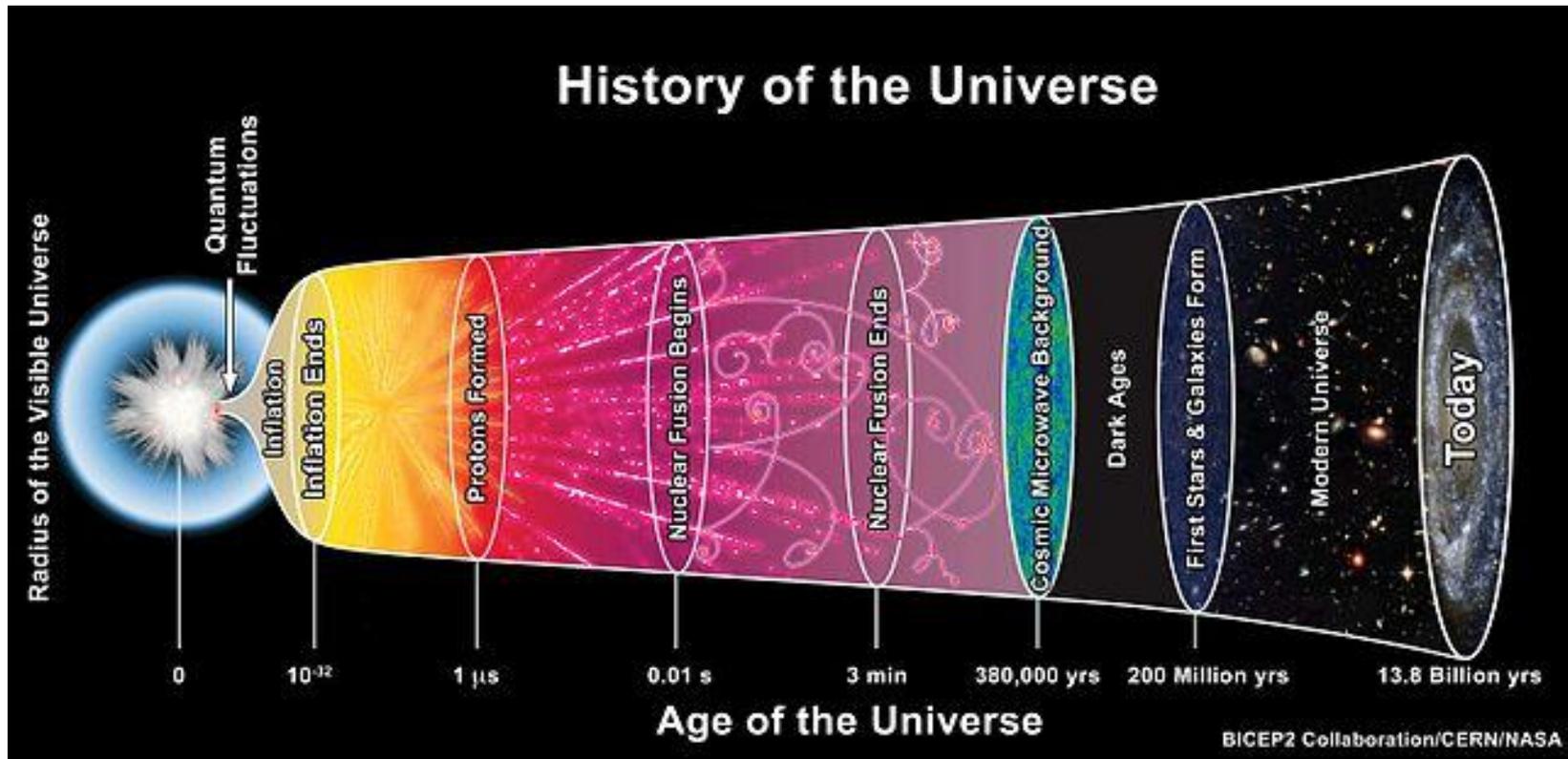


# Introduction to Outer Space

- **Astronomy** is the branch of science that studies objects beyond the Earth.
- Any object in space- for example the Sun or the Moon is considered to be a **celestial object** .



