

### What is the Observable Universe?

-*"The spherical region of the universe of all matter that may be observed from the Earth at present time, because light and other signals from these objects have had time to reach the Earth since the beginning of cosmological expansion."*

### Other Information

Assuming the universe is isotropic (a physical property which has the same value when measured in different directions.) the distance to the edge of the observable universe is roughly the same in every direction. Every location in the Universe has its own observable universe, which may or may not overlap with the one centred on Earth

The observable universe is about 93 billion light years

# Observable Universe

### Information

- Diameter of the Observable Universe:  $8.8 \times 10^{23}$ km
- Volume:  $4 \times 10^{80}$ m
- Mass of ordinary matter:  $10^{53}$ kg
- Age of the observable universe:  $13.799 \pm 0.021$  billion years
- Temperature: 2.72548K
- Contents: Ordinary Matter- 4.9%, Dark Matter- 26.8% and Dark Energy- 68.3%- Physicists are still investigating Dark Matter and Dark Energy!

The chemistry of life may have begun shortly after the Big Bang, 13.8 billion years ago, during a habitable epoch (the beginning of a period in history of someone or something) when the *Universe* was only 10-17 million years old.

The part of the universe that can be seen with the human eye or a current telescope, is also known as the known universe or the visible universe