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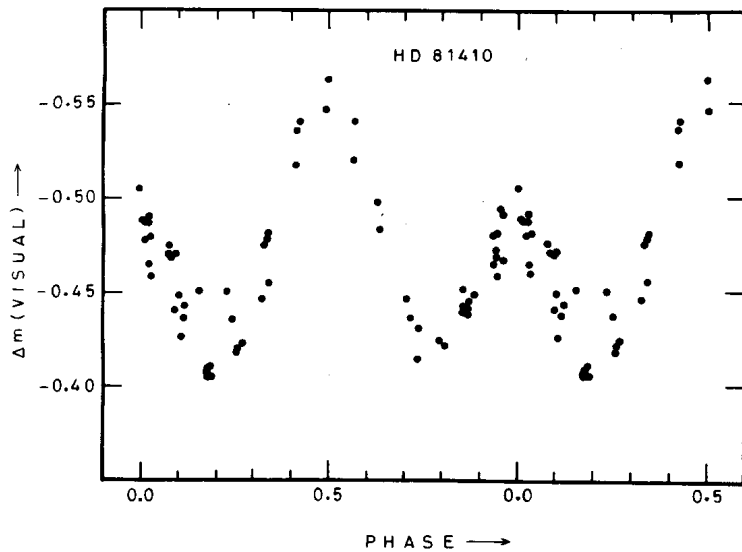
ON THE PHOTOMETRIC PERIOD OF HD 81410

HD 81410 is a single lined spectroscopic binary with K1 III spectrum displaying strong CaII H and K emission and 'filled Balmer lines' (Bidelman and MacConnell 1973, Eggen 1978). Photometric observations by Eggen (1973) in 1971 and 1972 confirmed the suspected light variability of HD 81410. He quotes a photometric period of 25.4 day which satisfies the observations of each season separately.

HD 81410 was included in our photometric programme on late type emission binaries mainly because very little is known about this system. Observations were made with the 34-cm reflector of the Kavalur Observatory on 34 nights, during 1981 January 3-March 14, through standard B and V filters. All measurements were made with respect to the comparison HD 81904. As a check on the constancy of the comparison, HD 80991 was also observed. An unrefrigerated 1P21 together with the conventional d.c. setup was used throughout.

It was immediately understood that the present set of observations does not follow the period derived by Eggen. Our observations indicated a period around 12.7 day. We tried a number of trial periods and find that $P = 12.86833$ day fits the present as well as Eggen's observations well. In the figure the visual magnitude difference, HD 81410-HD 81904, is plotted against the photometric phase computed using the above period. The time of the first observation is taken as the initial epoch. We find that the light curve has changed drastically since Eggen obtained the first light curve during 1971-72. The amplitude of light variation has decreased to ~ 0.15 from ~ 0.45 mag and the mean light level of the system

has gone up by ~ 0.10 mag.



It appears that HD 81410 is a member of the RS CVn group of binaries proposed by Hall (1976), where the photometric variation is attributed to the presence of 'starspots' which rotationally modulate the observed flux. A detailed analysis of all the available information, both spectroscopic and photometric, is in progress and will be published elsewhere.

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