in a month, May, 1890,	2
Greatest number of rainy days in a year, 1890,	14
	1
Least " " " " " " " " " " " " " " " " " " "	

Absolute Extremes—(Continued.) DURING 84 YEARS.

Snowfall in Inches.	
Greatest fall in one day, March 28th, 1876,	100
Greatest fall in a month, March, 1870,	16.2
Greatest fall of snow in a year in 1870,	62.4
Least " " " " " " " 1010	122.9
1919,	28.7
Greatest fall in any winter, 1869-70,	123.5
Least fall in any winter, 1877-78 and 1905-06,	30.2
Greatest No. of days of snow in a month, Dec. 1870 and December 1872	30.2
Greatest number of days of snow in a year, 1859,	24
	87
Least " " " " " 1848,	33

Dates of Gertain Periodic Events.

* 1	EXTREME	1923
Latest snow		
Earliest snow		Oct. 31st
Latest hoar frost		May 18th
Earliest hoar frost	0	Sept. 17th
Earliest thunder & lightning	Jan. 12, 1898	April 19th
Latest thunder and lightning	Dec. 23, 1871	Sept. 28th

	TOTAL	2	3	4	5	6	7	8	9		11	12	13		15	16	17
Month.	1		3	_		-	-	-		-		0.2	7.1	0	1.7	0.5	4.6
T	0	0.3	0	0	0	3.7	0	0	0	2.2	0		2750		-		
January.				- 0	8.1	0	0.6	2.3	0.8	8.8	5.6	0	2.5	of	2.0	1.9	8.
February.	0	3.7		5.2	101	0	4.9	7.6	7.6	5.9	7.5	1.2	7.4	9.9	2.7	2.5	9.
March.	0	3.9	6.7	0.7	6.0	A FEE				A Land	3.1	12.1	6.0	9.7	2.0	2.7	6.
	10.9	3.1	0	0	0	11.3	0.1	0.3	8.2	5.9							
April.		10 4	12.9	12.5	11.8	13.7	12.2	0	0.2	4.9	0.8	0	13.3	12.0	1.0	2.4	
May.	10.3	13.4		77.75	00.0010	0	0	3.0	13.7	13.1	9.9	12.8	13.3	3.6	12.3	11.8	13
June.	11.9	11.5	2.5	5.8	8.8		-010			1.1		199	13.8	4.7	0	11.5	14
July.	13.1	8.3	6.0	12.9	11.4	11.1	13.9		1	WE ATT	1/20		15.0			The same	
		5.2	10.3	1		11.7	10.9	10.6	13.2	10.4	11.7	7.4	12.7	3.3	10.6	12.7	12
August.	9.9	5.2		T. MAL			5.2	5.8	9.4	11.6	8.4	9.9	7.3	5.4	4.4	10.0	8
September.	5.0	3.0	0	9.9	6.6	9.0		1 5		100	-		4.4	4.8	6.4	5.6	1
October.	10.5	3.6	9.2	9.6	6.4	9.9	9.2	10.2	7.8	2.4	3.8	2.0	4.4				1
			7.4	0	0	0	0	1.4	0	8.0	3.3	2.0	1.9	4.7	0	0	
November.	9.5				1.5	0	00		5.9	2.3	6.9	0	0	7.5	0	2.4	
December.	0	1.8	3.9	0	0	0	2.9	0	5.8	2.0	0.0					B Lui	1

30

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY-1923. (Continued).

	1	1	1	1	(100	-						1000	The Late	-10		
Month.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Monthly Total	Months Per- centage
January.	T	1.0	0	3.1	6.7	3.0	0	8.1	0	0	0	6.2	6.5	0	510	
February.	4.8	5.3	0.4	0.2	6.1	9.2	0	6.0	1.0	6.0	2.6	0.2	0.0	1	54.9 96.0	19
March.	7.1	7.3	2.5	4.5	0.1	0.7	7.6	T	8.1	5.0	3.7	2.0	8.9	11.2	152.5	33
April.	6.9	8.7	10.9	9.4	1.1	12.4	13.2	13.3	12.3	6.2	0.5	4.9	1.5	11.2	183.1	41
May.	13.8	13.8	0.4	4.1	13.0	14.1	13.2	13.6	13.5	13.5	12.0	14.1	1 1000	11.8	285.7	46 63
June.	13.3	7.1	11.8	7.9	11.1	10.0	11.8	11.1	9.9	10.2	0	12.9	13.2		277.8	60
July.	13.8	13.9	12.2	12.0	12.0	9.7	0	9.9	10.8	0	6.0	2.5	10.6	8.9	284.3	61
August.	7.0	10000	11.6	0	12.0	6.6	6.8	4.7	11.7	7.9	2.1	7.8	9.5	9.9	284.3	66
September.	0.8	8.9	0	Т	10.3	6.9	10.5	7.5	5.2	8.6	1.9	9.7	1.9		192.0	51
October.	9.1	0.9	7.5	0	9.4	3.1	0]	0	6.8	6.7	5.7	6.5	2.6	1.1	173.0	50
November.	3.9	2.8	4.3	0.9	7.2	0	5.3	7.7	0	0	0	2.0	0		81.9	28
December.	0	5.7	0	0	1.2	0	7.5	0	2.3	0	1.3	0	0.1	0	510	10

MONTHLY TABLES FOR EACH HOUR OF RECORDED SUNSHINE—1923

Hours Ending. Local time	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
January.	0	0	0	0	0	1.6	1.9	2.5	2.5	2.4	2.7	2.2	1.5	0.4	0	0	0	
February.	0	0	0	0	0.1	2.1	3.0	4.0	4.4	4.6	4.6	5.0	4.1	2.3	0.1	0	0	
March.	0	0	0	0.1	2.4	3.5	4.9	4.7	5.7	6.1	6.4	6.1	5.2	3.1	0.9	0	0	N. I.
April.	0	0	0.6	3.1	5.0	5.0	5.6	5.7	5.9	5.6	5.8	4.8	4.6	4.4	3.5	1.6	0	180
May.	0	0	3.2	6.1	6.6	6.7	7.2	7.2	7.2	6.7	7.0	7.5	7.1	7.1	7.1	5.1	0.4	03
June.	0	0	2.3	6.7	7.6	7.7	7.4	7.5	8.2	8.2	7.4	6.5	6.5	6.5	4.9	4.3	0.9	199
July.	0	0	2.9	5.3	6.5	7.2	6.9	6.6	7.0	7.2	7.2	7.0	7.0	7.0	6.7	5.7	1.6	
August.	0	0	1.4	4.9	6.0	7.0	7.6	8.0	8.1	7.6	8.0	7.8	7.6	7.5	6.3	3.7	0	
September.	0	0	0	1.2	5.3	5.8	6.6	6.6	5.8	6.5	6.8	6.6	6.3	4.5	2.0	0.1	0	
October.	0	0	0	0.3	2.6	5.1	5.4	6.1	6.7	7.3	7.0	6.7	5.6	2.9	0.1	0	0	30
November.	0	0	0	0	0.7	2.5	2.9	3.6	3.2	3.7	4.2	3.8	2.1	0.4	0	0	0	
December.	0	0	0	0	0	0.1	1.5	23	2.7	2.4	2.3	2.6	2.0	0	0	0	0	509
Total hours.	0	0	10.4	27.7	42.8	54.3	60.9	64.8	67.4	68.3	69.4	66.6	59.6	46.1	31.6	20.5	2.9	

SUMMARY OF SUNSHINE.

BRIGHT SUNSHINE RECORDED.

