

NASA spacecraft to crash into an asteroid to save earth

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In news- In the first-of-its kind, save-the-world experiment, NASA (with spacecraft named Dart) is about to clobber a small, harmless asteroid millions of miles away.

Asteroid Didymos-

- The **asteroid with the bull's-eye on it is Dimorphos**, about 7 million miles (9.6 million kilometers) from Earth.
- It is actually the **puny sidekick of a 2,500-foot** (780-meter) **asteroid named Didymos, Greek for twin**.
- Discovered in 1996, Didymos is spinning so fast that scientists believe it flung off material that eventually formed a moonlet.
- Dimorphos roughly 525 feet (160 meters) across orbits its parent body at a distance of less than a mile (1.2 kilometers).
- Little Dimorphos completes a lap around big Didymos every 11 hours and 55 minutes.

Dart spacecraft-

- **Double Asteroid Redirection Test (DART) is a NASA space mission** aimed at testing a method of planetary defense against near-Earth objects.
- **The Johns Hopkins lab took a minimalist approach in developing Dart – short for Double Asteroid Redirection Test** – given that it's essentially a battering ram and faces sure destruction.
- It **has a single instrument: a camera used for navigating, targeting** and chronicling the final action.
- Believed to be essentially a rubble pile, **Dimorphos will emerge as a point of light an hour before impact**,

looming larger and larger in the camera images beamed back to Earth.

- The spacecraft's navigation is designed to distinguish between the two asteroids and, in the final 50 minutes, target the smaller one.
- The **Dart will zero in on the asteroid on September 26, intent on slamming it head-on at 14,000 mph (22,500 kph).**
- The size of a small vending machine at 1,260 pounds (570 kilograms), the spacecraft will slam into roughly 11 billion pounds (5 billion kilograms) of asteroid.

Numerous asteroid missions-

- Planet Earth is on an asteroid-chasing roll. NASA has close to a pound (450 grams) of rubble collected from asteroid Bennu headed to Earth.
- **Japan was the first to retrieve asteroid samples, accomplishing the feat twice.**
- China hopes to follow suit with a mission launching in 2025. **NASA's Lucy spacecraft, meanwhile, is headed to asteroids near Jupiter,** after launching in 2021.
- Another spacecraft, **Near-Earth Asteroid Scout,** is loaded into NASA's new moon rocket awaiting liftoff; it will use a solar sail to fly past a space rock that's less than 60 feet (18 meters) next year.
- In the next few years, NASA also plans to launch a census-taking telescope to identify hard-to-find asteroids that could pose risks.
- The Psyche mission of NASA is **a journey to a unique metal-rich asteroid orbiting the Sun between Mars and Jupiter.**