$\overline{ m H~P3}$ Abundances in 4 Lac (B9 Iab) and u Cep (A2 Ia)

K. Yüce

Ankara University, Faculty of Science, Department of Astronomy and Space Sciences, 06100, Tandoğan, Ankara, Turkey

I have performed using Kurucz LTE model atmospheres detailed fine analyses of the supergiants 4 Lac and ν Cep. The spectral data were obtained at 1.22-m telescope of the Dominion Astrophysical Observatory by Saul J. Adelman. The atmospheric parameters were derived using the wings of H β and H γ profiles for each one star, and from Fe I/II, Fe II/III, Si II/III equilibrium for 4 Lac, and from Fe I/II, Cr I/II equilibrium for ν Cep. A microturbulence of 2.7 km s⁻¹ for 4 Lac was found from Fe II lines while a mean value of 5.2 km s⁻¹ for ν Cep from Cr II, Ti II and Fe II lines. The rotational and macroturbulent velocities are, respectively, 14 ± 2 km s⁻¹ and 15 ± 2 km s⁻¹ for 4 Lac, and 26 ± 2 km s⁻¹ and 12 ± 2 km s⁻¹ for ν Cep. Their He, CNO and light element abundances are solar or overabundant while iron peak and heavy element abundances are solar or underabundant. The derived results show that 4 Lac has nuclearly processed matter in its photosphere while ν Cep does not.

8 H: Evolved A-type stars