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Abstract: Co-authors: Leslie Rogers, Avi Shporer, Tim Morton, Justin Crepp, Jon Swift, Phil Muirhead, John Johnson

Planets around retired A stars (hot stars that have evolved off the main sequence) tend to orbit further away from their stars than do planets around cooler, Sun-like stars (Bowler et al. 2010). This could be due to the fact that the star is evolved; as stars evolve and expand, they may engulf closer-in planets, or the planets' orbits may tidally decay until they are destroyed. Alternatively, differences in planet formation processes around these more massive stars may account for the observed result. To distinguish between these two possibilities, we characterize main sequence A stars with transiting planet candidates detected by Kepler. We identify likely A stars in the Kepler Input Catalog by their stellar effective temperatures, derived from KIC grizJHK photometry using the empirical relations from Boyajian et al. (2013). To verify the classification of a subset of these stars, we measure their spectra using Palomar DBSP and collect high-resolution images with Keck NIRC2. We determine the physical parameters of the transiting planets' orbits by fitting the Kepler transit lightcurves with Markov Chain Monte Carlo methods. By constraining the semi-major axis and eccentricity distributions of planets orbiting A stars, we gain insights into the role of stellar evolution in hot star planetary systems.