



SOLAR SYSTEM

BY

DR GOHAR TAQI KAZIMI

Our Solar System

DID YOU KNOW?

- Our Solar System is made up of eight planets, their moons, and our sun. The planets and their moons revolve around, or orbit the sun.

The orbits are not round. They are elliptical (E-lip-tih-cul). Elliptical means egg-shaped.

The first four planets are called the **inner planets**. They are closest to the sun. Their names are Mercury, Venus, Earth and Mars. These planets are made mostly of rock.

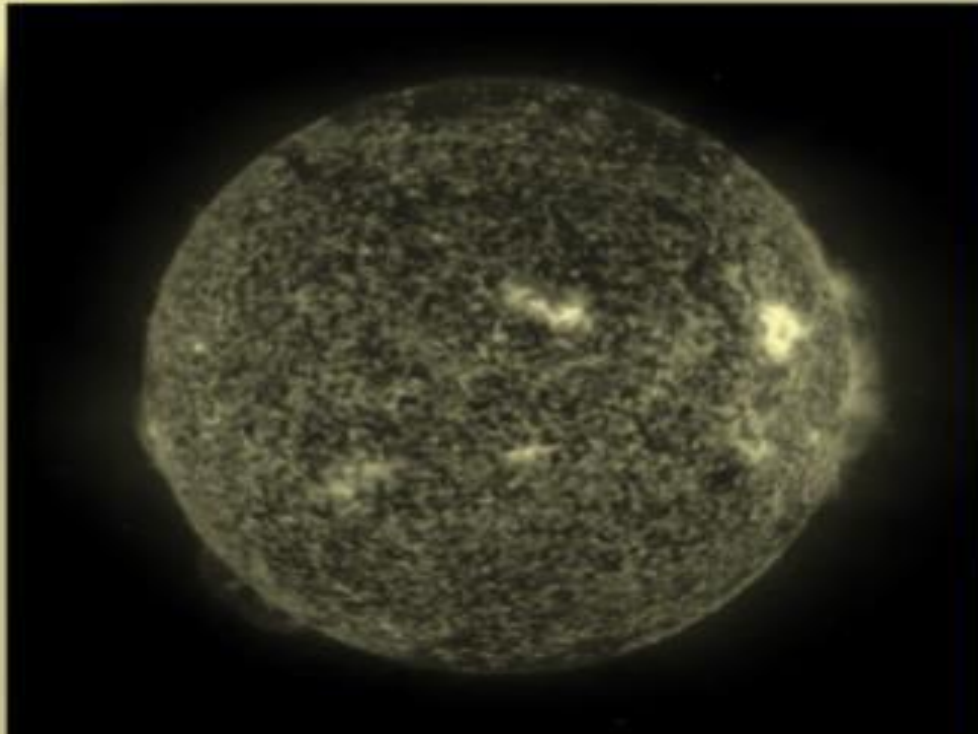
The next four planets are called the **outer planets**. Saturn, Jupiter, Uranus and Neptune are called gas giants because they are made mostly of gases.



Sun The Source

The Source

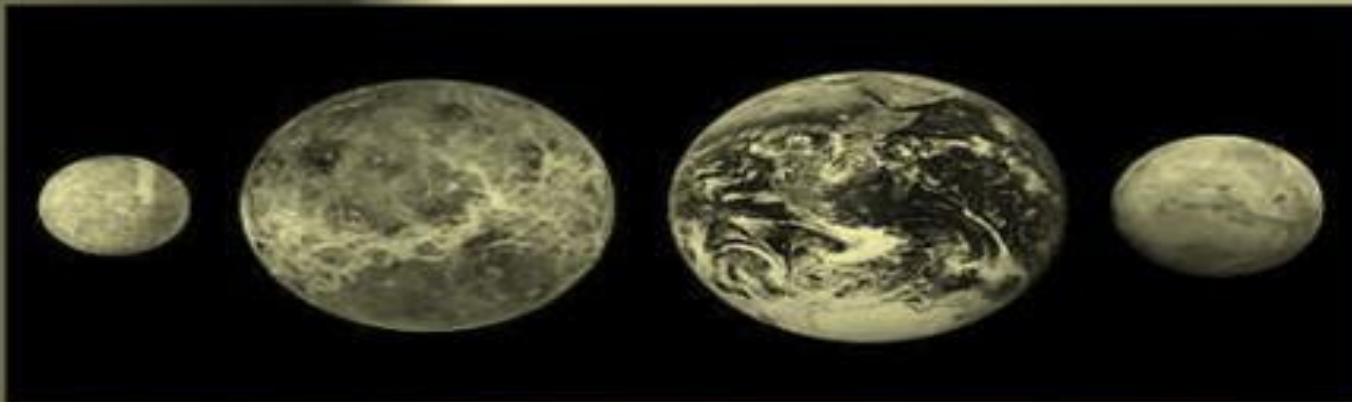
- The Sun is the most prominent feature in our solar system. It is the largest object and contains approximately 98% of the total solar system mass
- The Sun is the star at the center of the Solar System
- The Sun's color is white, although from the surface of the Earth it may appear yellow because of atmospheric scattering of blue light
- designated a yellow star, because its visible radiation is most intense in the yellow-green portion of the spectrum



