



The fingerprint of a star: ϵ Vir

ϵ Virginis (47 Vir = HD 113226), named Vindematrix, is a G8 giant of class III with comparable high proper motion. With 2.6 times the mass of the Sun, it has reached a stage in its evolution where the hydrogen fuel in its core is exhausted. As a result, it has expanded to over ten times the Sun's size and is now radiating around 77 times as much luminosity as the Sun. The spectrum of this star has served as one of the stable anchor points by which other stars are classified. This poster shows the optical spectrum of ϵ Vir 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 ($1\text{\AA} \approx 0.1\text{nm}$) 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 1 min, and 30 min with the VATT, and involve between 3-8 exposures in all six cross dispersers. The signal-to-noise ratio (S/N) of the spectrum peaks at 1970:1 at 8250 Å and has a low of 130:1 at 4500 Å. The LBT exposure was obtained on April 8, 2015, the VATT exposures on April 1, 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/>).

