

OUR UNIVERSE

The vast surrounding space is called Universe.

Unit for measuring distance in the universe -

i) AU [Astronomical Unit] - mean distance from earth to the sun.

$$1 \text{ AU} = 1.5 \times 10^8 \text{ km}$$

ii) Light Year - distance travelled by light in one year.

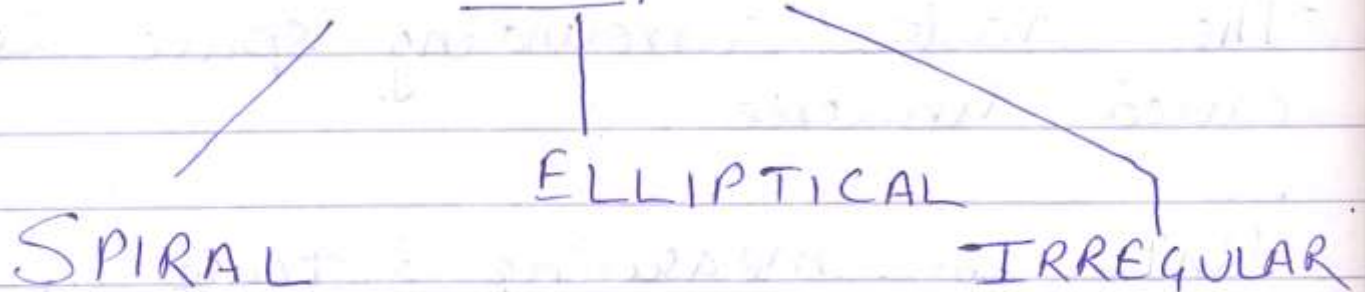
$$1 \text{ Ly} = 9.46 \times 10^{12} \text{ km}$$

GALAXY -

It is the cluster of billions of stars which are isolated from each other by dust particles and gas clouds.

eg: Milky Way galaxy,
Andromeda galaxy

TYPES OF GALAXIES -



MILKY WAY GALAXY -

It is our own galaxy. It is spiral shaped galaxy.

Sun along with the solar system rotates about centre of milky way galaxy.

It is also known as

AKASH GANGA -

CONSTELLATIONS -

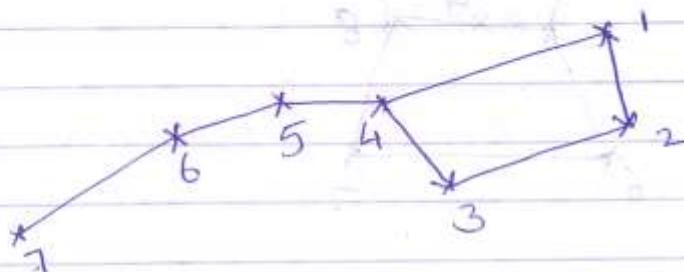
Stars which appear in the form of closed groups and represent recognisable shapes and patterns.

Some of the constellations are -

Ursa Major (Great Bear),
Ursa Minor (Little Bear),
Orion (Hunter),
Scorpio, Taurus, Pleiades,
Libra, Cassiopeia.

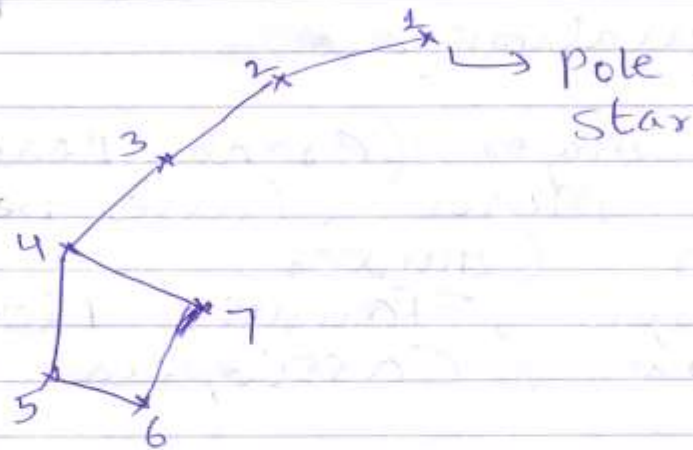
URSA MAJOR CONSTELLATION -

It consists of seven bright stars. Clearly seen in April in northern part of the sky.



