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**HD28665: A PROBABLE  $\delta$  SCUTI STAR**

In this note we present the results of 1.9 hours of differential photometry of HD28665. This bright ( $V=7.7$ ) southern (declination  $-29^\circ$ ) star is classified spectroscopically as F2III by Houk (1982). HD29507 ( $V=8.2$ , A2) and HD27905 ( $V=7.8$ , G0) were used as comparison stars.

The observations were obtained using the Modular photometer attached to the 0.5 meter telescope of the South African Astronomical Observatory at Sutherland. One cycle of observations consisted of Johnson V and B measurements (two 30 second integrations per filter) of HD29507, HD28665 and HD27905. Sky brightness measurements were obtained on average every 10 minutes. After correction of the count rates for sky background and atmospheric extinction, the two comparison stars showed a common drift of about 0.03 magnitudes in V, which may be ascribed to sky transparency changes. The B-V colour indices did not change by more than 0.005 during the period of observation.

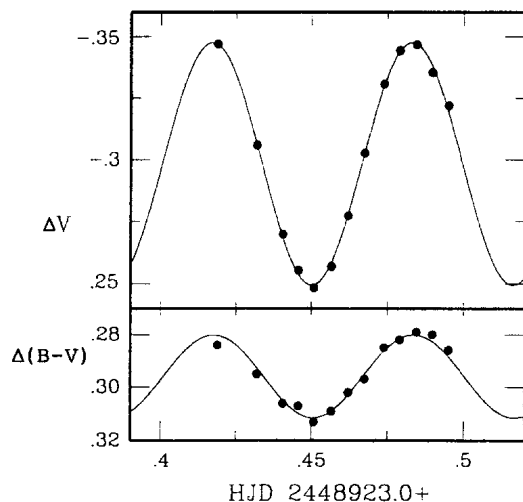


Figure 1

The differential V measurements of HD28665 are shown in the upper panel of the figure. Observations have been corrected for the zero-point drift, and are given with respect to the average of HD29507 and HD27905 brightnesses. The values shown can be related to V(HD27905) by subtracting 0.186, or to V(HD29705) by adding 0.186. It is clear that the plotted sinusoid with a frequency of 15.136 cycles/day (period 1.58 hours) and semi-amplitude of 0.049 magnitudes, fits the data extremely well. The lower panel shows the variation in B-V, for which no differential correction was deemed necessary. The slight phase difference found between the two fitted curves is not significant, being about one standard error of the colour curve phase.

The amplitude and period of the variation, together with the spectral type of the star, are consistent with HD28665 being a  $\delta$  Scuti pulsator.

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#### REFERENCE

Houk, N., 1982. *Michigan Catalogue of Two-Dimensional Spectral Types for the HD Stars. Volume 3.*, Department of Astronomy, University of Michigan.