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Astronomy and Meteorology.

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Astronomy.

The stars known to be variable now number about 150.

Some of the so-called "fixed stars" are estimated to be moving over a space equal to three thousand miles in a single hour.

Forty-four comets were observed in the ten years ending May, 1886. Six were conspicuous objects to the unaided eye, two, in fact, being remarkably so, notably those of 1881 and 1882.

In 1876 no comet appeared; in 1877 there were 6; 1878, 3; 1879, 5; 1880, 5; 1881, 8; 1882, 3; 1883, 2; 1884, 3; 1885, 6 and to May, 1886, 3. This may be considered as an extraordinary number.

The Pons-Brooks Comet of 1883-4 was one of the most interesting of the above, not because of its brilliancy, but by reason of its being the second instance of the return of one of the Neptunian family of comets to perihelion. Of these bodies there are now 6 known, with periods of from 68 to 76 years. Halley's, the largest of the 6, has already made several returns, being due again in 1910. Pons-Brook's, first seen in 1812, has returned; Olber's, (as stated in the May number of ASTRONOMY AND METEOROLOGY) is due in 1889 and three others in 1919, 1920 and 1922. All of these comets are believed to have had their orbits changed in some manner by the action of that sentinel of the solar system, the planet Neptune.

The *Südercal Messenger* for May sustains its high reputation as a first class astronomical journal. Prof. Kirkwood contributes a short paper on "The Eccentricities and Inclinations of the Asteroidal Orbits," Prof. Bigelow, a paper on "The Phenomena of Cooling Envelopes," and its editor, Prof. W. W. Payne, several highly interesting "Editorial Notes." It is published at Northfield, Minn., price \$2 per annum. Ten numbers are issued each year.

PLANETS IN JUNE.

Venus wins the place of honor this month, not only because of her brilliancy but by reason also of her position. On the opening days, she is close alongside Saturn, having passed 2° 15' N. of the slow moving planet on May 30. She leaves Saturn behind, only to pay her court to *Regulus*, drawing perceptibly nearer to *Alpha Leonis* as the month closes, the conjunction of planet and star taking place at 10 p.m., Montreal time, on July 4. Are we to consider this as an omen to the Republic, occurring as it does on its natal day? About the middle of the month Venus does not set before a quarter to eleven o'clock.

Jupiter is second in brightness and is on the meridian—overhead—at 9 p.m. on the 1st. He is consequently still well placed for observation and is ready to exhibit his two central belts on the application of very low optical power. He is "stationary" at midnight on the 22nd.

Saturn is hastening to conjunction on July 18, and observation is about over with him for a few months. He is 1° 34' S. of Mercury on the evening of the 20th.

Uranus is "stationary" among the stars on the 16th, and 90° from the sun—quadrature—on the last day of the month.

Mars is practically invisible.

THE CONGRESS AT PARIS.

Thirty-five astronomers from other portions of the world, together with fifteen from various parts of France—a total of fifty—were present in Paris at the inaugural meeting of the Congress convened for the special purpose of photographing the whole heavens. M. Flourens, Minister of Foreign Affairs, presided at the opening session. In his address he welcomed the strangers in the name of France, thanking them for accepting the invitations sent out by the

director of the Paris Observatory. Continuing, he alluded to the magnitude of the work about to be undertaken; saying, however, that he did not doubt but it would be carried to a successful issue, especially as the scientists would have the help of their various governments in so doing. The correctness of the proposed maps would, he knew, far surpass what had yet been realized, the eye being directed to depths where, even with the aid of the most powerful telescopes, it had until now been thought impossible to penetrate. Innumerable stars, as yet unknown, would be revealed, to the everlasting glory of the scientists before him, who were opening a new era in science, by transcribing the exact history of the Universe! The address concluded with congratulations to all present, but especially to M. Struve, whose twenty-fifth anniversary as Director of the famous Pulkowa Observatory had been celebrated a short time previous.

CONSTELLATIONS IN JUNE.

On the 15th at 10.30 p.m., directly North, near the horizon, lie *Auriga* and *Persus*, above the latter, to the East are five stars like a W, this is *Cassiopeia*, above which is *Cepheus*. Below *Cassiopeia*, skirting the horizon, is *Andromeda*, with a portion of *Pegasus* almost due East. *Cygnus*, with its bright star, *Ariedel*, is above *Pegasus*, in the Milky Way. Above its second star, *Beta (Alberio)* is *Lyra*, with its magnificent brilliant of the first water, *Vega*. The first magnitude star S.E. of *Vega* is *Altair*, in *Aquila*; below it *Capricornus* is ascending. West of the latter is *Sagittarius*, with *Ophiuchus* and *Serpens*; and above these, reaching to the zenith, is *Hercules*. *Scorpio* is West of *Sagittarius* and contains several fine stars, its brightest being named *Antares*, and its next brightest, *Graffias*. *Libra*, without any conspicuous stars, is West of *Scorpio*, and *Virgo*, with *Spica* and *Jupiter*, is further West still. *Corvus* and *Crater*, below *Virgo*, are setting. The bright star above *Virgo* is *Arcturus* in *Bootes*, to the right of which is the insignificant cluster named *Coma Berenices*. *Leo*, with *Regulus* and *Venus*, is setting, while over the Lion's tail is *Canes Venatici*. *Ursa Major* is towards the North-West, its tail uppermost, and a part of *Gemini* is on the North-Western horizon. Overhead are the circumpolar constellations of *Draco* and *Ursa Minor*, with its chief star, *Polaris*.