

THE CANADIAN
ASTRONOMICAL HANDBOOK
FOR 1908

PUBLISHED BY

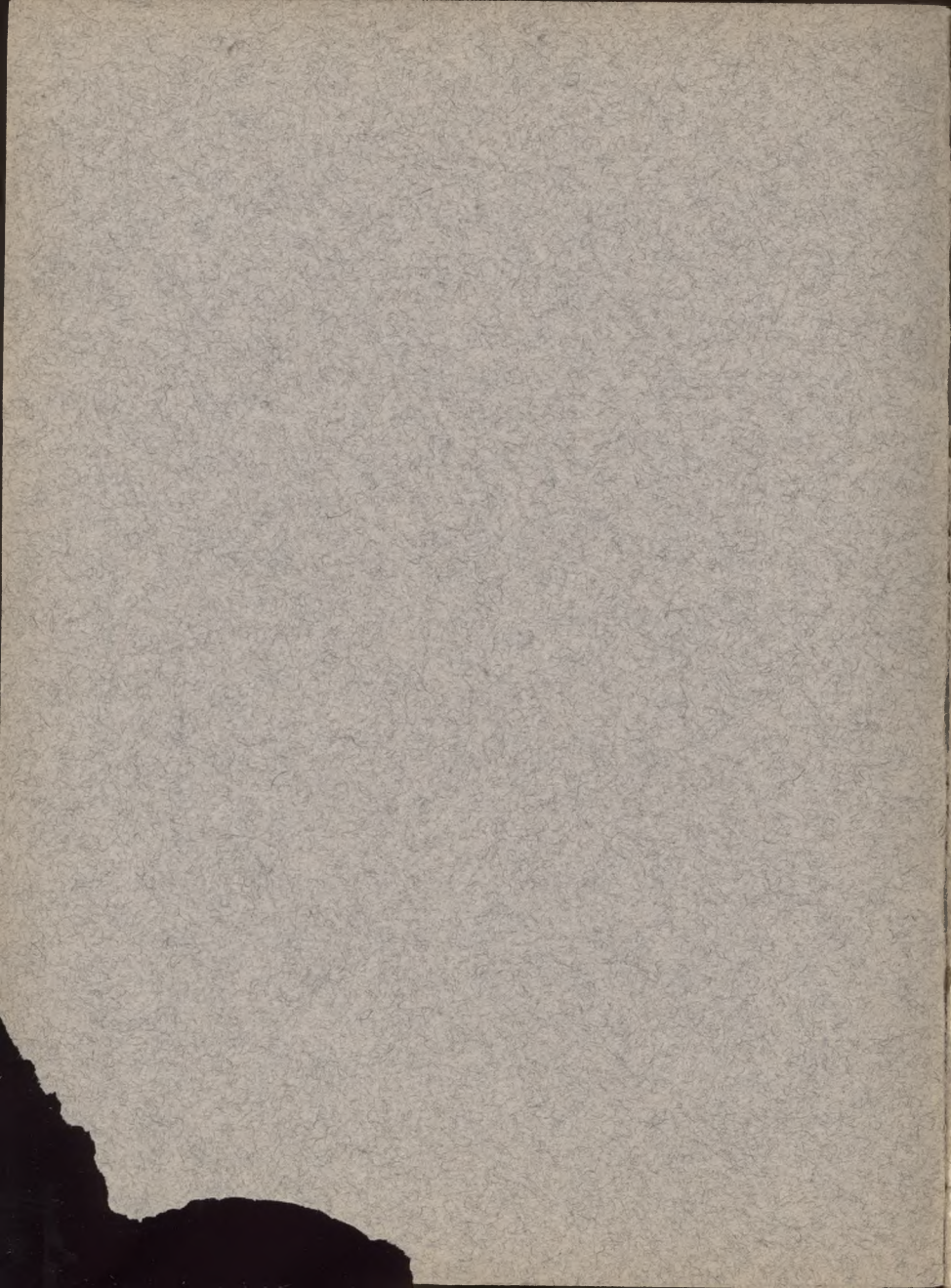
THE ROYAL ASTRONOMICAL
SOCIETY OF CANADA

EDITED BY C. A. CHANT



SECOND YEAR OF PUBLICATION

TORONTO
198 COLLEGE STREET
PRINTED FOR THE SOCIETY
1907



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PREFACE

The first issue of this HANDBOOK was received with much favor, and there is reason for believing that it has decidedly increased the interest in Astronomy throughout the country.

In preparing this, the second issue, the Editor had hoped to make great improvements by utilizing many valuable suggestions received from students and observers in various parts of Canada, but the limited funds available have delayed the realization of these hopes. The enlargement and improvement will be made just as soon as possible.

It is a pleasure to acknowledge assistance received from various members of the Society.

In the Calendar are to be found the Equation of Time, the Sun's Declination, the co-ordinates of Polaris; and in addition the times of rising and setting of the Sun and the Moon for five well-distributed points in Canada, namely, midway between Halifax and St. John, Quebec, Toronto, Winnipeg, and midway between Vancouver and Victoria. For the calculations in the latter we are indebted to Mr. F. L. Blake, of the Toronto Meteorological Observatory.

The summary of the values of the Magnetic Elements for the last six years was supplied by Director Stupart of the Canadian Meteorological Service.

The notes on the Planets will enable ordinary observers to follow their courses throughout the year.

In preparing the Predictions on pages 57 to 81 generous

assistance was given by Messrs. Stewart and Motherwell, of the Dominion Astronomical Observatory, Ottawa.

It was intended to include in this year's publication a paper outlining the uses of a small telescope, and giving an estimate of the cost of such, but for the present this is regretfully held over. For the information of beginners, however, the following works are mentioned:—

Half-hours with the Telescope. By Proctor. (Price 2s. 6d.)

Half-hours with the Stars (price 3s.) and *The Stars in their Seasons* (price 5s.). By the same author. Each contain 12 maps and explanations.

Astronomy with an Opera Glass. By Serviss. (Price \$1.50)

Astronomy Without a Telescope. By Maunder. (Price 5s.)

Anyone desiring information regarding small telescopes might write to Mr. J. R. Collins, 23 North Street, Toronto, Secretary of the R.A.S.C.

Those using the HANDBOOK will confer a favor on the undersigned by communicating suggestions for improvement.

THE EDITOR.

TORONTO, December, 1907.

SYMBOLS AND ABBREVIATIONS

SIGNS OF THE ZODIAC

♈ Aries 0°	♌ Leo 120°	♐ Sagittarius . . . 240°
♉ Taurus 30°	♍ Virgo 150°	♑ Capricornus . . . 270°
♊ Gemini 60°	♎ Libra 180°	♒ Aquarius 300°
♋ Cancer 90°	♏ Scorpio 210°	♓ Pisces 330°

SUN, MOON AND PLANETS

☉ The Sun.	☾ The Moon generally.	♃ Jupiter.
☾ New Moon.	☿ Mercury.	♄ Saturn.
☽ Full Moon.	♀ Venus.	♅ or ♁ Uranus.
☾ First Quarter.	♁ Earth.	♆ Neptune.
☾ Last Quarter.	♂ Mars.	

ASPECTS AND ABBREVIATIONS

- ♌ Conjunction, or having the same Longitude or Right Ascension.
 ♍ Opposition, or differing 180° in Longitude or Right Ascension.
 □ Quadrature, or differing 90° in Longitude or Right Ascension.
 ♍ Ascending Node; ♎ Descending Node.
a or A. R., Right Ascension; *δ* Declination.
h, *m*, *s*, Hours, Minutes, Seconds of Time.
 ° ' " , Degrees, Minutes, Seconds of Arc.

THE GREEK ALPHABET

Α, α, Alpha.	Ι, ι, Iota.	Ρ, ρ, Rho.
Β, β, Beta.	Κ, κ, Kappa.	Σ, σ, ς, Sigma.
Γ, γ, Gamma.	Λ, λ, Lambda.	Τ, τ, Tau.
Δ, δ, Delta.	Μ, μ, Mu.	Υ, υ, Upsilon.
Ε, ε, Epsilon.	Ν, ν, Nu.	Φ, φ, Phi.
Ζ, ζ, Zeta.	Ξ, ξ, Xi.	Χ, χ, Chi.
Η, η, Eta.	Ο, ο, Omicron.	Ψ, ψ, Psi.
Θ, θ, ϑ, Theta.	Π, π, Pi.	Ω, ω, Omega.

CHRONOLOGICAL ERAS AND CYCLES

- The year 1908 of the Gregorian Calendar (established in October, 1582) corresponds to
- “ “ 6621 of the Julian Period;
 - “ “ 5668-5669 of the Jewish Era, the year 5669 commencing at sunset on September 25;
 - “ “ 1326 of the Hegira, the Turkish Calendar, which commences on February 4, 1908.
 - “ “ 1908 of the Julian Calendar (used in Russia, Greece, etc.) begins 13 days later, *i.e.*, Jan. 1 Julian Calendar = Jan. 14 Gregorian Calendar.

Dominical Letters...ED. Epact...27. Solar Cycle...13.
 Roman Indiction.....6. Lunar Cycle or Golden Number.9.

FIXED AND MOVABLE FESTIVALS, ANNIVERSARIES, Etc.

New Year's Day,				Victoria Day.....	May 24
Wednesday.....	Jan.	1	Ascension Day, Holy		
Epiphany.....	“	6	Thursday.....	“	9
Accession of King			Pentecost, Whit-Sun-		
Edward VII.....	“	22	day.....	June 7	
Septuagesima Sun-			Trinity Sunday.....	“	14
day.....	Feb.	16	Corpus Christi.....	“	18
Shrove Sunday.....	Mar.	1	St. John Baptist....	“	24
St. David.....	“	1	Dominion Day,		
Ash Wednesday....	“	4	Wednesday.....	July 1	
First Sunday in			Labor Day, Monday.	Sept. 7	
Lent.....	“	8	Michaelmas Day....	“	29
St. Patrick.....	“	17	King's Birthday....	Nov. 9	
Annunci'n, Lady Day	“	25	First Sunday in Ad-		
Palm Sunday.....	Apr.	12	vent.....	“	29
Good Friday.....	“	17	St. Andrew.....	“	30
Easter Sunday.....	“	19	Queen's Birthday... Dec.	1	
St. George.....	“	23	St. Thomas.....	“	21
Low Sunday.....	“	26	Christmas Day,		
Rogation Sunday... May	24		Friday.....	“	25

STANDARD TIME

On account of the great extent of Canada, it is necessary to use five belts of Standard Time, as follows :—

60th Meridian or Atlantic Time, 4 hrs. west of Greenwich.					
75th	“	“	Eastern	“	5 “ “ “
90th	“	“	Central	“	6 “ “ “
105th	“	“	Mountain	“	7 “ “ “
120th	“	“	Pacific	“	8 “ “ “
135th	“	“	Yukon	“	9 “ “ “

The 60th Meridian passes through Sydney, N.S., and North-West River, Labrador; the 75th is about 30 mls. east of Ottawa, and passes through Philadelphia; the 90th passes through St. Louis, and crosses the west end of Lake Superior about 40 mls. west of Port Arthur; the 105th goes through Denver, and passes about 20 mls. west of Regina; the 120th passes about 20 mls. east of Kamloops, B.C., and 100 mls. east of San Francisco; the 135th passes near Skagway, White Horse and Fort McPherson.

In these places local and standard time will be the same. At places east of the meridian the time shown by a standard clock will be slow of local time; at places west it will be fast of local time.

CALENDAR FOR THE YEAR.

In the tables on the following pages the times of the rising and setting of the Sun and the Moon are given for points midway between Halifax and St. John, Vancouver and Victoria, and for Quebec, Toronto, and Winnipeg, standard time being used throughout, hours numbering from midnight.

For the rising and setting of the Sun the times are given for the upper limb, and are corrected for refraction.

For the Moon the times are for her centre, and are not corrected for refraction.

The Moon's Phases are given in the monthly predictions, near the end of this volume.

JANUARY, 1908

DAY OF YEAR	DAY OF MONTH	DAY OF WEEK	GREENWICH M. NOON		HALIFAX. . . { Lat. 45° 0' } ST. JOHN... { Long. 64 50 }				QUEBEC..... { Lat. 46° 48' } { Long. 71 13 }												
			Sun's Declination	Equation of Time to be subtracted from Mean Time	SUN		MOON		SUN		MOON										
					Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets									
					h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.									
			S.	m. s.																	
1	1	Wed..	23° 5' 47"	3 10.27	7.58	16.48	5.08	14.55	7.32	16.08	4.40	14.14									
2	2	Thur.	23 1 6	3 38.93	7.58	16.49	6.23	15.42	7.32	16.09	5.58	15.02									
3	3	Frid.	22 55 58	4 7.27	7.58	16.50	7.36	16.42	7.32	16.10	7.09	16.00									
4	4	Sat..	22 50 22	4 35.26	7.58	16.51	8.38	17.51	7.32	16.11	8.13	17.09									
5	5	Sun.	22 44 19	5 2.87	7.57	16.52	9.32	19.07	7.31	16.12	9.06	18.24									
6	6	Mon.	22 37 48	5 30.06	7.57	16.53	10.15	20.25	7.31	16.13	9.48	19.42									
7	7	Tues.	22 30 51	5 56.80	7.57	16.54	10.51	21.41	7.31	16.14	10.18	21.05									
8	8	Wed.	22 23 27	6 23.05	7.57	16.55	11.21	22.56	7.31	16.15	10.49	22.20									
9	9	Thur.	22 15 37	6 48.79	7.57	16.56	11.49	a.m.	7.30	16.16	11.14	23.36									
10	10	Frid.	22 7 20	7 13.98	7.56	16.57	12.15	0.10	7.30	16.18	11.40	a.m.									
11	11	Sat..	21 58 38	7 38.62	7.56	16.58	12.40	1.14	7.30	16.19	12.04	0.42									
12	12	Sun.	21 49 29	8 2.66	7.56	17.00	13.07	2.21	7.29	16.20	12.30	1.49									
13	13	Mon.	21 39 56	8 26.09	7.55	17.01	13.35	3.25	7.29	16.21	12.58	2.54									
14	14	Tues.	21 29 57	8 48.89	7.54	17.02	14.08	4.28	7.28	16.22	13.30	3.58									
15	15	Wed.	21 19 33	9 11.04	7.54	17.03	14.46	5.29	7.27	16.24	14.07	5.00									
16	16	Thur.	21 8 45	9 32.52	7.53	17.05	15.30	6.24	7.27	16.25	14.50	5.56									
17	17	Frid.	20 57 32	9 53.32	7.53	17.06	16.19	7.16	7.26	16.26	15.39	6.48									
18	18	Sat..	20 45 56	10 13.43	7.52	17.07	17.13	8.02	7.26	16.27	16.34	7.34									
19	19	Sun.	20 33 56	10 32.83	7.51	17.09	18.11	8.41	7.25	16.28	17.33	8.12									
20	20	Mon.	20 21 32	10 51.51	7.51	17.10	19.11	9.14	7.24	16.30	18.34	8.44									
21	21	Tues.	20 8 46	11 9.46	7.50	17.11	20.13	9.44	7.23	16.31	19.36	9.13									
22	22	Wed.	19 55 37	11 26.67	7.49	17.13	21.15	10.10	7.22	16.33	20.39	9.38									
23	23	Thur.	19 42 5	11 43.13	7.48	17.14	22.17	10.33	7.21	16.34	21.42	10.01									
24	24	Frid.	19 28 12	11 58.83	7.47	17.15	23.21	11.01	7.20	16.35	22.48	10.28									
25	25	Sat..	19 13 57	12 13.77	7.46	17.17	a.m.	11.21	7.19	16.37	23.55	10.46									
26	26	Sun.	18 59 21	12 27.94	7.45	17.18	0.27	11.46	7.18	16.38	a.m.	11.10									
27	27	Mon.	18 44 24	12 41.32	7.44	17.20	1.36	12.11	7.17	16.40	1.04	11.34									
28	28	Tues.	18 29 6	12 53.92	7.43	17.21	2.45	12.47	7.16	16.41	2.14	12.09									
29	29	Wed.	18 13 29	13 5.73	7.42	17.23	3.59	13.28	7.15	16.42	3.31	12.50									
30	30	Thur.	17 57 31	13 16.75	7.41	17.24	5.09	14.20	7.14	16.45	4.42	13.44									
31	31	Frid.	17 41 15	13 26.96	7.40	17.25	6.16	15.23	7.13	16.47	5.49	14.44									

STANDARD TIME.—The rising and setting of the Sun and

JANUARY, 1908

TORONTO... { Lat. 43° 40' Long. 79 24				WINNIPEG { Lat. 49° 53' Long. 97 7				VANCOUVER { Lat. 49° 0' VICTORIA... { Long. 123 12				R.A. OF POLARIS	DECL. OF POLARIS	
SUN		MOON		SUN		MOON		SUN		MOON				
Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets			
h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	° '
7.52	16.52	5.04	15.00	8.28	16.35	5.36	14.53	8.07	16.27	5.25	14.44	1 25	8849	
7.52	16.53	6.20	15.49	8.28	16.36	6.55	15.39	8.07	16.27	6.41	15.28	76s	9"	
7.52	16.54	7.31	16.46	8.28	16.37	8.08	16.35	8.07	16.28	7.56	16.29	74	9	
7.52	16.55	8.35	17.56	8.28	16.39	9.12	17.46	8.07	16.29	8.56	17.40	74	9	
7.52	16.56	9.28	19.10	8.27	16.40	10.03	19.04	8.07	16.30	9.47	19.00	72	10	
7.52	16.57	10.13	20.25	8.27	16.41	10.43	20.24	8.07	16.32	10.25	20.21	71	10	
7.51	16.58	10.46	21.44	8.27	16.42	11.11	21.48	8.06	16.33	10.59	21.41	70	10	
7.51	16.59	11.20	22.57	8.26	16.43	11.41	23.06	8.06	16.34	11.27	22.58	69	10	
7.51	17.01	11.49	a.m.	8.26	16.45	12.04	a.m.	8.06	16.35	11.49	a.m.	68	10	
7.51	17.02	12.18	0.07	8.25	16.46	12.26	0.23	8.05	16.36	12.10	0.16	67	10	
7.50	17.03	12.40	1.12	8.25	16.47	12.47	1.31	8.05	16.38	12.32	1.23	66	10	
7.50	17.04	13.08	2.18	8.24	16.49	13.10	2.43	8.04	16.39	12.57	2.33	65	10	
7.50	17.05	13.37	3.22	8.24	16.50	13.35	3.50	8.04	16.40	13.23	3.39	64	10	
7.49	17.06	14.12	4.24	8.23	16.52	14.05	4.56	8.03	16.42	13.55	4.43	63	10	
7.49	17.07	14.50	5.24	8.23	16.53	14.41	6.02	8.02	16.43	14.33	5.46	62	10	
7.48	17.08	15.34	6.21	8.22	16.54	15.23	6.59	8.01	16.45	15.15	6.42	61	10	
7.48	17.09	16.23	7.13	8.21	16.56	16.11	7.51	8.01	16.46	16.05	7.35	60	10	
7.47	17.10	17.17	7.58	8.21	16.57	17.07	8.35	8.00	16.48	17.01	8.19	59	10	
7.46	17.12	18.15	8.37	8.20	16.58	18.07	9.12	7.59	16.49	18.01	8.55	58	10	
7.46	17.13	19.15	9.12	8.19	17.00	19.11	9.42	7.58	16.51	19.04	9.25	57	10	
7.45	17.14	20.15	9.41	8.18	17.01	20.15	10.08	7.57	16.52	20.08	9.52	56	10	
7.44	17.16	21.16	10.08	8.17	17.03	21.22	10.31	7.56	16.54	21.14	10.15	55	10	
7.44	17.17	22.18	10.38	8.16	17.05	22.28	10.50	7.55	16.55	22.20	10.35	54	10	
7.43	17.18	23.22	10.58	8.15	17.07	23.36	11.15	7.54	16.57	23.28	10.59	53	10	
7.42	17.19	a.m.	11.21	8.13	17.08	a.m.	11.31	7.53	16.59	a.m.	11.15	52	10	
7.41	17.21	0.26	11.47	8.12	17.10	0.44	11.52	7.51	17.00	0.35	11.37	51	10	
7.40	17.22	1.33	12.17	8.11	17.12	1.59	12.14	7.50	17.02	1.48	12.00	50	10	
7.39	17.23	2.43	12.52	8.10	17.13	3.12	12.47	7.49	17.04	3.00	12.35	49	10	
7.38	17.25	3.55	13.34	8.08	17.15	4.31	13.24	7.48	17.05	4.15	13.13	48	10	
7.37	17.26	5.05	14.25	8.07	17.16	5.44	14.14	7.46	17.07	5.28	14.07	47	10	
7.36	17.27	6.13	15.33	8.05	17.18	6.52	15.17	7.45	17.08	6.36	15.09	46	10	

Moon are given in standard time for the places named.

FEBRUARY, 1908

DAY OF YEAR	DAY OF MONTH	DAY OF WEEK	GREENWICH M. NOON		HALIFAX... { Lat. 45° 0' } ST. JOHN... { Long. 64 50				QUEBEC..... { Lat. 46° 48' } { Long. 71 13			
			Sun's Declination	Equation of Time to be subtracted from Mean Time	SUN		MOON		SUN		MOON	
					Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets
			S.	m. s.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
32	1	Sat.	17° 24' 39"	13 36.35	7.39	17.27	7.15	16.35	7.11	16.49	6.48	15.57
33	2	Sun.	17 7 45	13 44.93	7.38	17.28	8.06	17.54	7.10	16.50	7.37	17.17
34	3	Mon.	16 50 33	13 52.69	7.37	17.30	8.44	19.15	7.09	16.52	8.13	18.38
35	4	Tues.	16 33 3	13 59.62	7.36	17.31	9.18	20.33	7.07	16.53	8.46	19.57
36	5	Wed.	16 15 16	14 5.72	7.35	17.32	9.48	21.46	7.06	16.54	9.16	21.11
37	6	Thur.	15 57 12	14 10.99	7.33	17.34	10.15	23.00	7.05	16.56	9.40	22.27
38	7	Frid.	15 38 51	14 15.43	7.32	17.35	10.41	a.m.	7.03	16.58	10.05	23.36
39	8	Sat.	15 20 15	14 19.04	7.30	17.37	11.09	0.08	7.02	17.00	10.33	a.m.
40	9	Sun.	15 1 23	14 21.84	7.29	17.38	11.37	1.16	7.00	17.01	11.00	0.45
41	10	Mon.	14 42 16	14 23.81	7.28	17.39	12.09	2.20	6.59	17.02	11.31	1.50
42	11	Tues.	14 22 55	14 24.99	7.26	17.41	12.45	3.23	6.57	17.03	12.06	2.54
43	12	Wed.	14 3 19	14 25.37	7.25	17.42	13.27	4.20	6.56	17.05	12.37	3.52
44	13	Thur.	13 43 29	14 24.96	7.23	17.44	14.14	5.13	6.55	17.07	13.36	4.45
45	14	Frid.	13 23 26	14 23.78	7.22	17.45	15.07	6.00	6.53	17.10	14.27	5.32
46	15	Sat.	13 3 10	14 21.85	7.20	17.47	16.03	6.42	6.51	17.11	15.24	6.13
47	16	Sun.	12 42 41	14 19.17	7.18	17.48	17.03	7.18	6.49	17.12	16.25	6.48
48	17	Mon.	12 21 59	14 15.76	7.17	17.50	18.06	7.47	6.48	17.13	17.29	7.16
49	18	Tues.	12 1 7	14 11.64	7.15	17.51	19.06	8.13	6.46	17.15	18.30	7.42
50	19	Wed.	11 40 2	14 6.82	7.14	17.52	20.11	8.37	6.45	17.17	19.35	8.05
51	20	Thur.	11 18 47	14 1.32	7.12	17.54	21.13	9.02	6.43	17.18	20.39	8.29
52	21	Frid.	10 57 21	13 55.15	7.10	17.55	22.19	9.25	6.41	17.20	21.47	8.50
53	22	Sat.	10 35 44	13 48.33	7.09	17.57	23.25	9.48	6.39	17.22	23.53	9.12
54	23	Sun.	10 13 58	13 40.89	7.07	17.58	a.m.	10.15	6.38	17.24	a.m.	9.38
55	24	Mon.	9 52 3	13 32.83	7.05	17.59	0.37	10.45	6.36	17.25	0.06	10.08
56	25	Tues.	9 29 58	13 24.18	7.04	18.01	1.44	11.23	6.34	17.26	1.14	10.44
57	26	Wed.	9 7 45	13 14.95	7.02	18.02	2.53	12.07	6.32	17.28	2.25	11.28
58	27	Thur.	8 45 23	13 5.16	7.01	18.03	4.01	13.02	6.30	17.29	3.34	12.23
59	28	Frid.	8 22 54	12 54.83	6.59	18.05	5.00	14.09	6.29	17.30	4.33	14.30
60	29	Sat.	8 0 17	12 43.95	6.57	18.06	5.52	15.23	6.27	17.31	5.24	15.45
...
...

STANDARD TIME.—The rising and setting of the Sun and

FEBRUARY, 1908

TORONTO... { Lat. 43° 40' Long. 79 24				WINNIPEG { Lat. 49° 53' Long. 97 7				VANCOUVER { Lat. 49° 0' VICTORIA... { Long. 123 12				R. A. OF POLARIS	DECL. OF POLARIS	
SUN		MOON		SUN		MOON		SUN		MOON				
Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets			
h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	° '
7.35	17.29	7.12	16.40	8.04	17.20	7.52	16.31	7.44	17.10	7.34	16.25	43s.	1 25	8849
7.34	17.30	8.03	17.58	8.02	17.22	8.36	17.53	7.42	17.12	8.19	17.48			10
7.33	17.31	8.41	19.18	8.01	17.23	9.10	19.18	7.41	17.13	8.54	19.23			10
7.32	17.33	9.16	20.34	7.59	17.25	9.40	20.41	7.39	17.15	9.23	20.43			10
7.31	17.34	9.47	21.47	7.58	17.27	10.06	21.58	7.38	17.17	9.49	21.51			10
7.30	17.35	10.15	22.59	7.56	17.29	10.27	23.16	7.36	17.18	10.11	23.08			10
7.29	17.37	10.42	a.m.	7.55	17.30	10.50	a.m.	7.35	17.20	10.34	a.m.			10
7.27	17.38	11.11	0.07	7.53	17.32	11.13	0.28	7.33	17.22	10.59	0.19			9
7.26	17.40	11.40	1.13	7.52	17.34	11.38	1.40	7.31	17.23	11.25	1.29			9
7.24	17.41	12.31	2.17	7.50	17.35	12.06	2.47	7.30	17.25	11.56	2.34			9
7.23	17.43	12.49	3.19	7.49	17.37	12.39	3.54	7.28	17.27	12.30	3.40			9
7.21	17.44	13.31	4.16	7.47	17.39	13.19	4.53	7.27	17.28	13.13	4.38			9
7.20	17.45	14.19	5.08	7.45	17.41	14.06	5.47	7.25	17.30	13.59	5.32			9
7.19	17.47	15.11	5.56	7.44	17.42	15.00	6.34	7.23	17.32	14.54	6.18			9
7.17	17.48	16.07	6.38	7.42	17.44	15.58	7.14	7.21	17.33	15.52	6.58			9
7.15	17.49	17.06	7.14	7.40	17.46	17.02	7.47	7.20	17.35	16.55	7.29			8
7.14	17.50	18.09	7.44	7.38	17.48	18.08	8.12	7.18	17.37	18.00	7.55			8
7.13	17.51	19.08	8.11	7.36	17.49	19.11	8.35	7.16	17.38	19.02	8.19			8
7.12	17.52	20.12	8.36	7.34	17.51	20.20	8.55	7.14	17.40	20.12	8.40			8
7.10	17.54	21.13	9.01	7.32	17.52	21.26	9.17	7.12	17.41	21.17	9.01			8
7.08	17.56	22.18	9.26	7.30	17.54	22.36	9.36	7.10	17.43	22.27	9.19			7
7.07	17.57	23.23	9.49	7.29	17.55	23.46	9.56	7.09	17.45	23.36	9.39			7
7.05	17.59	a.m.	10.17	7.27	17.57	a.m.	10.18	7.07	17.46	a.m.	10.04			7
7.03	18.00	0.35	10.49	7.25	17.59	1.03	10.46	7.05	17.48	0.51	10.32			7
7.01	18.01	1.41	11.28	7.23	18.01	2.13	11.20	7.03	17.50	2.00	11.10			7
6.59	18.02	2.50	12.12	7.21	18.02	3.26	12.01	7.01	17.51	3.11	11.52			6
6.58	18.04	3.57	13.08	7.19	18.04	4.37	12.55	6.59	17.53	4.21	12.48			6
6.57	18.05	4.56	14.14	7.17	18.06	5.36	14.04	6.57	17.54	5.20	13.57			6
6.55	18.06	5.49	15.28	7.15	18.07	6.26	15.21	6.55	17.56	6.09	15.16			6
...
...

