



SMITH'S



ALMANAC

1894

PLANETARY



AND

WEATHER GUIDE



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THE INCOME IN 1892 WAS FOR

Fire Premiums, after deducting Re-Insurances.....	\$7,925,975
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SMITH'S PLANETARY ALMANAC

AND
WEATHER GUIDE.

1894



1894

CONTAINING A GENERAL FORECAST FOR THE YEAR; AN OUTLINE SKETCH
OF THE WEATHER BY MONTHS; THE
WEATHER FOR EACH WEEK;

A PLANETARY EPHEMERIS CALCULATED TO MONTREAL MEAN TIME
THE STARS IN THEIR SEASONS;

LUNAR INFLUENCE ON VEGETATION,

WITH TABLES FOR SOWING ACCORDING TO IT IN ALL LATITUDES; A TRANSIT OF
MERCURY; A LIST OF MOONLIGHT EVENINGS; OUR SCIENCES AT THE
WORLD'S FAIR; THE MOON IN PERIGEE; NORTH-WEST CORP PRE-
DICTIONS; THE PLANET OF HERSCHEL; COPIOUS ASTRO-
NOMICAL AND METEOROLOGICAL NOTES, ETC.

BY

WALTER H. SMITH.

MONTREAL:
215 PINE AVENUE.

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SEVENTEENTH ANNUAL ADDRESS.

Although there has been an appreciable falling off in the receipts and profits during the past year, SMITH'S PLANETARY ALMANAC for 1894 will be found in no way curtailed so far as the number of pages is concerned. With respect to the amount of information, that has been increased instead of reduced.

During the coming year, I trust that those who have found my forecasts and advice either reliable or beneficial, or both, will do what they can for me by extending the sale of this Almanac. At the ridiculously low price at which it is offered, it should be in the hands of every family in the land. May I not trust that my friends will help me to so place it? If all who have taken a single copy in the past should send for a dozen, and distribute them to their friends and neighbors, a big step in the ultimate success of the book would be accomplished, because, wherever it once finds a foothold, it very seldom fails to stick. I have customers who have purchased copies from the first, who would not keep house without it. These are neither few nor far between, but the main body of its subscribers.

To all who have helped me to extend its sale and circulation of SMITH'S PLANETARY ALMANAC, I tender my warmest thanks, and assure them that the festive Christmas Day (1893) they have found so reliable in the past, have been just as carefully weighed and considered before using them in this issue.

So much interest centres in the prosperity of the Great North-West, on both sides of the Boundary Line, that my article on "North-West Crop Predictions" will, I am convinced, be read with interest. So also, in this "transit-year," will that on the passage of the twinkler Mercury across the disk of the Sun, Nov. 10th, 1894. "Our Sciences at the World's Fair" will commend itself to both visitors and non-visitors to that '93 Mecca of America.

WALTER H. SMITH.

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ASTRONOMICAL AND OTHER NOTES.

FIXED AND MOVABLE FESTIVALS, 1894.

Being the second after Bissextile, or Leap Year, and the 57th-58th of Queen Victoria's Reign, as well as the latter part of the 27th, and the beginning of the 28th year of the Confederation of the Provinces composing the Dominion of Canada.

<p>New Year's Day } Jan. 1 Circumcision. . } " 6 Epiphany, Russian } " 6 New Year. } " 6 Septuagesima Sunday..... " 21 Quinquagesima } Feb. 4 Shrove Sunday.. } " 4 Ash Wednesday..... " 7 First Sunday in Lent..... " 11 Washington's Birthday.... " 22 St. David Mar. 1 St. Patrick..... " 17 Palm Sunday..... " 18 Good Friday..... " 23 Easter Sunday, Annun- } " 25 ciation—Lady Day... } Low Sunday..... Apr. 1 St. George..... " 23 Rogation Sunday..... " 23 Ascension Day— } May 3 Holy Thursday.. } Pentecost—Whit-Sunday.. " 13 Trinity Sunday..... " 20 Birth of Queen } Victoria, 1819. } " 24</p>	<p>Corpus Christi..... May 24 Birth of Duke of } June 3 York, 1865. } Accession of Queen } " 20 Victoria, 1837. } St. John Baptist, } " 24 Midsummer, Day. } Coronation of Queen } " 28 Victoria, 1838. } St. Peter and St. Paul.... " 29 Dominion Day July 1 Independence Day..... " 4 Labor Day..... Sept. 3 Michaelmas " 29 All Saints Day..... Nov. 1 Birth of Prince of } " 9 Wales, 1841. } St. Andrew..... " 30 Birth of Princess of } Dec. 1 Wales, 1844. } Advent Sunday..... " 2 Conception B. V. M..... " 8 St. Thomas..... " 21 Christmas Day (Tuesday). " 25</p>
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PRINCIPAL ARTICLES OF THE CALENDAR.

Lunar Cycle or Golden Number 14	Dominical Letter..... G
Epact..... 23	Roman Indiction..... 7
Solar Cycle..... 27	Julian Period..... 6607

CHRONOLOGICAL ERAS.

The first day of January of the year 1894 is the 2,412,830th day since the commencement of, and the 6607th year of the Julian Period.

The year 1893 is the 7402-7403 of the Byzantine Era, the year 7403 commencing on September 1st.

The year 5654-55 of the Jewish Era, the year 5655 commencing on October 1st, 1893, or more exactly, at sunset on September 30th.

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The year 2647 since the Foundation of Rome, according to VARRO.

The year 2641 since the beginning of the Era of NABON-ASSAR, which has been assigned to Wednesday, the 26th of February of the 3967th year of the Julian Period; corresponding, in the notation of chronologists, to the 747th; and in the notation of astronomers, to the 746th year before the birth of CHRIST.

The year 2670 of the Olympiads, or the second year of the 668th Olympiad, commencing in July, 1894, if we fix the Era of the Olympiads at $755\frac{1}{2}$ years before CHRIST, or near the beginning of July of the year 3938 of the Julian Period.

The year 2206 of the Grecian Era, or the Era of the Seleucidæ.

The year 1610 of the Era of Diocletian, and the year 2554 of the Japanese Era.

The year 1312 of the Mahommedan Era, or the Era of the Hegira, commences on July 5th, 1894.

Ramadân (Month of Abstinence observed by the Turks) commences on March 19th, 1893.

The 119th year of the Independence of the United States of America begins on July 4th, 1894.

The 28th year of the Confederation of the Provinces of the Dominion of Canada begins on July 1st, 1894.

COMMENCEMENT OF THE SEASONS.

Montreal Mean Time.

The Sun enters ♈ (0° Longitude) and SPRING begins March 20th, at 10h. 04m. morning.

The Sun enters ♋ (90° Longitude) and SUMMER begins June 21st, at 6h. 09m. morning.

The Sun enters ♌ (180° Longitude) and AUTUMN begins September 22nd, at 8h. 33m. evening.

The Sun enters ♍ (270° Longitude) and WINTER begins December 21st, at 3h. 13m. evening.

The EQUINOXES happen when Spring and Autumn begin, and the SOLSTICES at the commencement of Summer and Winter.

The Earth is in PERIHELION—nearest the Sun—at 10h. 33m. evening on December 30th, 1893; in APHELION—farthest

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from the Sun—at 4h. 27m. morning, on July 3rd, 1894, and in PERIHELION, at 7h. 13m. evening, on January 2nd, 1895.

SIGNS OF THE ZODIAC.

These are twelve, and given for mean moon at Montreal, in "the Moon" column of each calendar page. They are as follows: ♈ Aries (Head and Face), the Ram; ♉ Taurus (Neck), the Bull; ♊ Gemini (Arms and Shoulders), the Twins; ♋ Cancer (Breast), the Crab; ♌ Leo (Heart), the Lion; ♍ Virgo (Bowels), the Virgin; ♎ Libra (Kidneys and Back), the Balance; ♏ Scorpio (Secrets), the Scorpion; ♐ Sagittarius (Thighs), the Archer; ♑ Capricornus (Knees), the Goat; ♒ Aquarius (Legs), the Water Bearer; and ♓ Pisces, (Feet), the Fishes.

ASTRONOMICAL SYMBOLS.

PLANETS.—☉ Sun, ☿ Mercury, ♀ Venus, ⊕ Earth, ☾ Moon, ♂ Mars, ♃ Jupiter, ♄ Saturn, ♅ Uranus, ♆ Neptune, ♁ Ascending Node, ♂ Descending Node.

ECLIPSES.

In the year 1894 there will be four eclipses, two of the Sun (☉) and two of the Moon (☾), and a Transit of Mercury (☿) over the Sun's Disk. [For particulars of Transit of Mercury, see page 11.]

1.—A partial Eclipse of the Moon (☾) March 21, invisible at Montreal. The beginning visible in the extreme western portion of North America, over the Pacific Ocean and Asia; the ending visible in Alaska, the Pacific Ocean and Asia. Moon enters penumbra, Montreal mean time, 7h. 03m. morn.; enters shadow (beginning of eclipse), 8h. 31m. morn.; middle of eclipse, 9h. 30m. morn.; Moon leaves shadow, 10h. 25m. morn.; leaves penumbra, 11h. 49m. morn. Magnitude of the eclipse, = 0.248 (Moon's diameter, = 1.)

2.—An Annular Eclipse of the Sun (☉) April 6, invisible at Montreal, but visible in Hindostan, China, Western Siberia and Alaska. Greenwich mean time of the conjunction in Right Ascension, 4h. 27m. 39s. morn.

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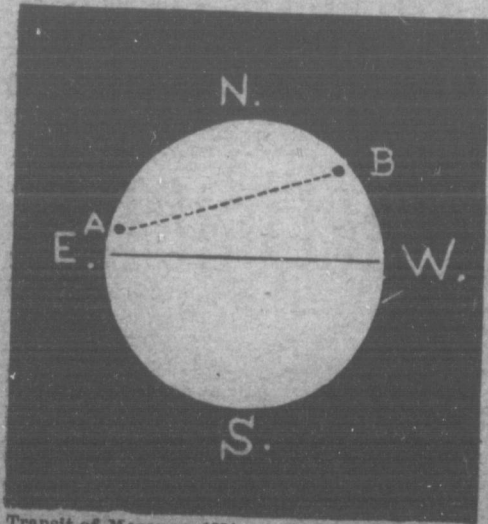
3.—A Partial Eclipse of the Moon (\ominus) September 14-15, visible at Montreal. The beginning, visible generally in the western portions of Europe and Africa, over the Atlantic Ocean, North and South America and the eastern portion of the Pacific Ocean; the end visible generally in the extreme western portion of Africa, the Atlantic Ocean, North and South America, and the eastern part of the Pacific Ocean. Moon enters penumbra, Montreal mean time, 9h. 05m. eve.; enters shadow (beginning of eclipse) 10h. 42m. eve.; middle of eclipse, 11h. 38m. eve.; leaves shadow (end of eclipse) 0h. 33m. morn.; leaves penumbra, 2h. 10m. morn. Magnitude of the eclipse, = 0.231 (Moon's diameter, = 1.)

4.—A Total Eclipse of the Sun (\odot) September 29, invisible at Montreal, but visible over the East of Africa, the Amirante Islands, Madagascar, the Indian and Antarctic Oceans. Greenwich mean time of the Conjunction in Right Ascension, 6h. 6m. 16s. morn.

A TRANSIT OF MERCURY ($\text{\textcircled{v}}$) 1894.

On Saturday, November 10, 1894, Mercury, for the last time this century, transits the disk of the Sun. The transit, although visible over the western portions of Europe, and in

Africa, is most favorably circumstanced for observers in Canada and the United States, where the whole of it will be visible, Mercury passing diagonally across the Upper, or Northern section of the Sun, as shown in the diagram. The dotted line shows the track of the planet, beginning at the eastern or left hand side, and moving across to the western, or right hand side. A



Transit of Mercury, 1894. A, Ingress. B, Egress.

Transit is due to an Inferior Planet passing directly between

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the Sun and the Earth, thus appearing upon the bright disk of the orb of day as a round, dark spot. Transits are very interesting. Mercury breaks in upon the Sun as a dark notch, sometimes preceded by a penumbral shade; not to miss the earliest impression, the exact point of ingress should be kept in the field of the telescope or opera glass—said telescope or opera glass to be properly protected from the Sun's rays by layers of smoked or colored glass held between the eye and the eye piece.

As Mercury advances from the eastern disk of the Sun, he may become visible before he is in actual transit, by being projected upon the "Corona," or solar atmosphere which sometimes relieves a dark body in front of it. Just at the final entry or departure, the planet may be lengthened towards the Sun's limb. This is due to irradiation, and is called the "black drop." When fully upon the disk, Mercury appears intensely black; sometimes has a dusky border, or a luminous ring, which some have considered to be due to an atmosphere like our own, but much thicker and denser, surrounding the planet. Others believe, however, that it is due to violent contrast and eye fatigue in the observer. Bright spots upon the planet have several times been seen, while in transit. Another optical illusion, no doubt.

A Transit of Mercury can only occur in May or November. This is owing to the fact that it is only in these months that Mercury crosses the path of the Earth (crosses the Ecliptic), and is then said to be in the "descending" or "ascending" node. This is the final transit of the present century, which, at its conclusion, will have witnessed thirteen transits of Mercury, as follows:—

1802.....	Nov. 9	1861.....	Nov. 12
1815.....	" 12	1868 ..	" 5
1822.....	" 5	1878 ..	May 6
1832.....	May 5	1881 ..	Nov. 7
1835.....	Nov. 7	1891.....	May 9
1845.....	May 8	1894.....	Nov. 10
1848.....	Nov. 9		

The Right Ascension of the Sun and Planet is 15h. 3m. 44s. Sun's Declination South, 17° 18' 59"; Mercury's, 17° 14' 6". Sun's semi-diameter, 16' 11"; Mercury's, 4".9.

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Times of the phases, Nov. 10, at Montreal (mean time.)

Ingress, exterior contact.....	11h. 01m. 22s.	morning.
" interior ".....	11 03 05	" "
Least distance of centres.(4' 26").....	1 40 05	evening.
Egress, interior contact	4 17 08	" "
" exterior "	4 18 51	" "

The dates when Mercury is Elongated East or West of the Sun will be found in the Calendar pages.

[For descriptive illustrated article, showing how to observe Mercury in Transit, see SMITH'S PLANETARY ALMANAC for 1891, price 12 cents, post paid.]

VENUS (♀) 1894.

At the beginning of the year "the star of love" will draw all eyes towards her place in the evening sky. She is at "Greatest Brilliancy" on January 10th. On February 16th Venus passes between the Earth and Sun, becoming a "Morning Star." She is at "Greatest Brilliancy" West of the Sun on March 22nd, at "Greatest Elongation West" of 46° 10' on April 27th, and at Conjunction with the Sun (Superior) on November 30th, when she becomes an "Evening Star" for the rest of the year.

[For descriptive illustrated article, see "Views of Venus," in SMITH'S PLANETARY ALMANAC for 1890, price 12 cents, post-paid.]

MOONLIGHT EVENINGS OF 1894.

January.—From the 14th to the 22nd.

February.—Between the 13th and the 20th, inclusive.

March.—The 14th to the 22nd.

April.—Beginning on the 12th and continuing until the 20th.

May.—From the 11th to the 20th.

June.—The 10th to the 20th.

July.—Between the 9th and the 19th.

August.—Beginning on the 8th and lasting until the 18th.

September.—From the 6th until the 16th.

October.—The 6th to the 16th.

November.—Between the 5th and the 14th.

December.—From the 5th to the 13th, inclusive.

SATELLITES OF MARS (♂) 1894.

A very favorable Opposition of Mars occurs on October 20th this year. The planet will then assume an apparent brilliancy only excelled by that taken on at the recent most

favorable Opposition (1892). All who have telescopes should observe him from September to November at every opportunity. The Satellites have been seen at favorable Oppositions in comparatively small telescopes. On the night of this Opposition (Oct. 20th) Phobos, the inner Satellite, is at Greatest Elongation West of the Planet at midnight; Deimos, the outer Satellite, being at a similar position at 9h. on the evening of the 20th, three hours previous to his smaller brother.

<i>Satellite.</i>	<i>Time of Revolution.</i>
PHOBOS (I).....	0d. 7h. 39m. 14s.
DEIMOS (II).....	1d. 6h. 17m. 54s.

Mars' apparent disc will vary from "gibbous" to "full"; or from 0.841 in June to 1.000 in the middle of October, reducing to 0.901 in December.

[For descriptive illustrated article, see "Markings on Mars," in SMITH'S PLANETARY ALMANAC for 1892, price 12 cents, post-paid.]

THE ASTEROIDS, 1894.

The total number is now 355. Of these, 29 were discovered in 1892, and 25 picked up by Wolf at Heidelberg and Charlois at Nice, by the aid of photography, between Jan. 1 and April 15, 1893. The negatives were made with an exposure of from three to five hours. Images of stars, if the exposure is carefully attended to, so that the telescope follows the star, come out round and clean—images of asteroids, comets, or other moving objects, appear as streaks, owing to their orbital motion.

While all the larger asteroids have without doubt been discovered, the list is not by any means complete, as there are probably thousands, ranging in size from a large cannon-ball to several miles in diameter.

CERES (1) reaches Opposition—brightest, is overhead at midnight, and best placed for telescopic observation on March 7th, 1894. Her Right Ascension is then 11h. 40m. 28s. Declination North, 20° 51' 51". A spot in the Constellation *Leo Major*, about 6° North of *Denebola*, the planet forming a triangle with *Denebola* and *Zozma*.

PALLAS (2) is at Opposition on February 15th, 1894. Its R. A. is then 9h. 18m. 37s.; Declination S. 15° 39' 21". A spot in the Constellation *Hydra*, South of *Alphard*.

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JUNO (3) reaches Opposition on May 3rd, 1894. Her R. A. is then 15h. 0m. 34s.; Declination S. $1^{\circ} 35' 36''$. A spot in the Constellation *Serpens* on the border of *Virgo*.

VESTA (4) is at Opposition on March 6th, 1894. Her R. A. is then 11h. 26m. 58s.; Declination N. $15^{\circ} 36' 6''$. A spot in the Constellation *Leo Major*, immediately West of the Star *Denebola*.

MONTREAL MEAN TIME.

ON MERIDIAN (SOUTH).	Feb. 8th.	March 4th.	April 8th.	May 14th.
Ceres.....	2 46 mo.	0 57 mo.	10 08 ev.	7 44 ev.
Pallas.....	0 12 mo.	10 20 ev.	8 06 ev.	6 21 ev.
Juno.....	6 03 mo.	4 38 mo.	2 13 mo.	11 21 ev.
Vesta.....	2 33 mo.	0 43 mo.	9 52 ev.	7 33 ev.

