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LIGHT CHANGES IN THE PRIMARY ECLIPSE OF RT Lac

Photoelectric observations of the active RS CVn type binary RT Lac have been continued at the Ege University Observatory. In this note we report about our observations and the light changes within the primary eclipse. The observations were carried out with the 48 cm Cassegrain reflector and one channel B, V photoelectric photometer. A photon counting system, Starlight 1, with an integration time of 10 sec was used. A microcomputer, Amstrad CPC6128, controls the photometer. An uncooled, standard EMI 9924A photomultiplier tube was used at the observations.

A primary eclipse was observed on 27/28 July 1987 in two different wavelengths, in blue and yellow. These are shown in Figure 1. The light variations have been discussed by Ibanoglu et al. (1980) and the periodic light changes within primary eclipse have been reported by Evren et al. (1984). A period for the light variation at mid-primary of about 4.5 years has been suggested. Later on, Ibanoglu et al. (1985) announced that the brightness of the star seen at the primary eclipse had been started to decrease and it would reach its minimum brightness about 1986 observing season. The mean values of brightness at mid-primary have been plotted against the years and are shown in Figure 2. It is clearly seen that the brightness at mid-primary reached its minimum value, which is the same as that in 1981 in blue, but it is a little brighter in yellow light. The last observations of the primary eclipse clearly confirmed that the light variation at mid-primary eclipse is periodic and is repeated with a period of about 5 years.

The light variations outside minima are nearly half of that seen at the primary. Therefore, the events observed in RT Lac cannot be explained with the spot hypothesis alone. These existing light variations in mid-primary eclipse of RT Lac clearly reveal that the component seen during the primary eclipse could be an intrinsic variable.

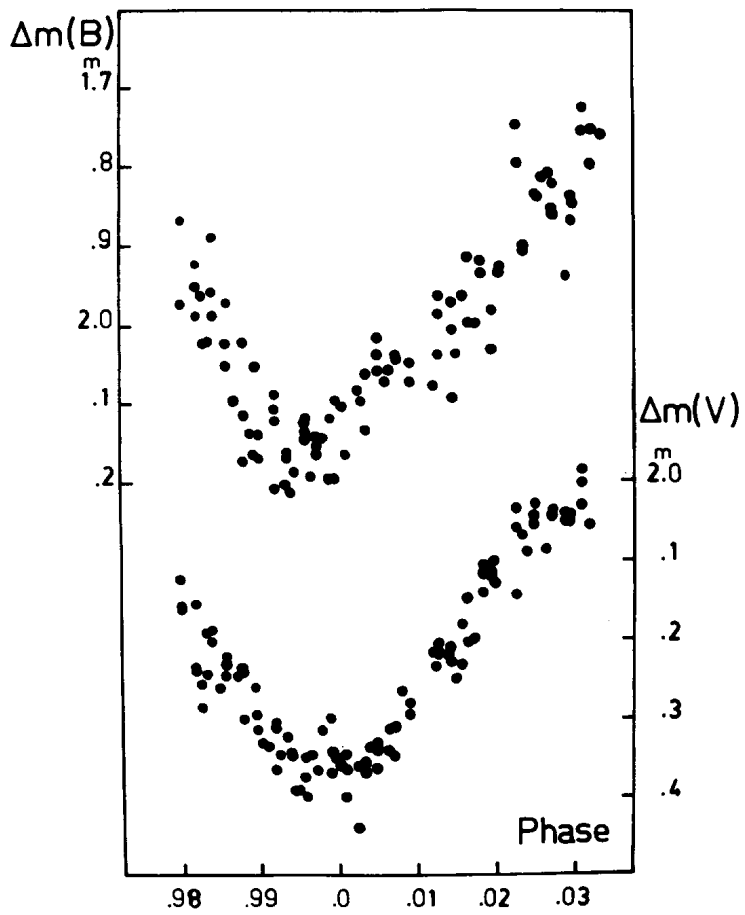


Figure 1

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

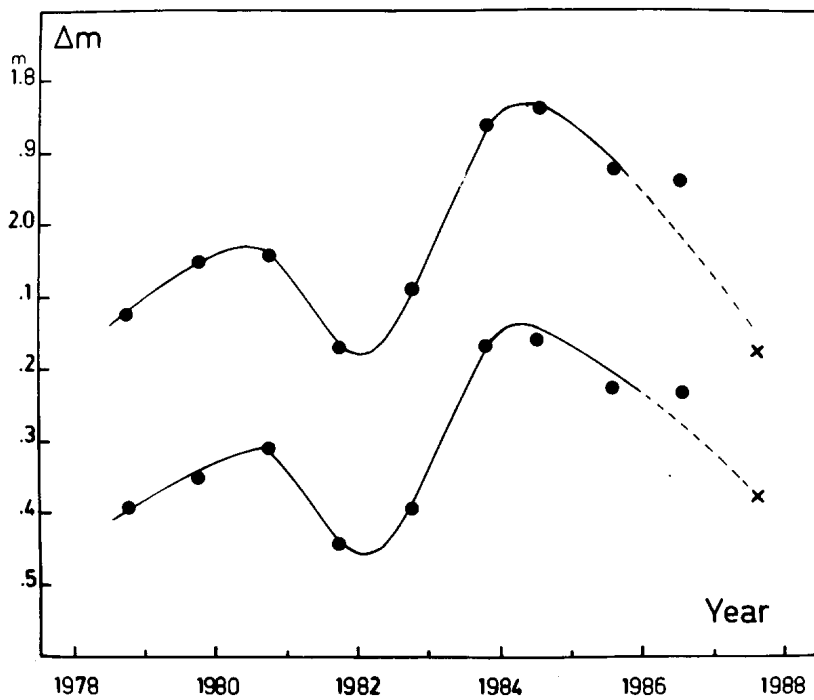


Figure 2

V. KESKIN, S. EVREN, C. IBANOGLU
 Z. TUNCA and M.C. AKAN
 Ege University Observatory
 Bornova-Izmir/TURKEY

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