K2-287b: an Eccentric Warm Saturn transiting a G-dwarf


We report the discovery of K2-287b, a Saturn mass planet orbiting a G-dwarf with a period of $P \approx 15$ days. First uncovered as a candidate using K2 campaign 15 data, follow-up photometry and spectroscopy were used to determine a mass of $M_p = 0.317 \pm 0.026 \, M_J$, radius $R_p = 0.833 \pm 0.013 \, R_J$, period $P = 14.893291 \pm 0.000025$ days and eccentricity $e = 0.476 \pm 0.026$. The host star is a metal-rich V = 11.410 ± 0.129 mag G dwarf for which we estimate a mass $M^* = 1.056 \, M_\odot$, radius $R^* = 1.07 \pm 0.01 \, R_\odot$, metallicity [Fe/H] = 0.20 ± 0.05 and $T_{\text{eff}} = 5673 \pm 75$ K. This warm eccentric planet with a time-averaged equilibrium temperature of $T_{\text{eq}} \approx 800$ K adds to the small sample of giant planets orbiting nearby stars whose structure is not expected to be affected by stellar irradiation. Follow-up studies on the K2-287 system could help in constraining theories of migration of planets in close-in orbits.