



The fingerprint of a star: μ Cas

μ Cassiopeiae (30 Cas = HD 6582), also named Marfak, is a G5 dwarf star. Its binary nature was discovered in 1961 and since then an orbit with a period of 21.75 years had been derived. The secondary component, μ Cas B, is a faint 0.17 solar-mass dwarf found from adaptive optics imaging. Compared to other nearby stars, this pair is moving at a relatively high velocity of 167 km/s through the Milky Way galaxy. They are low metal, population II stars that are thought to have formed before the galactic disk first appeared. This poster shows the optical spectrum of μ Cas obtained with the Potsdam Echelle Polarimetric and Spectroscopic Instrument (PEPSI) of the Large Binocular

Telescope (LBT). It plots the normalized intensity as a function of wavelength λ in Angströms (1Å=0.1nm) from the top left corner to the bottom right corner. The PEPSI spectrum covers the wavelengths between 3820 Å (top left) and 9130 Å (bottom right) with an average spectral resolution of $R=\lambda/\Delta\lambda=220,000$ or approximately 1.4 km/s. Its average dispersion is 0.012 Å/pixel. Integration time with the LBT was 7 min and consists of 2 exposures in all six cross dispersers. The signal-to-noise ratio (S/N) of the spectrum peaks at 1000:1 at 8250 Å and has a low of 220:1 near the blue cutoff. The exposure was obtained on September 27, 2015. A subset of spectral absorption lines is

identified in the graphics and marked with dashes beneath the spectrum. The annotation indicates the chemical element (e.g., Fe for iron), the ionization state (I for a neutral line, II for an ionized line), and the wavelength in Angström. The original spectrum has been published in *Astronomy & Astrophysics* (Strassmeier, K. G., Ilyin, I., & Weber, M. 2018, A&A, **612**, A45; see <https://pepsi.aip.de/>).

