Evolution of binary asteroids due to BYORP

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Binary YORP effect, or BYORP, causes binary systems to alter their semimajor axis, inclination, and obliquity, and can cause the binary to finally settle into a stable BYORP-Tide equilibrium, merge or expand. We study BYORP in the framework of the Steinberg and Sari (2011) model, but generalize their results for non-zero heat conductivity, using the approach developed by Golubov et al. (2016) for the normal YORP effect. We describe the state of a binary asteroid as a point in three-dimensional phase space, composed of the semimajor axis, the inclination, and the obliquity, and simulate dynamical evolution of a binary in this phase space. The general formalism is exemplified by simulation of orbital evolution of asteroid (66391) 1999 KW4.