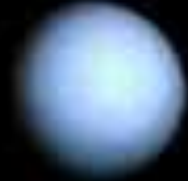
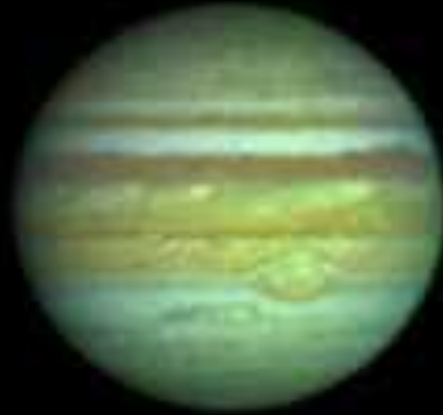
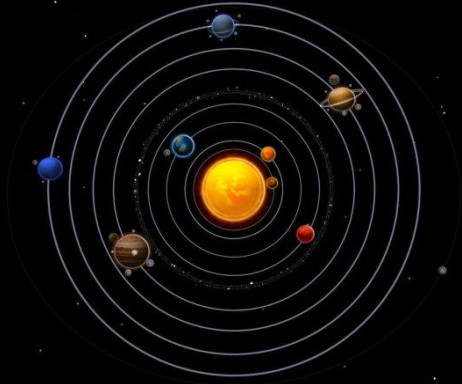


The solar system



What is the solar system?

A composite image of the solar system. In the foreground, Saturn is shown with its prominent rings, tilted at an angle. To its left is Jupiter, displaying its characteristic horizontal cloud bands. In the upper right, there are two smaller blue planets, likely Uranus and Neptune. The background is a deep black space with a few distant stars.

- The Sun, its planets and other objects in orbit are all together known as the solar system.

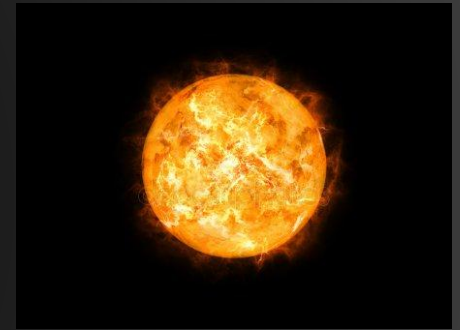
The nine planets

(starting with the closest to the Sun)

- 1) **Mercury** (the nearest planet to the sun)
 - 2) **Venus** (The hottest planet)
 - 3) **Earth**
 - 4) **Mars**
 - 5) **Jupiter**
 - 6) **Saturn**
 - 7) **Uranus**
 - 8) **Neptune**
 - 9) **Pluto (GAS)**
-

How do these planets move?

- The Sun is a star which the nine planets move around.