Inner Planets

Inner Planets

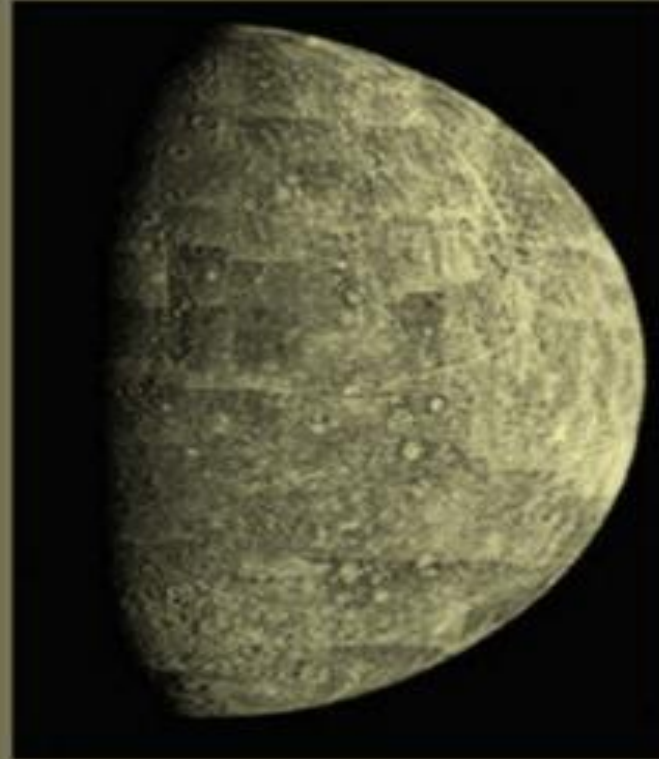
- The inner planets are Mercury, Venus, Earth, and Mars.
- Close to the Sun and separated from the much larger Outer Planets by an asteroid belt.
- Sometimes called terrestrial planets and are composed of rock.
- Due to their hard surfaces, these planets have canyons, craters, mountains, and volcanoes.
- Few or no moons.
- Developed from small grains of dust that collided and formed together.



