COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 2492

Konkoly Observatory
Budapest
16 March 1984
HU ISSN 0374 - 0676

A CLOSE ECLIPSING BINARY SYSTEM IN CYGNUS

The variability of the star PG7 ($\alpha = 19^h29^m.9$, $\delta = +38^o56'$; 1950.0) was discovered by P. Guida (cf. Harns, 1977).

The finding chart of the variable is given in Figure 1, and the magnitudes of the comparison stars derived photographically from the photoelectric standard sequence in NGC 6819 (Anner, 1974) using two plates, are presented in Table 1.

Table I

star	B
a	$12^m.09$
b	12.71
c	12.94
d	13.34

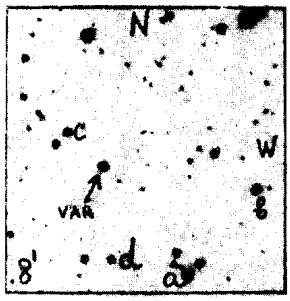

Figure 1

We estimated the object's brightness on 270 photographic plates of the Sternberg Institute plate collection taken during the interval J.D. 2436072—2444436. The reduction of these observations has shown that the star is a W Ursae Majoris type system with the following light elements:

$$J.D.Min._{\odot} = 2439415.247 + 0^d.4050654 \cdot E \quad .$$

The range is 12.5 - 12.9 B, and the minima are of equal depth.

Since the duration of the eclipse is slightly longer than one hour and the typical exposure time was 45^m, the real depth of minima must be greater

than that found in our observations.

Figure 2 shows the mean light curve based on the determined period value. No period change was found during this time interval.

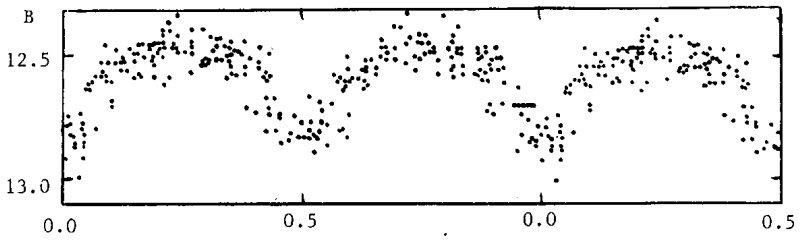

Figure 2

The comparison of the "red" and "blue" Palomar prints shows that the colour of the star does not differ significantly from that of the surrounding stars.

It is desirable to carry out photoelectric and spectroscopic observations of the object in order to determine the physical characteristics of the components of this close binary system.

S.YU. SHUGAROV

Moscow University
Sternberg State Astronomical Institute
13 Universitetskij Prospect
Moscow 119899
U.S.S.R.

References:

Anner, G.: 1974, Astronomy and Astrophysics Suppl.Ser., 13, 43.
Herns, C.L.: 1977, Journal of the A.A.V.S.O., 6, No.2, 6.