A RECENT PHOTOELECTRIC MINIMUM OF RZ CASSIOPEIAE

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RZ Cassiopeiae (HD 17138 (A2); $\alpha = 2^h39^m53^s$, $\delta = +69°13'$ (1900) is an Algol type eclipsing binary star with a period of $1^d.195$. Changes in its period in the past two decades have made it an interesting object to observe for further possible changes.

Observations

Observations of a primary minimum of RZ Cassiopeiae were made on the night of September 19, 1972 with a V bandpass (UBV System) filter with a one channel photoelectric photometer attached to a 16 inch reflecting telescope. An unrefrigerated RCA 1P21 photomultiplier tube was employed as the light detector. The photomultiplier output was amplified with a FET amplifier (Stokes, 1972) and the amplified output displayed on a digital voltmeter.

GC 3075 (F2); $\alpha = 2^h31^m25^s$, $\delta = +68°09'$ (1900) was used as the comparison star. A total of 66 observations was made on the variable star and 19 observations on the comparison star. The differences in magnitude in the sense 6.8 - RZ Cassiopeiae are listed in Table I according to the heliocentric Julian date. The comparison star is located close to the variable star; consequently no differential extinction corrections were made.

Analysis

The observational points were plotted and the time of minimum was determined by the tracing paper method. The observed heliocentric time of minimum was JD 2,441,580.7475. The computed time of minimum was determined from the Paranego (1952) elements;

$$\text{Min} = \text{JD}_{\odot}\ 2,417,355.4233 + 1.1952519\ E$$

and also from the Robinson (1966) elements:

$$\text{Min} = \text{JD}_{\odot}\ 2,437,143.9886 + 1.1952472\ E$$

The O-C derived for the Paranego elements was $- 0^d.0413$ and for the Robinson elements was $+ 0^d.0013$.

REFERENCES

1. Stokes, A. J. (1972), JAAVSO 1, 17.
2. Stokes, A. J. (1972), JAAVSO 1, 60.
3. Paranego, P. P. (1952), Variable Stars, 9, 125.
4. Robinson, L. J. (1966), Variable Stars, 16, 39.

TABLE I

Observations of RZ Cas

JD. 2,441,580.+	m	JD. 2,441,580.+	m	JD. 2,441,580.+	m
.5771	.423	.6910	−.021	.7340	−.929
.5837	.406	.6920	−.030	.7347	−.929
.5892	.390	.6958	−.056	.7354	−.929
.5937	.418	.6972	−.090	.7375	−.995
.5996	.427	.6979	−.137	.7389	−.995
.6062	.411	.7000	−.161	.7396	−.995
.6111	.390	.7021	−.213	.7444	−1.134
.6167	.375	.7028	−.231	.7458	−1.134
.6201	.388	.7042	−.246	.7479	−1.109
.6326	.400	.7056	−.312	.7503	−1.077
.6368	.411	.7083	−.334	.7566	−1.025
.6389	.376	.7125	−.440	.7583	−1.000
.6479	.367	.7135	−.458	.7618	−.926
.6590	.352	.7153	−.519	.7632	−.879
.6639	.358	.7187	−.582	.7653	−.838
.6681	.310	.7197	−.582	.7674	−.815
.6715	.260	.7208	−.653	.7688	−.774
.6736	.234	.7222	−.702	.7743	−.637
.6750	.229	.7236	−.723	.7757	−.569
.6788	.200	.7250	−.742	.7771	−.537
.6801	.147	.7292	−.860	.7798	−.484
.6875	.000	.7301	−.901	.7826	−.423

MINIMUM AT JD$_\odot$ 2,441,580.7475