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H α VARIABILITY IN TWO SOUTHERN RS CVn CANDIDATES

We present H α observations of two southern RS CVn candidates, HD 174429 (PZ Tel) and HD 196818. Recent photometry and brief histories of these objects can be found in Innis et al. (1983a, 1983b).

All observations were obtained with the Cassegrain echelle spectrograph on the 1.0 m telescope at Siding Spring Observatory on four nights in August 1983. The dispersion at H α was approximately 10 $\text{\AA}/\text{mm}$.

HD 174429 showed variation in the depth of H α over timescales of a few hours. Figures 1(a) and 1(b) show raw, uncorrected spectra taken almost exactly 24 hours apart. The variation is clearly visible. Our earlier photometry of this object gives a period around 22.6 hours, hence it appears that the H α variations are not correlated with the photometric wave, as the spectra in Figure 1 are taken at nearly the same photometric phase.

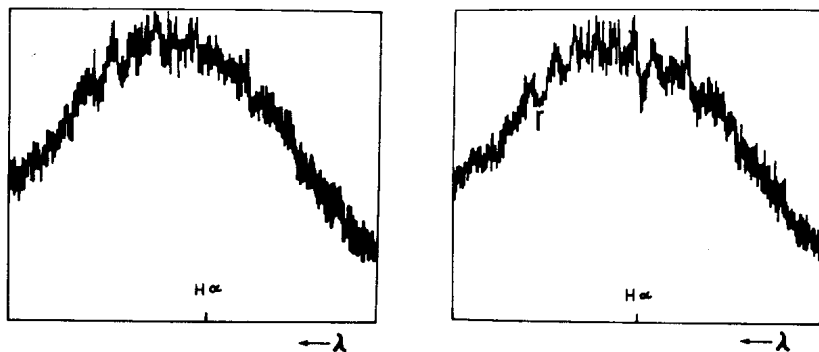


FIGURE 1 (a)

FIGURE 1 (b)

Observations were also taken on HD 196818. Collier et al. (1982) obtained an H α profile of this object, and reported a broad shallow absorption feature. Our observations show H α to be clearly in emission (Figure 2), obviously, the H α profile is variable in this star as well.

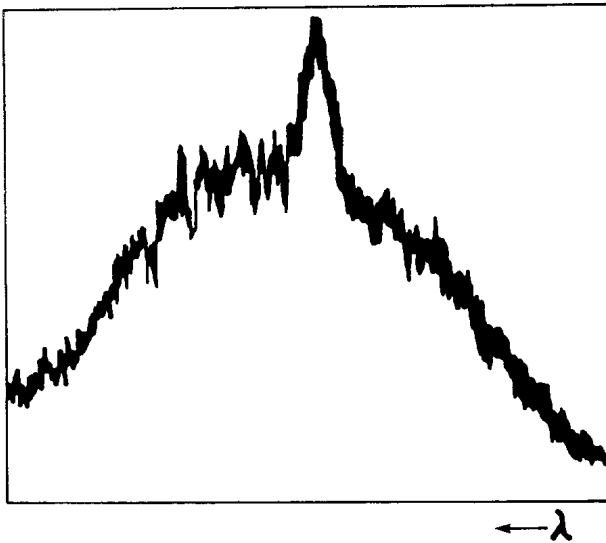


FIGURE 2

We also include an expanded plot of the sodium D lines for HD 196818 (Figure 3) and HD 174429 (Figure 4) which appear noticeably asymmetric.

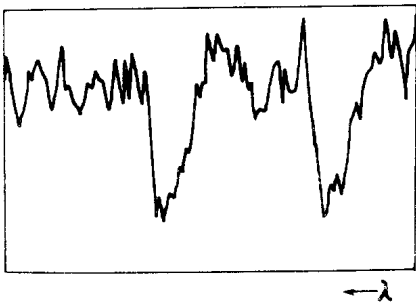


FIGURE 3

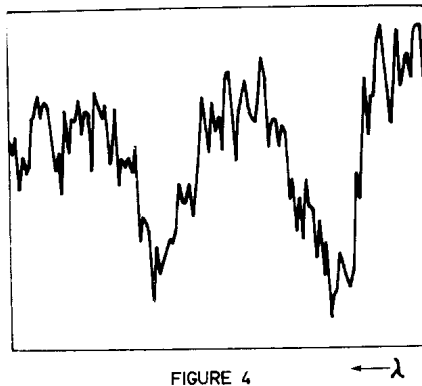


FIGURE 4

We suggest that these asymmetries are attributable to spots on the surface of the star, as has been proposed by Fekel (1983) for the star V711 Tau. (For comparison, Figure 5 shows the D lines of HR 6744, included in our observations as a template star).

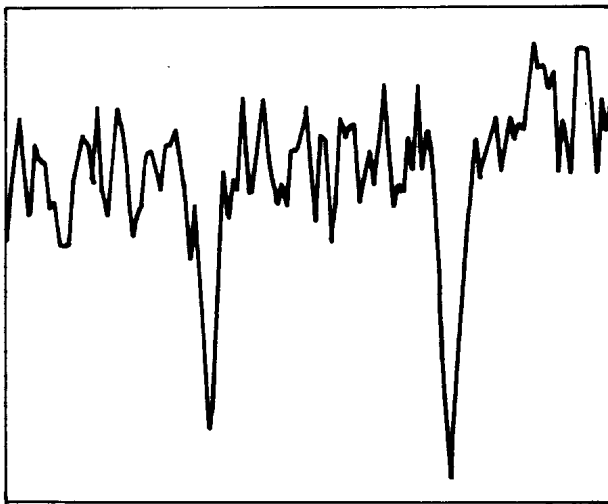


FIGURE 5

←λ

We are preparing a more extensive work for publication elsewhere.

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