

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

Number 1282

Konkoly Observatory
Budapest
1977 May 25

V1068 CYGNI, A LONG-PERIOD ECLIPSING BINARY

In the GCVS there conflicting periods had been reported for V 1068 Cygni, $0^d.517588$, $1^d.999985$ and $0^d.6654481$. In order to resolve this quandary I examined the star on Harvard and Nantucket plates, but was unable to confirm any one of these periods. Among 237 plates the star was found at minimum on 38. These yielded

$$\text{Minimum} = 2437876.1 + 42^d.68 \cdot E.$$

This new period, however, satisfies only about half of the minima published by Weber in IBVS 39, 1963. I therefore solicited the kind assistance of Professor B.V. Kukarkin, who asked Mr. S. Shugarov to examine the star on the Moscow plates. His 420 observations, spanning 1898-1976, Kukarkin reports, completely confirm my $42^d.68$ period. Totality lasts about three days, with abrupt ascending and descending branches of the light curve.

Dr. Bruce Stephenson searched the objective prism plates of the Warner and Swasey Observatory. One extremely low dispersion plate (1100A/mm) taken on July 21, 1966, indicates a spectral class in the neighborhood of G8II and is not composite.

Dr. Stephenson then obtained a better quality spectrum on August 17, 1976, with a dispersion of 580 A/mm. Here the spectrum is composite, B8 to A0 + G to K. The new spectrum was obtained at a phase about 15 days past minimum, whereas the early one corresponds to minimum phase.

The Table gives the dates of observed minima and of the maxima closest in phase before and after minimum. These data indicate that the duration of minimum is at least $2^d.9$ and at most $3^d.5$.

It is a pleasure to acknowledge the gracious response of Drs. Stephenson and Kukarkin to my requests for information; to thank Mr. Shugarov for his work on the Moscow plates, the Harvard College Observatory for my use of the Harvard plate collection, and Dr. Martha Liller for checking the discordant Julian Dates.

V1068 Cygni: Dates and Phases of Minima and Nearest
Phase Maxima

M/m*	J.D.	Phase	M/m	J.D.	Phase
M	2427207.792	+1. ^d 7	m	2431644.686	-0. ^d 1
m	28016.710	-0.3		31645.612	+0.8
	29466.737	-1.4	M	31685.576	-1.9
	29509.640	-1.2	m	31686.721	-0.8
M	29807.817	-1.8		.733	-0.8
m	30279.501	+0.4		31687.721	+0.2
	30663.554	-0.4		.733	+0.2
	31303.707	+0.3		31729.560	-0.6
	.717	+0.3		.572	-0.6
	.742	+0.4		31731.599	+1.4
	.756	+0.4		.608	+1.4
	.770	+0.4		.621	+1.4
	.783	+0.4		32798.697	-1.5
	31344.560	-1.5	or	37874.648, \diamond	-1.5,
	.577	-1.5		5.645 ¹	-0.5 ¹
	31643.610	-1.2		37876.697	+0.5
	.623	-1.2		37877.468**	+1.4
	.651	-1.2		39327.82 $\diamond\diamond$	+0.6
	.668	-1.1		42656.522	+0.2
	.743	-1.1		.535	+0.3
	.760	-1.0		42657.606	+1.4
	31644.628	-0.2		.623	+1.4

* Unless indicated M all the observations are minima.

\diamond Ambiguity in Harvard records as to which of the two dates the plate was taken.

**This is the JD₀ given in the GCVS

$\diamond\diamond$ The date of the spectrum at minimum furnished by C.B. Stephenson.

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