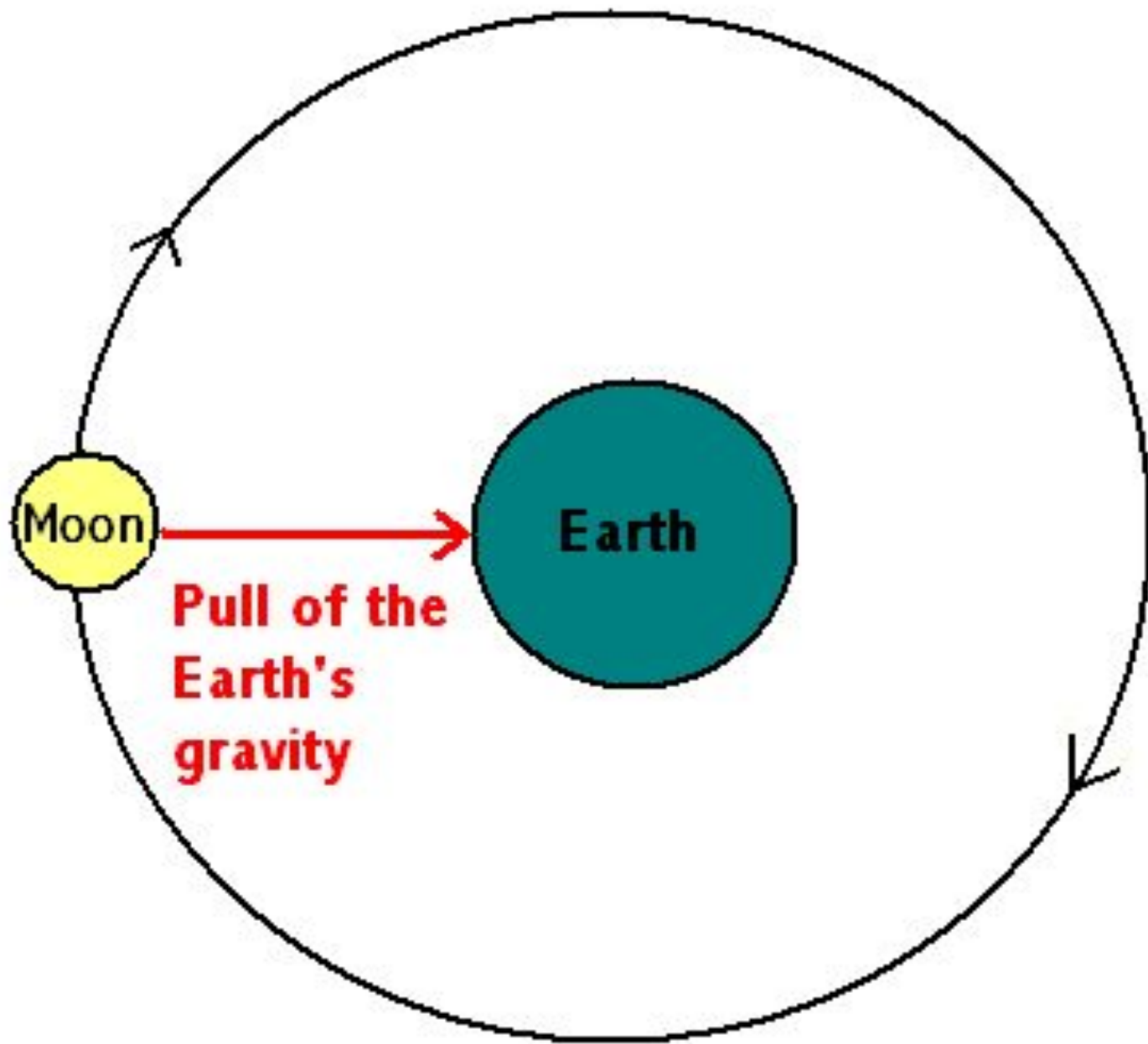


- The path each planet travels around is called its orbit.
 - The planets are kept in their orbits due to the pulling force of the Sun's gravity.
-

What are moons?



- Moons are 'natural satellites'
 - Moons orbit around a planet
 - The moon stays in its orbit due to the gravitational pull of the planet
 - Our moon has a circular orbit
 - We see the moon because it reflects light
-



What else is found in our Solar system?

- **Asteroids**
 - These are minor planets found in their thousands between Mars and Jupiter
 - **Meteorites**
 - These are probably fragments of asteroids that broke up
 - **Comets**
 - These are lumps of 'dirty ice' a few km across that travel in highly elliptical orbits. As they near the Sun they warm up. This causes a tail of dust and cloud.
-

What is a galaxy ?

