

Binary Candidates in the Jovian Trojan and Hilda Populations

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Determining the binary fraction for a population of asteroids, particularly as a function of separation between the two components, helps describe the dynamical environment at the time the binaries formed. For asteroids with near-fluid rubble pile structures, very large light curve amplitudes can be explained by close or contact binary systems. Because the structure of most asteroids is not known to a high confidence level, objects with very high light curve amplitudes can only be considered candidate binaries. In Sonnett et al. (2015), we identified several binary candidates in the Jovian Trojan and Hilda populations using archival data from the NEOWISE space mission. We have since been conducting an extensive follow-up campaign to obtain densely sampled light curves of the binary candidates to allow detailed shape and binary modeling, helping discern whether or not these candidates are true binaries.