

COMMISSIONS 27 AND 42 OF THE IAU  
INFORMATION BULLETIN ON VARIABLE STARS  
Number 3773

Konkoly Observatory  
Budapest  
21 September 1992  
HU ISSN 0324 - 0676

**A NEW SUPERGIANT VARIABLE: HD 186841 (B1 Ia)**

A large number of supergiants show optical variations (see e.g. Maeder 1980, Percy & Welch 1983). Several of them have been observed with the 1-m and 50-cm telescopes of Konkoly Observatory in Piszkestető in order to search for light variation. The variability of two supergiants has already been reported (Zsoldos 1990).

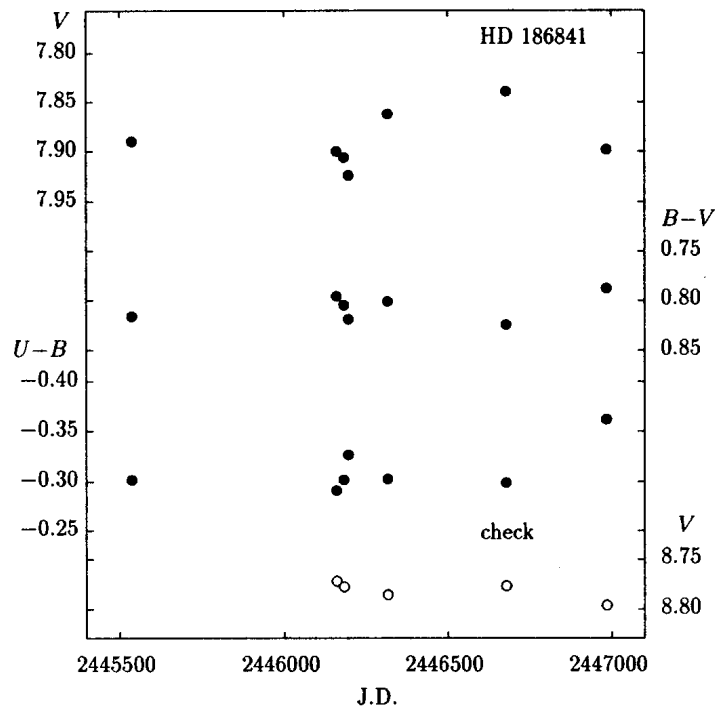
HD 186841 is a B1 supergiant in the Vul OB1 association (Humphreys 1978). It was observed earlier by Hiltner (1956), Thé & van Paradijs (1971) and Fernie (1983). These observations do not indicate any light variation except for the two  $V-I$  and  $V-R$  measurements of Fernie (1983, 1992) which differ by 0.1 mag.

HD 186841 was observed between 1983 and 1987 in the  $UBV$ -system. The observations were made relative to HD 186379 ( $V=6^m85$ ;  $B-V=0^m62$ ;  $U-B=0^m01$ ) and BD+23°3759 ( $V=8^m77$ ;  $B-V=0^m77$ ;  $U-B=-0^m34$ ) was the check star except for the first measurement in Table I where BD+23°3759 was the comparison. The observations are given in Table I. The average errors are  $0^m007$  in  $V$ ,  $0^m010$  in  $B-V$  and  $0^m013$  in  $U-B$ .

**Table I**  
Observations of HD 186841

J.D.	$V$	$B-V$	$U-B$
2440000+			
5536.459	7.890	0.817	-0.302
6159.590	7.900	0.796	-0.291
6181.526	7.906	0.805	-0.302
6196.539	7.924	0.819	-0.327
6315.378	7.862	0.801	-0.303
6678.368	7.839	0.824	-0.299
6985.432	7.898	0.788	-0.362

The light and colour curves of HD 186841 are plotted in Fig. 1. Though the observations listed in Table I are rather sporadic, they clearly show the variation in  $V$ . The  $P-L$ -relation of Maeder (1980) predicts a period of about 4 days ( $\log T_{\text{eff}} = 4.32$  and  $M_{\text{bol}} = -8.6$  was used (Peppel 1984)). There is, however, no possibility to check this prediction since the number of observations is low. The amplitude in  $V$  is about  $0^m07$  which is the expected value for a B supergiant (Maeder 1980). There are marked colour changes, too, though they do not necessarily follow the course of the variation in  $V$ .



**Figure 1.** The light and colour curves of HD 186841

This research has made use of the Simbad database, operated at CDS, Strasbourg, France.

E. ZSOLDOS  
 Konkoly Observatory  
 Budapest XII, P.O.Box 67  
 1525 Hungary

**References:**

- Fernie J.D. 1983, *Astrophys. J. Suppl.* **52**,7  
 Fernie J.D. 1992, personal communication  
 Hiltner W.A. 1956, *Astrophys. J. Suppl.* **2**,389  
 Humphreys R.M. 1978, *Astrophys. J. Suppl.* **38**,309  
 Maeder A. 1980, *Astron. Astrophys.* **90**,311  
 Peppel U. 1984, *Astron. Astrophys. Suppl.* **57**,107  
 Percy J.R., Welch D.L. 1983, *Publ. Astron. Soc. Pacific* **95**,491  
 Thé P.S., van Paradijs J.A. 1971, *Astron. Astrophys.* **13**,274  
 Zsoldos E. 1990, *Inf. Bull. Var. Stars* No.3525