		1923		Mean from 1882 to 1910.						
	Number of days.	Number of hours	Percentage of sunshine.	Number of days.	Number of hours.	Percentage of sunshine.				
January	15	54.9	19	20	77.9	27				
February	23	96.0	33	22	108.1	37				
March	28	152.5	41	25	150.0	40				
April	27	183.1	46	25	190.7	47				
May	28	285.7	63	29	218.9	48				
June	27	277.8	60	29	260.0	56				
July	28	284.3	61	30	282.2	60				
August	30	284.3	66	30	252.7	60				
September	27	192.0	51	28	207.8	55				
October	28	173.0	50	28	149.3	44				
November	18	81.9	28	22	85.3	29				
December	13	51.6	19	20	65.2	24				
Year	292	2117.1	48	308	2048.1	46				

Possible hours, 4,452.4.

No	Date 1923	- 1	P. T.	S. Commence.	L. W.	Ma	x.	E	and	Max. Amplitude.	REMARKS
2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487	Mar " Apr " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " "	24 1	e13 14.4	15 52.7	8 52.8 13 24.3 13 30.4 15 29.9 13 36.0	13 4 16 16 4 4 19 19 16 16 16 16 16 16 16 16 16 16 16 16 16	14.8 16.8 39.1 19.7 52.8	23	10.6 38.3 36.7 42.8 40.7 22.7 27.6 16.1 22.5 18.9 14.0	0.1	P. indistinct.

Period of Boom 18 seconds. Pillar inclination 1 mm = 0.46" THE WORLD STORY SET A SET OF THE PART OF T

BARTHQUAKE EECORDS BY MILNE-SHAW SEIS MOGRAPHS.

No.	Date P.T.	S. Commence	L.W. Commence.	Max.	End.	Max. Amplitude.	REMARKS.
2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2500 2500 2502 2502 2503 2504	May 2 H. M. " 4 22 38.5 " 8 e19 20.5 " 10 e 4 1.0 " 11 e 8 44.5 " 12 i 1 39.6 " 15 21 53.9 " 23 22 48.5	H. M. 22 47.3 1 52.9 22 3.5; 22 57.3	16 45.5 23 0.7 19 32.3 4 10.09 4 45.6 9 8.0 2 2.3 22 19.0 23 5.1 23 13.3 22 43.69 22 45.7 3 45.6 4 9.7 9 36.2 10 1.2 2 36.8	E. M. 16 45.8 16 51.2 16 57.2 22 48.2 23 0.6 2 46.2 23 14.8	0 49.7 20 17.5 6 10.0 10 5.09 3 38.6 23 35.6 2 22.8 10 7.9 4 2.0 Micros Micros 7 11.2	79 181 11 37 21 48	Milne, amp. 0.3mm. Early phases lost. 7,390 km. Very small amp. Small amp. N. & S. comp. Mirute slow waves. N. & S. comp. Very small amp. 7,460 km. No cut off, times doubtful. Milne, amp. 0.1 mm. Milne, amp. 0.05 mm. Milne, amp. 0.3 mm. N. & S. comp N. & S. comp N. & S. comp
2505	June 1	17 48.4	18 10.0	18 20.6 18 22.5	23 16.0	10 87	

35



EARTHQUAKE RECORDS BY MILNE SEISMOGRAPH.

P.T.—Preliminary Tremors. S.—Secondary Waves. L.W.—Large Waves. Time is Greenwich Civil Mean Time, and is given in hours, minutes, and decimals of minutes; 0 or 24h—Mid. REGISTER FROM TORONTO, ONTARIO.

			141			10130	1101						Max	- DVC A DVC	
Na. I	Date		P.7		5	100		W. mence.	M	ax.	E	ind.	Amplitude.	REMARKS.	
No.	1923.		H.	M.	H.	M.	H.	M.	H.	M.	H.	M.	MM.	A B LIVER	
The Street			n.	-		10	23	13.9	23	17.8	23	47.7	0.4	The second secon	
2437	Jan.	2	111				23	15.9			11	100	10.0	4,120 km. Northern California.	
2438	44	22	9	11.7	9	17.6	9	23.3	9	27.7	11	18.8	10.0		8
	-	07					9 8	$\frac{24.3}{14.7}$	8	14.9	8	17.2	0.4		
2439	66	27 27		930			8	34.2	100		8	35.6	0.2	Distant quake	-
2440 2441	Feb	1					20	26.6	20	34.9	21	14.6	Marie Sala	the state of the s	83
		2	100		P		20	32.3 35.9	1	53.2	3	11.4	1.3	e 1 28.3; 7,380 km. Amp. of S. = 0.4 mm.	3
2442 2443	1	2	5	19.6	5	28.4	5	37.0	5	50.2	8	25.0	6.7		
ZHI				10.0	100	00.1	5 16	47.2 36.8	1911		22	29.1	over 30.0		
2444	**	3	16	13.3	16	22.1	10	30.0	THE.				0.05	S. amp. 4.0 mm. Long. 142 W. Thickening.	1
244	44	4			101	60	2	50.6			13	3.4 23.2			1
2446	3 "	4					13 12	13.1 21.1			12		0.1	Thickening.	1
244		5			14		23		23	39.2	0	6.4	0.3	W 14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	15
244	8	9	18			100	23	37.1		E0 5	1	18.6	0.2		1
244		8		53.0)		8					STREET, C			1
245	0 "	8	3		10	1193	8						0.0	Doubtful as to being seismic.	1
245	1 16	11			E		17	52.9					0.4	Doublet as	1
245		11					23 23			25.	,	, 50.			1
945	0 11	7.6			2 2	27.				39.) ;			May be return waves of No. 245	1
				1		1									F
2456	Feb	14 19			1		17	38.7 17.6	0	20.5	17	44.3 43.2	0.1	Thickening.	1
2457	46	21			1		ĭ	33.2	1	36.3	1	46.9	0.2		1
2458	**	23			135		7	10.0			7	34.2	0.1		1
2459	66	24	pr7	53.9	7	56.1	8	22.7	8	15.4	11	16.7	10.0	Amp. at 7 56.1 was 1.0mm.	
			Pr.	00.0	7	57.4	8	3.5	0	TOT	11	10.1	10.0	Zimpi do i oo.i was i omin	1
2460		27		10 -			20	50.8	0	2.0	21	5.0	0.05	D 0 C 1 11	-
2461	Mar	1	i 8	48.5?			8	56.7	9	3.3	10	10.5	0.6	P. & S. not recorded,	1
2462		2			17	10.2	17	41.6	18	11.23	19	28.8	0.8	Max, possibly after 18h. 18m.	1
2463	**	3	kou		NO.		22 23	36.7			La constitution		0.05		1
2464	16	4			In the second		7	20.0 52.5	8	17.1	10	2.0	0.2	Killian in the contract of the	1
	100				120		8	10.0			1002095		1014/7		1
2465	"	11	133				23	26.6	23	29.8	0	1.0	0.2		34
2466	44	12					23	28.7 59.7			10	2.7	0.1		1
2467	66	12	The state of				10	19.0	for a		11	13.7	0.05		
9400		10					10	51.5	10	0	40	00.0	0.0		
2468	320	12	1		1		12 12	6.8	12	35.5	13	26.3	0.2		1
2469	66	13					20	28.0	Y.		21	0.02	0.05	Maria de la companya del companya de la companya del companya de la companya de l	1
2470	66	14			611		21	56.5	22	21.1?	22	29.7	0.3?	P. & S. not recorded.	
2471	66	15			910		22	$7.0 \\ 17.7$	6	24.6	7	1.0	0.5	Gradually increasing vibrations.	
		1000			200		6	20.0	0	23.0	1	1.0	0.0	creating moreasing vibrations.	
2472	6.6	16					23	1.1	23	26.2	0	37.8	0.8		
2473		18	144				23 20	$9.7 \\ 44.2$			20	59.0	0.05		
2474	4.	19	1				11	31.4	11	35.6		cros	0.8	P. & S. indistinct.	
100							11	34.8	To the				HING.		1

