TELESCOPIC WORK FOR OBSERVERS OF PLANETS.

THE possessors of telescopes now have an interesting variety of planetary objects for examination. These are Venus, Mars, Jupiter, Saturn, and Uranus.

Venus is visible, as a crescent, in the morning sky, increasing to half-moon shape in the second week of July, and arriving at her greatest elongation, west of the sun, on July 6, when her distance from that luminary will be 45° 44′. The conjunction of Venus and Jupiter will form an attractive spectacle on July 4.

Mars has now declined in diameter to 13″, but the principal markings are still very distinct, and some of the more delicate canals remain observable. After July the planet will have receded so far from the earth that further telescopic study of his physical lineaments cannot be pursued successfully.

Jupiter has just emerged into view as a morning star, rising about 2½ hours before the sun. The most interesting point to be determined is the present position of the great red spot. The motion of this remarkable object has been curiously variable in recent years. Between October, 1904, and March, 1905, the rotation period corresponded very closely with that of system ii. of the ephemeris based on 9h. 55m. 40·63s., and the longitude remained constant at about 26°, so that the spot followed the passages of the zero meridian by 43 minutes. The exact position of the marking should be ascertained as early and as frequently as possible during the coming opposition, and the following are the probable times of a few transits during ensuing weeks :—

Date 1905	Approximate Transit Time h.	m.	Date 1905	Approximate Transit Time h.	m.
July 1	16	32	July 30	15	35
6	15	41	Aug. 4	14	45
11	14	51	6	16	23
13	16	29	9	13	53
18	15	39	11	15	32
23	14	48	13	17	10
25	16	27	21	13	49

The large dark spot seen in the south temperate zone of Jupiter in and since 1901, if still visible, will be in longitude 191° at the end of June, and will therefore follow the zero meridian by 5¼ hours and the great red spot by 4½ hours.

Saturn rises 5 hours before the sun. It is most important to learn whether there are any lingering signs of the extensive disturbance which affected the northern hemisphere in the summer and autumn of 1903. It is singular that, though a large number of observations of the spots were made and promptly reported in 1903, we have heard practically nothing of similar results in 1904. Yet the markings remained visible, if much less conspicuously, in 1904.

Uranus was in opposition to the sun on June 23, and is therefore easily discernible at the present time, though his southern declination is 23¾° An excellent opportunity will be afforded of identifying this planet during the third week in July, when he passes about 1 minute of arc north of the star 1 Sagittarii (mag. 5·3).

Added June 25.—The great red spot on Jupiter was seen by the writer at Bristol, and estimated central on June 24 15h. 43m. Its longitude was therefore 25°·1, and this sufficiently shows that its motion has exhibited no further change during the last three months.

Saturn was also carefully examined on the same morning, but no conspicuous spots were seen in a 12½-inch reflector by Calver, power 235. The observation of Jupiter was obtained with a 10-inch reflector by With-Browning, power 205. W. F. DENNING.

THE ROYAL SOCIETY CONVERSAZIONE.

THE second, or ladies', conversazione of the Royal Society was held in the rooms of the society at Burlington House on Friday last, June 23, and was attended by a large and distinguished company. As on former occasions, many objects of scientific interest were exhibited, but most of them were shown at the earlier conversazione on May 17, and have already been described in these columns (May 25, p. 90). It is therefore only necessary now to refer to additional demonstrations and exhibits.

In the course of the evening there were demonstrations, with lantern illustrations, on recent work in mimicry and protective resemblance, by Prof. E. B. Poulton, F.R.S., and on the three-colour photographic process, by Sir W. de W. Abney, K.C.B., F.R.S. The photographs in colour that were shown were prints from three negatives taken of each subject. Each of the three negatives was taken through an appropriate coloured medium, and the three transparent prints were projected on a screen with appropriate coloured screens behind them, giving the colours of nature. The process and apparatus employed were based on those of Mr. Ives.

Brief descriptions of the new exhibits are given in the subjoined abstract of the official catalogue.

The metal sodium, prepared so as to show its true colour and lustre : Mr. G. T. Beilby. The specimen was prepared by Dr. Thomas Ewan by melting the metal *in vacuo* in one vessel and running the clean, bright part of the liquid into another communicating vessel which had been freed from condensed air or moisture by heating during exhaustion. After solidification of a crystalline crust on the glass, the surplus liquid was run back into the first vessel and the specimen globe was sealed off.—(1) Pictures produced in the dark on a photographic plate by different woods; (2) ordinary photographs of the same woods; (3) the woods used in the experiments : Dr. W. J. Russell, F.R.S. The pictures taken in the dark were obtained on an ordinary rapid photographic plate, the wood being in contact with the plate from one to eighteen hours at a temperature of 55° C. The pictures were developed in the same way as if they had been produced by light.

The entoptoscope, a new form of ophthalmoscope : Prof. W. F. Barrett, F.R.S. The instrument was devised by the exhibitor for the self-examination of the eye by means of pinhole vision—entoptic diagnosis (Listing). When an illuminated fine pinhole in a sheet of metal is held near the eye, sharp shadows of any opaque or semi-opaque object in the path of the rays within the eyeball are thrown on the retina. By this means the growth of cataract from its earliest stages can be traced. By using two closely adjacent pinholes in the revolving diaphragm, and the transparent scale in the eye-piece, the exact magnitude and distance from the retina of the opacity can be determined.—The Ettles-Curties ophthalmometer and ophthalmic microscope : Mr. C. Baker. The ophthalmometer is an instrument for measuring the radius of curvature of the cornea, and consequently of ascertaining the dioptric value of the refracting medium bounded by that curvature. The instrument consists of an attachment by which the patient's head is steadied, and a telescope with Wollaston prism for observing the images of the "mires." The latter are carried on an arc graduated in terms of dioptres and radius of curvature, and prismatic steel bars provide a steady movement by rack and pinion to the adjustable parts. The whole is mounted on a telescopic floor standard which contains a plunger actuated by a spiral spring; by slight pressure this can be pushed down to the level of the patient's eye and clamped. The ophthalmometer can be detached and a microscope provided with electric illumination substituted.

Tantalum, and tantalum electric lamps : Messrs. Siemens Bros. and Co., Ltd. The exhibit comprised (1) specimens of the metal tantalum in the form of small blocks of more or less purity, also sheets and metallic powder, and specimens of wire of various thicknesses; (2) a series of tantalum glow lamps, requiring 110 volts and 0·34 ampere to give a light of 25 N.C. (1½ watts per candle-power).—The "Osmi" incandescent lamp : the General Electric Company. The lamp in appearance is similar to the ordinary electric bulb, but in place of carbon the filament is made from the rare metal osmium, which, when in a state of incandescence, glows with extreme brilliancy. The advantages claimed are :—high fusing point, white light, higher electrical efficiency, longer life, saving of current, less heat. The blackening of bulbs is inappreciable. The consumption of current with ordinary carbon filament lamp is 3·5 to 4 watts per candle-power. Consumption of current