COMMISSIONS 27 AND 42 OF THE IAU
INFORMATION BULLETIN ON VARIABLE STARS
Number 4391

Konkoly Observatory
Budapest
4 November 1996
HU ISSN 0374 – 0676

NEW TYPE AND ELEMENTS FOR V939 CYGNI

[BAV Mitteilungen Nr. 92]

V939 Cyg = S 7821 Cyg was discovered by Hoffmeister (1963) on photographic plates of the Sonneberg Observatory. The first investigation of this variable was performed by Gessner (1966) on photographic plates taken with the Heidelberg Bruce-Astrograph in the years 1958 and 1959 and with Sonneberg astrographs after 1960. She classified the variable as a W UMa-type in the range between $12\overset{m}{.}1$ and $12\overset{m}{.}5$ and determined first elements as:

$$\text{Min I} = \text{HJD}\,2437917.62 + 0\overset{d}{.}558 \times \text{E} \qquad (1)$$

With these data V939 Cyg is listed in the fourth edition of the GCVS (Kholopov et al. 1985). Since then the variable has not been observed, until we put V939 Cyg on our observing program. The observations were made with SBIG ST6 CCD-cameras without filters, attached to a 32 cm RC telescope (W.M.) and a 20 cm SC telescope (F.A.). GSC 3942.1581 served as comparison star and several other stars in the same field were used to check its constancy. The individual measurements can be requested via e-mail.

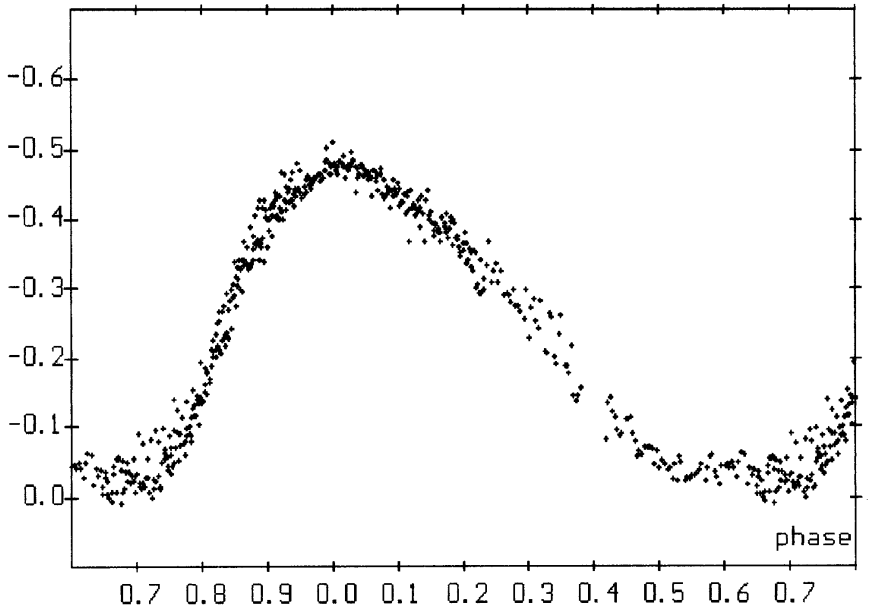

Figure 1. Differential light curve of V939 Cyg drawn with the new ephemeris (2)

Table 1. Heliocentric times of CCD-measured maxima for V939 Cyg, epochs and residuals computed with respect to the ephemeris (2) derived in this paper

JD hel.	Epoch	O−C	Observer
2449788.5612	0	+0.0026	Moschner
49789.7173	3	−0.0039	Moschner
49793.599	13	+0.002	Agerer
49800.572	31	−0.000	Agerer
49933.502	374	+0.005	Agerer
50027.2695	616	−0.0104	Moschner
50152.4536	939	+0.0000	Moschner
50195.4748	1050	+0.0049	Moschner
50300.4915	1321	−0.0003	Agerer

A period analysis program, based on the algorithm of Schwarzenberg–Czerny (1989) resulted in a period much shorter than the GCVS period. As our CCD observations show, the variable is of RR Lyr type (see Figure 1). In our instrumental system the amplitude of variability is $0\overset{m}{.}45$ and $M-m = 0\overset{p}{.}32$.

On the basis of maxima observed in the years 1995 and 1996 (listed in Table 1), using a least squares fit, we calculated the new, preliminary elements:

$$\begin{array}{rcccc} \text{Max} = \text{HJD}\,2449788.5586 & + & 0\overset{d}{.}3875346 & \times & \text{E} \\ & & \pm 3 & & \pm 5 \end{array} \qquad (2)$$

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