

Our Place In the Universe Notes

The Universe

- ▶ The universe consists of space and all matter and energy throughout space.
- ▶ The Big Bang is the current scientific explanation of how the universe was created 13-14 billion years ago.
- ▶ Although there are billions of stars, most of the universe is empty "space".

[Big Bang Video](#)

Distances In Space

- ▶ Are GIGANTIC!
- ▶ To make it easier to deal with huge distances, astronomers use light-years to measure distance
 - ▶ 1 light year is equal to the distance that light can travel in 1 year.
 - ▶ 671 million miles per hour
 - ▶ Light from Sun takes about 8 light minutes to get to us

Galaxy

- ▶ Very large groups of stars and the associated matter.
- ▶ Our galaxy is The Milky Way Galaxy
 - ▶ Spiral galaxy
 - ▶ 100,000 light years across and 10,000 light years thick

[Milky Way video](#)

Solar System

- ▶ A Sun (star) and all of the matter that orbits it in reach of it's gravity
- ▶ Our Solar System is about 4.5 billion years old
- ▶ Located in one of the outer arms of the spiral in the Milky Way

[Solar System Video](#)

Sun

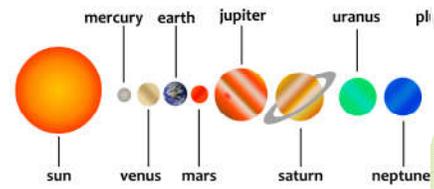
- ▶ Our Sun is an average size yellow star
- ▶ Made of hydrogen atoms that fuse during a thermonuclear reaction and give off heat and light energy
- ▶ Our Sun has an expected life span of 10 billion years
- ▶ Has been in existence for 5 billion years already

[Sun video](#)

Planet

- ▶ A celestial body (object in the sky) that orbits a Sun
- ▶ has enough mass to maintain a round shape
- ▶ doesn't share its orbit with other planets
- ▶ Our solar system has 8 planets
- ▶ [Earth Video](#)

Planets of Our Solar System



Size Scale

- ▶ <http://learn.genetics.utah.edu/content/cells/scale/>
- ▶ <http://viewpure.com/17jymDn0W6U?start=0&end=0>