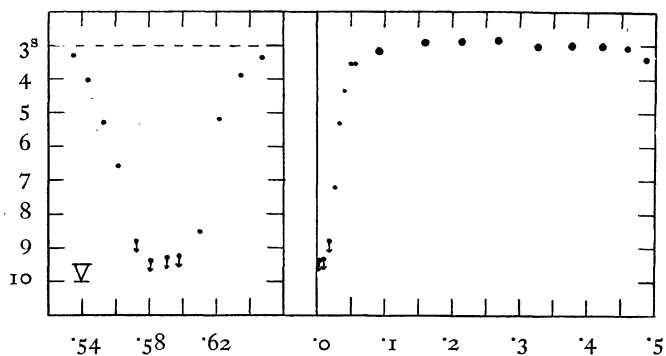
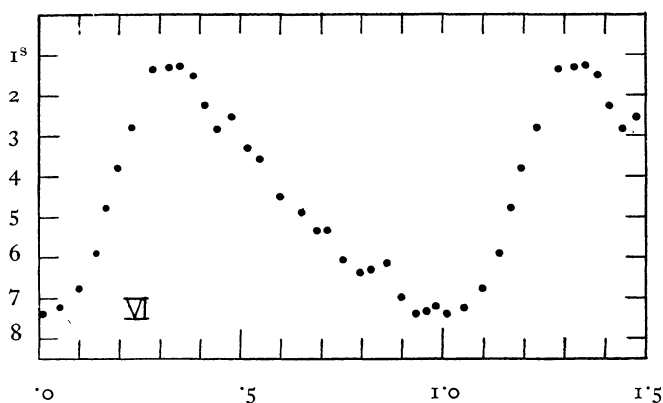


FIGURE V.



VI: The star is a variable of the δ Cephei type. It is only 2'.1 distant from the bright irregular variable T Car. From 26 maxima a period of $5^d.33588 \pm d.00014$ (m.e.) was derived. The resulting mean light curve is given in Table VIb and Figure VI. It is very similar to the light curve of variable IV with nearly the same period, although the ascending

FIGURE VI.



branch is less steep. A more accurate period was derived from the observations on the ascending branch between phases .15 and .21 in the same manner as for variable IV. The observations were reduced to a brightness of $4^s.5$. A least squares solution yields the following elements:

$$J. D. 2424627^d.136 + 5^d.33625 E \\ \pm 14 \quad \pm 8 \quad (m.e.)$$

The details of this solution are given in Table VIa.

TABLE VIa.

J.D.— 2420000	weight	E	O—C
^d			^d
3789.39	2	0	+ .05
3821.36	1	6	.00
3880.11	2	17	+ .05
3885.35	4	18	— .05
3928.02	3	26	— .07
3944.14	5	29	+ .04
3960.24	2	32	+ .14
3976.29	1	35	+ .18
4141.57	1	66	+ .03
4200.21	5	77	— .03
4205.52	6	78	— .05
4264.28	3	89	+ .01
4296.31	4	95	+ .02
4594.80	1	151	— .32
4627.30	1	157	+ .16
4915.30	2	211	+ .01
5379.56	1	298	+ .01
5406.17	2	303	— .06
5571.69	1	334	+ .04
5614.23	1	342	— .11
5651.68	2	349	— .02
5774.44	4	372	+ .01
5950.58	4	405	+ .05
6030.50	2	420	— .07
6884.29	1	580	— .08
8191.81	2	825	+ .06

TABLE VIb.

mean phase	mean bright- ness	n
P	S	
.0097	7.39	30
.0510	7.26	30
.0984	6.78	30
.1394	5.92	30
.1667	4.81	30
.1937	3.82	30
.2314	2.81	30
.2841	1.37	30
.3243	1.33	30
.3507	1.28	30
.3846	1.52	30
.4116	2.26	30
.4402	2.86	30
.4773	2.55	30
.5181	3.33	30
.5474	3.58	30
.5987	4.52	30
.6406	4.92	30
.6880	5.34	30
.7149	5.35	30
.7514	6.08	30
.7951	6.39	30
.8238	6.32	30
.8608	6.17	30
.8972	7.00	30
.9314	7.40	30
.9589	7.36	30
.9823	7.22	29

Note on the period of variables 15 and 40 in M 53,

by

P. Th. Oosterhoff.

In *The Observatory*, Vol. 62, No. 779 the writer has given a discussion of the variable stars in five globular clusters, which was based on the frequency distribution of the periods. From the diagram given there it is seen that with the exception of var. 65 in ω Cen the two shortest periods are found in the cluster M 53. They were determined by E. GROSSE from

observations made at Bergedorf¹⁾. As the periods of the other c-type variables in this cluster are considerably larger I have redetermined the periods of these two variables, 15 and 40, from the data given by GROSSE. Both periods were found to be erroneous. From a plot of several long series of observations during one night it was seen that the periods can

