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UBVR PHOTOMETRY OF THE ECLIPSING BINARY FH ORIONIS

The close binary system FH Ori (=47.1929=HD 243229, m=10.5−11.5pg, Sp.:A2) was detected by Hoffmeister (1929) as an eclipsing variable. The binary has been observed only by visual and photographic methods, while the visual estimations were overwhelming. Studying the times of minima Szczepanowska (1955) concluded that the variations of period seemed to be regular and could be represented by a curve having a period of about 18 years and an amplitude of $0^d.025$.

According to he GCVS the ephemeris of FH Ori is

$$\text{Min I}=\text{HJD } 2425900.387+2^d.15116\times E.$$

Soloviev (1947) observed the variable and found no constant brightness in the primary minimum (d=0), but the value d>0 in the curves obtained both by Kordilewski and Szczepanowska (1955).

We carried out the observations of FH Ori with the 0.6 m telescope at Mt. Maidanak in 1989/93 and 137 in U and 243 points were obtained in each B, V, R band. BD+4°911 ($V=10^m.13$; $U-B=0^m.12$; $B-V=0^m.42$; $V-R=0^m.26$) and BD+4°913 ($V=11^m.26$; $U-B=0^m.20$; $B-V=0^m.21$; $V-R=0^m.20$) served as comparison and check stars, respectively. Having used the above ephemeris we calculated the shift of the normal primary minimum to $0^p.9049$. The O−C residuals are plotted in Figure 1. We also used the list of the minima from Szczepanowska's (1955) report. A long gap between the last observations of the binary does not permit to see a character of the period change. In order to get a zero shift for the most recent primary minimum, we suggest that the new period is equal to $2^d.15114089$. Photoelectric curves of FH Ori are drawn in Figure 2. We can see a deep primary minimum and a hardly visible secondary one. The eclipse duration at the primary minimum is $0^p.20$ and d is equal to zero exactly. We list the main parameters of the curves of FH Ori in Table 1.

Table 1

	V	U−B	B−V	V−R
Max	11.26	0.21	0.20	0.20
Min I	12.41	0.21	0.28	0.28
Min II	11.27	-	0.19	0.14

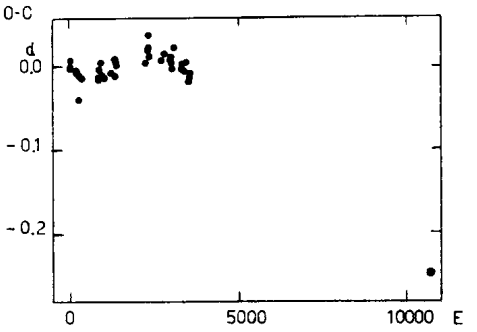

Figure 1. O−C diagram for FH Ori.

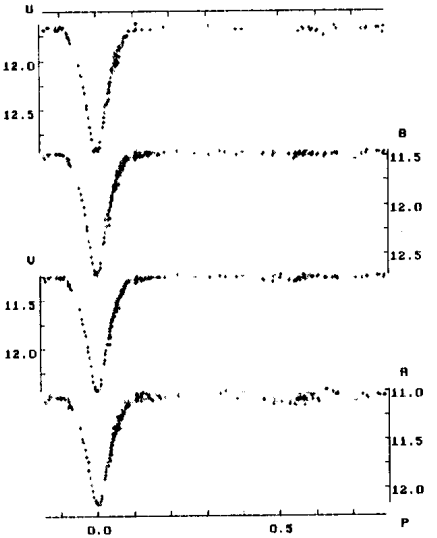

Figure 2. The light curves of FH Ori.

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