OUR ASTRONOMICAL COLUMN.

COMET 1916*b* (WOLF).—The following continued ephemeris of this comet, which is now very faint, is given by Dr. Kobold :—

1917	R.A. h. m. s.	Decl. °	Log *r*	Log Δ	Mag.
June 22	22 32 14	+23 51·9	0·2273	0·0751	10·2
24	36 6	24 3·5			
26	39 53	24 13·5	0·2282	0·0677	10·2
28	43 35	24 22·0			
30	47 11	24 28·8	0·2295	0·0604	10·2
July 2	50 42	24 34·0			
4	54 7	+24 37·6	0·2312	0·0531	10·1

The ephemeris is for Greenwich midnight.

SOLAR PROMINENCES IN RELATION TO SUN-SPOTS.—It has hitherto been generally supposed that solar prominences are inevitably, or usually, found in close connection with sun-spots and flocculi, but an extended investigation which has been made by Dr. O. J. Lee appears to show that there are no substantial grounds for this supposition (*Astrophysical Journal*, vol. xlv., p. 206). His conclusions are based on the photographs taken with the spectroheliograph of the Yerkes Observatory between March, 1904, and January of the present year, thus covering more than a spot cycle. Only 5·8 per cent. of 4068 prominences of all sizes, which were observed between +45° and −45° of solar latitude, were found in the immediate vicinity of spots, and in the same region only 8 per cent. of the prominences were associated with flocculi in which no spot was observed. On the other hand, 81 per cent. of the seventy-eight filaments observed near the solar limb showed a connection with prominences. A considerable number of the large eruptive prominences occurred either in unmarked regions of the solar surface, or where the surface was roughened. Intensely bright places in areas of flocculi, when traced to the limb, usually showed as jets, and rarely as prominences of any size.

THE ECLIPSING VARIABLE SS CAMELOPARDALIS.—Some interesting results with regard to this variable have been derived by R. J. McDiarmid from a series of nearly 11,000 observations made at Princeton between March, 1913, and December, 1915 (*Astrophysical Journal*, vol xlv., p. 50). The period is 4d. 19h. 47m. 6·4s., and the visual and photographic magnitudes of the system are respectively 10·15 and 9·9. The depth of primary eclipse is 0·57 mag., and that of the secondary 0·15 mag. The primary eclipse lasts twenty-one hours, and is total for seven hours, while the secondary is annular and of the same duration. The discussion of the observations indicates that the system consists of a large red star of low surface brightness and a smaller white star of a little more than one-third the diameter of the other. The surface brightness of the whiter star is five times that of the larger star visually, and twelve times photographically, so that the smaller star is visually the fainter and photographically the brighter of the pair. The density of the large red star is about 1/200, and that of the smaller white star about 1/12 that of the sun. The combined spectrum is recorded as F?, and it is considered not improbable that the small star is of type A, while the larger is of type G or redder.

HIND'S VARIABLE NEBULA.—The variable nebula N.G.C. 1555 has been photographed by Mr. Pease on seven occasions since December, 1911, with the 60-in. reflector at Mount Wilson (*Astrophysical Journal*, vol. xlv., p. 89). The most prominent feature is a fan-shaped nebulosity, having its apex 25″ south-west of the irregular variable star T Tauri. Two knots near the apex, each with a streamer running southward, are the brightest parts of the nebula. The sides of the fan include an angle of 70°, and are about one minute of arc in length. A curved stream of faint nebulous matter lies to the west of the star, and midway between this and the star is a knot which varies in size and brightness. There is also evidence of very faint extended nebulosity filling the whole starless region in the neighbourhood of the variable star. The photographs show distinct changes in the form and intensity of the nebula, but the available data are not sufficient to establish a relation to the variability of the star. Mr. Adams finds that the spectrum of T Tauri is of type Md, with additional bright lines, and that the parallax is of the order 0·05″ to 0·10″; the bright lines extend beyond the dark lines of the spectrum, and would thus appear to be due to the surrounding nebulosity.

THE NATIONAL PHYSICAL LABORATORY.

THE annual meeting of the General Board of the National Physical Laboratory was held at the laboratory on June 19. The president of the Royal Society, Sir J. J. Thomson, is chairman of the board, and Lord Rayleigh chairman of the Executive Committee.

During the past year the laboratory has been closely engaged, with a largely augmented staff, of whom more than one hundred are women, on a variety of researches and investigations arising out of the war, and has dealt with a greatly increased volume of test work for Government departments. The outstanding feature of the year has been the growth of the gauge-testing work. Nearly the whole of the gauges required for the inspection of munitions are now examined at the National Physical Laboratory, the number averaging about 10,000 weekly. By arrangement with the Ministry of Munitions a new building has recently been erected to accommodate the work, the space otherwise available having become quite insufficient for the purpose. There has been a great increase also in the number of optical and electrical instruments tested for the Admiralty; a new branch of work is the testing of luminous dials for instruments of various kinds.

The investigations carried out have been, in the main, of a confidential character, and no details are given in the report. It has only been possible to make progress with a very few of the researches undertaken prior to the war, and these are almost entirely closely connected with war problems. Aeronautics research has continued to be of great importance. The William Froude National Tank has carried out much work for the Admiralty, and has been visited by members of the Board of Admiralty—including Mr. Balfour when First Lord—who have expressed much appreciation of the results attained. In the metallurgy department researches on light alloys and on optical glass have been continued, while a number of special problems have been dealt with. Various investigations have been in progress in the engineering department; hardness tests, methods of impact-testing, the fatigue resistance of materials under combined bending and twisting stresses, the transmission of heat from surfaces to fluids flowing over them—as in the flow of air over an aeroplane engine—are among the questions examined. The observations on the rate of growth of cracks in the buildings of the Tower of London have been continued. No serious disturbances have been detected.

The laboratory is at present under the control of a General Board and an Executive Committee appointed by the Royal Society and the great technical institu-