



The fingerprint of a star: 16 Cyg B

16 Cygni B = HD 186427 is a G3 dwarf star. 16 Cygni is a triple star system approximately 69 light-years away from Earth. It consists of two Sun-like yellow dwarf stars, 16 Cygni A and 16 Cygni B, together with a red dwarf, 16 Cygni C. 16 Cygni C is much fainter than either of these stars. In 1996 an extrasolar planet was discovered around 16 Cygni B. Using the parallax of the A component, the distance is 21.1 parsecs. Age estimates for the two stars vary slightly, but 16 Cygni is likely to be much older than the Solar System, at around 10 billion years old. This poster shows the optical spectrum of 16 Cyg B obtained with the Potsdam Echelle Polarimetric and Spectro-

scopic Instrument (PEPSI) of the Large Binocular Telescope (LBT). It plots the normalized intensity as a function of wavelength λ in Angströms ($1\text{\AA}=0.1\text{nm}$) 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 2-6 exposures in all six cross dispersers. The signal-to-noise ratio (S/N) of the spectrum peaks at 1110:1 at 7000 Å and has a low of 180:1 near the blue cutoff. The exposure was obtained on

May 25, 2015 except the bluest part which 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/>).

