

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

Number 3718

Konkoly Observatory
Budapest
29 April 1992
HU ISSN 0374 - 0676

NSV 13679: NO ADDITIONAL MINIMUM

D. Hoffleit (1991) reported on the unsuccessful search for minima on more than 200 Harvard patrol plates taken between 1898 and 1921. Schlesinger (1925) had found the star barely detectable ("missing") on one of his Zone Catalogue Allegheny plates (AG 7042 = BD + 49^o3511).

There are at least two principal reasons to investigate an "object" like this in some detail:

Firstly, we have indications that among eclipsing variables totally unusual cases exist more frequently than thought hitherto, as for instance objects with strongly varying amplitude (e.g. SS Lac, Lehmann 1991) or with nonstellar components (e.g. BO Cep, Wenzel 1991).

Secondly, in the course of the search for optical counterparts of gamma-ray burst sources the important role of photographic plate defects has come to light (see e.g. Greiner, Wenzel and Degel 1990, Greiner and Wenzel 1991, Hudec 1991).

Therefore I checked the star on 1148 suitable Sonneberg Sky Patrol plates taken mainly by P. Ahnert, H. Huth, and B. Fuhrmann between 1928 and 1990 (except in 1934 and 1935) and additionally on 35 plates of the 400/1600 mm GC astrograph from 1974 to 1982. I found no further minimum. On the contrary, the star seemed remarkably constant at photographic magnitude 9^m.1 in the system of Hoffleit (l.c.). Our investigation can be regarded as a chronological continuation of Hoffleit's data.

After all, I conclude that Schlesinger's finding probably did originate from a plate blemish: Take for the value D/P, the ratio of the duration of minimum to the period of an Algol eclipse curve, the extreme value of 0.01. Then among our more than one thousand fairly uniformly distributed observations about 10 should lie within the domain of the mini-

mum, and some of these should be faint enough to be discernible, even if the minimum is distinctly less deep than 2.5 mag as was suggested by Hoffleit. If there exists a significant secondary minimum, the probability to find the object faint would be still higher.

If we do not prefer to drop this matter and to cancel the star from the list of suspected variables, an investigation of Schlesinger's suspicious plate by means of microscopic techniques such as described by Greiner, Wenzel and Degel (l.c.) might be recommended.

W. WENZEL
D O-6400 Sonneberg
Hauptstraße 40
Germany

References:

- Greiner, J., Wenzel, W., Degel, W.: 1990, *Astron. Astrophys.* 234, p.251
 Greiner, J., Wenzel, W.: 1991, *Adv. Space Res.* 11, p.149
 Hoffleit, D.: 1991, *I.B.V.S.* No. 3646
 Hudec, R.: 1991, *Astron. Inst. Ondřejov Prepr.* 123
 Lehmann, T.: 1991, *I.B.V.S.* No. 3610
 Schlesinger, F.: 1925, *Trans. Yale Univ. Obs.* 4
 Wenzel, W.: 1991, *I.B.V.S.* No. 3647