Moon are given in standard time for the places named.

MARCH, 1908

DAY OF YEAR	DAY OF MONTH	DAY OF WEEK	GREENWICH M. NOON		HALIFAX... { Lat. 45° 0' ST. JOHN... { Long. 64 50				QUEBEC..... { Lat. 46° 48' Long. 71 13			
			Sun's Declination	Equation of Time to be subtracted from Mean Time	SUN		MOON		SUN		MOON	
					Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets
			S.	m. s.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
61	1	Sun.	7° 37' 33"	12 32.56	6.55	18.07	6.36	16.42	6.25	17.32	6.05	16.06
62	2	Mon.	7 14 42	12 20.67	6.53	18.09	7.14	18.03	6.23	17.33	6.42	17.27
63	3	Tues.	6 51 45	12 8.28	6.52	18.10	7.44	19.21	6.21	17.35	7.11	18.48
64	4	Wed.	6 28 43	11 55.41	6.50	18.12	8.13	20.36	6.19	17.37	7.39	20.04
65	5	Thur.	6 5 35	11 42.08	6.48	18.13	8.40	21.48	6.17	17.38	8.04	21.17
66	6	Frid.	5 42 22	11 28.29	6.46	18.14	9.07	22.59	6.15	17.39	8.30	22.28
67	7	Sat.	5 19 4	11 14.08	6.44	18.15	9.36	a.m.	6.13	17.40	8.58	23.37
68	8	Sun.	4 55 42	10 59.45	6.42	18.17	10.06	0.07	6.11	17.42	9.27	a.m.
69	9	Mon.	4 32 17	10 44.43	6.41	18.18	10.42	1.13	6.09	17.44	10.02	0.45
70	10	Tue.	4 8 48	10 29.03	6.39	18.19	11.22	2.12	6.08	17.45	10.42	1.44
71	11	Wed.	3 45 16	10 13.27	6.37	18.21	12.07	3.09	6.06	17.47	11.27	2.41
72	12	Thur.	3 21 42	9 57.18	6.35	18.22	12.58	3.58	6.04	17.48	12.19	3.30
73	13	Frid.	2 58 5	9 40.79	6.33	18.23	13.55	4.41	6.02	17.50	13.16	4.12
74	14	Sat.	2 34 27	9 24.10	6.31	18.25	14.53	5.28	6.00	17.51	14.15	4.59
75	15	Sun.	2 10 47	9 7.14	6.30	18.26	15.53	5.49	5.58	17.52	15.16	5.19
76	16	Mon.	1 47 6	8 49.94	6.28	18.27	16.59	6.17	5.56	17.53	16.23	5.46
77	17	Tue.	1 23 24	8 32.52	6.26	18.29	18.02	6.42	5.54	17.54	17.26	6.10
78	18	Wed.	0 59 42	8 14.90	6.24	18.30	19.05	7.06	5.52	17.56	18.30	6.33
79	19	Thur.	0 35 59	7 57.10	6.22	18.31	20.12	7.29	5.50	17.57	19.39	6.54
80	20	Frid.	S. 12 17	7 39.16	6.20	18.33	21.17	7.53	5.48	17.59	20.45	7.17
81	21	Sat.	N. 11 25	7 21.09	6.18	18.34	22.25	8.17	5.46	18.01	21.54	7.41
82	22	Sun.	0 35 5	7 2.92	6.16	18.35	23.36	8.47	5.44	18.02	23.06	8.10
83	23	Mon.	0 58 45	6 44.67	6.14	18.36	a.m.	9.21	5.42	18.04	a.m.	8.43
84	24	Tue.	1 22 22	6 26.36	6.13	18.37	0.42	10.03	5.40	18.05	0.13	9.23
85	25	Wed.	1 45 58	6 8.02	6.11	18.39	1.51	10.53	5.38	18.06	1.24	10.14
86	26	Thur.	2 9 32	5 49.66	6.09	18.40	2.53	11.55	5.36	18.07	2.35	11.16
87	27	Frid.	2 33 3	5 31.31	6.07	18.41	3.45	13.03	5.34	18.09	3.18	12.25
88	28	Sat.	2 56 31	5 12.99	6.05	18.43	4.32	14.18	5.32	18.10	4.03	13.41
89	29	Sun.	3 19 55	4 54.71	6.03	18.44	5.10	15.36	5.30	18.12	4.39	14.59
90	30	Mon.	3 43 16	4 36.48	6.01	18.45	5.42	16.53	5.28	18.13	5.10	16.17
91	31	Tue.	4 6 33	4 18.32	5.59	18.47	6.11	18.10	5.26	18.14	5.39	17.35

STANDARD TIME.—The rising and setting of the Sun and

MARCH, 1908

TORONTO... { Lat. 43° 40' Long. 79 24				WINNIPEG { Lat. 49° 53' Long. 97 7				VANCOUVER { Lat. 49° 0' VICTORIA... { Long. 123 12				R. A. OF POLARIS	DECL. OF POLARIS
SUN		MOON		SUN		MOON		SUN		MOON			
Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets		
h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	° '
6.53	18.08	6.33	16.44	7.12	18.09	7.04	16.43	6.53	17.58	6.47	16.38	1.25	8848
6.51	18.09	7.11	18.04	7.10	18.11	7.39	18.08	6.51	17.59	7.22	18.02	16s.	66"
6.49	18.10	7.44	19.22	7.08	18.12	8.03	19.31	6.49	18.01	7.47	19.25	15	65
6.48	18.11	8.12	20.36	7.06	18.14	8.29	20.51	6.47	18.02	8.12	20.42	14	65
6.47	18.12	8.40	21.48	7.04	18.16	8.51	22.07	6.45	18.04	8.35	21.58	13	65
6.45	18.13	9.08	22.57	7.02	18.18	9.14	23.23	6.43	18.05	8.59	23.13	12	64
6.43	18.14	9.37	a.m.	7.00	18.19	9.39	a.m.	6.41	18.07	9.25	a.m.	12	64
6.41	18.16	10.10	0.05	6.58	18.21	10.05	0.34	6.39	18.08	9.53	0.23	11	64
6.39	18.18	10.44	1.09	6.55	18.23	10.38	1.44	6.37	18.10	10.27	1.29	11	64
6.38	18.19	11.27	2.09	6.54	18.24	11.16	2.46	6.35	18.11	11.07	2.30	10	63
6.36	18.20	12.12	3.04	6.52	18.26	11.59	3.45	6.33	18.13	11.52	3.28	10	63
6.35	18.22	13.04	3.52	6.49	18.27	12.51	4.34	6.30	18.15	12.43	4.17	9	63
6.33	18.23	14.00	4.36	6.47	18.29	13.49	5.15	6.28	18.16	13.43	4.58	9	63
6.31	18.24	14.58	5.23	6.45	18.30	14.50	5.58	6.26	18.18	14.44	5.41	8	62
6.29	18.25	15.59	5.46	6.42	18.32	15.54	6.16	6.24	18.19	15.47	5.59	7	62
6.27	18.26	17.00	6.15	6.40	18.34	17.03	6.41	6.22	18.21	16.55	6.24	7	62
6.25	18.27	18.03	6.40	6.38	18.36	18.11	7.02	6.20	18.22	18.03	6.46	6	61
6.24	18.29	19.05	7.05	6.36	18.37	19.17	7.22	6.18	18.24	19.09	7.06	6	61
6.22	18.30	20.10	7.28	6.34	18.39	20.28	7.41	6.16	18.26	20.20	7.25	5	61
6.20	18.31	21.15	7.54	6.32	18.40	21.37	8.02	6.13	18.27	21.28	7.46	5	60
6.18	18.32	22.22	8.20	6.30	18.42	22.49	8.21	6.11	18.29	22.38	8.07	5	60
6.16	18.33	23.31	8.50	6.27	18.43	a.m.	8.48	6.09	18.30	23.52	8.35	4	60
6.14	18.34	a.m.	9.26	6.25	18.45	0.05	9.19	6.07	18.31	a.m.	9.08	4	60
6.12	18.36	0.40	10.09	6.23	18.46	1.15	9.57	6.05	18.33	1.01	9.48	4	59
6.11	18.37	1.47	10.58	6.21	18.48	2.26	10.45	6.03	18.35	2.11	10.38	4	59
6.09	18.38	2.49	11.59	6.19	18.49	3.29	11.48	6.01	18.36	3.13	11.41	3	59
6.08	18.39	3.41	13.06	6.17	18.51	4.20	12.59	5.59	18.38	4.03	12.53	3	59
6.06	18.41	4.28	14.11	6.14	18.52	5.02	14.17	5.57	18.39	4.45	14.12	3	58
6.04	18.42	5.07	15.38	6.12	18.54	5.36	15.39	5.54	18.41	5.20	15.34	2	58
6.02	18.43	5.40	16.56	6.10	18.55	6.04	17.01	5.52	18.42	5.48	16.55	2	58
6.00	18.44	6.10	18.11	6.08	18.57	6.29	18.22	5.50	18.44	6.12	18.15	2	57

Moon are given in standard time for the places named.

APRIL, 1908

DAY OF YEAR	DAY OF MONTH	DAY OF WEEK	GREENWICH M. NOON		HALIFAX... { Lat. 45° 0' St. JOHN... { Long. 64 50				QUEBEC..... { Lat. 46° 48' { Long. 71 13			
			Sun's Declination	Equation of Time to be subtracted	SUN		MOON		SUN		MOON	
				added to Mean Time	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets
			N.	m. s.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
92	1	Wed.	4° 29' 45"	4 0.26	5.57	18.48	6.42	19.24	5.24	18.16	6.08	18.51
93	2	Thur.	4 52 52	3 42.30	5.56	18.49	7.06	20.38	5.22	18.17	6.30	20.06
94	3	Frid.	5 15 54	3 24.46	5.54	18.50	7.33	21.50	5.20	18.19	6.56	21.19
95	4	Sat.	5 38 51	3 6.75	5.52	18.51	8.03	22.57	5.18	18.20	7.26	22.27
96	5	Sun.	6 1 42	2 49.19	5.50	18.53	8.36	a.m.	5.16	18.21	7.58	23.32
97	6	Mon.	6 24 26	2 31.80	5.48	18.54	9.15	0.01	5.14	18.23	8.35	a.m.
98	7	Tues.	6 47 3	2 14.59	5.47	18.55	10.00	1.00	5.12	18.24	9.20	0.32
99	8	Wed.	7 9 34	1 57.58	5.45	18.56	10.50	1.53	5.10	18.25	10.10	1.25
100	9	Thur.	7 31 57	1 40.79	5.43	18.58	11.44	2.39	5.08	18.27	11.04	2.11
101	10	Frid.	7 54 12	1 24.23	5.41	18.59	12.43	3.17	5.06	18.29	12.04	2.48
102	11	Sat.	8 16 20	1 7.93	5.39	19.00	13.44	3.51	5.04	18.30	13.06	3.21
103	12	Sun.	8 38 19	0 51.90	5.38	19.01	14.45	4.20	5.02	18.32	14.08	3.49
104	13	Mon.	9 0 9	0 36.16	5.36	19.03	15.49	4.47	5.00	18.33	15.13	4.15
105	14	Tues.	9 21 50	0 20.73	5.34	19.04	16.53	5.10	4.59	18.34	16.18	4.38
106	15	Wed.	9 43 22	0 5.63	5.32	19.05	17.59	5.32	4.57	18.35	17.26	4.59
107	16	Thur.	10 4 44	0 9.12	5.30	19.07	19.06	5.55	4.55	18.36	18.34	5.20
108	17	Frid.	10 25 56	0 23.51	5.29	19.08	20.15	6.20	4.53	18.37	19.44	5.44
109	18	Sat.	10 46 58	0 37.52	5.27	19.09	21.26	6.48	4.51	18.38	20.55	6.11
110	19	Sun.	11 7 49	0 51.12	5.25	19.10	22.36	7.21	4.50	18.39	22.07	6.43
111	20	Mon.	11 20 30	1 4.30	5.24	19.11	23.45	8.00	4.48	18.41	23.18	7.21
112	21	Tues.	11 48 59	1 17.05	5.22	19.13	a.m.	8.48	4.47	18.42	a.m.	8.09
113	22	Wed.	12 9 16	1 29.35	5.20	19.14	0.48	9.47	4.46	18.43	0.21	9.08
114	23	Thur.	12 29 22	1 41.18	5.19	19.15	1.44	10.53	4.44	18.45	1.17	10.14
115	24	Frid.	12 49 15	1 52.53	5.17	19.17	2.31	12.04	4.42	18.47	2.02	11.26
116	25	Sat.	13 8 56	2 3.39	5.16	19.18	3.12	13.19	4.40	18.48	2.42	12.42
117	26	Sun.	13 28 24	2 13.75	5.14	19.19	3.43	14.34	4.38	18.58	3.12	13.58
118	27	Mon.	13 47 39	2 23.60	5.13	19.20	4.11	15.49	4.37	18.51	3.39	15.14
119	28	Tues.	14 6 41	2 32.94	5.11	19.21	4.39	17.04	4.35	18.52	4.06	16.31
120	29	Wed.	14 25 28	2 41.75	5.10	19.23	5.04	18.15	4.33	18.54	4.29	17.43
121	30	Thur.	14 44 2	2 50.04	5.08	19.24	5.32	19.26	4.31	18.55	4.56	18.55
...

STANDARD TIME.—The rising and setting of the Sun and

APRIL, 1908

TORONTO... { Lat. 43° 40' Long. 79 24				WINNIPEG { Lat. 49° 53' Long. 97 7				VANCOUVER { Lat. 49° 0' VICTORIA... { Long. 123 12				R. A. OF POLARIS	DECL. OF POLARIS	
SUN		MOON		SUN		MOON		SUN		MOON				
Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets			
h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	o'
5.58	18.45	6.43	19.23	6.06	18.59	6.55	19.40	5.48	18.45	6.40	19.33	1	25	8848
5.56	18.46	7.08	20.35	6.04	19.00	7.14	20.59	5.46	18.47	6.59	20.50	2	2s.	57"
5.54	18.47	7.36	21.46	6.01	19.02	7.36	22.14	5.44	18.48	7.23	22.04	1		56
5.53	18.49	8.06	22.53	5.59	19.03	8.03	23.25	5.42	18.49	7.52	23.13	1		56
5.51	18.50	8.40	23.56	5.57	19.05	8.32	a.m.	5.40	18.51	8.24	a.m.	2		56
5.49	18.51	9.20	a.m.	5.55	19.06	9.08	0.33	5.38	18.53	9.01	0.19	2		55
5.48	18.53	10.05	0.55	5.53	19.08	9.52	1.34	5.36	18.54	9.45	1.19	2		55
5.47	18.54	10.55	1.48	5.51	19.10	10.42	2.29	5.33	18.56	10.36	2.11	2		55
5.45	18.55	11.48	2.35	5.49	19.12	11.37	3.14	5.32	18.57	11.31	2.56	1		55
5.44	18.56	12.47	3.13	5.47	19.13	12.38	3.49	5.30	18.58	12.33	3.31	1		54
5.42	18.57	13.47	3.47	5.45	19.15	13.43	4.19	5.28	19.00	13.37	4.01	1		54
5.40	18.58	14.47	4.17	5.42	19.16	14.47	4.45	5.26	19.01	14.40	4.29	1		54
5.38	18.59	15.50	4.45	5.40	19.17	15.56	5.08	5.23	19.03	15.48	4.51	1		53
5.36	19.01	16.54	5.09	5.38	19.19	17.04	5.27	5.21	19.05	16.56	5.11	1		53
5.34	19.02	17.58	5.32	5.36	19.21	18.14	5.46	5.19	19.06	18.06	5.30	1		53
5.32	19.03	19.05	5.56	5.35	19.23	19.24	6.05	5.17	19.08	19.16	5.49	1		52
5.31	19.04	20.13	6.21	5.33	19.25	20.39	6.26	5.16	19.09	20.28	6.12	2		52
5.29	19.05	21.24	6.51	5.31	19.26	21.53	6.51	5.14	19.10	21.41	6.36	2		52
5.27	19.07	22.33	7.26	5.29	19.28	23.08	7.20	5.12	19.12	22.53	7.09	2		51
5.26	19.08	23.42	8.05	5.27	19.29	a.m.	7.55	5.10	19.13	a.m.	7.46	3		51
5.24	19.09	a.m.	8.54	5.24	19.30	0.20	8.40	5.08	19.15	0.04	8.34	3		51
5.23	19.10	0.44	9.53	5.22	19.32	1.24	9.39	5.06	19.17	1.07	9.34	3		51
5.22	19.11	1.40	10.58	5.20	19.33	2.19	10.45	5.04	19.18	2.02	10.42	3		50
5.20	19.12	2.28	12.09	5.18	19.35	3.03	12.02	5.02	19.19	2.45	11.58	4		50
5.18	19.14	3.10	13.23	5.16	19.36	3.40	13.21	5.01	19.21	3.22	13.16	4		50
5.16	19.15	3.41	14.36	5.14	19.38	4.07	14.41	4.59	19.22	3.50	14.33	4		49
5.15	19.16	4.10	15.50	5.12	19.39	4.30	16.00	4.57	19.24	4.13	15.53	4		49
5.14	19.17	4.39	17.04	5.10	19.41	4.54	17.17	4.55	19.25	4.37	17.11	5		49
5.12	19.18	5.05	18.14	5.09	19.42	5.16	18.34	4.54	19.27	4.58	18.26	5		49
5.11	19.19	5.31	19.24	5.07	19.44	5.39	19.50	4.52	19.28	5.24	19.40	5		48
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Moon are given in standard time for the places named.

MAY, 1908

DAY OF YEAR	DAY OF MONTH	DAY OF WEEK	GREENWICH M. NOON		HALIFAX... { Lat. 45° 0' } ST. JOHN... { Long 64 50				QUEBEC..... { Lat. 46°48' } { Long. 71 13				
			Sun's Declination	Equation of Time to be added to Mean Time	SUN		MOON		SUN		MOON		
					Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	
					h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	
			N.	m. s.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
122	1	Frid.	15° 2' 21"	2 57.80	5.06	19.25	5.59	20.36	4.30	18.54	5.24	20.11	
123	2	Sat.	15 20 25	3 5.03	5.05	19.27	6.31	21.45	4.28	18.55	5.55	21.20	
124	3	Sun.	15 38 13	3 11.72	5.03	19.28	7.09	22.48	4.27	18.57	6.30	22.23	
125	4	Mon.	15 55 47	3 17.86	5.02	19.29	7.51	23.41	4.25	18.58	7.11	23.19	
126	5	Tues.	16 13 4	3 23.47	5.01	19.30	8.39	a.m.	4.24	18.59	7.59	a.m.	
127	6	Wed.	16 30 5	3 28.54	4.59	19.31	9.33	0.35	4.22	19.00	8.53	0.09	
128	7	Thur.	16 46 50	3 33.05	4.58	19.33	10.30	1.16	4.21	19.02	9.52	0.51	
129	8	Frid.	17 3 17	3 37.02	4.57	19.34	11.29	1.53	4.19	19.03	10.53	1.26	
130	9	Sat.	17 19 28	3 40.43	4.55	19.35	12.31	2.23	4.18	19.04	11.55	1.54	
131	10	Sun.	17 35 21	3 43.28	4.54	19.36	13.34	2.49	4.17	19.06	13.00	2.19	
132	11	Mon.	17 50 57	3 45.57	4.53	19.37	14.39	3.13	4.15	19.07	14.05	2.43	
133	12	Tues.	18 6 14	3 47.31	4.52	19.39	15.42	3.36	4.14	19.08	15.10	3.00	
134	13	Wed.	18 21 13	3 48.49	4.51	19.40	16.50	3.58	4.13	19.09	16.17	3.20	
135	14	Thur.	18 35 54	3 49.10	4.49	19.41	17.59	4.23	4.11	19.11	17.30	3.40	
136	15	Frid.	18 50 16	3 49.15	4.48	19.42	19.12	4.49	4.10	19.12	18.42	4.10	
137	16	Sat.	19 4 19	3 48.63	4.47	19.43	20.24	5.20	4.09	19.13	19.57	4.40	
138	17	Sun.	19 18 2	3 47.55	4.46	19.44	21.34	5.58	4.08	19.14	21.19	5.10	
139	18	Mon.	19 31 26	3 45.89	4.45	19.45	22.40	6.43	4.07	19.16	22.16	6.00	
140	19	Tues.	19 44 30	3 43.67	4.44	19.46	23.41	7.39	4.06	19.17	23.16	6.50	
141	20	Wed.	19 57 14	3 40.89	4.44	19.47	a.m.	8.43	4.04	19.18	a.m.	8.00	
142	21	Thur.	20 9 38	3 37.54	4.43	19.48	0.31	9.54	4.03	19.19	0.05	9.10	
143	22	Frid.	20 21 41	3 33.64	4.42	19.50	1.13	11.09	4.02	19.20	0.45	10.30	
144	23	Sat.	20 33 23	3 29.19	4.41	19.51	1.48	12.24	4.01	19.21	1.19	11.40	
145	24	Sun.	20 44 44	3 24.20	4.40	19.52	2.16	13.38	4.01	19.22	1.46	13.00	
146	25	Mon.	20 55 44	3 18.67	4.39	19.53	2.43	14.48	4.00	19.23	2.11	14.10	
147	26	Tues.	21 6 23	3 12.63	4.38	19.53	3.09	16.01	3.59	19.25	2.35	15.30	
148	27	Wed.	21 16 39	3 6.09	4.38	19.54	3.34	17.12	3.58	19.26	2.59	16.40	
149	28	Thur.	21 26 34	2 59.06	4.37	19.55	4.00	18.21	3.57	19.27	3.25	17.50	
150	29	Frid.	21 36 6	2 51.56	4.36	19.56	4.30	19.30	3.56	19.28	3.53	19.00	
151	30	Sat.	21 45 17	2 43.61	4.36	19.57	5.05	20.35	3.56	19.29	4.26	20.10	
152	31	Sun.	21 54 4	2 35.22	4.35	19.58	5.45	21.34	3.55	19.30	5.05	21.00	

STANDARD TIME.—The rising and setting of the Sun at

MAY, 1908

TORONTO... { Lat. 43° 40' Long. 79 24				WINNIPEG { Lat. 49° 53' Long. 97 7				VANCOUVER { Lat. 49° 0' VICTORIA... { Long.123 12				R.A. OF POLARIS	DECL. OF POLARIS
SUN		MOON		SUN		MOON		SUN		MOON			
Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets		
h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h.m.	° /
5.10	19.20	6.04	20.36	5.05	19.46	6.02	21.06	4.50	19.30	5.48	20.52	6s.	8848
5.08	19.21	6.37	21.43	5.04	19.47	6.30	22.18	4.48	19.31	6.19	22.03	7	48
5.07	19.22	7.13	22.44	5.02	19.49	7.03	23.22	4.47	19.33	6.54	23.07	7	47
5.06	19.23	7.56	23.40	5.00	19.50	7.43	a.m.	4.45	19.34	7.35	a.m.	8	47
5.04	19.24	8.44	a.m.	4.58	19.52	8.30	0.20	4.43	19.36	8.24	0.00	8	47
5.03	19.25	9.38	0.30	4.57	19.53	9.24	1.08	4.42	19.37	9.19	0.54	9	47
5.02	19.26	10.35	1.12	4.55	19.55	10.24	1.49	4.40	19.38	10.17	1.33	9	46
5.00	19.28	11.35	1.49	4.53	19.56	11.27	2.22	4.39	19.40	11.20	2.05	10	46
4.59	19.29	12.35	2.20	4.52	19.58	12.32	2.49	4.37	19.41	12.25	2.32	10	46
4.58	19.30	13.38	2.47	4.50	19.59	13.40	3.11	4.36	19.43	13.30	2.56	11	46
4.57	19.31	14.40	3.13	4.49	20.01	14.47	3.32	4.34	19.44	14.40	3.17	11	45
4.56	19.32	15.43	3.35	4.47	20.02	15.55	3.50	4.33	19.45	15.46	3.35	12	45
4.54	19.33	16.48	3.59	4.46	20.03	17.05	4.09	4.32	19.47	16.59	3.53	12	45
4.53	19.34	17.58	4.24	4.44	20.05	18.21	4.30	4.30	19.48	18.11	4.15	13	45
4.52	19.35	19.08	4.52	4.43	20.06	19.36	4.53	4.29	19.49	19.27	4.37	14	44
4.51	19.36	20.20	5.24	4.42	20.08	20.53	5.20	4.28	19.51	20.35	5.08	15	44
4.50	19.38	21.30	6.02	4.40	20.09	22.08	5.53	4.26	19.52	21.55	5.44	16	44
4.49	19.39	22.37	6.49	4.39	20.10	23.17	6.36	4.25	19.53	23.00	6.28	16	44
4.48	19.40	23.37	7.44	4.38	20.12	a.m.	7.30	4.24	19.55	a.m.	7.25	17	44
4.47	19.41	a.m.	8.49	4.37	20.13	0.16	8.36	4.23	19.56	0.01	8.30	17	43
4.46	19.42	0.28	9.59	4.35	20.14	1.04	9.50	4.22	19.57	0.47	9.45	18	43
4.45	19.43	1.09	11.13	4.34	20.16	1.41	11.09	4.21	19.58	1.25	11.04	19	43
4.45	19.44	1.45	12.27	4.33	20.17	2.12	12.28	4.20	20.00	1.57	12.21	19	43
4.44	19.45	2.15	13.39	4.32	20.18	2.36	13.45	4.19	20.01	2.20	13.40	20	43
4.43	19.46	2.42	14.51	4.31	20.19	2.58	15.02	4.18	20.02	2.43	14.54	21	42
4.42	19.47	3.09	16.02	4.30	20.21	3.19	16.19	4.17	20.03	3.03	16.10	22	42
4.42	19.48	3.35	17.11	4.29	20.22	3.40	17.33	4.16	20.04	3.26	17.24	23	42
4.41	19.48	4.03	18.19	4.28	20.23	4.04	18.47	4.15	20.05	3.49	18.35	24	42
4.40	19.49	4.34	19.27	4.27	20.24	4.30	20.00	4.14	20.07	4.18	19.46	25	42
4.40	19.50	5.09	20.31	4.26	20.25	5.00	21.08	4.13	20.08	4.51	20.54	25	42
4.39	19.51	5.50	21.30	4.26	20.26	5.38	22.09	4.13	20.08	5.30	21.53	26	41

Moon are given in standard time for the places named.

