THE TEMPERATURE OF MASSIVE STARS

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We determined the stellar parameters for thirteen Galactic early-O type stars by modeling spectra from the *Far Ultraviolet Spectroscopic Explorer* (*FUSE*) (905-1187Å) and from *IUE* and *HST/STIS* (1150-3250Å) with line-blanketed, hydrodynamic, spherical non-LTE synthetic spectra, computed with the *WM-basic* code [1].

We find effective temperatures significantly lower (by 15-20%) than typically assigned to these spectral types ([2],[3],[4]). The stellar luminosities are also lower. The result is of great importance for the energy balance of HII regions and to understand massive star evolution.

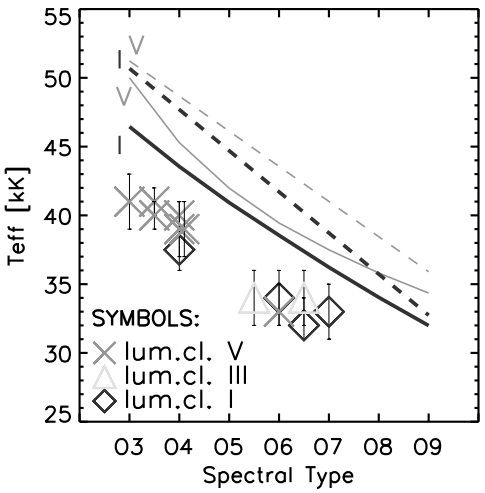

Figure 1. The effective temperatures of the sample stars are compared to the calibrations of Vacca et al. (1996) ([5], dashed line) and de Jager & Nieuwenhuijzen (1987) ([6], solid line). Symbols indicate different luminosity classes.

References

[1] Pauldrach, A. W. A., Hoffmann, T. L., & Lennon, M. 2001, A&A, 375, 161

[2] Bianchi, L., & Garcia, M. 2002, ApJ, 581, 610

[3] Bianchi, L., Garcia, M., & Herald, J. 2003, RMxAA, 15, 226

[4] Garcia, M., & Bianchi, L. 2003, A&A, in preparation

[5] Vacca, W. D., Garmany, C. D., & Shull, J. M. 1996, ApJ, 460, 914

[6] de Jager, C., & Nieuwenhuijzen, H. 1987, A&A, 177, 217