Inner Planets

Mercury

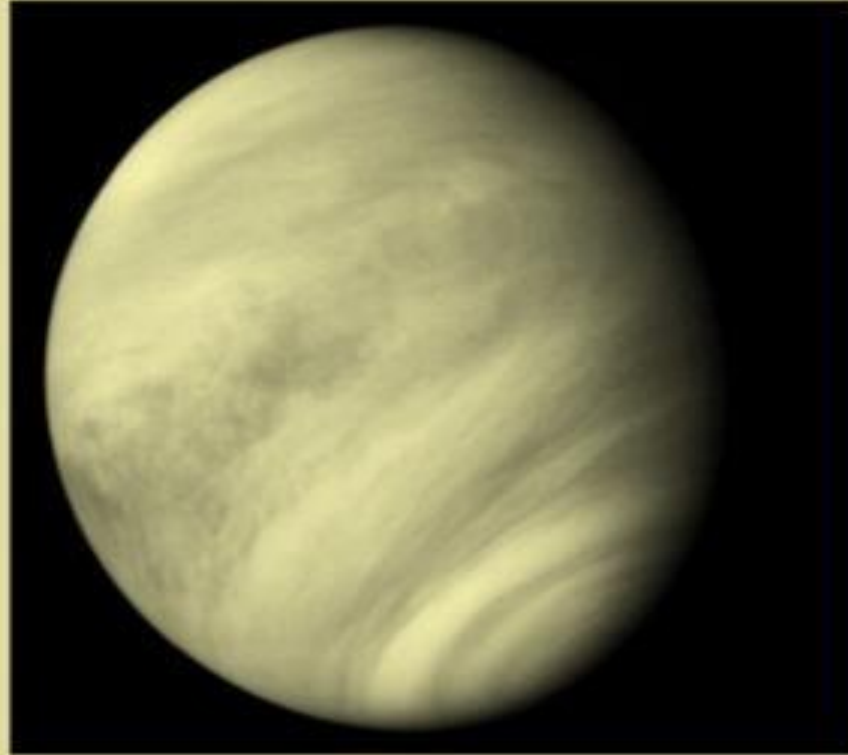
- Closest planet to the sun
- 2nd smallest planet in the solar system
- The surface is similar to that of Earth's moon
- Virtually has no atmosphere
- Mercury rotates 1 ½ times during each orbit
- 1 day on Mercury=176 Earth days
- Small magnetic field, which means there are no satellites



Inner Planets

Venus

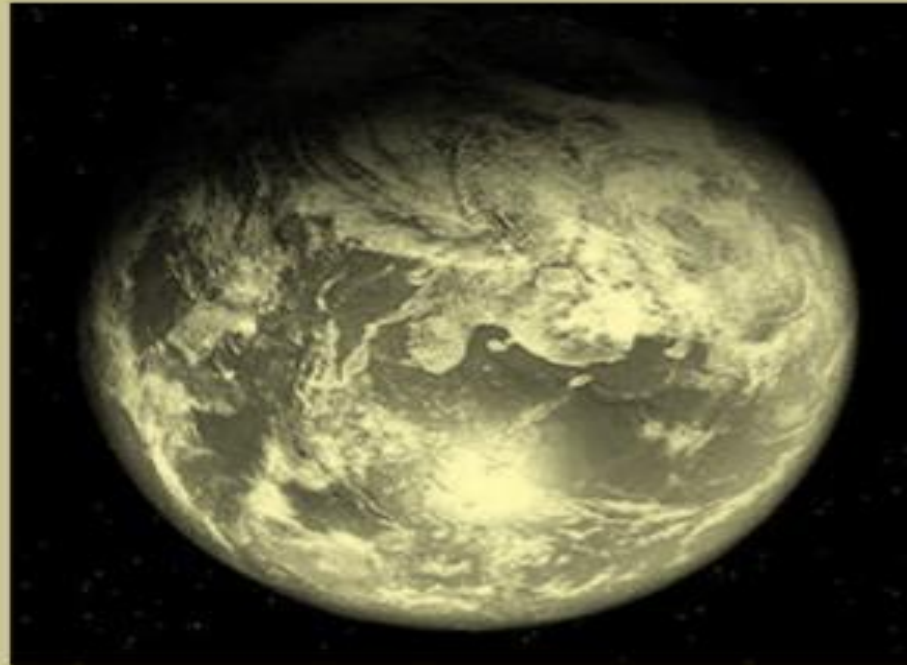
- 2nd Planet from the sun
- Brightest object in the sky except for the sun and moon
- 1 Venus day= 243 Earth days
- Regarded as Earth's sister planet
- Some ways similar to Earth, only slightly smaller
- Atmosphere is made up most of Carbon Dioxide
- No magnetic field, which means it has no satellites (moons)



