Scientists using James Webb Telescope find “Strongest sign of life” on alien planet

Published On: 18-04-2025

Context

• NASA’s James Webb Space Telescope in its study of **K2-18 b discovered the presence of carbon dioxide and methane.**

• The observations of James Webb also provided a possible **detection of a molecule called dimethyl sulfide (DMS).**

• **On Earth, DMS is only produced by life**.

• The bulk of the **DMS in Earth’s atmosphere is emitted from phytoplankton in marine environments.**

K2-18 b

• K2-18 b is an **exoplanet that orbits an M-type star.**

• It is **120 light years** from earth and orbits the **cool dwarf star K2-18 a.**

• It is **8.6 times as massive as Earth** and the size lies that of between earth and Neptune.

• Its **discovery was announced in 2015.**

• Planet k2-18b is within the “**habitable zone” of its star**, that is conditions are just right – **neither too hot nor too cold – ideal for life to exist.**

What is an exoplanet?

• An exoplanet is **any planet beyond our solar system.**

• All of the planets in our solar system orbit around the Sun. **Planets that orbit around other stars are called exoplanets.**

• Exoplanets are **very hard to see directly with telescopes**. They are **hidden by the bright glare of the stars they orbit.**

James Webb Telescope

• It is the **world’s premier space science observatory** launched in **December 2021.**

Kamaraj IAS Academy
Plot A P.127, AF block, 6 th street, 11th Main Rd, Shanthi Colony, Anna Nagar, Chennai, Tamil Nadu 600040
Phone: **044 4353 9988 / 98403 94477** / Whatsapp : **09710729833**

• It will solve mysteries in our solar system, look beyond distant worlds around other stars, and probe the mysterious structures and origins of our universe and our place in it.

• **NASA’**s James Webb Telescope was developed with the **assistance of the European Space Agency and the Canadian Space Agency.**

• Successor to Hubble: It has been conceived as the next-generation space **telescope succeeding the Hubble Space Telescope, with a focus on infrared astronomy.**

• It is currently at a point in space known as the **Sun-Earth L2 Lagrange point**, approximately 1.5 million km beyond Earth’s orbit around the Sun.

Mission:

• It will be “**a giant leap forward in the quest to understand the Universe and our origins**”, as it will examine every phase of cosmic history: from the Big Bang to the formation of galaxies, stars, and planets to the evolution of our own Solar System.