

COMMISSION 27 OF THE I. A. U.  
INFORMATION BULLETIN ON VARIABLE STARS  
Number 1715

Konkoly Observatory  
Budapest  
1979 December 10

PHOTOELECTRIC OBSERVATIONS OF RW COMAE BERENICIS

RW Com is a W UMa binary with a very short period,  $0^d.237$ . Hence it shows extreme W-type properties: Ca II emission lines (Struve, 1950), and variable and strongly asymmetrical light curves (O'Connell, 1951, Milone, 1976). The star has been observed photoelectrically with the double beam photometer at the 106cm telescope of Hoher List Observatory in 1976. Comparison star has been BD+27 $^{\circ}$ 2145. The B and V light curves are shown in Figs. 1 and 2,

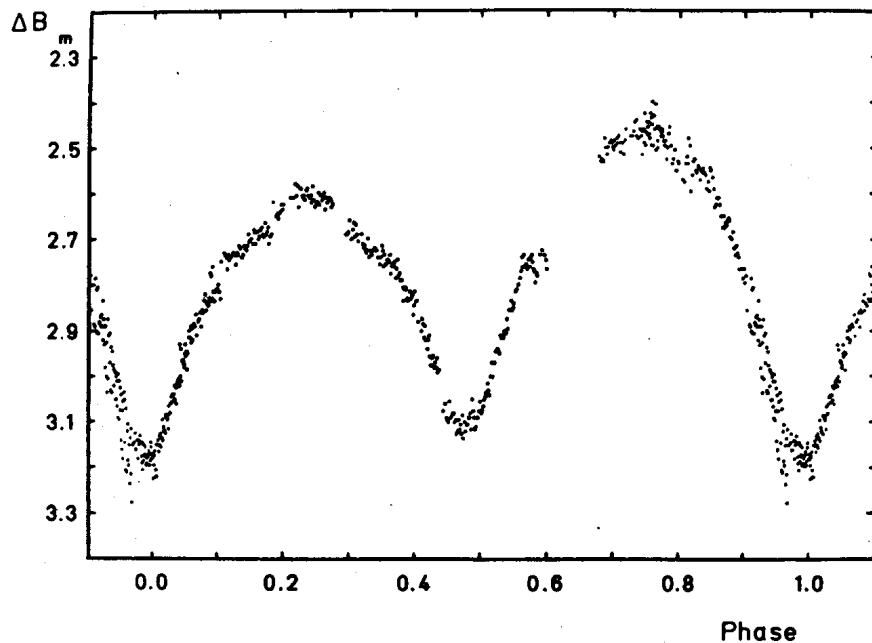


Fig. 1 B measurements of RW Com relative to BD+27 $^{\circ}$ 2145.

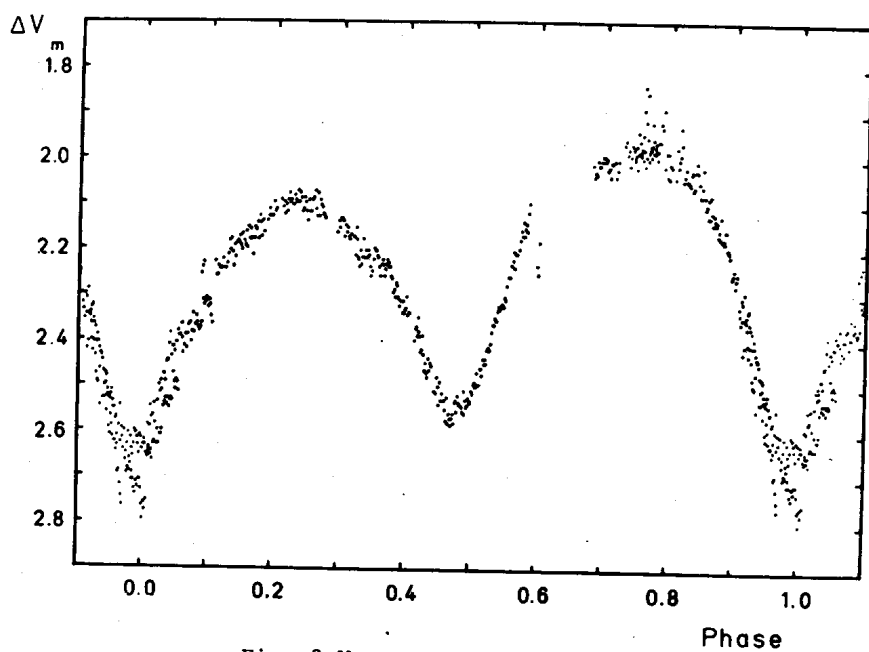


Fig. 2 V measurements of RW Com

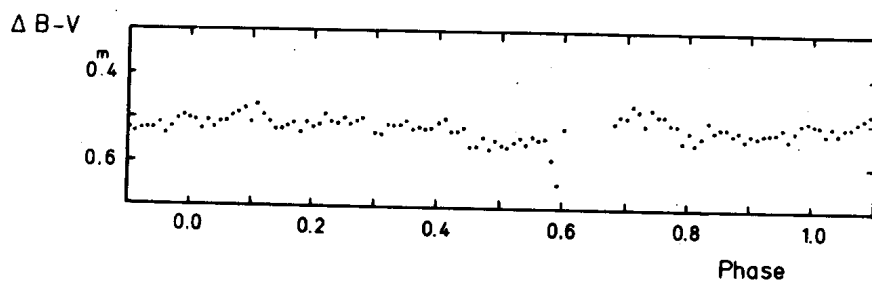


Fig. 3 B-V normal points of RW Com

the B-V curve is shown in Fig. 3. The bluest part of the light curve is the brighter second maximum, indicating the aspect of highest mean surface temperature. The reddest minimum is the secondary minimum, which fact seems to be an unusual but common property of the shortest period contact binaries. The peculiarities in RW Com's light curves prohibit an analysis of the system's constants, but for a description

the Fourier coefficients of the light curve outside the eclipses (phases 0.16...0.34, 0.66...0.84) shall be given.

$$\begin{aligned}L_v &= 0.7965 + 0.0284 \cos \phi - 0.1373 \cos 2\phi \\ &\quad - 0.0587 \sin \phi - 0.0031 \sin 2\phi \\L_b &= 0.7768 + 0.0093 \cos \phi - 0.1551 \cos 2\phi \\ &\quad - 0.0632 \sin \phi + 0.0092 \sin 2\phi\end{aligned}$$

Though these formulae are impossible for a "rectification", they reveal a section of constant light between phases 0.98 and 0.02. The eclipses of RW Com seem to be complete therefore, with the occultation at primary minimum. The ratio of the "radii" of the components may be of the order of 0.3, that of the luminosities of the order of 0.2.

Minima times could be determined from the observations as follows:

Min I	JD	2442841.3740
Min I		2442842.3215
Min II		2442842.4370

They are close to the ephemeris given in the GCVS, Suppl. 1 of 1971. So a conclusion of considerable mass loss to the system, as proposed by Milone (l.c.) is not supported by any obvious period change between 1968 and 1976. Much more frequent observations of this object are necessary for a solution of the problems associated with it.

The individual measurements have been sent to the IAU files of unpublished observations of variable stars. The partly support of this study by DFG grant Schm 167/12 shall be gratefully acknowledged.

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