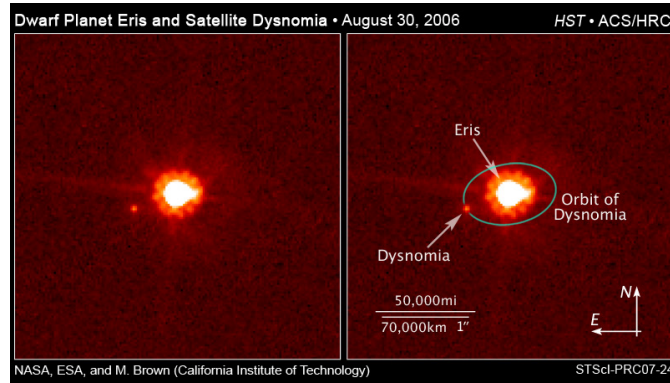


AST 250 – Spring 2018

Homework Due: Monday March 26

26. The Dwarf Planet Eris has a small moon, Dysnomia, which orbits Eris with a semi-major axis of $a = 37,370$ km in a 15.774 day orbit. What is the ratio of the mass of Eris to Pluto?



27. When we plot the distribution of semi-major axes for the Asteroid Belt, several gaps (the “Kirkwood Gaps”) occur in the distribution where asteroids are in a “resonance” with Jupiter (the asteroid’s orbital period is a simple fraction - like $\frac{1}{2}$ - of Jupiter’s orbital period). There are prominent Kirkwood gaps for $a = 2.5$, 2.82 , and 3.276 AU. Calculate which resonances these correspond to (as nearest simple fraction). (Jupiter: $a = 5.2$ AU, $P = 11.862$ yr)

