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UBVR - PHOTOMETRY OF BH Cep

BH Cep (F5 IV) is a rapid irregular variable star with unpredicted Algol-like light fadings (Wenzel and Brückner, 1978, Zhelezniakova and Kardopolov, 1980). Zaytseva and Kolotilov (1972) have observed two-components in the H α emission line with changing profile and intensity.

We carried out photoelectric UBVR observations of the star using the one-channel pulse-counting photometer and 0.5 m reflector at Peak Terskol (Caucasus, 3100 m). Details of reduction procedure and the reference stars have been described elsewhere (Pugach and Kovalchuk, 1983).

During 29 observational nights in 1972-1984 the star showed reasonable light variations near normal brightness 11^m. The amplitude of variations in V does not exceed 0.5^m. We have failed to detect deep light fadings previously reported by Hoffmeister (1949).

The recovery rise to the normal brightness was observed on J.D. 2441653. During 260 minutes of three-colour observations the brightness of the star increased

$$\Delta V = -0.22^m \quad \Delta B = -0.34^m \quad \Delta U = -0.39^m$$

as it is shown in Figure 1. The unusually wide scatter of the U, B, V magnitudes exceeding the standard deviation should be emphasized.

In Figure 2 U-B, B-V and V-R colour indices are plotted vs. V-magnitudes. Crosses in the figure represent eight sequential phases of the brightness rise on J.D. 2441653. While the star gets brighter the colour indices decrease. The solid lines in Figure 2 represent the "colour - magnitude relation" law:

$$\frac{\Delta V}{\Delta(U-B)} = 2.12 \quad \frac{\Delta V}{\Delta(B-V)} = 3.20 \quad \frac{\Delta V}{\Delta(V-R)} = 3.81$$

It strictly coincides with that of interstellar reddening law in the B, V, R passbands. Then colour - magnitude relations for BH Cep imply that its light variability should be caused by variable opacity of circumstellar matter which is like the interstellar one.

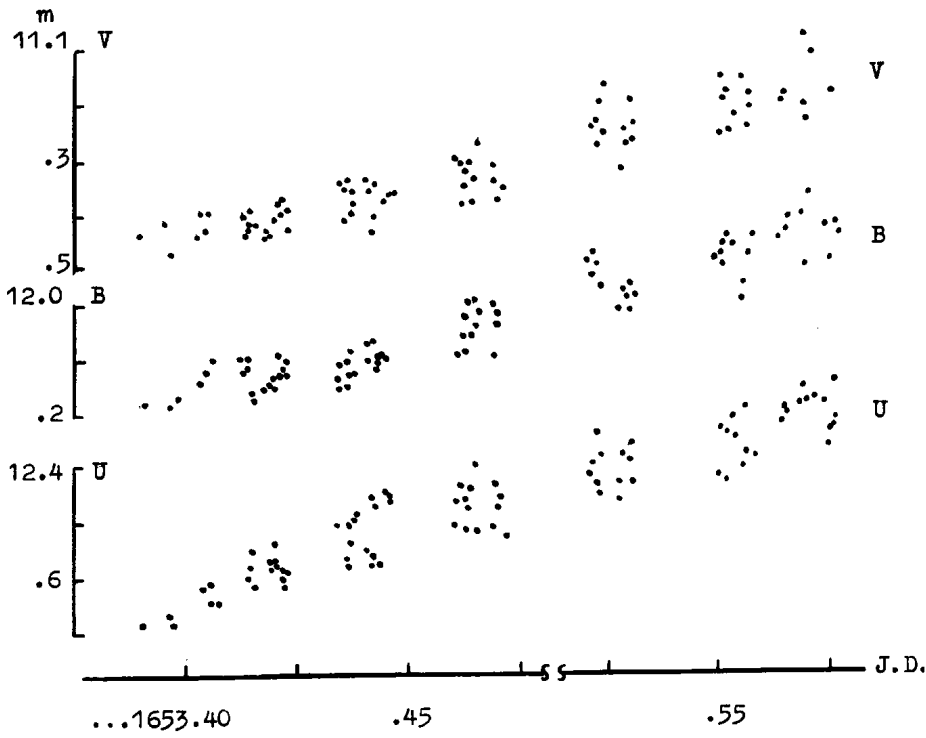


Figure 1

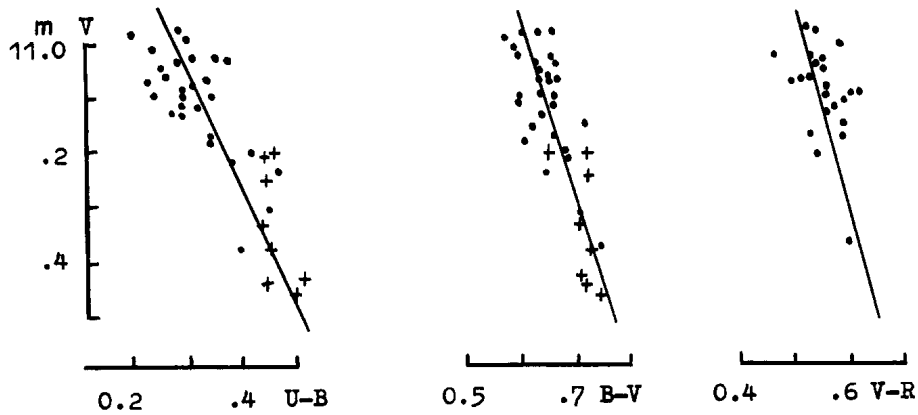


Figure 2

The B-monitoring observations covering the time span of an hour were carried out on J.D. 2442632. The scatter of the monitoring data is within the photometric uncertainty. Power spectrum analysis of the monitoring data reveals no periodic variations exceeding 0.0035^m .

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