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THE VARIABILITY OF HD73819

The star HD73819 is one of the UBV standard stars in the Praesepe cluster (Johnson 1952; Henden and Kaitchuck 1982). During a recent multi-site campaign, HD73819 was one of two comparison stars used for V filter photometry of the nearby  $\delta$  Scuti star HD73756. Throughout the campaign, photometry carried out with the 0.5m telescope at the Devon Astronomical Observatory showed persistent variability in the V magnitude difference between HD73819 (C2) and HD73711 (C1) that appeared to be modulated over time. Attempts to attribute this variation to either changes in sky conditions or electronics have proven unsuccessful and we are led to suggest that HD73819 is intrinsically variable.

The following four panels illustrate the variability of  $V(C1) - \text{minus}$   $V(C2)$  on the nights of February 10/11, 16/17, 18/19 and 21/22, 1989. A least-squares spline has been fitted to the data and is shown on each panel. The variation in (C1-C2) is clearly modulated and significant with respect to the scatter in the data. Typical scatter was  $\pm 2$  mmag. Subsequent period searches within the data sets (Variable - C1), (Variable - C2) and (C1-C2) suggest that the variation in the (C1-C2) signal is due entirely to variability in HD73819. The fourier transform of the entire (C1-C2) set, spanning approximately 30 hours over 7 nights, reveals multiple significant frequencies centered at approximately 5.82 cycles/day. All of this indicates that HD73819 may, in fact, be a multi-mode variable which warrants further

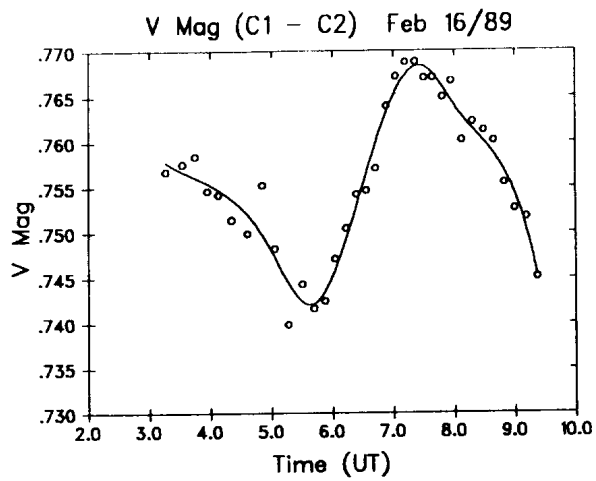
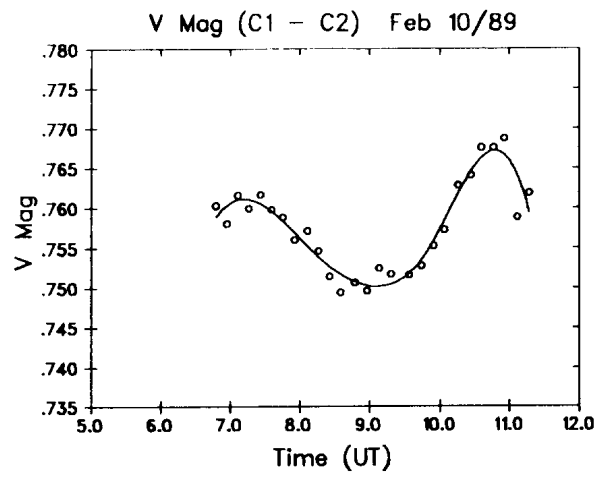


Figure 1

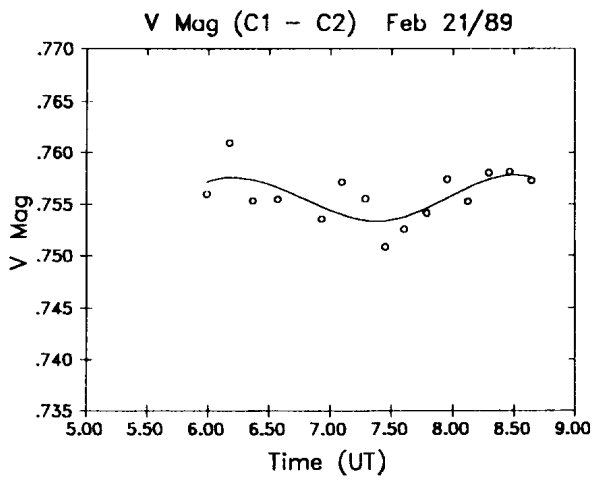
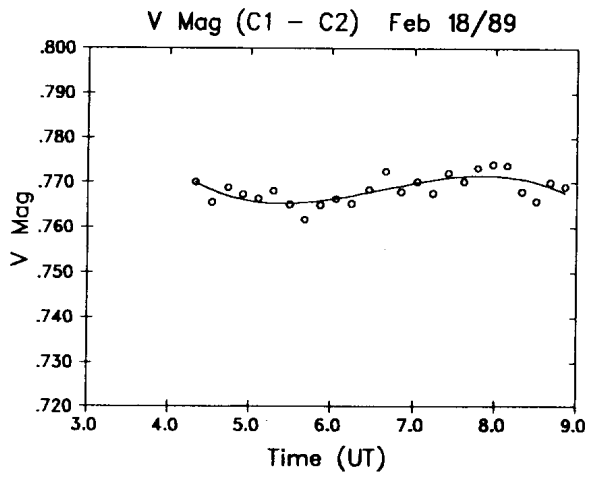


Figure 1 (cont.)

observations. A fundamental period of approximately 4.12 hours and a spectral type of A6 are suggestive of a  $\delta$  Scuti variable.

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