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1989, 1990 PHOTOELECTRIC LIGHT CURVES OF RT And

The star RT And has been classified by Hall (1976) as an object of the "Short-Period Group" with properties similar to the RS CVn.

Photometric observations for this star have been reported previously by several investigators listed by Dapergolas et al. (1988).

The star was observed photoelectrically for a total of 10 nights with the 1.2m Kryonerion telescope from October 3, 1989 to August 29, 1990 using a single channel photon counting photometer described by Dapergolas and Korakitis (1987). The photometer employs a high gain 9789QB phototube and UVB conventional 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 the BD +52^o 3384 and BD +52^o 3377 respectively and the accuracy of the observations presented here is ± 0.015 mag for V,B and ± 0.025 for U.

Table I lists the dates of observations and phases covered.

The derived light curves for U, B, V colours are illustrated in Figures 1, 2, 3. Dots are for the year 1990 and crosses for 1989.

Table I

DATE	PHASE
3 Oct. 1989	.88 - .07
6 Oct. 1989	.43 - .82
7 Oct. 1989	.12 - .44
21 Aug. 1990	.94 - .12
22 Aug. 1990	.30 - .71
25 Aug. 1990	.02 - .48
26 Aug. 1990	.65 - .07
27 Aug. 1990	.61 - .67
28 Aug. 1990	.79 - .19
29 Aug. 1990	.43 - .85

In Table II 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

$$T = 2441141.88902 + 0.^d628929513.E$$

given by Kholopov, (1982).

Our light curves show asymmetry in the secondary minima that gets larger in short wavelengths, and different for the two observed periods 1989 and 1990.

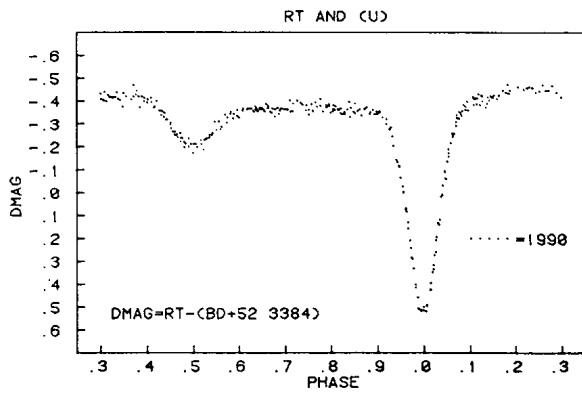


Figure 1

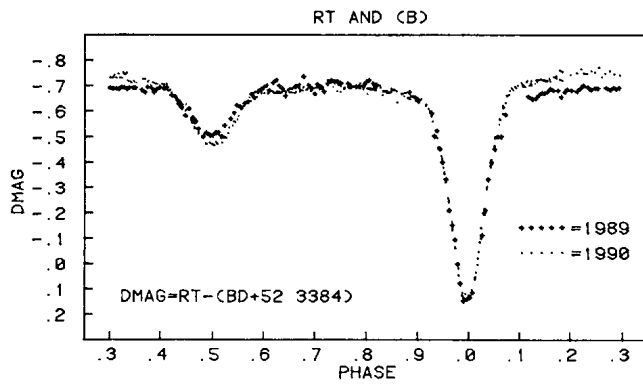


Figure 2

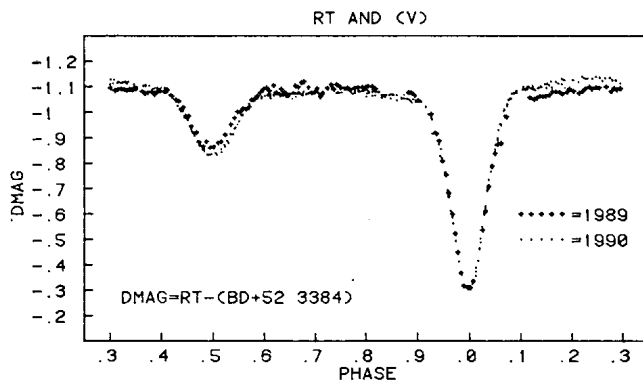


Figure 3

Table II

Type	V COLOUR		B COLOUR		U COLOUR	
	Heliocen. Jul. Day	(O-C) phase	Heliocen. Jul. Day	(O-C) phase	Heliocen. Jul. Day	(O-C) phase .
	2440000+		2440000.+		2440000.+	
I	7803.5094 ±0.0001	0.998	7803.5094 ±0.0002	0.998	-----	-----
II	7806.3389 ±0.0005	0.497	7806.3404 ±0.0003	0.500	-----	-----
I	8125.5203 ±0.0001	0.997	8125.5204 ±0.0001	0.997	8125.5201 ±0.0001	0.997
II	8126.4662 ±0.0001	0.501	8126.4665 ±0.0002	0.501	8126.4643 ±0.0008	0.498
I	8130.5517 ±0.0001	0.997	8130.5519 ±0.0001	0.997	8130.5519 ±0.0001	0.997
I	8132.4386 ±0.0001	0.997	8132.4386 ±0.0001	0.997	8132.4386 ±0.0001	0.997
II	8133.3832 ±0.0003	0.499	8133.3856 ±0.0003	0.503	8133.3858 ±0.0004	0.503

The variability in the levels of maxima noticed previously by Mancuso et al. (1979) and Dapergolas et al. (1988) it is present here as it can be seen in Figures 2 and 3. This is due to a photospheric activity of the system, Gordon et al. (1990), probably attributed to the presence of a spotted region.

A. DAPERGOLAS and E. KONTIZAS
National Observatory of Athens
Astronomical Institute
P.O. Box 20048
GR Athens 118-10
Greece

M. KONTIZAS
University of Athens
Laboratory of Astrophysics
Panepistimiopolis
GR Athens 151-71
Greece

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