2475 Mar 24 e13 14.4	- N-	Date	P. T.	S.	L. W.	Max.	End	Max. Amplitude.	REMARKS
2482 " 23 2483 " 24 2484 " 25 2485 " 29 2485 " 29 2485 " 29 2485 " 29 2485 " 20 2485 " 20 2485 " 20 25 3 14.1 16 41.6 21 18.6 21 18.6 21 18.6 21 18.6 21 18.6 21 18.6 21 18.6 21 18.6 21 18.6 21 18.6 21 18.6 21 18.6 21 18.6 21 18.6 21 18.6 21 18.6 21 18.6 21 18.6 21 18.6 22 18.6 23 16.1 3 18.9 3 18.9 3 18.9 3 18.9 3 18.9 3 18.9 3 18.9 3 18.9 3	2476 2477 2478 2479 2480 2481 2481 2481	Mar 2	Commence 24 e13	15 52.7	8 52.8 13 24.3 13 30.4 15 29.9 13 36.0 16 3.9 16 8.1 21 16.0 4 22.5 4 15.5 23 4.8 19 52.1 3 14.1	13 43.2 16 14.8 16 16.8 4 39.1 4 19.5 19 52.3	9 10.6 15 38.3 15 36.7 13 42.8 17 40.7 5 22.7 5 27.6 23 16. 3 20 22. 3 18. 17 14.	0.05 2.8 0.05 0.1 2.0 0.05 0.4 0.05 0.4 3 0.3 0.1 0.3 9 0.1 0.1	P. indistinct.

Period of Boom 18 seconds. Pillar inclination 1 mm=0.46"

DANTHQUAKE EEUORDS BY MILNE-SHAW SEE MOGRAPHS.

E & W Component.—Period, 12 seconds.—Magnification, 150.—Damping, 20 to 1

No.	Dat 1923	0-1	-	r.T. mence.	Com	mence.		L.W.		Max.	1	End.	Max. Amplitude.	REMARKS.
2100		100	Н.	M.	H.	M.	1 10	. M.	E.	M.	H.	M.	μ	
2488	May	2					16	45.5	16	45.8				Milne, amp. 0.3mm.
2489	1	4	979		1000		MI.		16	51.2	10		79	Early phases lost.
			P.S.		1		100		16	57.2	The .		181	Burry phases lost.
2490	66	4	22	38.5	22	47.3	23	0.7	22	48.2	0	49.7	11	7,390 km.
239983					100		100		23	0.6	100		37	1,000 Kill
2491	66	8	e19	20.2			19	32.3			20	17.5	100	Very small amp.
2492	44	10	e 4	1.0	1		4	10.02			6	10.0		Small amp. N. & S. comp.
2			1997		-11		4	45.6				20.00		Sman amp. N. & S. comp.
2493		11	e 8	44.5	13		9	8.0	100		10	5.02		Minute slow waves.
2494		12	i 1	39.6	1	52.9	2	2.3	2	46.2	3	38.6	21	N & C comp
2495	"	15	21	53.9	22	3.5?		19.0		10.2	23	35.6	21	N. & S. comp.
2496	**	23	22	48.5	22	57.3	23	5.1	23	14.8	2	22 8	48	Very small amp.
200		100		(LEASE	1000		23	13.3		11.0	1000	22 0	30	7,460 km.
2497	**	25			TOT		22	43.62			96	112		No and -65 4: 3 1/6 1
					MY.		22	45.7				70-11		No cut off, times doubtful.
2498		26					3	45.6			Thu	to the same of		W:1 - 0.1
1020			15	800		3.0	4	9.7			537	200		Milne, amp. 0.1 mm.
2499	66	26		- 1			9	36.2			10	7.9		
	22	-		7			10	1.2			10	1.0		Milne, amp. 0.05 mm.
2500	"	28		May 1			2	36.8	3	11.3	- 4	2.0		17.1
2501		30	8	48.62	8	58.12		0.4		11.0		cros	0	Milne, amp. 0.3 mm.
2502	66	30	e18	14.9	0	00.1.	18	31.2	18	32.9			8	
2503	**	31	010	11.0		1 4	6	49.0	10	52.9		cros	20	N. & S. comp
2504		31	22	12.6	22	18.0	22	21.7			7	11.2	10	N. & S. comp.
2505	June			12.0		48.4	18	10.0	10	20.0	23	16.0	10	
0.00	ounc	-			11	10.4	10	10.0	18 18	20.6 22.5			87	

36

35

	Date	- 1	P.		S		L. V	Ph Towns II	Ma	x.	Er	nd	Max.	REMARKS	
2506 2507 2508 2509 2510 2511 2512 2513 2514 2514 2511 2511 2511 2511 2512 2512	"" "" "" "" "" "" "" "" "" "" "" "" ""	1 2 2 2 3 4 5 6 6 10 10 11 18 18 22 22 3 8 7	8 8 8 8 8 22 e 4 e 7	34.7 35.1 51 2 4.	e23 e23 7 8 8 22 7	10.6 40.6 58.4	20 1 13 13 23 12 21 6 18 18 23 1 19 11 11 8 21 21 21 21 21 21 21 21 21 21 21 21 21	46.2 333.2 38.7? 46.5 49.2 33.1 32.9 38.1 35.2 35.2 10.4 48.2 10.4 5.2 20.6 54.5 32.9 54.5 52.0 54.5 54.6 54.6 54.6 54.6 54.6 54.6 54.6	9 23 7	17.4 11.2 51.4	Mid Mid 23 2 21 11 11 0 4	00000000	27? 36 62	Small amp. Doubtful as to being seismic. Micros going on. Very small. Slow waves. May not be seismic. N. & S. component. 4,820 km. Small amp. 5,520 km Small amp. Small amp. Small micros going on. Small. Slow waves.	87
25 25 25 25 25 25 25 25 25 25 25 25 25 2	229 Jul 330 " " 331 " " 332 " " 333 " " 336 " " 337 " " 338 " " 340 " " 412 " 413 " " 412 " " 413 " " 414 " " 415 " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " 415 " " " " 415 " " " " 415 " " " " 415 " " " " " 415 " " " " " " 415 " " " " " " " " " " " " " " " "	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 e 5 e 6 e 6 e 6 e 7 e 6 e 6 e 7 e 6 e 6 e 8 e 8 e 8 e 8 e 8 e 8 e 8 e 8	25. 29 25. 38. 30. 48. 34. 42. 27. 658. 658. 16. 7. 66	66 62 77 77 33 33 11 14 7	43.7	1 1 1 3 10 11 0 1 1 1 6 5 15 7 8 14 7 7 e 2	39. 8. 51. 6. 26. 4.	12 14 7	9.77 59.3 49.6	0 3 5 6 11	56.0 25.1 16.0 5.0	28 45 20	Small amp. Doubtful. Slow waves. Small amp. paper was taken off. Slow waves. Small amp. Very small, doubtful. Small amp. 9,340 km. Slow waves. Undulatory. Irregular, small amp. 3,980 km. 3.980 km, small amp. Small. Small amp. Slow waves. May not be seismic. 7,360 km. May not be seismic. Small amp.	38