JUNE, 1908

DAY OF YEAR	DAY OF MONTH	DAY OF WEEK	GREENWICH M. NOON		HALIFAX... { Lat. 45° 0' St. JOHN... { Long. 64 50				QUEBEC..... { Lat. 46° 48' { Long. 71 13			
			Sun's Declination	Equation of Time to be added to	SUN		MOON		SUN		MOON	
				subtracted from Mean Time	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets
			N.	m. s.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
153	1	Mon.	22° 2' 28"	2 26.42	4.35	19.59	6.30	22.29	3.54	19.30	5.49	22.02
154	2	Tues.	22 10 30	2 17.23	4.34	20.00	7.21	23.13	3.54	19.31	6.42	22.48
155	3	Wed.	22 18 8	2 7.67	4.34	20.01	8.18	23.51	3.53	19.32	7.38	23.26
156	4	Thur.	22 25 23	1 57.74	4.33	20.02	9.17	a.m.	3.53	19.33	8.39	23.57
157	5	Frid.	22 32 14	1 47.48	4.33	20.02	10.18	0.23	3.52	19.34	9.42	a.m.
158	6	Sat.	22 38 42	1 36.90	4.32	20.03	11.19	0.52	3.51	19.35	10.45	0.23
159	7	Sun.	22 44 46	1 26.03	4.32	20.03	12.23	1.16	3.51	19.35	11.48	0.46
160	8	Mon.	22 50 26	1 14.88	4.32	20.04	13.25	1.38	3.51	19.36	12.53	1.07
161	9	Tues.	22 55 41	1 3.84	4.32	20.05	14.31	2.01	3.51	19.37	13.59	1.29
162	10	Wed.	23 0 33	0 51.84	4.32	20.05	15.37	2.23	3.51	19.37	15.09	1.51
163	11	Thur.	23 5 0	0 39.98	4.31	20.06	16.47	2.48	3.50	19.38	16.19	2.14
164	12	Frid.	23 9 3	0 27.93	4.31	20.06	18.00	3.16	3.50	19.39	17.34	2.41
165	13	Sat.	23 12 41	0 15.70	4.31	20.07	19.13	3.50	3.50	19.39	18.48	3.14
166	14	Sun.	23 15 55	0 3.31	4.31	20.07	20.24	4.32	3.50	19.40	20.00	3.54
167	15	Mon.	23 18 44	0 9.23	4.31	20.08	21.30	5.25	3.50	19.40	21.05	4.46
168	16	Tues.	23 21 9	0 21.89	4.31	20.08	22.27	6.29	3.50	19.41	22.03	5.48
169	17	Wed.	23 23 9	0 34.66	4.31	20.08	23.12	7.39	3.50	19.41	22.46	7.01
170	18	Thur.	23 24 44	0 47.52	4.31	20.09	23.50	8.57	3.50	19.42	23.21	8.19
171	19	Frid.	23 25 55	1 0.44	4.32	20.09	a.m.	10.14	3.50	19.42	23.51	9.37
172	20	Sat.	23 26 40	1 13.42	4.32	20.09	0.21	11.29	3.50	19.42	a.m.	10.53
173	21	Sun.	23 27 1	1 26.43	4.32	20.09	0.48	12.41	3.50	19.42	0.16	12.08
174	22	Mon.	23 26 58	1 39.44	4.32	20.10	1.13	13.52	3.51	19.43	0.41	13.21
175	23	Tues.	23 26 29	1 52.42	4.33	20.10	1.40	15.01	3.51	19.43	1.04	14.33
176	24	Wed.	23 25 36	2 5.35	4.33	20.10	2.05	16.11	3.51	19.43	1.29	15.43
177	25	Thur.	23 24 18	2 18.21	4.33	20.10	2.32	17.18	3.52	19.43	1.56	16.52
178	26	Frid.	23 22 35	2 30.97	4.34	20.10	3.04	18.24	3.52	19.43	2.26	17.59
179	27	Sat.	23 20 27	2 43.61	4.34	20.10	3.42	19.26	3.52	19.43	3.01	19.00
180	28	Sun.	23 17 55	2 56.08	4.35	20.10	4.25	20.22	3.53	19.43	3.45	19.56
181	29	Mon.	23 14 59	3 8.37	4.35	20.09	5.12	21.08	3.53	19.43	4.34	20.44
182	30	Tues.	23 11 38	3 20.46	4.36	20.09	6.08	21.51	3.54	19.43	5.29	21.24
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STANDARD TIME.—The rising and setting of the Sun and

JUNE, 1908

TORONTO... { Lat. 43° 40' Long. 79 24				WINNIPEG { Lat. 49° 53' Long. 97 7				VANCOUVER { Lat. 49° 0' VICTORIA... { Long. 123 12				R.A. OF POLARIS	DECL. OF POLARIS	
SUN		MOON		SUN		MOON		SUN		MOON				
Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets			
h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	°	'
4.39	19.52	6.34	22.23	4.25	20.27	6.20	23.03	4.12	20.09	6.15	22.48	27s.	8848	41"
4.38	19.53	7.27	23.09	4.24	20.28	7.13	23.47	4.12	20.10	7.06	23.31			28 41
4.38	19.53	8.23	23.49	4.23	20.29	8.10	a.m.	4.11	20.11	8.05	a.m.			29 41
4.37	19.54	9.22	a.m.	4.23	20.30	9.13	0.23	4.11	20.12	9.07	0.06			29 41
4.37	19.55	10.23	0.21	4.22	20.31	10.18	0.52	4.10	20.13	10.11	0.34			30 41
4.36	19.56	11.23	0.49	4.22	20.32	11.23	1.16	4.10	20.14	11.14	1.00			31 40
4.36	19.56	12.24	1.14	4.21	20.33	12.29	1.36	4.09	20.14	12.20	1.21			32 40
4.36	19.57	13.28	1.38	4.21	20.34	13.37	1.55	4.09	20.15	13.27	1.38			33 40
4.36	19.58	14.31	2.02	4.21	20.34	14.45	2.14	4.09	20.16	14.38	1.57			33 40
4.35	19.58	15.39	2.26	4.20	20.35	15.58	2.33	4.08	20.16	15.47	2.16			34 40
4.35	19.59	16.47	2.52	4.20	20.36	17.12	2.55	4.08	20.17	17.01	2.38			36 40
4.35	19.59	17.59	3.21	4.20	20.37	18.29	3.19	4.08	20.18	18.16	3.04			37 40
4.35	20.00	19.11	3.56	4.19	20.37	19.46	3.49	4.08	20.18	19.33	3.37			38 40
4.35	20.00	20.21	4.39	4.19	20.38	21.00	4.28	4.08	20.19	20.45	4.17			39 40
4.35	20.01	21.26	5.31	4.19	20.38	22.06	5.17	4.08	20.19	21.51	5.10			40 40
4.35	20.01	22.24	6.33	4.19	20.39	23.02	6.20	4.08	20.20	22.46	6.16			41 40
4.35	20.02	23.09	7.44	4.19	20.39	23.43	7.34	4.08	20.20	23.26	7.29			42 39
4.35	20.02	23.47	9.01	4.19	20.39	a.m.	8.55	4.08	20.21	a.m.	8.51			42 39
4.35	20.02	a.m.	10.17	4.19	20.40	0.16	10.16	4.08	20.21	0.01	10.11			43 39
4.35	20.02	0.19	11.30	4.19	20.40	0.41	11.34	4.08	20.21	0.27	11.29			44 39
4.36	20.03	0.47	12.42	4.20	20.40	1.04	12.52	4.08	20.21	0.49	12.46			45 39
4.36	20.03	1.14	13.52	4.20	20.41	1.26	14.08	4.09	20.21	1.09	14.00			46 39
4.36	20.03	1.40	15.02	4.20	20.41	1.46	15.23	4.09	20.21	1.33	15.12			47 39
4.36	20.03	2.07	16.09	4.21	20.41	2.08	16.35	4.09	20.21	1.54	16.25			48 39
4.37	20.03	2.36	17.16	4.21	20.41	2.33	17.48	4.10	20.21	2.20	17.34			50 39
4.37	20.03	3.09	18.22	4.21	20.41	3.02	18.57	4.10	20.21	2.52	18.43			51 39
4.37	20.03	3.46	19.21	4.22	20.41	3.35	20.00	4.11	20.21	3.27	19.46			52 39
4.38	20.03	4.30	20.17	4.22	20.41	4.17	20.57	4.11	20.21	4.10	20.41			53 39
4.38	20.03	5.19	21.05	4.23	20.41	5.05	21.44	4.12	20.21	4.57	21.27			54 39
4.39	20.03	6.14	21.46	4.23	20.40	6.00	22.22	4.13	20.21	5.54	22.08			55 39
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Moon are given in standard time for the places named.

JULY, 1908

DAY OF YEAR	DAY OF MONTH	DAY OF WEEK	GREENWICH M. NOON		HALIFAX... { Lat. 45° 0' ST. JOHN... { Long. 64 50				QUEBEC.... { Lat. 46° 48' { Long. 71 13			
			Sun's Declination	Equation of Time to be subtracted from Mean Time	SUN		MOON		SUN		MOON	
					Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets
			N.	m. s.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
183	1	Wed.	23° 7' 52"	3 32.32	4.36	20.09	7.07	22.26	3.54	19.42	6.29	21.58
184	2	Thur.	23 3 42	3 43.90	4.37	20.09	8.07	22.54	3.55	19.42	7.30	22.25
185	3	Frid.	22 59 9	3 55.21	4.37	20.09	9.08	23.22	3.56	19.42	8.32	22.49
186	4	Sat.	22 54 11	4 6.21	4.38	20.09	10.11	23.43	3.56	19.42	9.36	23.12
187	5	Sun.	22 48 49	4 16.88	4.39	20.08	11.13	a.m.	3.57	19.41	10.39	23.33
188	6	Mon.	22 43 3	4 27.21	4.40	20.08	12.16	0.05	3.58	19.41	11.44	23.53
189	7	Tues.	22 36 53	4 37.16	4.40	20.07	13.19	0.26	3.58	19.41	12.50	a.m.
190	8	Wed.	22 30 20	4 46.72	4.41	20.07	14.27	0.49	3.59	19.40	13.58	0.15
191	9	Thur.	22 23 24	4 55.87	4.42	20.06	15.37	1.15	4.00	19.40	15.09	0.39
192	10	Frid.	22 16 5	5 4.60	4.43	20.06	16.50	1.43	4.01	19.39	16.24	1.09
193	11	Sat.	22 8 22	5 12.88	4.44	20.05	18.01	2.22	4.02	19.38	17.36	1.45
194	12	Sun.	22 0 17	5 20.71	4.45	20.04	19.10	3.10	4.03	19.38	18.46	2.30
195	13	Mon.	21 51 49	5 28.09	4.45	20.04	20.11	4.08	4.04	19.37	19.48	3.27
196	14	Tues.	22 42 59	5 34.99	4.46	20.03	21.04	5.17	4.05	19.36	20.38	4.38
197	15	Wed.	21 33 47	5 41.41	4.47	20.02	21.47	6.34	4.06	19.36	21.19	5.56
198	16	Thur.	21 24 12	5 47.35	4.48	20.02	22.21	7.53	4.07	19.35	21.52	7.18
199	17	Frid.	21 14 16	5 52.79	4.49	20.01	22.51	9.12	4.08	19.34	22.20	8.38
200	18	Sat.	21 3 58	5 57.72	4.50	20.00	23.17	10.28	4.09	19.33	22.45	9.55
201	19	Sun.	20 53 19	6 2.14	4.51	19.59	23.44	11.43	4.10	19.32	23.09	11.10
202	20	Mon.	20 42 18	6 6.04	4.52	19.58	a.m.	12.54	4.11	19.31	23.33	12.24
203	21	Tues.	20 30 57	6 9.41	4.53	19.57	0.09	14.03	4.12	19.30	23.59	13.35
204	22	Wed.	20 19 14	6 12.25	4.54	19.56	0.36	15.11	4.13	19.29	a.m.	14.44
205	23	Thur.	20 7 12	6 14.52	4.55	19.55	1.06	16.17	4.14	19.28	0.29	15.51
206	24	Frid.	19 54 49	6 16.22	4.56	19.54	1.42	17.19	4.15	19.27	1.03	16.55
207	25	Sat.	19 42 6	6 17.36	4.57	19.53	2.23	18.18	4.16	19.26	1.42	17.51
208	26	Sun.	19 29 4	6 17.93	4.59	19.52	3.08	19.06	4.17	19.25	2.30	18.41
209	27	Mon.	19 15 42	6 17.91	5.00	19.51	4.03	19.49	4.19	19.24	3.22	19.24
210	28	Tues.	19 2 0	6 17.29	5.01	19.50	4.59	20.26	4.20	19.23	4.21	19.59
211	29	Wed.	18 48 0	6 16.07	5.02	19.49	6.00	20.58	4.21	19.21	5.22	20.29
212	30	Thur.	18 33 42	6 14.24	5.03	19.48	7.00	21.23	4.22	19.20	6.25	20.54
213	31	Frid.	18 19 5	6 11.80	5.04	19.46	8.01	21.47	4.23	19.19	7.27	21.15

STANDARD TIME.—The rising and setting of the Sun and

JULY, 1908

TORONTO... { Lat. 43° 40' Long. 79 24				WINNIPEG { Lat. 49° 53' Long. 97 7				VANCOUVER { Lat. 49° 10' VICTORIA... { Long. 123 12				R. A. OF POLARIS	DECL. OF POLARIS
SUN		MOON		SUN		MOON		SUN		MOON			
Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets		
h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	° /
4.39	20.03	7.12	22.22	4.24	20.40	7.02	22.54	4.13	20.20	6.55	22.37	55s.	8848
4.40	20.03	8.12	22.51	4.25	20.40	8.05	23.19	4.14	20.20	7.58	23.03	56	39
4.40	20.03	9.12	23.17	4.25	20.40	9.10	23.40	4.15	20.20	9.02	23.29	57	39
4.41	20.02	10.14	23.42	4.26	20.39	10.16	a.m.	4.15	20.19	10.07	23.45	58	39
4.42	20.02	11.14	a.m.	4.27	20.39	11.21	0.01	4.16	20.19	11.13	a.m.	59	39
4.42	20.02	12.17	0.04	4.28	20.38	12.29	0.19	4.17	20.18	12.20	0.03	60	39
4.43	20.02	13.21	0.28	4.28	20.38	13.38	0.37	4.18	20.18	13.28	0.20	61	39
4.44	20.01	14.26	0.51	4.29	20.37	14.48	0.56	4.19	20.17	14.39	0.41	62	39
4.44	20.01	15.35	1.17	4.30	20.37	16.03	1.18	4.20	20.17	15.51	1.04	63	39
4.45	20.00	16.47	1.50	4.31	20.36	17.20	1.46	4.21	20.16	17.07	1.30	64	39
4.46	20.00	17.57	2.28	4.32	20.35	18.35	2.19	4.22	20.15	18.22	2.08	65	39
4.47	19.59	19.07	3.15	4.33	20.35	19.47	3.02	4.22	20.15	19.30	2.55	66	40
4.48	19.59	20.09	4.12	4.34	20.34	20.48	3.58	4.23	20.14	20.31	3.54	68	40
4.49	19.58	21.01	5.23	4.35	20.33	21.37	5.11	4.24	20.13	21.21	5.05	69	40
4.49	19.57	21.44	6.39	4.36	20.32	22.15	6.31	4.26	20.12	21.58	6.26	69	40
4.50	19.57	22.20	7.58	4.37	20.31	22.45	7.55	4.27	20.11	22.29	7.48	70	40
4.51	19.56	22.50	9.16	4.39	20.30	23.09	9.19	4.28	20.10	22.51	9.12	71	40
4.52	19.55	23.18	10.30	4.40	20.29	23.31	10.38	4.29	20.09	23.16	10.31	72	40
4.53	19.54	23.44	11.43	4.41	20.27	23.52	11.56	4.30	20.08	23.38	11.51	73	40
4.54	19.54	a.m.	12.54	4.42	20.26	a.m.	13.12	4.32	20.07	a.m.	13.04	74	40
4.55	19.53	0.11	14.03	4.43	20.26	0.13	14.27	4.33	20.06	0.00	14.16	75	40
4.56	19.52	0.39	15.09	4.45	20.25	0.37	15.39	4.34	20.05	0.24	15.26	76	40
4.57	19.51	1.11	16.14	4.46	20.24	1.05	16.48	4.35	20.03	0.53	16.34	78	41
4.58	19.50	1.46	17.16	4.47	20.22	1.36	17.54	4.36	20.02	1.27	17.37	79	41
4.59	19.49	2.27	18.12	4.49	20.21	2.14	18.52	4.38	20.01	2.07	18.37	80	41
5.00	19.48	3.15	19.02	4.50	20.20	3.00	19.41	4.39	20.00	2.53	19.25	81	41
5.01	19.47	4.07	19.45	4.51	20.18	3.53	20.22	4.40	19.58	3.49	20.06	82	41
5.02	19.46	5.04	20.22	4.53	20.17	4.53	20.55	4.41	19.57	4.46	20.39	83	41
5.03	19.45	6.04	20.54	4.54	20.16	5.56	21.23	4.43	19.55	5.51	21.08	84	42
5.04	19.44	7.05	21.20	4.55	20.14	7.01	21.45	4.44	19.54	6.54	21.30	85	42
5.05	19.43	8.05	21.44	4.57	20.13	8.06	22.05	4.46	19.53	7.56	21.50	85	42

Moon are given in standard time for the places named.

AUGUST, 1908

DAY OF YEAR	DAY OF MONTH	DAY OF WEEK	GREENWICH M. NOON		HALIFAX... { Lat. 45° 0' St. JOHN... { Long. 64 50				QUEBEC..... { Lat. 46° 48' { Long. 71 13			
			Sun's Declination	Equation of Time to be subtracted	SUN		MOON		SUN		MOON	
				added to Mean Time	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets
			N.	m. s.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
214	1	Sat.	18° 4' 10"	6 8.74	5.05	19.45	9.07	22.08	4.25	19.17	8.30	21.37
215	2	Sun.	17 48 58	6 5.07	5.06	19.44	10.06	22.28	4.26	19.16	9.33	21.57
216	3	Mon.	17 33 28	6 0.77	5.08	19.42	11.08	22.52	4.27	19.15	10.38	22.18
217	4	Tues.	17 17 41	5 55.86	5.09	19.41	12.12	23.16	4.28	19.13	11.42	22.40
218	5	Wed.	17 1 37	5 50.32	5.10	19.40	13.19	23.43	4.29	19.12	12.51	23.07
219	6	Thur.	16 45 16	5 44.17	5.11	19.38	14.29	a.m.	4.31	19.10	14.03	23.39
220	7	Frid.	16 28 40	5 37.40	5.12	19.37	15.38	0.16	4.32	19.09	15.14	a.m.
221	8	Sat.	16 11 47	5 30.03	5.13	19.35	16.50	0.57	4.33	19.07	16.25	0.18
222	9	Sun.	15 54 39	5 22.05	5.14	19.34	17.53	1.48	4.35	19.06	17.29	1.09
223	10	Mon.	15 37 16	5 13.49	5.16	19.32	18.51	2.51	4.36	19.04	18.25	2.12
224	11	Tues.	15 19 38	5 4.34	5.17	19.31	19.38	4.04	4.37	19.03	19.11	3.27
225	12	Wed.	15 1 45	4 54.62	5.18	19.29	20.16	5.24	4.38	19.01	19.49	4.47
226	13	Thur.	14 43 38	4 44.35	5.19	19.28	20.48	6.48	4.40	18.59	20.19	6.11
227	14	Frid.	14 25 16	4 33.54	5.21	19.26	21.17	8.07	4.41	18.58	20.46	7.32
228	15	Sat.	14 6 41	4 22.19	5.22	19.24	21.44	9.24	4.42	18.56	21.11	8.52
229	16	Sun.	13 47 53	4 10.34	5.23	19.23	22.11	10.38	4.44	18.54	21.37	10.09
230	17	Mon.	13 28 51	3 57.98	5.24	19.21	22.39	11.51	4.45	18.53	22.01	11.23
231	18	Tues.	13 9 36	3 45.13	5.25	19.20	23.08	13.02	4.46	18.51	22.31	12.35
232	19	Wed.	12 50 8	3 31.79	5.27	19.18	23.42	14.10	4.47	18.49	23.03	13.44
233	20	Thur.	12 30 29	3 17.99	5.28	19.16	a.m.	15.13	4.49	18.48	23.41	14.49
234	21	Frid.	12 10 37	3 3.74	5.29	19.15	0.21	16.12	4.50	18.46	a.m.	15.47
235	22	Sat.	11 50 34	2 49.02	5.30	19.13	1.05	17.05	4.51	18.44	0.27	16.40
236	23	Sun.	11 30 19	2 33.87	5.31	19.11	1.55	17.49	4.53	18.42	1.18	17.25
237	24	Mon.	11 9 53	2 18.29	5.32	19.09	2.53	18.26	4.54	18.40	2.13	18.01
238	25	Tues.	10 49 17	2 2.29	5.34	19.08	3.52	19.00	4.55	18.39	3.13	18.32
239	26	Wed.	10 28 30	1 45.88	5.35	19.06	4.53	19.27	4.57	18.37	4.16	18.59
240	27	Thur.	10 7 33	1 29.09	5.36	19.04	5.55	19.55	4.58	18.35	5.20	19.22
241	28	Frid.	9 46 27	1 11.92	5.37	19.02	6.57	20.13	4.59	18.33	6.23	19.42
242	29	Sat.	9 25 11	0 54.36	5.38	19.01	8.00	20.35	5.00	18.31	7.26	20.02
243	30	Sun.	9 3 46	0 36.46	5.40	18.59	9.00	20.56	5.02	18.29	8.30	20.23
244	31	Mon.	8 42 12	<u>0 18 21</u>	5.41	18.57	10.05	21.19	5.03	18.27	9.34	20.47

STANDARD TIME.—The rising and setting of the Sun and

AUGUST, 1908

TORONTO... { Lat. 43° 40' Long. 79 24				WINNIPEG { Lat. 49° 53' Long. 97 7				VANCOUVER { Lat. 49° 0' VICTORIA... { Long. 123 12				R.A. OF POLARIS	DECL. OF POLARIS
SUN		MOON		SUN		MOON		SUN		MOON			
Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets		
h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	° /
5.06	19.41	9.06	22.08	4.58	20.11	9.12	22.24	4.47	19.51	9.06	22.07	26s.	42"
5.07	19.40	10.06	22.30	4.59	20.10	10.17	22.41	4.48	19.50	10.08	22.23	27	42
5.08	19.39	11.09	22.54	5.01	20.08	11.25	23.01	4.50	19.48	11.14	22.44	28	42
5.09	19.38	12.11	23.18	5.02	20.06	12.32	23.20	4.51	19.47	12.23	23.05	29	42
5.10	19.36	13.17	23.47	5.04	20.05	13.44	23.45	4.53	19.45	13.32	23.31	30	43
5.12	19.35	14.27	a.m.	5.05	20.03	14.59	a.m.	4.54	19.43	14.45	a.m.	31	43
5.13	19.34	15.37	0.21	5.07	20.02	16.12	0.14	4.55	19.42	15.57	0.04	32	43
5.14	19.32	16.46	1.03	5.08	20.00	17.25	0.51	4.57	19.40	17.11	0.41	34	43
5.15	19.31	17.50	1.54	5.10	19.58	18.30	1.40	4.58	19.38	18.14	1.34	34	44
5.16	19.30	18.46	2.57	5.11	19.56	19.24	2.43	4.59	19.37	19.10	2.38	35	44
5.17	19.28	19.34	4.10	5.12	19.55	20.08	4.00	5.01	19.35	19.52	3.55	36	44
5.18	19.27	20.15	5.29	5.14	19.53	20.43	5.23	5.02	19.33	20.25	5.19	37	44
5.19	19.25	20.47	6.50	5.15	19.51	21.10	6.51	5.04	19.31	20.53	6.44	38	45
5.20	19.24	21.17	8.08	5.17	19.49	21.34	8.15	5.05	19.29	21.17	8.10	39	45
5.22	19.22	21.46	9.25	5.18	19.47	21.56	9.37	5.07	19.27	21.39	9.30	39	45
5.23	19.21	22.13	10.40	5.20	19.45	22.18	10.57	5.08	19.26	22.03	10.49	40	45
5.24	19.19	22.40	11.57	5.21	19.44	22.40	12.13	5.09	19.24	22.28	12.04	41	45
5.25	19.18	23.12	13.01	5.23	19.42	23.08	13.30	5.11	19.22	22.56	13.17	42	46
5.26	19.16	23.46	14.07	5.24	19.40	23.37	14.40	5.12	19.20	23.28	14.26	43	46
5.27	19.15	a.m.	15.10	5.26	19.38	a.m.	15.48	5.14	19.18	a.m.	15.31	44	46
5.28	19.13	0.26	16.08	5.27	19.36	0.14	16.48	5.15	19.16	0.06	16.31	45	46
5.29	19.11	1.12	17.01	5.29	19.34	0.57	17.40	5.17	19.14	0.50	17.24	46	47
5.31	19.10	2.03	17.46	5.30	19.32	1.48	18.24	5.18	19.12	1.40	18.07	47	47
5.32	19.08	2.58	18.24	5.32	19.30	2.45	18.58	5.19	19.11	2.39	18.40	48	47
5.33	19.06	3.56	18.56	5.33	19.28	3.47	19.27	5.21	19.09	3.41	19.11	48	48
5.34	19.05	4.57	19.25	5.35	19.26	4.52	19.52	5.22	19.07	4.46	19.35	49	48
5.35	19.03	5.58	19.50	5.36	19.24	5.58	20.18	5.24	19.04	5.50	20.01	50	48
5.36	19.01	6.59	20.13	5.38	19.22	7.04	20.30	5.25	19.02	6.54	20.13	50	48
5.37	19.00	8.01	20.35	5.39	19.20	8.10	20.47	5.27	19.00	8.02	20.32	51	49
5.39	18.58	9.02	20.58	5.41	19.17	9.16	21.06	5.28	18.58	9.02	20.49	52	49
5.40	18.56	10.04	21.22	5.42	19.15	10.22	21.25	5.29	18.56	10.04	21.09	52	49

Moon are given in standard time for the places named.

