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NEW LIGHT ELEMENTS FOR V CRATERIS

The eclipsing binary V Crt (BD-15° 3260) has been observed by us on four nights in March-April 1972 through B and V filters with a photoelectric photometer attached to the 1.2 meter reflecting telescope of the Rangapur Observatory. From observations made on the night of March 20, 1972, we have determined the time of primary minimum using the method of Kwee and van Woerden (1956). The heliocentric time of primary minimum was found to be JD hel 2441397.3323.

In the third edition of the General Catalogue of Variable Stars light elements for this system are given as

$$\text{JD hel.min. I} = 2427460.525 + 0^{\text{d}}.702034 \text{ E.}$$

These elements seem to have been adopted from the work of Tse-sevich (1954). However, on going through this paper we noticed that in the normal light curve obtained by using the elements given above the primary eclipse occurred at phase $0^{\text{P}}.98$, so that the time of primary minimum should be corrected to JD hel. 2427460.511.

The differences between the observed and computed times of minima using the above elements are given in Table I as $(O-C)_1$. The systematic nature of the residuals indicates an error in the period given above. Therefore, we propose the following new light elements for V Crt:

$$\text{JD hel.min. I} = 2441397.3323 + 0^{\text{d}}.7020361 \text{ E.}$$

The residuals obtained with the new light elements are given in Table I as $(O-C)_2$.

Table I

JD hel. min. I	$(O-C)_1$	$(O-C)_2$	Reference
2427460.511	-0.014	+0.000	Tsesevich (1954)
2427478.763	-0.015	-0.001	Gaposhkin (1953)
2432299.653	+0.008	+0.007	Solovyev (1958)
2441397.3323	+0.028	+0.000	

Our observations indicate that the primary eclipse is partial. The depth of the primary minimum was found to be $O^m.63$ and $O^m.60$ in B and V, respectively, and not $1^m.0$ as given in the General Catalogue of Variable Stars. Duration of the primary minimum is nearly $O^d.20$, and the variation of light outside the eclipses is approximately $O^m.1$.

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