

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

Number 4443

Konkoly Observatory  
Budapest  
28 February 1997

*HU* ISSN 0374 – 0676

**HD 193084: A NEW VARIABLE STAR**

The detection of variability in HD 193084 ( $V = 7.5$ ; CD $-30^{\circ}17822$ , SAO 189139) is reported. HD 193084 was used as one comparison star for the two  $\lambda$  Bootis stars HD 193256 and HD 193281 during our survey to detect pulsation within this group. Both  $\lambda$  Bootis stars and the second comparison star (HD 194170) turned out to be constant with an upper limit of 3 mmag in Strömngren  $b$  (Paunzen et al. 1996; Paunzen et al. 1997). Observations were performed at ESO during three nights (see Table 1 in Paunzen et al. 1997). A detailed description of the observation and reduction procedure can also be found in Paunzen et al. (1997).

Variability in the brightness of HD 193084 is clearly evident in all three nights. Figure 1 shows the differential light curves of HD 193084 and HD 193256 for the first night in Strömngren  $v$ . Furthermore, the data for HD 193256 – HD 194170 are presented to show the good photometric quality of the night and to establish the variability for HD 193084.

Using the data of all three nights, a time series analysis results in a period of about 80 minutes and an amplitude of 20 mmag in Strömngren  $v$ . The high statistical significance ( $\approx 15\sigma$ ) compared to the mean noise level proves the found period. Since Figure 1 shows that a semi-regular (or multiperiodic) behaviour is evident, these results are just first numerical estimations.

In order to determine the nature of variability, a search for informations in SIMBAD was performed. Houk (1978) classified this star as B8 V with a quality flag 1 (best). Unfortunately, no photometric measurements in one of the common systems (Geneva, Johnson or Strömngren) were found making a calibration impossible. Following this spectral type, a possible  $\delta$  Scuti pulsation can be excluded since the hot border of the instability strip ends at A0. Looking for other sources of variability among B-type stars, a possible membership in the  $\beta$  Cephei group (stars hotter than B4 with luminosity classes II to IV) and Be group (emission line stars with shells, periods  $\gg$  hours and amplitudes  $\gg 0.1$  mag, e.g. Pleione,  $\gamma$  Cas, S Dor, etc.) is very unlikely. One may speculate that HD 193084 is an unrecognized spectroscopic binary with a pulsating A-type component. Also a false classification by Houk (1978) cannot be ruled out.

In order to unambiguously establish the location of HD 193084 in the Hertzsprung–Russell–diagram and thus to determine the nature of variability, photometric and spectroscopic observations are very much needed. The author, therefore, encourages further observations as well as collaborations for solving the nature of HD 193084.

*Acknowledgements:* This research was carried out within the working group *Asteroseismology-AMS* with funding from the Fonds zur Förderung der wissenschaftlichen Forschung (project *S7303-AST*). Use was made of the SIMBAD database, operated at CDS, Strasbourg, France.

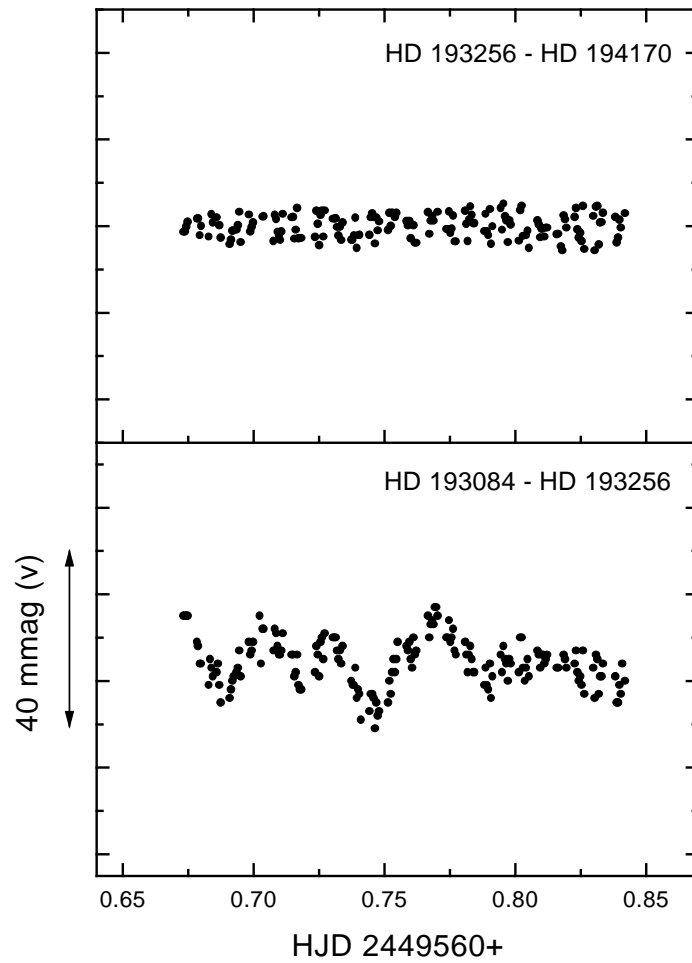


Figure 1. The differential light curves for HD 193084 – HD 193256 and HD 193256 – HD 194170 for the first night in Strömgren  $v$

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