¹⁾ *A.N.*, 246, 1932.

not be as short as $d^{-2.3}$ and that the reciprocal periods must be diminished by one. The periods were then computed by least squares from the maxima and minima of the years 1921 and 1922. The determination of the number of periods elapsed between these two oppositions caused some difficulty, but the counting adopted is believed to be correct. The resulting periods and reciprocal periods are:

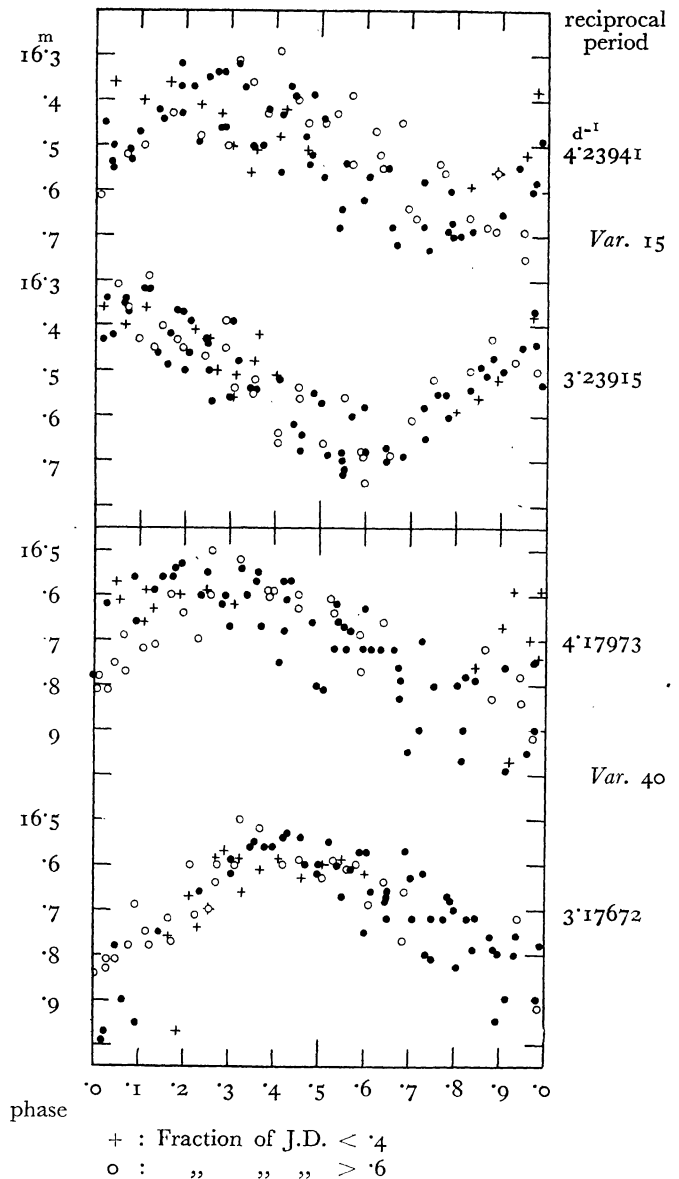
Var. 15 :	d	d^{-1}
	·308724	3·23915
	± 9 (m.e.)	
Var. 40 :	·314790	3·17672
	± 9 „	

Phases have been computed for the observations of the year 1931 with the periods given above and also with those by GROSSE according to the formula: phase = P^{-1} (J.D.—2420000).

The square of the mean error of a single observation derived from the differences in magnitude between observations following each other in phase was found to be:

Var. 15 :	m^2	m^2
	·0055 (GROSSE)	·0026 (OOSTERHOFF)
Var. 40 :	·0063 „	·0040 „

A plot of these observations is shown in the accompanying figure. The short period evidently causes a systematic shift between the observations taken early and late at night for both variables. With the correct period this shift has practically disappeared. The observations of variable 40 are probably less accurate, especially near minimum, because the star is situated near the dense central part of the cluster.



ERRATA

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|--|---|---|
| <i>B. A. N.</i> 256. Page 178, upper right corner, for: | <i>B. A. N.</i> 265, read: <i>B. A. N.</i> 256. | Index Vol. VIII. Page VIII, second column, line 8 from top, for: AYPup, read: AUPup. |
| <i>B. A. N.</i> 311. Page 284, first column, line 13 from bottom, for: July, read: June. | | Index Vol. VIII. Page VIII, second column, line 10 from top, for: AG Vel, read: AY Vel. |