

12. Pluto (Dwarf Planet)

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Distance: 5.9 billion km

Diameter: 2,377 km

Moons: 5

Not a full planet (reclassified 2006) full info every word



Pluto (Dwarf Planet) — Full Information

Name: Pluto

Type: Dwarf Planet

Position from Sun: 9th largest known object orbiting the Sun (formerly 9th planet)

Discovered by: Clyde Tombaugh

Discovery Date: February 18, 1930

Named after: Pluto, the Roman god of the underworld

Distance from the Sun

- **Average distance:** 5.9 billion kilometers (5,900,000,000 km)
- **In Astronomical Units (AU):** 39.5 AU
- **Closest distance (Perihelion):** 4.4 billion km
- **Farthest distance (Aphelion):** 7.3 billion km

Pluto's orbit is very **elliptical (oval-shaped)** and **tilted**, unlike most planets.

Size and Physical Characteristics

- **Diameter:** 2,377 km
- **Radius:** 1,188 km
- **Circumference:** 7,476 km
- **Surface area:** 17.7 million km²
- **Mass:** 1.309×10^{22} kg
- **Gravity:** 0.62 m/s² (about 6% of Earth's gravity)

A person weighing 50 kg on Earth would weigh about 3 kg on Pluto.

Temperature

- **Average temperature:** -229°C
- **Range:** -240°C to -218°C

Pluto is extremely cold because it is very far from the Sun.

Rotation and Time

- **Length of one day:** 6.4 Earth days
 - Pluto rotates very slowly.
 - Rotation direction: **Retrograde** (opposite to Earth's rotation)
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Orbit and Year

- **Length of one year:** 248 Earth years
 - Pluto takes 248 Earth years to complete one orbit around the Sun.
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Surface Features

Pluto's surface is made of frozen materials:

- Nitrogen ice
- Methane ice
- Carbon monoxide ice
- Water ice (hard as rock at Pluto temperatures)

Important feature:

Tombaugh Regio — a large heart-shaped region visible from space.

Surface includes:

- Mountains (up to 3,500 meters high)
 - Ice plains
 - Frozen valleys
 - Craters
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Atmosphere

Pluto has a very thin atmosphere made of:

- Nitrogen (N_2)
- Methane (CH_4)
- Carbon monoxide (CO)

The atmosphere can freeze and fall as snow when Pluto moves away from the Sun.

Moons of Pluto (Total: 5)

1. Charon (largest moon)
2. Nix
3. Hydra
4. Kerberos
5. Styx

Charon is very large — about half the size of Pluto.

Pluto and Charon orbit each other like a double system.

Why Pluto is Not a Full Planet (Reclassified in 2006)

In 2006, the International Astronomical Union (IAU) created 3 rules for a full planet:

A planet must:

1. Orbit the Sun ✓
2. Be round in shape ✓
3. Clear its orbit of other objects ✗

Pluto fails rule number 3 because it shares its orbit with many objects in the Kuiper Belt.

Therefore, Pluto was reclassified as a **dwarf planet**.

Location: Kuiper Belt

Pluto is located in the **Kuiper Belt**, a region beyond Neptune filled with:

- Ice objects
 - Small dwarf planets
 - Comets
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Internal Structure

Pluto has 3 layers:

1. Core — made of rock
2. Mantle — made of water ice
3. Surface — made of frozen nitrogen and methane

Scientists believe Pluto may have a **subsurface ocean** beneath its ice.

Gravity and Escape Velocity

- Gravity: 0.62 m/s^2
- Escape velocity: 1.21 km/s

Very low compared to Earth.

Light and Visibility

- Sunlight takes **5.5 hours** to reach Pluto
 - Pluto appears very dim and small from Earth
 - Cannot be seen with naked eye
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Space Mission to Pluto

NASA Mission: New Horizons

Launch: January 19, 2006

Reached Pluto: July 14, 2015

New Horizons gave the first clear images of Pluto.

Color and Appearance

Pluto appears:

- Brown
- Yellow
- White
- Slight red tint

Color comes from frozen methane and nitrogen.

Fun Facts

- Pluto is smaller than Earth's Moon
 - Pluto's largest moon Charon is so big they orbit each other
 - Pluto has mountains made of ice
 - Pluto may have underground ocean
 - Pluto was a planet for 76 years (1930–2006)
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Quick Summary Table

Property	Value	⋮
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Diameter	2,377 km	
Moons	5	
Day length	6.4 Earth days	
Year length	248 Earth years	
Temperature	-229°C	
Gravity	0.62 m/s ²	
Classification	Dwarf planet	
Location	Kuiper Belt	
Discovered	1930	

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



Do you like this personality?