

Looking for signs of life

THE STAR 17/04/18 ms. 24

Nasa's new planet hunter to seek closer, Earth-like worlds

TAMPA: Nasa is poised to launch a US\$337mil washing machine-sized spacecraft that aims to vastly expand mankind's search for planets beyond our solar system, particularly closer, Earth-sized ones that might harbour life.

The Transiting Exoplanet Survey Satellite, or TESS, is scheduled to launch atop a SpaceX Falcon 9 rocket from Cape Canaveral, Florida.

Its main goal over the next two years is to scan more than 200,000 of the brightest stars for signs of planets circling them and causing a dip in brightness known as a transit.

Nasa predicts that TESS will discover 20,000 exoplanets – or planets outside the solar system – including more than 50 Earth-sized planets and up to 500 planets less than twice the size of Earth.

"They are going to be orbiting the nearest, brightest stars," Elisa Quintana, TESS scientist at Nasa's Goddard Spaceflight Center, told reporters on Sunday.

"We might even find planets that orbit stars that we can even see with the naked eye," she added.

"So in the next few years we

TESS is designed as a follow-on to the US space agency's Kepler spacecraft, which was the first of its kind and launched in 2009.

The ageing spacecraft is currently low on fuel and near the end of its life.

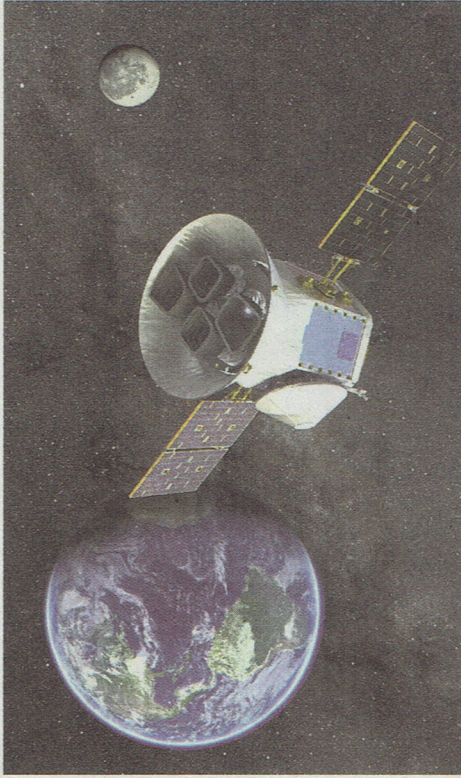
Kepler found a massive trove of exoplanets by focusing on one patch of sky, which contained about 150,000 stars like the Sun.

The Kepler mission found 2,300 confirmed exoplanets, and thousands more candidate planets. But many were too distant and dim to study further.

TESS, with its four advanced cameras, will scan an area that is 350 times larger, comprising 85% of the sky in the first two years alone.

"By looking at such a large section of the sky – this kind of stellar real estate – we open up the ability to cherry-pick the best stars to do follow-up science," said Jenn Burt, a postdoctoral fellow at the Massachusetts Institute of Technology (MIT).

"On average the stars that TESS observes are 30-100 times brighter and 10 times closer than the stars that Kepler focused on." — AFP



Discovery mission: An illustration of the Transiting Exoplanet Survey Satellite (TESS). — AP

might even be able to walk outside and point at a star and know that it has a planet. This is the future."

Just a couple of decades ago, the notion of finding habitable planets

– or any planets at all – was a mere fantasy, said Paul Hertz, astrophysics division director at Nasa.

"Humans have wondered forever whether we were alone in the uni-

verse, and until 25 years ago the only planets we knew about were the eight in our own solar system," he told reporters on the eve of the TESS launch.

"But since then, we have found thousands of planets orbiting other stars and we think all the stars in our galaxy must have their own family of planets."