- The **universe** is everything that exists, including all energy, matter and space.
- **Cosmology** is the study of the universe.
- It is believed to be 93 billion **light years** in diameter and 13.8 billion years old (**Big Bang Theory**)



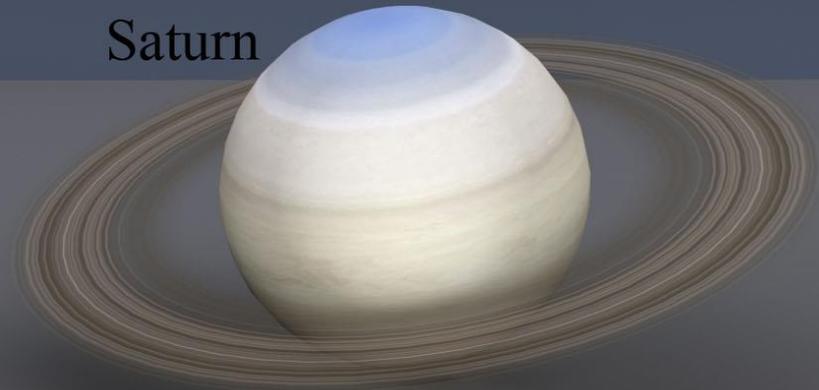
- **Stars** are massive collections of gases held together by their own gravity and emitting huge amounts of energy.
- Stars are **luminous** – meaning they produce and emit their own light.
- Stars appear to be very small to the naked eye and this is because they are extremely far away.



