

COMMISSION 27 OF THE I. A. U.
 INFORMATION BULLETIN ON VARIABLE STARS
 NUMBER 278

Konkoly Observatory
 Budapest
 1968 Juni 5

THE SECONDARY PERIOD OF THE RRab STAR TT CANCRI

This variable star of RR Lyrae type was recently investigated by W.S.FITCH, W.Z.WISNIEWSKI and H.L.JOHNSON (Comm.Lunar and Planetary Laboratory No 71, Vol.5, Part 2). Their photoelectric observations suggest the presence of Blashko-effect.

In order to investigate the nature of the light curve variation and determine the secondary period 1080 photoelectric observations have been obtained in yellow, blue and ultraviolet with the 24 inch telescope at the Konkoly Observatory. From December, 1967 to April, 1968 thirteen light maxima were observed, wich showed large variations in height and phase.

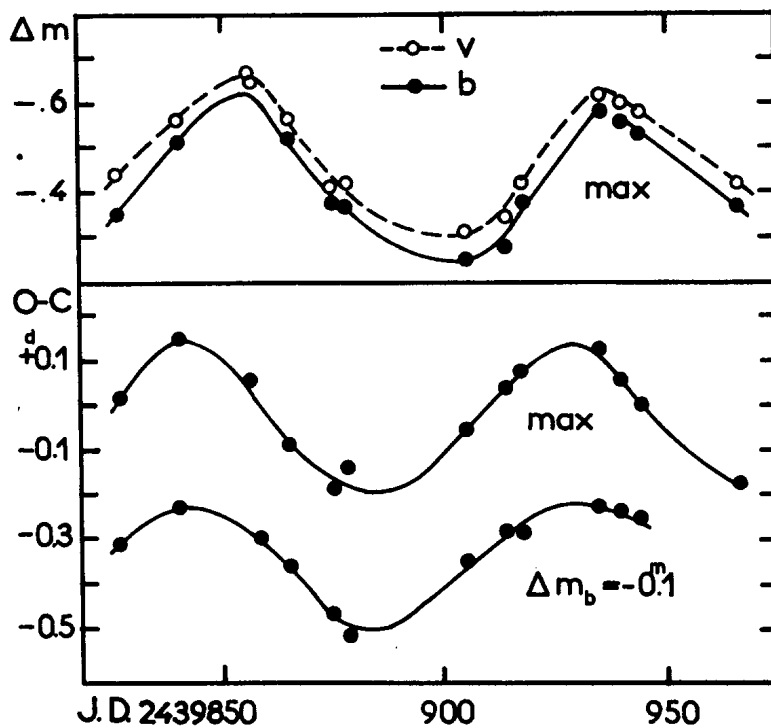
The first column of the Table contains the times of the observed maxima, the second column the O-C values computed by the following elements:

$$\text{Max.hel.} = \text{J.D.}2439944.3670 + 0.^{\text{d}}5634494.E$$

In the third and fourth columns the heights of the maxima relative to the comparison star are listed in yellow (ΔM_y) and blue (ΔM_b) in the instrumental system.

J.D.max.hel.	O-C	ΔM_y	ΔM_b
2439826.6074	+0.0013	-0.44	-0.35
840.707:	+0.0147	-0.56	-0.51
856.4738	+0.0049	-0.67	-0.66
865.4749	-0.0092	-0.55	-0.52
875.6060	-0.0202	-0.41	-0.38
878.4300	-0.0134	-0.42	-0.37
905.4841	-0.0049	-0.31	-0.25
914.5085	+0.0043	-0.35	-0.28
917.3289	+0.0075	-0.42	-0.38
935.3642	+0.0124	-0.62:	-0.58
940.4285	+0.0056	-0.60	-0.57
944.3670	0.0000	-0.58	-0.53
966.324:	-0.0175	-0.42	-0.37

In the upper part of the Figure the brightness variations of the light maxima are plotted against Julian Date. In the lower part the phase oscillations of the light maxima and the point at $\Delta m_b = -0^m.1$ on the rising branch (in blue) are shown. The maximum retardation in phase is reached when the amplitude nearly has its mean value and is increasing.



The oscillations both in the height of maxima and in their phase suggest a secondary period of about 89 days:

$$\text{Min. ampl.} = \text{J.D. } 2439903 + 89^{\text{d}} \cdot n$$

This formula is in good agreement with the observations obtained by FITCH, etc, as well.

Next year further observations will be carried out in order to determine a more exact value for the secondary period.

Konkoly Observatory, Budapest

B.SZEIDL