

# CONSTRAINING ELM WHITE DWARF STARS EXHIBITING ELLIPSOIDAL VARIATIONS WITH MCMC

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We constrain the physical characteristics of extremely low-mass white dwarf stars in tight binary systems that exhibit photometric ellipsoidal variations from tidal distortion with a Markov Chain Monte Carlo analysis. These variations allow us to constrain the orbital inclination and secondary mass that are typically ambiguous in single-lined spectroscopic binaries. We combine data from multiple surveys to benefit from the advantages of each data set, including Gaia astrometry measurements, lightcurves provided by the TESS, ASAS-SN, and ZTF surveys, and radial velocity measurements provided from the ELM Survey. This poster presents our current progress in this effort, indicating current challenges and future directions for the work.