

COMMISSIONS 27 AND 42 OF THE IAU
 INFORMATION BULLETIN ON VARIABLE STARS
 Number 4287

Konkoly Observatory
 Budapest
 12 January 1996
HU ISSN 0374 - 0676

NSV 10183 IS A NEW CEPHEID VARIABLE STAR

NSV 10183 (S 9291; GSC 1008.1699, $\alpha = 18^{\text{h}}05^{\text{m}}28^{\text{s}}.95$, $\delta = +7^{\circ}54'21''.1$, Epoch 2000) was discovered by Hoffmeister (1966) and classified by him as a possible eclipsing variable with a short period and an amplitude of about 0.5 mag in the photographic band.

The star was estimated by one of us (SVA) on 241 plates taken from JD 2442812 to 8832 with the 40 cm astrograph in Crimea. Each plate was estimated twice. The finding chart is presented in Figure 1, and magnitudes of the comparison stars are given in Table 1.

Our data show that NSV 10183 is a Cepheid variable with light elements:

$$\begin{aligned} \text{Max JD hel} &= 2444942.37 + 13.6299 \times E. \\ &\pm .52 \quad \pm .0051 \end{aligned}$$

The variability range is 12.4–13.2 pg. The study of the $O - C$ residuals (Table 2 and Figure 2), obtained with our version of Hertzsprung's method (Berdnikov, 1992), clearly shows variations in the period. The final light curve (Figure 3) was plotted taking into account seasonal shifts derived from the $O - C$ curve; thus it is corrected for period changes.

As to classification of this variable, the distinct bump on the ascending branch of the light curve shows that it may be a classical Cepheid, but, because of the rather flat curve in maxima, it may be a W Vir type star. It is necessary to obtain a photoelectric light curve for certain classification.

Table 1

<i>Comparison Star</i>	<i>Mag pg</i>
a	11.86
b	12.48
c	12.93
d	13.45

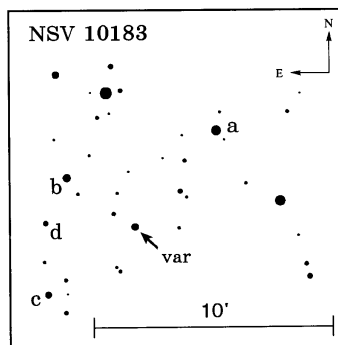


Figure 1

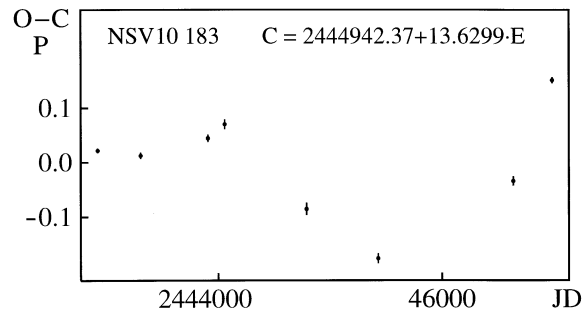


Figure 2

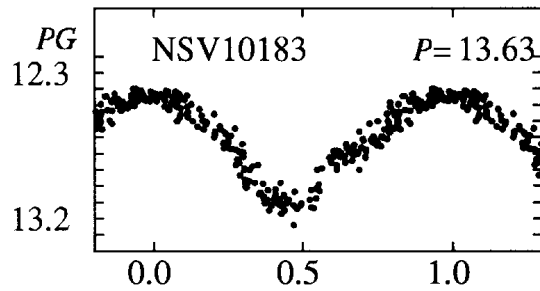


Figure 3

Table 2

Max JD hel 2400000+	Error	E	O-C	Number of observations
42925.44	.05	-148	.31	76
43306.95	.08	-120	.18	60
43907.10	.08	-76	.61	27
44057.37	.12	-65	.96	24
44791.27	.15	-11	-1.17	10
45430.64	.12	36	-2.41	13
46632.00	.11	124	-.48	15
46975.27	.07	149	2.04	16

This work was partially supported by the Russian Foundation for Basic Research through grant No. 95-02-05189 to one of us (SVA).

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