

RECENT RESULTS PERTAINING TO THE HELIUM-RICH STARS

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Abstract. The term *helium-rich stars* here refers to those stars with apparent spectral types near B2 and helium lines which are enhanced, but not stronger than the hydrogen lines. The previously known helium-rich star HD 184927 has been found to be a spectrum variable; the equivalent widths of the helium lines changed by an average of 46% between two observations. HD 186205 has been newly recognized as a member of the helium-rich class. Further work toward understanding the rapidly variable H α emission in the prototype helium-rich star, Sigma Orionis E, is in progress in co-operation with Dr J. E. Hesser at CTIO.

DISCUSSION

Garrison: I have spectra of stars in the small tight cluster which includes the multiple star σ Ori. The cluster forms an extremely narrow main sequence and contains a 'He weak' star in addition to σ Ori E, the 'He rich' star. The 'He weak' star is a mild one with a B5 colour and a B8 spectral type.

Morgan: On the assumption that σ Ori E is a member of the Orion association, do you find that it has normal luminosity for a B2V star?

Walborn: The presence of σ Ori E in a multiple system which contains an earlier-type main-sequence star, as well as a normal B2V star with nearly identical apparent magnitude and colour to E, places strong constraints of interpretations of the helium-rich star.

Bell: Is there any evidence for the existence of He³ in these stars?

Walborn: No.

Schatzman (To Dr Nissen and Dr Walborn): Mrs S. Vauclair has a nice explanation of the difference between He poor and He rich stars, as a result of competition between diffusion and stellar wind.

Nissen: Yes, I agree that the explanation by S. Vauclair is very interesting.

Note added in proof. A periodicity of 1^d.19 has been found in the spectrum, light, and color variations of Sigma Orionis E. References: *Publ. Astron. Soc. Pacific* 87, 613, 1975; *Astrophys. J. Letters*, April 15, 1976.