



The fingerprint of a star: 7 Psc

7 Psc = HD 220009 = BD+04°4997 is likely a K2 III red giant. The Michigan spectral survey had revised its spectral classification to K1 IV in 1999. It exhibits strong blue-shifted and doubled sodium absorption due to intervening clouds of interstellar matter which also demonstrates its high proper motion. This poster shows the optical spectrum of 7 Psc 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 5 min and consists of 2-4 exposures in all six cross dispersers. The signal-to-noise ratio (S/N) of the spectrum peaks at 1550:1 at 8250 Å and has a low of 170:1 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/>).