Inner Planets

Earth

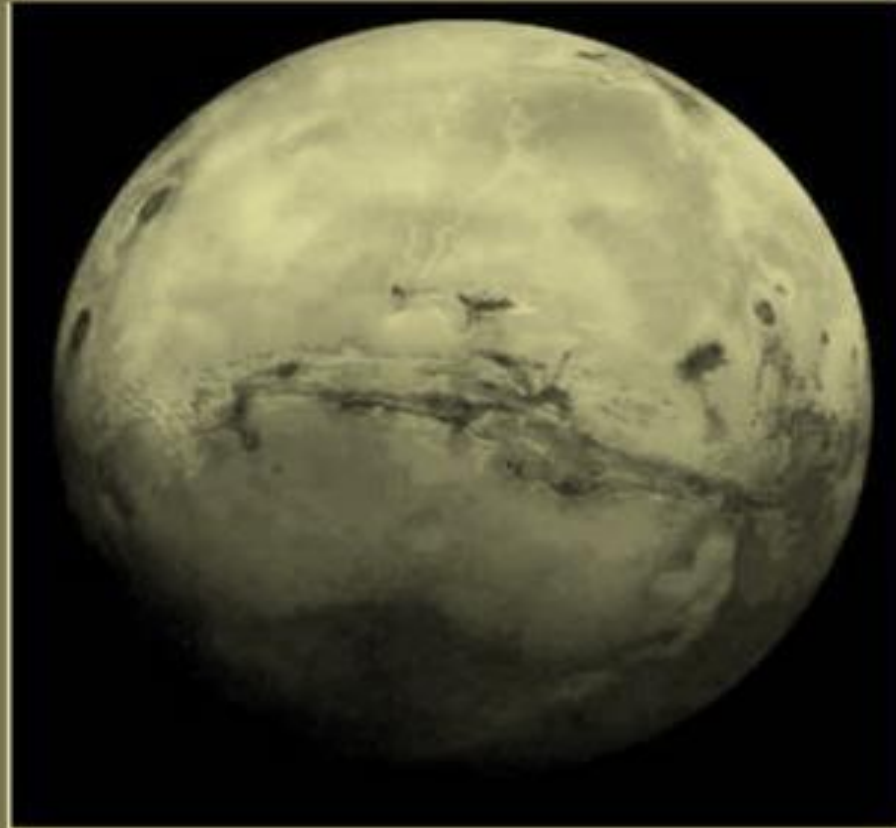
- 3rd planet from the sun
- 5th largest planet in the solar system
- 71 Percent of the Earth's surface is covered with **water**.
- Only planet on which water can exist in liquid form on the surface
- The Earth's magnetic field and its interaction with the solar wind also produce the Van Allen radiation belts
- Has one natural satellite called the moon



Inner Planets

Mars

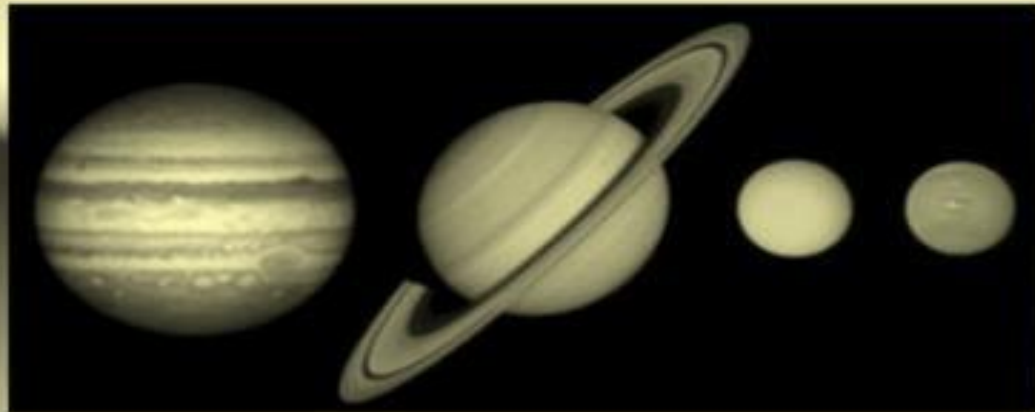
- 4th planet from the sun
- 7th largest in the solar system
- Referred to as the Red planet
- Most favorable place in the Solar System (other than Earth)
- Mars' orbit is significantly elliptical
- Though Mars is much smaller than Earth, its surface area is about the same as the land surface area of Earth
- Weak magnetic fields exist in various regions of Mars
- When it is in the nighttime sky, Mars is easily visible with the unaided eye
- Mars has two tiny satellites called Phobos and Deimos



