



Recent Findings about Venus

Why in News

Recently, scientists have obtained **new data about Venus by bouncing [radio waves](#)** off the planet.

- The scientists **transmitted radio waves toward Venus 21 times from 2006 to 2020 from NASA's Goldstone Antenna in the Mojave Desert of California** and studied the radio echo, which provided information on certain planetary traits.

Key Points

▪ Latest Findings:

- A single Venusian **rotation takes 243.0226 Earth days**. This means **a day lasts longer than a year on Venus**, which **makes a complete orbit around the sun in 225 Earth days**.
- The **Venusian planetary core has a diameter of about 7,000 km**, comparable to [Earth's core](#) which is **6,970 km**.
- The **Venusian tilt is at about 2.64 degrees**. **Earth's is about 23.5 degrees**.

▪ Previous Findings:

- **Presence of [phosphine](#)** was detected in the atmosphere of Venus. This indicates the possibility of the presence of lifeforms on Venus.
- According to a study published in **Nature Geoscience**, Venus is still **geologically active**.
 - The study identified **[37 active volcanoes](#)**, in the form of ring-like structures known as coronae, on the surface of Venus.

▪ About Venus :

- Venus, the **second planet from the sun**, is similar in structure but slightly smaller than Earth (**Earth's Twin**).
- It has a **thick and toxic atmosphere** that consists primarily of carbon dioxide, with clouds of sulfuric acid droplets.
- With a **runaway greenhouse effect**, its surface temperatures reach 471 degrees Celsius, hot enough to melt lead.
 - The phenomenon, called the '**runaway greenhouse' effect**, occurs when a planet absorbs more energy from the sun than it can radiate back to space. Under these circumstances, the hotter the surface temperature gets, the faster it warms up.
- Venus is **one of just two planets that rotate from east to west**. Only **Venus and Uranus** have this "backwards" rotation.
- Venus has **no moons and no rings**.
- On Venus, **one day-night cycle takes 117 Earth days** because Venus rotates in the direction opposite of its orbital revolution around the Sun.

▪ Missions Related to Venus:

- **ISRO Shukrayaan**: The [Indian Space Research Organisation \(ISRO\)](#) is also planning a

- mission to Venus, tentatively called Shukrayaan
- **Akatsuki** (Japanese 2015)
 - **Venus Express** (European Space Agency 2005)
 - NASA's **Magellan** (1989)

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