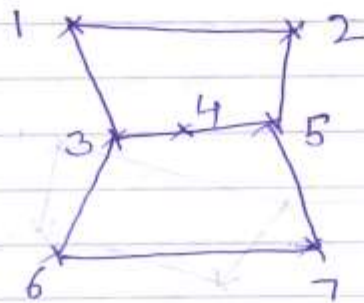
URSA MINOR -

Stars are less bright than Ursa Major.
Pole star is located at the tail of Ursa minor.
Generally seen in July.



ORION -

Arrangement of stars represents a hunting man.
Generally seen during winter season.



SCORPIO - Generally visible during summer



There are only about 88 Constellations.

STARS -

They are heavenly bodies. They are extremely hot and have their own light.

Stars are not permanent.

Stars are often classified on their colour, size, brightness and temperature.

POLE STAR - It lies

above earth's north pole.

It appears to be stationary and does not change its position with time because it lies on the axis of rotation of earth which is

fixed. All stars (except pole star) appear to move from east to west.

SOLAR SYSTEM =

It consists of Sun, planets, their satellites, heavenly bodies like - asteroids, comets and meteors.

Sun is at the centre of Solar System and all heavenly bodies are revolving around it.

Planets -

My Very Educated Mother

Just Show Us Nine Planets

Mercury
Venus
Earth
Mars

Inner planets
(Terrestrial)

Jupiter
Saturn
Uranus
Neptune
Pluto

Outer planets
(Jovian)

Features of Terrestrial Planets

- ① They have thin, rocky crust
- ② " " mantle rich in Iron and Magnesium
- ③ They have a core of molten metals.
- ④ They have thin atmosphere
- ⑤ " " few moons

Features of Jovian Planets

- ① Made of gases
- ② Have rings around them
- ③ Have large number of moons.

SATELLITES -

It is a solid heavenly body that revolves round a planet.

Moon is a natural satellite of earth.

Satellites have no light of their own.

They shine because they reflect the light of Sun.

ASTEROIDS -

They are small rocky bodies which revolve around Sun mainly between orbits of MARS and JUPITER.

Largest asteroid - Ceres

Smallest asteroid - Pebble.

COMETS -

Collection
It is a constellation of gas and dust which appears as a very bright ball of light in the sky with a long glowing tail.

The tail of comets always point away from sun.

Comets revolve round the sun like planets.

eg: Halley's comet has a period of 76 years. Last was seen in 1986.

METEOR -

Also called Shooting Star.

They are seen as a bright streak of light that flashes for a moment.

It is made up of rock and metal.

It is very small.

It has no light of its own.

It burns due to heat produced by friction on entering the atmosphere.

METEORITE -

A meteor which does not completely burn on entering earth's atmosphere and reaches earth's surface is called meteorite.

It is a sort of stone from the sky.

NATURAL SATELLITE -

It is a heavenly body which revolves around a planet.

eg: Moon

ARTIFICIAL SATELLITE -

A man-made ~~satellite~~ object which revolves around earth (or other planets).

The closed path of a satellite around earth is called ORBIT.

* The path is circular or elliptical.

GEO SYNCHRONOUS SATELLITE

An orbit in which artificial satellite takes 24 hours to revolve once round the earth.

Also called GEO STATIONARY

* These satellites are used

- for long distance telephone calls, fax

- for telephone and radio broadcast.

APPLICATION of artificial Satellite -

- Used for weather forecasting

- Used for communication

- Used for surveying the natural resources.

- Used for Spying for military purposes.

- Used for scientific observation purpose eg: X-ray [^] and Hubble Telescope