Asteroid Repulsion

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Asteroids are benign remnants of stellar formation. As benign as they may be, asteroids have been known to wreak havoc upon the Earth. The only currently known asteroid that could impact Earth in the near future is 99942 Apophis. There are many more potential candidates being found every day (Giogini, 2013). Developing a stable and reusable method of moving rogue asteroids is of the utmost importance. The current hypotheses is that, using a powerful burst from a microwave transmitter, a single side of a rotating asteroid could be heated. Thus allowing the Yarkovsky Effect to propel the space debris from its original Earth-bound trajectory (Bottke 2006). The experiment is expected to move an ice ball with a force of 1x10-4 newtons of thrust. The likelihood of the Yarkovsky effect being the primary driving force of the ice ball's motion is very unlikely. The ball moved in the vacuum chamber an average of 0.508mm and an average thrust of 0.0802 N. The success of this experiment has demonstrated the possibility to save countless lives from an asteroid impact.

Awards Won: