The rotational period distribution of massive magnetic field white dwarfs observed with TESS

Zorayda Martinez¹, Kurtis A. Williams¹

¹Department of Physics and Astronomy, Texas A&M University-Commerce

Rapidly rotating white dwarfs (WDs) have the potential to come about by either double degenerate mergers or weak coupling between the core and the outer envelope during the asymptotic giant branch (AGB). For both cases, knowledge of the rotational period distribution places tight constraints on the evolution of angular momentum transfer. Here we present initial results from a study of the rotational period distribution of 14 massive ($M > 0.9M_{\odot}$), magnetic, DA WDs observed by the Transiting Exoplanet Survey Satellite (TESS) and analyzed with the Lightkurve python package. We present periodograms, folded light curves, and statistics from this sample and compare the period distribution to that of other published rotating WDs. We also discuss ongoing searches to increase the sample size of massive, magnetic rotating WDs.