No	Date 1923		. T. mence.	S.	100	L. W.	Max.		End	Max. Amplitude.	REMARKS
558 559 560	uly 26 27 28 31			1	e e	0 52.2 11 7.0 2 14.8 18 36.5 6 1.3 16 3.6 16 4.0	5	010	1 58.0? 3 42.0 6 24.0		Undulatory. May not be seismic. Small amp. Uniform L. when paper was put on at 15h. 44m. Undulatory.
2563 2564	ug. 1 " 1 " 2 " 4		37.8	1	STATE OF	5 24.4 6 29.0 8 54.0 9 45.1 9 47.1 17 13.0 17 44.0			9 10.0 9 54.0	7 20	Small amp. Undulatory.
2567	" 8 " 8 " 10	12	8.3	12		9 4.0 9 18.0 12 3.0 12 15.8 3 2.4 3 16.1	12 2	21.5	13 48.0 5 21.0	8	Undulatory. 3,720 km. Undulatory.
2570 2571 2572 2573	" 10 " 10 " 11 " 12	e 1 e 7	26.4 7.2			10 46.5 23 12.8 1 52.5 11 7.6	582		Micros 23 48.03 3 12.0 7 24.0 12 1.0		Heavy micros. Micros. Slow waves. Slow waves.
2574 2575 2576	" 12 " 12			100		e17 43.5 21 3.	8		17 58.0 Micros 2 20.0		(N. & S. Component.)
25	801 A	, 17			- on to		W.F.	A I	4 52.0		Indefinite.
258 258 258 258 258 258 258	82 " 83 " 84 " 85 "	18 19 20 23 28 30 31	5 29 23 2	1.5 2 2.7	3 26.	13 13 22 13 19 5 4 23 5 14 5 12 2	12.0 17.4 0.0 18.5 12.6? 42.7 30.4 23 57.6 28.1	32.0	19 2 6 44 8 2 53		Changing papers at F. May not be seismic. Early phases masked, local cau N. & S. component. S. indefinete. 3,140 km. Large vibs, 0.23h 15 20s.
258 258 258 258 258 258 258 258 258 259	81 " 82 " 83 " 84 " 85 " 86 " 87 " 88 Sep.	18 19 20 23 28 30 31 1	5 22 23 22 ill 42 3 11 e 3 0 e 9 40	1.5 2 2.7 1.8 3 0.0 3 1.12 9	3 26. 3 26. 3 22. 3 10.	13 13 22 13 19 5 4 4 23 5 14 5 12 2 2 6 3 3 3 3 5 5 6 3 3 3 3 3 5 6 6 3 3 5 6 3 3 3 5 3 3 3 3	12.0 17.4 0.0 18.5 12.69 42.7 30.4 23 57.6	32.0	19 27 6 44 2 55 15 44 12 54 10 10	7.0 4.0 5 3.0 232 .0 .0 .0 .0 405	Changing papers at F. May not be seismic. Early phases masked, local cau N. & S. component. S. indefinete. 3,140 km. Large vibs, 0.23h 15 20s. Uniform waves, small amp
258 258 258 258 258 258 258 258 259 2590 2590	81 " 82 " 83 " 84 " 85 " 86 " 87 " 88 Sep. 9 " 1 "	18 19 20 23 28 30 31 1	5 22 23 22 iiii 42 3 11 3 11 42 9 44 422 48	1.5 22 2.7 1.8 3 0.0 3 1.1? 9 1.1 22 5? 4	3 26. 3 26. 3 22. 3 10. 3 50. 4 56.1	13 13 22 13 19 5 14 23 12 25 14 5 16 3 3 3 3 10 10 10 10 10 10 10 10 10 10 10 10 10	12.0 17.4 0.0 18.5 12.6? 42.7 30.4 23 23 57.6 28.1 36.3 3 3 3 3 3 60.6 3	56.3	19 2 6 44 2 55 15 44 12 54 10 10 7 10 12 10 1 2	7.0 7.0 5 5 232 0 0 800 0 405 13 0 56	Changing papers at F. May not be seismic. Early phases masked, local cau N. & S. component. S. indefinete. 3,140 km. Large vibs, 0.23h 15 20s. Uniform waves, small amp. Destructive Japanese; 9,760 km 0.2h. 58m. 58s. Marked disturbance. P. indefinately marked, 6,490km
258 258 258 258 258 258 258 259 259 259 2593 2594 2595	81 " 82 " 83 " 84 " 85 " 86 " 77 " 88 Sep. " 1 " 2 " 1 " 4 "	18 19 20 23 28 30 31 1 2 2 9 6 1 1 1 1 e	5 23 23 iii 42 3 11 e 3 0 e 9 40 9 44 22 48	1.5 22 2.7 1.8 3 0.0 3 1.17 9 1.1 22 5.5? 4	3 26. 3 26. 3 22. 3 10. 3 50. 4 56.1	13 13 22 13 13 19 5 5 14 23 3 3 5 5 10 12 22 3 3 10 10 10 10 10 10 10 10 10 10 10 10 10	12.0 17.4 0.0 18.5 12.69 42.7 30.4 23 23 23 36.6 9.2 3.5 7.7 2.5 0.0 3.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2	56.3	19 26 44 2 55 15 44 12 54 10 10 12 10	7.0 5.0 5.0 232 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	Changing papers at F. May not be seismic. Early phases masked, local cau N. & S. component. S. indefinete. 3,140 km. Large vibs, 0.23h 15 20s. Uniform waves, small amp. Destructive Japanese; 9,760 km 0.2h. 58m. 58s. Marked disturbance. P. indefinately marked, 6,490km L. not well defined. Small amp. P. & S. masked by micros. Small amp.
258 258 258 258 258 258 258 258 259 2590 2590 2590 2594	81 " 82 " 83 " 83 " 84 " 85 " 86 " 87 Sep. 9 " 1 " 2 " 4 "	18 19 20 23 28 30 31 1 2 2 9 6 9 10 10 e	5 22 23 22 3 11 6 3 0 6 9 40 9 44 22 48 4 37, 22 30, 9 55.	1.5 22 2.7 1.8 3 0.0 3 1.1? 9 1.1 22 4.5? 4	3 26. 3 26. 3 22. 3 10. 3 50. 4 56.1	13 13 22 13 19 5 14 23 5 14 25 12 22 5 10 22 3 10 10 9 28 9 9 3 24 6 6 9 9 9 9 10 9 10 9 10 9 10 9 10 9 10	12.0 17.4 0.0 17.4 0.0 18.5 18.5 18.5 18.6 42.7 42.7 30.4 23 37.6 38.1 36.3 3 30.6 9.2 3 3 3 3 3 3 3 3 3 3 3 3 3	56.3 46.1 5.1	19 27 6 44 2 55 15 44 12 54 10 10 7 10 12 10 1 2 5 0 0 58 10 17.	7.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	Changing papers at F. May not be seismic. Early phases masked, local cau N. & S. component. S. indefinete. 3,140 km. Large vibs, 0.23h 15 20s. Uniform waves, small amp. Destructive Japanese; 9,760 km 0.2h. 58m. 58s. Marked disturbance. P. indefinately marked, 6,490km L. not well defined. Small amp. P. & S. masked by micros. Small amp. Very small. Small amp.
258 258 258 258 258 258 258 258 259 2599 259	81 " 82 " 83 " 83 " 84 " 85 " 86 " 87 " 88 Sep. 90 " 1 " 2 " 4 " 4 " 4 " 4 " 4 " 4 " 4 " 4 " 4 " 4	18 19 20 23 28 30 31 1 2 2 9 6 9 10 10 12	5 22 23 22 3 11 42 3 11 e 3 0 e 9 40 9 44 22 48 9 4 37, 22 30, 9 55.	1.5 22 2.7 1.8 3 0.0 3 1.1? 9 1.1 22 4.5? 4	3 26. 3 26. 3 22. 3 10. 3 50. 4 56.1 34.7	13 13 13 12 13 13 19 5 6 12 23 3 3 3 5 10 10 12 23 13 19 12 23 3 3 3 10 10 10 10 10 10 10 10 10 10	12.0 17.4 0.0 17.4 0.0 18.5 18.5 18.5 18.6 23 37.6 28.1 36.3 3 30.6 9.2 7.7 2.5 3.0 3.5 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	32.0 56.3 46.1	19 22 6 44 2 55 15 44 12 54 8 10 10 7 10 12 10 1 2. 5 0, 0 58, 10 17. 9 40.	7.0 7 5.0 232 .0 .0 .0 .0 800 .0 405 13 .0 56 .0 71 .0 17	Changing papers at F. May not be seismic. Early phases masked, local cau N. & S. component. S. indefinete. 3,140 km. Large vibs, 0.23h 15, 20s. Uniform waves, small amp. Destructive Japanese; 9,760 km 0.2h. 58m. 58s. Marked disturbance. P. indefinately marked, 6,490km L. not well defined. Small amp P. & S. masked by micros. Small amp. Very small.

