

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS

Number 2655

Konkoly Observatory
Budapest
21 January 1985
HU ISSN 0374 - 0676

THE LIGHT CHANGES OF RT LACERTAE

The eclipsing system RT Lac is known as an active binary among the RS CVn type stars. The behaviour of the system is very interesting both in optical and radio regions. The existence of sinusoidal distortion on its light curves has been subject to various investigations (cf. Ibanoglu et al. 1980, Milone 1976, 1977, Tunca et al. 1983). Examining all available light curves obtained between 1890 and 1970, Hall and Haslag (1976) estimated a period of about 9.5 years for the migration of the wave. They have also derived a star spot cycle of about 30 years from the variations of the amplitude of the wave.

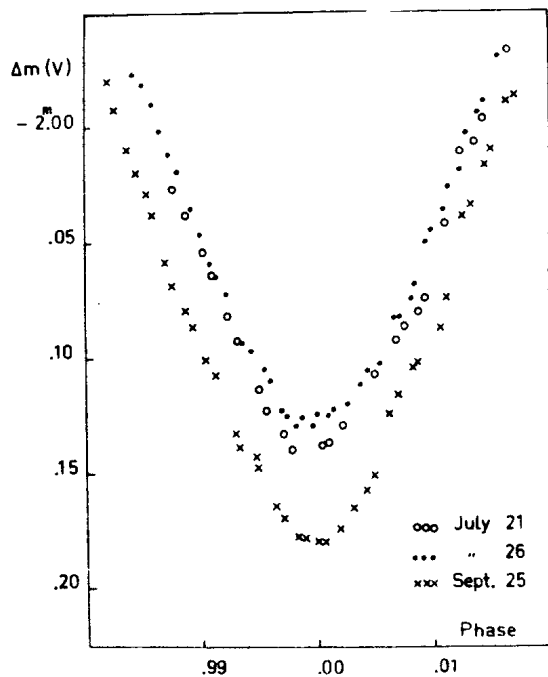


Figure 1 : The primary eclipses obtained in July and September 1984.

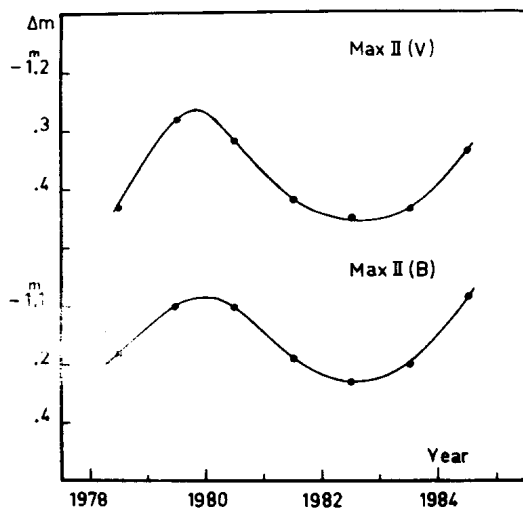


Figure 2 : The variations of the mean brightness of the system at second quarter in yellow and blue light.

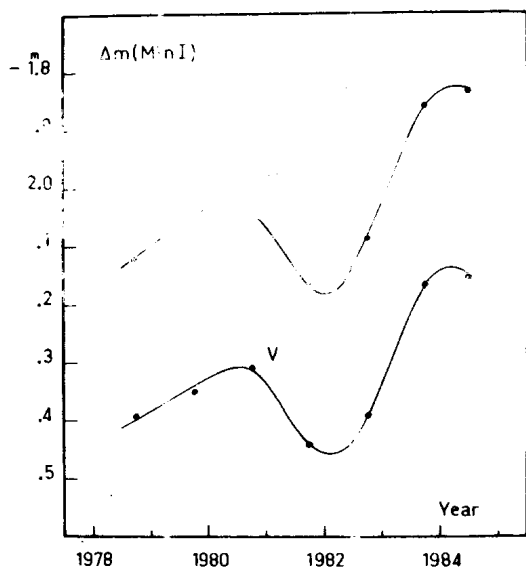


Figure 3 : The variations of the mean brightness at mid-primary in blue and yellow light.

Recently, Evren et al.(1984) published their results obtained from the photometry during last six years. The light variations during primary eclipse and also at second quarter show a similarity according to their investigation. But the period found from light variations at primary eclipse is shorter than that of second quarter. The mean period of about 4.5 years for the light variation has been suggested.

The system has been observed again in 1984 observing season. The observations during primary eclipse obtained on July 21, 26 and on September 25 have been plotted versus orbital phase and are shown in Figure 1. It is clearly seen that the brightness of the system has been changed within each orbital revolution. The observations obtained at the end of September show that the depth of the primary eclipse has been started to increase again. The mean brightnesses at second quarter and at primary eclipse have been also plotted in Figure 2 and 3. Figure 3 shows that the brightness of the star seen at the primary eclipse has been starting to decrease. We estimate that it will reach its minimum brightness about 1986 observing season.

Results of an international observing program at different wavelengths, which will be carried out in the next two years, of this peculiar system will of course yield us valuable information about RT Lac.

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