

---

**LENNARD BAKKER**, Brigham Young University  
*A Model for the Binary Asteroid 2017 YE5*

The Asteroid 2017 YE5, first discovered in December 2017, was determined in June 2018 to be a rare binary pair of asteroids with an even more rare property of the two asteroids having nearly equal masses. We propose a model for the motion of a binary pair, with arbitrary but small masses, in the presence of two primaries, that is two bodies with much larger masses. The model is a time-dependent Hamiltonian for a three dimensional two-body problem build upon the Kepler 2-Body problem for two primaries. We numerically investigate this model for stable motions as well as for unstable motions, especially the situation where a tight binary pair, like 2017 YE5, will be torn apart by a passage too close to the two primaries. This is joint work with Skyler Simmons.