

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS

Number 3187

Konkoly Observatory
Budapest
16 May 1988
HU ISSN 0374-0676

VARIABILITY OF THE HERBIG Be STAR BHJ 71

The star BHJ 71 as well as two other Herbig Be-Stars (HD 216629 (B2e) and LkHa 350 (B2-5e)) are members of the Cep OB3 association. BHJ 71 is the star No. 71 in the catalogue compiled by Blaauw et al. (1959).

125 UBVR observations of BHJ 71 were made at Maidanak Observatory between July 1984 and January 1988. The observations were carried out with the 48-cm and 60-cm reflectors equipped with identical photometers. The star underwent unique changes in the U-B colour. Figure 1 shows the light curve in V. The observed amplitude of the light variability is 0.5^m in B, V, and R bands, and 1^m in U.

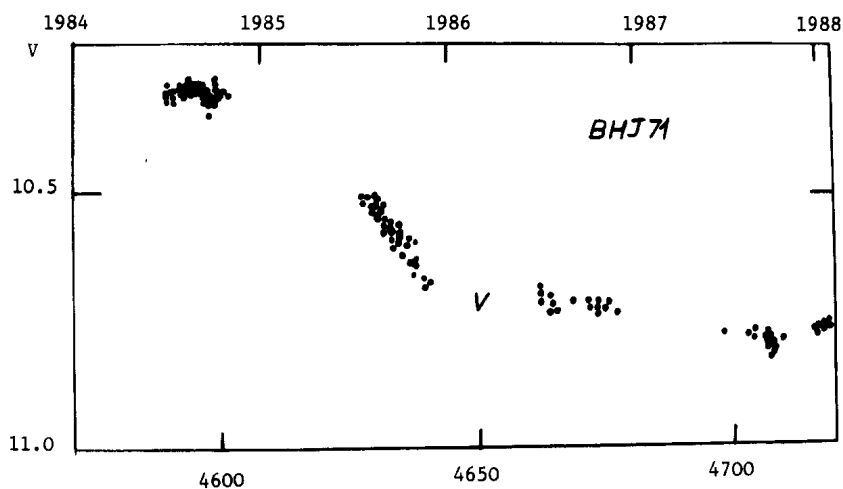


Figure 1

Figure 2 shows the position of the star on the two-colour diagram. The U-B colour index increased up to $\sim +0.6^m$ between July 1984 and mid-1987, and then decreased.

Five days before the beginning of the photometric observations on 23 July 1984, a spectrum of BHJ 71 was obtained with the 1-m Schmidt telescope of the

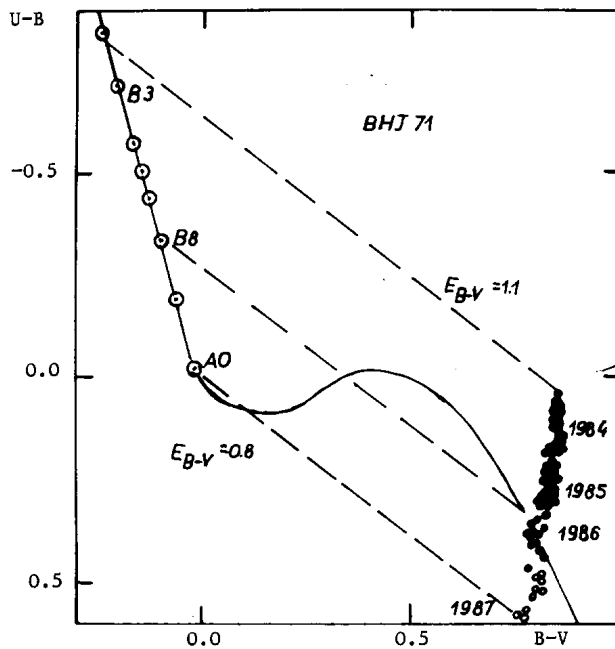


Figure 2

Byurakan Astrophysical Observatory using a 3° objective prism. The spectral class of BHZ 71 was estimated to be B2-3. Brodskaya (1953) estimated it as B0, while Finkenzeller and Mundt (1984) published B0-B8. The latest spectral class, B8, seems to be based on the estimation made by the Q-method (Blaauw et al., 1959). The same method was applied to our photometric observations, and we obtained the same result for the minimum brightness. The analysis of the two-colour diagram gives us different mean values of the extinction during the brightness maximum and minimum, viz. $E_{B-V}^{\text{max}} = 1.2^m$, $E_{B-V}^{\text{min}} = 0.8^m$.

It has to be noted that there are no analogies between the light curves of early type Ina irregular variables (including Herbig Ae/Be stars) and that of BHZ 71.

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