


### Our Solar System

- Our solar system is made up of eight planets, with the sun at the center. The planets revolve around the sun on paths called orbits. The time it takes to make one orbit around the sun is called the orbital period.

• The planets are made up of different combinations of chemical elements. The four common elements are; hydrogen, helium, oxygen and carbon.

- Each planet in the solar system is unique. The planets differ in their size, motion, and temperature, in the substances they are made of, and in their gravitational field strength.

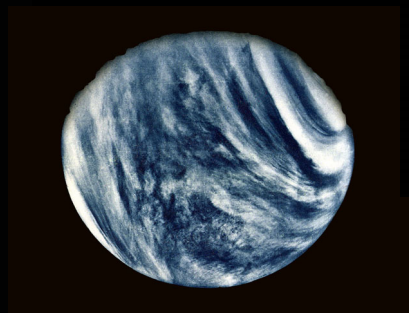
### → What makes a Planet a planet?

For an object to be a planet, it needs to meet these three requirements defined by the IAU:

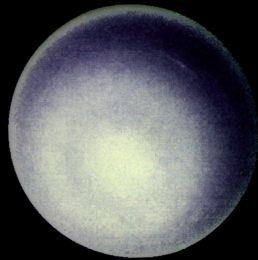
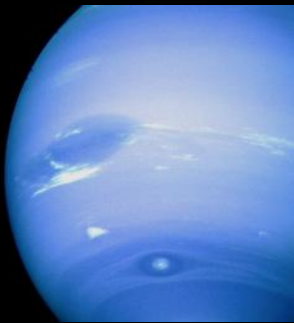
- 1. It needs to be in orbit around the Sun
- 2. It needs to have enough gravity to pull itself into a spherical shape
- 3. It needs to have "cleared the neighborhood" of its orbit
  - As planets form, they become the dominant gravitational body in their orbit in the Solar System. As they <sup>Planets</sup> interact with other, smaller objects, they either consume them, or sling them away with their gravity. ]
    - ✓ Pluto is only 0.07 times the mass of the other objects in its orbit and therefore does not have a high enough gravitational force to be considered a planet. Therefore, Pluto is a Dwarf planet.

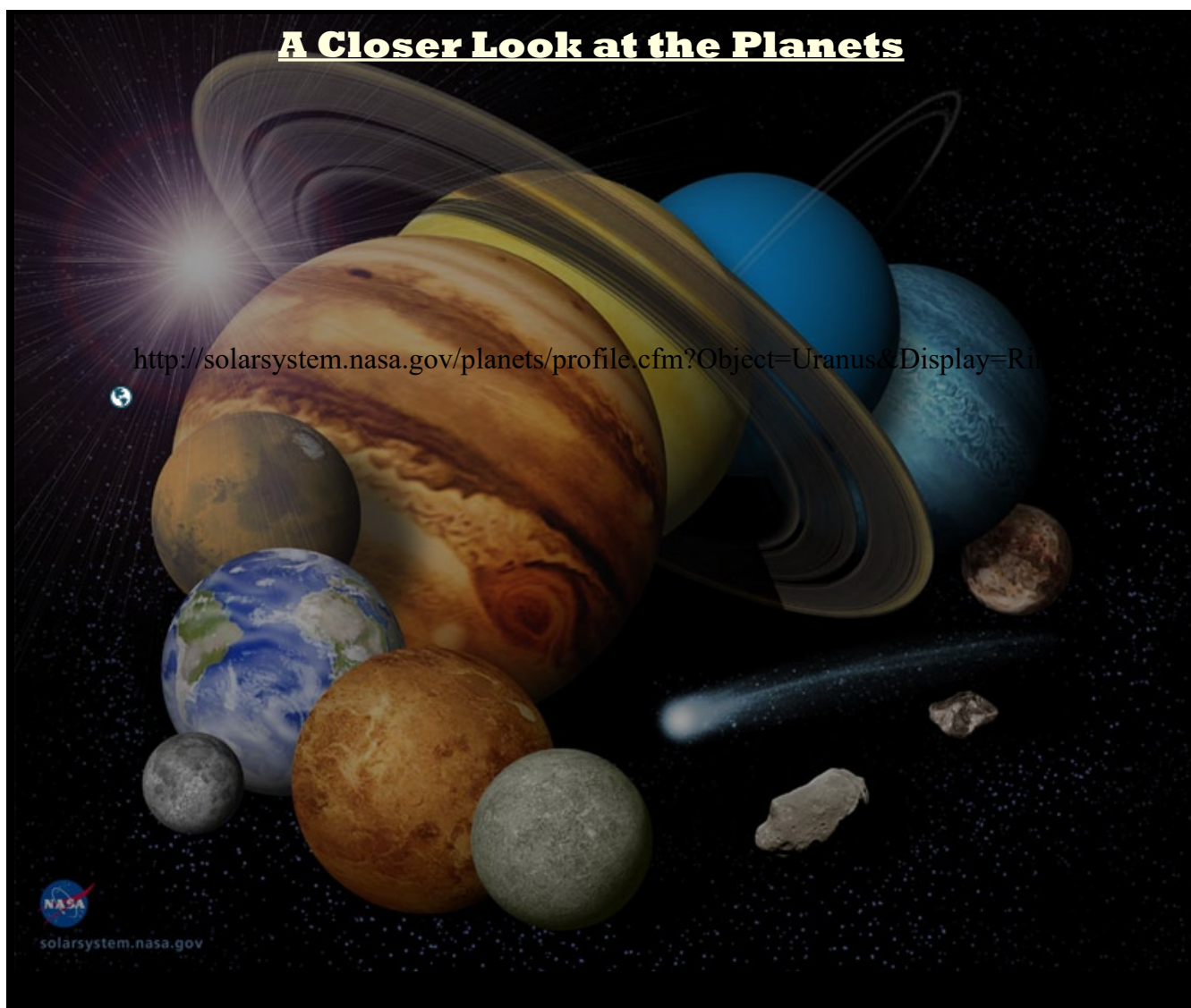
The 4 closest planets to the sun are Mercury, Venus, Earth and Mars. They all have many common characteristics. They are called the terrestrial planets or inner planets. They are made of rock and metal.

Planet Song



The 4 other planets (Jupiter, Saturn, Uranus and Neptune) are far away in space. They are called the outer planets. We can also call them the gas giants, because they are made up of mostly hydrogen and helium and they are big.







😊 Mercury

- 😊 • Closest planet to the sun
- 😊 • No atmosphere therefore temperature ranges from  $-180^{\circ}\text{C}$  to  $400^{\circ}\text{C}$
- 😊 • Contains craters caused colliding rocks
  - Too close to the sun and therefore is rarely visible in at night
- 😊 • No moons

Video (7:18)

[https://www.youtube.com/watch?v=P7-qjBy\\_rfU](https://www.youtube.com/watch?v=P7-qjBy_rfU)



# Venus

- Has a thick atmosphere made of Carbon Dioxide, and Nitrogen.
- Hottest planet due to the greenhouse effect
- Only planet that rotates backwards compare to the other planets ←
- Brightest object in the night sky with exception of the sun and moon
- no moons

How Have Astronomers Been Able to Study the Surface of Venus.docx