No	Date 1923	1	P. '	r.	S.	ence.	L. V	W.	Ma	ix.		Max. nplitude.	L. waves not pronounced but
100		012	(6)(0)		-			56.2?	200	1	3 20.0		L. waves not pronounced quick period.
2602 5	Sept :	22	12	15.5?			12	59.0		- 12	200 1000 200	07	quick period
					01		21		21	44.4	23 44.0	27	Small amp.
2603		22	21	100000	21	12.1	4	4.9		100	4 24.0		
2604	**	23	e 4	3.1			4	7.4		300	0.0	7	The Report has the boundaries and leaded
		-		11.00			17	52.3		110 -	18 53.0	,	Small amp.
2605				44.0?			3	0.4			3 28.0		Sman amp
2606	"	26	i 2	48.1?		1 27 18	3	1.7		and the same of		10	Japan.
		7			8	47.5	8	54.8	9	20.4	Micros	19	11,950 km, small amp.
2607	**	26	_	00.00	7	38.7	8	19.0			Micros	10	11,000 km,
2608	"	27	7	26.3?		30.1	21	21.0	21	21.3	Micros	18	THE REAL PROPERTY AND RESIDENCE
2609	ce	28		12.9	1	31.72		33.6	1	40 6	5 14.0	683	Preceded by micros.
2610	**	30	1	27.3?	1	31.1.	9	3.6	-	1000	10 0.0?	15	
2611	Oct	1	i 8	55.5?			1			MX I	The same		A TOTAL PROPERTY OF THE PARTY O
			8	58.9	1		23	18.4	186		Micros	6	
2612	6.6	1		53.3			1	35.5			1 55.0	-00	S. difficult to interpret; 11,410km
2613	66	5		22/2		2.9		0	4	38.8	William Hall	108	S. difficult to the re-
2614	66	7	3	51.0	4			21.0	4		The same		be seismic.
	W. Level				4	5.4		27.0			THE SERVICE	THE SAME	May not be seismic.
2615	**	7	7				e 7				PAL BEST		ar & C component.
	H-POTO						201	59500			4 23.0	6	N. & S. component.
2616	**	1	3	49.8	e	55.2	4	1000000			A DA	1	Well defined 4,760 km.
37.79	1 19					0= 0				34.3	9 28.0		
2617	" "	1	0 7	19.3	3 5	7 25.8	2		360 1/2 004		22 27.7		Undulatory.
2618		1			M.		1				13 41.0	?	Not definite. P. & S. masked by micros.
2619			1 el:			4 43.		4 46.2		48.0	5 31.0	8	P. & S. masked by moses
		- 1	3 i 4	32.7	7. e			8 28.0			10 22.0	6	No defined phases.
2620	0 66												
2620 2620	0		5 8	3 1.7	7? e		700	0 20.0			100	A STATE	G-all amn
262	1 "	1	5 8	3 1.7	7? e	8 13.	7	0 45.0	02		21 2.0		Small amp.
262	1 "	1	5 8	3 1.7	72 e		7 2	0 45.0	02				Small amp.
262 262 2625	1 " 2	. 19	5 8	1.7	ire		7 25	0 45.0	02		Micros		
262	1 " 2	1	5 8	1.7	ire		7 25 13	0 45.0 6 53.0 3 2.1 3 32.6	02				Small amp. N. & S. component. N. & S. component.
2625 2625 2626	0ct	. 19	5 8		1		7 25 13 13 15	3 2.1 3 32.6 3 43.7	0P		Micros Micros		N. & S. component.
262 2625 2626 2627	Oct "	1 19 20 21	5 8		1		7 25 13 13 15 19	3 2.1 3 32.6 3 43.7 20.9	02		Micros Micros		N. & S. component. N. & S. component.
262 2625 2626 2627 2628	Oct "	1 19 20 21 26	5 8 5 i19	16.8			7 25 13 13 19 e19	3 2.1 3 32.6 3 43.7 0 20.9 0 40.2	02		Micros Micros 19 27.0 19 50.0		N. & S. component. N. & S. component.
262 2625 2626 2627 2628 2629	Oct	1 19 20 21 26 7. 1	5 8 5 i19 e20	16.8		8 13.	7 25 13 13 19 e19 20	3 2.1 3 32.6 3 43.7 0 20.9 0 40.2 14.7	20		Micros Micros 19 27.0 19 50.0 21 2.0	16	N. & S. component.
262 2625 2626 2627 2628 2629 2630	Oct	1 19 20 21 26 7. 1	5 8 5 i19 e20	16.8		8 13.	7 22 13 13 19 e15 20 22 5 22	3 2.1 3 32.6 3 43.7 0 20.9 0 40.2 14.7 2.5	20		Micros Micros 19 27.0 19 50.0		N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km.
262 2625 2626 2627 2628 2629	Oct	1 19 20 21 26	5 8 5 i19 e20	16.8		8 13.	7 25 13 13 19 e19 20 22 3	3 2.1 3 32.6 3 43.7 0 20.9 0 40.2 14.7 2.5 29.4	20		Micros Micros 19 27.0 19 50.0 21 2.0	16	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km.
2627 2626 2627 2628 2629 2630 2631	Oct	11. 19. 20. 21. 26. 1. 1. 2. 3	5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	16.8		8 13.	7 25 13 13 19 e15 20 22 3 3	3 2.1 3 2.6 3 32.6 3 43.7 9 20.9 9 40.2 14.7 2.5 29.4 38.2	20		Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0	16	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp.
262 2625 2626 2627 2628 2629 2630	Oct	1 19 20 21 26 7. 1	5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	16.8		8 13.	25 13 15 19 e19 20 22 3 3 5	3 2.1 3 32.6 3 43.7 9 20.9 9 40.2 14.7 2.5 29.4 38.2 6.4	20		Micros Micros 19 27.0 19 50.0 21 2.0	16	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp.
2627 2626 2627 2628 2629 2630 2631	Oct " Nov"	1 19 20 21 26 3 3 3	5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	16.8 10.7 27.7		8 13.	25 13 13 19 e19 20 22 3 3 5 5	3 2.1 3 32.6 3 43.7 9 20.9 9 40.2 1 40.2 1 2.5 29.4 38.2 6.4 16.5	20		Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0	16 84	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km.
2622 2625 2626 2627 2628 2629 2630 2631	Oct " Nov"	11. 19. 20. 21. 26. 1. 1. 2. 3	5 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	16.8 10.7 27.7		8 13.	25 13 15 19 e19 20 22 3 3 5	3 2.1 3 32.6 3 43.7 9 20.9 9 40.2 14.7 2.5 29.4 38.2 6.4	20		Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0	16	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp.
2622 2625 2626 2627 2628 2629 2630 2631	Oct " Nov"	1 10 20 21 20 21 20 3 3 3 3 3	5 8 8 8 9 9 1 119 119 119 119 119 119 119	16.8 10.7 27.7 44.5 48.1	P 21	8 13.	25 13 13 19 e15 20 22 3 3 5 5 6	3 2.1 3 32.6 3 32.6 3 43.7 9 20.9 9 40.2 14.7 2.5 29.4 38.2 6.4 16.5 7.6	20 22	19.1	Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0	16 84	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp. Small slow waves.
2622 2625 2626 2627 2628 2629 2630 2631 2632	1 " " " " " " " " " " " " " " " " " " "	1 10 20 21 20 21 20 3 3 3 3 3 3 3	i19 e20 21 e 5 8	16.8 10.7 27.7		38.5	25 15 15 19 e15 20 22 3 5 5 6 8	3 2.1 3 32.6 3 32.6 3 40.2 1 40.2 1 4.7 2.5 29.4 38.2 6.4 16.5 7.6	200 222	19.1 56.0	Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0?	16 84 9 24	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp. Small slow waves.
2622 2625 2626 2627 2628 2630 2631 2632 2633 2634	Oct "" Nov "" "	1 10 20 21 20 21 20 3 3 3 3 3	i19 e20 21 e 5 8	16.8 10.7 27.7 44.5 48.1 43.1	8	8 13. 38.5	7 22 15 15 15 15 15 15 15 15 15 15 15 15 15	3 2.1 3 2.1 3 32.6 3 43.7 9 20.9 9 40.2 9 14.7 2.5 2.9 4 38.2 6.4 16.5 7.6 50.1 38.7	200 222 8 17	56.0 19.6	Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0? Micros	16 84 9 24 27	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp. Small slow waves. Larger amp. at P. 2,890 km.
2627 2626 2626 2627 2628 2630 2631 2632 2633 2634 2635	Oct " Nov " " "	11 20 20 21 20 21 20 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	i19 e20 21 e 5 8	16.8 10.7 27.7 44.5 48.1	P 21	8 13.	7 22 15 15 15 15 15 15 15 15 15 15 15 15 15	3 2.1 3 32.6 3 32.6 3 40.2 1 40.2 1 4.7 2.5 29.4 38.2 6.4 16.5 7.6	200 222 8 17 1	56.0 19.6 5.4	Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0?	16 84 9 24	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp. Small slow waves.
2627 2626 2627 2628 2629 2630 2631 2632 2634 2634 2635	Oct " Nov " " "	11 20 20 21 20 21 20 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	i19 e20 21 e 5 8	16.8 10.7 27.7 44.5 48.1 43.1	8	8 13. 38.5	7 22 23 18 18 18 19 19 20 22 3 3 5 5 6 6 8 16 0	3 2.1 3 2.6 3 32.6 3 43.7 2 20.9 4 40.2 14.7 2.5 29.4 38.2 6.4 16.5 7.6 50.1 38.7 54.9	200 222 8 17	56.0 19.6	Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0? Micros Micros	16 84 9 24 27	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp. Small slow waves. Larger amp. at P. 2,890 km.
2627 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636	Oct "" " " " " " " " " "	1 10 20 21 22 23 3 3 3 4 4 4	5 8 8 9 1 119 21 e 5 5 8 0	16.8 10.7 27.7 44.5 48.1 43.1 23.9	8	8 13. 38.5	7 22 11 15 19 e11 20 21 3 3 5 5 6 8 16 0 12	3 2.1 3 2.1 3 32.6 3 43.7 9 20.9 9 40.2 1 40.2 1 2.5 29.4 38.2 6.4 16.5 7.6 50.1 38.7 54.9	200 222 8 17 1	56.0 19.6 5.4	Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0? Micros Micros	9 24 27 281	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp. Small slow waves. Larger amp. at P. 2,890 km. 9,830 km. Small amp.