SEPTEMBER, 1908

DAY OF YEAR	DAY OF MONTH	DAY OF WEEK	GREENWICH M. NOON		HALIFAX... { Lat. 45° 0' } ST. JOHN... { Long. 64 50				QUEBEC..... { Lat. 46° 48' } { Long. 71 13			
			Sun's Declination	Equation of Time to be added to Mean Time	SUN		MOON		SUN		MOON	
					Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets
					h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
			N.	m. s.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
245	1	Tues.	8° 20' 31"	0 0 38	5.42	18.55	11.09	21.44	5.06	18.25	10.39	21.06
246	2	Wed.	7 58 41	0 19.27	5.43	18.53	12.18	22.14	5.08	18.23	11.49	21.34
247	3	Thur.	7 36 43	0 38.46	5.45	18.51	13.25	22.49	5.09	18.20	12.59	22.09
248	4	Frid.	7 14 38	0 57.95	5.46	18.49	14.33	23.36	5.10	18.18	14.08	22.55
249	5	Sat.	6 52 27	1 17.69	5.47	18.47	15.38	a.m.	5.11	18.17	15.12	23.50
250	6	Sun.	6 30 8	1 37.68	5.48	18.46	16.36	0.32	5.12	18.15	16.10	a.m.
251	7	Mon.	6 7 43	1 57.91	5.49	18.44	17.25	1.39	5.13	18.13	17.02	0.56
252	8	Tues.	5 45 13	2 18.34	5.50	18.42	18.09	2.51	5.14	18.11	17.43	2.12
253	9	Wed.	5 22 36	2 38.95	5.52	18.40	18.44	4.14	5.16	18.09	18.15	3.34
254	10	Thur.	4 59 55	2 59.72	5.53	18.38	19.15	5.35	5.18	18.07	18.43	4.59
255	11	Frid.	4 37 8	3 20.63	5.54	18.36	19.45	6.56	5.19	18.05	19.09	6.21
256	12	Sat.	4 14 16	3 41.65	5.55	18.34	20.09	8.15	5.20	18.03	19.33	7.45
257	13	Sun.	3 51 20	4 2.75	5.56	18.33	20.37	9.31	5.22	18.01	20.00	9.00
258	14	Mon.	3 28 19	4 23.93	5.58	18.31	21.06	10.45	5.24	17.59	20.26	10.15
259	15	Tues.	3 5 15	4 45.14	5.59	18.29	21.39	11.57	5.25	17.57	20.57	11.29
260	16	Wed.	2 42 7	5 6.38	6.00	18.27	22.18	13.04	5.26	17.55	21.35	12.37
261	17	Thur.	2 18 56	5 27.62	6.01	18.25	23.01	14.06	5.28	17.53	22.18	13.40
262	18	Frid.	1 55 42	5 48.85	6.03	18.23	23.51	15.01	5.29	17.51	23.08	14.35
263	19	Sat.	1 32 26	6 10.03	6.04	18.21	a.m.	15.49	5.30	17.49	a.m.	15.21
264	20	Sun.	1 9 7	6 31.16	6.05	18.19	0.46	16.28	5.31	17.47	0.03	16.01
265	21	Mon.	0 45 46	6 52.23	6.06	18.17	1.41	17.04	5.32	17.45	1.01	16.33
266	22	Tues.	N. 22 24	7 13.20	6.07	18.15	2.44	17.32	5.33	17.43	2.04	17.03
267	23	Wed.	S. 0 59	7 34.05	6.08	18.13	3.46	17.57	5.35	17.41	3.07	17.26
268	24	Thur.	0 24 24	7 54.78	6.10	18.12	4.48	18.19	5.36	17.39	4.08	17.46
269	25	Frid.	0 47 49	8 15.36	6.11	18.09	5.52	18.41	5.37	17.37	5.13	18.08
270	26	Sat.	1 11 13	8 35.77	6.12	18.07	6.53	19.03	5.38	17.35	6.17	18.29
271	27	Sun.	1 34 38	8 56.00	6.14	18.06	7.57	19.24	5.39	17.33	7.23	18.46
272	28	Mon.	1 58 2	9 16.04	6.15	18.04	9.04	19.48	5.40	17.31	8.29	19.08
273	29	Tues.	2 21 25	9 35.86	6.16	18.02	10.10	20.15	5.42	17.29	9.37	19.35
274	30	Wed.	2 44 47	9 55.45	6.17	18.00	11.19	20.49	5.44	17.27	10.46	20.06
...

STANDARD TIME.—The rising and setting of the Sun and

SEPTEMBER, 1908

TORONTO... { Lat. 43° 40' Long. 79 24				WINNIPEG { Lat. 49° 53' Long. 97 7				VANCOUVER { Lat. 49° 0' VICTORIA... { Long. 123 12				R.A. OF POLARIS	DECL. OF POLARIS	
SUN		MOON		SUN		MOON		SUN		MOON				
Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets			
h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	° /
5.42	18.53	11.07	21.47	5.43	19.13	11.32	21.46	5.31	18.54	11.22	21.32	53s.	1.26	8848
5.43	18.51	12.14	22.18	5.44	19.11	12.43	22.12	5.32	18.52	12.33	22.00	55	55	49'
5.44	18.50	13.21	22.55	5.46	19.09	13.56	22.45	5.34	18.50	13.42	22.34	54	54	50
5.45	18.48	14.29	23.42	5.47	19.07	15.07	23.29	5.35	18.48	14.52	23.20	56	56	50
5.46	18.46	15.33	a.m.	5.49	19.05	16.04	a.m.	5.37	18.46	15.58	a.m.	56	56	51
5.47	18.44	16.32	0.37	5.50	19.03	17.12	0.21	5.38	18.44	16.55	0.18	57	57	51
5.48	18.42	17.24	1.43	5.52	19.01	18.00	1.30	5.39	18.42	17.41	1.26	58	58	51
4.49	18.40	18.07	2.58	5.53	18.59	18.38	2.49	5.41	18.40	18.21	2.42	58	58	52
5.50	18.39	18.43	4.17	5.55	18.56	19.09	4.13	5.42	18.38	18.52	4.10	59	59	52
5.52	18.37	19.14	5.38	5.56	18.54	19.34	5.41	5.44	18.35	19.17	5.36	59	59	52
5.53	18.35	19.43	6.57	5.58	18.52	19.57	7.06	5.45	18.33	19.43	7.00	60	60	53
5.54	18.33	20.10	8.18	6.00	18.50	20.18	8.34	5.46	18.31	20.02	8.24	60	60	53
5.56	18.31	20.39	9.30	6.02	18.47	20.41	9.51	5.48	18.29	20.27	9.44	61	61	53
5.57	18.30	21.09	10.42	6.03	18.45	21.05	11.09	5.49	18.27	20.54	11.01	62	62	54
5.58	18.28	21.43	11.53	6.05	18.43	21.35	12.25	5.51	18.25	21.26	12.14	62	62	54
5.59	18.26	22.22	12.59	6.06	18.40	22.11	13.35	5.52	18.22	22.03	13.23	63	63	54
6.00	18.24	23.05	14.01	6.07	18.38	22.51	14.40	5.54	18.20	22.46	14.26	64	64	55
6.01	18.23	23.55	14.56	6.09	18.36	23.39	15.38	5.55	18.18	23.36	15.20	64	64	55
6.02	18.21	a.m.	15.42	6.10	18.34	a.m.	16.21	5.57	18.16	a.m.	16.07	65	65	55
6.03	18.19	0.50	16.23	6.12	18.32	0.37	17.00	5.58	18.14	0.32	16.45	65	65	56
6.04	18.17	1.48	16.57	6.13	18.30	1.38	17.30	6.00	18.12	1.29	17.15	66	66	56
6.05	18.15	2.50	17.28	6.14	18.27	2.44	17.57	6.01	18.09	2.35	17.31	66	66	57
6.07	18.13	3.51	17.54	6.16	18.25	3.50	18.18	6.03	18.07	3.40	18.04	66	66	57
6.08	18.11	4.50	18.17	6.18	18.23	4.54	18.37	6.04	18.05	4.44	18.20	67	67	57
6.09	18.10	5.52	18.41	6.19	18.21	6.00	18.57	6.05	18.03	5.52	18.39	67	67	58
6.10	18.08	6.54	19.05	6.21	18.19	7.07	19.15	6.07	18.01	6.57	18.57	67	67	58
6.11	18.06	7.57	19.24	6.22	18.17	8.16	19.29	6.08	17.59	8.05	19.14	68	68	58
6.12	18.04	9.00	19.49	6.24	18.14	9.24	19.49	6.10	17.57	9.17	19.37	68	68	59
6.14	18.03	10.06	20.19	6.25	18.12	10.34	20.15	6.11	17.55	10.24	20.02	69	69	59
6.15	18.01	11.12	20.52	6.27	18.10	11.45	20.43	6.13	17.52	11.35	20.34	69	69	59
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Moon are given in standard time for the places named.

OCTOBER, 1908

DAY OF YEAR	DAY OF MONTH	DAY OF WEEK	GREENWICH M. NOON		HALIFAX... { Lat. 45° 0' St. JOHN... { Long. 64 50				QUEBEC.... { Lat. 46° 48' { Long. 71 13			
			Sun's Declination	Equation of Time to be added to Mean Time	SUN		MOON		SUN		MOON	
					Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets
		S.	m. s.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	
275	1	Thur.	3° 8' 6"	10 14.80	6.18	17.58	12.24	21.30	5.46	17.25	11.58	20.48
276	2	Frid.	3 31 24	10 33.86	6.19	17.57	13.29	22.22	5.47	17.23	13.04	21.40
277	3	Sat.	3 54 40	10 52.65	6.21	17.55	14.28	23.22	5.48	17.21	14.02	22.39
278	4	Sun.	4 17 52	11 11.13	6.22	17.53	15.21	a.m.	5.50	17.19	14.55	23.50
279	5	Mon.	4 41 1	11 29.27	6.23	17.51	16.04	0.32	5.51	17.18	15.36	a.m.
280	6	Tues.	5 4 7	11 47.06	6.25	17.49	16.42	1.47	5.52	17.16	16.11	1.08
281	7	Wed.	5 27 9	12 4.48	6.26	17.47	17.13	3.07	5.54	17.14	16.41	2.29
282	8	Thur.	5 50 6	12 21.51	6.27	17.45	17.40	4.27	5.55	17.12	17.06	3.52
283	9	Frid.	6 12 59	12 38.11	6.29	17.43	18.06	5.46	5.57	17.00	17.30	5.12
284	10	Sat.	6 35 47	12 54.27	6.30	17.42	18.36	7.04	5.58	17.08	18.01	6.32
285	11	Sun.	6 58 30	13 9.96	6.31	17.40	19.03	8.21	6.00	17.06	18.23	7.51
286	12	Mon.	7 21 7	13 25.17	6.32	17.38	19.33	9.36	6.02	17.04	18.52	9.07
287	13	Tues.	7 43 38	13 39.86	6.34	17.36	20.10	10.46	6.03	17.02	19.30	10.23
288	14	Wed.	8 6 2	13 54.01	6.35	17.35	20.53	11.53	6.04	17.00	20.11	11.27
289	15	Thur.	8 28 20	14 7.61	6.36	17.33	21.40	12.55	6.05	16.58	21.00	12.29
290	16	Frid.	8 50 31	14 20.64	6.37	17.31	22.35	13.46	6.06	16.56	21.54	13.20
291	17	Sat.	9 12 35	14 33.07	6.39	17.30	23.33	14.28	6.07	16.55	22.53	14.02
292	18	Sun.	9 34 31	14 44.89	6.40	17.28	a.m.	15.06	6.09	16.54	23.50	14.38
293	19	Mon.	9 56 18	14 56.09	6.41	17.26	0.32	15.36	6.10	16.52	a.m.	15.06
294	20	Tues.	10 17 57	15 6.65	6.43	17.25	1.36	16.01	6.12	16.50	0.57	15.28
295	21	Wed.	10 39 27	15 16.55	6.44	17.23	2.39	16.24	6.13	16.48	2.01	15.51
296	22	Thur.	11 0 47	15 25.79	6.46	17.21	3.41	16.45	6.14	16.46	3.07	16.15
297	23	Frid.	11 21 58	15 34.34	6.47	17.20	4.43	17.07	6.16	16.44	4.09	16.32
298	24	Sat.	11 42 58	15 42.20	6.48	17.18	5.47	17.28	6.18	16.42	5.14	16.51
299	25	Sun.	12 3 48	15 49.35	6.50	17.16	6.53	17.52	6.19	16.41	6.21	17.14
300	26	Mon.	12 24 27	15 55.79	6.51	17.15	8.00	18.18	6.20	16.39	7.31	17.39
301	27	Tues.	12 44 54	16 1.49	6.52	17.13	9.10	18.49	6.21	16.37	8.41	18.08
302	28	Wed.	13 5 9	16 6.47	6.54	17.12	10.19	19.28	6.23	16.35	9.52	18.47
303	29	Thur.	13 25 12	16 10.71	6.55	17.10	11.25	20.17	6.24	16.33	10.59	19.34
304	30	Frid.	13 45 2	16 14.18	6.56	17.09	12.25	21.15	6.26	16.32	12.00	20.31
305	31	Sat.	14 4 39	16 16.90	6.58	17.08	13.20	22.20	6.28	16.31	12.54	21.38

STANDARD TIME.—The rising and setting of the Sun and

OCTOBER, 1908

TORONTO... { Lat. 43° 40' Long. 79 24				WINNIPEG { Lat. 49° 53' Long. 97 7				VANCOUVER { Lat. 49° 0' VICTORIA... { Long. 123 12				R. A. OF POLARIS	DECL. OF POLARIS	
SUN		MOON		SUN		MOON		SUN		MOON				
Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets			
h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	°
													1.27	8849
6.16	17.59	12.20	21.35	6.29	18.08	12.57	21.24	6.14	17.50	12.44	21.14	10	0	
6.17	17.57	13.25	22.27	6.30	18.06	14.07	22.11	6.16	17.48	13.49	22.08	10	0	
6.18	17.56	14.23	23.26	6.32	18.03	15.05	23.12	6.17	17.46	14.48	23.09	10	1	
6.20	17.54	15.16	a.m.	6.33	18.01	15.54	a.m.	6.19	17.44	15.40	a.m.	11	1	
6.21	17.52	16.00	0.37	6.35	17.59	16.34	0.26	6.20	17.42	16.17	0.21	11	1	
6.22	17.50	16.37	1.52	6.36	17.57	17.05	1.46	6.22	17.40	16.51	1.41	11	2	
6.23	17.48	17.10	3.10	6.38	17.55	17.33	3.10	6.23	17.38	17.17	3.05	11	2	
6.25	17.46	17.38	4.29	6.39	17.53	17.55	4.35	6.25	17.36	17.40	4.29	11	3	
6.26	17.45	18.06	5.46	6.41	17.50	18.17	5.58	6.26	17.34	18.01	5.52	11	3	
6.27	17.43	18.39	7.03	6.42	17.48	18.44	7.21	6.28	17.32	18.27	7.15	12	3	
6.28	17.41	19.04	8.19	6.44	17.46	19.04	8.43	6.29	17.30	18.52	8.35	12	4	
6.29	17.39	19.36	9.32	6.45	17.44	19.30	10.02	6.31	17.28	19.20	9.52	12	4	
6.31	17.37	20.16	10.45	6.47	17.42	20.06	11.20	6.32	17.26	19.55	11.04	12	4	
6.32	17.35	20.58	11.49	6.49	17.40	20.44	12.26	6.34	17.24	20.37	12.13	13	5	
6.33	17.34	21.47	12.50	6.51	17.38	21.31	13.32	6.35	17.22	21.25	13.14	13	5	
6.34	17.32	22.41	13.41	6.52	17.36	22.27	14.33	6.37	17.20	22.21	14.05	13	6	
6.36	17.30	23.40	14.23	6.54	17.34	23.29	15.01	6.38	17.18	23.20	14.46	13	6	
6.37	17.29	a.m.	15.00	6.55	17.32	a.m.	15.35	6.40	17.16	a.m.	15.20	13	6	
6.38	17.28	0.39	15.31	6.57	17.30	0.32	16.01	6.42	17.14	0.23	15.45	13	7	
6.39	17.26	1.40	15.56	6.58	17.28	1.37	16.22	6.43	17.12	1.29	16.08	13	7	
6.40	17.24	2.40	16.21	7.00	17.26	2.42	16.43	6.45	17.10	2.35	16.28	13	8	
6.42	17.23	3.44	16.47	7.01	17.25	3.51	17.04	6.46	17.09	3.40	16.44	13	8	
6.43	17.22	4.43	17.06	7.03	17.23	4.55	17.18	6.48	17.07	4.45	17.02	13	8	
6.44	17.20	5.46	17.28	7.05	17.21	6.03	17.35	6.49	17.05	5.54	17.20	13	9	
6.45	17.18	6.51	17.53	7.07	17.19	7.13	17.55	6.51	17.03	7.04	17.41	13	9	
6.46	17.16	7.58	18.22	7.09	17.17	8.25	18.18	6.53	17.01	8.14	18.05	13	9	
6.48	17.15	9.05	18.54	7.11	17.15	9.37	18.46	6.54	16.59	9.26	18.35	13	10	
6.49	17.14	10.14	19.34	7.12	17.13	10.50	19.22	6.56	16.58	10.38	19.12	13	10	
6.50	17.13	11.20	20.21	7.13	17.11	12.01	20.05	6.57	16.56	11.45	20.02	13	10	
6.51	17.12	12.21	21.18	7.15	17.09	13.03	21.02	6.59	16.54	12.46	21.01	13	11	
6.53	17.11	13.15	22.25	7.17	17.07	13.55	22.13	7.01	16.53	13.39	22.07	12	11	

Moon are given in standard time for the places named.

NOVEMBER, 1908

DAY OF YEAR	DAY OF MONTH	DAY OF WEEK	GREENWICH M. NOON		HALIFAX... { Lat. 45° 0' } ST. JOHN... { Long. 64 50				QUEBEC..... { Lat. 46° 48' } { Long. 71 13			
			Sun's Declination	Equation of Time to be added to Mean Time	SUN		MOON		SUN		MOON	
					Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets
					h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
306	1	Sun.	14° 24' 2"	16 18.85	6.59	17.06	14.03	23.33	6.30	16.29	13.37	22.51
307	2	Mon.	14 43 12	16 20.03	7.01	17.05	14.42	a.m.	6.31	16.28	14.15	a.m.
308	3	Tues.	15 2 6	16 20.41	7.02	17.03	15.13	0.49	6.32	16.27	14.42	0.10
309	4	Wed.	15 20 46	16 20.00	7.03	17.02	15.41	2.04	6.33	16.26	15.07	1.28
310	5	Thur.	15 39 11	16 18.79	7.05	17.01	16.09	3.22	6.35	16.24	15.33	2.48
311	6	Frid.	15 57 20	16 16.76	7.06	17.00	16.32	4.39	6.36	16.22	15.55	4.07
312	7	Sat.	16 15 13	16 13.90	7.07	16.58	16.59	5.54	6.38	16.20	16.22	5.23
313	8	Sun.	16 32 50	16 10.21	7.09	16.57	17.30	7.11	6.39	16.19	16.50	6.42
314	9	Mon.	16 50 10	16 5.68	7.10	16.56	18.04	8.24	6.41	16.18	17.22	7.57
315	10	Tues.	17 7 13	16 0.29	7.11	16.55	18.40	9.34	6.43	16.17	18.01	9.10
316	11	Wed.	17 23 58	15 54.05	7.13	16.54	19.30	10.41	6.44	16.16	18.48	10.15
317	12	Thur.	17 40 26	15 46.94	7.14	16.53	20.21	11.38	6.45	16.14	19.40	11.10
318	13	Frid.	17 56 35	15 38.97	7.16	16.52	21.20	12.25	6.46	16.13	20.38	11.57
319	14	Sat.	18 12 25	15 30.14	7.17	16.50	22.20	13.05	6.48	16.12	21.41	12.06
320	15	Sun.	18 27 57	15 20.45	7.18	16.49	23.23	13.38	6.50	16.11	22.43	13.09
321	16	Mon.	18 43 8	15 9.89	7.20	16.49	a.m.	14.04	6.51	16.10	23.48	13.35
322	17	Tues.	18 58 0	14 58.48	7.21	16.48	0.25	14.28	6.52	16.09	a.m.	13.58
323	18	Wed.	19 12 32	14 46.21	7.23	16.47	1.28	14.49	6.54	16.08	0.51	14.19
324	19	Thur.	19 26 44	14 33.10	7.24	16.46	2.30	15.09	6.55	16.07	1.54	14.36
325	20	Frid.	19 40 34	14 19.15	7.25	16.45	3.33	15.31	6.57	16.06	2.01	14.56
326	21	Sat.	19 54 3	14 4.37	7.26	16.44	4.38	15.55	6.58	16.05	3.06	15.17
327	22	Sun.	20 7 10	13 48.78	7.28	16.44	5.46	16.19	6.59	16.05	3.15	15.39
328	23	Mon.	20 19 55	13 32.40	7.29	16.43	6.56	16.48	7.00	16.04	4.26	16.00
329	24	Tues.	20 32 17	13 15.22	7.30	16.42	8.06	17.25	7.02	16.03	5.35	16.44
330	25	Wed.	20 44 17	12 57.28	7.31	16.42	9.14	18.11	7.04	16.02	6.47	17.29
331	26	Thur.	20 55 53	12 38.60	7.33	16.41	10.19	19.07	7.06	16.02	7.54	18.24
332	27	Frid.	21 7 6	12 19.19	7.34	16.40	11.15	20.12	7.07	16.01	10.51	19.30
333	28	Sat.	21 17 55	11 59.07	7.35	16.40	12.05	21.23	7.08	16.01	11.38	20.44
334	29	Sun.	21 28 20	11 38.26	7.36	16.39	12.49	22.38	7.09	16.00	12.18	21.57
335	30	Mon.	21 38 20	11 16.79	7.37	16.39	13.18	23.54	7.10	16.00	12.49	23.14
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STANDARD TIME.—The rising and setting of the Sun and

NOVEMBER, 1908

TORONTO... { Lat. 43° 40' Long. 79 24				WINNIPEG { Lat. 49° 53' Long. 97 7				VANCOUVER { Lat. 49° 0' VICTORIA... { Long. 123 12				R.A. OF POLARIS	DECL. OF POLARIS
SUN		MOON		SUN		MOON		SUN		MOON			
Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets		
a. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	° /
6.55	17.09	13.59	23.37	7.19	17.06	14.35	23.30	7.02	16.51	14.19	23.26	72s.	12"
6.56	17.08	14.40	a.m.	7.21	17.04	15.10	a.m.	7.04	16.50	14.53	a.m.	72	13
6.58	17.07	15.10	0.53	7.22	17.02	15.35	0.51	7.05	16.48	15.20	0.46	71	13
6.59	17.05	15.38	2.07	7.24	17.01	15.58	2.10	7.07	16.46	15.43	2.04	71	13
7.00	17.04	16.07	3.24	7.25	16.59	16.21	3.33	7.09	16.45	16.07	3.26	71	14
7.02	17.02	16.32	4.40	7.27	16.58	16.40	4.56	7.10	16.43	16.25	4.48	71	14
7.03	17.01	17.01	5.53	7.28	16.56	17.03	6.14	7.12	16.42	16.49	6.07	70	14
7.04	17.00	17.33	7.09	7.30	16.55	17.28	7.36	7.13	16.41	17.18	7.27	70	15
7.05	16.59	18.08	8.21	7.32	16.53	17.59	8.53	7.15	16.39	17.50	8.41	70	15
7.06	16.58	18.48	9.32	7.34	16.52	18.35	10.09	7.17	16.38	18.24	9.54	70	15
7.08	16.57	19.35	10.36	7.35	16.50	19.19	11.16	7.18	16.36	19.15	11.01	69	16
7.09	16.56	20.27	11.31	7.37	16.49	20.11	12.13	7.20	16.35	20.06	11.48	69	16
7.11	16.55	21.25	12.18	7.39	16.47	21.12	12.58	7.21	16.34	21.06	12.43	69	16
7.12	16.54	22.27	12.58	7.40	16.46	22.17	13.35	7.23	16.33	22.08	13.21	68	17
7.13	16.53	23.27	13.33	7.42	06.44	23.23	14.06	7.25	16.31	23.16	13.49	68	17
7.14	16.52	a.m.	14.01	7.43	16.43	a.m.	14.29	7.26	16.30	a.m.	14.13	67	18
7.15	16.51	0.29	14.26	7.45	16.42	0.29	14.50	7.28	16.29	0.20	14.34	67	18
7.16	16.50	1.29	14.50	7.46	16.41	1.33	15.09	7.29	16.28	1.26	14.49	66	18
7.18	16.49	2.30	15.10	7.48	16.40	2.39	15.24	7.31	16.27	2.31	15.06	65	18
7.19	16.49	3.34	15.32	7.50	16.39	3.49	15.41	7.32	16.26	3.38	15.24	65	19
7.20	16.48	4.37	15.55	7.51	16.38	4.57	15.59	7.34	16.25	4.47	15.45	65	19
7.22	16.47	5.43	16.21	7.53	16.37	6.08	16.20	7.35	16.24	6.02	16.07	64	19
7.23	16.46	6.51	16.53	7.54	16.36	7.21	16.47	7.37	16.23	7.11	16.34	64	20
7.24	16.46	8.00	17.31	7.56	16.35	8.35	17.20	7.38	16.22	8.24	17.10	63	20
7.25	16.45	9.09	18.16	7.57	16.34	9.49	18.01	7.40	16.21	9.34	17.55	63	20
7.26	16.45	10.15	19.11	7.59	16.33	10.57	18.55	7.41	16.21	10.39	18.52	62	21
7.27	16.44	11.12	20.17	8.00	16.32	11.54	20.03	7.42	16.20	11.34	19.59	62	21
7.28	16.44	11.59	21.28	8.02	16.31	12.36	21.18	7.44	16.19	12.22	21.13	61	21
7.30	16.43	12.40	22.43	8.03	16.31	13.13	22.39	7.45	16.19	13.01	22.33	60	22
7.31	16.43	13.13	23.57	8.05	16.30	13.48	23.58	7.48	16.18	13.26	23.51	59	22
.....

Moon are given in standard time for the places named.

