

Hydrogen-deficient nature of Z UMi

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Abstract.

Benson et. al (A.J. 108, 247, 1994) classified Z UMi as a RCB star based mainly on the light variations. Although their low resolution spectra show that Z UMi is a carbon star, the hydrogen deficiency, which is a characteristic feature of all RCB type stars, was not established. To investigate this aspect and further explore the other spectroscopic features, we obtained high resolution (~ 60000) spectra in both blue (4200-4630Å) and red (5050-7950Å) regions using the Sandiford échelle spectrometer at the Cassegrain focus of the McDonald observatory's 2.1m telescope on JD2449471.829 and JD2449826.900. The strong lines of the CH band (G band) at about 4300Å, which are prominently seen in normal carbon stars are conspicuous by their absence in the spectrum of Z UMi indicating the hydrogen deficient nature [Figure 1]. The radial velocity as measured from several relatively unblended atomic lines is -37.4 kms^{-1} for both epochs. We confirm the membership of Z UMi to the RCB class of variables. Further analysis is in progress.

