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A LOW-AMPLITUDE RED VARIABLE STAR NEAR THE GLOBULAR CLUSTER
NGC 6352

Photoelectric observations spanning 10 years of UBV secondary standard stars (Hartwick and Hesser 1972) near the southern globular cluster NGC 6352 ($\alpha_{1950}=17^{\text{h}}21^{\text{m}}.6$, $\delta_{1950}=-48^{\circ}26'$; $l=342^{\circ}$, $b=-7^{\circ}$) have recently been summarized preparatory to undertaking calibration of a new color-magnitude diagram for the cluster. The observations were made on the telescopes of the Cerro Tololo Inter-American Observatory with both single- and dual-channel photometers, RCA 1P21 or ITT FW-130 (S20) photomultipliers, appropriate filters, and charge integration or pulse counting techniques. E-region standards (Cousins and Stoy 1962, Cousins, Lake and Stoy 1966, selected as described by Hartwick, Hesser and McClure 1972) were observed each night; in 1979 use was also made of Landolt's (1973) standards having numerous observations.

With the exception of star E (and noting that the V value for star A in Hartwick and Hesser (1972) should read 7.01 mag), the mean difference between the latest values (where the quantity of data has been approximately quadrupled) and the original ones given by them is 0.004 ± 0.003 (s.d.), 0.000 ± 0.002 , and -0.002 ± 0.002 mag for V, B-V, and U-B, respectively.

Star E, however, is found to be a low amplitude ($\Delta V \sim 0.3$ mag) variable. Its mean V, B-V, and U-B values are 9.43, 1.83, and 1.96 mag, respectively. The standard deviations of the individual values entering into the respective means are 0.10, 0.02, and 0.06 mag; thus B-V is constant within the precision of these data. Individual photoelectric magnitudes and colors for N6352-E are given in the Table, where multiple measures on the same night have been averaged. Clearly, the highly irregular spacing

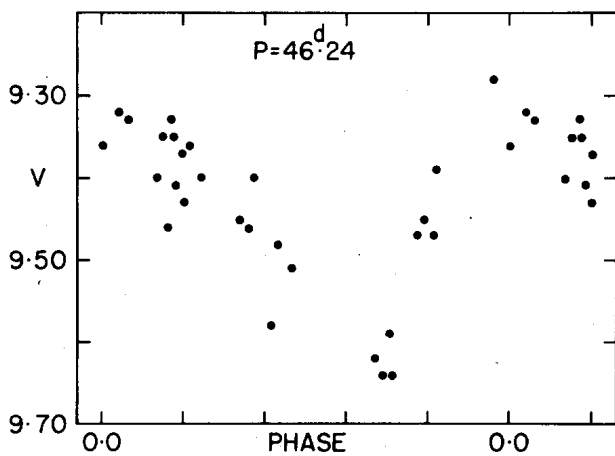


Figure 1

Table I

NGC 6352 - Star E Photoelectric UBV Measurements

Date (dd-dd/mm/yy)	V (mag)	B-V (mag)	U-B (mag)	Notes	Date	V	B-V	Notes
22-23/05/69	9.36	1.81	2.05	1	28-29/03/73	9.58	1.84	3
24-25/05/69	9.32	1.81	2.04	1	27-28/05/73	9.49	1.81	3
25-26/05/69	9.33	1.81	1.88	1	01-02/06/73	9.47	1.83	3
30-31/05/69	9.33	1.78	1.99	1	26-27/08/73	9.62	1.82	3
17-18/04/70	9.40	1.83	1.94	1	27-28/08/73	9.64	1.80	3
18-19/04/70	9.46	1.79	1.94	1	28-29/08/73	9.64	1.78	3
19-20/04/70	9.41	1.83	1.92	1	20-21/08/74	9.48	1.86	3
20-21/04/70	9.43	1.83	2.00	1	11-12/06/75	9.39	1.86	3
21-22/04/70	9.40	1.83	1.96	1	05-06/07/75	9.45	1.84	3
03-04/06/70	9.35	1.84	2.02	1,2	06-07/07/75	9.46	1.86	3
04-05/06/70	9.35	1.85	1.98	1,2	27-28/03/79	9.47	1.80	3
05-06/06/70	9.37	1.82	2.01	1	28-29/03/79	9.45	1.83	3
14-15/06/70	9.40	1.83	1.98	1	18-19/07/79	9.36	1.82	3
11-12/05/72	9.51	1.82	1.90	1				
19-20/07/72	9.28	1.87	1.83	1				

Notes:

1. 1P21 photomultiplier.
2. Average of observations made at 0.4 and 1.5m telescopes.
3. ITT FW 130 photomultiplier.

of the data complicates the derivation of a unique period, if, indeed, one exists. Nevertheless, the data were searched with the DAO period finding program (Morbey 1976) over the range 5 to 60 days. A reasonable, but by no means unique or entirely satisfactory fit to the V-band data, is provided by $P=46.24^d$ (see Fig. 1). The possibility that star E is an irregular variable obviously cannot be discounted. Adopting $E(B-V)=0.23$ mag (Hesser 1976), the DDO and UBV colors of the star are consistent with it being a K5 Ib star.

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References:

- Cousins, A.W.J., and Stoy, R.H. 1962, Roy.Obs.Bull., No. 49
Cousins, A.W.J., Lake, R., and Stoy, R.H. 1966, Roy.Obs.Bull.,
No. 121
Hartwick, F.D.A., and Hesser, J.E. 1972, Ap.J., 175, 77
Hartwick, F.D.A., Hesser, J.E., and McClure, R.D. 1972
Ap.J., 174, 557
Hesser, J.E. 1976, Pub.A.S.P., 88, 849
Landolt, A.U. 1973, A.J., 78, 959
Morbey, C.L. 1976, Pub.Dom.Ast.Obs., 15, 105

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