DECEMBER, 1908

DAY OF YEAR	DAY OF MONTH	DAY OF WEEK	GREENWICH M. NOON		HALIFAX... { Lat. 45° 0' } St. JOHN... { Long. 64 50 }				QUEBEC..... { Lat. 46° 48' } { Long. 71 13 }				
			Sun's Declination	Equation of Time to be added to subtracted from MeanTime	SUN		MOON		SUN		MOON		
					Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	
			S.	m. s.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
336	1	Tues.	21° 47' 55"	10 54.67	7.39	16.39	13.45	a.m.	7.12	15.59	13.14	a.m.	
337	2	Wed.	21 57 5	10 31.92	7.40	16.38	14.11	1.10	7.13	15.59	13.34	0.34	
338	3	Thur.	22 5 50	10 8.57	7.41	16.38	14.35	2.23	7.14	15.59	13.58	1.49	
339	4	Frid.	22 14 9	9 44.64	7.42	16.38	15.02	3.37	7.15	15.58	14.23	3.06	
340	5	Sat.	22 22 2	9 20.15	7.43	16.38	15.29	4.49	7.16	15.58	14.48	4.21	
341	6	Sun.	22 29 29	8 55.11	7.44	16.38	15.59	6.03	7.17	15.58	15.19	5.36	
342	7	Mon.	22 36 30	8 29.56	7.45	16.37	16.36	7.15	7.18	15.58	15.53	6.50	
343	8	Tues.	22 43 4	8 3.51	7.46	16.37	17.20	8.23	7.19	15.58	16.37	7.57	
344	9	Wed.	22 49 12	7 36.98	7.47	16.37	18.09	9.24	7.20	15.58	17.27	8.59	
345	10	Thur.	22 54 52	7 10.00	7.47	16.38	19.05	10.17	7.21	15.58	18.24	9.51	
346	11	Frid.	23 0 5	6 42.60	7.48	16.38	20.05	11.01	7.22	15.58	19.23	10.34	
347	12	Sat.	23 4 52	6 14.80	7.49	16.38	21.06	11.37	7.22	15.58	20.26	11.09	
348	13	Sun.	23 9 10	5 46.63	7.50	16.38	22.10	12.07	7.23	15.58	21.30	11.35	
349	14	Mon.	23 13 1	5 18.12	7.51	16.38	23.13	12.31	7.24	15.58	22.35	12.01	
350	15	Tues.	23 16 25	4 49.31	7.52	16.38	a.m.	12.54	7.25	15.58	23.40	12.22	
351	16	Wed.	23 19 20	4 20.21	7.52	16.38	0.15	13.14	7.26	15.59	a.m.	12.42	
352	17	Thur.	23 21 48	3 50.87	7.53	16.39	1.17	13.31	7.26	15.59	0.42	13.02	
353	18	Frid.	23 23 47	3 21.32	7.54	16.39	2.20	13.56	7.27	15.59	1.47	13.21	
354	19	Sat.	23 25 19	2 51.59	7.54	16.40	3.25	14.20	7.28	16.59	2.53	13.42	
355	20	Sun.	23 26 22	2 21.72	7.55	16.40	4.33	14.46	7.28	16.00	4.03	14.07	
356	21	Mon.	23 26 57	1 51.75	7.55	16.41	5.45	15.23	7.29	16.00	5.16	14.38	
357	22	Tues.	23 27 4	1 21.71	7.56	16.41	6.56	16.02	7.29	16.00	6.28	15.20	
358	23	Wed.	23 26 42	0 51.65	7.56	16.42	8.03	16.54	7.30	16.00	7.39	16.11	
359	24	Thur.	23 25 52	0 21.60	7.56	16.42	9.07	17.57	7.30	16.01	8.41	17.14	
360	25	Frid.	23 24 34	0 8.40	7.57	16.43	10.00	19.08	7.31	16.02	9.30	18.26	
361	26	Sat.	23 22 47	0 38.31	7.57	16.44	10.45	20.25	7.31	16.03	10.18	19.45	
362	27	Sun.	23 20 33	1 8.08	7.57	16.44	11.19	21.43	7.31	16.04	10.50	21.03	
363	28	Mon.	23 17 50	1 37.69	7.57	16.45	11.50	23.00	7.31	16.05	11.19	22.23	
364	29	Tues.	23 14 39	2 7.09	7.57	16.46	12.16	a.m.	7.32	16.06	11.42	23.37	
365	30	Wed.	23 11 0	2 36.26	7.58	16.47	12.42	0.13	7.32	16.07	12.06	a.m.	
366	31	Thur.	23 6 53	3 5.15	7.58	16.48	13.06	1.27	7.32	16.08	12.28	0.52	

STANDARD TIME.—The rising and setting of the Sun and

DECEMBER, 1908

TORONTO... { Lat. 43° 40' Long. 79 24				WINNIPEG { Lat. 49° 53' Long. 97 7				VANCOUVER { Lat. 49° 0' VICTORIA... { Long.123 12				R.A. OF POLARIS	DECL. OF POLARIS
SUN		MOON		SUN		MOON		SUN		MOON			
Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets	Rises	Sets		
h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h.m.	° /
7.32	16.42	13.44	a.m.	8.06	16.29	14.06	a.m.	7.48	16.18	13.48	a.m.	59s.	8849
7.33	16.42	14.10	1.11	8.07	16.29	14.26	1.18	7.49	16.17	14.10	1.13	58	23
7.34	16.42	14.34	2.23	8.09	16.28	14.44	2.36	7.50	16.17	14.29	2.30	57	23
7.35	16.42	15.01	3.37	8.10	16.28	15.05	3.56	7.51	16.17	14.53	3.47	57	23
7.36	16.42	15.30	4.49	8.12	16.27	15.29	5.14	7.52	16.16	15.17	5.04	56	23
7.37	16.42	16.03	6.01	8.12	16.27	15.57	6.31	7.53	16.16	15.46	6.19	55	24
7.38	16.42	16.40	7.12	8.13	16.27	16.29	7.48	7.54	16.16	16.20	7.33	55	24
7.39	16.42	17.24	8.19	8.14	16.27	17.08	8.58	7.55	16.16	17.04	8.43	54	24
7.40	16.42	18.14	9.20	8.16	16.26	17.58	10.02	7.56	16.16	17.53	9.44	53	24
7.41	16.42	19.11	10.12	8.17	16.26	18.55	10.54	7.57	16.16	18.51	10.36	52	25
7.42	16.42	20.10	10.55	8.18	16.26	19.59	11.33	7.58	16.16	19.53	11.19	52	25
7.43	16.42	21.12	11.31	8.19	16.26	21.05	12.06	7.59	16.15	20.57	11.51	51	25
7.44	16.42	22.13	12.03	8.20	16.26	22.11	12.33	8.00	16.16	22.04	12.16	50	26
7.44	16.42	23.14	12.29	8.21	16.26	23.16	12.55	8.01	16.16	23.09	12.38	49	26
7.45	16.42	a.m.	12.52	8.22	16.26	a.m.	13.13	8.02	16.16	a.m.	12.57	48	26
7.46	16.43	0.17	13.14	8.23	16.26	0.24	13.30	8.03	16.16	0.15	13.12	47	26
7.46	16.43	1.16	13.38	8.23	16.27	1.28	13.48	8.03	16.17	1.20	13.25	46	26
7.47	16.43	2.19	13.58	8.24	16.27	2.37	14.04	8.04	16.17	2.27	13.47	45	26
7.47	16.44	3.23	14.22	8.24	16.27	3.45	14.23	8.04	16.17	3.36	14.08	44	26
7.48	16.44	4.30	14.50	8.25	16.28	4.57	14.46	8.05	16.18	4.47	14.33	44	27
7.48	16.44	5.40	15.24	8.25	16.28	6.13	15.15	8.05	16.18	6.00	15.11	43	27
7.49	16.45	6.50	16.07	8.26	16.28	7.27	15.54	8.06	16.19	7.16	15.46	42	27
7.50	16.45	8.00	16.58	8.26	16.29	8.42	16.42	8.06	16.19	8.24	16.39	41	27
7.50	16.46	9.02	18.01	8.27	16.30	9.44	17.45	8.07	16.20	9.28	17.44	40	28
7.50	16.46	10.51	19.13	8.27	16.30	10.30	19.02	8.07	16.21	10.19	18.47	39	28
7.51	16.47	10.40	20.29	8.27	16.31	11.15	20.23	8.07	16.21	10.59	20.19	38	28
7.51	16.48	11.16	21.44	8.28	16.32	11.45	21.43	8.07	16.22	11.29	21.41	37	28
7.51	16.49	11.48	23.01	8.28	16.32	12.11	23.06	8.07	16.23	11.55	23.01	36	28
7.51	16.50	12.14	a.m.	8.28	16.33	12.32	a.m.	8.07	16.24	12.17	a.m.	35	29
7.51	16.51	12.40	0.13	8.28	16.34	12.52	0.23	8.07	16.25	12.37	0.18	34	29
7.52	16.52	13.05	1.28	8.28	16.35	13.11	1.45	8.07	16.26	12.56	1.36	33	29

Moon are given in standard time for the places named.

GEOGRAPHICAL POSITIONS OF SOME POINTS IN CANADA

NAME	LATITUDE N.			LONGITUDE W.			Feet above Sea. Level
	°	'	"	°	'	"	
Banff, Alta.....	51	10		115	35		4542
Barrie, Ont.....	44	23		79	41		839
Battleford, Sask.....	52	41		108	20		1620
Brandon, Man.....	49	51		99	57		1176
Calgary, Alta.....	51	02	39.21	7	36	15.1	3428
Charlottetown, P.E.I....	46	14		63	10		38
Collingwood, Ont.....	44	30		80	15		595
Edmonton, Alta.....	53	31	58.81	113	30	27.0	2188
Father Point, Que.....	48	31		68	19		20
Fort Churchill.....	58	51		94	11		....
Fort Simpson.....	61	52		121	43		....
Fredericton, N.B.....	45	57		66	36		164
Golden, B.C.....	51	16		116	55		2550
Gravenhurst, Ont.....	44	54		79	20		770
Guelph, Ont.....	43	32	43.7	80	15	09.0	1063
Halifax, N.S.....	44	39		63	36		97
Hamilton, Ont.....	43	16		79	54		303
Herschel Is.....	69	30		139	15		....
Kingston, Ont.....	44	13		76	29		285
London, Ont.....	42	59		81	13		808
Medicine Hat.....	50	1		110	37		2161
Moncton, N.B.....	46	9		64	45		50
Montreal, Que.....	45	30	17.0	73	34	39.45	187
New Westminster, B.C....	49	13		122	54		330
No. West River, Ungava.	53	31	31.45	60	10	17.85	....
Ottawa, Ont.....	45	23	38	75	42	58.20	273.4
Owen Sound, Ont.....	44	33	56.42	80	56	40.5	585
Peterborough, Ont.....	44	17		78	19		722
Portage la Prairie, Man...	49	58		98	17		830
Port Simpson, B.C.....	54	34		130	26		26
Prince Albert, Sask.....	53	10		106	0		1432
Quebec, Que.....	46	48		71	13		296
Regina, Sask.....	50	27		104	37		1885
Revelstoke, B.C.....	51	00	11.25	7	52	49.8	1503
Rose Point, Ont.....	45	19	00.73	80	02	28.5	602
St. Catharines, Ont.....	43	10		79	17		347
St. John, N.B.....	45	17		66	4		70
St. Johns, Nfd.....	47	34		52	42		125
Stratford, Ont.....	43	23		81	00		1191
Toronto, Ont.....	43	39	35.9	79	23	39.75	350
Vancouver, B.C.....	49	17	48.0	123	07	05.52	11
Victoria, B.C.....	48	25	31.38	123	21	42.0	55
Windsor, Ont.....	42	20		83	4		625
Winnipeg, Man.....	49	53	51.53	97	08	28.53	751
York Factory.....	57	00		92	28		55

ASTRONOMICAL STATIONS

CALGARY : 1 chain 56 links south of centre line of C.P.R. main line, and 2 chains 49 links north of north-east corner of lot No. 11, in block 69.

EDMONTON : 70.2 feet south-east of Dominion Lands Survey Station; azimuth $120^{\circ}.07$.

GUELPH : 150 feet west of Norfolk Street, and 85 feet north of Paisley Street, Nelson Crescent.

MONTREAL : McGill College Observatory.

NORTH-WEST RIVER : Pier on site occupied by Government Eclipse Expedition, 1905.

OTTAWA : Dominion Astronomical Observatory, centre of dome. Altitude is of lowest step at front entrance.

OWEN SOUND : 215.96 feet on the course, making an angle of $57^{\circ} 33'$ with the westerly side of Poulett Street, from the intersection of that side of Poulett Street with the southerly side of Baker Street.

REVELSTOKE : 134 ft. 10 in. north of centre line of C.P.R., and 128 ft. 8 in. on a course north $37^{\circ} 29'$ east from C.P.R. traverse station No. 1,064 of the year 1886.

ROSE POINT : South-east corner of garden of Rose Point Hotel.

TORONTO : The Dominion Meteorological Observatory.

VANCOUVER : Brockton Point, close to and south-east of lighthouse.

VICTORIA : 7 ft. 5 in. east of Broad Street and 17 ft. 6 in. south of View Street.

WINNIPEG : On Dominion Government lot between Princess and King Streets, east of Notre Dame Street.

The altitudes for these stations are usually only approximate results.

**MAGNETIC ELEMENTS FOR THE AGINCOURT STATION
OF THE TORONTO OBSERVATORY, 1901-1906**

Mean values for the Months named.

The Horizontal Force is in millionths of a dyne.

DATE	DECLINATION WEST		DIP.		HORIZONTAL FORCE
	°	'	°	'	
1901	January.....	5 28.4	74	32.7	0.165071
	July.....	5 29.4	74	31.9	0.165036
1902	January.....	5 30.5	74	32.4	0.164924
	July.....	5 31.6	74	32.1	0.164868
1903	January.....	5 33.1	74	32.7	0.164883
	July.....	5 33.7	74	32.1	0.164716
1904	January.....	5 37.0	74	32.6	0.164492
	July.....	5 38.1	74	31.9	0.164544
1905	January.....	5 40.2	74	34.4	0.164325
	July.....	5 42.3	74	34.5	0.164328
1906	January.....	5 43.0	74	35.0	0.164010
	July.....	5 43.6	74	34.2	0.16436

ECLIPSES IN 1908

In the year 1908 there will be three eclipses of the Sun and a Lunar Appulse or Penumbral Eclipse of the Moon.

I. A total Eclipse of the Sun, January 3, invisible in Canada. The path of totality is across the Pacific Ocean, intersecting the Equator at West Longitude 106° and 182° approximately.

II. An annular Eclipse of the Sun, June 28, visible in Canada (except in the extreme north-west portion) as a partial eclipse. The path of central eclipse crosses Mexico, Florida, and ends in Western Africa.

At Montreal, a partial eclipse is visible, magnitude (Sun's diameter = 1) 0.551.

	H.	M.	
Begins June 28.....	9	56.1	} 75th Meridian Time.
Greatest phase.....	11	20.5	
Ends.....	12	49.0	

Angle from north point of first contact, 235° towards the east.
 Angle from vertex of first contact, 276° towards the east.

At Toronto, a partial eclipse, magnitude 0.572.

	H.	M.	
Begins June 28.....	9	43.9	} 75th Meridian Time.
Greatest phase.....	11	8.5	
Ends.....	12	38.7	

Angle from north point of first contact, $235^\circ 50.6'$ towards the east.

Angle from vertex of first contact, $284^\circ 5'$ towards the east.

III. A Lunar Appulse or Penumbral Eclipse of the Moon, December 7, 1908, visible generally throughout Europe, Asia, Africa, and the extreme eastern portions of North and South America.

	H.	M.	
First contact with the penumbra, Dec. 7.	14	38.2	} 75th Meridian Time.
Middle of the eclipse.....	16	55.1	
Last contact with the penumbra.....	19	12.0	

Computed least distance of Moon's limit from shadow, $12''$.

IV. An Annular Eclipse of the Sun, December 23. The line of central eclipse runs across South America at about S. Latitude 30° and passes about 18° south of the Cape of Good Hope. It will be seen as a partial eclipse over the eastern portion of South America and the southern portion of Africa.

At the Cape of Good Hope the greatest phase is at 1.40 p.m. (mean time) and the magnitude of the eclipse (Sun's diameter = 1) 0.410.

PRINCIPAL ELEMENTS OF THE SOLAR SYSTEM

NAME	MEAN DISTANCE FROM SUN		SIDEREAL PERIOD		MEAN DIAM'T'R MILES	MASS $\oplus = 1$	DENS-ITY Water = 1	VOLUME $\oplus = 1$	AXIAL ROTATION
	$\oplus = 1$	MILLIONS OF MILES	MEAN SOLAR DAYS	YEARS					
					♁ Mercury...	0.387	36.0	87.97	0.24	3030	0.476	4.7(?)	0.056	88d
♀ Venus.....	0.723	67.2	224.70	0.62	7700	0.82	4.94	0.92	225d
♁ Earth.....	1.000	92.9	365.26	1.00	7917.6	1.00	5.55	1.00	23 ^h 56 ^m 4 ^s
♂ Mars.....	1.524	141.5	686.95	1.88	4230	0.108	3.92	0.152	24 ^h 37 ^m 23 ^s
♃ Jupiter....	5.203	483.3	4332.58	11.86	86500	317.7	1.32	1309	9 ^h 55 ^m ±
♄ Saturn.....	9.539	886.0	10759.2	29.46	73000	94.8	0.72	760	10 ^h 14 ^m ±
♅ Uranus....	19.183	1781.9	30686.8	84.02	31900	14.6	1.22	65	?
♆ Neptune...	30.055	2971.6	60181.1	164.78	34800	17.0	1.11	85	?
☉ Sun.....	.....	.....	.....	.....	866400	332000	1.39	1300000	25 ^d 7 ^h 48 ^m ±
☾ Moon.....	From \oplus 238,840 mls	.....	27.32	0.75	2163	1/81.5	3.39	0.020	27 ^d 7 ^h 43 ^m

SATELLITES OF THE SOLAR SYSTEM

NAME	STELLAR MAGNITUDE	MEAN DISTANCE IN MILES	SIDEREAL PERIOD <small>d. h. m. s.</small>	DISCOVERER	DATE
THE EARTH					
The Moon..	..	238,840	27 7 43 11		
MARS					
1. Phobos.....	14	5,850	7 39 15	Asaph Hall....	Aug. 17, 1877
2. Deimos....	13	14,650	1 6 17 54	Asaph Hall....	Aug. 11, 1877.
JUPITER					
5. (Nameless)..	13	112,500	11 57 23	Barnard.....	Sept. 9, 1892
1. Io.....	6½	261,000	1 18 27 33	Galileo.....	Jan. 7, 1610
2. Europa....	6½	415,000	3 13 13 42	Galileo.....	Jan. 8, 1610
3. Ganymede..	6	664,000	7 3 42 33	Galileo.....	Jan. 7, 1610
4. Callisto...	7	1,167,000	16 16 32 11	Galileo.....	Jan. 7, 1610
6. (Nameless)..	14	7,000,000	250 d.	Perrine.....	Dec. 1904
7. (Nameless)..	16	7,300,000	265 d.	Perrine.....	Jan. 1905
SATURN					
1. Mimas.....	15	117,000	22 37 6	W. Herschel...	July 18, 1789
2. Enceladus..	14	157,000	1 8 53 7	W. Herschel...	Aug. 29, 1789
3. Tethys.....	11	186,000	1 21 18 26	J. D. Cassini...	Mar. 21, 1684
4. Dione.....	11	238,000	2 17 41 9	J. D. Cassini...	Mar. 21, 1684
5. Rhea.....	10	332,000	4 12 25 12	J. D. Cassini...	Dec. 23, 1672
6. Titan.....	9	771,000	15 22 41 23	Huygens.....	Mar. 25, 1655
7. Hyperion...	16	934,000	21 6 39 27	G. P. Bond....	Sept. 16, 1848
8. Iapetus....	11	2,225,000	79 7 54 17	J. D. Cassini...	Oct. 25, 1671
9. Phoebe....	17	8,000,000	546.5 d.	W.H.Pickering	1898
10. Themis....	17	906,000	20 20 24 0	W.H.Pickering	1905
URANUS					
1. Ariel.....	15	120,000	2 12 29 21	Lassell.....	Oct. 24, 1851
2. Umbriel....	16	167,000	4 3 27 37	Lassell.....	Oct. 24, 1851
3. Titania....	13	273,000	8 16 56 29	W. Herschel...	Jan. 11, 1787
4. Oberon....	14	365,000	13 11 7 6	W. Herschel...	Jan. 11, 1787
NEPTUNE					
1. (Nameless)..	13	221,500	5 21 2 44	Lassell.....	Oct. 10, 1846

THE PLANETS IN 1908

In the following notes on the Planets the most interesting phenomena connected with their motions are given, and it is hoped that their courses can be intelligently followed throughout the year. For the five outer planets maps showing the paths among the stars are given.

MERCURY ☿

Mercury is always so near the sun that it is comparatively seldom seen with the naked eye, but when not far from its greatest elongation, which, however, never exceeds 28° , it is easily visible as a star of the first magnitude. It is usually visible for about a fortnight at each elongation, and is best seen in the evening at such eastern elongations as occur in March or April.

The phases of the planet succeed in the following order :

Jan.	14	Superior Conjunction.....	
Feb.	13	Greatest Elongation E., $18^\circ 9'$	} Evening Star.
Feb.	28	Inferior Conjunction.....	
Mar.	27	Greatest Elongation W., $27^\circ 49'$	} Morning Star.
May	7	Superior Conjunction.....	
June	7	Greatest Elongation E., $23^\circ 59'$	} Evening Star.
July	4	Inferior Conjunction.....	
July	25	Greatest Elongation W., $19^\circ 51'$	} Morning Star.
Aug.	20	Superior Conjunction.....	
Oct.	4	Greatest Elongation E., $25^\circ 34'$	} Evening Star.
Oct.	28	Inferior Conjunction.....	
Nov.	13	Greatest Elongation W., $19^\circ 19'$	} Morning Star.
Dec.	23	Superior Conjunction.....	

Usually the planet at the time of conjunction passes north or south of the Sun, but at the inferior conjunction of Nov. 14, 1907, the planet was very near its line of nodes, and crossed the Sun's disc. It was visible as a black spot. Such transits must occur in May and November, those in the latter month being more than twice as numerous as those in the former. The last previous transit, visible in Canada, was on Nov. 7, 1894; the next will be on Nov. 6, 1914. To observe the transit a small telescope is necessary.

VENUS ♀

Venus was in superior conjunction on Sept. 14, 1907, and so at the beginning of 1908 is east of the Sun and hence

an evening star. It will remain such until July 5, and for the rest of the year will be a morning star. Its phases are given in the following table :—

April 26	Greatest Elongation E., 45° 37'.
May 29	Greatest Brilliancy.
June 13	Stationary.
July 5	Inferior Conjunction.
July 27	Stationary.
Aug. 11	Greatest Brilliancy.
Sept. 14	Greatest Elongation W., 46° 2'.

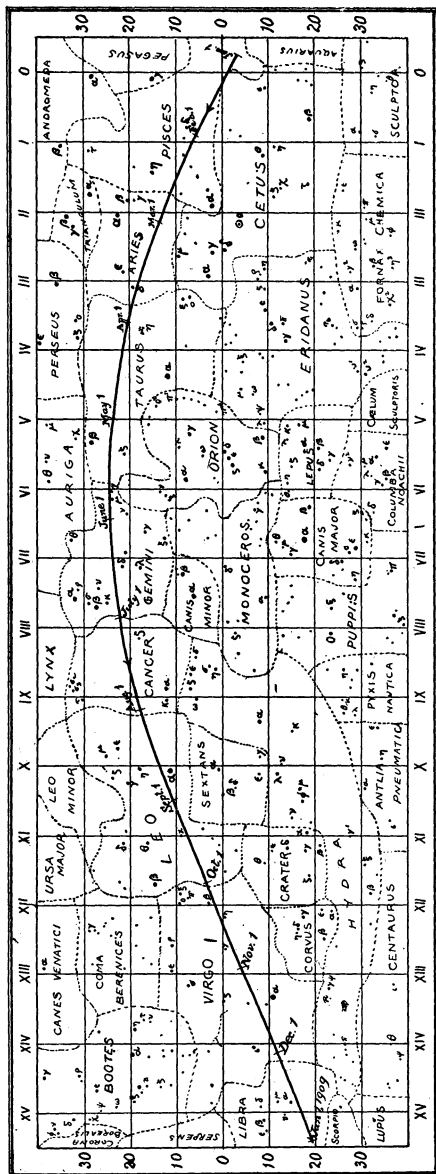
The phases of Venus are easily seen with a small telescope. When about midway between greatest elongation and inferior conjunction the planet has an apparent diameter of 40", and with a magnifying power of only 45 it looks exactly like the Moon when four days old, and of precisely the same apparent size.

The surface markings are not conspicuous but are deserving of careful study, as observations on them may lead to a determination of the period of rotation of the planet. Some observers give it as 23 h. 21 m., but the stronger evidence favors 225 days, i.e., the planet's orbital period. In this case the planet will always present the same face to the Sun, just as our Moon does to the Earth.

MARS ♂

This planet is a most interesting object of study, but during 1908 it will not be well placed for observation. Its sidereal period is 687 days and synodic period 780 days, and hence its oppositions occur a little over two years apart. The last was on July 6, 1907, and the next will be on Sept. 24, 1909. This opposition will be a favorable one for observation, the distance from the earth being about 36,200,000 miles. These favorable oppositions occur at intervals of 15 or 17 years, the last previous one having been in 1892. Fifteen years before this, in 1877, the two minute moons of the planet were discovered by Asaph Hall, at Washington. These satellites, remarkable for the rapidity of their revolution about the planet, can be seen only with very powerful telescopes.

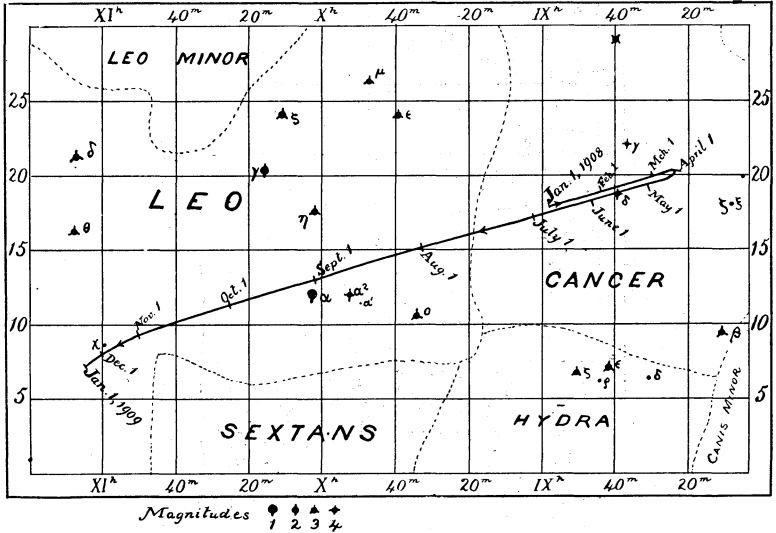
In the accompanying diagram on page 43 is shown the path of Mars amongst the stars in 1908.



Path of Mars among the Stars in 1908.

JUPITER ♃

Jupiter is the greatest of all the planets, and his brightness, superior to any of the fixed stars, is surpassed by Venus only. Even a small telescope will show an appreciable disc, and the motions of the four earliest discovered moons can easily be followed by the amateur astronomer. At present Jupiter is known to have seven satellites. Four were discovered by Galileo in 1610, the



Path of Jupiter among the Stars in 1908.

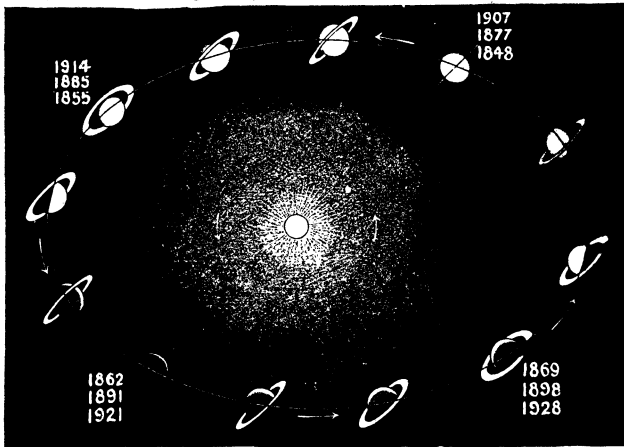
fifth by Barnard at the Lick Observatory in 1892, and the sixth and seventh were discovered by photography by Perrine of the same Observatory in December, 1904, and January, 1905. The times of all the eclipses visible in Canada are given in the monthly predictions at the end of this volume.

On January 29 Jupiter will be in opposition. Its synodic period is 399 days, and the next opposition will be on Feb. 28, 1909. The planet will be in quadrature on

April 24, in conjunction August 17, and in quadrature to the west of the Sun on Dec. 5. From August 17 to the end of the year it will be a morning star. In the accompanying diagram is shown the path of Jupiter among the stars in 1908.

SATURN b

In the telescope a magnificent spectacle is presented by this planet, surrounded by its unique ring-system and its numerous satellites.