JUPITER'S (4) SATELLITES, 1894.

Jove's four elder Satellites are visible in the smallest telescopes from January 1st to May 7th. Jupiter is after this too near the Sun for his moons to be visible. They continue hidden until about July 1st, when observations may be recommenced upon them in the morning sky. The discovery of a fifth moon by Prof. Barnard, on Sept 9th, 1892, was recorded in SMITH'S PLANETARY ALMANAC for 1893. While it is the fifth in list of discovery it is the first in order of distance from the Planet, and the old nomenclature (adhered to still) will have to be changed. I refrain from altering however, until others see fit to make the change universal.

The Satellites mean synodic periods, or times of revolution around Jupiter are :

Satellite.	Time of Revolution.
BARNARD'S (V).....	0d. 11h. 59m. 00s.
Io (I).....	1d. 18h. 28m. 36s.
EUROPA (II).....	3d. 13h. 17m. 53s.
GANYMEDE (III).....	7d. 3h. 59m. 36s.
CALISTO (IV).....	16d. 18h. 5m. 7s.

[For descriptive illustrated article, see "Glimpses of Jupiter," in SMITH'S PLANETARY ALMANAC for 1889, price 12 cents, post-paid.]

SATURN'S (5) SATELLITES, 1894.

May be observed from January 1st to about July 31st, and again from about December 15th to the end of the year.

Their mean synodic periods are :

<i>Satellite.</i>	<i>Time of Revolution.</i>
MIMAS (I).....	0d. 22.6h.
ENCELADUS (II).....	1d. 8.9h.
TETHYS (III).....	1d. 21.3h.
DIONE (IV).....	2d. 17.7h.
RHEA (V).....	4d. 12.4h.
TITAN (VI).....	15d. 23.3h.
HYPERION (VII).....	21d. 7.8h.
JAPETUS (VIII).....	79d. 22.0h.

URANUS' (Υ) SATELLITES, 1894.

Uranus is at Opposition May 3rd. The Satellites may be looked for during April and May with most prospect of success. The apparent distances from the Planet on May 3rd are: Ariel 15".0; Umbriel 20".9; Titania 34".3 and Oberon 45".8.

<i>Satellite.</i>	<i>Time of Revolution.</i>
ARIEL (I).....	2d. 12.48h.
UMBRIEL (II).....	4d. 3.46h.
TITANIA (III).....	8d. 16.94h.
OBERON (IV).....	13d. 11.11h.

[For a description of this planet and its satellites see pages 62-63 of this issue.]

NEPTUNE'S (Ψ) SATELLITE, 1894.

Neptune is at Opposition December 6th, and the Satellite may be looked for about that date. Its period is 5d. 21.04h. Its apparent distance from the Planet. 16".9.

OUR SCIENCES AT THE WORLD'S FAIR.

Along with millions of others, I went to the World's Fair. I saw many wonders that I never expected to see, beside many that I went seeking after. I wanted to see, of course, all that had been contributed by the nations to my pet sciences. I saw instruments, photographs, pictures, exhibits, that were worth my travelling far to see.

For instance, the Yerkes' telescope, the largest refracting telescope in the world, with an objective of forty inches in diameter. It exceeds the famous Lick telescope by four inches, and that at Washington by fourteen inches. The

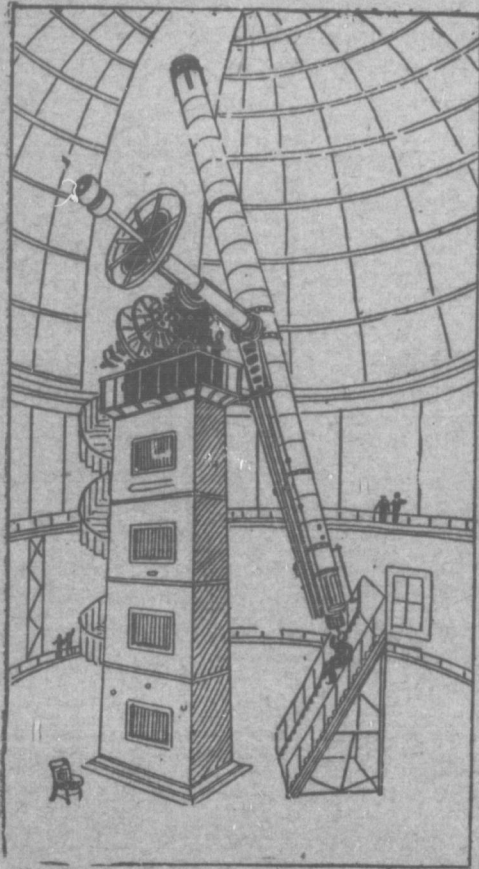
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gift of Mr. Charles T. Yerkes to the Chicago University, the column and head of this telescope rise to a height of forty-three feet, and weigh fifty tons; the tube is of steel, sixty-four feet long and fifty-two inches in diameter at the centre, tapering towards the ends, and having a weight of six tons. The driving clock—needed in order to follow an object in



The Largest Refracting Telescope in the World.

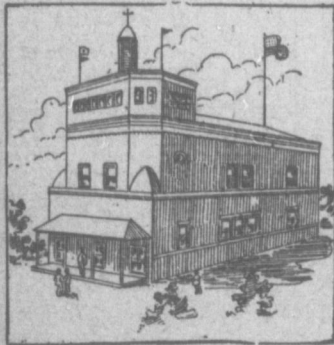
the heavens—weighs one and a half tons. The total weight of the telescope is 75 tons, yet it can be controlled by a slight touch. To produce this wonderful piece of mechanism the leading opticians of France and America have taxed their powers. When the telescope gets to work, it is hoped that its performances will eclipse those of the Washington and Lick observatories. The former has given us two Martian satellites, the latter added a fifth one to the Jovian system. What new gifts of unknown worlds may this telescope have in store for us!

The U.S. Weather Bureau had an interesting exhibit in a building near the Lake shore. Specially designed to illustrate all the features of a first-class weather station, it was complete in every detail. Here I found courteous officials in charge; also recording instruments for taking air pressure, temperature, force and direction of the wind, amount of sunshine, rain, humidity, etc. Several new instruments,

specially designed for this exhibit, were on view. One, a normal barometer, invented by Prof. C. F. Marvin, can be read to the ten thousandth part of an inch of pressure.

The Map and Forecast work of the Signal Service I found fully illustrated, complete reports having been received daily, from which forecast-maps were made and printed, similar to those at Washington.

Amongst other interesting things in the Weather Station were: photographs showing every form of cloud, loaned by Harvard University; a view of "the Midnight Sun," with halo, in the Arctic regions; views of "clouds amongst the Alps," presented to Harvard by Mr. Thos. Eccles, of London, Eng.; and some very interesting "photographs of lightning flashes" by Mr. W. N. Jennings, of Philadelphia.



Weather Bureau Station, World's Fair.

The Lick Observatory exhibit consisted of transparencies from photographs of the "Milky Way," moon, planets, comets, etc. In the Milky Way photograph the stars were resolved out of their nebulosity into groups and clusters. Venus, in another photograph, was shown in transit across the Sun, a sight which no one now living can ever see again, as it only recurs in 2004. This

observatory also showed a magnificent picture of Jupiter.

Harvard Observatory exhibited the largest astronomical photograph, a picture of the Moon, taken with their 13 inch refractor on Wilson's Peak in 1889, and magnified 1,440 times. The U.S. Naval Observatory had an exhibit for the special purpose of familiarizing people with its work. To this end it exhibited a specimen observatory.

The University of New York showed the oldest existing daguerreotype, taken in 1840 by Dr. Draper, a letter from Sir John Herschel, and a picture of his father's forty-foot telescope; Germany sent Kirchoff's original spectroscope; London, Captain Abney's photograph of the Infra red solar spectrum; the Earl of Rosse, drawings of the Milky Way, by Boeddicker; and Pennsylvania, Langley's original bolometer.



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GENERAL FORECAST, 1894.



For a whole year in advance. mind. A general forecast, to be acceptable, must be written at least three months before the opening of the year with which it deals. Would you care to undertake it, you who make light of weather men and their ways? Not you. Would you care to undertake it, you—who with far more sense—see “method in our madness,” bearing with our vagaries for the truth that is in us? You prefer to leave it alone. Very good. So I shoulder the responsibility. What you want I take it, is a forecast for the year, made up, not of guesses or imaginings, but built up as surely and fairly as any sum in arithmetic, that is, from actual figures and facts. Built up until it becomes a goodly structure, with its base on the rock bottom foundation of astronomical and meteorological science, a fitting achievement for these latest years of this much achieving nineteenth century.

But it takes time and study. How much? As much as one can conveniently crowd into nine or ten months. Sometimes longer. It begins with the year itself. It grows steadily through the cold days and weeks of the Winter season, strengthens with the Sun's heat in Spring, fructifies and ripens into full stature as the Summer speeds onward. It is by such continual study alone that one can hope to make successful weather forecasts at “long range,” forecasts that will gain the confidence of the people and not prove a laughing stock to their maker.

It covers a deal of ground also. It looks almost everywhere for its inspiration. It looks to the great, round Sun, the full orbed Moon, the belted Jupiter, the silver crescented Venus, the ringed Saturn, the swift paced Mercury, even to the far-off Uranus and still more distant Neptune. It takes account of the passing comet and flashing meteorite. All have truths to whisper to those who “lean an ear in many a secret place.” The oceans of air and water, the passing cloud, the muttered thunder, the treasures of hail and hoar frost may at any moment “a tale unfold,” and consequently are not to be passed by lightly.

Is it not a fair study this! Are not its lines cast in pleasant places? Does it not bring its student near at times to the Master Mind of the Universe? From the first half-groping instincts of the lower levels of thought and consciousness, how one climbs slowly but surely up to the clearer views of the higher levels. How the imagined frowns of Nature become actual smiles on nearer view to eyes that learn to see through her tears!

And how valuable a study it is! Do I magnify mine office? Not I. What would recompense the world for the loss of its knowledge of climate and weather? Does not nearly everything hinge upon this? To be without a knowledge of those average air conditions which so deeply affect the comfort and health of all, were to lose a possession beyond all price. To be able to make successful forecasts of cold waves, hot spells, great winds, heavy rains, snows or floods, is an attainment of the highest practical value. To achieve even partial success has been my sustaining motive for many years of persistent, careful, hard work in weather science.

But the forecast for 1894.

"Study the past if you would divine the future." Am I enigmatic? Listen then. Come across the Atlantic with me. The persistence of dry, hot weather over Western Europe has been puzzling those not sufficiently acquainted with Planetary Meteorology to understand it. Those who search into the hidden mysteries of things would have been surprised at anything different. Those who read my 1892 "General Forecast" will have understood. It was then that I pointed out in a few plain words that the great continental wind areas that circle the globe (areas of high and low pressure, fine weather and storms) settled almost invariably what the weather would be. When the storm tracks take exceptionally Southerly courses, said I then, the rain and snow areas are carried South, we have cold, dry Winters and dry, hot Summers in Northern sections; when the storm areas take exceptionally Northerly courses, wet, cool Summers and open, wet Winters are the result. The experience of last Winter remains with us yet. It was one of the driest and coldest on record in Northern sections, both in this country and Europe. In the tropics, it was one of the stormiest, the hurricanes of low latitudes having been of

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the severest. The Spring was dry. The Summer (except in some isolated sections which included Montreal) dry and warm. "Three figure weather" was recorded in the Canadian and American North-West and West. The West Indian hurricane season was severe. The hurricanes that skirted (and are skirting) the Atlantic coast dealt death and destruction, as all who read the newspapers have shuddered to find.

At the recent International Congress of Meteorology at Chicago, the fluctuations in the latitude of these storm tracks was discussed. The Sun was called upon to take the whole responsibility. There cannot be a question but the Sun has much to do with it. The changes in his spot zones, together with the increase or decrease in the number of spots, I came to the conclusion years since, have a marked influence on terrestrial weather. But not to the Sun alone. The positions of Moon and planets also go to help or retard effects in Meteorology. Nor even these alone. Those mighty ones, the fixed stars, for all their immense distances, have their influences, could we but discover and tabulate them.

Drought, therefore, has been the rule in the higher latitudes the past year. Are we on the eve of a sudden turn over towards extreme precipitation? I think not. Rather, we appear to be approaching another dry, cold Winter, both in Canada, the Northern and Eastern States, and Western Europe. A winter not as cold as 1892-3, whose December and January in this section were almost unprecedented in severity, but a Winter with some pretty continuous zero "dips" as "dips" go. The prospects for rain and snow are better. There will be more precipitation this Winter. When precipitation is heavy, the Winter temperature cannot range as low as when it is light. A Summer with an excess of thunder storms is usually followed by a Winter with considerable precipitation. Last Summer, Montreal recorded twenty-five of these electric visitants, as compared with fifteen during the Summer of 1892, to say nothing of the frequency of the Aurora.

Picking the year apart into months, the forecast reads about as follows:—

JANUARY.

A cold month, with considerable downfall. Snows and rains in Northern and Eastern, considerable rain in Southern

sections. Snowfall in the North-West about, or perhaps below the average. The "January thaw" looks like being a marked feature. The coldest "dips" appear most likely towards the middle, and during the last few days of the month. Severe storms over the North Atlantic.

FEBRUARY.

A cold month. Mean temperature in Canada and the Northern States below the average. Precipitation about, or above the average for February. Some severe storms, and rapid changes of temperature, causing alternations of floods and "freeze-ups." The dreaded tornado is likely to be heard from in the South and South-West early this year.

MARCH.

A low temperature March. A month of many and rapid changes, high winds and considerable downfall. Heavy gales on the Atlantic seaboard. Every week of this month will have its particular storm. Spring will be late in opening out.

APRIL.

More cool weather. Not a favorable April, on the whole rather too much rain. Vegetation backward. Rapid changes of temperature and heavy rains in sections, causing Spring freshets and damage therefrom.

MAY.

Summer all at once this month. Overcoats to-day and straw hats to-morrow. A changeable May, but with a temperature above the average. Very hot days, cool nights and frosts, dry weather, rains, thunder storms, tornadoes, will jostle each other. At the close vegetation will be found to have advanced far beyond the general expectation.

JUNE.

A month of thunder storms and showers. One or two spells of intensely hot weather, followed by the inevitable cool reaction. Mean temperature generally below the average.

JULY.

A hot July. Mean temperature above the average. Good for the summer resort people and ice-dealers. Some very

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severe and damaging electrical storms, accompanied by heavy rains. The hot spells are likely to prove very trying and deaths from sunstroke numerous. "Three figure weather" (when the mercury rises to 100° or over in the shade) will be recorded at places where such high temperatures are infrequent. A likely month for a "cholera scare."

AUGUST.

Another warm month, with considerable precipitation. Two, perhaps three, cool reactionary periods, when damage to crops in the North-West is to be feared, and, if possible, guarded against. The general results of the harvest in the West and North-West are, however, likely to be satisfactory this year.

SEPTEMBER.

A warm month. Considerable heat and some drought. Mean temperature above the average. More thunder than usually falls to the lot of our Northern Septembers. Good weather for the Fall fairs and ploughing operations.

OCTOBER.

Lots of weather this month. Killing frost, rain, snow, gales of wind, drought, heat and thunder. Just how the mean temperature will come out at the end of it all is pretty hard to foresee. The chances, however, seem to be in favor of below, rather than above the average.

NOVEMBER.

A cold November, severe storms, sharp frosts and considerable downfall in the shape of snow. Early severe weather in the North-West, and an early closing of navigation East. A marked, warm, dry "Indian Summer" spell, amidst the general badness of this month's weather.

DECEMBER.

A stormy month. Some extraordinary changes from heat to cold; heavy snowfalls and severe weather. Mean temperature below the average.

WALTER H. SMITH.

MONTREAL, *Sept. 30th, 1893.*

1st Month, 1894.
31 Days.

JANUARY.

☉ enters ♍
19d. 8h. ev.

Moon's Phases	Day.	BOSTON.	MONTREAL.	WASHINGTON	CHICAGO.	WINNIPEG.
● N. M.	6	10.26 ev.	10.12 ev.	9.59 ev.	9.17 ev.	8.39 ev.
☽ F. Q.	14	7.28 ev.	7.14 ev.	7.01 ev.	6.19 ev.	5.41 ev.
☾ F. M.	21	10.30 mo.	10.16 mo.	10.03 mo.	9.21 mo.	8.43 mo.
☾ L. Q.	28	0.09 ev.	11.55 mo.	11.42 mo.	11.00 mo.	10.22 mo.

DAYS.	WEATHER FORECAST.	MONTREAL.					
		—THE SUN—			THE MOON		
M.	W.	Slow.	Rises.	Sets.	Zod.	Souths.	
1 Mo.	NEW YEAR'S DAY. 1894 opens	M.	H. M.	H. M.	☾	H. M.	
2 Tu.	with snows N. and rains S.; very heavy	4	7 42	4 27	☾	8 29	
3 We.	rains in sections; fogs and mists on	5	7 41	4 29	☾	9 16	
4 Th.	Atlantic coast—Changeable, unseasonable	5	7 41	4 30	☾	10 05	
5 Fri.	weather—Colder, stormy and unsettled,	6	7 40	4 31	☾	10 57	
6 Sat.	EPIPHANY. with snows and drifts.	6	7 40	4 32	☾	11 48	

(1) 1st Sunday after Epiphany. (Day's length, 8h. 53m.) ☽ in ♏

7 Su.	A "dip;" zero readings general about	7	7 40	4 33	☾	11 48
8 Mo.	7th and 8th in N. and W. sections—Fine	7	7 39	4 34	☾	1 27
9 Tu.	winter weather—"Moderating to snow"—	8	7 39	4 35	☾	2 14
10 We.	A general storm period, with high winds	8	7 39	4 36	☾	2 58
11 Th.	and heavy precipitation about 11th—Very	8	7 38	4 37	☾	3 41
12 Fri.	cold about 12th and 13th; extreme tem-	9	7 38	4 38	☾	4 23
13 Sat.	peratures probable.	9	7 37	4 40	☾	5 06

(2) 2nd Sunday after Epiphany. (Day's length, 9h. 05m.) ♀ in ♏

14 Su.	Cold, with high winds, snows and drifts;	9	7 37	4 41	☾	5 50
15 Mo.	Gales on Atlantic coast—Fine Winter	10	7 36	4 42	☾	6 39
16 Tu.	weather—Moderating to mild, with snow	10	7 36	4 43	☾	7 32
17 We.	and sleet N. and E., rain S.—An extended	10	7 35	4 44	☾	8 31
18 Th.	"January thaw;" generally mild and	11	7 35	4 46	☾	9 36
19 Fri.	unseasonable.	11	7 34	4 48	☾	10 43
20 Sat.		11	7 33	4 49	☾	11 50

(3) Septuagesima Sunday. (Day's length, 9h. 18m.) ♂ in ♏

21 Su.	Colder, with scattered snowfalls and	12	7 32	4 51	☾	Morn
22 Mo.	strong winds—Fine winter weather—Mild	12	7 31	4 52	☾	0 52
23 Tu.	again, with snow and rainfalls; fogs on	12	7 30	4 54	☾	1 49
24 We.	Atlantic seaboard; another "thaw out,"	12	7 29	4 55	☾	2 40
25 Th.	Conversion of St. Paul.	13	7 28	4 56	☾	3 27
26 Fri.	some warm winds—Cloudy and colder,	13	7 27	4 57	☾	4 12
27 Sat.	with snow at close of week.	13	7 26	4 58	☾	4 56

(4) Sexagesima Sunday. (Day's length, 9h. 34m.) ♀ in ♏

28 Su.	A wintry spell, stormy and unsettled,	13	7 25	4 59	☾	5 40
29 Mo.	with snow—Extreme weather; very cold—	13	7 24	5 01	☾	6 25
30 Tu.	Auroral displays probable—Ends stormy.	14	7 23	5 03	☾	7 11
31 We.	with snows N. and rains S.	14	7 22	5 04	☾	8 00

In this month the Mornings increase 20 min. and the Afternoons 37 min.

