

Confirmation of a 2.3-Day Periodicity in the Wolf-Rayet Star WR 134: a Twin of EZ CMa?

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We confirm the existence of the $2^d.25 \pm 0^d.05$ periodicity in the line-profile changes of the apparently single Wolf-Rayet star WR 134 that was first proposed by McCandliss et al. (1994). This period dominates the skewness, centroid, and FWHM variations of He II $\lambda 4686$ in spectra obtained in 1992 and 1993. Furthermore, the line-profile changes demonstrate a coherent, although complex, pattern of variability when phased with this period. Loss of coherency on a \sim monthly time scale is also observed.

Although definitive statements regarding the nature of the variability must await a more detailed analysis of the data, two mechanisms can be proposed in order to account for the periodic nature of the variability:

- the presence of a collapsed companion (neutron star or black hole) orbiting in the Wolf-Rayet wind (Antokhin & Cherepashchuk 1984).
- the existence of large-scale wind structures that persist for \sim one month in a rotating single star, as is likely for the peculiar WN 5 star EZ CMa (Morel et al. 1997, 1998).

References

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