2622 2625 26262 2628 2630 2631 2632 2633 2634 2635 2636 2637	Oct "" " " " " " " " " " "	1 10 20 21 22 23 3 3 3 4 4 4 4 4	5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	16.8 10.7 27.7 44.5 48.1 43.1 23.9	8	8 13. 38.5	7 22 11 15 19 e11 20 20 3 3 5 5 6 6 8 16 0 12 21	3 2.1 3 2.1 3 32.6 3 43.7 2.5 29.4 38.2 6.4 16.5 7.6 50.1 38.7 54.9 0.5	200 222 8 17 1	56.0 19.6 5.4	Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0; Micros Micros Micros 23 59.0	16 84 9 24 27	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp. Small slow waves. Larger amp. at P. 2,890 km.
2622 2625 2626 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639	Oct "" "" "" "" "" "" "" "" "" "" "" "" ""	1 20 20 21 20 20 3 3 3 3 4 4 4 4 5 5	5 8 8 119 e20 e20 e 2	16.8 10.7 27.7 44.5 48.1 43.1 23.9 32.6 22.2	8	8 13. 38.5	7 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3 2.1 3 32.6 3 43.7 9 20.9 9 14.7 2.5 29.4 16.5 7.6 50.1 38.7 54.9 0.5 24.6	200 222 8 17 1	56.0 19.6 5.4	Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0 Micros Micros Micros 23 59.0 2 34.0	9 24 27 281	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp. Small slow waves. Larger amp. at P. 2,890 km. 9,830 km. Small amp.
2622 2625 26262 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640	Oct "" Nov "" "" "" "" "" "" "" "" "" "" "" "" ""	1 1 20 20 21 26 3 3 3 3 4 4 4 4 5 5 5	5 8 e20 21 e 5 5 8 0 e2(e) e14	16.8 10.7 27.7 44.5 48.1 43.1 23.9 32.6 22.2 36.5	8 0	38.5 47.7 34.8	7 2 13 15 15 15 15 15 15 15 15 15 15 15 15 15	3 2.1 3 2.6 3 32.6 3 43.7 2 20.9 9 40.2 14.7 2.5 29.4 38.2 6.4 16.5 7.6 50.1 38.7 54.9 0.5 24.6 38.6	200 222 8 17 1 1	56.0 19.6 5.4 5.9	Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0 6 Micros Micros 23 59.0 2 34.0 14 52.0	9 24 27 281 12	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp. Small slow waves. Larger amp. at P. 2,890 km. 9,830 km. Small amp. Micros going on.
2622 2625 26262 2629 2630 2631 2632 2633 2634 2635 2636 2637 2637 2638 2639	Nov.	1 20 20 21 20 20 3 3 3 3 4 4 4 4 5 5	5 8 8 119 e20 e20 e 2	16.8 10.7 27.7 44.5 48.1 43.1 23.9 32.6 22.2	8 0	8 13. 38.5	7 2 13 15 15 15 15 15 15 15 15 15 15 15 15 15	3 2.1 3 32.6 3 43.7 9 20.9 9 14.7 2.5 29.4 16.5 7.6 50.1 38.7 54.9 0.5 24.6	200 222 8 17 1 1	56.0 19.6 5.4 5.9	Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0 Micros Micros 23 59.0 2 34.0 14 52.0 1 2.0	9 24 27 281	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp. Small slow waves. Larger amp. at P. 2,890 km. 9,830 km. Small amp. Micros going on.
2622 2625 2626 2627 2628 2630 2631 2632 2634 2635 2636 2637 2638 2639 2640 2641	Nov.	1 1 20 20 21 22 3 3 3 4 4 4 4 4 5 5 5 5	5 5 8 e20 e20 e 2 e 2 e 1 4 21	16.8 10.7 27.7 44.5 48.1 43.1 23.9 32.6 22.2 36.5 42.12	8 0	38.5 47.7 34.8	7 22 13 15 19 19 19 19 19 19 19 19 19 19 19 19 19	3 2.1 3 2.6 3 32.6 3 43.7 2.5 29.4 38.2 6.4 16.5 7.6 50.1 38.7 54.9 0.5 24.6 38.6 11.5	200 222 8 17 1 1	56.0 19.6 5.4 5.9	Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0 6 Micros Micros 23 59.0 2 34.0 14 52.0	9 24 27 281 12	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp. Small slow waves. Larger amp. at P. 2,890 km. 9,830 km. Small amp. Micros going on. P. poorly defined, 9,780 km.
2622 2625 2626 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642	Nov	1 1 20 20 21 22 3 3 3 4 4 4 4 5 5 5 5 6	5 5 8 e20 e20 e 2 e 2 e 1 4 21	16.8 10.7 27.7 44.5 48.1 43.1 23.9 32.6 22.2 36.5	8 0	38.5 47.7 34.8	7 22 11 11 12 12 12 12 12 12 12 17	3 2.1 3 2.6 3 32.6 3 43.7 20.9 40.2 14.7 2.5 29.4 38.2 6.4 16.5 7.6 50.1 38.7 54.9 0.5 24.6 38.6 11.5 49.6	200 222 8 17 1 1	56.0 19.6 5.4 5.9	Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0 Micros Micros 23 59.0 2 34.0 1 2.0 19 24.0	9 24 27 281 12	N. & S. component. N & S. component. N & S. component: N & S. component; small Micros. 9,800 km. Small amp. Small slow waves. Larger amp. at P. 2,890 km. 9,830 km. Small amp. Micros going on. P. poorly defined, 9,780 km; 0,21h, 29m, 17s.
2622 2625 2626 2627 2628 2629 2630 2631 2632 2634 2635 2636 2637 2638 2639 2640 2641	Nov.	1 1 20 20 21 22 3 3 3 4 4 4 4 4 5 5 5 5	5 5 8 e20 e20 e 2 e 2 e 1 4 21	16.8 10.7 27.7 44.5 48.1 43.1 23.9 32.6 22.2 36.5 42.12	8 0	38.5 47.7 34.8	7 22 15 15 19 15 16 16 16 16 16 16 16 16 16 16 16 16 16	3 2.1 3 2.6 3 32.6 3 43.7 20.9 14.7 2.5 29.4 16.5 7.6 50.1 38.7 54.9 0.5 24.6 38.6 11.5	200 222 8 17 1 1	56.0 19.6 5.4 5.9	Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0 Micros Micros 23 59.0 2 34.0 14 52.0 1 2.0	9 24 27 281 12	N. & S. component. N & S. component. N & S. component: N & S. component; small Micros. 9,800 km. Small amp. Small slow waves. Larger amp. at P. 2,890 km. 9,830 km. Small amp. Micros going on. P. poorly defined, 9,780 km; 0.21h. 29m. 17s. Small amp.
2622 2625 26262 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641	Nov.	1 1 20 21 22 3 3 3 3 3 4 4 4 4 5 5 5 5 6 6 6	5 5 8 e20 e20 e 2 e 2 e 1 4 21	16.8 10.7 27.7 44.5 48.1 43.1 23.9 32.6 22.2 36.5 42.12	8 0	38.5 47.7 34.8 52.9	7 22 15 15 19 e19 20 3 3 5 5 6 8 16 0 12 21 2 14 22 17 20 20	3 2.1 3 2.6 3 32.6 3 43.7 9 20.9 9 40.2 14.7 2.5 29.4 38.2 6.4 16.5 7.6 50.1 38.7 54.9 0.5 24.6 38.6 11.5 11.5 19.1	200 222 8 17 1 1 1 222 222	56.0 19.6 5.4 5.9	Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0 Micros Micros 23 59.0 2 34.0 1 2.0 19 24.0	9 24 27 281 12	N. & S. component. N & S. component. N & S. component: N & S. component; small Micros. 9,800 km. Small amp. Small slow waves. Larger amp. at P. 2,890 km. 9,830 km. Small amp. Micros going on. P. poorly defined, 9,780 km; 0,21h, 29m, 17s.
2622 2625 2626 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644	Nov.	1 10 20 21 20 20 21 20 3 3 3 3 4 4 4 4 5 5 5 5 6 6 6 6 8	5 5 8 e20 e20 e 2 e 2 e 1 4 21	16.8 10.7 27.7 44.5 48.1 43.1 23.9 32.6 22.2 36.5 42.12	8 0	38.5 47.7 34.8 52.9	7 22 15 15 19 19 19 19 19 19 19 19 19 19 19 19 19	3 2.1 3 32.6 3 43.7 2 40.2 14.7 2.5 29.4 38.2 6.4 16.5 7.6 50.1 38.7 54.9 0.5 24.6 38.6 11.5 19.1 16.0	200 222 8 17 1 1 1 222 222	56.0 19.6 5.4 5.9 19.7 20.1	Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0 6 Micros Micros 23 59.0 2 34.0 14 52.0 1 2.0 19 24.0 21 10.0	9 24 27 281 12 94	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp. Small slow waves. Larger amp. at P. 2,890 km. 9,830 km. Small amp. Micros going on. P. poorly defined, 9,780 km; 0.21h. 29m. 17s. Small amp. Small amp. Small amp. Small amp.
2622 2625 2626 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645	Nov	1 10 20 21 20 20 20 20 20 20 20 20 20 20 20 20 20	5 5 8 e20 e20 e 2 e 2 e 1 4 21	16.8 10.7 27.7 44.5 48.1 43.1 23.9 32.6 22.2 36.5 42.12	8 0 21	38.5 47.7 34.8 52.9	7 22 15 15 19 19 19 19 19 19 19 19 19 19 19 19 19	3 2.1 3 2.6 3 32.6 3 43.7 2.5 29.4 38.2 6.4 16.5 7.6 50.1 38.7 54.9 0.5 24.6 38.6 11.5 19.6 11.5 19.6 11.6 10.0 40.6	200 222 8 17 1 1 1 222 222	56.0 19.6 5.4 5.9	Micros Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0 Micros Micros 23 59.0 2 34.0 1 2.0 19 24.0	16 84 9 24 27 281 12 94	N. & S. component. N & S. component. N & S. component: N & S. component; small Micros. 9,800 km. Small amp. Small slow waves. Larger amp. at P. 2,890 km. 9,830 km. Small amp. Micros going on. P. poorly defined, 9,780 km; 0.21h. 29m. 17s. Small amp. Small amp. Small amp. P. & F. masked by high winds
2622 2625 26262 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642	Nov	1 20 21 22 3 3 3 3 3 4 4 4 5 5 5 5 6 6 6 8 9 10	5 5 8 e20 e20 e 2 e 2 e 1 4 21	16.8 10.7 27.7 44.5 48.1 43.1 23.9 32.6 22.2 36.5 42.12	8 0 21	38.5 47.7 34.8 52.9	7 22 15 15 19 19 19 19 19 19 19 19 19 19 19 19 19	3 2.1 3 2.6 3 32.6 3 43.7 2 0.9 2 14.7 2.5 29.4 38.2 6.4 16.5 7.6 54.9 0.5 24.6 38.6 11.5 19.1 16.0 40.6 14.2	2002 222 8 177 1 1 1 222 222 0 3	56.0 19.6 5.4 5.9 19.7 20.1	Micros 19 27.0 19 50.0 21 2.0 1 30.0 5 34.0 6 36.0 10 52.0 6 Micros Micros 23 59.0 2 34.0 14 52.0 1 2.0 19 24.0 21 10.0	9 24 27 281 12 94	N. & S. component. N & S. component. N & S. component; small Micros. 9,800 km. Small amp. Small slow waves. Larger amp. at P. 2,890 km. 9,830 km. Small amp. Micros going on. P. poorly defined, 9,780 km; 0.21h. 29m. 17s. Small amp. Small amp. Small amp. Small amp.