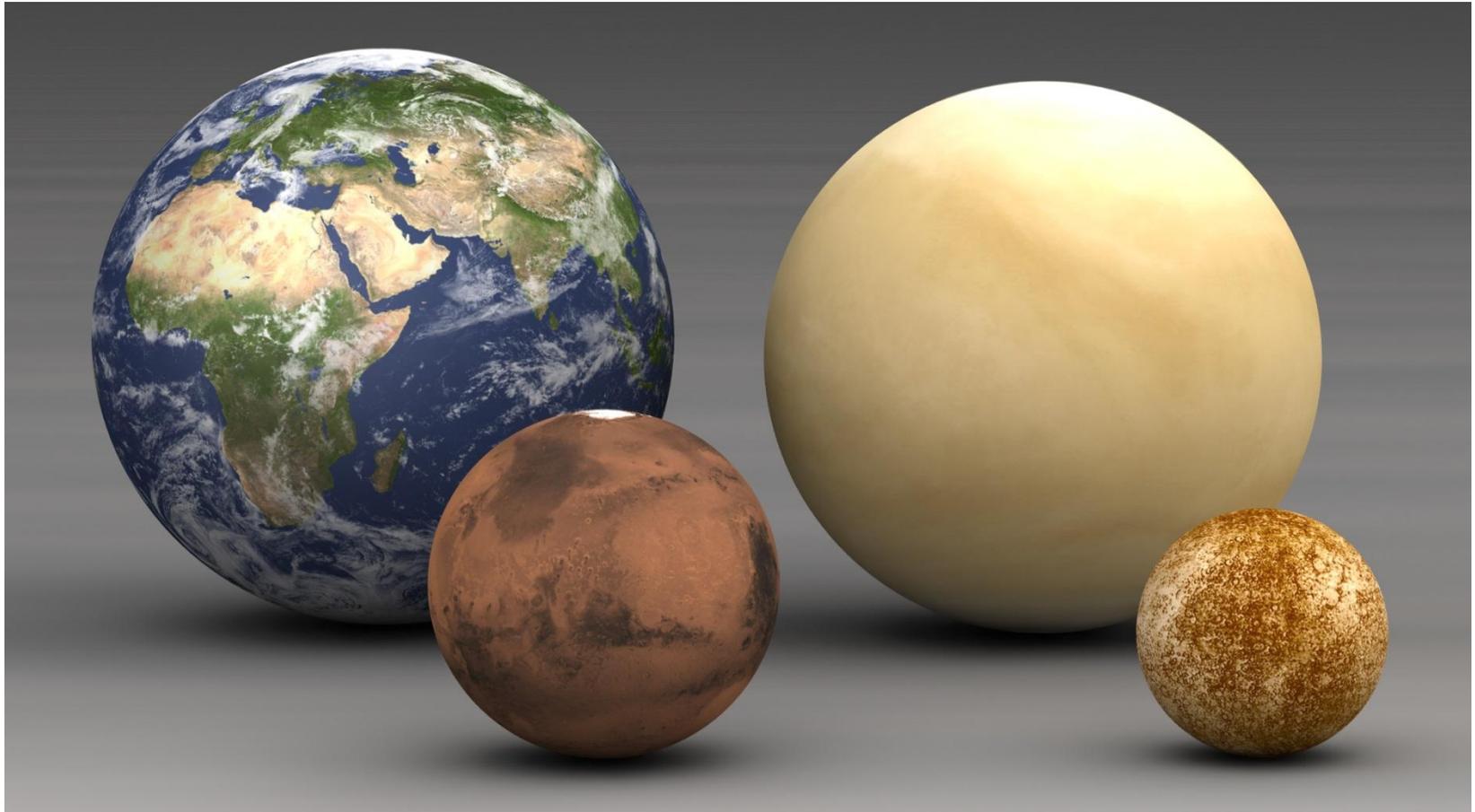


- Our star (the **Sun**) is approximately **150,000,000 km** away from Earth.
- Travelling at 100km/h non stop, it would take approximately 171 years to get to the **Sun**.

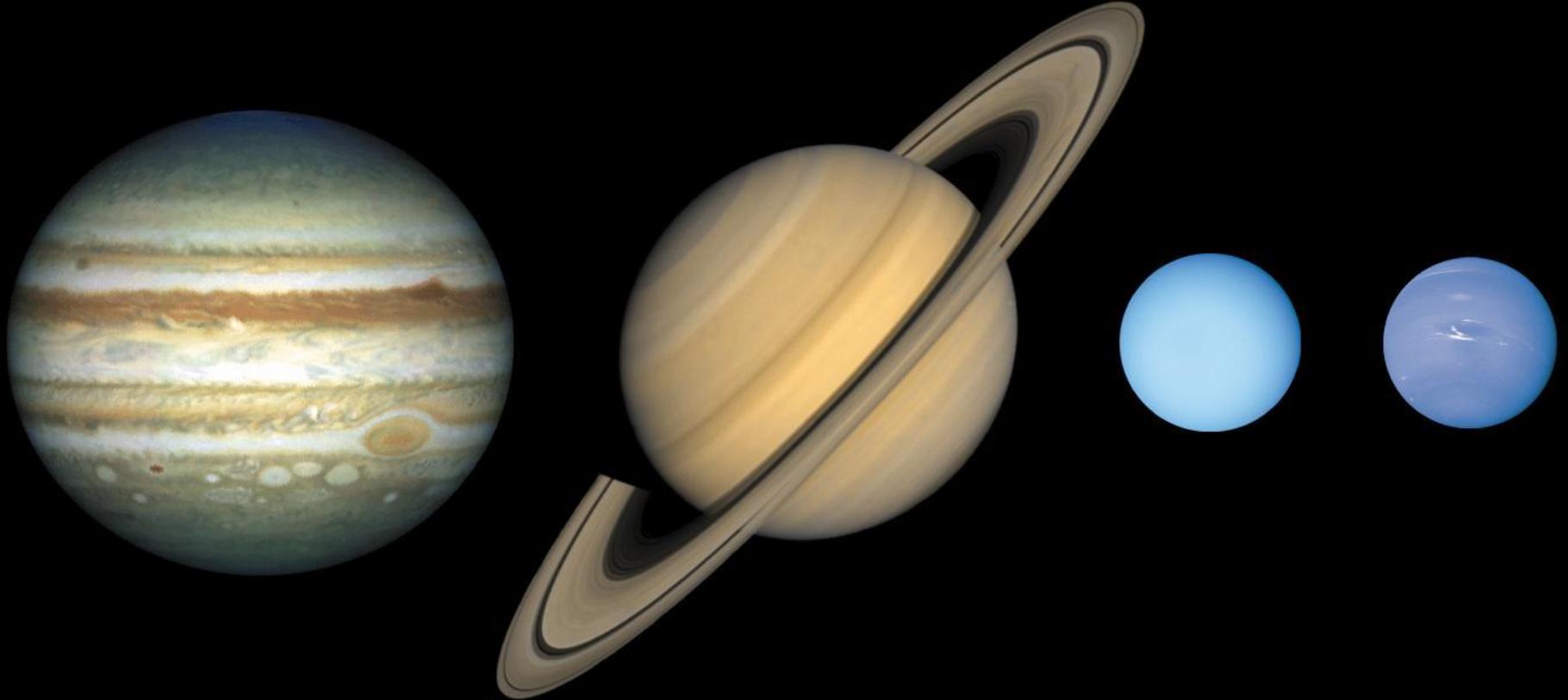
- **Planets** are large celestial objects that revolve (travel) around a star and are **non-luminous** (reflect but do not emit light)