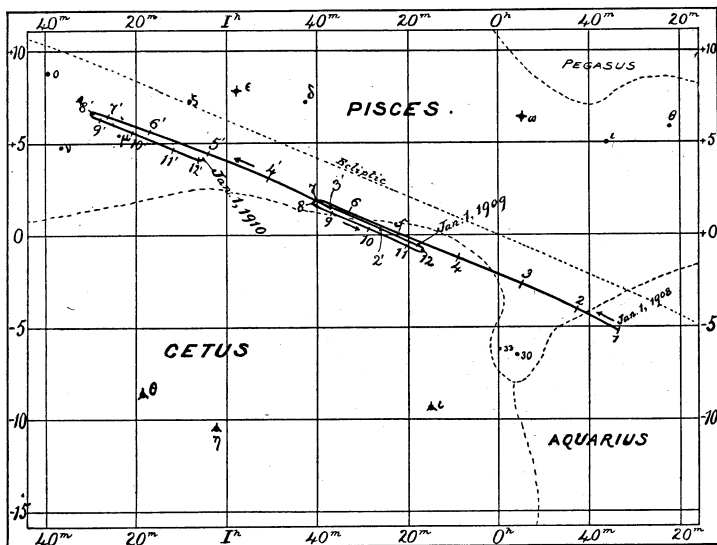
Phases of Saturn's Rings.

At the beginning of the year Saturn will be an evening star, gradually approaching the Sun until on March 20 it will be in conjunction. After this it will be a morning star, being in quadrature on July 1 and reaching opposition on September 30. After this it will be an evening star again, being in quadrature on Dec. 25.

On account of the fact that the ring-system remains always parallel to itself, as shown in the accompanying

figure, it will happen that twice in the planet's revolution in $29\frac{1}{2}$ years the edge of the rings will be turned to the Sun or the Earth, in which case they will not be seen. This very interesting event took place in 1907.

At the beginning of 1908 the earth is 5° below (south of) the plane of the Ring, and at the end of the year it will be $10\frac{1}{2}^\circ$ below. The south face of the Ring appears to broaden out until 1914, when it will reach its maximum elevation above the earth.



Path of Saturn among the Stars in 1908 and 1909.

Saturn is now known to have ten satellites, the ninth having been discovered in 1898 by W. H. Pickering, and the tenth by the same astronomer in 1905. The latter is a very small object. The largest of all is Titan, which, according to Webb, may be seen with a telescope of 1-inch aperture. Its mean synodic period is 15 d. 23.3 h., and

the times for eastern elongation are given in the following table :—

Eastern Elongations of Titan

(Greenwich Mean Time, Hours numbered from Noon).

	D.	H.		D.	H.		D.	H.
Jan.....	4	14.6	July.....	14	17.3	Oct.....	2	6.6
Jan.....	20	14.6	July.....	30	16.0	Oct.....	18	4.0
May.....	27	18.6	Aug.....	15	14.1	Nov.....	3	1.7
June.....	12	18.6	Aug.....	31	11.9	Nov.....	18	23.6
June.....	28	18.0	Sept.....	16	9.3	Dec.....	4	22.0
						Dec.....	20	21.0

The position of the satellite at any other time can easily be calculated.

The outer ring has an exterior diameter of 168,000 miles, while the thickness probably does not exceed 100 miles. If a model of the rings were constructed on a scale of 10,000 miles to the inch, the outer ring would have a diameter of nearly 17 inches, and the thickness would be that of an ordinary sheet of writing paper.

It has been demonstrated that the rings are composed of a swarm of separate particles, each pursuing its own path about the planet.

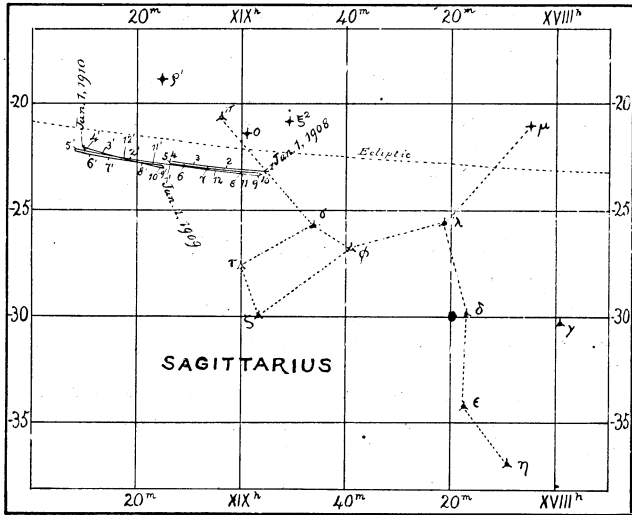
In the diagram on page 46 is shown the path of Saturn amongst the stars in 1908 and 1909.

URANUS ☽ or ♅

Uranus, the planet discovered by the elder Herschel in 1781, appears to the naked eye on a dark night as a small star of the sixth magnitude. During the year it will be in the constellation Sagittarius. On Jan. 4 it will be in conjunction, on April 6 in quadrature, on April 21 stationary, on July 7 in opposition, on Sept. 22 stationary, and in quadrature to the east of the Sun on Oct. 6.

Uranus has four satellites, inaccessible, however, to telescopes of small aperture.

The accompanying diagram exhibits the path of the planet in 1908 and 1909.



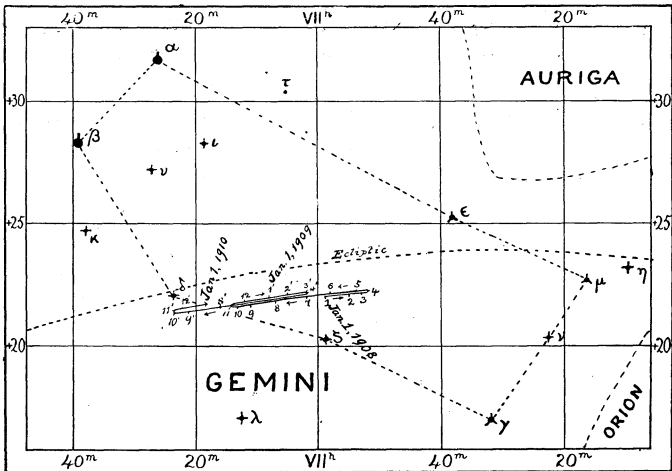
Magnitudes $\frac{3}{4} \frac{5}{6}$

Path of Uranus among the Stars in 1908 and 1909.

NEPTUNE Ψ

The planet Neptune is the most distant member of the solar system, being 2,800 millions of miles from the Sun, and requiring 165 years to complete a revolution. In 1908 it will be in the constellation Gemini, and the accompanying diagram shows its path during the years 1908 and 1909. It appears as a star of the eighth magnitude and so cannot be seen with the naked eye.

It will be in opposition January 4, in conjunction July 6, and in quadrature April 2 and October 10.



Magnitudes $\bullet \blacktriangle + \cdot$
 1 3 4 5

Path of Neptune among the Stars in 1908 and 1909.

**MERIDIAN PASSAGE AND DECLINATION OF FIVE PLANETS
ON THE 1st AND 15th OF EACH MONTH**

The times are local mean time (approximately); the variation of this from the Standard time for any place must be allowed for. Hours number from midnight. The declination is that at Greenwich mean noon on the days named.

1907		MERCURY ♀		VENUS ♀		MARS ♂		JUPITER ♃		SATURN ♄	
		Mer. Pass.	Decl.	Mer. Pass.	Decl.	Mer. Pass.	Decl.	Mer. Pass.	Decl.	Mer. Pass.	Decl.
		h. m.	° /	h. m.	° /	h. m.	° /	h. m.	° /	h. m.	° /
Jan.	1	11 30	S.24 32	13 58	S.20 20	16 56	S. 3 10	2 22	N.17 52	16 54	S. 5 14
"	15	12 14	23 12	14 12	15 11	16 37	N. 1 0	1 20	18 20	16 3	4 47
Feb.	1	13 5	14 57	14 24	7 14	16 14	5 58	0 5	18 58	15 2	4 8
"	15	13 20	5 17	14 31	N. 0 2	15 54	9 50	22 58	19 27	14 12	3 30
March	1	11 42	5 15	14 37	7 49	15 35	13 40	21 52	19 51	13 19	2 48
"	15	10 40	10 25	14 42	14 31	15 17	16 51	20 54	20 4	12 31	2 7
April	1	10 27	8 6	14 51	21 11	14 57	20 4	19 45	20 9	11 32	1 17
"	15	10 46	0 42	15 0	24 56	14 41	22 6	18 52	20 3	10 43	0 37
May	1	11 34	N.11 41	15 7	26 55	14 23	23 42	17 54	19 45	9 46	N. 0 4
"	15	12 34	22 7	15 5	26 43	14 8	24 24	17 5	19 22	8 57	0 37
June	1	13 36	25 29	14 44	24 41	13 50	24 23	16 8	18 43	7 56	1 9
"	15	13 37	22 24	14 1	22 17	13 34	23 40	15 23	18 5	7 4	1 29
July	1	12 25	18 35	12 33	19 31	13 15	22 8	14 32	17 13	6 4	1 43
"	15	11 3	18 51	11 3	17 41	12 58	20 13	13 48	16 23	5 10	1 47
Aug.	1	10 51	21 20	9 46	17 15	12 34	17 18	12 55	15 15	4 4	1 42
"	15	11 45	17 22	9 13	17 48	12 14	14 28	12 12	14 16	3 7	1 29
Sept.	1	12 42	5 11	8 58	17 52	11 50	10 38	11 20	13 2	1 57	1 5
"	15	13 7	S. 5 16	8 56	16 37	11 27	7 14	10 36	12 1	0 59	0 41
Oct.	1	13 21	14 56	9 0	13 20	11 2	3 11	9 46	10 52	23 47	0 11
"	15	13 6	19 2	9 5	8 56	10 40	S. 0 26	9 1	9 55	22 48	S. 0 14
Nov.	1	11 13	11 6	9 12	2 12	10 13	4 49	8 5	8 53	21 37	0 39
"	15	10 32	10 36	9 19	S. 3 57	9 51	8 19	7 17	8 11	20 40	0 53
Dec.	1	11 0	18 38	9 29	10 56	9 28	12 6	6 21	7 35	19 35	0 59
"	15	11 34	23 44	9 41	16 18	9 8	15 9	5 30	7 16	18 40	0 55

A SHORT LIST OF VARIABLE STARS

By *J. Miller Barr.*

Taken chiefly from the Harvard "Provisional Catalogue," which gives the positions and elements of 1227 stars, and is of great value to the amateur. Most of these stars can be identified with the aid of a good Star-Atlas. For times of maxima and minima consult also *Popular Astronomy* (monthly) and the "Companion to the *Observatory*."

NAME	LIMITING MAGS.	PERIOD			CLASS	DISCOVERER
		d.	h.	m.		
U Cephei.....	7.0- 9.2	2	11	49.6	V.	W. Ceraski.....1880
o Ceti.....	1.7- 9.5	331.7			II.	Fabricius.....1596
ρ Persei.....	3.4- 4.2		Irr.		III.	Schmidt.....1854
6.1904 Cephei.....	8.6- 9.1	32.3			V.	Blajko.....1904
β Persei (Algol)...	2.1- 3.2	2	20	48.9	V.	Montanari.....1669
λ Tauri.....	3.3- 4.2	3	22	52.2	V.	Baxendell.....1848
W Eridani.....	8.1-<12.5	369			II.	Fleming.....1898
RW Tauri.....	8-11	2	18	27.2	V.	Fleming.....1905
R Leporis.....	6-8?	436.1			II.	Schmidt.....1855
α Orionis.....	1- 1.4		Irr.		III.	J. Herschel.....1840
U Orionis.....	5.8-12.3	375			II.	Gore.....1885
η Geminorum.....	3.2- 4.2	231.4			III.	Schmidt.....1865
T Monocerotis.....	5.7- 6.8	27.0			IV.	Gould.....1871
ζ Geminorum.....	3.8- 4.3	10	3	41.5	IV.	Schmidt.....1847
R Geminorum.....	6.6-13.3	370.2			II.	Hind.....1848
R Canis Maj.....	5.7- 6.3	1	3	15.8	V.	Sawyer.....1887
S Cancrī.....	8.0-10.2	9	11	37.8	V.	Hind.....1848
S Antliæ.....	6.3- 6.8	0	7	46.8	IV.	Paul.....1888
W Ursæ Maj.....	7.9- 8.6	0	4	0.2	V.?	Müller & Kempf..1903
R Leonis.....	4.6-10.5	312.8			II.	Koch.....1782
R Hydræ.....	3.5- 9.7	425.1			II.	Montanari.....1670
δ Libræ.....	5.0- 6.2	2	7	51.4	V.	Schmidt.....1859
α Herculis.....	3.1- 3.9		Irr.		III.	W. Herschel.....1795
U Ophiuchi.....	6.0- 6.7	0	20	7.7	V.	Gould.....1871
X Sagittarii.....	4.4- 5.4	7	0	17.1	IV.	Schmidt.....1866
R Scuti.....	4.8- 7.8		Irr.		III.	Pigott.....1795
β Lyræ.....	3.4- 4.1	12	21	59.2	IV.	Goodricke.....1784
χ Cygni.....	4.5-13.5	406.0			II.	Kirch.....1686
η Aquilæ.....	3.7- 4.5	7	4	14.0	IV.	Pigott.....1784
S Sagittæ.....	5.5- 6.1	8	9	11.8	IV.	Gore.....1885
14.1904 Cygni.....	10.7-11.6	0	3	14.2	IV.	Ceraski.....1904
Y Cygni.....	7.1- 7.9	1	11	57.5	V.	Chandler.....1886
δ Cephei.....	3.7- 4.6	5	8	47.7	IV.	Goodricke.....1784
U Pegasi.....	9.3- 9.9	0	8	59.7	IV.	Chandler.....1894

DOUBLE STARS

Even with telescopes of small aperture it is possible to resolve a comparatively large number of double stars, and hence this kind of observation has much interest for the amateur. It permits one, also, to determine the optical value of the instrument he employs, as the power to separate the images is directly proportional to the diameter of the objective.

The usual test of excellence is that an objective of one-inch diameter should be able to separate star images at a distance of 4".56 between their centres. This power should vary according to the following table:—

An objective of diam.	2 in.	should separate stars distant	2.28
An objective of diam.	3 in.	should separate stars distant	1.52
An objective of diam.	4 in.	should separate stars distant	1.14
An objective of diam.	5 in.	should separate stars distant	0.91
An objective of diam.	6 in.	should separate stars distant	0.76
An objective of diam.	10 in.	should separate stars distant	0.45
An objective of diam.	20 in.	should separate stars distant	0.23
An objective of diam.	40 in.	should separate stars distant	0.114
and so on.			

In choosing a double-star for testing a telescope care should be taken that a binary, with varying distance between the components, be not selected.

THE MOST BEAUTIFUL DOUBLE STARS FOR TELESCOPES OF ORDINARY POWER

I. THE MOST LUMINOUS PAIRS

"Diamonds"

STAR	MAGS.	DIST. "	STAR	MAGS.	DIST. "
Mizar....	2.4, 4.0	14.5	γ Leonis....	2.5, 4.0	3.0
Castor...	2.5, 3.0	5.6	β Scorpii...	2.5, 5.5	13.0
γ Virginis..	3.0, 3.2	5.0	θ Serpentis..	4.4, 6.0	21.0
γ Arietis...	4.2, 4.5	8.9	44i Boötis....	5.0, 6.0	4.8
ζ Aquarii..	3.5, 4.4	3.5	π Boötis....	4.3, 6.0	6.0

II. THE FINEST COLORED PAIRS

“Rubies, Garnets, Sapphires, Topazes, Emeralds”

STAR	MAGNITUDES	DISTANCE "	COLORS
γ Andromedæ..	2.2, 5.5	10	Orange, Green.
α Canum Venat.	3.2, 5.7	20	Golden, Lilac.
β Cygni.....	3.3, 5.5	34	Golden, Sapphire.
ϵ Boötis.....	2.4, 6.5	2.9	Golden, Sapphire.
95 Herculis....	5.5, 5.8	6	Golden, Azure.
α Herculis....	4, 5.5	4.7	Ruby, Emerald.
γ Delphini....	3.4, 5	11	Golden, Bluish Green.
32 Eridani.....	4.7, 7	6.7	Topaz, Bright Green.
ϵ Hydræ.....	3.5, 7.5	3.5	Yellow, Blue.
ζ Lyræ.....	4.5, 5.5	44	Yellow, Green.
ι Cancrî.....	4.5, 5	30	Pale Orange, Blue.
\omicron Cygni.....	4.3, 7.5, 5.5	337.8, 106.8	Yellow, Blue.
24 Coma Beren..	5.6, 7	21	Orange, Lilac.
\omicron Cephei.....	5.4, 8	2.5	Golden, Azure.
94 Aquarii.....	5.5, 7.5	11	Rose, Greenish.
39 Ophiuchi....	5.7, 7.5	12	Yellow, Blue.
41 Aquarii.....	5.8, 8.5	4.8	Yellow Topaz, Blue.
2 Canum Venat	6, 9	11	Golden, Azure.
52 Cygni.....	4.6, 9	7	Orange, Blue.
55 Piscium.....	6, 9	6	Orange, Blue.
κ Geminorum..	3.8, 9	9	Orange, Blue.
ρ Orionis.....	5.1, 9	6.8	Orange, Blue.
54 Hydræ.....	5.2, 8	9	Yellow, Violet.
η Persei.....	4.2, 8.5	28	Yellow, Blue.
ϕ Draconis....	4.8, 6	31	Yellow, Lilac.
\omicron Draconis....	4.7, 8.5	32	Golden, Lilac.
η Cassiopeïæ..	4.7, 7	5.7	Golden, Purple.
23 Orionis.....	5.4, 7	32	White, Blue.
δ Herculis....	3.6, 8	18	White, Violet.
\omicron Capricorni..	6.3, 7	22	Bluish.
17 Virginis....	6.5, 7	20	Rose.
ξ Boötis.....	4.5, 6.5	4.2	Reddish Yellow.

The colors given above are according to Flammarion. For slight variations and also for a much longer list consult Webb's "Celestial Objects."

MEAN PLACES OF FIXED STARS, JANUARY 1, 1908

NAME OF STAR	MAG.	RIGHT ASCENSION	DECLINATION
		h. m. s.	° ' "
<i>β</i> Cassiopeiā.....	2.4	0 4 15.8	+58 38 32.5
<i>α</i> Cassiopeiā (var.).....	2.3	0 35 16.8	+56 1 58.4
<i>γ</i> Cassiopeiā.....	2.3	0 51 8.9	+60 12 7.4
<i>β</i> Andromedā.....	2.2	1 4 34.6	+35 7 58.7
<i>α</i> Ursae Min. (Polaris).....	2.2	1 26 1.6	+88 48 56.3
<i>α</i> Eridani (Achernar).....	0.4	1 34 17.3	-57 42 14.6
<i>α</i> Arietis.....	2.1	2 1 59.0	+23 1 39.9
<i>β</i> Persei (Algol) (var.).....	2.3	3 2 10.7	+40 36 6.2
<i>α</i> Persei.....	1.9	3 17 44.9	+49 32 3.6
<i>α</i> Tauri (Aldebaran).....	1.0	4 30 38.4	+16 19 29.6
<i>α</i> Aurigæ (Capella).....	0.1	5 9 53.4	+45 54 18.6
<i>β</i> Orionis (Rigel).....	0.3	5 10 7.0	- 8 18 26.6
<i>β</i> Tauri.....	1.8	5 20 28.5	+28 31 49.4
<i>ε</i> Orionis.....	1.8	5 31 32.7	- 1 15 36.4
<i>α</i> Orionis (var.).....	0.9	5 50 11.5	+ 7 23 25.7
<i>β</i> Aurigæ.....	2.0	5 52 46.8	+44 56 19.8
<i>α</i> Argus (Canopus).....	-0.8	6 21 54.6	-52 38 42.8
<i>γ</i> Geminorum.....	2.0	6 32 23.9	+16 28 42.1
<i>α</i> Can. Maj. (Sirius).....	-1.4	6 41 5.6	-16 35 22.2
<i>ε</i> Canis Majoris.....	1.5	6 55 0.6	-28 50 47.1
<i>α</i> ² Geminorum (Castor).....	1.9	7 28 43.9	+32 5 28.1
<i>α</i> Can. Min. (Procyon).....	0.5	7 34 29.2	+ 5 27 40.2
<i>β</i> Geminorum (Pollux).....	1.2	7 39 41.3	+28 14 56.3
<i>β</i> Argus.....	2.0	9 12 11.6	-69 20 17.5
<i>α</i> Hydræ.....	2.1	9 23 4.0	- 8 15 33.9
<i>α</i> Leonis (Regulus).....	1.3	10 3 28.4	+12 25 1.7
<i>α</i> Ursæ Majoris.....	2.0	10 58 3.6	+62 14 52.3
<i>β</i> Leonis.....	2.2	11 44 22.1	+15 5 11.0
<i>γ</i> Ursæ Majoris.....	2.4	11 48 59.8	+54 12 22.6
<i>α</i> ¹ Crucis.....	0.9	12 21 28.4	-62 35 21.5
<i>α</i> Virginis (Spica).....	1.1	13 20 20.7	-10 40 52.5
<i>η</i> Ursæ Majoris.....	1.9	13 43 55.0	+49 46 19.9
<i>β</i> Centauri.....	0.7	13 57 19.4	-59 55 46.1
<i>α</i> Boötis (Arcturus).....	0.2	14 11 27.9	+19 39 39.9
<i>α</i> ² Centauri.....	0.2	14 33 26.6	-60 27 21.9
<i>α</i> Corona Borealis.....	2.3	15 30 47.5	+27 1 25.9
<i>α</i> Scorpii (Antares).....	1.2	16 23 45.9	-26 13 42.1
<i>α</i> Ophiuchi.....	2.2	17 30 39.8	+12 37 35.1
<i>α</i> Lyræ (Vega).....	0.2	18 33 49.4	+38 41 51.4
<i>α</i> Sagittarii.....	2.3	18 49 33.6	-26 24 41.9
<i>α</i> Aquilæ (Altair).....	0.9	19 46 17.7	+ 8 37 29.3
<i>γ</i> Cygni.....	2.3	20 18 55.6	+39 57 42.6
<i>α</i> Cygni.....	1.4	20 38 17.7	+44 57 4.4
<i>ε</i> Pegasi.....	2.4	21 39 40.0	+ 9 27 10.2
<i>α</i> Pis. Austr. (Fomalhaut).....	1.3	22 52 34.2	-30 6 36.2
<i>α</i> Pegasi (Markab).....	2.5	23 0 10.6	+14 42 36.4

DISTANCES OF THE STARS

The *annual parallax* of a star is the angle subtended at the star by a radius of the earth's orbit. It is from this quantity that the distances of the stars are calculated. For a small number of stars their distances from us have been determined with considerable accuracy, and some of these are given in the following table.

In the fifth column the distance is given in terms of the Sun's distance, and in the sixth column the distance is expressed in Light-years, i.e., the number of years required for the light from the star to travel to us. Light travels at the rate of 186,000 miles per second.

NAME	MAGNITUDE	ANNUAL PARALLAX	PROPER MOTION	DISTANCE	
				Times Sun's Distance	Light Years
		"	"		
<i>a</i> Centauri....	0.7	0.75	3.67	275,000	4
21 185 Lalande.	6.9	0.50	4.75	447,000	6.5
61 Cygni.....	5.1	0.40	5.16	550,000	8
Sirius.....	- 1.4	0.39	1.31	570,000	8.3
Procyon....	0.5	0.27	1.25	825,000	12
<i>σ</i> Draconis....	4.7	0.25	.....	907,000	13.2
Altair.....	1.0	0.20	0.65	1,120,000	16.3
<i>ε</i> Indi.....	5.2	0.20	4.60	1,120,000	16.3
<i>σ</i> ² Eridani....	4.5	0.19	4.05	1,169,000	17
<i>β</i> Cassiopeæ..	2.4	0.16	0.55	1,375,000	20
Vega.....	0.2	0.16	0.36	1,375,000	20
70 Ophiuchi....	4.1	0.15	1.13	1,444,000	21
<i>e</i> Eridani.....	4.4	0.14	3.03	1,581,000	23
Aldebaran..	1.0	0.12	0.19	1,856,000	27
Capella....	0.2	0.11	0.43	1,994,000	29
Regulus....	1.4	0.10	0.27	2,200,000	32
Polaris....	2.1	0.07	0.05	3,231,000	47
85 Pegasi.....	5.8	0.054	1.29	4,125,000	60

RADIANTS OF THE CHIEF METEORIC SHOWERS, 1908

By *W. F. Denning.*

B, Bright ; R, Rapid ; S, Slow ; K, Streaks ; T, Trains.

DATE	RADIANT		Meteors	DATE	RADIANT		Meteors
	R.	DEC.			R.	DEC.	
	°	°			°	°	
Jan. 2—4	230	+ 53	R	July—Aug.	339	- 27	ST
Jan. —Mar.	147	- 12	SB	Aug. 10—12	45	+ 57	RK
Jan. 11	220	+ 13	RK	Aug. 10—Sept. 16	353	- 11	ST
Jan. 17—25	143	+ 48	R	Aug. 5—16	290	+ 53	RB
Jan. 22—Feb. 1 . .	159	+ 26	R	Aug. 21—25	291	+ 60	SB
Jan. 25	131	+ 32	R	Aug. 25	5	+ 11	S
Feb. 5—23	75	+ 41	SB	Aug.—Sept.	346	+ 1	ST
Feb. 15	236	+ 11	RK	Aug.—Oct. 2	74	+ 42	RK
Feb. 20	263	+ 36	RK	Sept. 3—8	353	+ 39	vR
Mar. 1—4	166	+ 4	SB	Sept. 5—15	62	+ 37	RK
Mar. 14	250	+ 54	R	September	64	+ 22	RK
Mar. 18	316	+ 76	SB	Sept. 7—27	75	+ 15	RK
Mar. 13—24	161	+ 58	R	Sept. 3—22	60	+ 49	RK
Mar.—May	263	+ 62	R	Sept. 15—Oct. 11	14	+ 7	S
April 12—24	210	- 10	SB	Sept. 21	31	+ 19	ST
April 17—22	218	- 31	ST	Sept. 29—Oct. 5 . .	189	+ 73	R
April 18—23	189	- 31	ST	Oct. 2	230	+ 52	SB
April 20—22	271	+ 33	RK	Oct. 4	133	+ 79	RK
April 30	290	+ 59	R	Oct. 8	77	+ 31	RK
April—May	193	+ 58	SB	Oct. 8—14	45	+ 58	ST
May 1—6	338	- 2	RK	Oct. 16—23	89	+ 8	RK
May 11—18	231	+ 27	S	Oct. 18—24	92	+ 15	RK
May 26—31	310	+ 80	ST	Oct.	100	+ 13	RK
May 25—June 4 . .	280	+ 31	R	Oct.	133	+ 68	RK
May 30—Aug.	333	+ 27	RK	Oct. 11—Nov. 1 . .	43	+ 22	SB
May—June	235	+ 9	ST	Nov. 2—3	58	+ 9	SB
May—July	252	- 21	SB	Nov. 7—28	154	+ 41	RK
June 4—13	312	+ 61	RK	Nov. 14—16	151	+ 23	RK
June—Sept.	335	+ 57	R	Nov. 17—23	25	+ 43	ST
June—Sept.	303	+ 24	R	Nov. 20—28	63	+ 23	SB
July 6—Aug. 22 . .	284	- 13	ST	Nov. 23—Dec. 1 . .	189	+ 73	R
July 15—31	23	+ 43	RK	Nov. 25—Dec. 12	316	+ 60	ST
July 6—Aug. 16 . .	315	+ 48	R	Nov. 30	190	+ 58	RK
July—Aug.	269	+ 48	ST	Nov. 30—Dec. 9 . .	162	+ 58	RK
July 15—28	304	- 10	ST	Dec. 6	80	+ 23	SB
July	22	+ 22	RK	Dec. 8	208	+ 71	R
July 25—Sept. 15 .	48	+ 43	RK	Dec. 10—12	108	+ 33	R
July 27—31	339	- 11	ST	Dec. 7—12	119	+ 29	R
July—Sept.	335	+ 73	R	Dec. 22	194	+ 67	RK
July—Oct. 8	30	+ 36	RK	Dec. 22—29	194	+ 33	RK
July—Oct.	310	+ 79	S				

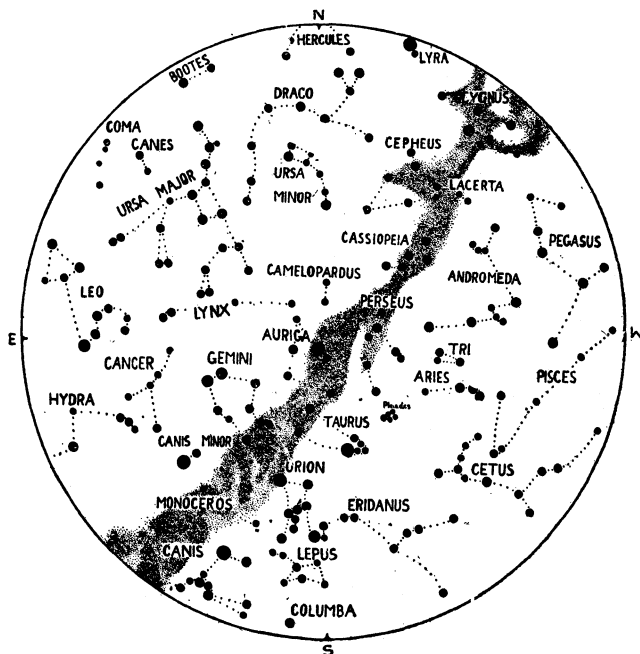
MONTHLY PREDICTIONS FOR 1908

Of the pages which follow two are devoted to each month.