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PLANETS IN JANUARY, 1894.

MONTREAL MEAN TIME.

*ON MERIDIAN (SOUTH).	Jan. 1st.	Jan. 8th.	Jan. 16th.	Jan. 24th.
Mercury . . . ♀	10 54 mo.	11 13 mo.	11 36 mo.	0 01 ev.
Venus ♀	3 05 ev.	2 54 ev.	2 35 ev.	2 07 ev.
Mars ♂	9 08 mo.	9 00 mo.	8 52 mo.	8 44 mo.
Jupiter ♃	8 31 ev.	8 03 ev.	7 31 ev.	7 00 ev.
Saturn ♄	6 50 mo.	6 23 mo.	5 52 mo.	5 22 mo.
Uranus ♅	8 03 mo.	7 33 mo.	7 03 mo.	6 32 mo.
Neptune . . . ♆	9 53 ev.	9 25 ev.	8 53 ev.	8 21 ev.

* Planets "Southing" between noon and midnight are "Evening stars"; planets "Southing" between midnight and noon are "Morning stars." The time of "Southing" is the time at which a heavenly body passes the meridian, and is so called because it is then due South. It is then also at its greatest altitude above the horizon.]

THE PLANETS.—MERCURY is in Aphelion (at greatest distance from the Sun in his orbital revolution) on the 11th at 1h. 05m. mo., and reaches Superior Conjunction with the Sun on the 29th at 7h. 41m. mo. The lovely VENUS is at Greatest Brilliancy on the 10th at 6 ev., when she is the most conspicuous star in our evening skies. She is "Stationary amongst the Stars" on the 24th at 2h. mo. JUPITER is Stationary on the 15th at 4h. 41m. ev. SATURN reaches Quadrature, when he is 90° from the Sun and overhead at 6 mo., on the 14th at 6h. 30m. ev.

THE MOON.—Opens the year with a Conjunction with Mars on the 3rd at 4h. 14m. mo.; is in Apogee on the 5th at 6h. mo.; passes 4° S. of Mercury the same day at 3h. 14m. ev.; is 5° S. of the radiant Venus on the 10th (nearest approach at 10h. 38m. mo.); passes Jupiter at 7h. 14m. ev. on the 16th; Neptune on the 18th at 3h. 13m. mo.; is in Perigee at 10h. mo. on the 20th; 4° S. of Saturn on the 27th at 0h. 30m. ev., and in Conjunction with Uranus at 2h. 20m. mo. on the 28th.

THE STARS.—[Commenced in 1891 issue. Under this head, it is my intention to continue each year, until the whole visible star sphere has been briefly described. In no case will a Constellation, Group, Cluster or Star be twice dealt with. Students should, therefore, preserve back numbers.]

Aldebaran, in *Taurus*, is well placed in January. The word in Arabic means "the hindmost," as he appears to drive the *Pleiades* before him. Occultations of *Aldebaran* are not unusual, as he lies in the Moon's path. He is the brightest star of the V shaped cluster named the *Hyades*.

2nd Month, 1894.
28 Days:

FEBRUARY.

☉ enters ♋
18d. 10h. mo.

Moon's Phases	Day.	BOSTON.	MONTREAL.	WASHINGTON	CHICAGO.	WINNIPEG.
● N.M.	5	5.03 ev.	4.49 ev.	4.36 ev.	3.54 ev.	3.16 ev.
☽ F.Q.	13	6.01 mo.	5.47 mo.	5.34 mo.	4.52 mo.	4.14 mo.
☽ F.M.	19	9.35 ev.	9.21 ev.	9.08 ev.	8.26 ev.	7.48 ev.
☾ L.Q.	27	7.47 mo.	7.33 mo.	7.20 mo.	6.38 mo.	6.00 mo.

DAYS.		WEATHER FORECAST.	MONTREAL.			
M.	W.		THE SUN—		THE MOON	
			Slow.	Rises.	Sets.	Zod. Souths.
1	Th.	Enters cold, with zero readings, followed	14	7 21	5 06	♄ Morn
2	Fri.	CANDLEMAS.	14	7 20	5 08	♃ 9 43
3	Sat.	by a general storm period, with deep	14	7 19	5 09	♃ 10 34

(5) **Quinquagesima Sunday.** (Day's length, 9h. 53m.) ♃ in ♍

4	Su.	snows, very high winds and big drifts—	14	7 18	5 11	♃ 11 23
5	Mo.	Very cold weather—	14	7 17	5 12	♃ Eve.
6	Tu.	SHROVE TUESDAY.	14	7 16	5 14	♃ 0 56
7	We.	ASH WEDNESDAY.	14	7 14	5 15	♃ 1 40
8	Th.	Moderating to mild, heavy rains and snows	14	7 13	5 17	♃ 2 22
9	Fri.	(tornadoes probable in S.), thick fogs on	14	7 12	5 18	♃ 3 05
10	Sat.	Atlantic coast (floods in sections)—Fine, cold weather.	14	7 10	5 19	♃ 3 49

(6) **Quadragesima Sunday.** (Day's length, 10h. 11m.) ♃ in ♎

11	Su.		14	7 09	5 21	♃ 4 35
12	Mo.	Fine weather, some strong winds—A	14	7 07	5 22	♃ 5 25
13	Tu.	mild period, with thaws and rains, heavy	14	7 06	5 24	♃ 6 21
14	We.	ST. VALENTINE.	14	7 04	5 25	♃ 7 21
15	Th.	snows and rains in sections, fogs and	14	7 02	5 27	♃ 8 25
16	Fri.	mists—A mild week generally.	14	7 01	5 28	♃ 9 30
17	Sat.		14	6 59	5 30	♃ 10 33

(7) **2nd Sunday in Lent.** (Day's length, 10h. 33m.) ♃ in ♏

18	Su.	Opens mild, changing to colder; stormy	14	6 58	5 31	♃ 11 31
19	Mo.	and unsettled, with wind and snow (some	14	6 56	5 33	♃ Morn
20	Tu.	severe storms)—Fine and very cold, a	14	6 54	5 34	♃ 0 25
21	We.	severe zero "dip"—Moderating to snow;	14	6 53	5 36	♃ 1 15
22	Th.	Washington born, 1732.	14	6 51	5 37	♃ 2 01
23	Fri.	a general storm period; snows N., rains	13	6 50	5 39	♃ 2 47
24	Sat.	S. (tornadoes S.)	13	6 48	5 40	♃ 3 32

(8) **3rd Sunday in Lent.** (Day's length, 10h. 54m.) ♃ in ♐

25	Su.		13	6 47	5 41	♃ 4 17
26	Mo.	Cloudy, squally and snowy—A cold	13	6 45	5 43	♃ 5 04
27	Tu.	wave, extreme temperatures probable—	13	6 44	5 45	♃ 5 53
28	We.	Moderating, with snows N. and rains S.	13	6 43	5 46	♃ 6 44

In this month the Mornings increase 38 min. and the Afternoons 40 min.

The Moon's place is given in the Zodiac "Sign," the places of the planets refer to the Zodiacal "Constellations."

PLANETS IN FEBRUARY, 1894.

MONTREAL MEAN TIME.

ON MERIDIAN (SOUTH).	Feb. 1st.	Feb. 8th.	Feb. 16th.	Feb. 24th.
Mercury..... ♀	0 26 ev.	0 47 ev.	1 08 ev.	1 18 ev.
Venus..... ♀	1 30 ev.	0 50 ev.	0 01 ev.	11 12 mo.
Mars..... ♂	8 36 n.o.	8 30 mo.	8 23 mo.	8 15 mo.
Jupiter..... ♃	6 30 ev.	6 04 ev.	5 36 ev.	5 08 ev.
Saturn..... ♄	4 51 mo.	4 23 mo.	3 51 mo.	3 19 mo.
Uranus..... ♅	6 05 mo.	5 37 mo.	5 06 mo.	4 34 mo.
Neptune..... ♆	7 49 ev.	7 21 ev.	6 49 ev.	6 18 ev.

THE PLANETS.—MERCURY and Venus (the two Inferior Planets) are in Conjunction on the 8th at 10h. 46m. ev., when Mercury passes 9° 49' S. of his sister sphere. Mercury is at Greatest Brilliancy on the 21st at 6h. ev.; at Perihelion (nearest the Sun in his orbital revolution) on the 24th at 0h. 51m. mo.; and at Greatest Elongation East of the Sun of 18° 8' on the 25th at 10h. 58m. ev. During the last nine or ten evenings of this month he should be readily picked out, low down towards the west, shortly after sunset. VENUS is in Perihelion on the 5th at 7h. 50m. mo.; passes Inferior Conjunction, between the Sun and Earth, on the 16th at 4h. 09m. mo.; and is in Conjunction with *Beta Aquarii*, passing 18' S. of that star, on the 27th at 1h. 41m. mo. JUPITER is 90° from the Sun (overhead at 6h. ev.) on the 10th at 2h. 57m. mo. SATURN is Stationary on the 3rd at 11h. 19m. mo. URANUS is 90° from the Sun (overhead at 6h. mo.) on the 3rd at 8h. 09m. ev. He is Stationary on the 18th at 3h. 50m. mo. NEPTUNE is Stationary on the 19th at 5h. 45m. ev.

THE MOON.—Is in Conjunction with Mars on the 1st at 1h. 51m. mo.; reaches Apogee the same day at 4h. ev.; passes Mercury on the 6th at 3h. 57m. mo.; Venus the same day at 4h. 08m. ev.; is near Jupiter on the 13th at 4h. 20m. mo.; alongside Neptune on the 14th at 10h. 33m. mo.; in Perigee on the 17th at 4h. ev.; passes Saturn on the 23rd at 9h. 07m. ev.; and Uranus on the 25th at 11h. 03m. mo.

THE STARS.—*Lynx* "the Lynx" occupies a considerable space N. of *Gemini* between *Auriga* and *Ursa Major*. Of its 44 visible stars only 3 reach the third magnitude. The beauty of its pairs, however, reward a careful observer.

3rd Month, 1894.
31 Days.

MARCH.

☉ enters ♉
20d. 10h. mo.

Moon's Phases	Day.	BOSTON.	MONTREAL.	WASHINGTON	CHICAGO.	WINNIPEG.
● N. M.	7	9.37 mo.	9.23 mo.	9.10 mo.	8.28 mo.	7.50 mo.
☽ F. Q.	14	1.47 ev.	1.33 ev.	1.20 ev.	0.38 ev.	0.00 ev.
☽ F. M.	21	9.29 mo.	9.15 mo.	9.02 mo.	8.20 mo.	7.42 mo.
☾ L. Q.	29	3.46 mo.	3.32 mo.	3.19 mo.	2.37 mo.	1.59 mo.

DAYS.	M. W.	WEATHER FORECAST.	MONTREAL.			
			THE SUN		THE MOON	
			Slow.	Rises.	Sets.	Zod. Souths.
1 Th.		ST. DAVID. Enters cold and stormy, "like a lion," with strong wind, and snow N. and N.W., and rain S.	M.	H. M.	H. M.	H. M.
2 Fri.			12	6 41	5 48	☽ Morn
3 Sat.			12	6 39	5 49	☽ 8 27
			12	6 37	5 50	☽ 9 17

(9) 4th Sunday in Lent.

(Day's length, 11h. 16m.) ♀ in ☾

4 Su.		Stormy, wintry weather, with snow blockades N. and N.W., snow and sleet W., sleet and snow well into the Southern States—Storms on Atlantic coast and generally cold weather everywhere—A decidedly wintry week—Fine at close.	12	6 35	5 51	☽	10 05
5 Mo.			12	6 33	5 53	☽	10 52
6 Tu.			11	6 31	5 54	☾	11 36
7 We.			11	6 29	5 55	☾	Eve.
8 Th.			11	6 27	5 57	☽	1 03
9 Fri.			11	6 25	5 58	☽	1 47
10 Sat.			10	6 23	6 00	☽	2 33

(10) 5th Sunday in Lent.

(Day's length, 11h. 40m.) ♂ in ♄

11 Su.		Fine weather, milder, a return to better weather, especially in Southern sections—Cloudy, stormy and cold again, with some heavy snow and rainfalls—Very cold weather; a severe March "dip" E. and W.	10	6 21	6 01	♂	3 22
12 Mo.			10	6 19	6 02	♂	4 16
13 Tu.			10	6 17	6 03	♂	5 14
14 We.			9	6 15	6 04	♂	6 16
15 Th.			9	6 13	6 06	♂	7 19
16 Fri.			9	6 11	6 07	♂	8 21
17 Sat.			8	6 09	6 08	♂	9 20

(11) Palm Sunday.

(Day's length, 11h. 53m.) ♀ in ♄

18 Su.		A spring-like change, with rains; quite warm for the season in S.W. and S.; ice breaking up in more N. sections—Equinoctial storms, cold, windy, rainy (or snowy)	8	6 07	6 10	♂	10 14
19 Mo.			8	6 06	6 11	♂	11 04
20 Tu.			7	6 04	6 13	♂	11 51
21 We.			7	6 02	6 14	♂	Morn
22 Th.			7	6 00	6 15	♂	0 37
23 Fri.			7	5 58	6 16	♂	1 22
24 Sat.			6	5 56	6 18	♂	2 08

(12) Easter Sunday.

(Day's length, 12h. 25m.) ♀ in ♀

25 Su.		ANNUNCIATION. Milder, a calmer period—Windy, dark, threatening weather, with rain (sleet or snow N.)—Very cold for the season about 28th and 29th, with strong winds—Changeable at end of month.	6	5 54	6 19	♂	2 55
26 Mo.			6	5 52	6 20	♂	3 44
27 Tu.			5	5 50	6 21	♂	4 34
28 We.			5	5 48	6 23	♂	5 26
29 Th.			5	5 47	6 24	♂	6 18
30 Fri.			4	5 45	6 26	♂	7 09
31 Sat.			4	5 43	6 27	♂	7 58

In this month the Mornings increase 58 min. and the Afternoons 39 min.

PLANETS IN MARCH, 1894

MONTREAL MEAN TIME.

ON MERIDIAN (SOUTH).	Mar. 1st.	Mar. 8th.	Mar. 16th.	Mar. 24th.
Mercury ♀	1 12 ev.	0 42 ev.	11 47 mo.	10 59 mo.
Venus ♀	10 45 mo.	10 15 mo.	9 49 mo.	9 32 mo.
Mars ♂	8 11 mo.	8 05 mo.	7 58 mo.	7 50 mo.
Jupiter ♃	4 52 ev.	4 28 ev.	4 02 ev.	3 36 ev.
Saturn ♄	2 58 mo.	2 30 mo.	1 56 mo.	1 23 mo.
Uranus ♅	4 15 mo.	3 47 mo.	3 15 mo.	2 42 mo.
Neptune ♆	5 58 ev.	5 32 ev.	5 01 ev.	4 30 ev.

THE PLANETS.—MERCURY is Stationary on the 4th at 6h. 30m. mo.; in Conjunction with the Sun (Inferior) on the 14th at 3h. 23m. mo.; and Stationary (for the second time this month) on the 26th at 1h. 53m. ev. VENUS is Stationary on the 7th at 0h. 19m. ev. She is at "Greatest Brilliancy" (in the morning sky) on the 22nd. NEPTUNE is at Quadrature (90° from the Sun) and overhead at 6h. ev. on the 1st.

THE MOON.—Is in Apogee at 11h. mo. on the 1st; near Mars on the 2nd at 0h. 34m. mo.; passes 12° 28' S. of Venus on the 4th at 10h. 44m. ev.; is in Conjunction with Mercury on the 8th at 2h. 45m. mo.; near Jupiter on the 12th at 3h. 45m. ev.; passes Neptune on the 13th at 4h. 23m. ev.; is in Perigee on the 17th at 0h. mo.; is eclipsed on the 21st [see page 9]; is close to Saturn on the 23rd at 4h. 06m. mo.; in Conjunction with Uranus on the 24th at 7h. 17m. ev.; in Apogee on the 29th at 7h. mo., and near Mars on the 31st at 0h. 43m. mo.

THE STARS.—The star *Zeta Cancri* (1196 Struve) is triple. R. A. 8h. 5m., Dec. N. 18° 1'. The component stars are respectively of the 6, 7, and 7½ magnitudes: A, yellow, B, orange, C, yellowish. Supposed to be a ternary system, one pair revolving in not much less than 100 years (Struve 62 years), with a companion in a very remarkable orbit of 600 or 700 years. The Periastron (closest approach) of the two first stars, according to Key, occurred in 1872, when in an 18 inch reflector they were separated but one-half of a second of space. In 1865 they were well separated even in an 8 inch reflector.

4th Month, 1894.
30 Days.

APRIL.

☉ enters 8
19d. 10h. ev.

Moon's Phases	Day.	BOSTON.	MONTREAL.	WASHINGTON	CHICAGO.	WINNIPEG.
● N.M.	5	11.18 ev.	11.04 ev.	10.51 ev.	10.09 ev.	9.31 ev.
☾ F.Q.	12	7.51 ev.	7.37 ev.	7.24 ev.	6.42 ev.	6.04 ev.
☽ F.M.	19	10.20 ev.	10.06 ev.	9.53 ev.	9.11 ev.	8.33 ev.
☾ L.Q.	27	10.39 ev.	10.25 ev.	10.12 ev.	9.30 ev.	8.52 ev.