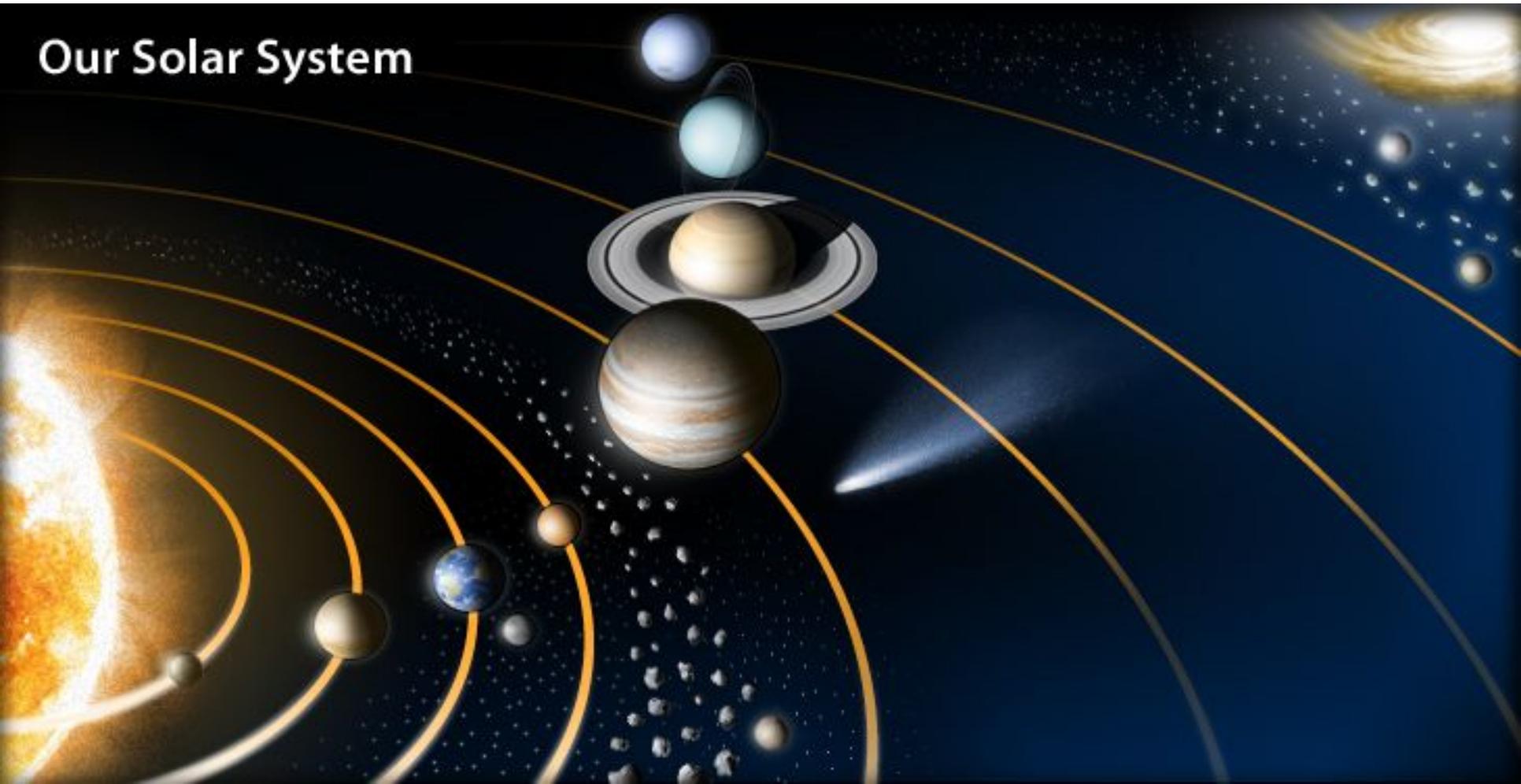
Mercury, Venus, Earth, Mars are the inner planets known as *terrestrial planets* as they have a solid rocky core.