Outer Planets

Outer Planets

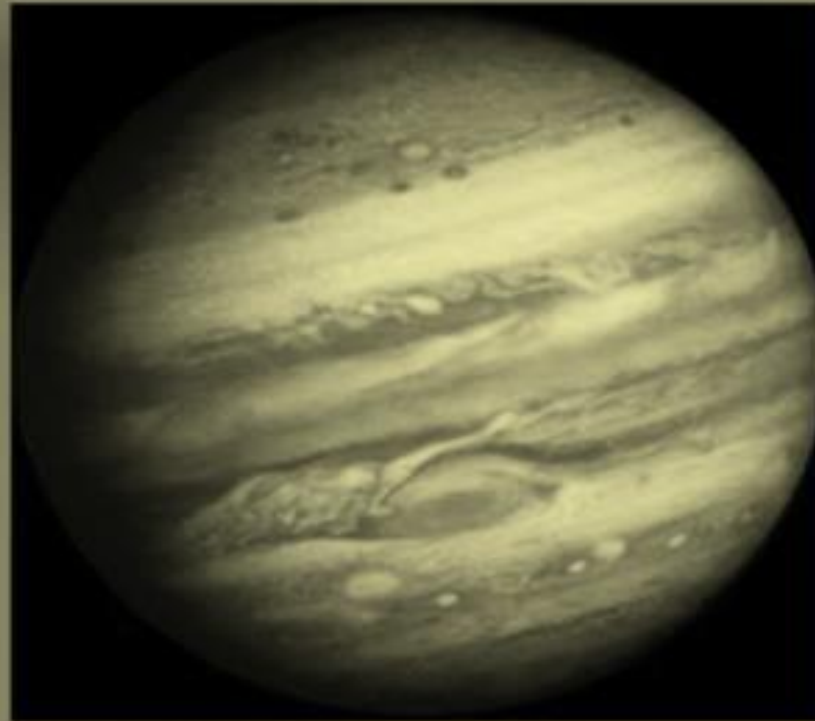
- The outer planets are Jupiter, Saturn, Uranus, and Neptune.
- Located outside of the asteroid belt.
- These planets are much larger than the inner planets and are called gas giants as they are composed primarily of hydrogen and helium.
- No solid surface. The hydrogen and helium are in gas form in the atmosphere and below that in a liquid state.
- Each has many moons and rings.



Outer Planets

Jupiter

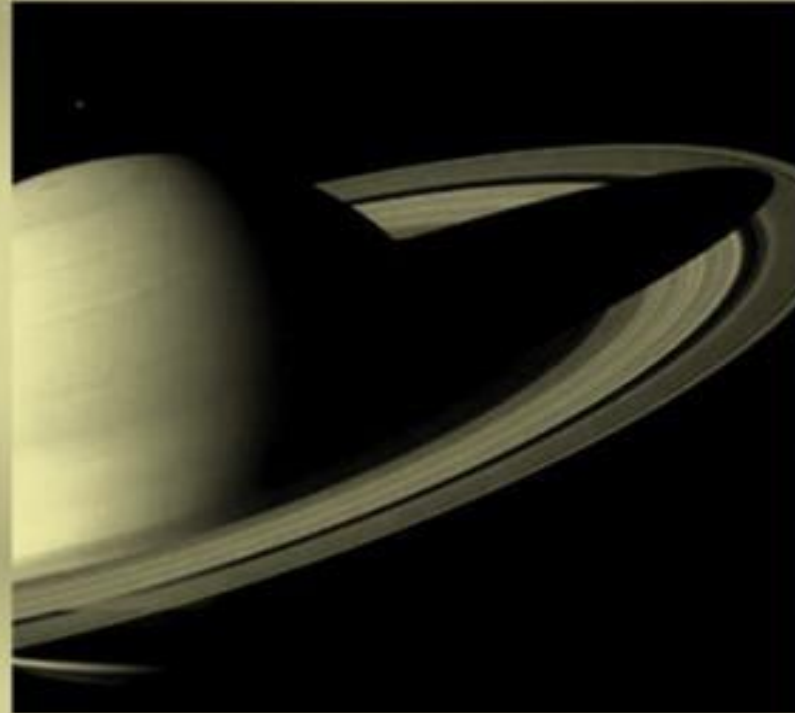
- Jupiter is the fifth planet from the Sun and by far the largest.
- Jupiter is more than twice as massive as all the other planets combined (the mass of Jupiter is 318 times that of Earth).
- Jupiter is the fourth brightest object in the sky (after the Sun, the Moon and Venus).
- Jupiter has 63 known satellites (as of Feb 2004): the four large Galilean moons plus many more small ones
- Jupiter has rings like Saturn's, but much fainter and smaller



