



The fingerprint of a star: γ Aql

γ Aquilae (50 Aql = HD 186791), also named Tarazed, is a K3 bright giant of luminosity class II. Parallax measurements place it at a distance of 395 light-years from the Sun. It is a relatively young star with an age of about 100 million years but has already consumed all of the hydrogen at its core and expanded into what is termed a bright giant star. The star is now burning helium into carbon in its core. After it has finished generating energy through nuclear fusion, γ Aquilae will become a white dwarf. The interferometry-measured angular diameter of Gamma Aquilae is 7.271 $\pm$ 0.073 mas, which, at its estimated distance, equates to a physical radius of about 95 times the radius of the Sun. With almost six times the Sun's mass, this is an enormous star that is radiating over 2500 times

the luminosity of the Sun. This poster shows the optical spectrum of γ Aql 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 30 sec, and 30 min with the VATT, and consists of 2-11 exposures in all six cross dispersers. The signal-to-noise ratio (S/N) of the spectrum peaks at 1540:1 at 8250 Å and has a low of

180:1 near the blue cutoff. The LBT exposure was obtained on June 5, 2016, the VATT exposures on May 24-30, 2016. 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/>).

