

# Short-term spectroscopic variability of Plaskett's star

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Plaskett's star (HD47129) is a very massive O-star binary in a post Roche-lobe overflow stage. CoRoT observations of this system revealed photometric variability with a number of frequencies. The aim of this paper is to characterize the variations in spectroscopy and investigate their origin. To sample its short-term variability, HD47129 was intensively monitored during two spectroscopic campaigns of six nights each. The spectra were disentangled and Fourier analyses were performed to determine possible periodicities and to investigate the wavelength dependence of the phase constant and the amplitude of the periodicities. Complex line profile variations are observed. Frequencies near 1.65, 0.82, and 0.37 d<sup>-1</sup> are detected consistently in the He I 4471, He II 4542, and N III 4510-4518 lines. These frequencies are consistent with those of the strongest signals detected in photometry. The possibilities that these variations stem from pulsations, a recently detected magnetic field or tidal interactions are discussed. Whilst all three scenarios have their strengths, none of them can currently account for all the observed properties of the line profile variations.

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