

Sadaf Talib
Batch - 075

General Science (Physical Sciences)

Astronomical System of Units

Astronomical system of units (ASU) is a system of measurement developed for the use in astronomy.

This is first developed by the International Astronomical Unit (IAU) in 1976 and further developed in 1999 and 2009.

This system was used for the difficulties of ~~astr~~ astronomical mass and energy.

Astronomical system of units has its three-dimensions.

i. Astronomical System
unit of length

ii. Astronomical System
unit of Mass

iii. Astronomical system
unit of Time.

Astronomical Unit of Time:

Astronomical unit
of time is **the day**, which
is defined as 86500
seconds.

365.25 days makes one
Julian year.

The symbol **D** is used in
astronomy to refer time.

Astronomical Unit of Mass

The astronomical
unit of mass is the
solar mass.

The solar mass is

$$1.98892 \times 10^{30} \text{ Kg.}$$

This is a standard way to
express mass in astronomy.

This is also used to measure masses of other stars and galaxies.

This is equal to the mass of sun.

Astronomical Unit of Length:

Astronomical unit of length is a unit used to measure average distance between the Earth and the Sun.

It is approximately.

150 million Kilometers.

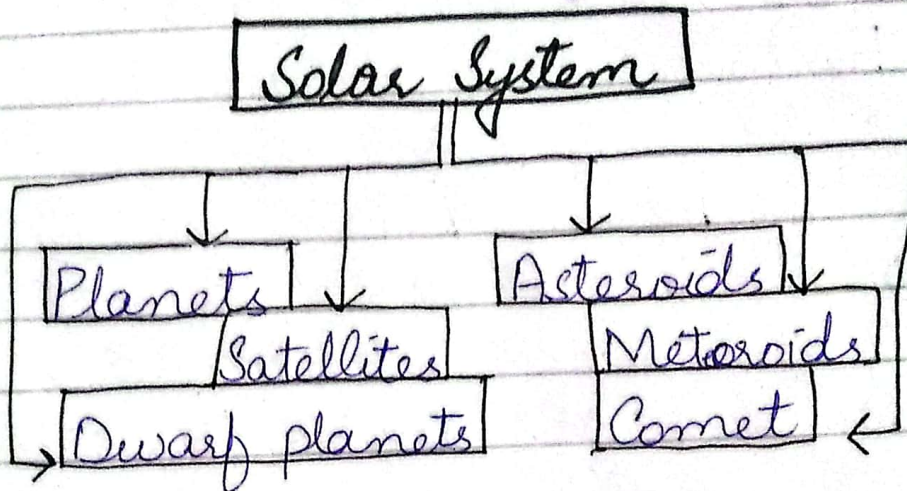
⇒ Astronomical unit, light-year and parsec are the units used to measure huge distances.

Solar System

Solar system consists of sun, moon, earth, and other different objects. Solar system is elliptical in shape, which means it is egg like.

Solar system is 4.5 million years old. It is made by the cloud of huge gas and dust called as solar nebula.

The material in cloud formed the sun and other material formed is stars making.

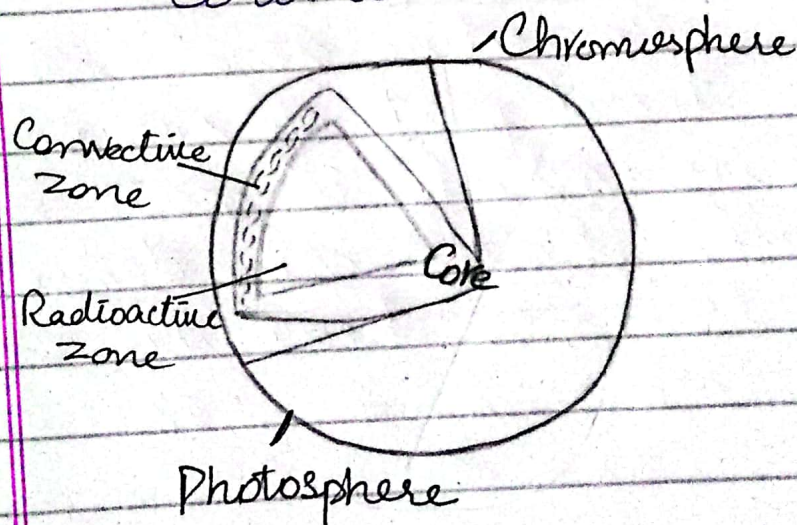


The Sun

Sun is a star and it is the center of solar system. Sun is more than 99% of the total solar system's mass. Sun is divided into three parts.

- The interior
 - The atmosphere
 - The visible 'surface'
- ## Structure of Sun

Core
↓
Radioactive Zone
↓
Convective Zone
↓
Photosphere
↓
Upper Chromosphere
↓
Lower Chromosphere
↓
Corona



Core:

Core is at the centre and it is region where nuclear fusion reactions of Sun occur. Core produces much heat through fusion. The temperature is 150 million degree Celsius.

Radiative zone:

The second part of solar interior is radiative zone.

It is hot and dense enough that thermal (not fusion) reactions transfer intense heat to core outward.

Convective zone:

Convective zone is the third part of solar interior, which is not much hotter nor dense to transfer heat to the core.

Photosphere:

Photosphere is the boundary between the sun's interior and the solar atmosphere.

Chromosphere:

It is the lowest region of solar atmosphere.

Corona:

Corona is the uppermost portion of the sun's atmosphere. It is much hotter than photosphere.

Physical Features of Sun

- Diameter of Sun is 870,000 miles.
- Mass of Sun is 1.98892×10^{30} kg.
- Density of Sun is 1.41 g/cm^3 .
- Distance from Earth is 93 million miles.

