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PHOTOELECTRIC TIMES OF MINIMA OF ECLIPSING BINARIES

The following times of minimum light have been determined from V-filter observation made during the 1981 observing season with the 40-cm f/18 Cassegrain reflector operated by the Department of Physics and Astronomy at the University of Montana. The observing procedure has been described previously (Margrave et al. 1978).

As has been done previously, a least-squares parabolic fit to the observations was used to find each time in Table I, in which are listed the Heliocentric Julian Date (minus 2,440,000) for each minimum, its epoch number E, the O-C value, and N, the number of observations (each being the average of three 10-second integrations) used in the determination.

As a check, the chord-bisection method was also used on the above eclipses, and the average difference between the results from the parabolic fit and the chord bisection methods was $0^{d}.0004$, which gives $\pm 0^{d}.0002$ as a reasonable estimate of the uncertainty in the final results. The ephemerides used to calculate the above O-C values are given in Table II.

The residuals for RZ Cas continue to become more negative, extending a trend exhibited during the previous observing season (Margrave, 1981). The trend suggests that a period decrease of about 0.1 seconds occurred between October 1979 and August 1980.

Table I. Heliocentric Times of Primary Minimum

Star	Hel.JD-2.440,000	E	O-C	N
KO Aql	4785.8991	1012	+0^{d}.0030	48
44 i Boo	4813.7845	20325	+0.0021	29
RZ Cas	4813.8884	12498	-0.0026	32
	4855.7220	12533	-0.0026	27
TV Cas	4859.8426	1801	+0.0019	40
	4879.7816	1812	+0.0024	55
TW Cas	4827.8954	1974	-0.0035	45
DO Cas	4859.8888	15969	-0.0014	37
XX Cep	4839.8022	1412	+0.0078	40
	4860.8373	1421	+0.0071	23
SW Lac	4854.8834	22706	-0.1414	40
	4856.8064	22712	-0.1427	27
	4860.8188*	22724	-0.1394	25
	4914.8574	22893	-0.1435	27
AT Peg	4826.7553	3856	+0.0055	47

*Secondary minimum

Table II. Ephemerides for Program Stars

Star	Epoch (24...)	Period	Source
KO Aql	41,887.4724	2^{d}.864055	IBVS 1869
44 i Boo	39,370.4222	0.2678160	SAC 53
RZ Cas	29,875.6902	1.1952473	Herczeg and Friboes-Conde
TV Cas	41,595.3582	1.8125944	IBVS 1869
TW Cas	42,008.3873	1.4283240	IBVS 1869
DO Cas	33,926,4573	0.6846661	SAC 53
XX Cep	41,539.4971	2.337321	SAC 53
SW Lac	37,572.5723	0.32072811	Bookmyer (1965)
AT Peg	40,407.4370	1.14610886 $-5.5772\times10^{-9}E$	IBVS 1930

The recent residuals for TV Cas exhibit a continuing positive trend, a result which has also been noted by deLandtsheer (1981), who has suggested that the period of TV Cas may have increased slightly relative to that given by Margrave (1980).

In the case of SW Lac the residuals have continued to grow more negative but at a diminishing rate. This result would seem to support the suggestion by Faulkner and Bookmyer (1978) that the period of this system has increased. It is also possible that a continuous period decrease lasting ten years or so has been replaced by a phase of continuous period increase, but further observations are required to substantiate this hypothesis.

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