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R PHOTOMETRY OF RW Com

The 0.24 day W Ursae Majoris system RW Com has been the subject of intensive UBV photoelectric monitoring (Milone et al. (1980)) as well as JHKL photometry (Milone and Clark (1981)). Due to the sizeable wavelength gap between V and J it was decided to obtain a light curve in R.

The system was studied by T.J. Davidge and J.D. Himer during 3 nights in June 1980 with the 0.40 meter reflector at the Rothney Astrophysical Observatory. The detector used was a dry ice cooled FW 118 photomultiplier, run at - 1900 volts. The comparison star used was that designated as "b" in Tsesevich's (1953) study of the system. Each variable star observation was bracketed by a comparison star observation. Sky measurements were made directly after each star measurement.

The light curve is shown in Figure 1. Phases were calculated using the ephemeris given by Milone et al. (1980). Of particular importance in the light curve shown here is the size of the "O'Connell Effect" (O'Connell (1951), Milone (1969)). The O'Connell Effect is defined to be the difference in magnitudes between the two maxima. It is positive if the maximum following primary minimum is brighter than that following secondary minimum. For this system it would appear that the size of the O'Connell Effect increases with wavelength. In the published UBV light curves spanning 8 years, the O'Connell Effects in U, B, and V remain fairly constant at about -0.09, -0.09, and -0.06 magnitudes

respectively (Davidge (1981)). In JHKL light curves the O'Connell Effect appears not to be less than  $-0.02$  magnitudes and not to exceed  $0.00$  magnitudes (Milone and Clark (1981)). Therefore it might be expected that the O'Connell Effect in R should lie somewhere between the values quoted for V and the infrared. Although there is considerable scatter in the maximum following primary minimum in Figure 1, it can be seen that the O'Connell

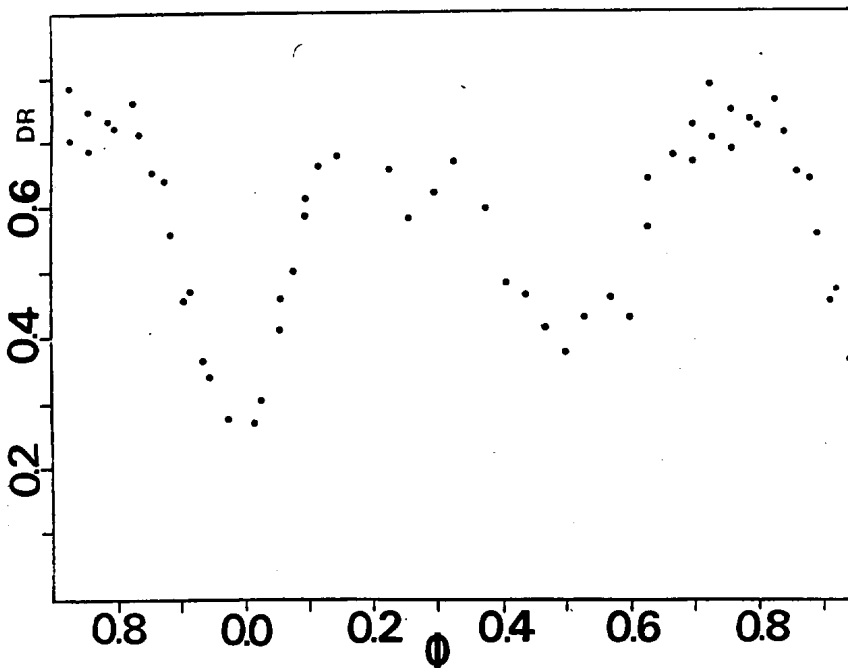


Figure 1: R light curve of RW Com.

Effect appears to be comparable to, or even less than,  $-0.06$  magnitudes. This is not what would be expected from the above arguments.

Clearly, more intensive photoelectric monitoring of this system is necessary in R and I to confirm this finding and to uncover the complete wavelength dependence of the O'Connell Effect in this system.

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