

HAMMER to deal with asteroids heading for earth

An artist's conception shows an asteroid crashing into the earth. File photo | Photo Credit: [Reuters](#)

Hollywood's favourite plan of blowing up an asteroid on a collision course with Earth, may not be the only way to avoid the apocalypse. A small push is all that is needed to change its course and save our planet.

Scientists from NASA, the National Nuclear Security Administration, and two other national laboratories in the USA have conceptualised an asteroid deflector that can deliver this small nudge. They also theoretically studied the impact of the deflector on a near-Earth asteroid -- 101955 Benu.

Deflector set-up

Named HAMMER (Hypervelocity Asteroid Mitigation Mission for Emergency Response vehicle), the deflector is nine metres tall and weighs more than 8000 kg. HAMMER can be used as a kinetic impactor (spacecraft at high speed to give the push), or as a carrier for some other nuclear device which can do the same job.

"The chance of an impact appears slim now, but the consequences would be dire," said [Kirsten Howley](#), physicist and co-author of the paper, in a release. "This study aims to help us shorten the response timeline when we do see a clear and present danger so we can have more options to deflect it."

The study was recently published in *Acta Astronautica*.

The researchers evaluated various deflection scenarios in the study, ranging from launching the deflector 10 years to 25 years before the impact.

"In the 10-year scenarios, it was determined that it could take between 34 and 53 launches of the Delta IV Heavy rocket, each carrying a single HAMMER impactor, to make a Benu-class asteroid miss the Earth. If there were a 25-year lead time, that number could be reduced to seven to 11 launches. The exact number would depend on the desired Earth-miss-distance and the impact conditions at the asteroid," says the release.

According to NASA's Centre for Near Earth Object Studies there are more than 2,500 near Earth objects and most of them don't pose any threat to our planet. "The ultimate goal is to be ready to protect life on Earth," adds Prof. Howley.

Perkin discovered the first synthetic dye, known as mauveine.

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