



The fingerprint of a star: 51 Peg

51 Pegasi = HD 217014, also named Helvetios, is a G2.5 dwarf star. It was the first main-sequence star found to have an exoplanet (designated 51 Pegasi b, officially named Dimidium) orbiting it. It is estimated to be 6.1–8.1 billion years old, somewhat older than the Sun, with a radius 24% larger and 11% more massive. The star has a higher proportion of elements other than hydrogen/helium compared to the Sun. This poster shows the optical spectrum of 51 Peg 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 ($1\text{\AA}=0.1\text{nm}$) 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 6 min and consists of 3-5 exposures in all six cross dispersers. The signal-to-noise ratio (S/N) of the spectrum peaks at 1410:1 at 7000

Å and has a low of 330:1 near the blue cutoff. The exposure was obtained on November 20, 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/>).

