

COMMISSION 27 OF THE I. A. U.
 INFORMATION BULLETIN ON VARIABLE STARS
 Number 1110

Konkoly Observatory
 Budapest
 1976 March 3

V1, THE ONLY KNOWN CEPHEID VARIABLE IN THE GLOBULAR CLUSTER NGC 6752;
 OBSERVATIONS AND PERIOD

The period (1937) of this remarkable star was found independently by Lee (1) and by Wesselink (2) at about the same time. Lee's work was done at Siding Spring, Australia; Wesselink made use of plates taken at the Radcliffe Observatory, South Africa and of plates obtained at the Yale-Columbia Observatory in South America.

Since then 23 more South American plates of the star became available. This new material is in accord with the earlier results.

Table I gives the details of the B photometry done on South African material. Table II, similarly, gives the South American B results presently available.

TABLE I
 South African Plates
 (74-inch Radcliffe Reflector)

2430000 +	Ph	B	2430000 +	Ph	B
3539.30	.14	13.05	7433.58	.86	13.70
3895.34	.49	13.68	7433.59	.86	13.59
5364.24	.33	13.34	7845.53	.77	13.67
5366.27	.80	13.90	7847.45	.16	12.90
5366.29	.82	13.90	8172.60	.10	13.00
6456.22	.68	13.92	8172.62	.11	13.05
6697.64	.85	13.44	8172.63	.12	13.00
7198.23	.09	13.11	8172.64	.12	13.05
7198.26	.11	13.11	8230.47	.09	13.11

TABLE II
South American Plates
(20-inch Y - C Astrograph)

2440000 +	Ph	B	2440000 +	Ph	B
828.55	.27	13.11	1926.67	.08	13.07
829.55	.00	13.00	1926.69	.09	13.11
830.54	.72	13.72	1926.72	.11	13.00
832.56	.18	12.98	1926.75	.13	13.00
834.56	.63	13.74	1927.49	.67	13.81
835.55	.35	13.40	1927.52	.69	13.89
836.58	.10	12.92	1927.55	.71	13.89
854.55	.14	12.90	1927.58	.74	13.89
857.55	.31	13.22	1927.61	.76	13.89
858.55	.04	13.05	1927.64	.78	13.89
1897.67	.03	13.16	1927.67	.80	13.81
1926.50	.95	13.16	1927.70	.82	13.81
1926.52	.97	13.25	1927.73	.84	13.45
1926.55	.99	13.16	1927.76	.87	13.45
1926.58	.01	13.16	1948.50	.92	13.45
1926.61	.03	13.11	1949.52	.66	13.81
1926.64	.05	13.16			

The B magnitudes are on Lee's photometric system, allowing a direct comparison with the Lee photometry. Instead of the more accurate heliocentric values, geocentric Julian Dates have been given as being good enough.

The Australian, South African and South American data were used for a new discussion of the period.

It was found that the constant period $1^d.378156 \pm 0.000006$ (s.e.) gives a satisfactory representation of all the available observations over an interval of 23 years.

The corresponding reciprocal period is 0.725607 ± 0.000003 (s.e.)

The phases as given in Table I and Table II were calculated from

the formula

$$\text{Phase} = 0.725607 \times (\text{JD} - 2430000)$$

Corresponding to this formula, the phase of maximum light is 0.16.

The new ephemeris is

$$\text{JD of maximum} = 2441000.67 + 1.378156 \times E$$

Future observations are needed to check the constancy of the period to higher accuracy.

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References:

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