

Our Astronomical Column.

THE APPROACHING OPPOSITION OF MARS.—Mars will be closer to the earth next June than it has been since 1909; the opposition of 1924 will, however, be still closer, the distance being then almost the absolute minimum. The high south declination next June of 26° , making its meridian altitude at Greenwich only 12° , will prevent any useful work from being done in this country. The nearest approach to the earth, 0.45 astronomical units, is on June 18; a week later the autumnal equinox of the northern hemisphere will occur, so that both polar caps should be visible. The earth will remain to the north of the Martian equator till mid-September.

PLANETARY OBSERVATIONS AT SÉTIF.—M. Jarry-Desloges established an Observatory at Sétif, N. Africa, specially for planetary and lunar observations, and he has lately published a large illustrated volume containing studies of the moon and all the planets. Mercury was found a fairly easy object by day, the spots being nearly as well-defined as those of Mars. The results confirm those of Schiaparelli and Lowell, making the period of rotation 88 days, equal to that of revolution. Other observers have concluded that the low albedo, and the absence of an external ring of light when the planet is entering on the sun in transit, negative the idea of an appreciable atmosphere; this volume, however, supports the presence of occasional mist or cloud veiling some of the markings and altering their aspect. It is pointed out that the light and heat received from the sun at perihelion and aphelion are in the ratio of 9 to 4, which would make much difference in the precipitation or dissipation of cloud. Most of the markings are broad, curved, dusky streaks, some 60° in length; there are a few larger spots. The colour of the disc was generally rosy.

Drawings of Uranus show markings not unlike those of Saturn; there is a bright equatorial belt, and fairly bright belts in each temperate zone, with darker regions between them and round the poles. The markings are much inclined and curved, but exact measures are not given. It was noted that the direction of the belts changed during the night, showing that they cannot be quite parallel to the equator. Dark belts were also seen on Neptune, making in 1914 an angle of some 40° with the east-west line, and slightly curved. Neptune's satellite Triton was generally easier to see than Mimas; two fainter stars were seen on February 15, 1914, between Triton and Neptune.

There are also interesting drawings of Saturn, showing notches in the outline of the Cassini division, and in that of the crêpe ring. The markings seen on Venus were so vague and difficult that no deduction was made of the rotation period.

STARS OF CLASS A IN THE SOLAR CLUSTER.—Both Sir J. Herschel and Dr. Gould noticed a zone of bright stars, the medial line of which makes a small angle with the Milky Way. Later on, the local cluster of B stars studied by Prof. Charlier was found to mark out nearly the same great circle. Dr. Harlow Shapley and Miss Annie J. Cannon, in Harvard Circular No. 229, describe the distribution of the stars of spectral type B8, B9, A0, A2, A3, of magnitude 6.5 or brighter. The stars, 2450 in number, are plotted in galactic co-ordinates on an equal-area projection. The median galactic latitudes of the stars in each 10° of longitude are then found and marked

with crosses. The resulting smoothed curve shows maxima and minima as follows: long. 50° , lat. $+5^\circ$; long. 195° , lat. -6° , long. 300° , lat. $+7^\circ$; long. 335° , lat. -4° . These results are considered to confirm the existence of the local cluster, but also to show the presence of some disturbing factor, possibly a separate cluster about the region of Corona Austrina. It is intended to pursue the investigation with stars of "later" spectral types, for which spectroscopic parallaxes can be found.

THE PERTH SECTION OF THE ASTROGRAPHIC CATALOGUE.—The publication of Zone -35° of this catalogue by Mr. Curlewis was noticed in this column a few weeks ago. Zone -33° has followed it after a very short interval, the arrangement being in all respects similar. It appears in 4 parts, each containing 6 hours of R.A.; they contain respectively 7393, 25,882, 21,163, and 16,365 stars. The variation in star-density with galactic latitude is again very striking; it will be remembered that the south galactic pole is in Decl. -29° , so that these zones embrace practically all galactic latitudes. The ratios of the numbers of stars in each volume to those given in the same areas in the Cape Durchmusterung are 3.5, 5.7, 5.7, 4.6 respectively. Actually the extreme ratios are 2 in poor fields near the galactic pole and 8 in rich galactic fields.

The places of the reference stars have been taken from the recent Perth Catalogue; the tables for reduction from rectangular co-ordinates are in the same form as those in the Oxford Astrographic Catalogue.

THE LIGHT-CURVE OF NOVA CYGNI, 1920.—An exhaustive discussion both of the light-curve and of the colour variation of this Nova is given in Publications of Urania Observatory, Copenhagen, 2nd Series, No. 3. The Nova was of special interest from its comparatively slow rise to maximum and its early visual detection, which enabled observations to be made on the up-slope of the curve: two photographs taken before discovery, at Kvistaber, by Mr. Tamm, and at Harvard, fully confirm the leisurely nature of the increase of light. The apex of the curve, at mag. 1.8, is very sharp. The fall of light was at first very rapid, amounting to $2\frac{1}{2}$ mags. in ten days; it then became slower but still uniform for 3 months. Here it began to be oscillatory; after another 3 months the oscillations grew larger and the diminution of light slower; in the year ending 1921 Sept. the mean magnitude fell from about 8.6 to 9.7.

The colour determinations are much less consistent than those of magnitude, but they suffice to indicate that at discovery the colour was less than 2, while three months later it rose to 6 or 7, on a scale extending from 0 (white) to 10 (red). The colour at maximum was yellow. A table of photographic magnitudes for the first six months is also included in this publication. This indicates a fall of light from magnitude 2.12 (at maximum) to magnitude 10; a comparison of this table with that giving the visual magnitudes fails to indicate the rapid increase in redness after maximum which the observers noted.

SLIDES OF PHOTOGRAPHS TAKEN AT YERKES OBSERVATORY.—The beauty of the slides taken with the 40-inch refractor at Yerkes Observatory is well known, and a selected list of a hundred slides is now being offered for sale. The price asked is $62\frac{1}{2}$ dollars in addition to carriage; 75 cents is charged for single slides, and double this amount for coloured slides.