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Search for Vertical Abundance Stratification of Chemical Elements in HD176232 (U)*

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Two high resolution and high signal to noise ratio spectra of HD176232 have been analyzed to study the chemical abundances in atmosphere of this star using the ZEEMAN2 code. These spectra were recently obtained with the spectropolarimeter ESPaDOnS at the Canada-France-Hawaii telescope (CFHT) in the frame of the project VeSElKA. The project's objective is the search for signatures of vertical stratification of chemical element abundance within chemically particular (CP) stars. The surface gravity and effective temperature of HD176232 were derived from the fitting of nine Balmer line profiles through the FITSB2 code. Over one hundred line profiles were analyzed in each spectrum and the average abundance of 32 chemical elements were measured. Some of them, for example, cobalt, neodymium, samarium and gadolinium show a significantly enriched abundance in the stellar atmosphere of HD176232, while carbon and molybdenum seem to be in deficit. Also, our analysis reveals an abundance stratification with optical depth for calcium, cobalt, iron, manganese and nickel.

Authors: PERRON-CORMIER, Mathieu (Université de Moncton); KHALACK, Viktor (Université de Moncton)

Presenter: PERRON-CORMIER, Mathieu (Université de Moncton)

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