The Kepler Giant Planet Survey. I: A Decade of Kepler Planet Host Radial Velocities from W. M. Keck Observatory

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Improving our understanding of planetary system architectures, and especially the relationship between Earth-like planets and giant planets, is a major goal of the U.S. astronomical community. A long-term RV study of stars that host small, transiting planets discovered by the NASA Kepler mission is uniquely suited to measure the occurrence of giant planets in a homogeneous sample of stars that are known to contain small planets. We present the results of the Kepler Giant Planet Survey, in which we measured 3,241 RVs of 56 Kepler planet-hosting stars over the past 12 years using Keck-HIRES. Our sample was giant-blind, meaning we had no prior knowledge of which systems would contain giant planets. We announce 16 non-transiting companions, updated masses and densities of 81 transiting planets, and preliminary results about the relationship between small, transiting planets and their massive companions.