

BD-21.3873: An Heavy Element-Rich Symbiotic?*

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The recent discovery (Jorissen and Mayor, 1988) that not only Ba II but also S stars appear to belong predominantly to binary systems with periods of several hundred days raises the question of the similarity between these peculiar red giants and symbiotic stars. That question has been addressed by looking whether symbiotics have enhanced s-element lines in their spectra. In most cases, definite conclusions are hampered by the composite nature of such spectra. Nevertheless, in the case of the "yellow symbiotic" BD -21.3873, the spectral classification criteria provided by Keenan and Wilson (1977) allow to assign without ambiguity the type GIII-II to BD -21.3873, the symbiotic nature of that star being apparent only through weak Fe II emission lines. Some heavy element lines (such as Sm II $\lambda 4220.7$, $\lambda 4221.1$ and $\lambda 4566.3$) are clearly enhanced. Comparison with a spectrum of a G3Ib supergiant ensures that luminosity is not responsible for that effect. Moreover, some of these spectral features are also enhanced in Barium stars, as seen on a comparison spectrum of a Barium Star.

If abundance effects were really involved - a fact that needs to be confirmed by more detailed spectroscopic studies, - this should constitute a further indication that Barium, S and (some) symbiotic stars represent the same kind of binary objects, seen at different evolutionary stages.

In that respect, it is interesting to note that the other yellow symbiotic AG Dra also seems to show some evidence for heavy element peculiarities (Lutz *et al.*, 1987), and, on the other hand, that the S star HD 35155 and ER Del display some "symbiotic-like" behavior in their UV spectrum (Johnson and Ake, 1983, 1988).

References

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