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Demographics of Tightly Packed Systems (STIPs and SUTIPs)

Demographics of Tightly Packed Systems (STIPs and SUTIPs) Mariah MacDonald and Darin Ragozzine (Florida Institute of Technology) Over a thousand planets in hundreds of systems have been discovered by Kepler and other surveys and methods. The discovery of planets in systems means that we can address the demographics of different populations of planetary systems, such as Hot Jupiters, Circumbinary planets, Very Hot Earths, Warm Eccentric Jupiters, and Systems with Tightly-packed Inner Planets (STIPs). STIPs typically have 3-7 small (0.5-2 Earth radii) planets, stably packed with periods from 3-100 days. STIPs are quite common, orbiting 10-50% of stars, and could be the dominant mode of planet formation. In addition, there are some systems that are even more tightly packed, Systems with Ultra-Tightly-Packed Inner Planets (SUTIPs). Motivated by our study of the KOI-500/Kepler-80 system, we will present 1) definitions of STIPs and SUTIPs, 2) demographics of these systems, 3) how common STIPs are among RV systems, and 4) how common three-body resonances are in STIPs.