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Adaptive Optics Imaging of Exoplanet Host Stars MIRANDA HERMAN, MASON WAALER, KIMBERLY WARD-DUONG, JENNIFER PATIENCE, Arizona State University — With the 6.5m MMT observatory on Mt. Hopkins we obtained high angular resolution images of 12 exoplanet host stars. The targets are all systems with exoplanets in extremely close orbits such that the planets transit the host stars and cause regular brightness changes in the stars. The level of brightness change is used to infer the radius and density of the planet (radial velocity methods are used to determine the planet's mass), but the values can be incorrect if the light from the host star is the combined light of a pair of stars in a binary system. The adaptive optics images were used to determine if any of the host stars had a previously unknown second star at a small enough separation that would affect the interpretation of the planet properties. After analysis, companions were identified around five of the twelve targets. This indicates that the brightness measurements of these host stars are in fact the combined brightness of their systems. Correcting for this has the effect of increasing the inferred radius of the planet and therefore decreasing its density, which provides insight into its composition and the ways in which stellar properties impact planetary characteristics.

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