OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES IN OCTOBER:—

October 7. 10h. 18m. Minimum of Algol (β Persei).
9. 14h. Saturn in conjunction with the moon (h 1° 27′ N.).
10. 7h. 7m. Minimum of Algol (β Persei).
10. 7h. 3m. to 8h. 10m. Occultation of 4 Sagittarii (mag. 4·6) by the moon.
11. 5h. Mars in conjunction with Jupiter, δ 1° 11′ S.
14. Vesta (mag. 6·5) in opposition to the sun.
15. Venus. Illumination portion of disc 0·991; Mars, 0·981.
16. 6h. 3m. to 7h. 2m. Occultation of 16 Piscium (mag. 5·6) by the moon.
16. 11h. 53m. to 13h. Occultation of 19 Piscium (mag. 5·2) by the moon.
18–20. Epoch of the October Meteors (Radiant, 91°+15°).
21. 8h. 37m. to 9h. 35m. Occultation of K^1 Tauri (mag. 4·6) by the moon.
21. 8h. 38m. to 9h. 34m. Occultation of K^2 Tauri (mag. 5·5) by the moon.
26. 6h. Venus in conjunction with α Libræ. ♀ 0° 6′ N.
29. 13h. Venus in conjunction with Jupiter. ♀ 0° 33′ S.
30. 8h. 50m. Minimum of Algol (β Persei).

COMET E. GIACOBINI.—A telegram has been received from the Centralstelle at Kiel announcing the detection of this comet at the Nice Observatory for the first time during the present apparition. The observation was as follows:—

1899. Sept. 29d. 8h. Nice Mean Time. { R.A. 16h. 26m. 32s. / Decl. −5° 10′

The daily motion in right ascension is + 2m. and in north polar distance − 10′, so that the comet is moving slowly in a north-easterly direction. The position at the time of discovery on September 29 was about 3° north of the 5th magnitude star, v Ophiuchi. The comet is merely described as "faint." Previous appearances of this visitor took place in September 1896 and June 1898.

A later telegram from Kiel announces that the comet has been observed at the Konigsberg Observatory, the measured position being:—

1899. Oct. 1d. 8h. 0·5m. { R.A. 16h. 31m. 0·7s. / Decl. −4° 39′ 50″

TWO NEW VARIABLE STARS.—Dr. T. D. Anderson, of Edinburgh, announces in *Astr. Nach.* (Bd. 150, No. 3594) his discovery of two new variables.

(1) *In Hercules.*—A star, not mentioned in the B.D., whose position is

R.A. = 17h. 53m. 27s. / Decl. = +19° 30′ } (1855)

was found in August to have a variation amounting to about 0·9 of a magnitude. The star is about 2′ or 3′ *north preceding* the 9·2 magnitude star B.D. +19°·3489.

(2) *In Cygnus.*—A star, not mentioned in the B.D., whose position is

R.A. = 20h. 9m. 44s. / Decl. = +30° 37′ } (1855)

is at present (September 21) rapidly diminishing in brightness. Comparisons with the neighbouring stars B.D. +30°·3958, 3963, 3964 showed the variation in magnitude to be from 8·5 to 9·2.

THE MELBOURNE OBSERVATORY.—The thirty-third report of Mr. P. Barrachi, the Government Astronomer at the Melbourne Observatory, Victoria, has recently been distributed, showing the work undertaken and the progress made during the period July 1, 1898, to February 28, 1899. The observatory is reported in good order, the instruments well cared for and in good working condition.

With the 8-inch transit circle 1571 observations have been made in right ascension, for determinations of azimuth, clock corrections and catalogue stars; also 1017 observations in north polar distance have been made in connection with latitude determination, catalogue stars and special zodiac stars, The catalogue stars were intended chiefly to be used in the reduction of the plates for the astrophotographic catalogue. The zodiacal stars have been observed at the request of Dr. Gill, of the Cape Observatory, in connection with his heliometer observations of Neptune and the other major planets at opposition. All the reductions are well in hand.

Astrophotographic Catalogue.—The series of plates for the catalogue is now completed, and 387 plates for the Chart have been passed as satisfactory. Special series have been taken for the region round the South Pole, and seven plates have been exposed for the Oxford chart type. The measurement of the plates is being undertaken by six young ladies, using three micrometers. The probable error of a measured coordinate is now no more than 0″·1, which is within the prescribed limit. The progress of this part of the work is rather slow, but trials with Prof. Turner's scale, as adopted at Greenwich and Oxford, although permitting of much greater speed, showed the error to be as great as 0″·5, and therefore all the measurements are to be made with the filar micrometer. A new instrument, similar to that designed by Dr. Gill for the Cape, has been ordered from Messrs. Repsold and Söhne.

The various operations connected with the time service, meteorological observations, and inspection of outlying depôts have been carried out as in previous years.

Terrestrial Magnetism.—The photographic registration of the horizontal and vertical components and of the magnetic declination have been continued, absolute measurements and redeterminations of scale zeros being made *five* times. The measurement and reduction of the curves obtained since 1867, numbering some 30,000, have been commenced.

The photo-heliograph has been employed on sixteen days for solar pictures; 264 pairs of cloud photographs have been obtained with cameras placed at different points round the observatory buildings.

The great telescope and south equatorial have been used for comet and planetary observation, and for the use of visitors, 189 persons being admitted on Wednesday afternoons and 195 at night during the year.

SIR ANDREW NOBLE ON THE BEST EDUCATION FOR ENGINEERS.[1]

WHEN your Dean first did me the honour to ask me to address you on the opening of your session, I had grave doubts as to whether I was a proper person to accept the invitation. On the one hand, I have had little or nothing to do with the education of others, and in some points my views, at all events so far as regards primary education, are at variance with much that is being done at the present day, but as, on the other hand, I have had exceptional opportunities of observing, both in this and other countries, certain points which seem to me to be of importance to those who propose to uphold the industrial supremacy of this country in the struggle which year by year other countries are rendering more and more severe, you therefore see me here to-day, and I shall consider myself amply rewarded if I can tempt but one of you to enter, for the sake of knowledge itself, the boundless fields which science day by day is opening up to you. I can promise that the pursuit will give you happiness. I hope it may give you wealth and distinction; but I remember the words of the Preacher, that riches are not always given to men of understanding, nor favour to men of skill, but that time and chance happen to us all.

Technical education is a phrase that has been so often misused, perhaps so often misunderstood, that many of those who, like myself, are engaged chiefly in trying to solve the practical problems of engineering are in the habit of hearing it either with impatience or of regarding it as a fad of lay theorists, or sometimes, I fear, as a cloak for educational shortcomings in other directions. And I am bound to confess, if their experience has been the same as mine, that there is some excuse for them. You can form but little idea of the number of persons of both sexes who have assured me that their sons had no taste for books, but had shown a marvellous talent for engineering. I need hardly tell you that the marvellous talent generally turns out to be an incapacity, possibly from defective education, for seriously applying the mind to any subject whatever.

But technical education, properly considered, is of the highest

[1] Inaugural Address of the Session 1899–1900 of the City and Guilds Central Technical College, given at the College, Exhibition Road, by Sir Andrew Noble, K.C.B., F.R.S., on Tuesday, October 3.