Outer Planets

Saturn

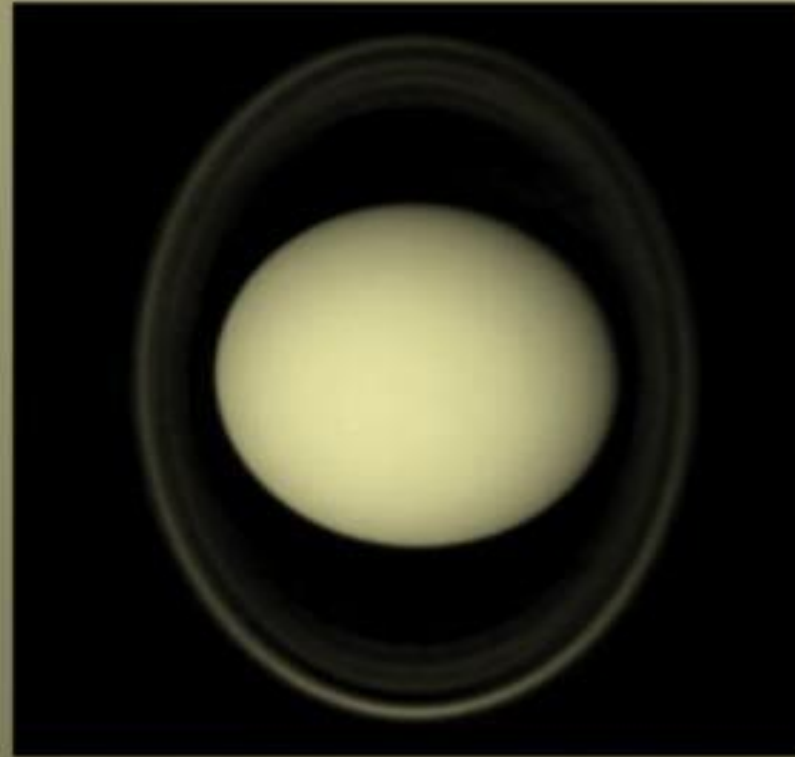
- Saturn is the sixth planet from the Sun and the second largest
- Saturn has 53 named satellites
- Saturn is the least dense of the planets; its specific gravity (0.7) is less than that of water.
- Saturn's rings are extraordinarily thin, there are two prominent rings (A and B) and one faint ring (C) can be seen from the Earth
- In the nighttime sky, Saturn is easily visible to the unaided eye
- Like the other Jovian planets, Saturn has a significant magnetic field.



Outer Planets

Uranus

- Uranus is the 7th planet from the sun and the third largest
- Most of the planets spin on an axis nearly perpendicular to the plane of the ecliptic but Uranus' axis is almost parallel to the ecliptic
- Primarily composed of rock and various ices
- Uranus' blue color is the result of absorption of red light by methane in the upper atmosphere
- Uranus has 11 known rings
- Uranus has 27 named moons



Outer Planets

Neptune

- Neptune is the eighth planet from the Sun and the fourth largest
- Neptune's blue color is largely the result of absorption of red light by methane in the atmosphere but there is some additional as-yet-unidentified chromophore which gives the clouds their rich blue tint.
- Little is still know of Neptune because there has only been one visit of a spacecraft there
- Neptune's winds are the fastest in the solar system, reaching 2000 km/hour.
- Neptune's rings are very dark but their composition is unknown.
- Neptune has 13 known moons; 7 small named ones



Outer Planets

Pluto

- Pluto orbits beyond the orbit of Neptune (usually).
- It is smaller than many moons, therefore it is now called a Dwarf Planet
- A spacecraft has never visited Pluto
- Pluto rotates in the opposite direction from most of the other planets.
- Charon ("KAIR en") is Pluto's largest satellite:

