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A NEW FLARE STAR IN CYGNUS

During the nights of 12-13, 13-14 and 16-17 in November 1971, we took five plates centered at V 1057 Cygni with multiple exposures on each one. We used Eastman Kodak 103a0 plates behind an ultraviolet filter. The length of each exposure was 10 minutes with a time interval of less than 1 second between the exposures. On the first of the two plates (six different exposures in each) obtained the night of November 13-14, a very conspicuous flare-up was registered in a star that is rather faint at minimum. The

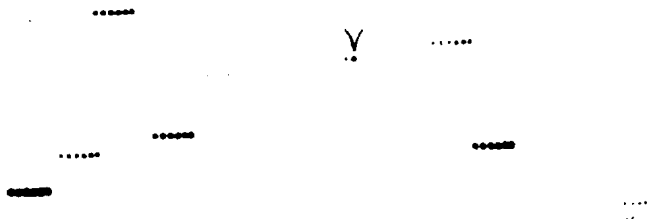


Fig. 1

rapid brightening of this star occurred during the fourth exposure of this first plate, reaching thus its maximum brightness. The star declined rapidly during the fifth and sixth exposure, as is shown in Fig.1. On the second multiple exposure plate taken immediately after the first one mentioned, the star was not visible any more.

The approximate right ascension and declination, the approximate ultraviolet apparent magnitude during minima, and the  $\Delta m_U$ , are given in Table I. Fig.2 is a copy of a Tonantzintla Schmidt camera red plate and will serve as identification chart.

Table I  
Flare Star in Cygnus

Tonantzintla No.	R.A. (1950)	Dec.	Cygnus mU	$\Delta mU$	Date of Flare-up
1	21 <sup>h</sup> 00 <sup>m</sup> 5	+42°07'8	18.0	4.5	1971 XI/14

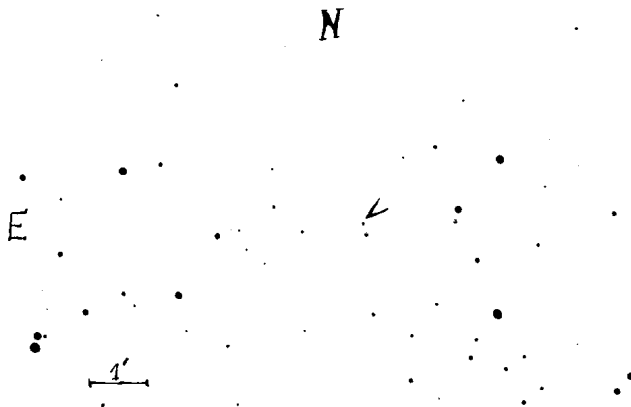


Fig. 2

It is interesting to note, first, that this new flare star in Cygnus was discovered in a rather small number of multiple ultraviolet exposure plates, 30 different exposures in all, covering a total of 5 hours of effective observation; and second, that the star is located near the edge of a somewhat obscure area south of the North America Nebula. As is well known, this region is characterized by the existence - apart from the bright and dard nebulae - of a good number of high luminosity stars, Be objects, T Tauri stars, and the remarkable V 1057 Cygni star which before its outburst was known as an advanced T Tauri type object. Because of the apparent magnitude and colors of this new "rapid" flare star during minima and the possible spectral type that is earlier than M, it seems highly probable that it is at the same distance as the great majority of the stars mentioned before.

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