
An astrometric, spectroscopic, and spectropolarimetric study of a binary with two magnetic pulsating components: the delta Scuti variable HD 21190 and CPD -83 64B

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Abstract

HD21190 is a member of a visual binary system and is a known delta-Scuti variable star showing Ap star characteristics. Using an astrometric analysis, we showed that the this star forms a physical binary system with the nearby companion CPD -83 64B at an angular distance of about 19". Our recent HARPS spectropolarimetric observations of this system reveal the presence of a magnetic field in both components. Furthermore, also the component CPD -83 64B exhibits pulsations. A careful study of binary components with a common evolutionary path is especially important to understand the complex interplay between stellar pulsations, magnetic fields, and chemical composition.

Keywords: binaries, magnetic fields, pulsations, chemical abundances

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