

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

Number 4352

Konkoly Observatory  
Budapest  
2 July 1996

*HU ISSN 0374 - 0676*

## HBV 479: A NEW VARIABLE STAR IN HERCULES

An emission-line star near the PN Hu 2-1 (PK 51+9.1) in Hercules, denoted as HBV 479, was found to be a long period variable (Mira Ceti type) during photographic observations of the "Stellar ring No. 373". The Schmidt camera (80/120, f=240 cm) of the Hamburg Observatory in Bergedorf was used. The position of HBV 479 is:  $\alpha = 18^{\text{h}}50^{\text{m}}17^{\text{s}}.05$ ,  $\delta = +20^{\circ}50'39''.4(1950)$ .

Altogether 14 direct Schmidt plates were taken in V (Kodak 103a-D +GG11) between May 1971 and June 1975. Seven comparison stars are shown together with the variable in Figure 1; their V-magnitudes (measured at least on 5 plates) are presented in Table 1; the accuracy of these magnitudes varies between  $\pm 0.04$  mag and  $\pm 0.10$  mag with the exception of the star No. 7. Individual measurements of HBV 479 are given in Table 2 with the accuracy of about  $\pm 0.05$  mag. The plates were measured with the Haffner iris photometer (Haffner, 1953). The star varies between 12.1 and 16.6 mag. Assuming in the first approximation a sine-like light curve we have derived period of 277.5 days and an amplitude  $\Delta V = 4.8$  mag (V between 11.8 and 16.6 mag).

The photoelectric sequence of Isserstedt and Schmidt-Kaler (1970) was exposed on the plates with nearly the same distance from the centre as in the case of the variable.

Table 1. Comparison stars

Comparison star	V [mag]	n
1	11 <sup>m</sup> .92	5
2	12.08	5
3	12.95	14
4	13.62	5
5	14.51	13
6	14.73	5
7	15.9	5

Table 2. Brightness of HBV 479

Plate No. (GS )	JD 2440000+	V [mag]
4759	1073.6	14 <sup>m</sup> .33
4782	1180.4	13.64
4816	1209.4	15.27
4846	1240.3	15.87
4997	1476.5	14.39
5019	1511.5	16.1 :
5091	1562.3	16.55
5133	1592.3	15.81
5321	1831.5	16.3 :
5357	1922.4	14.27
5541	2269.4	12.54
5723	2493.7	12.12
5752	2545.6	12.39
5764	2568.5	13.72

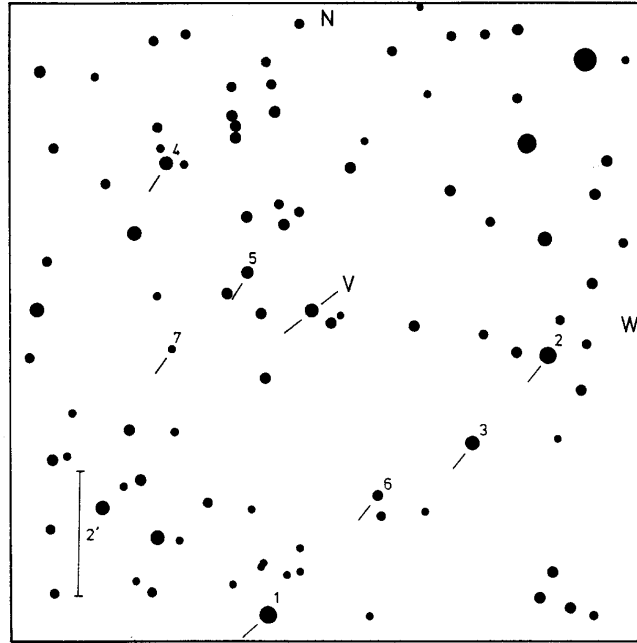


Figure 1. Identification chart of the variable and the comparison stars

The spectral characteristics of the variable star are typical for a long period variable of the spectral type Me: there are 6 Schmidt spectral plates in the region 3600 - 6400 Å which show a medium strong continuum and the emission lines  $H\delta$ ,  $H\gamma$  and probably  $H\beta$ , as well as TiO bands 4761, 4955, 5838 and 6148 Å.

*Acknowledgements:* I am grateful to *U. Haug* for his contribution to the discovery of the variable, especially for having taken some plates which belong to our observations concerning the stellar ring No.373.

L. KOHOUTEK  
Hamburger Sternwarte  
Gojenbergsweg 112  
D-21029 Hamburg  
Germany  
e-mail: lkohoutek@hs.uni-hamburg.de

#### References:

- Haffner, H., 1953, *Veröff. Univ. Sternw. Göttingen*, **106**  
Isserstedt, J., Schmidt-Kaler, T., 1970, *A&A*, **7**, 481