No	Date 1923		P. Commo		S. Commence.	L. W		Ma	r.	End	Max. Amplitude.		
2648	Nov.	16	1100	Wall	4 28.5		2.5	4 3	34.8	5 30.0		Micros masked P.	
2649		16				7 2	26.5			7 40.0		Micros going on.	
2650		17	3	3.6	3 11.9	3 2	22.6	3 :	30.2	5 16.0) 14		
2651		18		1000		22	6.5	-	20.25.4	Micros	13	Micros mask early phase.	
		19					2.2		1 3	Micros		Strong micros prevailing.	
2652	15	19					8.8			HILLOR			
0050		00					27.4			3 40.0		The state of the s	
2653	**	23								18 53.0		Small amp.	
2654	"	25			No.		14.8					Micros going on.	
2655	66	26	e13	28.4	The same		35.1			14 40.0			
2656	6.6	26	e16	28.8	The state of the		31.9			Micros		Small amp.	
2657	66	28				0	42.2			Micros		Small amp.	
200.						0	49.2						
9859	Dec.	2	015	36.2			57.9			Micros			
	Dec.	3	CIO	00.2			57.2			Micros			
2659	1	3	Town.		10	9				Micros			48
	1			-00			0.4			25:	200	N. & S. component, small.	-
2660		5	e7	59.2	1/1/2	8	2.8			Micros	S		
2661		5	E M		1000		22.0				9	Japan.	
						21	31.0			1	- P	P. S. & F. lost, wind effects.	
2662		5	e23	48.5			57.0			1 28.	03	Irregular waves.	
2002		U	020	10.0	U . Manue		11.7			-		N. & S. comp. Micros preceded.	
0000		7					32.0			Micro		Small amp.	
2663	2550	-								HIGIO	5	Cilitati and	
		1165					34.2	line.				G11	
2664		11	151		1		11.1	30		Micro	S	Small.	1
	100		- The		1 12 . 1997	6	14.6	1					
2665	166	12	TO CO.		1	11	31.1			2	and the same	Micros mask F.	
2666			e17	9.9		17	10.1			Micro	s 7		1
2667		15				12	50.72			Micro	s	Micros mask movements.	1
2007		10			A LONG	12	51.9			111010	Sales and the last		1
2665	2	16	e7	51.		7	58.0		-	Miero	os	Irregular, small.	-
2669	Don	- 00				12 12 1							
2008	Dec	. 22				0.7 10	12.4	10	21.	2 11 24	1.0 23	3,120 km. Colombia.	
0070		-	10	5.	1			- Common			-0	o,140 km. Colombia.	100
2670		22			PARTE	e18	13.2	100		18 26	3.0	Vannana	1
			100			18	16.2	1		10 20		Very small.	
2671	66	26	e 3	9.6	32	3	11.2			Miero	20 300		1
2672		27		Sec.	N. Carlotte	i15	3.1			Micro	os	THE RESIDENCE OF THE PARTY OF THE PARTY.	
	The same	2287	113		PALAL	15				STATE OF THE PARTY	Me Constitution	Paper changed at 15h 20m.	1
2673	44	28	019	11			6.5	1		1	E OF TOWN		1
2674		28	1910	11.	12188	18	15.6			Micro	S	N. & S. component.	1
2014		40				23	14.8	3 -		1	9	Wind and mismes	-
			1		Alberta	23	17.0	-		7 200	3 1889	Wind and micros mask phases.	1