DAYS.	WEATHER FORECAST.	MONTREAL.	
		THE SUN— Slow. Rises. Sets.	THE MOON Zod. Souths.

(13) **Low Sunday.** (Day's length, 12h. 47m.) ☿ in ♋

		M.	H.	M.	H.	M.	H.	M.
1 Su.		4	5	41	6	28	☾	Morn
2 Mo.	Cold, showery weather, cold to very cold	4	5	40	6	29	☿	9 30
3 Tu.	at night in Canada and the N. States, with	3	5	38	6	31	☿	10 13
4 We.	some sleet and wind—Fine—Much warmer,	3	5	36	6	32	☿	10 56
5 Th.	quite a spring-like change.	3	5	34	6	33	☿	11 41
6 Fri.		2	5	32	6	34	☿	Eve.
7 Sat.		2	5	30	6	35	♄	1 16

(14) **2nd Sunday after Easter.** (Day's length, 13h. 09m.) ♀ in ♋

8 Su.		2	5	28	6	37	♄	2 10
9 Mo.	Fine weather—High wind and precipita-	1	5	26	6	38	♄	3 08
10 Tu.	tion—Rapid changes from cold to heat and	1	5	24	6	39	♄	4 10
11 We.	heat to cold, with disastrous wind, rain,	1	5	22	6	40	♄	5 13
12 Th.	hail or snow storms (tornadoes probable)	1	5	20	6	42	♄	6 15
13 Fri.	and very heavy rains between 9th and	0	5	19	6	43	♄	7 14
14 Sat.	12th—Fine Spring weather.	fast	5	17	6	45	♄	8 08

(15) **3rd Sunday after Easter.** (Day's length, 13h. 31m.) ♂ in ♋

15 Su.		0	5	15	6	46	♄	8 58
16 Mo.	Warm to hot advanced Spring weather,	0	5	13	6	47	♄	9 45
17 Tu.	a very favorable period—Cool and rainy,	1	5	11	6	48	♄	10 30
18 We.	with some sudden squalls, accompanied by	1	5	10	6	50	♄	11 15
19 Th.	hail or sleet, perhaps snow (tornadoes	1	5	08	6	51	♄	Morn
20 Fri.	probable).	1	5	07	6	52	♄	0 00
21 Sat.		1	5	05	6	53	♄	0 46

(16) **4th Sunday after Easter.** (Day's length, 13h. 41m.) ♃ in ♋

22 Su.	April showers—Fine, pleasant, warm	2	5	03	6	54	♄	1 35
23 Mo.	ST. GEORGE.	2	5	02	6	56	♄	2 25
24 Tu.	weather—A cool to cold change, with some	2	5	00	6	57	♄	3 17
25 We.	ST. MARK.	2	4	59	6	58	♄	4 09
26 Th.	heavy rains and thick mists (Foggy and	2	4	57	6	59	♄	5 00
27 Fri.	misty on Atlantic seaboard).	3	4	56	7	01	♄	5 50
28 Sat.		3	4	54	7	02	♄	6 37

(17) **Rogation Sunday.** (Day's length, 14h. 12m.) ♃ in ♋

29 Su.	Month ends unsettled and windy (hail	3	4	52	7	04	♄	7 22
30 Mo.	storms probable).	3	4	50	7	05	♄	8 06

In this month the Mornings increase 51 min. and the Afternoons 37 min.

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PLANETS IN APRIL, 1894.

MONTREAL MEAN TIME.

ON MERIDIAN (SOUTH).	April 1st.	April 8th.	April 16th.	April 24th.
Mercury.....♄	10 32 mo.	10 23 mo.	10 24 mo.	10 32 mo.
Venus.....♀	9 20 mo.	9 14 mo.	9 09 mo.	9 06 mo.
Mars.....♂	7 42 mo.	7 35 mo.	7 27 mo.	7 18 mo.
Jupiter.....♃	3 11 ev.	2 49 ev.	2 24 ev.	2 00 ev.
Saturn.....♄	0 49 mo.	0 20 mo.	11 42 ev.	11 08 ev.
Uranus.....♅	2 10 mo.	1 42 mo.	1 09 mo.	0 36 mo.
Neptune.....♆	3 59 ev.	3 33 ev.	3 02 ev.	2 32 ev.

THE PLANETS.—MERCURY is in Aphelion on the 9th at 0h. 30m. mo. He is at Greatest Elongation W. of $27^{\circ} 40'$ on the 10th at 10h. 33m. ev., when he is visible in the mornings prior to sunrise. VENUS, still the most brilliant Planet, is in Conjunction with *Theta Aquarii* at 3h. 22m. mo. on the 5th, the Planet passing $19'$ S. of the Star. Venus is at Greatest Elongation W. of $46^{\circ} 10'$ on the 27th at 4h. 32m. mo., after which she approaches the Sun. SATURN reaches Opposition on the 11th at 1h. 06m. ev. He is at his best for observation during 1894, passing the meridian at midnight. URANUS has a very interesting Conjunction on the 27th with the double Star *Alpha Librae*. At moment of nearest approach he is but $4'$ N. of the brightest Star, which is of the 3rd magnitude.

THE MOON.—Passes $6^{\circ} 55'$ S. of Venus on the 2nd at 4h. 03m. mo.; is near Mercury on the 3rd at 6h. 42m. ev.; in Conjunction with Jupiter on the 9th at 6h. 19m. mo.; near Neptune the same day at 11h. 02m. ev.; in Perigee on the 10th at 10h. ev.; is $4^{\circ} 14'$ S. of Saturn on the 19th at 8h. 50m. mo.; passes $3^{\circ} 29'$ S. of Uranus on the 21st at 1h. 44m. mo.; is in Apogee on the 26th at 2h. mo.; and near Mars on the 29th at 2h. 04m. mo.

THE STARS.—*Hydra*, "the Water Serpent," is well placed in April. It is an extensive Constellation, winding along from East to West in a serpentine direction, over a space exceeding 100° in length. *Hydra* lies South of the Constellations *Cancer*, *Leo* and *Virgo*. It reaches almost from *Canis Minor* to *Libra* and contains 60 stars, the largest of the 2nd-magnitude, three of the 3rd, and twelve of the 4th.

5th Month, 1894.
31 Days.

MAY.

☉ enters ♀
20d. 9h. ev.

Moon's Phases	Day.	BOSTON.	MONTREAL.	WASHINGTON	CHICAGO.	WINNIPEG.
● N. M.	5	10.00 mo.	9.46 mo.	9.33 mo.	8.51 mo.	8.13 mo.
☽ F. Q.	11-12	1.39 mo.	1.25 mo.	1.12 mo.	0.30 mo.	11.52 ev.
☾ F. M.	19	0.01 ev.	11.47 mo.	11.34 mo.	10.52 mo.	10.14 mo.
☾ L. Q.	27	3.23 ev.	3.69 ev.	2.56 ev.	2.14 ev.	1.36 ev.

DAYS.	WEATHER FORECAST.		MONTREAL.				
			THE SUN			THE MOON	
M.	W.		Fast.	Rises.	Sets.	Zod.	Souths.
1 Tu.		MAY DAY. Enters with favorable weather, Summer-like, with showers—	3	4 49	7 06	♋	Morn
2 We.			3	4 47	7 07	♌	9 32
3 Th.		ASCENSION DAY.	3	4 46	7 09	♌	10 17
4 Fri.		A cold change, wet weather, with bleak air	3	4 44	7 10	♌	11 05
5 Sat.		and night frosts.	3	4 43	7 11	♌	11 58

(18) Sunday after Ascension. (Day's length, 14h. 30m.) ♀ in ♌

6 Su.			4	4 42	7 12	♌	Eve.
7 Mo.		Fine weather—Warm to hot, with	4	4 40	7 13	♌	1 58
8 Tu.		thunder showers and bush fires about the	4	4 39	7 14	♌	3 03
9 We.			4	4 37	7 16	♌	4 08
10 Th.		8th to 10th—Cloudy, windy, cool and	4	4 36	7 17	♌	5 09
11 Fri.		rainy.	4	4 35	7 18	♌	6 05
12 Sat.			4	4 34	7 19	♌	6 56

(19) Whit Sunday (Pentecost). (Day's length, 14h. 48m.) ♀ in ♌

13 Su.		Fine, warm weather, perhaps quite sultry	4	4 33	7 21	♌	7 43
14 Mo.		from 13th to 15th, with bush fires—A cool	4	4 31	7 22	♌	8 28
15 Tu.		change, with rains and sudden squalls	4	4 30	7 23	♌	9 12
16 We.			4	4 29	7 24	♌	9 56
17 Th.		Montreal founded, 1642.	4	4 28	7 25	♌	10 41
18 Fri.		(tornadoes probable)—Fine at close.	4	4 27	7 26	♌	11 28
19 Sat.			4	4 26	7 27	♌	Morn

(20) Trinity Sunday. (Day's length, 15h. 00m.) ♀ in ♌

20 Su.			4	4 25	7 28	♌	0 18
21 Mo.		Windy and unsettled, with rains—Fine	4	4 24	7 29	♌	1 09
22 Tu.		May weather—Dark and cold, with severe	4	4 23	7 30	♌	2 01
23 We.		wind and rain storms (tornadoes probable)	3	4 22	7 31	♌	2 53
24 Th.		Q. Victoria b. 1819. Corpus Christi.	3	4 21	7 32	♌	3 43
25 Fri.		—Cold for season, with night frosts—Fine	3	4 20	7 33	♌	4 31
26 Sat.		and warm.	3	4 19	7 34	♌	5 16

(21) 1st Sunday after Trinity. (Day's length, 15h. 16m.) ♂ in ♌

27 Su.			3	4 19	7 35	♌	6 00
28 Mo.		A warm period, hot, smoky weather,	3	4 18	7 36	♌	6 42
29 Tu.		with damaging electrical storms (tornadoes	3	4 18	7 37	♌	7 24
30 We.		DECORATION DAY.	3	4 17	7 38	♌	8 07
31 Th.		probable)—Fine, some showers.	3	4 16	7 39	♌	8 53

In this month the Mornings increase 33 min., and the Afternoons 33 min.

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PLANETS IN MAY, 1894.

MONTREAL MEAN TIME.

ON MERIDIAN (SOUTH).	May 1st.	May 8th.	May 16th.	May 24th.
Mercury . . . ♀	10 46 mo.	11 05 mo.	11 37 mo.	0 17 ev.
Venus ♀	9 05 mo.	9 04 mo.	9 04 mo.	9 05 mo.
Mars ♂	7 10 mo.	7 02 mo.	6 52 mo.	6 42 mo.
Jupiter . . . ♃	1 39 ev.	1 18 ev.	0 54 ev.	0 31 ev.
Saturn ♄	10 39 ev.	10 10 ev.	9 36 ev.	9 03 ev.
Uranus . . . ♅	0 08 mo.	11 35 ev.	11 02 ev.	10 29 ev.
Neptune . . . ♆	2 05 ev.	1 39 ev.	1 08 ev.	0 38 ev.

THE PLANETS.—MERCURY is in Conjunction with the Sun (Superior) on the 20th at 10h. 49m. mo. On the 23rd at 0h. 08m. mo. he is in Perihelion. On the 26th at 3h. 26m. mo. he is 1° 45' N. of Jupiter, and 2° 49' N. of Neptune the same day at 6h. 22m. ev. VENUS is in Aphelion on the 28th at 1h. mo. URANUS, on the 3rd at 2h. 49m. ev. reaches Opposition, when he is overhead at midnight.

THE MOON.—Is 42' S. of Venus at 6h. 12m. ev. on the 1st; near Mercury at 5h. mo. on the 4th; passes Jupiter on the 7th at 0h. mo.; is near Neptune at 7h. 57m. the same morning, and in Perigee at 11h. that evening. In Conjunction with Saturn on the 16th at noon; near Uranus on the 18th at 7h. 07m. mo.; in Apogee on the 23rd at 7h. ev.; only 1' N. of Mars on the 28th at 3h. 23m. mo., and near Venus on the 31st at 4h. 15m. ev.

THE STARS.—*Canes Venatici*, "the Greyhounds," are well seen in May. It is a modern Constellation; formed by Hevelius out of the unformed stars scattered between *Bootes* on the East, *Ursa Major* on the West, the handle of "The Dipper" on the North, and *Coma Berenices* on the South. These hounds, in pictures of the sphere, are represented as in pursuit of the "Great Bear," which *Bootes*, "the Bear Driver," is hunting round the Pole, while he holds in his hand the leash by which the hounds are fastened together. The name of the Northernmost hound is *Asterion*, of the Southern one, *Chara*. The Earl of Rosse's wonderful Spiral Nebula is in this Constellation: R.A. 13h. 25m., Dec. N. 47° 49'. Small telescopes show it as two unequal nebulae nearly in contact. To resolve it into stars requires the largest lenses.

6th Month, 1894.
30 Days.

JUNE.

☉ enters ♋
21d. 6h. mo.

Moon's Phases	Day.	BOSTON.	MONTREAL.	WASHINGTON	CHICAGO.	WINNIPEG.
● N.M.	3	6.15 ev.	6.01 ev.	5.48 ev.	5.06 ev.	4.28 ev.
☽ F.Q.	19	8.32 mo.	8.18 mo.	8.05 mo.	7.23 mo.	6.45 mo.
☾ F.M.	18	2.25 mo.	2.11 mo.	1.58 mo.	1.16 mo.	0.38 mo.
☾ L.Q.	26	5.21 mo.	5.07 mo.	4.54 mo.	4.12 mo.	3.34 mo.

DAYS.		WEATHER FORECAST.	MONTREAL.					
M.	W.		THE SUN—			THE MOON		
			Fast.	Rises.	Sets.	Zod.	Souths.	
1	Fri.	Fine, warm Summer weather, with strong winds.	M.	H. M.	H. M.	H. M.	H. M.	
2	Sat.		2	4 16	7 40	♋	Morn	
			2	4 15	7 41	♋	10 38	

(22) 2nd Sunday after Trinity. (Day's length, 15h. 28m.) ♃ in ♋

3	Su.	Warm, Summer weather, a heated term, with thunder showers (electrical storms), considerable damage by storms—Generally fine, Summer weather.	2	4 14	7 42	♋	11 39
4	Mo.		2	4 14	7 43	♋	Eve.
5	Tu.		2	4 13	7 44	♋	1 52
6	We.		2	4 13	7 45	♋	2 57
7	Th.		1	4 12	7 45	♋	3 57
8	Fri.		1	4 12	7 46	♋	4 52
9	Sat.		1	4 12	7 46	♋	5 41

(23) 3rd Sunday after Trinity. (Day's length, 15h. 36m.) ♃ in ♋

10	Su.	Fine, Summer weather—A change to	1	4 11	7 47	♋	6 27
11	Mo.	ST. BARNABAS.	1	4 11	7 47	♋	7 11
12	Tu.	rainy, cool, cloudy and squally—Fine, warm Summer weather.	0	4 11	7 48	♋	7 55
13	We.		0	4 11	7 48	♋	8 39
14	Th.		0	4 11	7 49	♋	9 25
15	Fri.		0	4 11	7 49	♋	10 13
16	Sat.		0	4 11	7 50	♋	11 04

(24) 4th Sunday after Trinity. (Day's length, 15h. 39m.) ♃ in ♋

17	Su.	Hot, with thunder and hail storms— Accession Queen Victoria. Cooler, with showers (frosts possible between the 20th and 23rd).	1	4 11	7 50	♋	11 56
18	Mo.		1	4 11	7 51	♋	Morn
19	Tu.		1	4 11	7 51	♋	0 48
20	We.		1	4 11	7 51	♋	1 38
21	Th.		2	4 11	7 51	♋	2 27
22	Fri.		2	4 12	7 52	♋	3 13
23	Sat.		2	4 12	7 52	♋	3 56

(25) 5th Sunday after Trinity. (Day's length, 15h. 40m.) ♃ in ♋

24	Su.	ST. JOHN BAPTIST.—MID-	2	4 12	7 52	♋	4 38
25	Mo.	Warmer—Variable wea- [SUMMER DAY.	2	4 13	7 52	♋	5 19
26	Tu.	ther, with thunder and wind—A warm to	3	4 13	7 52	♋	6 01
27	We.	hot spell—Sultry, with thunder storms—	3	4 14	7 52	♋	6 44
28	Th.		3	4 14	7 52	♋	7 31
29	Fri.	ST. PETER and ST. PAUL.	3	4 15	7 52	♋	8 22
30	Sat.	Cooler at close of month.	3	4 15	7 51	♋	9 19

In this month the Mornings decrease 1 min. and the Afternoons 11 min.

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PLANETS IN JUNE, 1894.

MONTREAL MEAN TIME.

ON MERIDIAN (SOUTH).	June 1st.	June 8th.	June 16th.	June 24th.
Mercury..... ♀	0 58 ev.	1 26 ev.	1 46 ev.	1 50 ev.
Venus..... ♀	9 07 mo.	9 10 mo.	9 13 mo.	9 18 mo.
Mars..... ♂	6 31 mo.	6 21 mo.	6 09 mo.	5 57 mo.
Jupiter..... ♃	0 07 ev.	11 47 mo.	11 23 mo.	10 59 mo.
Saturn..... ♄	8 31 ev.	8 03 ev.	7 31 ev.	6 59 ev.
Uranus..... ♅	9 57 ev.	9 28 ev.	8 56 ev.	8 24 ev.
Neptune..... ♆	0 08 ev.	11 41 mo.	11 11 mo.	10 41 mo.

THE PLANETS.—MERCURY is at Greatest Elongation E. of 25° 16' on the 23rd at 2h. 50m. mo. MARS is 90° from the Sun (Quadrature) and overhead at 6h. mo. on the 17th. JUPITER and Neptune are but 59' apart (Neptune is S. of Jupiter) on the 1st at 9h. 19m. ev. Jupiter is in Conjunction with the Sun on the 4th at 9h. 16m. mo. SATURN is Stationary on the 22nd at 3h. 53m. mo. NEPTUNE is in Conjunction with the Sun on the 3rd at 4h. 35m. ev.

THE MOON.—Is near Neptune on the 3rd at 7h. 11m. ev.; Jupiter the same day at 7h. 46m. ev.; is near Mercury on the 4th at 11h. 37m. ev.; in Perigee on the 5th at 0h. mo.; in Conjunction with Saturn on the 12th at 3h. 46m. ev.; near Uranus on the 14th at 11h. 14m. mo.; in Apogee on the 20th at 5h. mo.; close to Mars on the 26th at 1h. 53m. mo.; and is near Venus on the 30th at 10h. 47m. mo.

