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HD 50896 (=EZ CMa) has long been known as a variable star.Recently,Firmani et al.(1980) derived a period of 3.763 days from spectral and photometric variations.This period was later confirmed by McLean(1980) and by Cherepashchuk(1981).

We have obtained 69 blue spectrograms of HD 50896 between 1971 and 1979 at the Cerro Tololo Inter-American Observatory, Chile,and at the Bosque Alegre Astrophysical Station of Córdoba Observatory,Argentina.Several spectrogrphs have been used giving dispersions from 125 to 38 A/mm.A radial velocity study of our spectrograms has produced the following results:

a) The broad NIV 4058 emission (disregarding superimposed narrow emission or absorption components) shows velocity variations which tend to correlate with the period of 3.763 days. In Figure 1 we have plotted the radial velocities in this period,with different symbols for three different epochs.

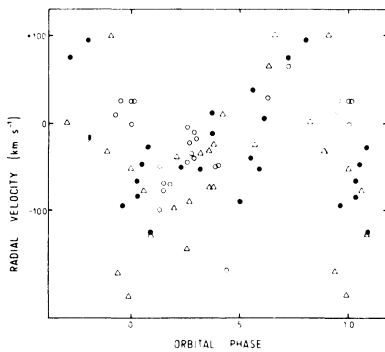


Figure 1.Radial velocities of the NIV 4058 emission as a function of orbital phase (as defined in text).Open circles correspond to 1971,filled circles to 1979,and triangles to 1973-74.

Throughout this paper the orbital phases have been computed using  $T_0 = 2443199.53$  and  $P = 3.763$  days, as in Firmani et al. (1980).

b) The NV 4603 emission also shows radial velocity variations correlated with the same period, but with different amplitude from one epoch to another. This is clearly seen in Figure 2.

c) The radial velocities of the blueshifted NV 4603 absorption seem to show little or no correlation with the velocities of the NV 4603 emission (compare Figure 3 with Figure 2a).

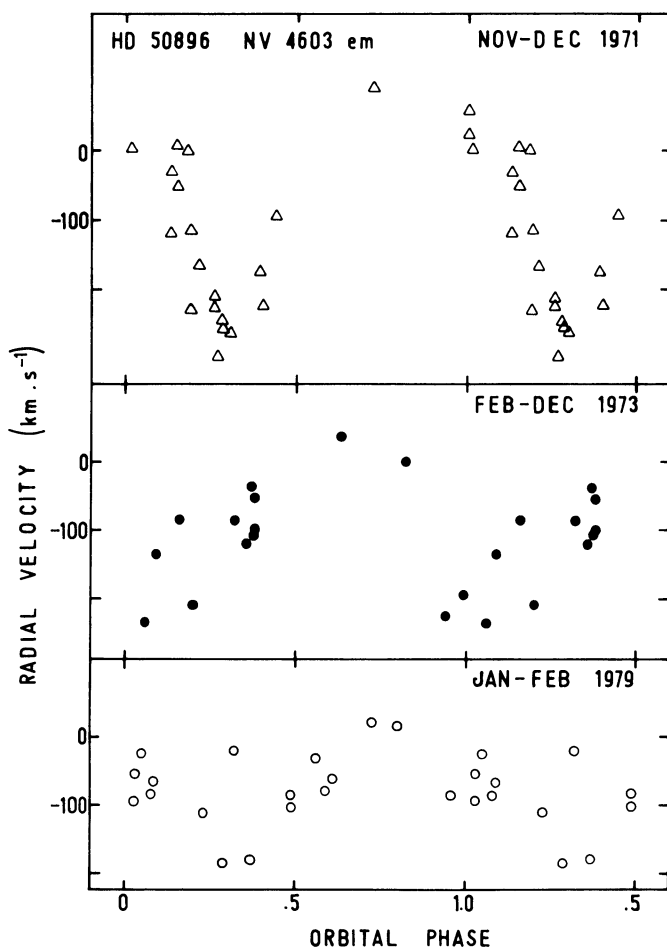


Figure 2. Radial velocities of the NV 4603 emission as a function of orbital phase: (a) in 1971; (b) in 1973; (c) in 1979.

