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BV LIGHT CURVES OF BY Dra IN 1993

Photometry in BV was obtained for the spotted star BY Dra (BD +51°2402) during 1993 at Bucharest Observatory. The observations were carried out with a 50 cm Cassegrain telescope during the period 10 July-27 November 1993, on 23 nights. An EMI 9502B unrefrigerated photomultiplier and filters V (Schott 1mm GG11) and B (Schott 1mm BG12+Schott 1mm GG13) were used. The data were obtained by a paper milli-voltmeter recorder. Our comparison star was HD 172268, $V=7.89$, $B-V=1.27$ (Rodono et al., 1986).

Mean JD, V magnitudes and B-V colours are presented in Table I and Figure 1. The phases are calculated using the ephemeris given by Rodono et al. (1986).

$$\text{Min}=\text{J.D. } 2438983.612+3^d 836 \times E$$

No significant B-V variation is observed, the mean value being $1^m 20$. However, at minimum the star seems to be a little redder, which is consistent with the maximum visibility of the spot at that phase. From our observations it is difficult to determine the light curve amplitudes precisely. A rough estimate shows that the amplitudes lie around $0^m 08$ in both colours.

The observed minimum is at phase ~ 0.5 with respect to the ephemeris used by us. Comparing our data with those obtained in 1991 by Panov and Ivanova (1993) our observations indicate no spectacular changes in the light curves. However, a mean brightness increase of about $0^m 15$ is evident in both colours.

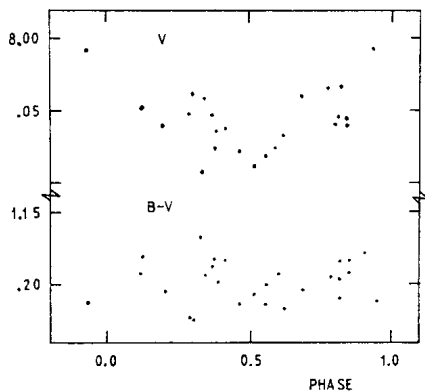


Figure 1. V, B-V light curves of BY Dra obtained at Bucharest Observatory during the period July-November, 1993.

Table 1

Photometric observations of BY Dra (N, σ_V , σ_B represent the number of individual points which form the mean value, and average standard deviations in V and B respectively).

JD	N	Phase	V	B-V	σ_V	σ_B
2449000.0 +						
178.4417	3	0.6717	8.040	1.205	.004	.012
206.3179	1	0.9387	8.008	1.210	-	-
212.3063	3	0.5000	8.087	1.207	.001	.008
213.3208	3	0.7643	8.034	1.194	.010	.008
215.2950	2	0.2791	8.048	1.222	.009	.001
217.3213	2	0.8073	8.035	1.208	.010	.017
217.4138	3	0.8315	8.055	1.189	.011	.025
220.3194	1	0.5888	8.075	1.190	-	-
223.2916	3	0.3636	8.075	1.181	.009	.017
223.3229	4	0.3717	8.064	1.197	.015	.009
230.2846	4	0.1866	8.059	1.202	.004	.012
242.3333	2	0.3276	8.093	1.165	.007	.017
245.3054	1	0.1024	8.046	1.190	-	-
247.2396	3	0.6066	8.067	1.215	.006	.008
248.2917	2	0.8800	8.059	1.177	.008	.010
288.1875	5	0.2812	8.052	1.223	.007	.007
289.1870	5	0.5419	8.079	1.198	.011	.030
290.1804	5	0.8008	8.056	1.183	.010	.018
292.2150	2	0.3313	8.040	1.191	.016	.022
300.1754	4	0.4064	8.061	1.181	.007	.011
304.2000	1	0.4556	8.077	1.212	-	-
317.1666	2	0.8357	8.059	1.182	.018	.007
319.1660	4	0.3571	8.051	1.178	.014	.005

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References:

- Panov, K. P., Ivanova, M. S.: 1993, *Astrophys. Sp. Sci.*, **199**, 265
 Rodono, M., Custisopoto, G., Catalano, S., Byrne, P. B., Doyle, J. G., Buttler, C. J.,
 Andrews, A. D., Marilli, E., Linsky, J. L., Scaltriti, F., Busso, M., Cellino, A.,
 Hopkins, J. L., Okazaki, A., Hayashy, S. S., Zeilik, M., Helston, R., Henson, G.,
 Smith, P. and Simon, T.: 1966, *A & A*, **165**, 135