THE STARS.—*Corona Borealis*, "the Northern Crown," is conspicuous in June. It is easily distinguished by means of its six principal stars, placed so as to form a circular wreath or "crown." It is situate between *Bootes* on the West and *Hercules* on the East. It was known to the Hebrews by the name of *Ataroth*, and it is called by that name in the East to this day. A most difficult but very interesting double star is *Eta* in this Constellation, R.A. 15h. 18m., Dec. N. 30° 43'. One of the most rapid binary systems known. A pair of suns revolving about each other in 42 years. Half the time that Uranus takes to revolve about the Sun. *Eta* is visible as a single star to the unaided eye. In this Constellation (R.A. 15h. 54m., Dec. N. 26° 16') appeared the celebrated "blaze" star which flared up to the 2nd magnitude in 1866.

7th Month, 1894.
31 Days.

JULY.

☉ enters ♍
22d. 4h. ev.

Moon's Phases	Day.	BOSTON.	MONTREAL.	WASHINGTON	CHICAGO.	WINNIPEG.
● N.M.	2-3	1.04 mo.	0.53 mo.	0.37 mo.	0.55 mo.	11.17 ev
☽ F.Q.	9	5.33 ev.	5.19 ev.	5.06 ev.	4.24 ev.	3.46 ev.
☼ F.M.	17	5.21 ev	5.07 ev.	4.54 ev.	4.12 ev.	3.34 ev.
☾ L.Q.	25	4.25 ev.	4.11 ev.	3.58 ev.	3.16 ev.	2.58 ev.

DAYS.	WEATHER FORECAST.	MONTREAL.	
		THE SUN— Slow. Rises. Sets.	THE MOON Zod. Souths.

(26) 6th Sunday after Trinity. (Day's length, 15h. 35m.) ♀ in ♋

		M.	H.	M.	H.	M.		H.	M.
1 Su.	DOMINION DAY. Fine, warm	4	4	16	7	51	♏	11	30
2 Mo.	Summer weather—Hot to sultry, with	4	4	16	7	51	♏	11	30
3 Tu.	thunder storms—A cooler change, with	4	4	17	7	51	♏		Eve.
4 We.	INDEPENDENCE DAY.	4	4	17	7	50	♏	1	42
5 Th.	damaging storms and showery weather.	4	4	18	7	50	♏	2	40
6 Fri.		5	4	18	7	49	♏	3	34
7 Sat.		5	4	19	7	49	♏	4	22

(27) 7th Sunday after Trinity. (Day's length, 15h. 29m.) ♀ in ♌

8 Su.		5	4	19	7	48	♐	5	08
9 Mo.	Fine, summer weather—Thunder and	5	4	20	7	48	♐	5	53
10 Tu.	hail storms, cloudy, squally and showery—	5	4	21	7	47	♐	6	37
11 We.		5	4	22	7	47	♐	7	23
12 Th.	Fine, hot to sultry summer weather at the	5	4	23	7	46	♐	8	11
13 Fri.	close of week.	6	4	24	7	46	♐	9	00
14 Sat.		6	4	25	7	45	♐	9	51

(28) 8th Sunday after Trinity. (Day's length, 15h. 18m.) ♂ in ♌

15 Su.	ST. SWITHIN.	6	4	26	7	44	♐	10	43
16 Mo.	Fine and hot, with thunder showers—	6	4	27	7	43	♐	11	35
17 Tu.	A cooler change, with rains, sudden alter-	6	4	28	7	42	♐		Morn
18 We.	ations of temperature and storms of rain	6	4	29	7	41	♐	0	24
19 Th.	and thunder—Warm, pleasant summer	6	4	30	7	40	♐	1	11
20 Fri.	weather.	6	4	31	7	39	♐	1	55
21 Sat.		6	4	32	7	38	♐	2	37

(29) 9th Sunday after Trinity. (Day's length, 15h. 04m.) ♀ in ♌

22 Su.	Hot to sultry, a heated term; very high	6	4	33	7	37	♐	3	18
23 Mo.	Canada visited by Cartier, 1534.	6	4	34	7	36	♐	3	59
24 Tu.	ST. JAMES.	6	4	35	7	35	♐	4	40
25 We.	temperatures recorded, with damaging	6	4	36	7	34	♐	5	24
26 Th.	thunder and hail storms—Cooler—Fine	6	4	37	7	33	♐	6	12
27 Fri.	summer weather.	6	4	38	7	32	♐	7	05
28 Sat.		6	4	39	7	31	♐	8	04

(30) 10th Sunday after Trinity. (Day's length, 14h. 50m.) ♀ in ♌

29 Su.	Fine weather—Very hot, a torrid wave,	6	4	40	7	30	♐	9	08
30 Mo.	with local storms—Cooler at end of month.	6	4	41	7	29	♐	10	15
31 Tu.		6	4	42	7	28	♐	11	21

In this month the Mornings decrease 26 min. and the Afternoons 23 min.

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PLANETS IN JULY, 1894.

MONTREAL MEAN TIME.

ON MERIDIAN (SOUTH.)	July 1st.	July 8th.	July 16th.	July 24th.
Mercury ♀	1 40 ev.	1 16 ev.	0 30 ev.	11 37 mo.
Venus ♀	9 23 mo.	9 30 mo.	9 38 mo.	9 47 mc.
Mars ♂	5 46 mo.	5 34 mo.	5 19 mo.	5 04 mo.
Jupiter ♃	10 39 mo.	10 18 mo.	9 54 mo.	9 30 mo.
Saturn ♄	6 32 ev.	6 05 ev.	5 36 ev.	5 05 ev.
Uranus ♅	7 56 ev.	7 28 ev.	6 56 ev.	6 25 ev.
Neptune ♆	10 14 mo.	9 48 mo.	9 17 mo.	8 47 mo.

THE PLANETS.—MERCURY is in Aphelion on the 5th at 11h. 46m. ev.; Stationary on the 6th at 8h. 49m. mo.; in Conjunction with the Sun (Inferior) on the 20th at 5h. 33m. ev.; and Stationary (for the second time this month) on the 31st at 3h. 43m. mo. VENUS is only 9' S. of Neptune on the 12th, when the pair may be seen together with a telescope before sunrise (nearest approach at 1h. mo.). She is but 51' S. of Jupiter on the 20th (nearest approach at 3h. 33m. mo.). On the 28th she is but 3' S. of the star *Mu Gemini*, a double star of the 3rd magnitude (nearest approach at 7h. 18m. mo.). MARS is in Perihelion on the 26th at 11h. 16m. mo. SATURN is 90° from the Sun (Quadrature) on the 10th at 9h. 37m. ev., when he is overhead at 6h. ev. URANUS is Stationary on the 19th at 11h. 45m. ev.

THE MOON.—Passes Neptune on the 1st at 7h. 17m. mo.; Jupiter the same day at 4h. 11m. ev.; is in Perigee on the 3rd at 8h. mo.; passes Mercury on the 4th at 10h. 01m. mo.; Saturn on the 9th at 10h. 16m. ev.; Uranus on the 11th at 4h. 04m. ev.; is in Apogee on the 17th at 9h. mo.; near Mars on the 24th at 5h. 51m. ev.; near Jupiter on the 29th at 11h. 30m. mo.; passes Venus on the 30th at 2h. 39m. mo.; is near Mercury on the 31st at 4h. 37m. mo., and in Perigee the same day at 6h. ev.

THE STARS.—*Hercules* is well placed for observation in July. This Constellation extends from 12° to 50° N. Declination, and is represented with one foot on the head of *Draco* on the North, his head touching that of *Ophiuchus* on the South. The Constellation contains 113 visible stars, including 1 of the 2nd, 9 of the 3rd, and 19 of the 4th magnitudes.

8th Month, 1894.
31 Days.

AUGUST.

☉ enters ♍
22d. 11h. ev.

Moon's Phases	Day.	BOSTON.	MONTREAL.	WASHINGTON	CHICAGO.	WINNIPEG.
● N.M.	1	7.42 mo.	7.28 mo.	7.15 mo.	6.33 mo.	5.55 mo.
☽ F.Q.	8	5.24 mo.	5.10 mo.	4.57 mo.	4.15 mo.	3.37 mo.
☾ F.M.	16	8.35 mo.	8.21 mo.	8.08 mo.	7.26 mo.	6.48 mo.
☾ L.Q.	23-24	0.58 mo.	0.44 mo.	0.31 mo.	11.49 ev.	11.11 ev.
● N.M.	30	3.23 ev.	3.09 ev.	2.56 ev.	2.14 ev.	1.36 ev.

DAYS.	WEATHER FORECAST.	MONTREAL.				
		THE SUN		THE MOON		
M. W.		Slow.	Rises.	Sets.	Zod.	Souths.
1 We.	LAMMAS DAY. Fine, summer	6	4 43	7 27	♊	Eve.
2 Th.	weather—Hot and sultry, with disastrous	6	4 45	7 26	♋	1 19
3 Fri.	local storms and sudden changes (torna-	6	4 46	7 25	♌	2 11
4 Sat.	does probable).	6	4 47	7 24	♍	3 00

(31) 11th Sunday after Trinity. (Day's length, 14h. 35m.) ♀ in □

5 Su.	Cooler weather, with showers—Fine	6	4 48	7 23	♎	3 46
6 Mo.	summer weather—Some rain and wind,	6	4 50	7 21	♏	4 32
7 Tu.	cooler—Fine weather, but cool for the	6	4 51	7 19	♐	5 19
8 We.	season—	5	4 52	7 18	♑	6 06
9 Th.		5	4 53	7 16	♒	6 56
10 Fri.	ST. LAWRENCE. Warm at	5	4 54	7 14	♓	7 47
11 Sat.	close of week.	5	4 56	7 13	♓	8 39

(32) 12th Sunday after Trinity. (Day's length, 14h. 14m) ♀ in □

12 Su.	Storms in Western and North-Western	5	4 57	7 11	♈	9 30
13 Mo.	sections—A cool reactionary period, with	5	4 58	7 09	♉	10 20
14 Tu.	showers (Frosts probable in summer frost	4	4 59	7 08	♊	11 08
15 We.	ASSUMPTION B. V. M.	4	5 00	7 07	♋	11 53
16 Th.	sections between 13th and 15th)—Fine—	4	5 02	7 06	♌	Morn
17 Fri.	Hot to sultry, with severe electrical	4	5 03	7 04	♍	0 36
18 Sat.	storms:	4	5 04	7 02	♎	1 59

(33) 13th Sunday after Trinity. (Day's length, 13h. 55m.) ♂ in ♋

19 Su.	Electrical disturbances (tornadoes prob-	4	5 05	7 00	♏	2 40
20 Mo.	able), a cool reaction, (frosts again	3	5 06	6 58	♐	3 23
21 Tu.	probable in summer frost sections between	3	5 08	6 56	♑	4 08
22 We.	19th and 21st)—Rest of week fine and	3	5 09	6 54	♒	4 58
23 Th.		3	5 10	6 52	♓	5 53
24 Fri.	ST. BARTHOLOMEW.	2	5 11	6 51	♈	6 53
25 Sat.	warm, with some thunder showers.	2	5 12	6 49	♉	7 57

(34) 14th Sunday after Trinity. (Day's length, 13h. 34m.) ♀ in □

26 Su.		2	5 14	6 48	♊	9 02
27 Mo.	Fine weather—Hot to sultry, with some	2	5 15	6 46	♋	10 04
28 Tu.	strong winds—Showery, with thunder—	1	5 16	6 44	♌	11 03
29 We.		1	5 17	6 42	♍	11 57
30 Th.	Cooler at close of month.	1	5 18	6 41	♎	Eve.
31 Fri.		0	5 20	6 40	♏	0 47

In this month the Mornings decrease 37 min. and the Afternoons 47 min.

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PLANETS IN AUGUST, 1894.

MONTREAL MEAN TIME.

ON MERIDIAN (SOUTH).	Aug. 1st.	Aug. 8th.	Aug. 16th.	Aug. 24th.
Mercury ♀	10 59 mo.	10 47 mo.	10 59 mo.	11 27 mo.
Venus ♀	9 57 mo.	10 05 mo.	10 15 mo.	10 24 mo.
Mars ♂	4 48 mo.	4 33 mo.	4 14 mo.	3 52 mo.
Jupiter ♃	9 05 mo.	8 44 mo.	8 19 mo.	7 53 mo.
Saturn ♄	4 36 ev.	4 10 ev.	3 40 ev.	3 12 ev.
Uranus ♅	5 54 ev.	5 27 ev.	4 57 ev.	4 26 ev.
Neptune ♆	8 16 mo.	7 50 mo.	7 19 mo.	6 48 mo.

THE PLANETS.—MERCURY reaches Greatest Elong. on the 8th, when he is $18^{\circ} 57'$ W. of the Sun, and visible prior to sunrise in the early morning sky. He is in Perihelion on the 18th at 11h. 21m. ev. VENUS is in close Conjunction ($9'$ S.) with *Delta Gemini* on the 8th. *Delta* is a double star of the 3rd magnitude. (Nearest approach 8h. 50m. mo.) URANUS is at Quadrature, and overhead at 6h. ev., on the 3rd at 1h. 42m. ev.

THE MOON.—Is $4^{\circ} 27'$ S. of Saturn on the 6th at 8h. 35m. mo.; near Uranus on the 7th at 11h. 07m. ev.; in Apogee on the 13th at 2h. ev.; passes Mars on the 21st at 10h. 56m. ev.; is beside Neptune on the 25th at 3h. 10m. mo.; close to Jupiter on the 26th at 3h. 57m. mo.; near Venus on the 28th at 8h. 28m. ev.; in Perigee at 1h. mo. on the 29th, and $44'$ N. of Mercury at 8h. 23m. mo. on the 30th.

THE STARS.—*Aquila*, "the Eagle," is well placed during August. It is situate between *Taurus Poniatowski* on the West, and *Delphinus* on the East. *Aquila* contains one star of the 1st magnitude, *Altair*. It may be readily picked out during the summer evenings, from its being the largest and middle star of a line of three, ranged from N.W. towards S.E. The stars on each side of *Altair* are of the 3rd magnitude, about 2° distant. *Altair* is one of the stars used for computing the Moon's longitude by seamen. When on the meridian, it occupies nearly the same place that the Sun does on April 12th. It has been thought to be a variable star. It has a very sensible proper motion. This is a very rich region of the sky, the Galaxy being plentifully strewn with groups and pairs of stars.

9th Month, 1894.
30 Days

SEPTEMBER.

☉ enters ♋
22d. 8h. ev.

Moon's Phases	Day.	BOSTON.	MONTREAL.	WASHINGTON	CHICAGO.	WINNIPEG.
☽ F. Q.	6	8.21 ev.	8.07 ev.	7.54 ev.	7.12 ev.	6.34 ev.
☽ F. M.	14	11.40 ev.	11.26 ev.	11.13 ev.	10.31 ev.	9.53 ev.
☾ L. Q.	22	7.50 mo.	7.36 mo.	7.23 mo.	6.41 mo.	6.03 mo.
● N. M.	28-29	1.02 mo.	0.48 mo.	0.35 mo.	11.53 ev.	11.15 ev.

DAYS.		WEATHER FORECAST.	MONTREAL.			
M.	W.		THE SUN		THE MOON	
				Fast. Rises.	Sets.	Zod. Souths.

1	Sat.	ST. GILES.	Fine, warm weather.	M.	H. M.	H. M.	H. M.
				0	5 21	6 39	☾ Eve.

(35) 15th Sunday after Trinity. (Day's length, 13h. 25m.) ♃ in ♏

2	Su.	Fine weather—Cloudy, windy, unsettled,		0	5 22	6 37	☾ 2 23
3	Mo.	LABOR DAY.		1	5 23	6 35	☾ 3 10
4	Tu.	with rains and squalls—A cool reactionary		1	5 24	6 33	☾ 3 59
5	We.	period (frosts in Summer frost sections)—		1	5 26	6 31	☾ 4 49
6	Th.	Auroral displays probable—Fine weather		2	5 27	6 29	☾ 5 40
7	Fri.	—Showery and windy.		2	5 28	6 27	☾ 6 32
8	Sat.			2	5 29	6 25	☾ 7 24

(36) 16th Sunday after Trinity. (Day's length, 12h. 53m.) ♃ in ♋

9	Su.	Fine, but cool for the season—(frosts		3	5 30	6 23	☾ 8 15
10	Mo.	again probable)—Fine September weather,		3	5 32	6 22	☾ 9 04
11	Tu.	growing warmer (after about 11th) as the		4	5 33	6 20	☾ 9 50
12	We.	week advances—Quite hot at close, with		4	5 34	6 18	☾ 10 34
13	Th.	thunder and hail storms.		4	5 35	6 16	☾ 11 16
14	Fri.			5	5 36	6 14	☾ 11 57
15	Sat.			5	5 38	6 12	☾ Morn

(37) 17th Sunday after Trinity. (Day's length, 12h. 31m.) ♃ in ♏

16	Su.	Cooler (frosts probable)—Generally		5	5 39	6 10	☾ 0 39
17	Mo.	stormy, with heavy rains—Windy and		6	5 40	6 08	☾ 1 21
18	Tu.	showery—Clearing to fine—Some rain and		6	5 41	6 06	☾ 2 07
19	We.			6	5 42	6 04	☾ 2 55
20	Th.	ST. MATTHEW.		7	5 44	6 02	☾ 3 49
21	Fri.	wind—Fine at end of week.		7	5 45	6 00	☾ 4 46
22	Sat.			7	5 46	5 58	☾ 5 48

(38) 18th Sunday after Trinity. (Day's length, 12h. 09m.) ♃ in ♏

23	Su.	Fine weather—Warm to hot for the sea-		8	5 47	5 56	☾ 6 50
24	Mo.	son, with local thunder showers—Wet and		8	5 48	5 54	☾ 7 52
25	Tu.	unsettled at end of week (equinoctial		8	5 50	5 53	☾ 8 50
26	We.	storms) with gales on Lakes and Atlantic		9	5 51	5 51	☾ 9 44
27	Th.	coasts.		9	5 52	5 49	☾ 10 35
28	Fri.			9	5 53	5 47	☾ 11 24
29	Sat.	MICHAELMAS.		10	5 55	5 45	☾ Eve.

(39) 19th Sunday after Trinity. (Day's length, 11h. 46m.) ♃ in ♏

30	Su.	Stormy, with rains.		10	5 56	5 43	☾ 0 59
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In this month the Mornings decrease 35 min. and the Afternoons 56 min.

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PLANETS IN SEPTEMBER, 1894.

MONTREAL MEAN TIME.

