

1973JAVSO...2

A PHOTOELECTRIC LIGHT CURVE OF X CYGNI

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While determining the magnitudes of sequence stars for 203935 X Cygni (Landis & Scovil 1972), a number of observations of X Cygni were taken. I decided it would be of interest to continue the observations in order to obtain a complete light curve. (Figure 1). During the period of August 21, 1972 to December 18, 1972, 37 observations were made.

The photoelectric photometer uses an unrefrigerated 1P21 photomultiplier tube and is attached to a 200mm Newtonian reflector. The filter used is a V bandpass (UBV system) which is very close to that of the visual magnitude. The amplifier, of my own design, is of solid-state construction using standard feedback technique to control gain. The output is read on a 150mm mirrored-scale meter having a scale accuracy of better than 0.5%. The reference star used was 2 Cygni, using a magnitude value of 4.54 (Iriarte et al., 1965). All observations were made through less than 1.15 airmass, so no differential extinction factor was applied. Due to the length of the period of the star, the time of observation has not been given heliocentric correction. The elements used in plotting the curve are: JD 2425739.90 + 16<sup>d</sup>3866E (Kukarkin et al., 1969).

REFERENCES

Cragg, T. A. 1972, JAAVSO 1, 9.  
 Iriarte et al. 1965, Sky & Tel 30, 21.  
 Kukarkin, B. V. et al. 1969, General Catalog of Variable Stars, Moscow.  
 Landis, H. J. and Scovil, C. E. 1972, JAAVSO 1, 52.

TABLE 1. OBSERVATIONS OF X CYGNI (JD 2441000+)

JD	M	PHASE	JD	M	PHASE	JD	M	PHASE
551.62	6.10	.917	596.53	6.87	.658	627.59	6.78	.554
553.61	5.93	.039	598.55	6.63	.782	630.50	6.74	.731
558.60	6.40	.343	599.56	6.65	.843	631.57	6.60	.797
560.60	6.62	.466	600.52	6.28	.902	634.53	5.85	.977
568.54	5.89	.950	603.53	6.02	.085	637.50	6.12	.159
572.54	6.16	.194	608.54	6.36	.391	639.50	6.31	.281
574.54	6.35	.316	612.57	6.86	.637	646.47	6.84	.706
580.55	6.79	.683	615.57	6.60	.820	648.54	6.63	.832
582.56	6.57	.806	616.60	6.47	.883	649.48	6.43	.890
585.60	5.84	.991	620.56	6.07	.125	653.47	6.10	.133
591.63	6.47	.359	622.57	6.24	.247	655.49	6.25	.256
593.57	6.66	.478	625.56	6.56	.430	669.49	6.04	.111
						670.48	6.12	.171

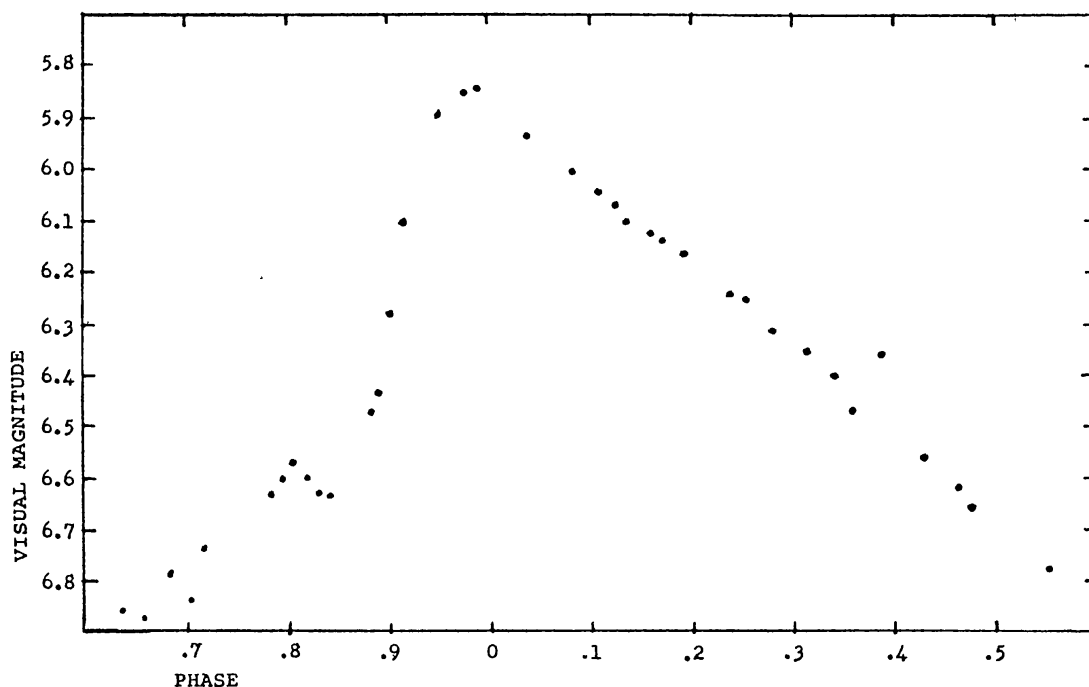


Figure 1. Photoelectric Light Curve of X Cygni.

#### A NOTE ON OBSERVER CONSTANTS

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#### ABSTRACT:

Light curves for three visual observers were compared with the Landis photoelectric light curve of X Cygni (see Landis, H. J., this issue). It was shown that the results of one visual observer agreed closely with the photoelectric curve. The curves obtained by the other two observers agreed closely with each other, but were about 0.3 mag. below the photoelectric results. This indicated that "Observer Constants" could be applied to the two visual curves to bring them into approximate agreement with the photoelectric curve.