

20 Nov
GSA: Astronomy
"And yet it moves," Galileo Galileo

Astronomy is the study of the universe and the celestial bodies, gas and dust within it. The vast empty space around us that consists of stars, solar system, galaxies etc. is called Universe.

① "It is defined as sum total of all matter and energy that exists or has existed both in space and time"

② "The totality of everything that exists, including all matter and energy, the planets, stars, galaxies and the contents of intergalactic space"

Astronomical System of Units

The astronomical system of units is a system of measurement developed for use in astronomy. It was adopted by the International Astronomical Union (IAU) in 1976 and has been significantly updated in 1994 and 2009. Developed due to difficulties in measuring and expressing astronomical data in International System of units (SI units). It is a tri-dimensional system, in that it defines units of length, mass and time only.

Astronomical Unit of time - is the day, defined as 86400 seconds. 365.25 days make up one Julian year. The symbol Δ is used in astronomy to refer to this unit.

Astronomical Unit of Mass - is the solar mass. The solar mass, 1.98892×10^{30} kg, is a standard way to express mass in astronomy, used to describe the masses of other stars and galaxies. It is equal to the mass of sun.

Astronomical unit of length - average distance between the earth and the sun and it is approximately 150 million kilometers or exactly 149,597,870,700 m.

Astronomical unit, light-year and parsec are the units for measuring huge distances.

'Light-year' is the distance that light can travel in one year in a vacuum, which is about 5.8×10^{12} miles or 63240 AU or 9.46053×10^{12} km.

A 'Parsec' is a unit of distance that is equal to 3.26 light years or 3.085678×10^{13} km. It is the distance at which a star would have a parallax of 1 second of arc.