**NASA to test planetary defence system by crashing spacecraft into an asteroid**

Experiment will help scientists see whether such a strike could work to divert future hazardous asteroids away from Earth



An asteroid strike millions of years ago wiped out dinosaurs from Earth. Image via Pixabay

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NASA is working on a planetary defence system intended to save Earth from a deadly asteroid strike.

Dubbed Double Asteroid Redirection Test (DART), the Agency plans to conduct an experiment that will involve smashing a spacecraft into an asteroid at speeds of about 21,600 kilometres-per-hour to see if a similar collision might work to divert future hazardous asteroids from Earth.

According to NASA, the primary object of the DART mission is to demonstrate a kinetic impact on the small asteroid.

"DART would be NASA's first mission to demonstrate what's known as the kinetic impactor technique - striking the asteroid to shift its orbit - to defend against a potential future asteroid impact," [**Lindley Johnson, planetary defence officer at NASA Headquarters in Washington**](https://www.nasa.gov/feature/nasa-s-first-asteroid-deflection-mission-enters-next-design-phase), had earlier stated.

In recent years, space experts have raised their concerns regarding space rocks which may smash into the Earth in future and cause catastrophic damage on it, similar to the asteroid strike, which wiped out dinosaurs from our planet.

The space agency wants to use the DART system to hit asteroid Didymos. This binary near-Earth asteroid is made up of two small rocks, Didymos A and B, and is not a threat to Earth. Didymos A is approximately 800 metres wide. The smaller Didymos B is about 160 metres wide and orbits around Didymos A.

NASA's spacecraft will hit the smaller rock when it comes close to Earth sometime between 2022 and 2024. The collision will take place about 11 million kilometres away from Earth.

This experiment will enable scientists to gather robust data about the asteroid and help them track how much the impact knocked the rock off its path.

Nancy Chabot, a planetary scientist at Johns Hopkins University's Applied Physics Laboratory and project scientist for DART, believes telescopes will play a significant role in the success of the mission.

"We have to know where this moon is in order to impact it, to make this maximum deflection. We kind of take for granted that we know where everything is at all times. We understand where the system is as a whole, but specifically where that moon's gonna be [requires tracking] because we want to try to hit it head-on," [**Chabot told*Space.com***](https://www.space.com/42853-dart-asteroid-impact-defense-mission-2022.html).

The entire event will be tracked by ground telescopes as well as two satellites in space:

1. The Light Italian Cubesat for Imaging of Asteroids, which will be sent with DART; and,
2. The European Space Agency's HERA probe, which the ESA plans to launch to study the binary asteroid in more detail