

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

Number 3916

Konkoly Observatory
Budapest
29 July 1993
HU ISSN 0324 - 0676

BD +16°2766 IS NOT AN EW-TYPE STAR

BD +16°2766 = BV 137 ($\alpha_{1950} = 15^{\text{h}}17^{\text{m}}28^{\text{s}}$ $\delta_{1950} = +16^{\circ}33.9'$) is a star designed as NSV 7028 in the New Catalogue of Suspected Variable Stars (Kukarkin et al., 1982).

Its variability was suspected by Strohmeier, Kippenhahn and Geyer (1956). The star appeared in a list of 32 new suspected stars discovered by the authors.

The 84 visual estimates carried out between 1951 and 1956 by a Russian observer (Filatov, 1957), who had observed 26 stars of the above mentioned list, allowed him to conclude to a rapid variation for NSV 7028. The author gives a list of 8 times of minima and suggests an EW-type for the star, without proposing a first ephemeris.

From this paper the NSV Catalogue reports the following elements :

11.3-11.8 P EW: Spectrum : K4

Despite the low amplitude of variation, a few GEOS observers have realized a visual survey tentative conducted by one of us (Walas, 1992) during four seasons (1987-90).

The 562 observations failed to show evidence of any significant variations, discouraging further visual monitoring.

In order to confirm the constancy in brightness of the star, BD +16°2766 was observed photoelectrically during the 1990 and 1991 runs at the Jungfrauoch Observatory (Switzerland) with the 76-cm Cassegrainian telescope fitted with a Geneva photometer (Dumont et al., 1990, Dumont, 1990, 1991).

The B and V filter values of the Geneva system and the B-V ones have been converted into the Johnson and Morgan system using the formula suggested by Meylan and Hauck (1981).

The general theory for the data reduction is described in IBVS 3758 (Walas, Dumont, Remis, 1992) and a more complete one is presented in GEOS Circular RR7 (Dumont, 1983).

All the observations are listed in Table 1.

The complete analysis of the 1990 measurements gives an average of 10.219 ± 0.014 in the V-Band and 1.16 ± 0.02 for the B-V index. If any, the variation is smaller than 0.02 magnitude, but BD +16°2766 is more probably constant since the same value is obtained for the error bars.

Other observations collected in 1991 give a further confirmation of the constancy of the star.

NSV 7028 is not an EW-Type star as was suggested by Filatov and also seems not to be a variable. It could be looked on as a constant star with the following parameters :

$$V = 10.21 \pm 0.02 \quad B-V = 1.15 \pm 0.04$$

No further observations are planned by the GEOS on this object.

Table 1 : BV data on BD +16°2766

JJ Hel.	Air-Mass	V	B-V
48121.3677	1.76	10.205	1.16
.3844	1.97	10.197	1.16
48122.3516	1.63	10.216	1.14
.3666	1.78	10.219	1.15
.3787	1.93	10.216	1.17
48123.3585	1.73	10.221	1.12
.3700	1.85	10.216	1.14
.3898	2.15	10.226	1.16
.4047	2.46	10.223	1.19
.4120	2.64	10.249	1.19
48478.3510	1.44	10.193	1.08
.3552	1.47	10.202	1.12
.3565	1.48	10.205	1.13

O.WALAS ¹

M. DUMONT ^{1,2}

J. REMIS ¹

¹ GEOS

3, Promenade Vénézia
F-78000 VERSAILLES

²

Palais De La Découverte
Avenue Franklin D. Roosevelt
F-75008 PARIS

References :

- Dumont, M.: 1983, *GEOS Circular RR7*.
 Dumont, M., Ralincourt, P., Remis, J.: 1990, *GEOS NC 630*.
 Dumont, M.: 1990, 1991, Private communications.
 Filatov, G.S.: 1957, AU No. 182.
 Kukarkin, B.V. et al.: 1982, NSV Catalogue, (Moscow, "Nauka").
 Meylan, G., Hauck, B.: 1981, *Astron. and Astrophys. Suppl.*, **46**, 281.
 Strohmeier, W., Kippenhahn, R., Geyer, E.: 1956, KVB No. 15.
 Walas, O., Dumont, M., Remis, J.: 1992, IBVS Number 3758.
 Walas, O.: 1992, *GEOS NC 675*.