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UBV LIGHT CURVE OF RT And FOR 1992

The continuation of a long term project of photometry of the short period RS CVn system RT And is reported here.

Photometric observations for this star have been given previously by several investigators listed by Dapergolas et al. (1988, 1991, 1992).

The star was observed photometrically for a total of 3 nights with the 1.2m Kryonerion telescope from 23 to 27 Aug. 1992 using a single channel photon counting photometer described by Dapergolas & Korakitis (1987). The photometer employs a high gain 9789QB phototube and conventional UBV filters. Its output is fed directly to a microcomputer enabling rapid data access.

The data reduction method is the standard one. Comparison and check stars are BD +52°3384 and BD +52°3377 respectively and the accuracy of the observations presented here is ± 0.015 mag for V and B and ± 0.025 for U.

Table 1 lists the dates of observations and the corresponding phases covered.

The derived light curves for U, B, V colours are illustrated in Figure 1.

Table 1

Date	Phase
23 August 1992	.13—.59
26 August 1992	.92—.36
27 August 1992	.48—.96

RT And Aug. 1992

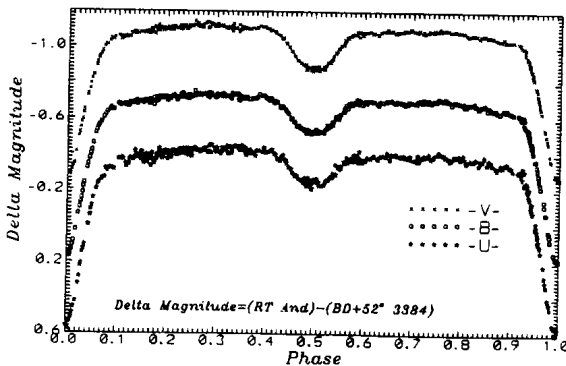


Figure 1

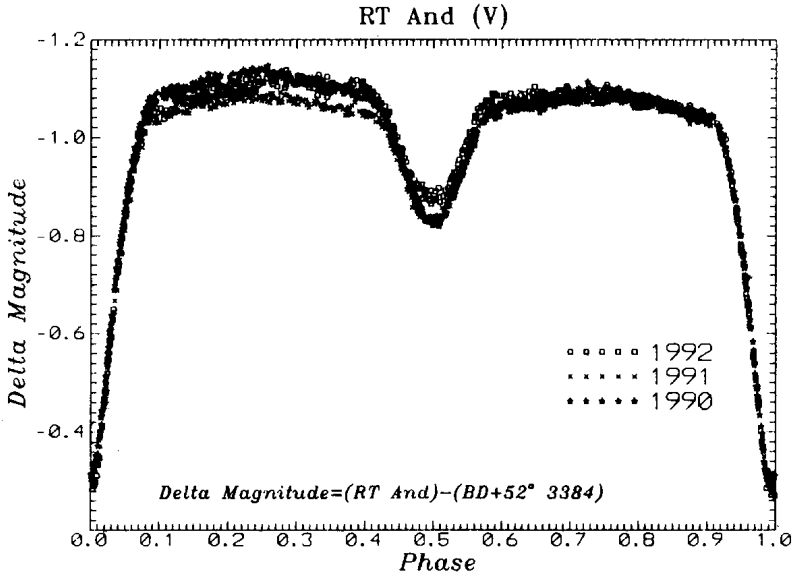


Figure 2

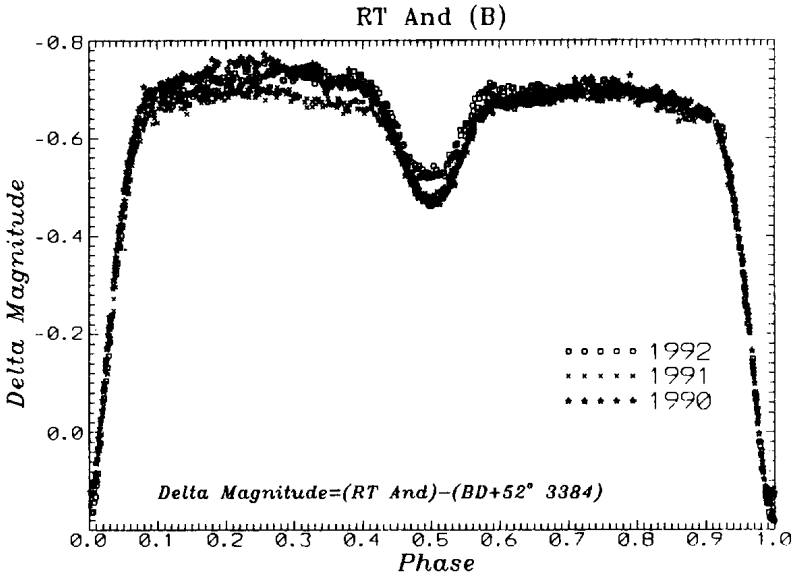


Figure 3

Table 2

Date	Type	V		B		U	
		J.D. Hel. 2440000+	O-C phase	J.D. Hel. 2440000+	O-C phase	J.D. Hel. 2440000+	O-C phase
23 Aug. 1992	II	8858.5388 ±0.0004	0.499	8858.5396 ±0.0004	0.500	8858.5408 ±0.0007	0.502
26 Aug. 1992	I	8861.3684 ±0.0001	0.998	8861.3686 ±0.0001	0.998	8861.3687 ±0.0001	0.998

In Table 2 the times of minima and the O-C values are listed for the V, B and U bands respectively. Times of minima are calculated using the method described by Kwee and van Woerden (1956) whereas the O-C values were determined from the linear ephemeris

$$T=2441141.88902+0^d628929513 \times E$$

given by Kholopov (1982).

From Figure 1 it can be seen that the light curves show asymmetry in the secondary minima that gets larger towards shorter wavelengths.

The variability in the levels of maxima noticed previously by Mancuso et al. (1979). Dapergolas et al. (1988, 1991, 1992) is also present here (see Figures 2 and 3), where the light curves for the years 1990, 1991 and 1992 in V and B are superimposed. This variability is probably due to a photospheric activity of the system as it is assumed by Dapergolas et al. (1988, 1991, 1992), Zeilik et al. (1989) and Gordon et al. (1990). This activity derived from the distortion in the light curve outside the eclipse is probably due to the presence of dark spots on the surface of the active star.

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