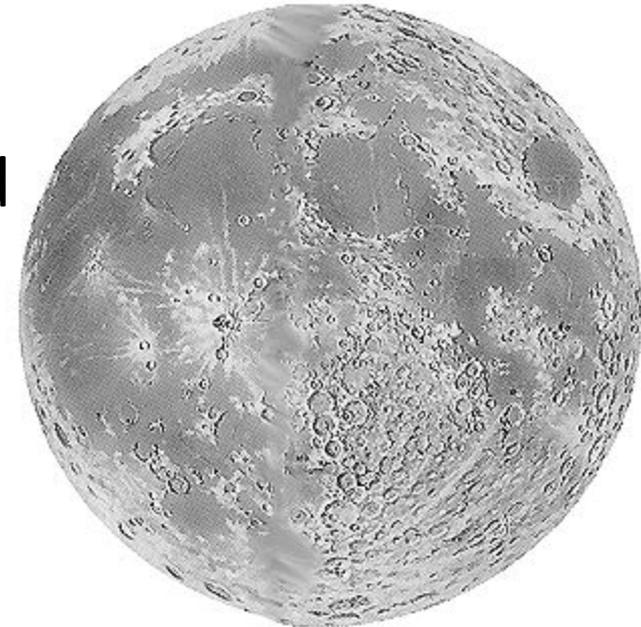
Jupiter, Saturn, Uranus, Neptune are the outer planets known as *gas giants* as they are composed mainly of gases and liquids.



- The *solar system* consists of the *Sun* and all celestial objects that revolve around it (planets, moons, asteroids, comets etc)



- A **satellite** is a celestial object that revolves around a planet in a closed path or **orbit**.
- Earth has one satellite called “**Moon**”
- Planets can have no satellites or several satellites.
- Jupiter and Saturn have over 60 each.
  
- Our Moon is **non-luminous** (reflects light) and though it appears to be the largest/brightest celestial object in the sky, it is small compared to planets and stars.
- Its average distance from Earth is **384,000 km**.



- A **galaxy** is a huge, rotating collection of gas, dust and billions of stars, planets and other celestial objects.
- Our planet and solar system are a part of the ***Milky Way Galaxy***.
- It contains more than 200 billion stars, including the Sun and what seems an infinite number of celestial objects.

