OUR ASTRONOMICAL COLUMN.

BRIGHT METEOR.—Mr. Denning at Bristol saw a bright meteor of about first magnitude at 11h. 12m. on June 2 with path from 301°+50° to 265°+55°, and directed from the shower of Pegasids at 334°+28°, to which he recently directed attention in NATURE. The meteor left a streak of about 10° amongst the stars of Cygnus and Draco. At Bristol the midnight sky of June 2 was magnificent, the stars being unusually bright and the firmament remarkably dark, and comparable with some of the evenings of early autumn.

THE TOTAL SOLAR ECLIPSE OF MAY 8, 1910.—In a letter to the *Observatory*, Mr. J. F. Tennant points out the availability of Tasmania as an observing station for the eclipse of the sun due to take place on May 8, 1910. The duration of the total phase will be something like three minutes, but the sun will, at most places, apparently be at a low altitude; in fact, except at the extreme N.W., the sun sets partially eclipsed. Particulars as to times are given in the letter, and the writer states his intention to obtain particulars concerning the climatic probabilities, &c. (the *Observatory*, No. 397, p. 250, June).

THE DARK D_3 LINE IN THE SUN.—In the June number of the *Observatory* (p. 250) Mr. Buss returns to the discussion anent the presence of the helium absorption line in the solar spectrum. Among other things, he points out that, according to Mr. Evershed's recent letter, the position of the dark D_3 line is now given as being on the red side of the bright chromospheric line, whereas it was previously stated to be on the more refrangible side.

Mr. Buss adds that of 358 observing days in 1906 and 1907 he made spectroscopic observations on 317 days, and was able to detect the D_3 absorption on 236 days, or on about 75 per cent. of the total number. This indicates that the phenomenon of helium absorption over active solar areas is not so rare as has been thought, and Mr. Buss suggests that, with a more refined equipment than his, a practical permanency of the phenomenon over such areas, with or without spots, might be established.

It is interesting to note with regard to this that at the meeting of the British Astronomical Association held on April 29, Father Cortie expressed the opinion that for this class of work a telescope of not very large aperture and a spectroscope of moderate dispersion were required.

POSITION OF THE AXIS OF MARS.—In No. 4251 of the *Astronomische Nachrichten* (p. 39, May 29) Prof. Lowell gives the results obtained from his measures of the position of the axis of Mars during 1907. Between September 23 and December 16, 1907, 198 determinations of the position-angle of the south polar cap were made by Prof. Lowell and seventy-nine by Mr. Lampland. The measures were made in three different ways:—(1) with the micrometer thread cutting off equal segments below the cap; (2) with the thread tangent externally to the cap; and (3) with the thread tangent internally to the cap, and on collating the results it was seen that each method is subject to systematic errors. To throw some light on the question of these errors, an artificial planet was devised by Mr. Lampland on which measures were made by both observers, under conditions as far as possible identical with the true conditions. The results of these observations showed that the dichotomy measures are more trustworthy than the tangential, that they are decreased by phase, and that the tangency measures are too large.

Combining the results for the measures made during 1901–7, Prof. Lowell obtains as the general mean for the position of the axis R.A.=315° 38′, dec.=54° 39′, and for the obliquity of the Martian ecliptic 23° 8′. He then gives a table comparing his results with others obtained since 1781, and points out that there is apparently a steady decrease in the obliquity if Cerulli's observations of 1896–7 be excepted; of this phenomenon he offers no explanation.

THE ORBIT OF α ANDROMEDÆ.—From spectrograms taken at the Potsdam Observatory during the period 1901–7, Herr Ludendorff determined an orbit for the spectroscopic binary α Andromedæ, and now publishes his discussion in No. 4250 of the *Astronomische Nachrichten* (p. 23, May 21). For the period he finds 96·7 days, a value which he considers certain to within 0·1 day. In the discussion he confirms Sir Norman Lockyer's remarks as to changes in the spectrum, and records that he has on several plates observed the Mg line at λ 4481 doubled.

THE ECCENTRICITIES OF COMET ORBITS.—In No. 113, vol. xix. (pp. 67–71), of the Publications of the Astronomical Society of the Pacific, which we have just received, there is an interesting address by Prof. Leuschner on the probable general form of comet orbits. Prof. Leuschner raises strong objections against the prejudice which assumes all cometary orbits to be parabolic unless it can be proved very certainly that they are elliptic or hyperbolic. In support of his suggestion that the parabola may be the exception, and not the rule, he gives two tables, the first of which shows the percentage of parabolic orbits of comets appearing in three different periods. For the last period (1846–95) only 54 per cent. of the determined orbits had the eccentricity 1·0, and therefore it seems no more probable that a comet's path should be parabolic than that it should not. The second table classifies the orbits according to the duration of visibility of the comets, and here it appears that the longer the comet is observed the more probable it becomes that the orbit cannot be satisfied by a parabola. Of comets observed for more than 240 days, it is doubtful whether any had parabolic orbits.

THE ROYAL OBSERVATORY, GREENWICH.

THE annual visitation by the Board of Visitors of the Royal Observatory, Greenwich, was held on Wednesday, June 3, when the customary report was presented by the Astronomer Royal dealing with the work carried out during the twelve months ending 1908 May 10. A summary of the chief points of the report is given below.

Among other matters, it is interesting to note that various national undertakings of importance were, or are being, facilitated by the loan of instruments by the observatory authorities. Thus the observers attached to the British Antarctic Expedition (1907) are using the 4-inch Simms' telescope No. 2, Captain Monro, R.N., used the transit instrument D in the determination of the longitude of Ascension, whilst a very interesting collection of historical and modern astronomical and meteorological instruments, models, photographs, &c., illustrating the past and present work of the observatory, is being exhibited in the Science Section of the Franco-British Exhibition.

Referring to the work done with the transit circle, the report states that the system of inclined wires formerly used has been replaced by a system of two close vertical wires and one horizontal wire, and the method employed for illuminating the field has been changed to that applied so successfully to the altazimuth last year. A series of observations is now being carried out in order to compare the results obtained under the respective conditions of illumination, and it is hoped that a discussion of the results may throw some light on the question of the magnitude equation in the observation of the fainter stars.

The transit was employed for the usual observations of the sun, moon, planets, and fundamental stars, the working list being made up by the inclusion of stars of the ninth magnitude and brighter between the parallels of north declination +24° to +32°, which will serve as reference stars for the Oxford astrographic zones. Eight thousand seven hundred and twenty-three transits and 7960 circle observations were taken during the year.

From the observations made in 1905, applying Bessel's refractions, 38° 31′ 21″·70 was determined as the co-latitude, whilst those made in 1906, with Pulkowa refractions, gave the value 38° 31′ 21″·67. The reduced solar observations of 1906 show the correction to the tabular values for the obliquity of the ecliptic to be −0″·09, and the observations of the summer and winter solstices indicate that the mean of the observed distances from the pole to the ecliptic is apparently 0″·005 too great.

Each day, when practicable, three or more observations of level and nadir were made, and it was found that the diurnal changes of level ranged from +0″·13 at noon, to 0″·00 at 6 p.m., to +0″·18 at midnight; the corresponding values for the nadir were found to be +0″·17, 0″·00, and