

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

Number 4694

Konkoly Observatory
Budapest
8 April 1999

HU ISSN 0374 – 0676

HD 129231: A NEW SHORT-PERIOD δ Sct VARIABLE

E. RODRIGUEZ¹, S.F. GONZALEZ-BEDOLLA^{2,†}, M.J. LOPEZ-GONZALEZ¹, A. ROLLAND¹, V. COSTA¹

¹ Instituto de Astrofísica de Andalucía, CSIC, P.O. Box 3004, E-18080 Granada, Spain

² Instituto de Astronomía, UNAM, P.O. Box 70-264, CP-4510 México D.F., Mexico

During an observational program on δ Sct variables, HD 129727 (SAO 140102, $V = 9^m5$, F0) was used as comparison star and HD 129231 (SAO 140074, $V = 7^m8$, A2) as check star. The observing run was carried out through the years 1995 and 1996 at the observatories of San Pedro Mártir, México (1.5-m telescope) and Sierra Nevada, Spain (0.9-m telescope) by using similar simultaneous *uvby β* Strömrgren photometers attached to each telescope. The observations showed that while HD 129727 kept a constant brightness, HD 129231 presented a slight photometric variability. This latter star has not been reported as variable before in any catalogue, hence it has to be considered as a new variable star. This star was observed by the Hipparcos satellite (ESA, 1997) but it was considered as a constant star in the final results.

Figure 1 shows the light curves obtained for this star in the *v* filter during three nights 17, 22 and 27 of February, 1996. In this figure magnitude differences HD 129231 – HD 129727 versus Heliocentric Julian Day have been plotted. From this it can be seen that the period is about 0.032 days and the amplitude of luminosity variation is of about 0^m01 (from peak to peak). Multiperiodicity is also suggested from the light curves shown in the figure. We tried to make use of the data collected by the Hipparcos satellite (HIP 71820, ESA, 1997) in order to gain some insight on the frequency content of this new variable. Unfortunately, this data set contains very few points (70 points) on this star, randomly distributed in time with a time span of 3.1 years. Moreover, the error of each measurement is too large (about 0^m011). Therefore, it is not possible to reveal any reliable variability in the data. On the other hand, the geometric distance of HD 129231, as measured by the Hipparcos satellite, is of only 123(± 15) pc. Since the star is far from the Galactic plane and lies within close proximity to the Sun, the interstellar reddening can be neglected. This way, a visual absolute magnitude of $M_v = 2^m38(\pm 0.26)$ is obtained (assuming $V = 7^m83$ from the same catalogue). Hence, due to the characteristics shown, we can conclude that this star is a new δ Sct-type variable located near to the main sequence and blue edge of the instability strip.

Acknowledgements. This research was supported by the Junta de Andalucía and the Dirección General de Enseñanza Superior (DGES) under project PB96-0840 and CONACYT.

[†]Deceased

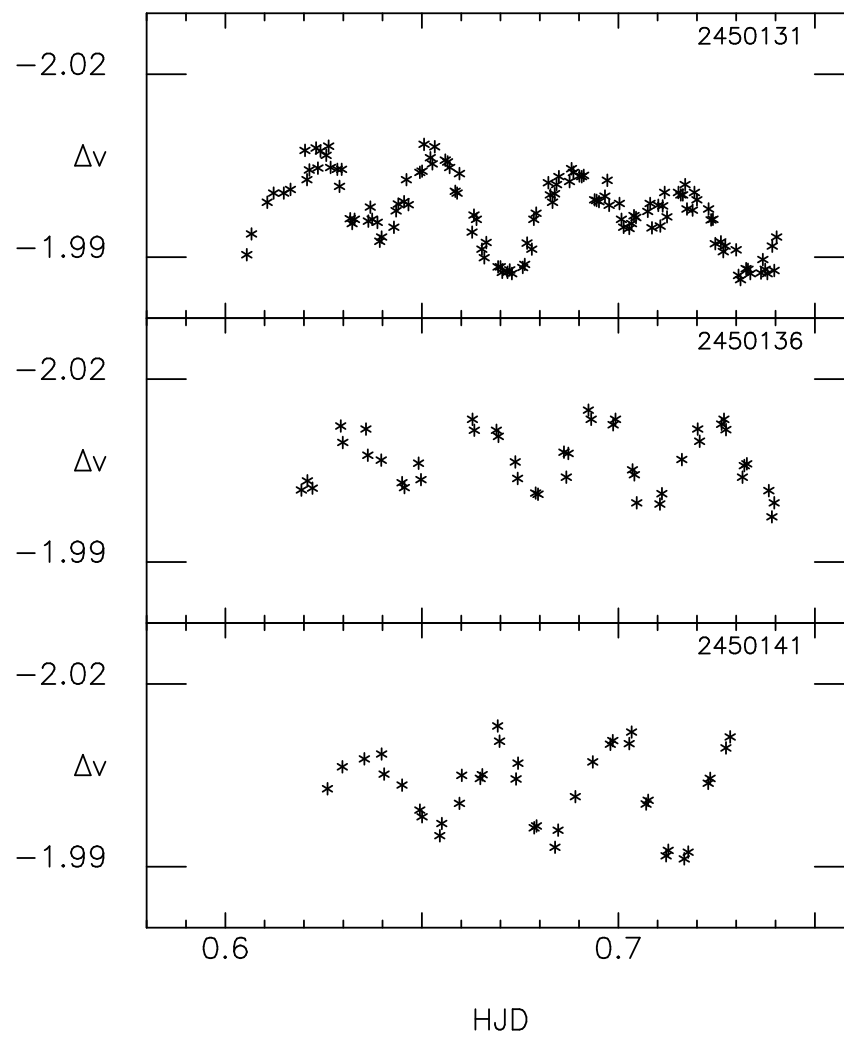


Figure 1. Differential light curves HD 129231 – HD 129727 in the v filter versus Heliocentric Julian Day

Reference:

ESA 1997, The Hipparcos and Tycho Catalogues, ESA SP-1200