

IDENTIFICATION OF ^3He IN THE BINARY SYSTEM 68u Her

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Abstract. From a radial velocity study of 60 spectrograms of the binary system 68u Her, systematic velocity differences have been found to exist between the He I singlet lines and the He I triplet lines of the primary component. These differences are independent of orbital phase, date of observation or spectrograph employed and can be interpreted in terms of the existence of a large fraction of ^3He in the atmosphere of the primary component. A $^3\text{He}/^4\text{He}$ ratio of between 4:1 and 49:1 is suggested.

Note Added in Proof. An alternative, and much more preferable, interpretation of the above measured wavelength shifts has been given by Pagel and Drew (*Monthly Notices Roy. Astron. Soc.* **174** (1976), 138). However, their interpretation calls into question the standard rest wavelengths for the lines in B stars. This matter is commented upon further by A. H. Batten (paper submitted to *Observatory*). The correlation between rest wavelengths of the He lines in the spectrum of 68u Her, inferred from the above measurements, and the rest wavelengths of ^3He lines appears to be fortuitous.