ON MERIDIAN (SOUTH).	Sept. 1st.	Sept. 8th.	Sept. 16th.	Sept. 24th.
Mercury ♀	11 57 mo.	0 18 ev.	0 36 ev.	0 51 ev.
Venus ♀	10 32 mo.	10 39 mo.	10 45 mo.	10 51 mo.
Mars ♂	3 28 mo.	3 05 mo.	2 35 mo.	2 01 mo.
Jupiter ♃	7 27 mo.	7 03 mo.	6 36 mo.	6 08 mo.
Saturn ♄	2 43 ev.	2 18 ev.	1 50 ev.	1 22 ev.
Uranus ♅	3 56 ev.	3 29 ev.	2 59 ev.	2 29 ev.
Neptune ♆	6 16 mo.	7 49 mo.	7 17 mo.	4 46 mo.

THE PLANETS.—MERCURY is in Conjunction with the Sun (Superior) on the 3rd at 1h. 22m. mo. He is $3^{\circ} 35'$ S. of Saturn on the 30th at 2h. 45m. ev. VENUS is in Perihelion on the 17th at 7h. 40m. ev. MARS is Stationary on the 15th at 10h. 35m. mo. JUPITER is 90° from the Sun (overhead at 6h. mo.) on the 28th at 4h. 35m. mo. NEPTUNE is 90° from the Sun (overhead at 6h. mo.) on the 18th at 6h. 39m. mo., and Stationary on the 21st at 9h. 21m. mo.

THE MOON.—Is in Conjunction with Saturn on the 2nd at 10h. 14m. ev.; near Uranus at 8h. 56m. mo. on the 4th; in Apogee at 3h. mo. on the 10th; is eclipsed on the 14th [see page 9]; passes N. of Mars on the 18th at 11h. 54m. mo.; is near Neptune on the 21st at 8h. 21m. mo.; passes $5^{\circ} 38'$ N. of Jupiter on the 22nd at 4h. 14m. ev.; is in Perigee on the 26th at 0h. mo.; very close to Venus ($20'$ S.) on the 27th at 7h. 56m. ev.; near Mercury on the 30th at 1h. 28m. ev.; and in Conjunction with Saturn 8 min. later.

THE STARS.—*Cygnus*, "the Swan," is a remarkable Constellation. It is well placed in September for viewing. Situate in the "Milky Way," East of *Lyra*, nearly on the same meridian as *Delphinus*, it cannot be mistaken, especially as its principal stars, which mark the wings, body and bill of the bird, form a large cross, the upright piece lying along the "Milky Way" from N.E. to S.W. Its largest star is *Aried* or *Deneb*, which has no perceptible parallax or proper motion, consequently, it must be placed at an amazing distance, its magnitude perhaps surpassing that of *Arcturus*, *Vega*, or even *Sirius*. It is believed to be approaching us at about 39 miles per second.

10th Month, 1894.
31 Days.

OCTOBER.

☾ enters ♍
23d. 5h. mo.

Moon's Phases	Day.	BOSTON.	MONTREAL.	WASHINGTON	CHICAGO.	WINNIPEG.
☽ F. Q.	6	2.19 ev.	2.05 ev.	1.52 ev.	1.10 ev.	0.32 ev.
☽ F. M.	14	1.59 ev.	1.45 ev.	1.32 ev.	0.50 ev.	0.12 ev.
☾ L. Q.	21	2.14 ev.	2.00 ev.	1.47 ev.	1.05 ev.	0.27 ev.
☾ N. M.	28	1.15 ev.	1.01 ev.	0.48 ev.	0.06 ev.	11.28 mo.

DAYS.	WEATHER FORECAST.	MONTREAL.					
		THE SUN—			THE MOON		
M.	W.	Fast.	Rises.	Sets.	Zod.	Souths.	
1 Mo.	Opens wet and unsettled, with high winds—Very cool for October; sharp night frosts (killing frosts)—Fine, more pleasant weather.	M.	H. M.	H. M.	☾	H. M.	
2 Tu.		10	5 57	5 41	☾	Eve.	
3 We.		11	5 59	5 39	☾	2 38	
4 Th.		11	6 00	5 37	☾	3 30	
5 Fri.		11	6 01	5 35	☾	4 23	
6 Sat.		12	6 03	5 34	☾	5 16	
		12	6 04	5 32	☾	6 08	

(40) 20th Sunday after Trinity. (Day's length, 11h. 25m.) ♃ in ☐

7 Su.		12	6 05	5 30	☾	6 57
8 Mo.	Fine, but cold for October—Rainy, cold	13	6 06	5 28	☾	7 44
9 Tu.	ST. DENIS. weather (perhaps sleet	13	6 08	5 26	☾	8 29
10 We.	flurries)—Fine weather.	13	6 09	5 25	☾	9 11
11 Th.		13	6 11	5 23	☾	9 53
12 Fri.	Columbus discov'd America, 1492.	14	6 12	5 21	☾	10 35
13 Sat.		14	6 13	5 19	☾	11 17

(41) 21st Sunday after Trinity. (Day's length, 11h. 02m.) ♃ in ♍

14 Su.		14	6 15	5 17	☾	Morn
15 Mo.	Stormy, with sudden squalls (hail	14	6 16	5 16	☾	0 02
16 Tu.	probable); rough weather on Lakes and	14	6 18	5 14	☾	0 59
17 We.		15	6 19	5 12	☾	1 43
18 Th.	ST. LUKE. Atlantic seaboard—Fine,	15	6 20	5 10	☾	2 41
19 Fri.	mild, warm to hot weather.	15	6 21	5 08	☾	3 42
20 Sat.		15	6 23	5 07	☾	4 44

(42) 22nd Sunday after Trinity. (Day's length, 10h. 41m.) ♃ in ♋

21 Su.		15	6 24	5 05	☾	5 46
22 Mo.	A cooler change, with heavy rains and	16	6 25	5 03	☾	6 44
23 Tu.	high winds—Fine, warm and favorable;	16	6 26	5 01	☾	7 38
24 We.		16	6 28	5 00	☾	8 28
25 Th.	a marked warm spell, with thunder	16	6 29	4 58	☾	9 16
26 Fri.	showers.	16	6 31	4 57	☾	10 03
27 Sat.		16	6 32	4 55	☾	10 49

(43) 23rd Sunday after Trinity. (Day's length, 10h. 20m.) ♃ in ♋

28 Su.	Stormy, dark and cold, with cold rains	16	6 33	4 53	☾	11 37
29 Mo.	(snow flurries probable) and sudden	16	6 35	4 52	☾	Eve.
30 Tu.	squalls.	16	6 36	4 50	☾	1 18
31 We.	All Hallow's Eve.	16	6 38	4 49	☾	2 11

In this month the Mornings decrease 41 min. and the Afternoons 52 min.

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PLANETS IN OCTOBER, 1894.

MONTREAL MEAN TIME.

ON MERIDIAN (SOUTH).	Oct. 1st.	Oct. 8th.	Oct. 16th.	Oct. 24th.
Mercury ♀	1 01 ev.	1 10 ev.	1 16 ev.	1 14 ev.
Venus ♀	10 56 mo.	11 00 mo.	11 05 mo.	11 11 mo.
Mars ♂	1 29 mo.	0 54 mo.	0 13 mo.	11 25 ev.
Jupiter ♃	5 43 mo.	5 17 mo.	4 47 mo.	4 16 mo.
Saturn ♄	0 57 ev.	0 33 ev.	0 05 ev.	11 37 mo.
Uranus ♅	2 03 ev.	1 37 ev.	1 07 ev.	0 38 ev.
Neptune ♆	4 18 mo.	3 50 mo.	3 19 mo.	2 46 mo.

THE PLANETS.—MERCURY is in Aphelion at 11h. ev. on the 1st; in Conjunction ($3^{\circ} 2' S.$) with Uranus on the 14th at 7h. 10m. mo.; at Greatest Elongation East of $24^{\circ} 31'$, and visible after sunset in the West on the 19th; and Stationary on the 30th at 8h. 23m. ev. VENUS is $7' N.$ of the Star *Eta Virginis* on the 9th at noon. She is in Conjunction with Saturn, passing $1^{\circ} 6' S.$ of his place on the 30th at 11h. 12m. mo. MARS reaches Opposition, the most interesting point in his orbit, on the 20th, at 5h. 14m. ev., when he is overhead at midnight. JUPITER is Stationary at 7h. 44m. mo. on the 24th. SATURN is in Conjunction with the Sun on the 21st at 5h. 46m. mo. URANUS occults the Star *Alpha Librae* on the 4th at 4h. 17m. ev.

THE MOON.—Is in Apogee on the 7th at 8h. ev.; near Mars on the 15th at 7h. 36m. mo. (Mars, $5^{\circ} 31' S.$); passes Neptune at 2h. 27m. ev. on the 18th; reaches Jupiter on the 20th at 0h. 10m. mo.; in Perigee on the 22nd at 8h. mo.; close to Venus on the 27th at 11h. 40m. ev.; near Saturn on the 28th at 4h. 46m. mo.; close to Uranus on the 29th at 9h. mo.; and near Mercury on the 30th at 5h. mo.

THE STARS.—*Pisces Australis*, "the Southern Fish," is directly south of *Aquarius*. It is well seen during the evenings of October. It contains 24 visible stars, of which 1 is of the first, 2 of the third, and 5 of the fourth magnitude. The largest star is called *Fomalhaut*, whose ruddy glare is readily distinguished low in the southern sky, any fine night in the Fall. Its R.A. is 22h. 51m. Dec. $30^{\circ} 10' S.$, or about $14^{\circ} S.$ of *Scheat* in *Aquarius*. It has a distant companion star of the ninth magnitude.

11th Month, 1894.
30 Days.

NOVEMBER.

☉ enters ♄
22d. 2h. mo.

Moon's Phases	Day.	BOSTON.	MONTREAL.	WASHINGTON	CHICAGO.	WINNIPEG.
☽ F. Q.	5	10.34 mo.	10.20 mo.	10.07 mo.	9.25 mo.	8.47 mo.
☉ F. M.	13	3.08 mo.	2.54 mo.	2.41 mo.	1.59 mo.	1.21 mo.
☾ L. Q.	19	9.27 mo.	9.13 mo.	9.00 mo.	8.18 mo.	7.40 mo.
☀ N. M.	27	4.13 mo.	3.59 mo.	3.46 mo.	3.04 mo.	2.26 mo.

DAYS.		WEATHER FORECAST.		MONTREAL.						
M.	W.			THE SUN—			THE MOON			
				Fast.	Rises.	Sets.	Zod.	Souths.		
1	Th.	ALL SAINTS. Opens with fine		16	6 39	4 47	♄	♋	Eve.	
2	Fri.	Autumnal weather, but cold for the season.		16	6 41	4 46	♃	♋	3 58	
3	Sat.			16	6 42	4 44	♃	♋	4 49	

(44) 24th Sunday after Trinity. (Day's length, 9h. 59m.) ♀ in ♋

4	Su.	Very cold for the season (a sharp "dip")		16	6 44	4 43	☁	♋	5 37	
5	Mo.			16	6 45	4 41	☁	♋	6 22	
6	Tu.	in N.W.)—Fine and cool—Stormy and cold,		16	6 47	4 40	☁	♋	7 05	
7	We.	some severe storms and sharp frosts—		16	6 48	4 39	☾	♋	7 47	
8	Th.			16	6 50	4 38	☾	♋	8 28	
9	Fri.	Prince of Wales born, 1841.		16	6 51	4 37	♄	♋	9 10	
10	Sat.	Fine weather at close of week.		16	6 53	4 35	♄	♋	9 53	

(45) 25th Sunday after Trinity. (Day's length, 9h. 40m.) ♀ in ♋

11	Su.	MARTINMAS. Snow N., rain S.,		16	6 54	4 34	♄	♋	10 41	
12	Mo.	very cold for season—Fogs on Atlantic		16	6 55	4 33	♃	♋	11 33	
13	Tu.	coast, cold winds inland, with snows and		16	6 57	4 31	♃	♋	Morn	
14	We.	dashing rains—A cold "dip," extreme		15	6 58	4 30	♂	♋	0 30	
15	Th.	temperature, probable zero records in		15	7 00	4 29	♂	♋	1 31	
16	Fri.	N.W. sections—Fine and warm.		15	7 01	4 28	♂	♋	2 35	
17	Sat.			15	7 02	4 27	♂	♋	3 39	

(46) 26th Sunday after Trinity. (Day's length, 9h. 23m.) ♂ in ♋

18	Su.	Fine, mild weather—Colder, with snow		15	7 03	4 26	♃	♋	4 39	
19	Mo.	and wind in N.W. and N.; unsettled and		14	7 04	4 25	♃	♋	5 35	
20	Tu.	showery S.—Fine and mild for season—		14	7 06	4 24	♃	♋	6 26	
21	We.	Stormy again, with snows and rains—Cold		14	7 08	4 23	♃	♋	7 16	
22	Th.	in the N.W., a brief cold snap, cloudy and		14	7 09	4 22	♃	♋	7 59	
23	Fri.	snowy at close.		13	7 10	4 22	♃	♋	8 45	
24	Sat.			13	7 12	4 21	♃	♋	9 31	

(47) 27th Sunday after Trinity. (Day's length, 9h. 07m.) ♀ in ♋

25	Su.	ST. CATHERINE. Heavy storms,		13	7 13	4 21	♃	♋	10 19	
26	Mo.	snows, high winds and unsettled weather		12	7 14	4 20	♃	♋	11 09	
27	Tu.	general—Gusty and cold, a "dip"—Milder,		12	7 15	4 20	♄	♋	Eve.	
28	We.	with rain and fog (floods in sections).		12	7 16	4 19	♄	♋	0 55	
29	Th.			11	7 18	4 19	♃	♋	1 49	
30	Fri.	ST. ANDREW.		11	7 19	4 18	♃	♋	2 41	

In this month the Mornings decrease 40 min. and the Afternoons 29 min.

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PLANETS IN NOVEMBER, 1894.

MONTREAL MEAN TIME.

ON MERIDIAN (SOUTH).	Nov. 1st.	Nov. 8th.	Nov. 16th.	Nov. 24th.
Mercury ♀	0 51 ev.	0 02 ev.	10 58 mo.	10 29 mo.
Venus ♀	11 17 mo.	11 23 mo.	11 31 mo.	11 41 mo.
Mars ♂	10 44 ev.	10 11 ev.	9 35 ev.	9 03 ev.
Jupiter ♃	3 44 mo.	3 16 mo.	2 42 mo.	2 08 mo.
Saturn ♄	11 09 mo.	10 45 mo.	10 17 mo.	9 49 mo.
Uranus ♅	0 08 ev.	11 37 mo.	11 00 mo.	10 44 mo.
Neptune ♆	2 14 mo.	1 46 mo.	1 14 mo.	0 42 mo.

THE PLANETS.—MERCURY transits the Sun's disk [see page 11], and is in Inferior Conjunction on the 10th. He is but 8' S. of Venus on the 12th at 11h. 26m. mo., and 26' N. of Uranus at 1h. 09m. ev. the same day. In Perihelion on the 14th at 10h. 37m. ev.; Stationary on the 19th at 1h. 46m. ev.; at Greatest Elongation W. and visible in the morning sky on the 27th, and in Conjunction with Uranus (for the second time this month) on the 28th at 8h. 14m. mo. VENUS is in Conjunction with Uranus (32' N.) on the 12th at 9h. 48m. mo.; and reaches her own Superior Conjunction with the Sun on the 30th at 10h. 22m. mo. MARS is Stationary on the 22nd at 9h. 15m. ev. URANUS is in Conjunction with the Sun on the 7th at 8h. 36m. ev.

THE MOON.—Is in Apogee on the 4th at 4h. ev.; near Mars (3° 2' N.) on the 11th at 2h. 01m. mo.; passes Neptune on the 14th at 8h. 43m. ev.; is near Jupiter on the 16th at 5h. 09m. mo.; in Perigee the same day at 3h. ev.; beside Saturn on the 24th at 6h. 08m. ev.; close to Mercury on the 25th at 3h. 31m. ev.; passes Uranus at 8h. the same evening; and Venus at 4h. mo. on the 27th.

THE STARS.—*Cepheus*, "the King," is 25° N.W. of *Cassiopeia*, and is well seen in the November evenings; but like the latter, it belongs to the Circumpolar Stars, which never set in this latitude, so it can be seen at all hours of the night. The largest star in *Cepheus* is named *Alderamin*, while two others of almost equal brightness form a curved line towards the N.E. The middle star is named *Alphirk*, the outer, *Gamina* or *Er Rai*. The latter star will be the Pole-star in about 2,320 years.

12th Month, 1894.
31 Days.

DECEMBER.

☉ enters ♍
21d. 3h. ev.

Moon's Phases	Day.	BOSTON.	MONTREAL.	WASHINGTON	CHICAGO.	WINNIPEG.
☽ F. Q.	5	7.34 mo.	7.20 mo.	7.07 mo.	6.25 mo.	5.47 mo.
☾ F. M.	12	3.04 ev.	2.50 ev.	2.37 ev.	1.55 ev.	1.17 ev.
☾ L. Q.	19	6.34 mo.	6.20 mo.	6.07 mo.	5.25 mo.	4.47 mo.
☾ N. M.	26	9.38 ev.	9.24 ev.	9.11 ev.	8.29 ev.	7.51 ev.

DAYS.		MONTREAL.					
WEATHER FORECAST.		THE SUN			THE MOON		
M.	W.	Fast.	Rises.	Sets.	Zod.	Souths.	

1	Sat.	Opens dull and mild.					
		M.	H.	M.	H.	M.	H.
		11	7 20	4 18	☾	☾	8 29

(48) 1st Sunday in Advent. (Day's length, 8h. 57m.) ♀ in ♍

2	Su.	Clear, cold December weather—A sharp "dip" (below zero in Northern and Eastern sections)—Moderating to snow and rain (much downfall), with high winds—Variable weather.	10	7 21	4 18	☾	4 16
3	Mo.		10	7 22	4 17	☾	5 00
4	Tu.		9	7 23	4 17	☾	5 41
5	We.		9	7 24	4 16	☾	6 21
6	Th.		9	7 26	4 16	☾	7 02
7	Fri.		8	7 27	4 15	☾	7 44
8	Sat.		8	7 28	4 15	☾	8 29
			CONCEPTION B. V. M.				