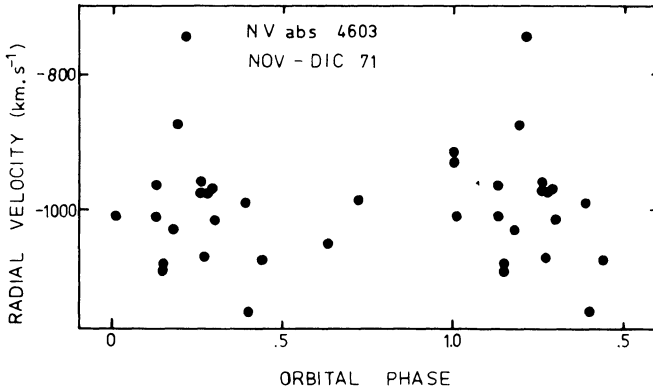


Figure 3. Radial velocities of the violet-shifted N V 4603 absorption as a function of the orbital phase (epoch 1971 only)

d) The radial velocities of He II emission lines do not seem to have any correlation with orbital phase. Our mean values compare fairly well with those published by Ebbets (1979) and Firmani et al. (1980).

Concerning spectral variations, we have confirmed the variability and phase dependence of the intensities of the blueshifted N V 4603, 4619 absorptions. Figure 4 shows eye estimates of these intensities, on an arbitrary scale from 0 (absent) to 5 (maximum intensity), plotted as a function of the orbital phase. It is interesting to note that maximum intensity in Fig. 4 corresponds to minimum radial velocity in Fig. 2. We observe the maximum intensity of the N V 4603, 19 absorptions at about phase 0.2 P. It should be noted that this differs from what Firmani et al. (1980) observed for these same lines, i.e. their maximum intensity occurred at about phase 0.05 P.

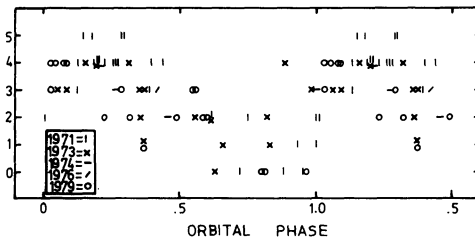


Figure 4. Intensities of the violet-shifted N V 4603, 4619 absorptions as a function of orbital phase at different epochs. The intensity scale is arbitrary, and based on eye estimates (see text).

We finally note that the variable structure of the N IV 4058 emission does not seem to be clearly phase dependent. For example, we have observed sometimes, at almost every phase, the sharp central emission which Firmani et al. (1980) observed, superimposed upon the broad emission, only at phase 0.4.

We conclude that the period of 3.763 days is associated to the radial velocity and spectral variations of HD 50896, but is not detectable in all spectral features.

#### REFERENCES

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#### DISCUSSION

Moffat: Your data for NV emission variations is similar to Firmani et al's. (1980) epoch-epoch variation for NV absorption. In that paper, we noted that the NV absorption was strongly variable on long and short time scales and would also perturb the emission measures. This was claimed to be due to perturbation in the outer wind by the secondary component. Also since the RV semi-amplitude of the system K ~ 30 km/s from NIV 3483 and HeII is quite low, it is difficult to find. The dispersion about the RV-orbit by Firmani et al. is ~6 km/s for NIV 3483 and ~17-18 km/s for HeII. What is the dispersion ( $\sigma$ ) of your HeII data ?

Niemela: The NV emission line velocity curve amplitude may be affected by the absorption, but obviously this has nothing to do with the period determination. The errors in our RV values are 10-40 km/s but the differences in velocity with respect to the orbit by Firmani et al. of our data are much larger.