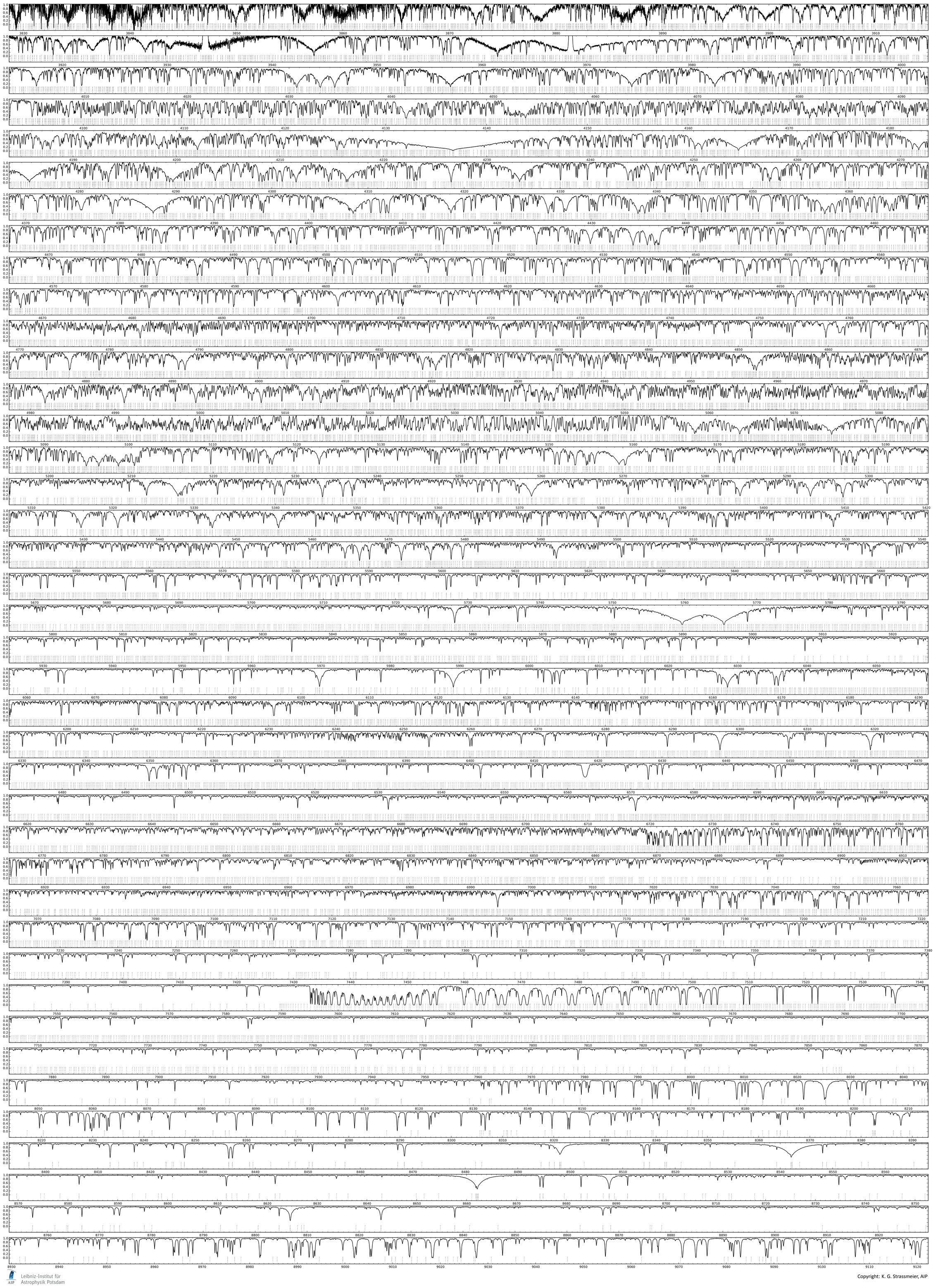
The fingerprint of a star: 61 Cyg B

61 Cygni B (HD 201092) is a cool K7 dwarf star. 61 Cygni is a visual binary system consisting of a pair of K-type dwarf stars that orbit each other in a period of about 659 years. It first attracted the attention of astronomers when its large proper motion was demonstrated by Giuseppe Piazzi in 1804. In 1838, Friedrich Bessel measured its distance from Earth at about 10.3 light-years; this was the first distance estimate for any star other than the Sun. Both binary components appear to be old-disk stars with an estimated age that is older than the Sun. The system has a net space velocity of 108 km/s relative to the Sun, which results in the high proper motion across the sky. At a distance of just over 11 light-years, it is the 15th-nearest-known star system to the Earth. 61 Cygni A is a typical BY Draconis variable star designated as V1803 Cyg while 61 Cygni B is a flare type variable star. On several occasions, it has been claimed that 61 Cygni might have unseen low-mass companions, planets or a brown dwarf. This poster shows the optical spectrum of 61 Cyg B 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 6 min and consists of 1-4 exposures in all six cross dispersers. The signal-to-noise ratio (S/N) of the spectrum peaks at 980:1 at 8250 Å and has a low of 70:1 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/).



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