



# 300 Million Potentially Habitable Earths

## Why in News

New analysis of data from [Kepler Spacecraft](#) shows a large number of habitable [Exoplanets](#).

- An **exoplanet or extrasolar planet** is a **planet outside the Solar System**. The **first confirmation** of detection of exoplanets occurred in **1992**.

## Key Points

- After analysing Kepler's data for two years, a team from [National Aeronautics and Space Administration \(NASA\)](#) estimated that there are at least 100 billion stars in the Milky Way, of which about 4 billion are sunlike.
- If only 7% of those stars have habitable planets, a conservative estimate is that there could be **as many as 300 million potentially habitable Earths (exoplanets)** out there in the whole Milky Way alone.
- The team calculated that at least one third of stars similar in mass and brightness to the sun have rocks like earth in their habitable zone.

## Kepler Spacecraft

- The Kepler mission was **named** in honor of 17<sup>th</sup>-century German astronomer Johannes Kepler, who discovered the laws of planetary motion.
- The Kepler Mission was **launched in 2009** on a three-and-a-half year mission to monitor 1,50,000 stars in a patch of sky in the Milky Way.
- It was **NASA's first planet-hunting mission**, it discovered more than 2,600 of around 3,800 exoplanets.
  - It looked for tiny dips in starlight caused by an exoplanet passing in front of its home star.
- Kepler's **formal goal** was to measure a number called **eta-Earth**: the fraction of sunlike stars that have an Earth-size object orbiting them in the **"goldilocks"** or **habitable zone**, where it is warm enough for the surface to retain liquid water.
- Kepler is succeeded by NASA's [Transiting Exoplanet Survey Satellite, or TESS](#), which was launched in **April 2018**. TESS is the new planet hunter for NASA.