

SPECTRAL AND POLARIMETRIC INVESTIGATION OF RCB STARS

M. Ya. ORLOV and M. H. RODRÍGUEZ

Main Astronomical Observatory of the Ukrainian Academy of Sciences, Kiev, U.S.S.R.

Abstract. Spectroscopic and polarimetric observations of the RCB variables DZ And, R CrB and XX Cam are described. DZ And is not a RCB-type star.

DZ And. Originally classified as an RCB star (Cragg, 1961). Spectrograms taken in October, 1973, showed normal Balmer lines, $H\alpha$ to $H\delta$, and other lines corresponding to a spectral type K0. However, no bands and/or lines of carbon and cyanogen, characteristic of RCB type variables.

R CrB. 10 low-dispersion spectra taken after the deep minimum of 1972 showed no marked changes compared with the observations by Totochava (1973) made before the 1972 minimum.

Multicolor polarimetric observations during the quiet state (April to September, 1971), during increase of brightness in the second part of the minimum (June, 1972) and after minimum (quiet state, June, 1973) are shown in Figure 1. One year after the 1972 minimum, the position angle and degree of polarization had not returned to the pre-minimum value.

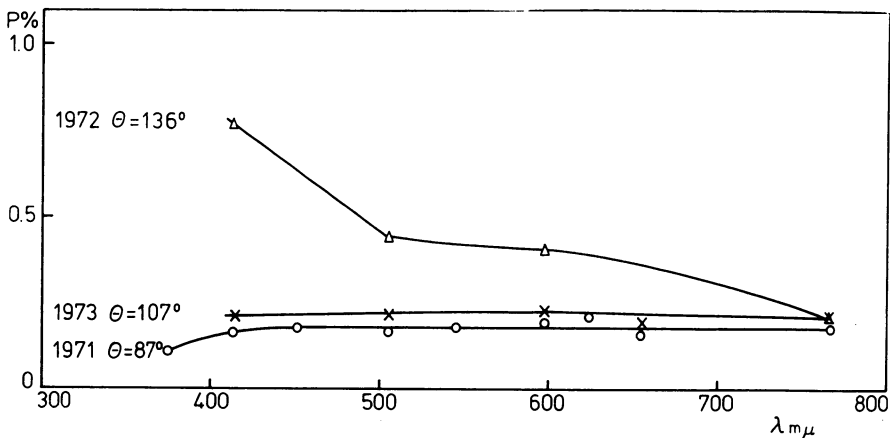


Fig. 1. Changes in the polarization of R CrB in 1971–1973.

XX Cam. This star is still poorly observed, although it is one of the brightest RCB variables. The spectral energy distribution was observed by Kolotilov *et al.*, (1973). Polarimetric observations from August, 1971, to January, 1972 are shown in Figure 2; all were made during the quiet state. For the only minimum, found on old photographic plates, see Chang Yuin (1948).

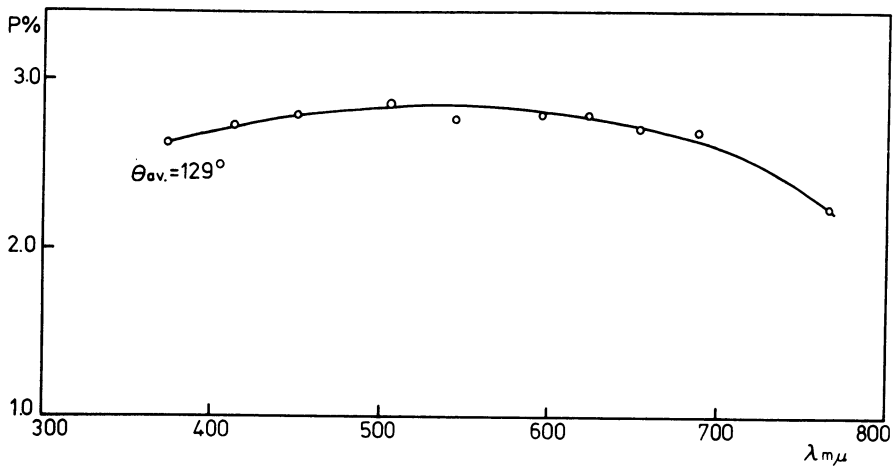


Fig. 2. The wavelength dependence of the polarization for XX Cam.

References

- Chang Yuin: 1948, *Astrophys. J.* **107**, 413.
Cragg, T.: 1961, *Publ. Astron. Soc. Pacific* **73**, 453.
Kolotilov, E. A., Orlov, M. Ya., and Rodriguez, M. H., 1973, *Astron. Zh.* **50**, 968.
Totochava, A. G.: 1973, *Astron. Circ.*, No. 744, 2.