MAGNETIC SUMMARY FOR 1923

Toronto (Agincourt) Observatory. Latitude 43° 47′ N. Longitude 79°16′ W. Mean values are from hourly measures of the photographic D, H and Z curves. H and Z are given in C. G.S. units. I is obtained by formula H tan I=Z.

	1	150.5	A STATE OF	MEAN	vs.							EXTE	MES.		
1923	D.	West	H	[.	- 2	1	1	-	D	W	est	Н	el area	Z	
	Mean	Daily range	Mean	Daily		Daily range	Mean		Iax.		Mın.	Max.	Min.	Max.	Min.
January	6 58.6	7.4	.15799	.00022	. 57899	.00003	74 44.2	8.12	13.		6 39.4	.15828	.15753	.57915	.57875
February	6 59.3	6.8	.15794	21	.57895	07	44.4	7	18.	9	6 10.8	.15853	.15695	.57991	.57836
March	7 00.0	8.9	.15790	30	.57889	07	44.6	1	3 07.	4	6 18.6	.16048	.15473	.58061	.57686
April	7 00.3	11.7	.15790	38	.57870	07	44.3	1	20.	9	6 41.7	.15836	.15735	.57887	.57801
May	7 00.4	10.7	.15791	31	.57851	08	44.0		20.	0	6 38.5	.15844	.15710	.57880	.57775
June	7 00.2	11.9	.15790	38	.57858	13	44.1	,	25.	1	6 10.1	.15897	.15709	.57929	.57728
July	7 00.0	9.8	.15788	31	.57849	06	44.1	١,	7 15.	4	6 41.4	.15841	.15708	.57875	.57794
August	7 01.9	10.6	.15782	36	.57827	08	44.0		7 15.	2	6 49.2	.15857	.15732	.57852	.57781
September	7 01.7	10.3	.15777	31	.57817	13	44.2		7 59	.9	5 41.4	.15845	.15560	.58016	.57626
October	7 02.2	6.2	15767	7 22	.57818	13	44.8		7 38	9	5 57.5	.15805	.15606	.57914	.57707
November	7 02.7	6.8	15768	3 17	.57812	2 4	44.6	0	7 16	.1	6 43.2	.15789	.15735	.57823	.57743
December	7 03.4	4.4	.15768	3 10	57798	3 03	44.4		7 18	.3	6 52.4	.15784	.15734	.57812	.57780



Phenological Observations, 1923

DATE WHEN FIRST SEEN.

Canada Thistle, flo'ering	g, May 14	Buttercup	June 14
Dandelion, flowering,	May 14	Robins arrive	April 3
Violet, cultivated Violet, White "	April 23 May 24	Meadow Larks	
Trees appear green	May 11	Blue Birds	April 1
Red Clover, flowering		Flickers	April 26
White Clover " Wild Rose "	June 21 June 12	Swallows	May 1
Maple "	April 19	Song Sparrows	April 2
Crocus, cultiv'd "	April 23	King Birds	May 24
Lilac " Apple, cultiv'ed "	May 28 May 26	Humming birds	May 30
Plum, cultivated "	May 17	Rivers open	April 3
Cherry, wild "	May 23		111-7
Cherry, cultivated "	May 16		