(49) 2nd Sunday in Advent. (Day's length, 8h. 45m.) ♀ in ♍

9	Su.	Fine and Winter-like, seasonable cold weather—Milder, a general storm period, with rains and snows; quite mild for season—Colder weather, with high winds.	7	7 29	4 14	♄	9 18
10	Mo.		7	7 30	4 14	♄	10 12
11	Tu.		6	7 31	4 15	♄	11 13
12	We.		6	7 33	4 15	♄	Morn
13	Th.		5	7 34	4 16	♄	0 17
14	Fri.		5	7 35	4 16	♄	1 24
15	Sat.		5	7 36	4 17	♄	2 28

(50) 3rd Sunday in Advent. (Day's length, 8h. 40m.) ♀ in ♍

16	Su.	Cold, with high winds, drifts and snow blockades in sections—A sharp zero "dip"—Moderating to snow (rain in Southern sections)—Fine winter weather—Cloudy, snowy (or rainy), a thaw.	4	7 37	4 17	♄	3 27
17	Mo.		4	7 38	4 18	♄	4 21
18	Tu.		3	7 39	4 18	♄	5 11
19	We.		3	7 40	4 19	♄	5 58
20	Th.		2	7 40	4 19	♄	6 43
21	Fri.		2	7 41	4 20	♄	7 29
22	Sat.		1	7 41	4 20	♄	8 16
			ST. THOMAS.				

(51) 4th Sunday in Advent. (Day's length, 8h. 39m.) ♂ in ♋

23	Su.	Cloudy, squally, colder, but seasonable—High winds and snow blockades; a general storm period about 27th to 29th, with some extremely cold weather.	1	7 42	4 21	♄	9 04
24	Mo.		0	7 42	4 21	♄	9 55
25	Tu.		1	7 43	4 22	♄	10 48
26	We.		1	7 43	4 23	♄	11 41
27	Th.		1	7 43	4 21	♄	Eve.
28	Fri.		2	7 43	4 24	♄	1 24
29	Sat.		2	7 42	4 25	♄	2 12
			CHRISTMAS.				

(52) Sunday after Christmas. (Day's length, 8h. 44m.) ♀ in ♏

30	Su.	Henry G. Vennor born, 1840. A very cold "dip"—Moderating as year closes.	3	7 42	4 26	♄	2 56
31	Mo.		3	7 42	4 26	♄	3 38

In this month the Mornings decrease 22 min. and the Afternoons increase 8 min.

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PLANETS IN DECEMBER, 1894.

MONTREAL MEAN TIME.

ON MERIDIAN (SOUTH).	Dec. 1st.	Dec. 8th.	Dec. 16th.	Dec. 24th.
Mercury ♀	10 30 mo.	10 41 mo.	10 58 mo.	11 19 mo.
Venus ♀	11 50 mo.	0 01 ev.	0 13 ev.	0 25 ev.
Mars ♂	8 37 ev.	8 14 ev.	7 50 ev.	7 27 ev.
Jupiter ♃	1 37 mo.	1 06 mo.	0 30 mo.	11 49 ev.
Saturn ♄	9 24 mo.	8 59 mo.	8 31 mo.	8 02 mo.
Uranus ♅	10 17 mo.	9 52 mo.	9 22 mo.	8 52 mo.
Neptune ♆	0 13 mo.	11 41 ev.	11 08 ev.	10 36 ev.

THE PLANETS.—MERCURY is 3' N. of *Beta Scorpii* (*Graffias*), a star of the 2nd magnitude, on the 10th at 0h. 11m. mo.; and in Aphelion at 10h. 17m. ev. on the 28th. JUPITER is at his brightest, in Opposition to the Sun on the 22nd at 8h. 56m. ev., when he is overhead at midnight. NEPTUNE is at a similar position (Opposition) on the 6th at 6h. 45m. mo., when he is overhead at midnight.

THE MOON.—Is in Apogee on the 2nd at 6h. ev.; near Mars (1° 53' N.) on the 8th at 1h. 12m. ev.; passes 6° 28' S. of Neptune on the 12th at 5h. 18m. mo.; is close to Jupiter (5° 14' S.) on the 13th at 9h. 37m. mo.; makes her Perigee passage at 10h. mo. on the 14th; passes Saturn on the 22nd at 5h. 05m. mo.; is near Uranus on the 23rd at 4h. 58m. mo.; near Mercury on the 26th at 3h. 29m. mo.; and alongside Venus on the 27th at 10h. 39m. mo. At Apogee on the 30th at 6h. mo.

THE STARS.—*Cetus*, "the Whale," may be observed during the evenings of December. It is the largest Constellation, occupying a space 50° in length, E. and W., with a breadth of some 20° from N. to S. It is situate below *Aries* and *Triangula*. It takes six weeks to pass the meridian, its tail being in that position on November 10th, its head on December 22nd. There are 97 visible stars in *Cetus*, but of these only 2 are of the second magnitude. Ten are of the third, and 9 of the fourth magnitudes. Five remarkable stars, forming a pentagon, represent the head. The leading star of these is *Menkar*, which is, however, not as bright now as *Beta*, one of its companions, which leads to the inference that one or both may have changed.

LUNAR INFLUENCE ON VEGETATION.

Friends who have used these tables for years past will not need to be told the meaning of this familiar headline. They have tried the efficacy of my calculations and found them correct. But to those into whose hands this work may come for the first time, I would explain—in order to have them experiment and succeed—for succeed they must—that the theory of Lunar Influence on Vegetation is founded on the belief that “To everything there is a season, and a time for every purpose under heaven.” For the proper times to plant and sow can be calculated by those who understand astronomy just as readily as the moon’s phases, and the planetary conjunctions. The calculations of such proper and improper times are of inestimable service to farmers and horticulturists, by yielding returns—in some cases of one thousand per cent. over the irregular, haphazard method of putting in crops.

The theory asserts that the moon exerts an influence upon the growth and development of plant life—not equal to the sun, of course, but considerable, nevertheless—that during the period from “new” to “full” the fructifying influences are stronger than during the moon’s passage through the remaining half of her orbit; that certain signs of the zodiac, when the moon is passing through them are more favorable than others. Why? Well, some of the simplest facts in nature are very difficult to answer, much less explain. But perhaps the zodiacal signs influence—not because of the number of the stars in them assisting the moon’s “pull” upon the earth’s surface—but rather owing to the proximity, or grouping of said stars. Perhaps the moon also, by continuing above the horizon after sunset at the times calculated, prevents that rapid transition from heat to cold, from moist to dry, so hurtful to young, tender plants, the moon in such positions helping to retain the moisture at the surface, even as the sun in Northern latitudes in summer creates an all night twilight while skirting the Northern horizon.

Whatever the cause, the facts remain. Things planted at the times calculated for “top growth” will be found to make great headway above ground; things planted at times calculated to develop “roots,” to make remarkable progress below ground. Experiments reported to me will be

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examined with interest, perhaps recorded in print. Requests for special calculations for special times should always have stamp enclosed to ensure reply.

* SEED SOWING—1894.

LATITUDE 35°.

Favorable times for sowing and transplanting in Virginia, West Virginia, North and South Carolina, Georgia, Kentucky, Tennessee, Arkansas, Southern Missouri, Northern Texas, Arizona, Indian Territory, New Mexico, California, and all places in North America at or near Latitude 35° N.

JANUARY.—The 10th, 11th and 12th have ☾ in ♋ rising between 9.30 and 10.40 morning; ☽ rising the same days from 12.00 noon to 1.25 aft. These are consequently good times for sowing all kinds of garden truck and things of top growth, but not potatoes or roots. On 15th and 16th ☾ is in ♌ and ♋ rising from 9.15 to 10.30 morn., good for roots and potatoes. Good for all other things on the same days from 11.40 morn. to 1.05 aft., when ☽ rises. The 19th and 20th have ☾ in ♍ with ♋ rising from 9.05 to 10.20 morn., and (☽ rising) 11.30 morn. to 1.00 aft., good for roots. For garden truck and other things from 3.15 to 5.10 aft. when ☽ rises.

FEBRUARY.—The 6th, 7th and 8th, when ☾ is in ♋ rising between 7.40 and 8.55 morn., are good for all things of top growth, as well as the same days between 10.15 and 11.40 morn. (☽ rising) and 1.45 to 3.55 aft. (☽ rising.) On the 12th and 13th the ☾ is in ♌ with ♋ rising from 7.25 to 8.40 morn., good for roots, potatoes, etc., ☽ rising with the ☾ therein from 10.00 to 11.20 morn., and ☽ rising from 1.20 to 3.40 aft., very good for sowing and transplanting things which fruit above ground, such as grain, fruit, vines, tomatoes, strawberries, etc., On the 16th and 17th the ☾ is in ♍ with ♋ rising from 7.15 to 8.30 morn., ☽ rising from 9.50 to 11.20 morn., good for roots. Between 12.35 noon and 2.45 aft. ☽ rises, good for things of top growth, grain, vines, etc.

MARCH.—On the 11th and 12th the ☾ is in ♌ and ♋ rising from 5.35 to 6.50 morn., good for roots; ☽ rises from

* The local time, at the place mentioned, is meant in every case.

8.05 to 9.35 and ☉ from 11.35 morn. to 1.45 aft., when corn, wheat, other grain, vines and vegetables should be put in. The 15th and 16th have ☾ in ☉ with ♃ rising from 5.05 to 6.15 morn.; and (♃ rising) 7.40 to 9.05 morn., good for roots. For grain, vines, etc., 11.20 morn. to 1.25 aft., when ☉ rises. On the 21st, 22nd and 23rd the ☾ is in ♌ and the following times are good (especially for roots) 7.05 to 8.40 morn., (♃ rising) 10.40 morn. to 12.50 noon (☉ rising.) The same days when ♌ rises, are good for other crops, corn, wheat, other grain, vines, etc., from 5.55 to 8.20 eve.

APRIL.—The 7th and 8th have ☾ in ♃ rising from 6.20 to 7.45 morn., (☉ rising) 9.45 to 11.55 morn and (♌ rising) 5.00 to 7.25 evening. All these times are good for things requiring top growth, grain, vines, etc. On the 11th and 12th the ☾ is in ☉ with ♃ rising from 5.50 to 7.15 morn., good for roots. The same days from 9.20 to 11.30 (☉ rising) and 4.35 to 6.50 aft., when ♌ rises, are excellent for sowing wheat, corn and other grain, as well as vegetables, squash, cucumbers, transplanting things of top growth, etc. The 18th and 19th have ☾ in ♌ and are good for sowing and setting crops which fruit below ground; potatoes, beets, etc., from 9.00 to 11.10 morn. (☉ rising) and for spring wheat, corn, squash, and all things which fruit above ground, from 4.15 to 6.35 aft.

MAY.—On the 6th the ☾ is in ♃ with ☉ rising from 8.05 to 10.05 morn., when grain and vegetables of all kinds (except roots) may be sown, as well as between 3.10 and 5.35 aft., on the 5th and 6th when ♌ rises. On the 8th and 9th the ☾ is in ☉ rising from 7.55 to 9.55 when grain and all kinds of vegetables should be sown. These days between 3.00 and 5.25 aft. when ♌ rises are especially good for sowing grain, squash, tomatoes, and all things requiring top growth. The 15th and 16th have ☾ in ♌ with ☉ rising from 7.20 to 9.30 morn., (good for root crops) and (♌ rising) from 2.20 to 4.40 aft. (especially good for grain, vines, flower seeds, etc.)

JUNE.—The 5th and 6th have ☾ in ☉ rising from 6.00 to 8.10 morn., and ♌ rising from 1.15 to 3.40 aft., good for everything needing top or surface growth. On the 11th, 12th and 13th the ☾ is in ♌ rising from 12.30 morn. to 2.45 aft., also good for things of upward growth.

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JULY.—On the 2nd and 3rd the ☾ is in ♋ and ♌ rises from 11.20 morn to 1.45 aft. The 8th, 9th and 10th have the ☾ in ♌ rising from 10.50 morn. to 12.50 noon.

AUGUST.—On the 5th and 6th the ☾ is in ♌ rising between 9.10 and 11.35 morn. On the 17th and 18th the ☾ is in ♋ with ♌ rising from 8.25 to 10.50 morn., and (♋ rising) from 7.05 to 8.15 eve. The latter is excellent for Fall grain.

SEPTEMBER.—The ☾ is in ♌ rising on the 1st, 2nd and 3rd from 7.35 to 10.00 morn., and the same days ♋ rises from 6.10 to 7.25 aft. Good for Fall grain. On the 13th, 14th and 15th the ☾ is in ♋ and ♌ rising from 6.35 to 9.00 morn., good for roots, etc., and (♋ rising) from 5.20 to 6.35 aft. Good for Fall grain. The 29th and 30th are good, when the ☾ is in ♌ rising, between 5.30 and 7.50 morn., and (♋ rising) from 4.30 to 5.45 aft., both of these times are good for Fall grain.

OCTOBER.—The 10th, 11th and 12th have the ☾ in ♋ rising from 3.15 to 4.25 aft., good for grain. The ☾ is in ♌ with ♋ rising on the 15th and 16th from 3.00 to 4.10 aft., good for grain.

NOVEMBER.—The ☾ is in ♋ rising on the 7th and 8th from 1.15 to 2.35 aft.; good for grain. The ☾ is in ♌ with ♋ rising on the 12th and 13th from 1.00 to 2.20 aft.; also good for grain.

DECEMBER.—On the 4th, 5th and 6th the ☾ is in ♋ rising from 11.50 morn. to 1.15 aft. The 9th and 10th are good when the ☾ is in ♌ and ♋ rises, between 11.30 morn. and 12.50 noon. The 31st has the ☾ in ♋ rising between 10.55 and 12.05 noon.

LATITUDE 40°.

Favorable times for sowing in Maryland, District of Columbia, Pennsylvania, Delaware, New Jersey, Southern New York, Rhode Island, Connecticut, Ohio, Indiana, Southern Illinois, Northern Missouri, Iowa, Kansas, Nebraska, Utah Territory, Nevada, Colorado, and all places at or near Latitude 40° North. (For Moon's place in Zodiac at these times see Calendar pages or table for Latitude 35° N.)

MARCH.—The 11th and 12th from 5.35 to 6.35 morn., good for roots; 8.05 to 9.25 morn., and 11.40 morn. to 1.50

aft., good for corn, wheat, grain, vines and vegetables. The 15th and 16th from 5.25 to 6.35 morn., and 7.50 to 9.10 morn., good for roots. For grain, vines, etc., 11.10 morn., to 1.20 aft. The 21st, 22nd and 23rd are good for roots; from 5.05 to 6.10 morn., and 7.30 to 8.55 morn. The same days for other crops, from 11.10 morn. to 1.15 aft., and 6.10 to 8.30 eve.

APRIL.—The 7th and 8th from 6.20 to 7.40 morn., are good for roots; all other things, 9.35 to 11.55 morn., and 5.10 to 7.35 aft. The 11th and 12th from 5.55 to 7.15 and 9.10 to 11.25 morn., good for roots, and (same days) from 4.40 to 7.00 aft., are excellent for spring wheat, corn, other grain, vegetables, squash, tomatoes, etc. The 18th and 19th are good for roots, from 5.35 to 6.50 morn., and for spring wheat, vines, etc., from 8.50 to 11.05 morn., and 4.20 to 6.40 aft.

MAY.—The 6th, from 8.00 to 10.00 morn., when grain, vines, and things which fruit above ground should be sown or set. Also, between 3.15 and 5.45 aft. On the 8th and 9th, from 7.40 to 9.45 morn. grain and all kinds of vegetables should be sown, and 3.00 to 5.30 aft., when it is specially favorable for grain, vines, squash, and other garden truck. The 15th, and 16th, 7.05 to 8.05 morn. (good for root crops), and 2.25 to 4.55 aft., good for grain, vines, flower seeds, etc.

JUNE.—On the 5th and 6th, from 5.45 to 8.00 morn. (good for roots), and 1.10 to 3.40 aft., good for all things of top growth. The 11th, 12th, and 13th, from 12.30 to 3.05 aft. (Very good for things of top growth.)

JULY.—The 2nd and 3rd, from 11.25 morn. to 1.55 aft. The 8th, 9th and 10th, from 10.55 morn. to 1.20 aft.

AUGUST.—The 5th, and 6th, from 8.55 to 11.25 morn. The 17th and 18th, from 8.10 to 10.40 morn., and 7.00 to 8.10 eve. The latter excellent for grain.

SEPTEMBER.—On the 1st, 2nd and 3rd, from 7.30 to 10.00 morn., and the same days, from 6.10 to 7.20 aft. Excellent for fall grain. The 13th, 14th and 15th also, from 6.30 to 8.55 morn., and 5.15 to 6.30 aft. for grain. The 29th and 30th are good for fall grain, from 5.25 to 7.45 morn., and 4.45 to 5.45 aft.

OCTOBER.—The 10th, 11th and 12th, between 3.30 and 4.35 aft., are especially good for grain. The 15th and 16th, from 3.25 to 4.25 aft., are also good for grain.

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LATITUDE 45°.

Favorable times for sowing in Massachusetts, New Hampshire, Vermont, Maine, Nova Scotia, New Brunswick, Prince Edward Island, Quebec, Ontario, Northern New York, Michigan, Northern Illinois, Wisconsin, Southern Minnesota, South Dakota, Southern Idaho, Wyoming, Southern Montana, Oregon, Southern Washington Territory, and all places in North America at or near Lat. 45° N. (For Moon's place in Zodiac at these times, see Calendar pages, or table for Lat. 35° N.)

MARCH.—(*Calculated especially for greenhouse and framework.*)—The 11th and 12th, from 5.35 to 6.30 morn., good for roots (radishes, beets, etc.) 8.00 to 9.20 morn., and 11.45 morn. to 1.55 aft., good for spring salads, lettuce, tomatoes, etc. The 15th and 16th, from 5.35 to 6.50 morn., and 8.00 to 9.15 morn., good for roots. For salads, vines, etc., 11.05 morn. to 1.15 aft. The 21st, 22nd and 23rd, are good for roots, from 7.40 to 9.05 morn.; all other things, from 11.25 morn. to 1.30 aft., and 6.25 to 8.40 eve.

APRIL.—The 7th and 8th, from 6.10 to 7.25 morn., are good for roots; all other things, from 9.20 to 11.35 morn., and 5.00 to 7.35 eve. The 11th and 12th, from 5.50 to 7.00 morn., and 9.00 to 11.15 morn., are excellent for roots, and same days, from 4.40 to 7.10 eve., are excellent for spring wheat, corn, other grain, vegetables, tomatoes, etc. The 18th and 19th are also good for roots, from 5.20 to 6.30 morn., and for spring wheat, vines, etc., from 8.30 to 10.50 morn., and 4.15 to 6.45 eve.

MAY.—The 6th, from 7.45 to 8.50 morn., when grain, vines, and all other things of top growth should be put in. Also from 3.15 to 5.55 aft. On the 8th and 9th, from 7.35 to 8.40 morn., for grain and all kinds of vegetables, also from 3.05 to 5.45 aft., especially good for spring wheat and garden truck. The 15th and 16th, from 6.50 to 8.55 morn., are good for roots, and 2.25 to 5.00 aft., good for grain, vines, squash, flower seeds, etc.

