

Defense Against The ASTEROIDS

In 2029, the asteroid Apophis could, but probably will not, hit the Earth. The world ends not with a bang, at least for a little while longer. Meanwhile, people patent meteor and asteroid defensive systems.

One remarkable example is Patent No. 8,025,002 (2011) by Gregory A. Piccionelli of Westlake Village, Calif. According to his patent, nuclear devices are

detonated on the moon and propulsion devices are then attached to the resultant moon pieces. These moon pieces are then driven into the incoming meteor to alter its orbit.

Another example, and this one comes from NASA, is Patent No. 6,726,153 (2004). Three or four spacecraft place a Kevlar loop around an asteroid. The spacecraft then dock on the asteroid and deploy a “rigidized photon momentum transfer plane.” Photons from the sun strike this reflective surface and alter the position of the asteroid. Assuming a reflective surface one kilometer in diameter, “...in just three years an asteroid that was going to strike the dead center of the Earth’s disk would be deflected enough to completely miss the Earth.”

Pending Patent Application No. US 2011/0302906 (December 15, 2011) discloses a laser tractor beam able to move meteors. I’m not sure how or if it works, but I love saying “laser tractor beam.” The inventors are John Sinko of St. Cloud, Minn., and Clifford Schlecht of Glastonbury, Conn.

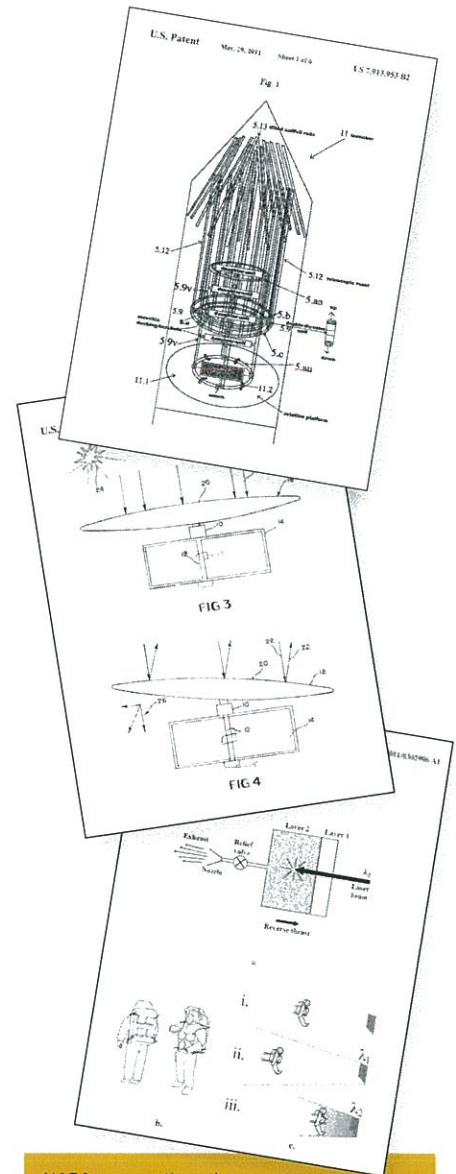
If a meteor was going to impact the Earth would you want to know it? Patent

No. 5,512,743 (1996) by the Navy discloses a satellite based scanning system for monitoring “NEOs”—near-Earth objects.

NASA Patent Application No. 2010/0245163 (September 30, 2010) is for a step frequency inverse synthetic aperture radar system used to ascertain the internal structure of NEOs. According to the patent, “...because Earth-crossing objects such as Apophis are scheduled to pass inside the moon’s orbit in 2029, and may constitute a potential hyper velocity impact risk to the Earth, availability of detailed information regarding the internal structure of NEOs may allow scientists to quantify the mechanics of impact events involving NEOs.” Does NASA know something we don’t?

Where some see NEOs as a threat, others view them as an opportunity. Patent No. 7,913,953 (2011) proposes a solar sail mother ship spacecraft carrying “daughter units,” which would carry asteroid mining products back to the earth. A start-up by the name of Planetary Resources (PlanetaryResources.com) is also developing technology to mine asteroids. ■

Kirk Teska is the author of Patent Project Management and Patent Savvy for Managers, is an adjunct law professor at Suffolk University Law School, and is the managing partner of Iandiorio Teska & Coleman, LLP, an intellectual property law firm in Waltham, Mass.



NASA surveys the solar system (top of page) for near-Earth asteroids. Schemes to deal with them include a spacecraft (above, top) to sample their minerals, and a photon momentum plane (center) and a laser tractor beam to deflect them.