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PHOTOELECTRIC PHOTOMETRY OF WY CANCRI

WY Cancri was discovered to be variable by Hoffmeister in 1948 and recognized as an Algol-type eclipsing binary by Kippenhahn in 1953. Chambliss (Astron.J. vol.70, p. 741, 1965) published the first photoelectric investigation of this system. When his observations, which were made in 1964-65, were combined with earlier ones the following ephemeris was obtained:

$$\text{Hel. Min I} = \text{JD } 2426352.3895 + 0^d 82937122 \cdot E$$

$$\pm \quad 22 \quad \pm \quad 16 \text{ p.e.}$$

Subsequently Ahnert (MVS Sonneberg vol. 6, p. 107, 1973) obtained a similar ephemeris and noted that the period of WY Cancri has remained constant for the past 40 years.

In January, 1975 the author obtained one additional time of minimum light using a 16-inch telescope at Kitt Peak National Observatory. When this time is combined with those previously published, the following ephemeris is obtained:

$$\text{Hel. Min I} = \text{JD } 2426352.3888 + 0^d 82937126 \cdot E$$

$$\pm \quad 17 \quad \pm \quad 11 \text{ p.e.}$$

This ephemeris is essentially identical with the one previously given as the differences between them are much smaller than their respective probable errors.

Observed times of minimum light of WY Cancri are listed in the following table. Observations made on the same night have been averaged.

Hel. JD	E	Method	Wt.	O-C
2426352.392	0	pg	1	+0 ^d 0032
396.352	53	pg	1	+0.0066
608.644	309	pg	1	-0.0205
7898.341	1864	pg	1	+0.0042
8607.463	2719	pg	1	+0.0138
8622.377	2737	pg	1	-0.0009
2436612.534	12371	pg	1	-0.0066
7346.533	13256	v	3	-0.0012
352.341	13263	v	3	+0.0012
356.485	13268	v	3	-0.0017
366.439	13280	v	3	-0.0001
376.393	13292	v	3	+0.0014
667.504	13643	v	1	+0.0031

Hel. JD	E	Method	Wt.	O-C
2437707.310	13691	v	1	-0 ^d .0007
731.362	13720	v	1	-0.0005
8091.309	14154	v	1	-0.0006
739.8779	14936	pe	10	0.0000
788.8111	14995	pe	10	+0.0003
794.6169	15002	pe	10	+0.0005
847.6959	15066	pe	10	-0.0003
854.325	15074	v	1	-0.0062
9223.401	15519	v	1	-0.0004
238.314	15537	v	1	-0.0160
490.461	15841	v	1	+0.0021
932.518	16374	v	1	+0.0042
2440988.308	17647	v	1	+0.0046
1041.384	17711	v	1	+0.0008
1055.484	17728	v	1	+0.0015
1765.4225	18584	pg	3	-0.0018
2433,8985	19390	pe	10	+0.0010

The star BD + 27^o1701 was used as a comparison, while BD + 28^o1672 was used as a check star. The magnitudes and colors obtained for these stars are as follows:

	v	B-V	U-B
WY Cancri (max.)	9.51	+0.72	+0.17
WY Cancri (pri.)	10.14	+0.79	+0.23
BD + 27 ^o 1701	10.00	+0.64	+0.15
BD + 28 ^o 1672	9.61	+0.98	+0.88

The depths of the primary minimum are O^m63, O^m70 and O^m76 in yellow, blue, and ultraviolet, respectively.

A faint star is observed about 20"N of WY Cancri. The approximate magnitudes and colors of this star are V = 12.8, B-V = + 0.6, and U-B = +0.1. The colors and magnitudes given for WY Cancri exclude any contribution from this star, but all of the observations made by this investigator in 1964-65 include it as a 72" diaphragm was used at that time.

Additional U,B,V photoelectric observations of WY Cancri are planned.

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