



New Missions to Venus: NASA

Why in News

Recently, the [National Aeronautics and Space Administration \(NASA\)](#) announced **two new robotic missions to Venus**.

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

Key Points

▪ Aim:

- The two sister missions aim to **understand how Venus became an inferno-like world capable of melting lead at the surface**.

▪ About:

◦ DaVinci Plus:

- It will be the first of the two, **it will analyze the thick, cloudy Venusian atmosphere** in an attempt to **determine whether the inferno planet ever had an ocean and was possibly habitable**. A small craft will plunge through the atmosphere to measure the gases.

◦ Veritas:

- It will be the second one seeking a **geologic history by mapping the rocky planet's surface**.

▪ Significance:

- The new missions will **give fresh views of the planet's atmosphere, made up mostly of carbon dioxide, down to the core**.

▪ Previous Missions:

◦ US:

- **Mariner** series 1962-1974, **Pioneer** Venus 1 and Pioneer Venus 2 in 1978, Magellan in 1989.

◦ Russia:

- **Venera** series of space crafts 1967-1983, **Vegas** 1 and 2 in 1985.

◦ Japan:

- **Akatsuki** in 2015.

◦ Europe:

- **Venus Express** in 2005.

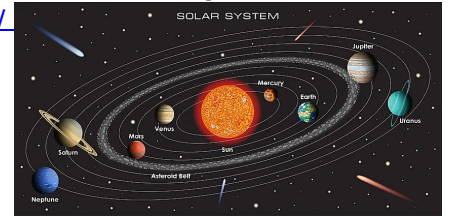
▪ Indian Initiative:

- India plans to launch a new orbiter named **Shukrayaan** to Venus in 2024.

Venus

▪ About:

- It is named after the Roman goddess of love and beauty. It is the **second planet from the Sun and sixth in the solar system in size and mass.** //



- It is the **second brightest** natural object in the night sky **after the Moon**, probably that is the reason why it was the **first planet to have its motions plotted across the sky**, as early as the second millennium BC.
- Unlike the other planets in our solar system, **Venus and Uranus spin clockwise** on their axis.
- It is the **hottest planet** in the solar system because of the **high concentration of carbon dioxide** which works to produce an intense [greenhouse effect](#).
- **A day on Venus is longer than a year.** It takes Venus **longer to rotate once on its axis than to complete one orbit of the Sun.**

- That's **243 Earth days to rotate once** - the longest rotation of any planet in the Solar System - and only **224.7 Earth days to complete one orbit of the Sun.**

▪ Venus & Earth:

- Venus has been called **Earth's twin** because of the **similarities in their masses, sizes, and densities and their similar relative locations** in the solar system.
- No planet approaches closer to Earth than Venus; at its nearest **it is the closest large body to Earth other than the Moon.**
- Venus has **90 times the atmospheric pressure of Earth.**

▪ Reason For Studying Venus:

- It will help to learn **how Earth-like planets evolve and what conditions exist on Earth-sized exoplanets** (planets that orbit a star other than our sun).
- It will help in modelling **Earth's climate**, and serves as a cautionary tale on how dramatically a planet's climate can change.

[Source:IE](#)