WIDE-FIELD OBSERVATIONS OF VARIABLE STARS IN THE REGION OF NGC 7129

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During our programme for nonstable and flare star investigations in the star forming regions, more than 290 UBVR photographic plates in the field of the bright nebula NGC 7129 were obtained. The photographic observations were made with the 50/70/172 cm Schmidt telescope of the Rozhen Astronomical Observatory of the Bulgarian Academy of Sciences during the period September 1984 - July 1993.

The possible T Tauri star V 350 Cep located in the field of NGC 7129 was discovered by Gyulbudaghian & Sarkissian (1977) as a star of about 17 in U- and pg-lights, and 16.5 in V-light. On the red reproduction of the Palomar Sky Survey Atlas the star is about 21 but on the blue reproduction it is below the limit. Our photometric observations (Semkov 1993a) suggest that during the last six years a definite increase of brightness of V 350 Cep is observed (Fig. 1).

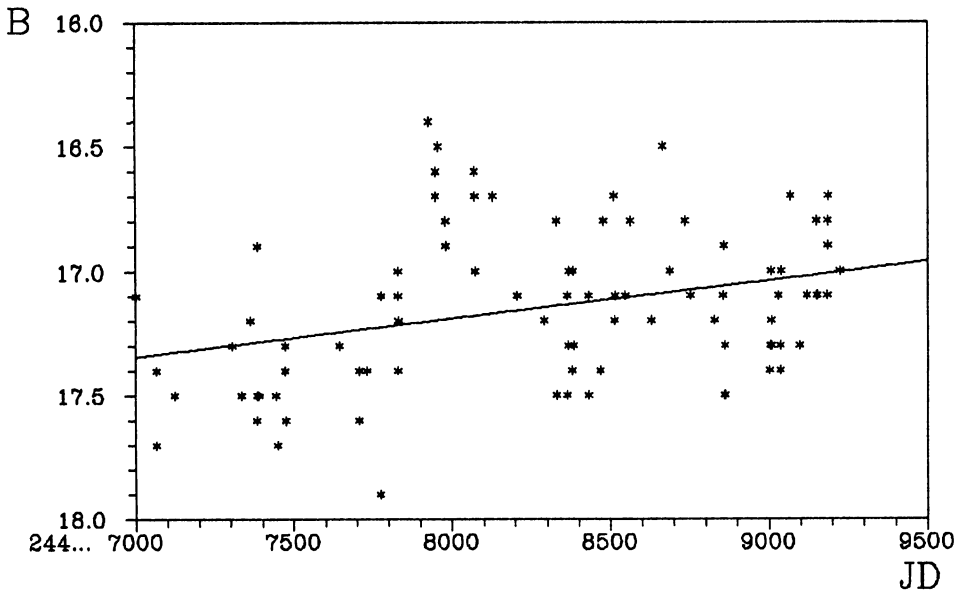
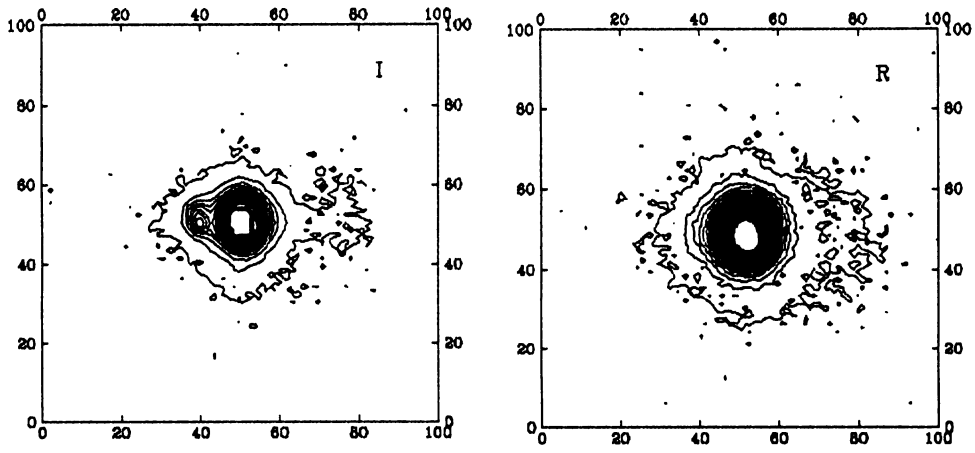


Figure 1. Light curve of V 350 Cep during the observational period July 1987 - July 1993.

H. T. MacGillivray et al. (eds.), Astronomy from Wide-Field Imaging, 475–477.



a. b.

Figure 2. CCD frames of the new T Tauri star.

We discovered an interesting irregular variable star (Semkov 1993b) located in the dark clouds near the emission nebula NGC 7129. It was also recognized as a very strong Hα emission star — No. 7 from the list of Semkov & Tsvetkov (1986). The photometric data suggest that the star brightness ranges from 14.9 to 17.0 in B-light. The colour index B-V varies about the value 1.5, and the colour index U-B about -0.6.

The CCD observations of the new irregular variable star, were carried out with the ST6 camera attached to the Rozhen 2 m RCC telescope. The CCD image of the star through an I filter is shown in Fig. 2a and through the R filter in Fig. 2b. In both figures North is at the top, East on the left, and the scale is 0.5 arcmin on a side. The observations showed that there is a small

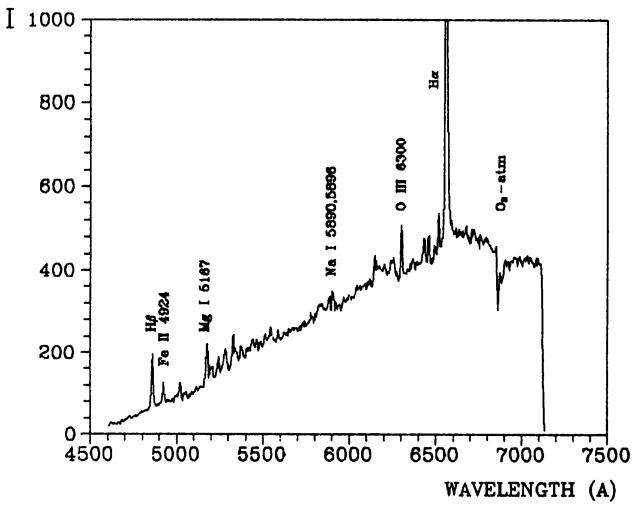


Figure 3. CCD spectrum of the new T Tauri star.

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cometary nebula around the star, which is not visible on the Palomar Sky Survey Atlas. On the East of the star a denser object is allocated, which is maybe an H-H object or a jet from the star.

The spectra of the star were taken with a grating prism having dispersion of 0.47 nm/pixel (Fig. 3). The spectral observations exhibit strong emission line spectrum with the lines of HI, OIII, FeII, MgI and other metals. The hydrogen line Hα is very intensive and it goes beyond the frame in Fig. 3. This kind of spectrum is typical for the very active T Tauri stars connected with nebulae according to Herbig's classification (1962).

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