Astronomy and Meteorology.

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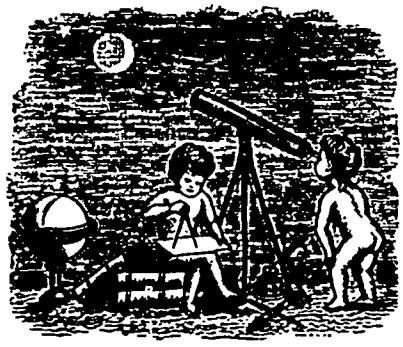

Astronomy and Meteorology.

PUBLISHED MONTHLY BY

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One hundred subscriptions are still needed to pay cost of printing. Is it the intention of my friends that I should publish this paper at a loss?

Astronomy.

The average duration of a sun spot is from two to three months, but a spot is recorded that lasted eighteen months. Some spots only last a few hours.

Mercury's apparent diameter varies from five seconds to twelve seconds; that of Venus from ten to sixty-six seconds; Mars from four to thirty seconds; Jupiter from thirty to fifty seconds; and Saturn from fourteen to twenty seconds. The order, according to greatest apparent brightness, is therefore: 1, Venus; 2, Jupiter; 3, Mars; 4, Saturn; and 5, Mercury.

From the above it will also be seen that Jupiter, when least bright, is still more brilliant than Saturn and quite equal to Mars when brightest, that Mars is the dimmest of all at apogee, that Mercury at his best is a little brighter than Venus at her worst, and nearly equal to Saturn when the latter is nearing conjunction, and that Venus at her best is more than twice as bright as Jupiter at his worst or Mars at his best.

The stars visible to the naked eye between the North Pole and the thirty-fifth circle South of the Equator number about 3,400.

Mars is the only superior planet that has appreciable phases. At quadrature he appears slightly gibbous.

Viewed in its relation to the other stars, our sun belongs to the smaller or inferior order. As a sun, *Sirius* is thought to exceed our heat giver in volume about one thousand times.

If 100 be taken to represent the amount of light that reaches the earth from a star of the first magnitude, then the light from a star of the second magnitude is equal to 25, third 12, fourth 6, fifth 2 and sixth 1. Stars of lesser magnitude are invisible to the unaided eye and are denominated "telescopic stars."

The lunar day is twenty-nine times and a half as long as the terrestrial day. Near the moon's equator the sun shines without any intermission for nearly fifteen days, and is absent a similar length of time.

The evening skies are now bare of visible planets. Jupiter is too near the sun, and Venus, Mars and Saturn are "morning stars."

The distance of a star with a parallax of one second would be 206,265 times the distance of the earth from the sun, or some nineteen million million miles. No star is nearer than this.

Saturn's ring system, at present so well defined and nicely opened that a glass of very moderate power suffices to show it, is gradually closing up as viewed from the earth and will be turned edgeways to us in 1892-3, when the best telescopes will lose all trace of it for a time.

OCTOBER CONSTELLATIONS.

At 10.30 p.m. on October 15th *Ursa Major* is due north at its lowest elevation. Beneath *Polaris* is *Ursa Minor* and between the two Bears *Draco*. *Cepheus* is above *Polaris*, and *Cassiopeia* almost directly overhead. *Gemini* is rising in the North-East, and above it is *Auriga*. Due East, *Orion* is just rising, with *Taurus* and *Perseus* between it and *Cassiopeia*. South-East are *Cetus* and *Eridanus* and above these, on the ecliptic, *Pisces* and *Aries*. Almost due South, and near the horizon, is *Fomalhaut*, the leading brilliant in *Pisces Australis*, and above it is first *Aquarius* and next *Pegasus*, whose "square" is on the meridian, with *Andromeda* to the East of it. South-West, on the point of setting, is *Capricornus*, and due West, approaching the horizon, *Aquila*. Above *Aquila* is *Cygnus* and *Delphinus*, and between *Aquila* and *Pegasus*, the small asterism *Equleus*. North-West is *Lyra*, with *Ophiuchus* below it, and skirting the horizon in that direction *Hercules*, *Coronæ Borealis* and *Bootes*.

THE OLBERS-BROOKS' COMET.

In reply to a letter asking for the position of his discovery on August 25th, Mr. W. R. Brooks forwards the following:

T=1887, October 6.480, Greenwich Mean Time.

EPHEMERIS.

Greenwich Midnight.	R.A. h.	R.A. m.	R.A. s.	Decl. °	Decl. ′
September 2	9	8	44	+30	2
6	9	27	4	30	11
10	9	45	48	30	13
14	10	5	0	30	5
18	10	24	32	29	49
22	10	44	16	+29	23

Accordingly, the comet first appeared in *Cancer*, entered *Lynx*, and crossing the foot of that constellation was in *Leo Minor* by Sept. 6th, and, at time of writing (Sept. 15), is almost directly North of *Regulus* in *Leo Major*. Dimness, growing daylight and strong moonlight, thus far, have made it a hard object to find with an ordinary telescope.

STAR SWEEPING.

Although all the planets are away, good work may now be done on moonless evenings by the amateur possessed of an ordinary telescope. It is best to wait until *all* the twilight has faded out of the sky, say until about 8 o'clock. True, we have not yet the winter constellations, but many of the grandest revelations of the telescope are within reach. For what astronomer is there that ever grows tired of viewing double and triple stars, gorgeous star clusters and hazy nebulæ? How beautiful is *Mizar* in *Ursa Major*, with its companion star, and *Alcor* and the other visible in the same field! Then there is *Polaris*, with that faint little twinkler just above it; and for clusters, all one has to do is to sweep the regions adjacent to the Milky Way, in the neighborhood of the constellations nearly overhead, where such sights as the magnificent cluster in the sword hand of *Perseus*,—where the stars are literally powdered over the whole field,—and the nebulæ in *Andromeda* will swim into ken. Low power eye-pieces are best for star sweeping.