JUNE.—The 5th and 6th, from 5.30 to 7.45 morn., are good for roots, and 1.10 to 3.50 aft., good for all other things. The 11th, 12th and 13th, from 12.25 noon to 3.00 aft., are very good for things requiring top growth.

JULY.—The 2nd and 3rd, from 11.25 noon to 2.05 aft. The 8th, 9th and 10th, from 10.55 morn. to 1.45 aft.

AUGUST.—The 5th and 6th, from 9.00 to 11.35 morn. The 17th and 18th, from 8.15 to 10.50 morn., and 7.00 to 8.05 eve., the latter especially good for Fall grain.

SEPTEMBER.—The 1st, 2nd and 3rd, from 7.25 to 10.05 morn., and (same days) from 6.20 to 7.20 aft., excellent for Fall grain. The 13th, 14th and 15th, from 6.30 to 9.05 morn., and 5.30 to 6.30 aft., the latter especially for grain. The 29th and 30th are also good for grain, from 5.30 to 7.50 morn., and 4.50 to 5.50 aft.

OCTOBER.—The 10th, 11th and 12th, between 3.40 and 4.35 aft., and the 15th and 16th, from 3.25 to 4.20 aft., are all good for sowing Fall grain.

LATITUDE 50°.

Favorable times for sowing in Newfoundland, Manitoba, and the North-West Territories, North Dakota, Northern Montana, Northern Minnesota, Northern Washington Territory, Northern Idaho, British Columbia, and all places in North America, at or near Latitude 50° North. (For Moon's place in Zodiac at these times, see Calendar pages, or table for Lat. 35° N.)

APRIL.—The 7th and 8th, from 6.05 to 7.10 morn., are good for sowing root crops; all other things from 9.10 to 11.20 morn., and 4.55 to 7.40 eve. The 11th and 12th, from 5.45 to 6.50 morn., and 8.50 to 11.05 morn., are good for roots, as well as (same days) from 4.40 to 7.20 aft., excellent for spring wheat, corn, other grain, vegetables, etc. The 18th and 19th, are good for roots, from 5.10 to 6.15 morn., and for spring wheat, oats, barley, vines, vegetables, etc., from 7.55 to 10.15 morn., and 4.15 to 6.55 eve.

MAY.—The 6th, from 7.25 to 8.30 morn., when grain, vines, and all other things of top growth should be put in. Also, from 3.15 to 6.05 aft. The 8th and 9th, from 7.15 to 9.20 morn., and from 3.05 to 5.55 aft., when grain, vines, and all other things needing top growth should be put in. The 15th and 16th, from 6.20 to 8.35 morn., are good for roots, and 2.25 to 5.15 aft., good for grain, vines, flower seeds, etc.

JUNE.—The 5th and 6th, from 5.10 to 7.25 morn., good for roots, and 1.05 to 3.55 aft., good for all other things. The 11th, 12th and 13th, are excellent for things requiring top growth, from 12.25 noon to 3.15 aft.

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JULY.—The 2nd and 3rd, from 11.20/ morn. to 2.10 aft.
The 8th, 9th and 10th, from 10.55 morn. to 1.45 aft.

AUGUST.—The 5th and 6th, from 8.50 to 11.30 morn.
The 17th and 18th, from 8.10 to 11.00 morn., and 7.00 to 8.00 aft., the latter for Fall grain.

SEPTEMBER.—The 1st, 2nd and 3rd, from 7.25 to 10.15 morning, and (same days) from 6.25 to 7.15 aft., excellent for Fall grain. The 13th, 14th and 15th, from 6.35 to 9.25 morn., and 5.45 to 6.35 aft, the latter especially good for Fall grain. The 29th and 30th, are good for grain, from 5.35 to 7.55 morn., and 4.40 to 5.40 aft.

OCTOBER.—The 10th, 11th and 12th, are good for Fall grain, between 3.45 and 4.35 aft. Also, the 15th and 16th, from 3.35 to 4.25 aft.

THE MOON IN PERIGEE.

When I see an aurora I look for spots on the sun ; when I find that there is to be a Perigee passage of the Moon, I forecast warm weather. But first of all, what is the Perigee of the Moon? "Perigee" comes from two Greek words meaning "near" and "the earth," *i.e.*, that point in the orbit of a heavenly body at which it is nearest the Earth—the opposite of Apogee.

The Moon's orbit is not a circle, any more than Mars', Mercury's or the Earth's. Once, sometimes twice in a calendar month, the Moon is at Apogee—farthest away from the Earth,—once, sometimes twice she is at Perigee—nearest to the earth. Her distance at Apogee is 251,880 miles, while at Perigee it is only 225,700, a difference of 26,180 miles.

The new Lunar theory of weather forecasting supposes that these fluctuations of several thousand miles in distance have an appreciable effect on the atmosphere, even as upon the Ocean,—have not the great Lakes lunar tides of three or four inches? They have an appreciable effect by altering the barometric pressure. Changes of barometric pressure are of course accompanied or followed by alterations of temperature ; a high barometric area usually producing clear, cool weather ; a low area, cloudy, oppressive weather, followed or accompanied by precipitation.

LUNI-SOLAR RECORD, 1892-1893 (☾ and ☉)
at Montreal.

DATE.	PERI- GEE.	THERMOMETER.					WEATHER.
		Max.	Min.	Rose or Fell.	Rise of		
					Max.	Min.	
		Deg.	Deg.		Deg.	Deg.	
1892.							
Jan. 4		18	5				Dull, cold; p.m., clear.
" 5	P.	10	2				Clear.
" 6		18	3	R.	8	1	Hazy, calm; p.m., blinding snow.
" 31		20	14				Fine.
Feb. 1	P.	34	19	R.	14	5	" dull, light thaw; p.m., clear.
" 2		28	16				" " " "
" 28		16	-6				Clear, "a dip," calm.
" 29	P.	27	6	R.	11	12	Dull, growing milder all day.
Mar. 1		24	3				Clear, strong wind.
" 27		38	25				" thawing in sun.
" 28	P.	41	29	R.	3	6	" " " "
" 29		39	27				" " " "
April 25		46	21				" very cool, strong N.W. wind.
" 26	P.	54	32	R.	8	11	"
" 27		53	37				"
May 23		46	39				Raining, wind E., cool.
" 24	P.	65	41	R.	19		Rain early, clear; p.m., cloudy.
" 25		65	52			11	Dull, fine and warm.
June 20		69	62				Heavy rain; late p.m., clear.
" 31	P.	82	64	R.	13	2	Clear and hot, cloudy and rainy late.
" 22		80	64				Dull, hot.
July 16		75	52				" strong wind.
" 17	P.	72	51				Clear to partly cloudy, breezy.
" 18		78	59	R.	6	8	" strong breeze.
Aug. 11		72	60				
" 12	P.	62	53				
" 13		64	55				
" 14		71	57	R.	9		
Sept. 7		61	48				Dull, cool wind; p.m., clear.
" 8	P.	61	43				Clear and cool.
" 9		70	48	R.	9		Fog, morn.; very fine and warm.
Oct. 5		49	39				Dull, cool, light shower (hall).
" 6	P.	50	39				Clear, breezy, cool.
" 7		62	46	R.	12	7	" warm; p.m., showery.
Nov. 3		35	32				Dull, thawing.
" 4	P.	41	33	R.	6	1	" mist and rain, evening.
" 5		38	22				Heavy snowstorm, cold wind; p.m., clearing.
Dec. 1		36	26				Dull, snow flurries.
" 2	P.	35	21	F.			Clear.
" 30		18	5				Partly cloudy, light wind.
" 31	P.	26	14	R.	8		Dull, light snow.
1893.							
Jan. 1		33	22			8	Snow and frozen rain.
" 26		23	5				Cloudy.
" 27	P.	19	-1				Clear, solar circle.
" 28		9	-4				"A dip," a.m., cloudy with snow, p.m.
" 29		42	8	R.	33	12	Dull, heavy rain, "January thaw," "Chinook" wind.
Feb. 20		13	0				High wind and drifts; p.m., clear.
" 21	P.	12	-8				Clear; p.m., dull.
" 22		22	7	R.	10	15	Dull, with snow.
Mar. 19		22	7				Clear.
" 20	P.	33	11	R.	11	4	" thawing in sun.
" 21		40	29		7	18	Soft snow, sleet and rain, high wind.
April 16		39	32				Clear.
" 17	P.	43	27		4		Fine, white frost, a.m.
" 18		45	32	R.	2	5	Snow and light rain; p.m., clear.
May 14		54	48				Dull, sprinkles of rain.
" 15	P.	61	45	R.	7		" showery; p.m., clear.
" 16		60	44				" misty and showery.
June 12		67	53				" threatening; p.m., clearing.
" 13	P.	78	58	R.	11	5	Misty, calm; p.m., clear and hot.
" 14		84	62				Clear, hot, stiff breeze, eve.
July 10		72	55				" cool, breezy.
" 11	P.	77	56	R.	5	1	" " "
" 12		76	59				" " "

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By the increase of her attractive power, owing to her increased proximity, the Moon has a greater "pull" upon the air of the Earth. The thinner air of the upper stratas is drawn towards the Moon, while the heavier air in the lower stratas is piled up underneath, until a vast wave, billow or tide is created in the atmosphere under the Moon and an area of "low barometer" formed. Lunar Perigees usually coincide with low barometric areas.

But whatever the cause, the fact remains that twenty times out of twenty-one there is an increase in the temperature at Montreal at a Perigeo passage,—as shown in the table on the opposite page.

[For additional articles and tables relating to Planetary Meteorology, see SMITH'S PLANETARY ALMANAC for 1892 ("The Sun with Mars"); for 1890 ("The Moon in Apogee"); and 1889 ("The Sun with Saturn"); price 12 cents each, post paid.]

NORTH-WEST CROP PREDICTIONS.

The wheat harvest is the mainstay of this country. More depends upon it than upon any other article of produce. Seeing this, any method of arriving at the probabilities of the crop-producing season of the Great West and North-West a year, or even six months beforehand, should be worth millions of dollars to our farmers. Perhaps, if you read on, you will decide with me, that it is possible to arrive at such conclusions.

First of all, what does the character of a crop-producing season over the Great North-West and West depend upon? Almost exclusively on the Summer rainfall. The local snowfall of the previous Winter has something to do with it, but the rainfall is the main factor. If the rainfall is efficient, the crop is good; if inefficient, the crop is poor.

On what does the Summer rainfall of the Great West and North-West depend? It depends (as far East at least as the Red and Mississippi River valleys) on the amount of snowfall over the mountains the Winter previous. Heavy snowfalls over the Rocky and Sierra Nevada ranges in the Winter guarantee rain over the prairies the following Summer.

How? Let us see.

There is an ocean of air as well as an ocean of water. It moves over the earth in waves, subject to solar, lunar and

planetary action; but chiefly solar. Its wave crests correspond to areas of high pressure (clear, fine weather); its troughs, or hollows, to areas of low pressure (rainy, snowy, stormy weather). These storm areas travel around the globe from west to east:

“As the years go on, and the world goes over.”

They enter the continent of North America at the Pacific coast, they leave it at the Atlantic. Meteorologists know this for a certainty; they have traced the courses of these storms hundreds, yes, thousands of times the past twenty-five years. These storms pursue average courses which carry their centres over the Canadian North-West, Manitoba and the Dakotas, on their way to the Atlantic. Heavily laden with moisture when they impinge on the Pacific coast, just as soon as they come in contact with the colder land, they give out their heat, *i.e.*, precipitate their moisture. That is why portions of the Pacific coast are the wettest (most rainy) spots in America.

Frequently, the greater portion of this moisture is precipitated at or near the coasts. While it fertilizes that already fertile section, in such case, it is useless to the prairies east. Sometimes it gets carried as far as the eastern slopes of the Rockies. Then it becomes of use to the prairie regions east.

In years of drought, the storm areas find very little moisture to draw from in passing over the mountains. Then, instead of copious rains, the worn-out “depressions” can do little else but distribute a few passing showers, until reinforced east of the Mississippi by the moisture from the Gulf of Mexico and the Atlantic, which builds them up once more.

Hence the dry climate of the West and North-West, especially the latter, which is more distant from the Atlantic. Just so long as these influences continue the North-West will always be liable to drought.

To give illustrations.

How was it in the mountains during the Winter that preceded the year of drought (1889)? Perhaps the snowfall was heavy. Not a bit of it. The United States Signal Service reported for January, 1889: “There can be no doubt that the Winter snowfall to the close of January over much of the country, particularly the central and Southern

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portions, is the smallest that has occurred for a number of years." In February, 1889: "Precipitation remained considerably below the normal in the Plateau and Pacific coast regions." In March, 1889: "To the Northward of the 40th parallel the line indicating the snow limit over the Western part of the country curves South-eastward over the Plateau region of the Rocky Mountains, forming an elongated area, within which no snow was reported, extending from Washington and the North-eastern part of Oregon to Western Colorado."

The total deficiency over Dakota alone that Summer was 65 inches, or 7,500 tons of water to the square acre.

Now for the opposite side. In February, 1891, unusual snowfalls occurred. Precipitation was in excess on the North-east slope of the Rockies to the extent of 130 per cent. above normal; on the Northern Plateau, 129 per cent.; Middle Plateau, 108 per cent.; Southern Plateau, 219 per cent.; and Middle Pacific coast, 250 per cent. In March, 1891, the snowfall continued in excess over the mountains. Over Dakota that year the total excess of precipitation was equal to 40 inches, or 4,600 tons of water to the acre. The Department of Agriculture reports that 1891 was an extremely favorable year there for crops.

The Winter of 1892-3, from October to March, gave an excess of precipitation over the Rockies; of thirteen storms which crossed the mountains last January, ten developed their greatest energy West of Winnipeg and Omaha. February gave the greatest precipitation ever known in February at all parts of the Southern Rocky Mountain Region and in Washington. At stations in Canada, in the mountains and along the Pacific coast, the precipitation was in accord with the stations south of the boundary. At Spence's Bridge, B.C., the snowfall for the Winter of 1892-3 was in excess by 20 inches; at Esquimault by 50 inches; at Agassiz by 23.9 inches; at Quamichan by 54.7 inches; at Nichola Lake by 6 inches; and at Abbotsford by 16.8 inches. At Glacier, the total snowfall was $278\frac{1}{2}$ inches (23 feet $2\frac{1}{2}$ inches)! At Griffin's Lake 114 inches, and at Donald 115 inches. Only two stations showed deficiencies, viz.: Fort Simpson and Barkersville; the fall at the latter, however, amounted to 135 inches, or $11\frac{1}{4}$ feet, so there was plenty of it.

The crop-producing season of 1893 in the North-West was a good one.

Combined records over portions of the North-West appear to show a thirteen-year period of deficiency of rain, the total precipitation waxing and waning. The dry period, which began in 1883, was finally broken in 1891, when the period of approximate excess appears to have commenced. Consequently the Great West and North-West may confidently anticipate several years of abundant crops.

HERSCHEL'S PLANET.

The planet of Herschel (Uranus) will take up some interesting positions on the star-sphere during 1894. It is at its brightest (Opposition) on May 3rd, and overhead at midnight, in the Constellation *Libra*. When very near its brightest phase—on April 27th—it will pass only four minutes of arc North of the star *Alpha Libræ*, or rather the companion star of the brighter component of *Alpha*—for *Alpha Libræ* (*Zubeneshamali*, “the Southern Scale,” of the Chaldeans and Arabians) is a double star, “A” being of the third, and “B” of the sixth magnitude. “A” is pale yellow, “B” light grey. Just above this light grey star, Uranus will pass and repass, the former on April 27th, the latter on October 4th. On the last occasion the conjunction actually becomes an occultation, so close is the approach, but it will not be readily seen, owing to planet and star's near approach to the Sun, Uranus reaching Conjunction with, and passing behind the Sun, on November 7th.

To Flamsteed, Astronomer Royal at the time of the founding of Greenwich Observatory, the honor of the discovery of Uranus really belongs. He saw and registered it as far back as 1690; re-discovered it, still thinking it a fixed star, in 1715. Bradley saw it and thought it a star, so did Mayer, and Lemmonier, who observed it 11 times and never suspected the truth! Sir W. Herschel detected its motion on March 31st, 1781, and announced that he had discovered a comet! Maskelyne and Lexell started to compute its orbit and decided it was not a comet. It was soon proved a planet.

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As very few students of astronomy have ever seen this far-away orb—with its mean distance from the sun of seven-teen hundred and seventy millions of miles; where the very existence of such an atom as our earth is entirely undiscoverable; its diameter of about thirty-two thousand miles; its year equal to eighty-four of ours; and its beautiful system of four moons, named respectively Ariel, Umbriel, Titania and Oberon—I would direct their attention (from about the end of March) to its place in the sky. On March 24th it is $3^{\circ} 39'$ N. of the Moon. If the eyesight fails to pick it up, have recourse to optical aid—say an opera glass or small telescope—when the planet cannot be mistaken. It will look larger than an ordinary star, will not twinkle or flicker, but shine with a steady light, like a tiny moon, of about the size, to the naked eye, of a star of the fifth or sixth magnitude. When the amateur has seen this, he can satisfy himself with the knowledge that few, with the most powerful telescopes, have seen much more. We know very little of its surface markings, and four satellites only, out of a probable host, have as yet been discovered. At times, the closest scrutiny in the best glasses has indicated traces of faint belts, similar to those of Saturn, just discernible, stretched across a pale blue (or green) disc. So little is known of these markings, by which alone its rotation or length of day can be ascertained, that the time of rotation is still a question of doubt.

The disc of Uranus is not sharply defined, especially in a small telescope. Its discoverer suspected that it had rings similar to Saturn, but this idea has long been discarded. Herschel also announced that it was attended by six satellites; but two of these were afterwards proven to have been faint stars in the neighborhood.

To the student who may feel discouraged at seeing so little of this body, I would say that Uranus is placed at such a distance, that light itself, travelling at a rate of nearly 187,000 miles in a single second, takes over 2h. 28m. to pass over the interval which separates the Earth from Uranus when at the point of closest approach (Opposition). Only those with telescopes of large apertures—say 7 inches and upwards—can therefore hope to glimpse the Uranian satellites.

To those who have to be content with unaided eye observations—or at best a very little optical aid—the dates when Uranus is near the Moon during 1894 will be of interest, viz. :—January 29th, February 25th, March 24th, April 21st, May 18th, June 14th, July 11th, August 7th, September 4th, October 1st, October 29th, November 25th, and December 23rd.

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