

HR 2142: A SEMI-DETACHED INTERACTING BINARY?

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ABSTRACT. The energy distribution of HR 2142 is studied in order to test the hypothesis that this star is an interacting binary with a cool Roche-lobe filling companion. We find that, for any reasonable choice of T_{eff} , the companion should have been detected in the red part of the spectrum. We propose instead that the Be star is the outcome of a case B mass-transfer, which has pun it up. It is now surrounded by a mass-loss disc, rather than an accretion disc and is accompanied by either a helium star (resembling the ϕ Per system) or by a white dwarf. If the binary was born spinning rapidly, alternatively the companion may be a solar-type, unevolved main sequence star. In case of a Helium star companion, there may be Helium lines visible (like in ϕ Per), or the helium star may be detectable in the XUV, e.g. by the *ROSAT* XUV instrument. A white dwarf companion may be accreting material from the disc around the Be star and may show low luminosity X-ray emission. This emission may have been seen in the *ROSAT* PSPC X-Ray Survey.

Reference

For a full account of this study we refer to: Waters, L.B.F.M., Côté, J., Pols, O.R. (1991) *Astronomy and Astrophysics*, in press