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Abstract: Jack J. Lissauer, Jason F. Rowe, Daniel Jontof-Hutter, Geoffrey W. Marcy, Stephen T. Bryson,

A substantial majority of Kepler's planet candidates are true exoplanets, but a nontrivial number are likely to be false positives, primarily signatures of eclipsing binary stars. More than 40% of Kepler planet candidates are associated with targets possessing more than one candidate (multis). The fraction of the candidates in multis that are false positives is expected to be substantially smaller than among single candidates, based upon both statistical arguments (Lissauer et al. 2011, 2012) and the small number of identified false positives for the broader sample of KOI's that have been tabulated (Latham et al. 2011). We present results of tests of statistical models using the broad sample KOI's that show the validity of these models for signals that are well above the noise threshold. We extend previous statistical studies by examining the various sources of false positives separately and looking at planetary candidate reliability as a function of period. While the overall false positive rate of multis is extremely low, the lowest amplitude and shortest period events are not as reliable as deeper and longer period transits. New results based on these studies will be presented.

Latham, D., et al. 2011 Ap. J. Lett. 732, 24
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