On the first of these is a star map for the month, and also the times of the rising or the setting of the Planets according as they are morning or evening Stars on the 15th day of the month. These times are only approximate, being calculated for north latitude 45° with no allowance for refraction. They are given in local mean time, hours counting from midnight, and for any place the proper correction for standard time must be applied.

On the second page will be found the phases of the Moon, the planetary configurations, and the minima of Algol and eclipses of Jupiter's satellites visible in Canada. On this page 75th Meridian time is used.

THE NIGHT SKY FOR JANUARY



The heavens as they appear on
December 6, midnight; January 6, 22^h; February 5, 20^h

THE PLANETS ON JANUARY 15, 1908

	H.	M.	
Mercury, invisible.....			
Venus, Evening Star, sets.....	19	10	} Local Mean Time
Mars, Evening Star, sets.....	22	41	
Jupiter, Morning Star, rises.....	18	00	
Saturn, Evening Star, sets.....	21	43	

Jupiter in opposition, Jan. 29

JANUARY

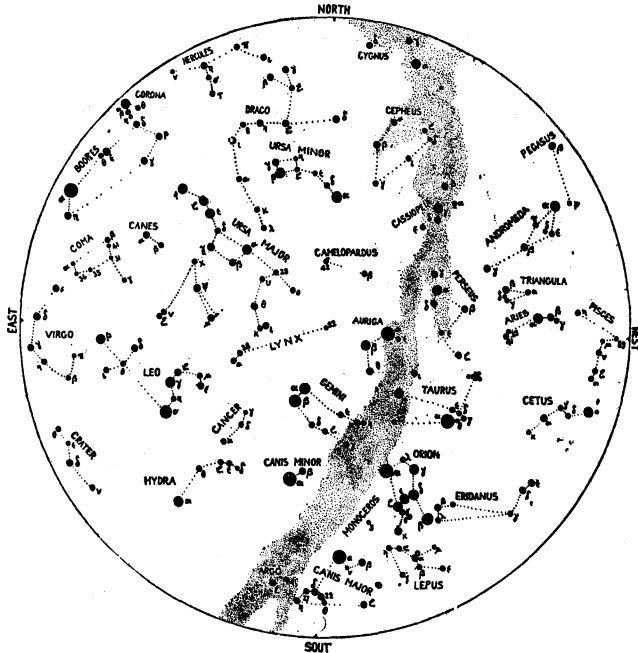
ASTRONOMICAL PHENOMENA

(75th Meridian Time, Hours Numbering from Midnight)

Day.

- 1.
2. 1^h ♀ greatest heliocentric latitude S.; 5^h ⊕ in Perihelion; 3^h 41^m eclipse II Sat., disap.
- 3. 4^h 43^m, new Moon; 5^h 45^m ♂ ♃ ♄, ♃ 2° 7' S.; 17^h ☉ eclipse (see page 37); 17^h 48^m ♂ ♁, ♁ 0° 30' S.
4. 9^h ♂ ♁ ☉.
5. 0^h ♂ ♀ ☉; 15^h 20^m ♂ ♀ ♄, ♀ 0° 45' N.
- 6.
7. 2^h 42^m eclipse I Sat., disap.
8. 3^h 8^m ♂ ♃ ♁, ♃ 1° 18' S.; 8^h 20^m ♂ ♁ ♄, ♁ 2° 57' N.; 16^h 59^m ♂ ♂ ♄, ♂ 5° 8' N.; 7^h 28^m minimum of Algol; 9^h 10^m, eclipse I Sat., disap.
9. 6^h 17^m eclipse II Sat., disap.
- Ⓝ 10. 8^h 53^m Moon's first quarter.
11. 4^h 16^m minimum of Algol.
12. 7^h 24^m eclipse II Sat., disap.
- 13.
14. 6^h ♂ ♃ ☉ superior; 1^h 5^m minimum of Algol; 4^h 36^m eclipse I Sat., disap.
15. 11^h 4^m eclipse I Sat., disap.
16. 21^h 54^m minimum of Algol.
17. 4^h 10^m ♂ ♀ ♄, ♀ 0° 44' S.
- ⊕ 18. 8^h 37^m full Moon; 11^h 0^m eclipse III Sat., disap.
19. 9^h 56^m ♂ ♁ ♄, ♁ 1° 33' S.; 19^h 7^m minimum of Algol; 10^h 10^m eclipse II Sat., disap.
- 20.
21. 8^h ♃ greatest heliocentric lat. S.; 6^h 30^m eclipse I Sat., disap.
- 22.
23. 0^h 58^m eclipse I Sat., disap.
24. 7^h 27^m eclipse I Sat., disap.
- 25.
- ⊕ 26. 11^h 1^m Moon's last quarter; 2^h 58^m eclipse III Sat., disap.
27. 8^h ♂ in ♁; 0^h 45^m eclipse III Sat., disap.
28. 6^h 39^m eclipse IV Sat., disap.
29. 16^h ♂ ♁ ☉.
30. 2^h 52^m eclipse I Sat., disap.
31. 7^h 49^m ♂ ♁ ♄, ♁ 0° 20' S.; 5^h 58^m minimum of Algol; 11^h 37^m eclipse I Sat., re-ap.

THE NIGHT SKY FOR FEBRUARY



The heavens as they appear on
January 6, midnight; February 5, 22^h; March 7, 20^h

THE PLANETS ON FEBRUARY 15, 1908

	H.	M.	
Mercury, Evening Star, sets.....	18	59	} Local Mean Time
Venus, Evening Star, sets.....	20	32	
Mars, Evening Star, sets.....	22	36	
Jupiter, Evening Star, sets.....	6	22	
Saturn, Evening Star, sets.....	19	58	

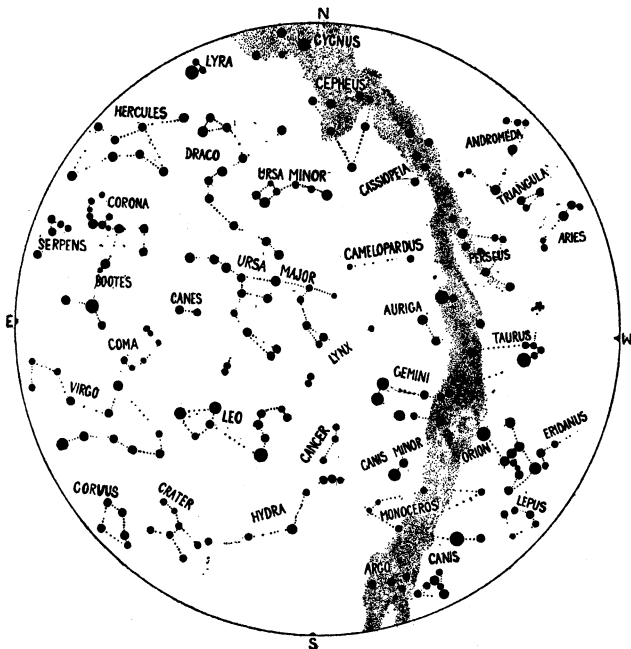
FEBRUARY

ASTRONOMICAL PHENOMENA

(75th Meridian Time, Hours Numbering from Midnight)

- Day.
- 1.
 - 2. 3^h 36^m new Moon; 18^h 5^m eclipse I Sat., re-ap.
 3. 1^h 27^m ♂ ♃ ☾, ♃ 2° 27' N.; 2^h 47^m minimum of Algol;
6^h 12^m eclipse II Sat., re-ap.
 4. 11^h 10^m ♂ ♀ ☾, ♀ 3° 48' N.; 22^h 2^m ♂ ♄ ☾, ♄ 3° 2' N.
 5. 23^h 36^m minimum of Algol.
 6. 17^h 21^m ♂ ♂ ☾, ♂ 5° 49' N.; 19^h 30^m eclipse II Sat., re-ap.
 - 7.
 - ♃ 8. 11^h 28^m Moon's first quarter; 20^h 25^m minimum of Algol;
1^h 31^m eclipse I Sat., re-ap.
 9. 21^h ♃ in ♋; 8^h 0^m eclipse I Sat., re-ap.
 10. 19^h 50^m ♂ ♀ ♄, ♀ 1° 18' N.
 11. 17^h 14^m minimum of Algol.
 - 12.
 13. 13^h 58^m ♂ ♃ ☾, ♃ 0° 43' S.; 14^h ♃ at greatest elongation 18° 9' E.; 22^h 5^m eclipse II Sat., re-ap.
 14. 6^h ♃ in Perihelion; 5^h 21^m eclipse IV Sat., re-ap.
 15. 9^h 17^m ♂ ♃ ☾, ♃ 1° 12' S.; 3^h 26^m eclipse I Sat., re-ap.
 16. 18^h 29^m eclipse III Sat., re-ap; 21^h 54^m eclipse I Sat., re-ap.
 - ☉ 17. 4^h 5^m full moon.
 - 18.
 19. 7^h ♃ stationary.
 20. 7^h 40^m minimum of Algol.
 21. 0^h 40^m eclipse II Sat., re-ap.
 - 22.
 23. 4^h 29^m minimum of Algol; 10^h 29^m eclipse III Sat., re-ap.; 11^h 49^m eclipse I Sat., re-ap.
 - ☾ 24. 10^h 24^m Moon's last quarter; 13^h ♃ greatest heliocentric lat. N.
 - 25.
 26. 1^h 18^m minimum of Algol.
 27. 19^h 48^m ♂ ♂ ☾, ♂ 0° 7' S.; 20^h ♀ in ♋.
 28. 23^h ♂ ♃ ☉ inferior; 22^h 7^m minimum of Algol; 3^h 15^m eclipse II Sat., re-ap.
 - 29.

THE NIGHT SKY FOR MARCH



The heavens as they appear on
February 5, midnight; March 7, 22^h; April 7, 20^h

THE PLANETS ON MARCH 15, 1908

	H.	M.	
Mercury, Morning Star, rises.....	5	22	} Local Mean Time
Venus, Evening Star, sets.....	21	43	
Mars, Evening Star, sets.....	22	28	
Jupiter, Evening Star, sets.....	4	19	
Saturn, Evening Star, sets.....	18	22	

Saturn in conjunction March 22, after this a morning star.

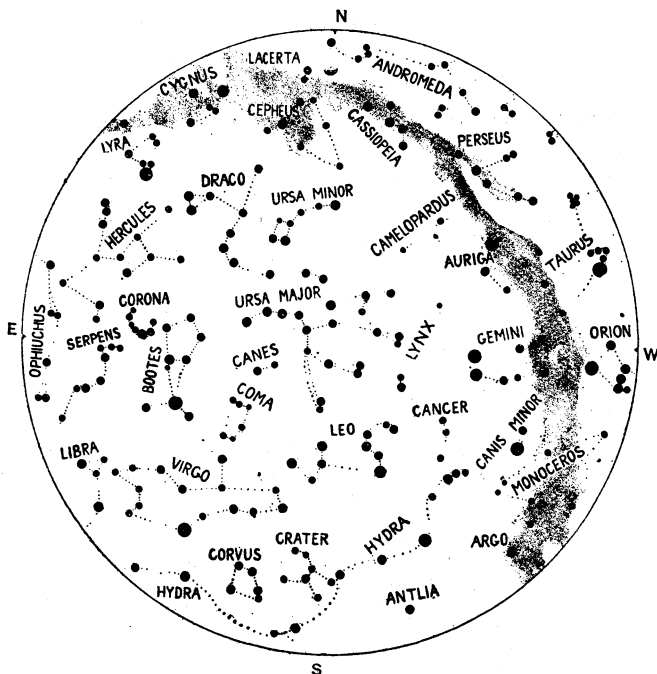
MARCH

ASTRONOMICAL PHENOMENA

(75th Meridian Time, Hours Numbering from Midnight)

- Day.
1. 18^h 43^m eclipse IV Sat., disap.; 23^h 25^m re-ap.
 - 2. New Moon 13^h 57^m; 1^h 31^m ♂ ♄, ♄ 8° 7' N.; 18^h 56^m minimum of Algol; 1^h 44^m eclipse I Sat., re-ap.; 2^h 28^m eclipse III Sat., re-ap.
 3. 14^h 9^m ♂ ♄, ♄ 3° 4' N.; 20^h 13^m eclipse I Sat., re-ap.
 - 4.
 5. 8^h 29^m ♂ ♀ ♄, ♀ 5° 49' N.
 6. 9^h 52^m ♂ ♂ ♄, ♂ 5° 26' N.
 - 7, 8.
 - 9. Moon's first quarter 16^h 42^m; 3^h 39^m eclipse I Sat., re-ap.; 19^h 8^m eclipse II Sat., re-ap.
 10. 22^h 8^m eclipse I Sat., re-ap.
 11. 14^h 55^m ♂ ♀ ♄, ♀ 0° 50' S.
 12. 7^h ♄ stationary.
 13. 11^h 7^m ♂ ♃ ♄, ♃ 1° 7' S.
 14. 6^h 11^m minimum of Algol.
 - 15.
 16. 21^h 43^m eclipse II Sat., re-ap.
 - ⊙ 17. Full Moon 21^h 28^m; 3^h 0^m minimum of Algol.
 18. 0^h 3^m eclipse I Sat., re-ap.
 19. 0^h ♄ in ♃; 23^h 49^m minimum of Algol.
 20. 7^h 27^m ☉ enters ♈; Spring begins.
 21. 0^h ♂ ♄ ☉.
 22. 20^h 38^m minimum of Algol.
 23. 8^h ♀ stationary.
 24. 0^h 18^m eclipse II Sat., re-ap.
 - ☾ 25. Moon's last quarter 7^h 32^m; 17^h 27^m minimum of Algol; 1^h 58^m eclipse I Sat., re-ap.
 26. 4^h 20^m ♂ ♄ ♄, ♄ 0° 11' N.; 20^h 27^m eclipse I Sat., re-ap.
 27. 5^h ♄ at greatest elongation 27° 49' W.
 - 28.
 29. 6^h ♄ in Aphelion; 21^h 25^m ♂ ♄ ♄, ♄ 2° 48' N.
 30. 9^h ♃ stationary.
 31. 11^h 4^m ♂ ♄ ♄, ♄ 3° 7' N.

THE NIGHT SKY FOR APRIL



The heavens as they appear on
 March 7, midnight; April 7, 22^h; May 7, 20^h

THE PLANETS ON APRIL 15, 1908

	H.	M.	
Mercury, Morning Star, rises.....	4	48	}
Venus, Evening Star, sets.....	22	51	
Mars, Evening Star, sets.....	22	17	
Jupiter, Evening Star, sets.....	2	17	
Saturn, Morning Star, rises.....	4	44	
			Local Mean Time

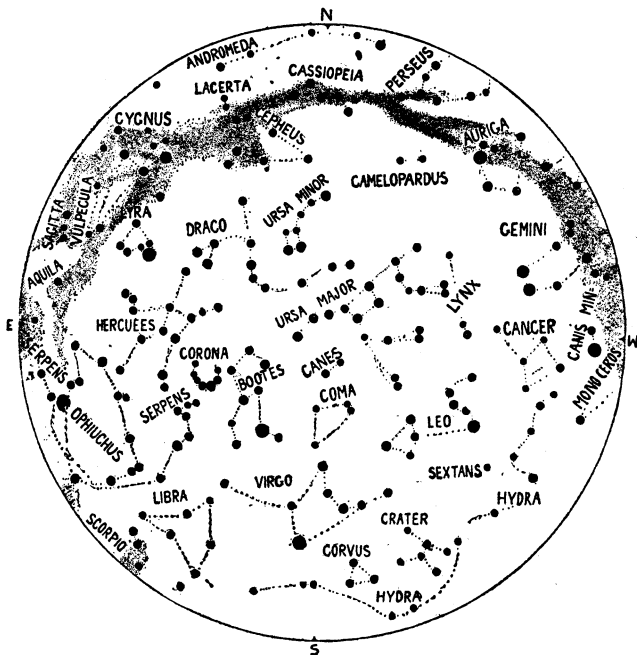
APRIL

ASTRONOMICAL PHENOMENA

(75th Meridian Time, Hours Numbering from Midnight)

- Day.
- 1. 0^h 2^m new Moon; 7^h ♀ in Perihelion.
 - 2. 1^h ☐ Ψ ☉; 22^h 23^m eclipse I Sat., re-ap.
 - 3. 7^h 53^m minimum of Algol.
 - 4. 8^h 24^m ♂ ♀ ☿, ♀ 5° 52' N.; 8^h 28^m ♂ ♂ ☿, ♂ 4° 15' N.;
10^h 27^m ♂ ♀ ♂, ♀ 1° 37' N.
 - 5.
 - 6. 8^h ☐ ♂ ☉; 4^h 42^m minimum of Algol; 22^h 27^m eclipse
III Sat., re-ap.
 - 7. 10^h 40^m ♂ Ψ ☿, Ψ 1° 5' S.
 - 8. 11^h 32^m Moon's first quarter.
 - 9. 17^h 55^m ♂ ♀ ☿, ♀ 1° 21' S.; 1^h 31^m minimum of Algol.
 - 10. 0^h 18^m eclipse I Sat., re-ap.
 - 11. 22^h 20^m minimum of Algol.
 - 12.
 - 13. 22^h 53^m eclipse III Sat., disap.
 - 14. 16^h 0^m ♂ ♀ ♃, ♀ 0° 28' S.; 19^h 8^m minimum of Algol.
 - 15.
 - ☉ 16. 11^h 55^m full Moon.
 - 17. 14^h ♀ greatest heliocentric lat. S., 21^h 20^m eclipse II Sat.,
re-ap.
 - 18. 20^h 42^m eclipse I Sat., re-ap.
 - 19, 20.
 - 21. 7^h ♂ stationary; 0^h 52^m eclipse IV Sat., disap.
 - 22. 10^h 12^m ♂ ♂ ☿, ♂ 0° 27' N.
 - ☿ 23. 14^h 7^m Moon's last quarter; 8^h ♀ greatest heliocentric
lat. N.
 - 24. 23^h 54^m eclipse II Sat., re-ap.
 - 25. 0^h ☐ ♀ ☉; 22^h 38^m eclipse I Sat., re-ap.
 - 26. 14^h ♀ at greatest elongation 45° 37' E.; 6^h 24^m minimum
of Algol.
 - 27. 19^h 50^m ♂ ♃, ♃ 3° 12' N.
 - 28.
 - 29. 15^h 15^m ♂ ♀ ☿, ♀ 3° 38' N.; 3^h 13^m minimum of Algol.
 - 30. 10^h 33^m new Moon.

THE NIGHT SKY FOR MAY



The heavens as they appear on
 April 7, midnight; May 7, 22^h; June 1, 20^h 30^m

THE PLANETS ON MAY 15, 1908

	H.	M.	
Mercury, Evening Star, sets.....	20	10	} Local Mean Time
Venus, Evening Star, sets.....	23	06	
Mars, Evening Star, sets.....	21	57	
Jupiter, Evening Star, sets.....	0	27	
Saturn, Morning Star, rises.....	2	54	

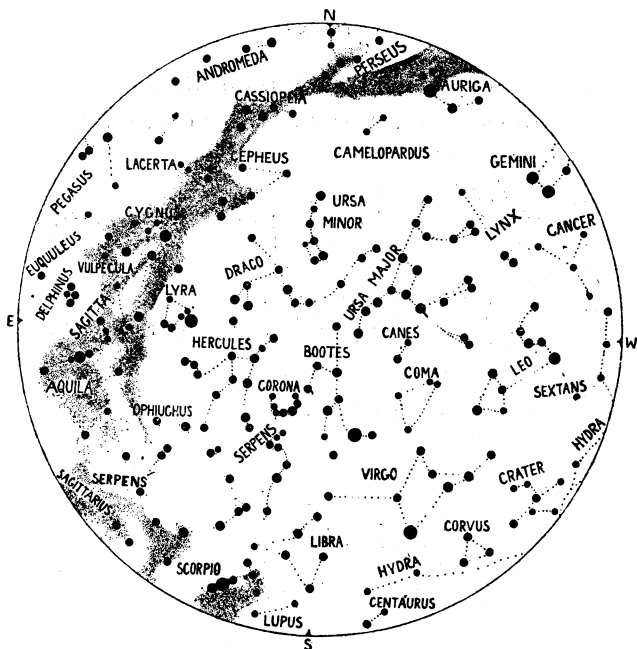
MAY

ASTRONOMICAL PHENOMENA

(75th Meridian Time, Hours Numbering from Midnight)

- Day.
- 1.
 2. 0^h 2^m minimum of Algol.
 3. 6^h 52^m ♂ ♂ ☿, ♂ 2° 40' N.; 0^h 33^m eclipse I Sat., re-ap.
 4. 4^h 59^m ♂ ♀ ☿, ♀ 4° 15' N.; 20^h 50^m minimum of Algol.
 5. 7^h 51^m ♂ ♀ ☿, ♀ 1° 20' S.
 - 6.
 7. 5^h 41^m ♂ ♀ ☿, ♀ 1° 47' S.; 13^h ♂ ♀ ☉ superior; 15^h ♀ in Ω; 17^h 39^m minimum of Algol; 23^h 43^m eclipse IV Sat., re-ap.
 - ☽ 8. 6^h 23^m Moon's first quarter.
 - 9, 10.
 11. 20^h 57^m eclipse I Sat., re-ap.
 12. 5^h ♀ in Perihelion.
 - 13, 14.
 - ☉ 15. 23^h 32.4^m full Moon.
 16. 8^h 6^m minimum of Algol.
 - 17.
 18. 22^h 53^m eclipse I Sat., re-ap.
 19. 15^h 34^m ♂ ♀ ☿, ♀ 0° 35' N.; 4^h 55^m minimum of Algol; 20^h 56^m eclipse II Sat., re-ap.; 22^h 27^m eclipse III Sat., re-ap.
 - 20, 21.
 - ☾ 22. 19^h 17^m Moon's last quarter; 12^h ♀ greatest heliocentric lat. N.; 1^h 44^m minimum of Algol.
 - 23.
 24. 22^h 32^m minimum of Algol.
 25. 6^h 47^m ♂ ♀ ☿, ♀ 3° 15' N.
 26. 22^h 53^m eclipse III Sat., disap.
 27. 19^h 21^m minimum of Algol.
 - 28.
 - ☉ 29. 22^h 14^m new Moon; 15^h ♀ at greatest brilliancy.
 - 30.
 31. 20^h 52^m ♂ ♀ ☿, ♀ 2° 19' N.

THE NIGHT SKY FOR JUNE



The heavens as they appear on
May 7, midnight; June 7, 22^h; June 22, 21^h

THE PLANETS ON JUNE 15, 1908

	H.	M.	
Mercury, Evening Star, sets.....	21	14	}
Venus, Evening Star, sets.....	21	37	
Mars, Evening Star, sets.....	21	18	
Jupiter, Evening Star, sets.....	22	38	
Saturn, Morning Star, rises.....	0	57	

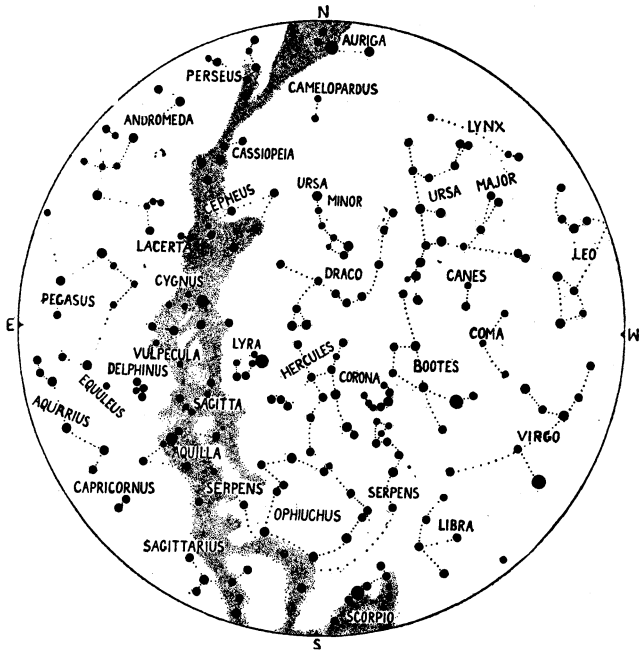
JUNE

ASTRONOMICAL PHENOMENA

(75th Meridian Time, Hours Numbering from Midnight)

- Day.
1. 4h 6^m ♂ ♀ ☿, ♂ 0° 59' N.; 17h 27^m ♂ ♀ ☿, ♀ 1° 30' S.
 2. 5h 43^m ♂ ♀ ☿, ♀ 1° 12' N.
 3. 8h 56^m ♂ ♀ ♃, ♀ 2° 15' S.; 21h 12^m eclipse I Sat., re-ap.
 - 4, 5.
 - ♃ 6. 11h 56^m Moon's first quarter.
 7. 11h 24^m ♂ ♀ ♂, ♀ 0° 19' N.; 20h ♀ at greatest elongation 23° 58' E.
 8. 6h 37^m minimum of Algol.
 - 9.
 10. 23h 25^m ♂ ♀ ♀, ♀ 1° 37' N.
 11. 3h 26^m minimum of Algol.
 12. 5h 38^m ♂ ♂ ♀, ♂ 1° 53' N.
 13. 16h ♀ stationary.
 - ☉ 14. 8h 55.2^m full Moon; 23h ♀ in ☿; 0h 14^m minimum of Algol.
 15. 10h 13^m ♂ ♀ ☿, ♀ 0° 33' N.
 16. 21h 3^m minimum of Algol.
 - 17.
 18. 9h ♀ in ☿.
 19. 17h 52^m minimum of Algol.
 20. 20h 31^m eclipse II Sat., re-ap.; 15h 30^m ♂ ♀ ☿, ♀ 3° 13' N.
 - ☿ 21. 0h 26^m Moon's last quarter; 4h ♀ stationary; 15h 19^m ☉ enters ☿; Summer begins.
 22. 15h 32^m ♂ ♀ ♂, ♀ 2° 4' S.
 - 23, 24.
 25. 5h ♀ in Aphelion.
 26. 21h 26^m eclipse I Sat., re-ap.
 - 27.
 - ♁ 28. 11h 32^m new Moon; ☉ eclipsed (see page 37); 8h 19^m minimum of Algol.
 29. 2h 33^m ♂ ♀ ☿, ♀ 1° 36' S.; 4h 34^m ♂ ♀ ☿, ♀ 4° 36' S.; 8h 27^m ♂ ♀ ☿, ♀ 3° 37' S.; 23h 47^m ♂ ♂ ☿, ♂ 0° 39' S.
 - 30.

