

3. Venus (2nd Planet)

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Distance: 108.2 million km

Diameter: 12,104 km

Moons: 0

Key features:

Hottest planet: 465°C

Thick CO₂ atmosphere

Strong greenhouse effect

Special facts:

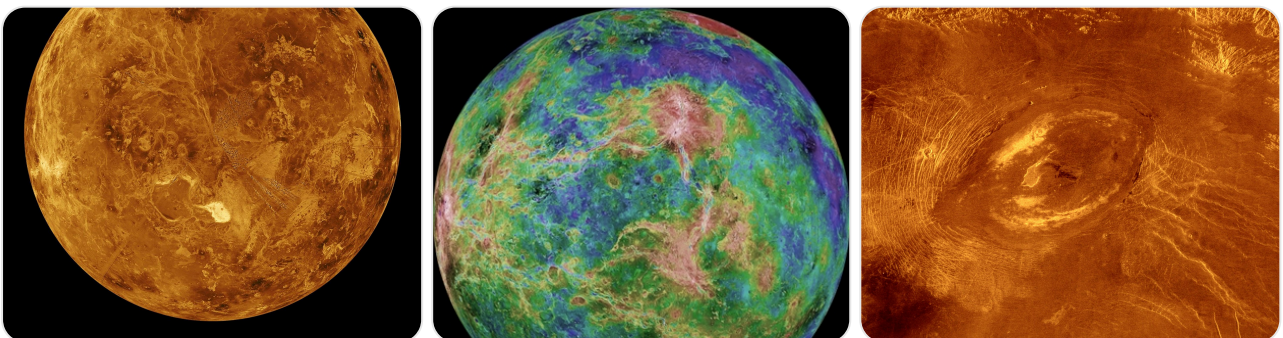
Rotates backwards

Day longer than year

Surface:

Volcanoes

Lava plains give more all the info



Venus – Complete Information (2nd Planet from the Sun)

Basic Facts

- **Position from Sun:** 2nd planet
- **Average distance from Sun:** 108.2 million km
- **Diameter:** 12,104 km (almost same size as Earth)
- **Radius:** 6,052 km
- **Mass:** 4.87×10^{24} kg
- **Gravity:** 8.87 m/s^2 (about 90% of Earth's gravity)
- **Number of moons:** 0
- **Length of day (rotation):** 243 Earth days
- **Length of year (orbit):** 225 Earth days

This means **one Venus day is longer than one Venus year.**

Temperature and Climate

- **Average surface temperature:** 465°C
- **Hottest planet in the Solar System** (even hotter than Mercury)
- Temperature stays almost the same everywhere — day and night

Why is Venus so hot?

Because of a **very strong greenhouse effect**:

- Atmosphere is **96% carbon dioxide (CO_2)**
 - CO_2 traps heat from the Sun
 - Heat cannot escape back into space
 - Result: constant extreme heat
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Atmosphere

Venus has an extremely thick atmosphere.

Composition:

- 96% Carbon dioxide (CO_2)
- 3% Nitrogen
- Small amounts of sulfur dioxide and other gases

Clouds:

- Made of **sulfuric acid**
- Very toxic and dangerous
- Reflect sunlight strongly → Venus appears very bright

Pressure:

- Surface pressure is **92 times Earth's pressure**
 - Equal to being **900 meters underwater on Earth**
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Rotation and Movement (Special Feature)

Venus rotates differently from most planets.

Retrograde rotation (backwards):

- Venus spins from **east to west**
- On Venus, the **Sun rises in the west and sets in the east**

Very slow rotation:

- 1 rotation = 243 Earth days
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Surface Features

Venus surface is rocky like Earth but very harsh.

Main surface features:**1. Volcanoes**

- Venus has thousands of volcanoes
- Some may still be active
- Largest volcano: **Maat Mons**

2. Lava plains

- Huge flat areas covered by hardened lava
- Most of Venus surface is lava plains

3. Mountains

- Highest mountain: **Maxwell Montes**
- Height: about 11 km

4. Craters

- Impact craters from asteroids
 - Fewer than Mercury because lava covered many
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Internal Structure

Venus structure is similar to Earth:

1. Core – iron and nickel
 2. Mantle – hot rocky layer
 3. Crust – outer rocky surface
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Appearance and Visibility

- Venus is the **brightest planet in the night sky**
 - Called:
 - **Morning Star** (seen before sunrise)
 - **Evening Star** (seen after sunset)
 - Visible without telescope
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Why Venus is called Earth's Twin

Because Venus and Earth are very similar in:

- Size
- Mass
- Density
- Structure

But Venus is not suitable for life because:

- Extreme heat
 - Toxic atmosphere
 - No liquid water
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Space Missions to Venus

Many spacecraft have visited Venus.

Famous missions:

- Soviet **Venera missions** – first landing
- NASA **Magellan** – mapped surface using radar
- Japan **Akatsuki** – studies atmosphere



Feature

Venus



Distance from Sun

108.2 million km

Diameter

12,104 km

Moons

0

Temperature

465°C

Day length

243 Earth days

Year length

225 Earth days

Atmosphere

Thick CO₂

Rotation

Backwards

Surface

Volcanoes, lava plains

Life possible?

No

If you want, I can also make this into **short notes, school project format, or PPT format.**

