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

Number 2343

Konkoly Observatory
Budapest
31 May 1983

HU ISSN 0374-0676

THE LIGHT ELEMENTS OF EX Del, V502 Her, AND RT LMi

EX Del, V502 Her, and RT LMi are eclipsing binaries of W UMa type. They were included in a recent series of photoelectric observations of contact binaries with the 1.06m telescope of Hoher List Observatory. During the observations it turned out that their light elements deserve an urgent rediscussion.

1. EX Delphini

This object was discovered by Hoffmeister (1949). A first discussion was given by Huth (Götz et al., 1957), but the W UMa type of variability was found by Karamysh and Mandel (1965), who gave a period of $0^d.3968$.

In 1982 larger parts of the light curve were observed in two nights. Because these observations could not be described by the hitherto known light elements, the Sonneberg plate collection was examined. A total of 33 minima between JD 2427338.343 and 2445209.392 could be used to determine the new light elements:

Min. = JD 24338.343 + $0^d.3309882 \cdot E$

53 993 epochs are covered by the well distributed minima. There is no indication for a period change.

2. V502 Herculis

Again it was Hoffmeister (1949) who discovered the variability of this eclipsing binary. Gessner (1966) determined its period to $0^d.3117$.

Photoelectric photometry during six nights in 1982 and new minimum times from the Sonneberg plates helped to determine the corrected light elements:

Min. = JD 2430938.493 + $0^d.3692768 \cdot E$

73 minima between JD 2430938.493 and 2445140.50 covering 38 459 epochs were available. No period change was found during this time interval.

3. RT Leonis Minoris

This variable was found by Hoffmeister (1949) too. Meinunger (1961) gave a preliminary period of $0^d.374$, but, although it is a moderately bright object (11^m), no further discussion on the light elements could be found in the literature.

Photoelectric photometry in three nights in 1982 and a thorough examination of the Sonneberg plate archive revealed 72 minima which span 24 362 epochs between JD 2435868.483 and 2445002.4147. The refined light elements are now:

Min. = JD 2435868.477 + $0^d.3749180 \cdot E$

The period remained constant during this interval within the limits of accuracy.

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