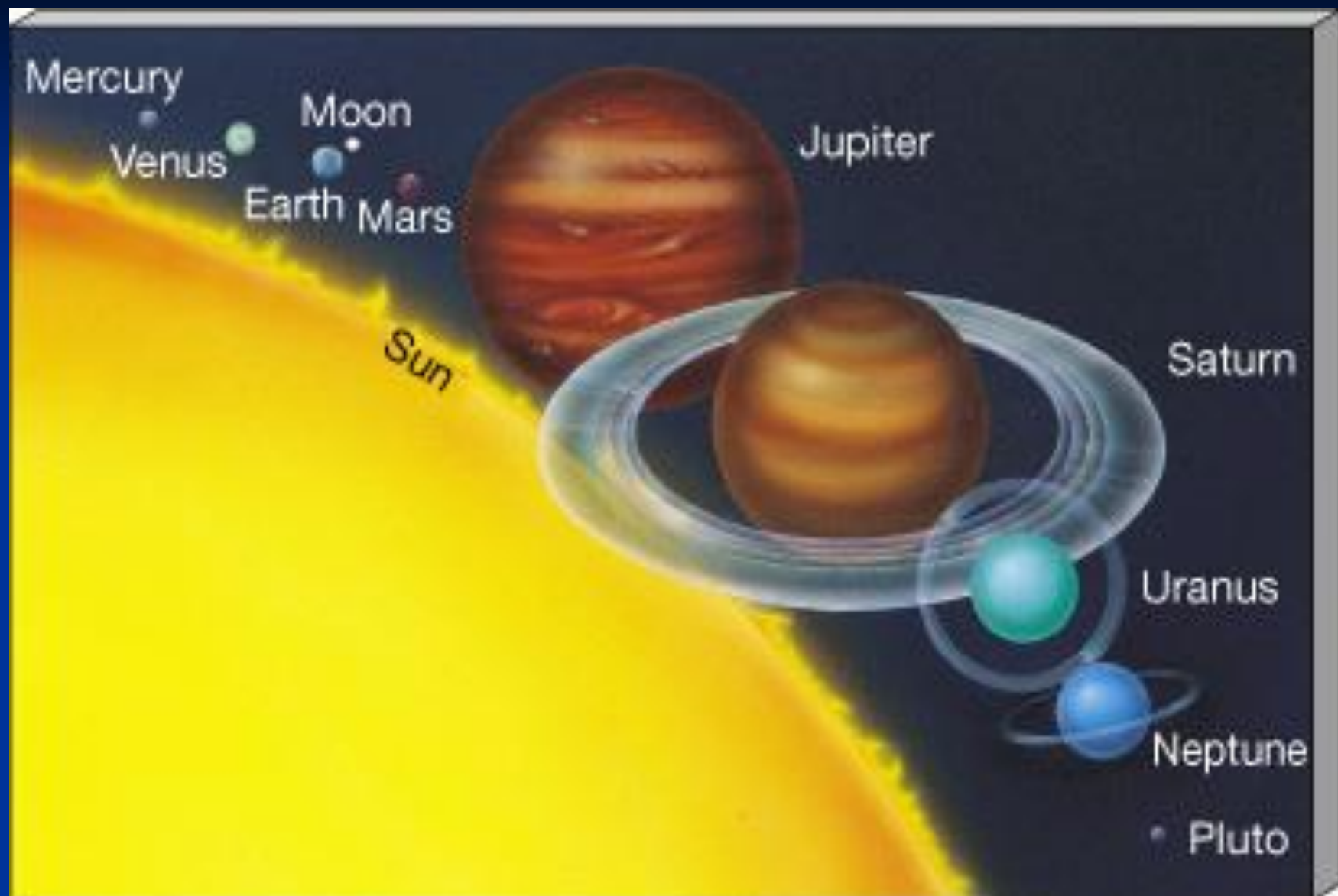


The Solar System

The Solar System

- Contains:
 - 1 star (the Sun)
 - 8 planets and 1 dwarf planet (Pluto)
 - 6 asteroids larger than 300 km in diameter
 - Tens of thousands of smaller asteroids
 - Countless meteoroids less than 100 m across



Inner vs. Outer Planets

- Inner planets-

- Small, dense, rocky composition

- Mercury – Venus
 - Earth – Mars

- Outer planets-

- Large, low density, gaseous

- Jupiter – Saturn
 - Uranus – Neptune
 - Pluto

Terrestrial Planets

- Rocky planet is a planet that is primarily composed of silicate rocks
- Physical and chemical properties similar to Earth
- Called terrestrial because the Latin word *terra* means “land” or “earth”
- Lie within about 1.5 AU of the Sun
- Have canyons, craters, mountains, and volcanoes

Terrestrial Planets cont

- All four have
 - Range from a near-vacuum on Mercury to a hot dense inferno on Venus
 - Only Earth has oxygen in its atmosphere and liquid water on Earth
- Different surface conditions on the four planets
 - Range from barren, heavily cratered terrain on Mercury to volcanoes on Venus

Terrestrial Planets cont

- Earth and Mars spin at roughly the same
- Mercury and Venus take months to rotate once
- Venus rotates in the opposite direction
- Earth and Mars have moons, but Mercury and Venus don't
- Earth and Mercury have magnetic fields, but Venus and Mars don't

Jovian Planets

- Large planet that is not primarily composed of rock or other solid matter, gas giant
- Physically and chemically similar to each other
- Named Jovian after Jupiter
- Jove is another name for the Roman god Jupiter
- Larger than the terrestrial planets and quite different in composition and structure

Terrestrial vs. Jovian Planets

Terrestrial	Jovian
Close to the Sun	Far from the Sun
Closely spaced orbits	Widely spaced orbits
Small diameter	Large diameter
Small mass	Large mass
very little hydrogen and helium, and are made mostly of much heavier elements	chemical composition (by element) as the Sun: 75% hydrogen, 24% helium, and only 1% everything else
Solid surface	No solid surface
High density	Low density
Slower rotation	Faster rotation
Weak magnetic fields	Strong magnetic fields
Few natural satellites (Earth only one)	Many natural satellites
No rings	Many rings