

## The Hindu explains: NASA's Transiting Exoplanet Survey Satellite

This image made available by NASA shows an illustration of the Transiting Exoplanet Survey Satellite (TESS). | Photo Credit: [AP](#)

In February 2017, NASA announced that it has discovered more new exoplanets, a finding that was expanded in December to include two more celestial objects found with the help of artificial intelligence. An exoplanet is a planet that orbits a star outside our solar system.

On Wednesday, April 18, NASA is expected to launch TESS (Transiting Exoplanet Survey Satellite), which will monitor more than 200,000 stars for temporary drops in brightness caused by planetary transits.

### What is the current exoplanet count?

As of now, the number of known exoplanets stands at over 3,700. Another 4,500 objects are strong contenders to become exoplanets. About 50 are believed to potentially habitable. They have the right size and the right orbit to support surface water and, at least theoretically, to support life.

### What will TESS do?

According to NASA, "TESS scientists expect the mission will catalog thousands of planet candidates and vastly increase the current number of known exoplanets. Of these, approximately 300 are expected to be Earth-sized and super-Earth-sized exoplanets, which are worlds no larger than twice the size of Earth. TESS will find the most promising exoplanets orbiting our nearest and brightest stars, giving future researchers a rich set of new targets for more comprehensive follow-up studies."

### How does it plan to do this?

Tess will look for dips in the visible light of stars, which requires that planets cross stars in our line of sight. "Repetitive, periodic dips can reveal a planet or planets orbiting a star. Transit photometry, which looks at how much light an object puts out at any given time, can tell researchers a lot about a planet," says NASA.

### How long is this mission?

NASA says TESS will survey the entire sky over a period of two years. The satellite will do this by breaking it up into 26 different sectors and the cameras on the satellite will survey each sector for 27 days.

### Who all are behind Tess?

The Tess team includes Massachusetts Institute of Technology, the Kavli Institute for Astrophysics and Space Research, NASA's Goddard Space Flight Center, MIT's Lincoln Laboratory, Orbital ATK, NASA's Ames Research Center, the Harvard-Smithsonian Center for Astrophysics, and the Space Telescope Science Institute.

TESS will be launched using Falcon 9, a rocket manufactured by Elon Musk's SpaceX.

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