it had a faint companion north following (74°, 1″, mags. about 8·0 and 10·5): on account of the difference of magnitudes it would be classed as a moderately difficult pair. Although it has not been my habit to make a record of stars examined and found single, I am sure that on more than one occasion I have carefully examined the region for double stars. I believe I did so with the 18-in. McClean refractor about 1900, and found the star single. There is no doubt that Professor See also unsuccessfully examined the star for duplicity in 1897, as his Nos. 122 and 123 are near it. Hence there is a fair *a priori* probability that the companion is in orbital movement, with a suggestion that the outbursts of light which have occurred in the past have been caused by periastral grazings.

Both Mr. Wood and Mr. Worsell saw the companion readily, and the former remarked that η Argûs was fuzzy. This I was able to confirm easily; it is impossible to focus η Argûs sharply, whilst neighbouring stars of much the same hue, as well as those both redder or yellower, can be sharply focussed.

Union Observatory, Johannesburg.

Discovery of a Variable Star in Carina. By H. E. Wood.

On comparing together two plates taken respectively on 1911 April 18 and 1914 April 27 with the aid of the Zeiss Stereo-comparator, I found that the star C.P.D. – 59°, 2860 : $10^h\,51^m\,10^s{\cdot}5$, – 59° 47′·1 (1875), mag. 7·64 was variable. The magnitudes of the star on the two plates were roughly 6·5 and 8·0, the star being brighter on the earlier photograph. This star does not appear in the A.G. Catalogue of Variable Stars, but is near to the two variables T and U Carinæ. The images of U Carinæ showed a distinct difference of magnitude of about the same order and in the same direction as those of C.P.D. – 59°, 2860. With reference to the star T Carinæ, there seems to be some considerable uncertainty. The position of this star is $10^h\,50^m\,18^s{\cdot}0$, – 59° 51′·1 (1875). Careful examination of the two plates showed no difference between its two images, so that either the star was not variable or it was photographed at similar epochs. However, as the variability of this star has not been confirmed (Harvard revised Photometry), it appears now to be quite certain that Gould's star is not variable, but it is possible that there has been a mis-identification.

I sent my observations to Dr. A. W. Roberts of Lovedale on April 30, who, in reply, states that the problem of T Carinæ is now probably solved. Dr. Roberts has one or two old observations of C.P.D. – 59°, 2860 which, although not of much value, indicate change of some kind. He has placed the star on his observing list, and is observing it on every possible night.

Union Observatory, Johannesburg.

Nebulæ seen on Mr. Franklin-Adams' Plates. By J. A. Hardcastle, with Note by A. R. Hinks. (Plate 18.)

In the *Monthly Notices*, vol. lxxi., No. 7, Mr. Hinks threw out the suggestion that it would be an advantage if the series of 206 plates on which Mr. Franklin-Adams photographed the whole sky could be examined and a statement made of the nebulæ visible on them. By the kind permission of the Astronomer Royal these plates have been placed at my disposal, and I now present the result of a scrutiny carried out simply with a view of obtaining a list of the more conspicuous objects found on them. The position angles of those that are markedly elongated have also been added.

The aperture of the instrument was 10 inches and the focal length about 4 feet, so that $1^\circ = 2$ cm. The exposures were usually two hours.

The following classification has been adopted :—

Class I.—Spirals.

This class includes :—

(*a*) 33 nebulæ which clearly show a spiral structure.
(*b*) 87 nebulæ which were judged to be probably spiral. About 20 of these are known from other sources to be spirals.
(*c*) 53 nebulæ of which it was impossible to state the structure, but which are known already to be spirals.

These 173 objects are plotted on fig. 1.

Class II.—Elongated.

These are spindle-shaped, with or without a central condensation or nucleus ; some are oval, with length at least double of the breadth. These 233 objects are plotted on fig. 2.

Class III.—Diffused.

This class contains the large gaseous nebulæ already well known and any others of which the images on the plates exceeded 2′ in diameter, but show no structure. Of these there are 51.

Class IV.—Small.

Of these all that can be said is that they are distinguishable from star-images on these plates. About 20 which were originally placed in this class were found to be known to be spiral and were transferred to class I (*c*). About 25 others which appear in the lists given by Mr. Hinks in *M.N.*, vol. lxxi., No. 8, have also been removed, and the remaining 327 have been plotted in fig. 3.

The position angles which are printed in italics differ notably from those given in the *N.G.C.*