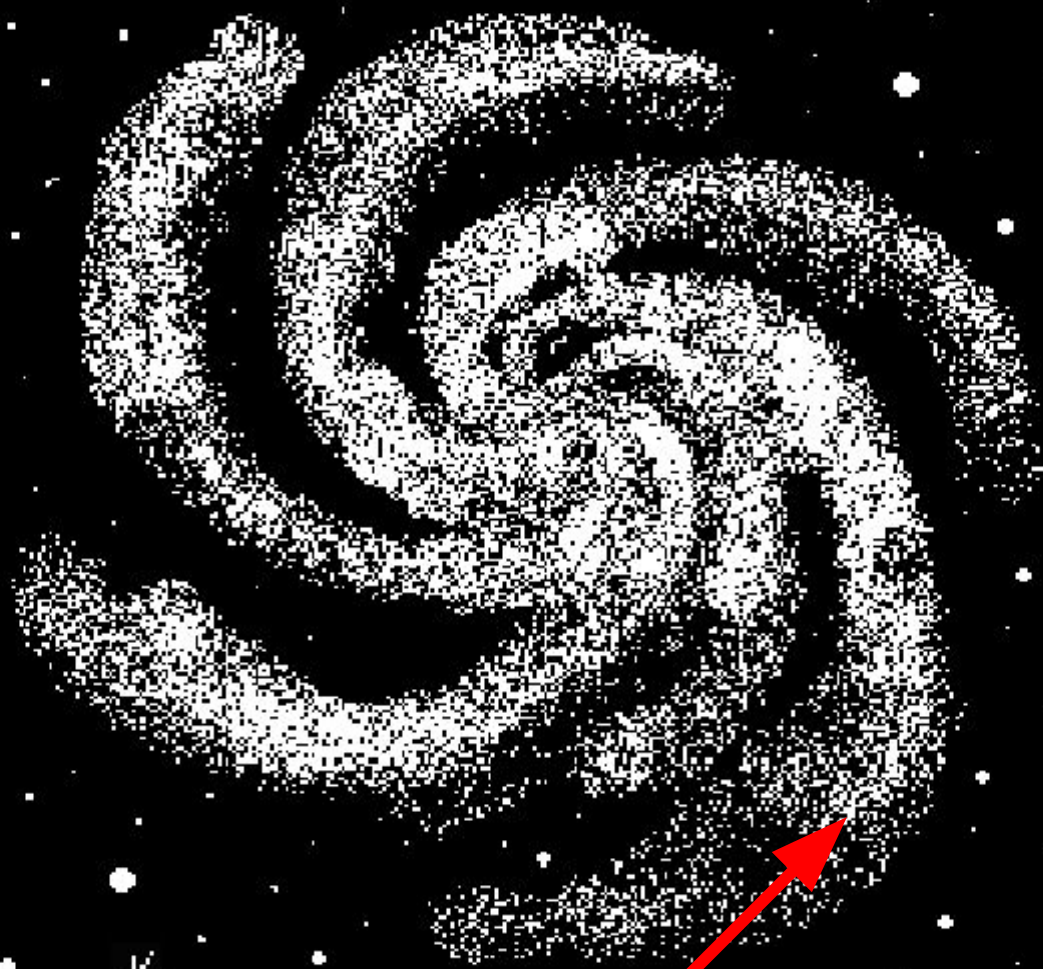
- A galaxy is made up of billions of stars



-
- Our galaxy is called the **Milky Way galaxy**, that has a **spiral** shape
 - Our Sun is just one of the stars that form the Milky way galaxy.
 - The Milky Way is **100 000 light years** across, and the nearest star to Earth (apart from the Sun) is **4.2 light years** away
-



The Milky Way galaxy



Our solar system is here

What is a light year?

- A light year is **not** a period of time
 - A light year is a **distance**
 - A **light year** is the **distance** that light travels in **one year**
 - As light travels at a speed of **300 000 000 m/s** (or **300 000 km/s**) then if we multiply this by the number of seconds in a year we will see that light will have travelled **9.5×10^{15} m** (9 500 000 000 000 000 m)
 - Our galaxy is 100 000 times this distance across
-

The Universe !

- There are **millions of other galaxies** which are seen further and further away in space
 - Galaxies themselves **are millions of times further apart** than the stars are within a galaxy
 - All these galaxies make up the **Universe** (which includes all the empty space between galaxies)
 - The Universe is perhaps 20 000 million light years across
-

Questions about the solar system for teacher)

1. The smallest planet in the solar system

- a) Mercury
- b) Mars
- c) Pluto
- d) Earth

2. Which planet is closest to the Sun?

- a) Saturn
- b) Jupiter
- c) Mars
- d) Mercury

3. The hottest planet in the solar system

- a) Uranus
- b) Neptune
- c) Venus
- d) Mercury

What do you think ... is there life on other planets?) And when aliens come to us?)))

