

K2-18b

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K2-18b Latest News

In 2025, scientists detected the presence of either dimethyl sulphide (DMS) or dimethyl disulphide (DMDS) in the atmosphere of K2-18b.

What is K2-18b?

- **K2-18b** is an **exoplanet** (a planet located **outside our solar system**) situated **124 light-years away** from Earth in the **constellation Leo**, orbiting a star called **K2-18**.
- It was **discovered in 2015** by the **Kepler Space Telescope**.
- **K2-18b** is **5.2 times wider and around 9 times more massive** than Earth, suggesting it may possess a **hydrogen-rich atmosphere**.
- The planet receives a **similar level of stellar radiation** from its star as Earth does from the Sun, hinting at the possibility of **habitable surface conditions**.

Atmospheric Discoveries

- In **2019**, the **Hubble Space Telescope** detected **water vapour** in the atmosphere of K2-18b.
- Later, the **James Webb Space Telescope (JWST)** found the presence of **carbon dioxide (CO₂)** and **methane (CH₄)**.
- The **absence of ammonia** along with CO₂ and CH₄ in a **hydrogen-rich atmosphere** is significant because it may indicate the **possible presence of a liquid water ocean**.

About Dimethyl Sulphide (DMS)

- **DMS is considered a potential biomarker** because, on **Earth**, it is mostly produced by **phytoplankton** in the **oceans**.
- DMS is formed when phytoplankton die and enzymes break down **dimethylsulphoniopropionate**.
- It is also released when **soil bacteria** decompose plant matter and in trace amounts during **volcanic eruptions**.
- A **2015 study** found that **76% of soil bacteria** on Earth contain a **gene that produces DMS**, reinforcing its biological origin.

Source: **TH**

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