

PROBE 190

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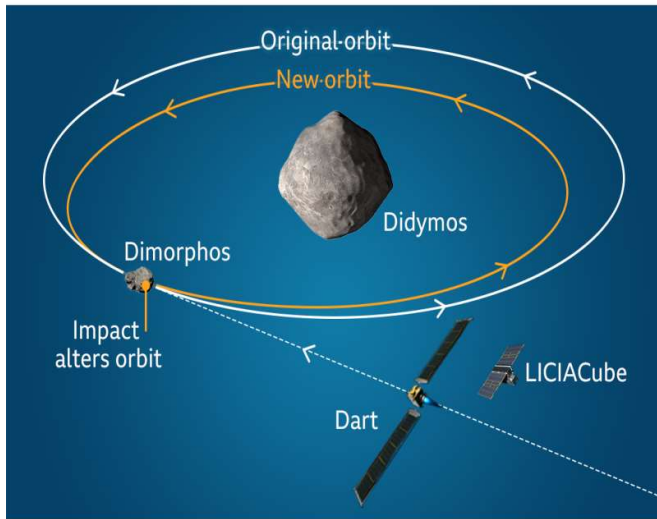
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Space Mission to Divert Asteroid (from the NASA website)

Nasa spacecraft will crash into asteroid's moon



Source: Nasa, Johns Hopkins Applied Physics Laboratory

A NASA mission to deliberately smash a spacecraft into an asteroid - a test run should humanity ever need to stop a giant space rock from wiping out life on Earth – has blasted off from the Vandenberg Space Force Base in California.

The mission spacecraft aboard the Space-X rocket is heading towards a binary asteroid system 11 million kilometers from Earth and should arrive there late in 2022.

Dimorphos is a “moonlet” of around 160m wide which circles a much larger asteroid called Didymos. The mission's finale will test the spacecraft's ability to alter an asteroid's trajectory with sheer kinetic force, nudging it just enough off course to keep our planet out of its way.

The mission is called DART (Double Asteroid Redirection Test) and it aims to change the orbital period of Dimorphos from 11 hours and 55 minutes to about 10 minutes shorter. This will reveal the effect of the impact. Cameras mounted on a mini-spacecraft will be released from DART about 10 days before the collision to record it and beam back images to Earth.

“What we are trying to learn is how to deflect a threat” said Thomas Zuburchren, one of NASA's top scientists. The project will cost about \$330 million. They are interested in those asteroids that are larger than about 140 meters in size, which have the potential to level entire cities or regions and have the energy of many times the average nuclear bomb.

There are more than 10 000 known near Earth asteroids, but none has a significant chance of striking the Earth in the next 100 years. But scientists think that there are about 15 000 more such objects waiting to be discovered.

Scientists say that the Didymos-Dimorphos system is an ideal natural laboratory because Earth-based telescopes can be used to determine the time it takes the moonlet to orbit its big brother. Also this system poses no threat to Earth.

The DART spacecraft also contains sophisticated programmes for navigating and imaging, including the Space Agency's Light Italian CubeSat for Imaging of Asteroids, which will hopefully give spectacular pictures of the impact.

The mission is expected to occur between September the 26th and October the 1st next year.