THE NIGHT SKY FOR JULY



The heavens as they appear on
 June 7, midnight; July 7, 22h; July 30, 20h 30m

THE PLANETS ON JULY 15, 1908

	H.	M.	
Mercury, Morning Star, rises.....	3	42	} Local Mean Time
Venus, Morning Star, rises.....	3	48	
Mars, Evening Star, sets.....	20	24	
Jupiter, Evening Star, sets.....	20	55	
Saturn, Morning Star, rises.....	23	02	

Venus in conjunction July 5.

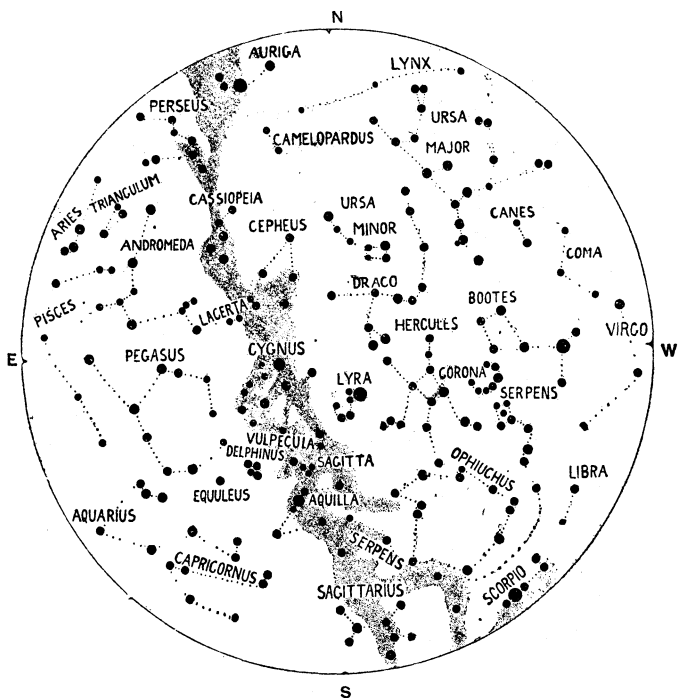
JULY

ASTRONOMICAL PHENOMENA

(75th Meridian Time, Hours Numbering from Midnight)

- Day.
1. 13^h 59^m ♂ ♃ ♄, ♃ 2° 40' S.; 23^h ♁ ♅ ☉; 5^h 8^m minimum of Algol.
 2. 14^h ☉ in Apogee.
 - 3.
 4. 2^h 5^m ♂ ♀ ♃, ♀ 2° 50' S.; 17^h ♂ ♀ ☉ inferior; 1^h 56^m minimum of Algol.
 5. 22^h ♂ ♀ ☉ inferior.
 - 6. 15^h 25^m Moon's first quarter; 23^h ♂ ♃ ☉; 22^h 45^m minimum of Algol.
 7. 7^h ♂ ♅ ☉.
 - 8.
 9. 19^h 34^m minimum of Algol.
 - 10, 11, 12.
 - ☉ 13. 16^h 48^m full Moon; 6^h 30^m ♂ ♅ ♄, 0° 26' N.
 - 14.
 15. 9^h 2^m ♂ ♃ ♀, ♃ 1° 12' N.; 14^h ♃ greatest heliocentric lat. S.; 17^h ♃ stationary.
 - 16, 17.
 18. 23^h 11^m ♂ ♅ ♄, ♅ 3° 2' N.
 - 19.
 - ☾ 20. 7^h 2^m Moon's last quarter.
 21. 6^h 49^m minimum of Algol.
 22. 19^h ♀ in Aphelion.
 23. 11^h ♅ stationary.
 24. 3^h 38^m minimum of Algol.
 25. 14^h 58^m ♂ ♀ ♄, ♀ 6° 10' S.; 17^h ♃ at greatest elongation 19° 50' W.
 26. 6^h 36^m ♂ ♃ ♄, ♃ 2° 44' S.; 10^h 45^m ♂ ♃ ♄, ♃ 1° 41' S.
 27. 13^h ♀ stationary; 0^h 27^m minimum of Algol.
 - 28. 2^h 17^m new Moon; 6^h 45^m ♂ ♃ ♃, ♃ 0° 44' S.; 18^h 13^m ♂ ♂ ♄, ♂ 2° 7' S.
 29. 8^h 42^m ♂ ♃ ♄, ♃ 3° 2' S.; 21^h 16^m minimum of Algol.
 30. 13^h ♂ greatest heliocentric lat. N.
 - 31.

THE NIGHT SKY FOR AUGUST



The heavens as they appear on
July 7, midnight; August 7, 22^h; September 6, 20^h

THE PLANETS ON AUGUST 15, 1908

	H.	M.		
Mercury, Morning Star, rises.....	4	34	}	
Venus, Morning Star, rises.....	1	58		Local
Mars, Evening Star, sets.....	19	15		Mean
Jupiter, Evening Star, sets.....	19	10		Time
Saturn, Morning Star, rises.....	20	59		

Mars in conjunction Aug. 23, after this a morning star.
Jupiter in conjunction Aug. 18, after this a morning star.

AUGUST

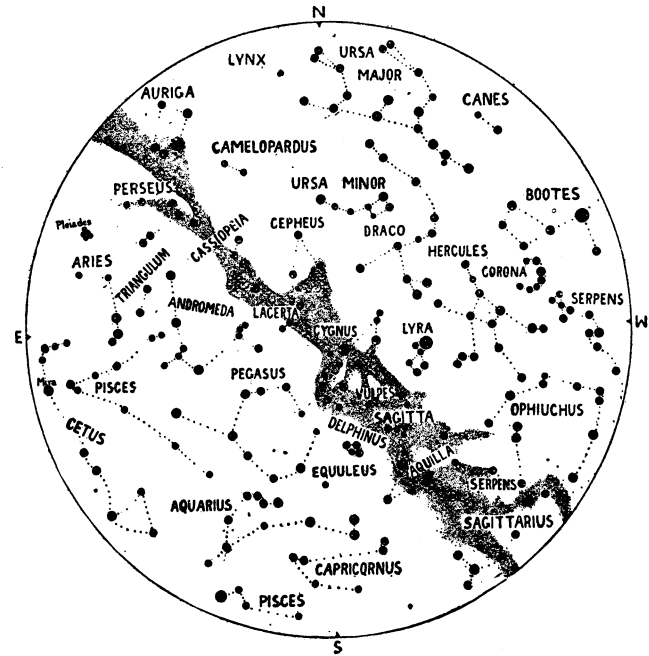
ASTRONOMICAL PHENOMENA

(75th Meridian Time, Hours Numbering from Midnight)

Day.

1. 18^h 5^m minimum of Algol.
- 2.
3. 2^h ♃ in ♏.
- 4.
- ♃ 5. 4^h 40^m Moon's first quarter.
- 6, 7.
8. 5^h ♃ in Perihelion.
9. 15^h 31^m ♂ ♄ ♃, ♄ 0° 24' N.
10. 8^h 31^m minimum of Algol.
- ☉ 11. 23^h 59^m full Moon; 19^h ♀ at greatest brilliancy.
- 12.
13. 21^h 12^m ♂ ♂ ♃, ♂ 0° 24' N.; 5^h 20^m minimum of Algol.
14. 6^h ♀ greatest heliocentric lat. S.
15. 6^h 53^m ♂ ♄ ♃, ♄ 2° 46' N.
16. 2^h 29^m minimum of Algol.
17. 15^h ♂ ♃ ☉.
- ♃ 18. 16^h 26^m Moon's last quarter; 12^h ♃ greatest heliocentric lat. N.; 22^h 58^m minimum of Algol.
19. 1^h 19^m ♂ ♃ ♃, ♃ 1° 2' N.
20. 10^h ♂ ♃ ☉ superior; 15^h 9^m ♂ ♃ ♂, ♃ 0° 40' N.
21. 19^h 47^m minimum of Algol.
22. 1^h ♂ ♂ ☉; 16^h 53^m ♂ ♀ ♃, ♀ 5° 36' S.; 18^h 16^m ♂ ♀ ♃, ♀ 1° 51' S.
- 23, 24, 25.
- ♃ 26. 17^h 59^m new Moon; 1^h 33^m ♂ ♃ ♃, ♃ 3° 23' S.; 12^h 6^m ♂ ♂ ♃, ♂ 3° 20' S.
27. 5^h 38^m ♂ ♃ ♃, ♃ 3° 22' S.
- 28, 29, 30, 31.

THE NIGHT SKY FOR SEPTEMBER



The heavens as they appear on
 August 7, midnight; September 6, 22^h; October 6, 20^h

THE PLANETS ON SEPTEMBER 15, 1908

	H.	M.	
Mercury, Evening Star, sets.....	18	45	} Local Mean Time
Venus, Morning Star, rises.....	1	47	
Mars, Morning Star, rises.....	4	58	
Jupiter, Morning Star, rises.....	3	46	
Saturn, Morning Star, rises.....	18	53	

SEPTEMBER

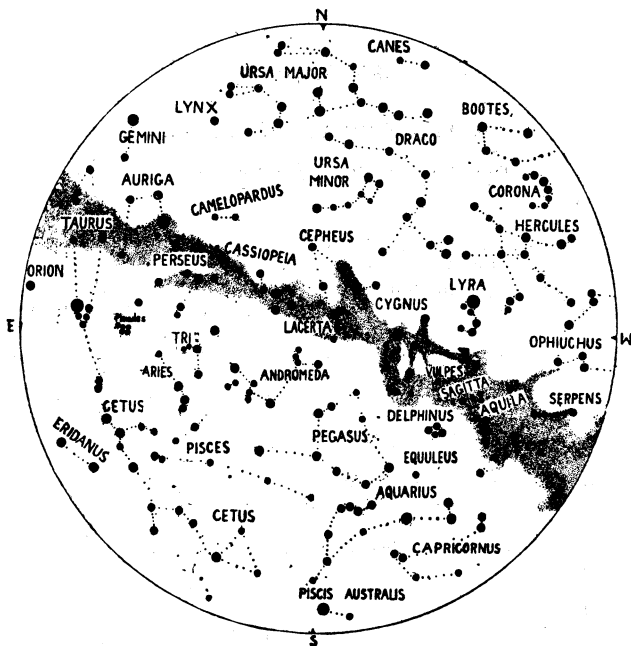
ASTRONOMICAL PHENOMENA

(75th Meridian Time, Hours Numbering from Midnight)

Day.

- 1.
2. 7^h 2^m minimum of Algol.
3. 13^h 51^m Moon's first quarter.
4. 1^h ♂ in Aphelion.
5. 23^h 53^m ♂ ♁, ♁ 0° 31' N.; 3^h 51^m minimum of Algol.
- 6, 7.
8. 0^h 40^m minimum of Algol.
- 9.
10. 7^h 23^m full Moon; 23^h ♃ in ☿; 21^h 29^m minimum of Algol.
11. 14^h 45^m ♂ ♁, ♁ 2° 33' N.
- 12.
13. 18^h 18^m minimum of Algol.
14. 16^h ♀ at greatest elongation 46° 2' W.
- 15, 16.
17. 5^h 33^m Moon's last quarter.
- 18.
19. 1^h 42^m ♂ ♃, ♃ 2° 7' S.
- 20.
21. 2^h 15^m ♂ ♁, ♁ 5° 0' S.; 4^h ♃ in Aphelion.
22. 9^h ♁ stationary; 19^h 19^m ♂ ♁, ♁ 3° 45' S.; 8^h 43^m minimum of Algol.
23. 5^h 59^m ☉ enters ♋; Autumn begins.
24. 6^h 21^m ♂ ♁, ♁ 4° 9' S.
25. 9^h 59^m new Moon; 5^h 33^m minimum of Algol.
- 26.
27. 8^h 42^m ♂ ♃, ♃ 7° 3' S.
28. 2^h 22^m minimum of Algol.
- 29.
30. 2^h ♂ ♁; 23^h 11^m minimum of Algol.

THE NIGHT SKY FOR OCTOBER



The heavens as they appear on
September 6, midnight; October 6, 22^h; November 6, 20^h

THE PLANETS ON OCTOBER 15, 1908

	H.	M.	
Mercury, Evening Star, sets.....	17	44	}
Venus, Morning Star, rises.....	2	30	
Mars, Morning Star, rises.....	4	42	
Jupiter, Morning Star, rises.....	2	18	
Saturn, Evening Star, sets.....	4	48	

Saturn in opposition Oct. 1.

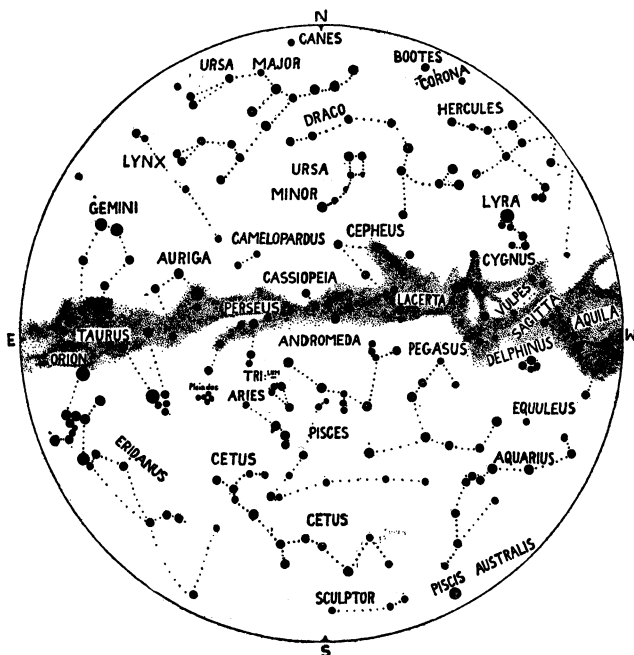
OCTOBER

ASTRONOMICAL PHENOMENA

(75th Meridian Time, Hours Numbering from Midnight)

- Day.
1, 2.
- ☽ 3. 1^h 14^m Moon's first quarter; 6^h 57^m ♄ ☽ ☿, ☽ 0° 46' N.;
19^h 6^m minimum of Algol.
4. 18^h ♃ at greatest elongation, 25° 33' E.
- 5.
6. 12^h ☐ ☽ ☉.
- 7.
8. 22^h 7^m ♂ ♀ ☿, ♀ 2° 31' N.
- ☉ 9. 16^h 3^m full Moon; 13^h ♀ in ♋; 5^h 15^m eclipse I Sat.,
disap.
10. 14^h ☐ ♀ ☉.
11. 13^h ♃ greatest heliocentric lat. S.
- 12.
13. 22^h 58^m ♂ ♀ ♃, ♀ 0° 36' S.
- 14.
15. 7^h 15^m minimum of Algol.
- ☿ 16. 22^h 35^m Moon's last quarter; 9^h 36' ♂ ♀ ☿, ♀ 2° 24' S.
17. 2^h ♃ stationary.
18. 4^h 4^m minimum of Algol.
- 19.
20. 11^h ♀ stationary; 12^h 40^m ♂ ♃ ☿, ♃ 4° 5' S.; 2^h 44^m
♂ ♀ ☿, ♀ 4° 26' S.
21. 0^h 53^m minimum of Algol.
- 22.
23. 1^h 49^m ♂ ♂ ☿, ♂ 4° 24' S.; 21^h 42^m minimum of Algol;
2^h 55^m eclipse II Sat., disap.
- 24.
- ☾ 25. 1^h 47^m new Moon; 11^h 38^m ♂ ♃ ☿, ♃ 5° 56' S.; 3^h 30^m
eclipse I Sat., disap.
26. 18^h 30^m minimum of Algol.
- 27.
28. 11^h ♂ ♃ ☉ inferior.
- 29.
30. 13^h 22^m ♂ ☽ ☿, ☽ 1° 3' N.; 14^h ♃ in ♋; 5^h 31^m eclipse
II Sat., disap.
- 31.

THE NIGHT SKY FOR NOVEMBER



The heavens as they appear on
October 6, midnight; Nov. 6, 22^h; December 6, 20^h

THE PLANETS ON NOVEMBER 15, 1908

	H.	M	
Mercury, Morning Star, rises.....	5	16	}
Venus, Morning Star, rises.....	3	35	
Mars, Morning Star, rises.....	4	24	
Jupiter, Morning Star, rises.....	0	43	
Saturn, Evening Star, sets.....	2	37	
			Local Mean Time

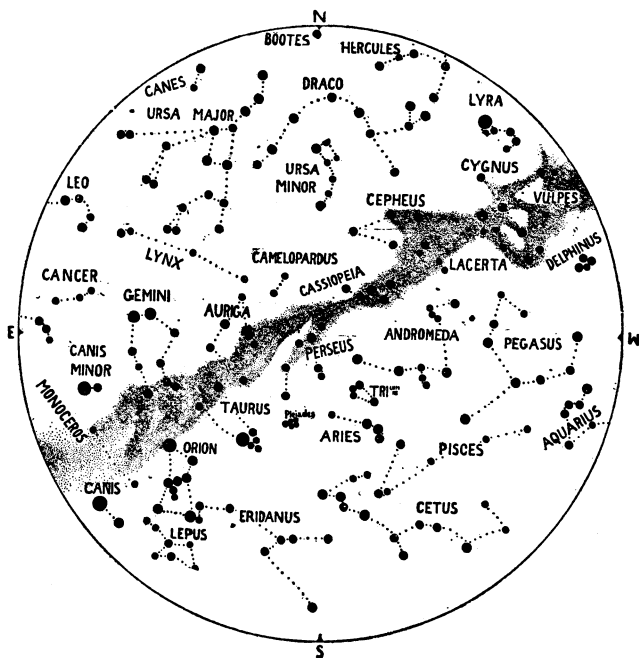
NOVEMBER

ASTRONOMICAL PHENOMENA

(75th Meridian Time, Hours Numbering from Midnight)

- Day.
1. 9^h 16^m Moon's first quarter; 5^h 23^m eclipse I Sat., disap.
- 2, 3.
4. 4^h ♃ in Perihelion; 8^h 57^m minimum of Algol.
5. 4^h 10^m ♂ ♃ ♄, ♃ 2° 42' N.
6. 3^h ♃ stationary.
7. 5^h 46^m minimum of Algol.
- ☉ 8. 7^h 58^m full Moon; 5^h 44^m eclipse IV Sat., re-ap.
- 9.
10. 2^h 35^m minimum of Algol; 1^h 44^m eclipse I Sat., disap.
- 11.
12. 6^h ♀ in Perihelion; 17^h 58^m ♂ ♄, ♄ 2° 36' S.; 23^h 24^m minimum of Algol.
13. 14^h ♃ at greatest elongation 19° 18' W.
14. 11^h ♃ greatest heliocentric lat. N.
- ☾ 15. 18^h 41^m Moon's last quarter; 20^h 12^m minimum of Algol; 1^h 48^m eclipse III Sat., re-ap.
- 16.
17. 4^h 42^m ♂ ♃ ♄, ♃ 4° 20' S.; 3^h 37^m eclipse I Sat., disap.
- 18, 19.
20. 10^h 42^m ♂ ♄ ♃, ♄ 3° 6' S.; 22^h 49^m ♂ ♂ ♄, ♂ 4° 0' S.
- 21.
22. 6^h 16^m ♂ ♃ ♄, ♃ 1° 55' S.; 2^h 19^m eclipse III Sat., disap.; 5^h 45^m eclipse III Sat., re-ap.
- ☉ 23. 16^h 53^m new Moon; 2^h 35^m eclipse II Sat., disap.; 5^h 30^m eclipse I Sat., disap.
- 24, 25.
26. 21^h 6^m ♂ ♄ ♃, ♄ 1° 17' N.
27. 7^h 28^m minimum of Algol.
- 28.
29. 6^h 16^m eclipse III Sat., disap.
- ☾ 30. 16^h 44^m Moon's first quarter; 18^h 15^m ♂ ♄ ♂, ♄ 1° 17' N.; 4^h 17^m minimum of Algol.

THE NIGHT SKY FOR DECEMBER



The heavens as they appear on
November 6, midnight; December 6, 22^h; January 6, 20^h

THE PLANETS ON DECEMBER 15, 1908

	H.	M.	
Mercury, Morning Star, rises.....	7	20	} Local Mean Time
Venus, Morning Star, rises.....	4	50	
Mars, Morning Star, rises.....	4	11	
Jupiter, Morning Star, rises.....	22	59	
Saturn, Evening Star, sets.....	0	37	

DECEMBER

ASTRONOMICAL PHENOMENA

(75th Meridian Time, Hours Numbering from Midnight)

- Day.
1. 5^h 11^m eclipse II Sat., disap.
 2. 9^h 11^m σ \flat \mathbb{C} , \flat 2° 56' N.
 3. 1^h 6^m minimum of Algol; 1^h 52^m eclipse I Sat., disap.
 4. 1^h φ greatest heliocentric lat. N.
 5. 21^h \square \mathbb{Q} \odot ; 21^h 54^m minimum of Algol.
 - 6.
 - ☉ 7. 16^h 44^m full Moon; 15^h \flat stationary; Moon eclipsed (see page 37); 22^h ϑ in ϑ .
 8. 18^h 43^m minimum of Algol.
 - 9.
 10. 2^h 2^m σ Ψ \mathbb{C} , Ψ 2° 38' S.; 3^h 44^m eclipse I Sat., disap.
 - 11, 12, 13.
 14. 17^h 47^m σ \mathbb{Q} \mathbb{C} , \mathbb{Q} 4° 22' S.
 - ☾ 15. 16^h 12^m Moon's last quarter.
 - 16.
 17. 9^h 9^m minimum of Algol; 5^h 37^m eclipse I Sat., disap.
 18. 4^h ϑ in Aphelion; 23^h 42^m eclipse II Sat., disap.
 19. 20^h 56^m σ σ \mathbb{C} , σ 2° 58' S.; 0^h 6^m eclipse I Sat., disap.
 20. 19^h 37^m σ φ \mathbb{C} , φ 0° 56' S.; 5^h 59^m minimum of Algol.
 - 21.
 22. 0^h 35^m \odot enters \sphericalangle ; Winter begins.
 - ☉ 23. 6^h 50^m new Moon; 6^h 4^m σ ϑ \mathbb{C} , ϑ 1° 5' S.; \odot eclipsed (see page 37); 2^h 47^m minimum of Algol.
 24. 0^h σ ϑ \odot superior; 7^h 39^m σ δ \mathbb{C} , δ 1° 25' N.
 25. 15^h \square \flat \odot ; 23^h 36^m minimum of Algol.
 26. 1^h 58^m eclipse I Sat., disap.; 2^h 18^m eclipse II Sat., disap.
 - 27.
 28. 20^h 25^m minimum of Algol; 1^h 30^m eclipse III Sat., re-ap.
 29. 15^h 14^m σ \flat \mathbb{C} , \flat 3° 4' N.
 - ☾ 30. 0^h 40^m Moon's first quarter.
 31. 0^h \mathbb{Q} stationary.

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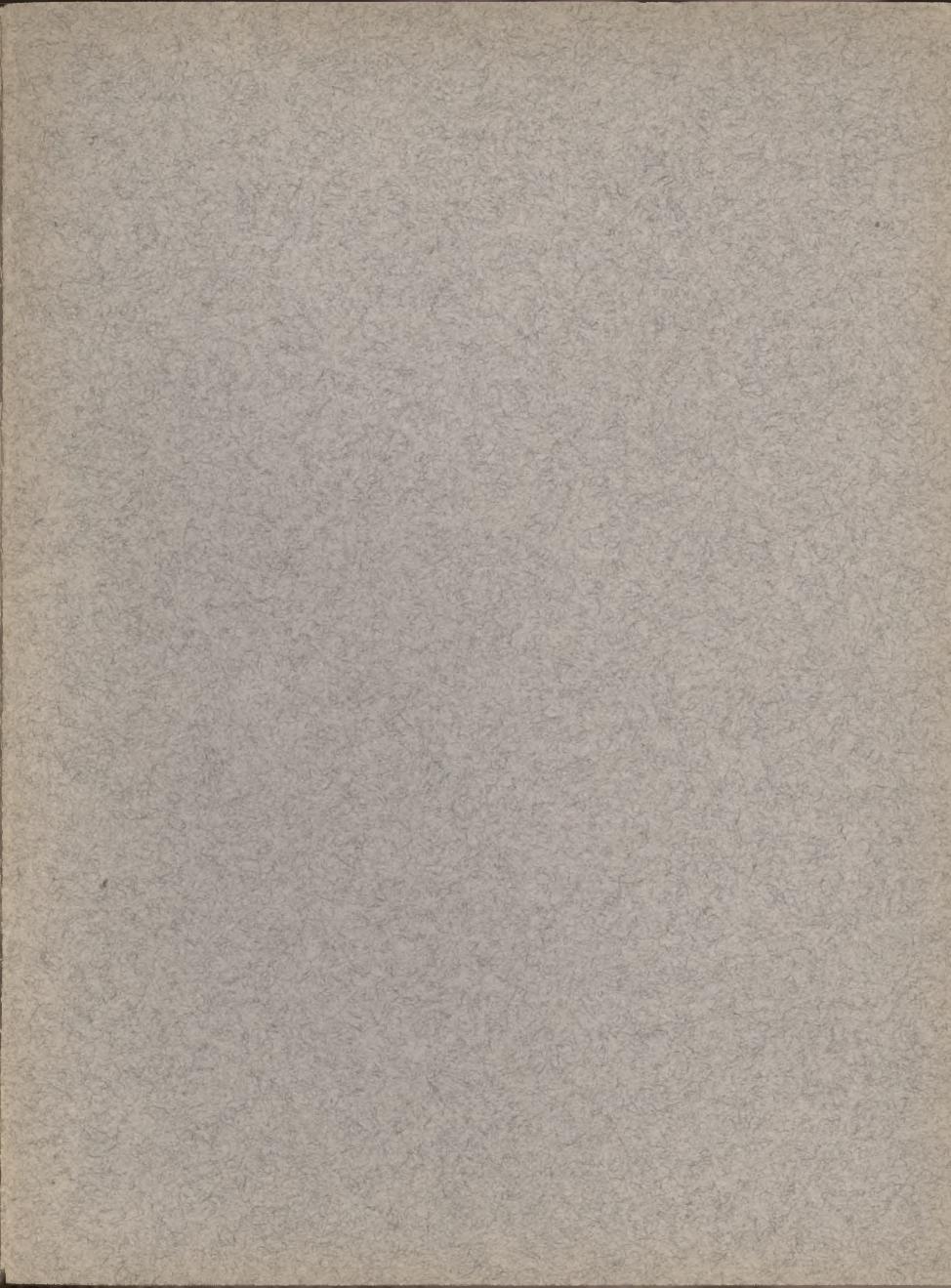
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