OUR ASTRONOMICAL COLUMN.

A NEW STAR IN GEMINI.—A communication received from Prof. H. H. Turner on March 25 announced that the image of a Nova, or a variable, had been discovered on a photograph taken at the University Observatory, Oxford, on March 16. The position of the object was given as

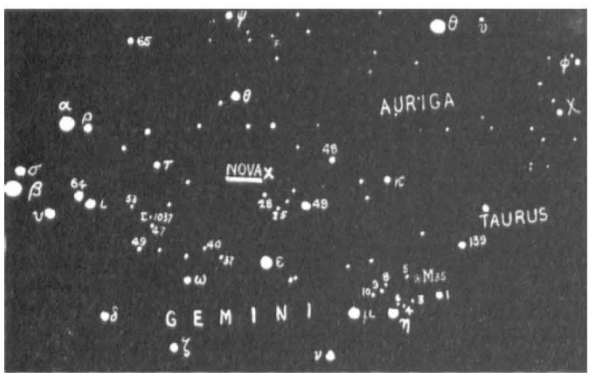
R.A. = 6h. 37m. 48·9s., Dec. = +30° 2′ 39″ (1900),

which is situated in the constellation Gemini near to the border of Auriga, and about half-way between θ and ϵ Geminorum, a little preceding the straight line joining them. This position was confirmed by an observation made at Oxford on the evening of March 24. A telegram from the Kiel Centralstelle confirmed the discovery.

In a second communication from Oxford it was announced that Mr. Newall had observed the spectrum with a direct vision spectroscope attached to the Sheepshanks equatorial at Cambridge, and had little doubt that the object was a Nova. He found that bright lines—both numerous and strong—were present, those in the green part of the spectrum being especially bright.

In a letter to the *Times* of Saturday, March 28, Prof. Turner stated that the object was not bright enough for its image to appear on plates taken on February 24 and earlier, and as no apparent movement had taken place between March 16 and 24, it was certainly not a planet.

The magnitude of the new star is about 7, and, as it is at present near to the zenith during a greater part of the evening, it should be easy to observe, given favourable meteorological conditions. The accompanying chart shows the approximate position of the Nova in regard to the surrounding stars.



A *Circular* (No. 58) from the Kiel Centralstelle announces that Prof. Hartmann, at Potsdam, examined the visual spectrum on March 27. He found the hydrogen lines Hβ and Hα to be present, the latter appearing especially bright; the yellow part of the spectrum is extremely faint as compared with the blue, which contains many bright lines superimposed on a continuous spectrum. The spectrum leads to the conclusion that the star is either a Nova or a variable of the Mira type.

Prof. Hale, at Yerkes Observatory, observed the Nova on March 27·75 (G.M.T.), and found its position to be α = 6h. 37m. 49s., δ = +30° 2′ 38″, and its magnitude 8·5. The spectrum contains bright lines (or bands), and the colour of the Nova is red.

THE SOLAR CONSTANT.—In a paper read before the American Association for the Advancement of Science on December 30, Prof. S. P. Langley discussed the values which have hitherto been obtained for the constant of solar radiation, and gave an outline of the course of study of this constant that it is proposed to carry out in the immediate future at the Smithsonian Astrophysical Observatory.

The author, in his opening remarks, drew attention to the vital importance to humanity of obtaining definite knowledge of the magnitude, nature and possible variations of this radiation, and stated that whilst many other astronomical problems are of great interest from a purely scientific point of view, this one problem is of intensely practical importance; he then summarised this view in the following statement:—"I recognise that every nebula might be wiped out of the sky to-night without affecting the price of a labourer's dinner, while a small change in the solar radiation may conceivably cause the deaths of numberless men in an Indian famine."

Thus recognising the grave importance of a minute study of solar physics, Prof. Langley devoted a great deal of attention to its problems whilst connected with the Allegheny Observatory and the Mount Whitney expedition, and with his bolometer made a long series of observations which led to the conclusion that the values obtained by Pouillet and other observers were far too small. By measuring the solar radiations wave-length by wave-length, he obtained values varying from 3·0 to 3·5, thus nearly doubling the classical value, 1·76 calories, obtained by Pouillet.

Using the bolometric method it is now possible to obtain results in fifteen minutes which it previously took two days to obtain, and the Smithsonian Observatory proposes to commence, in the immediate future, a series of observations in order to determine (*a*) the coefficients of atmospheric transmission under all conditions, and (*b*) the coefficients of transmission of the various parts of the apparatus. In doing this the observers will become familiar with the experimental methods which, it is hoped, will be used later at more elevated stations where the atmospheric conditions are much more favourable, and they will also obtain values more nearly approximate to the true values than those hitherto obtained (*Astrophysical Journal*, vol. xvii. No. 2).

THE MAGNESIUM SPECTRUM LINE AT λ 4481.—Sir William and Lady Huggins communicate to the March number of the *Astrophysical Journal* the preliminary results obtained by them in a series of experiments made in order to determine under what laboratory conditions the line at λ 4481 in the magnesium spectrum assumes the sharp, narrow appearance it has in many stellar spectra.

The authors have arrived at the conclusion that the quantity and the electromotive force of the electricity which acts during the spark discharge between magnesium poles, have only a small influence on the character of this line, but that the suddenness of the blow of the discharge determines its character.

In a plate which accompanies the article is shown a reproduction of the spark spectrum where the discharge of the secondary took place directly between the magnesium poles, the jar having been removed from the circuit; in this case the blow of the discharge is less sudden, through the incoming of the full self-induction of the coil itself, and the line assumes the sharp appearance seen in stellar spectra.

Other spectra which are reproduced show the difference in the appearance of this line under various conditions of spark discharge.

THE EMANATIONS OF RADIUM.[1]

A SOLUTION of almost pure radium nitrate which had been used for spectrographic work was evaporated to dryness in a dish, and the crystalline residue examined in a dark room. It was feebly luminous.

A screen of platinocyanide of barium brought near the residue glowed with a green light, the intensity varying with the distance separating them. The phosphorescence disappeared as soon as the screen was removed from the influence of the radium.

A screen of Sidot's hexagonal blende (zinc sulphide), said to be useful for detecting polonium radiations, was almost as luminous as the platinocyanide screen in presence of radium, but there was more residual phosphorescence, lasting from a few minutes to half an hour or more according to the strength and duration of the initial excitement.

The persistence of radio-activity on glass vessels which

[1] By Sir William Crookes, F.R.S. Read at the Royal Society on March 19.