

## NASA'S DART MISSION



### Issue

NASA's first planetary defense test mission known as Double Asteroid Redirection Test (DART) will soon be launched.

### Background

The spacecraft will be launched using a SpaceX Falcon 9 rocket from Vandenberg Space Force Base in California.

### Details

- The mission involves crashing a spacecraft into an asteroid and change its course away from the direction of Earth.
- The mission will be targeting a small moonlet known as Dimorphos. It will collide when it is 11 million kilometres away from Earth.
- This moonlet revolves around another asteroid known as Didymos. The moonlet and asteroid do not pose any threat to Earth.
- The mission is just an experiment to test new technology to be prepared in case an asteroid heads towards Earth in the future.

### Mission details

- The spacecraft will intentionally collide with moonlet with a speed of 24,000 km/hr. it will be a suicide mission as the spacecraft will get completely destroyed.
- Telescopes will be employed to study if the collision has been successful in changing the path and orbit of the moonlet.

### The DART spacecraft

- The DART is a low-cost spacecraft that weights around 550 kg during impact. It consists of solar arrays and hydrazine propellant for maneuvering.
- The agency is set to use Xenon for testing the new NASA Evolutionary Xenon Thruster–Commercial (NEXT-C).
- Imager known as Didymos Reconnaissance and Asteroid Camera for Optical Navigation (DRACO) will be used to capture details during impact.
- The spacecraft will also be carrying a CubeSat named LICIACube (Light Italian CubeSat for Imaging of Asteroids).
- This will be launched 10 days before impact to capture images of the impact and the impact crater formed as a result of the collision.

### NOTES

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