The Universe

Universe:

The vast surrounding space which includes everything that exists like earth, stars, planets, satellites etc.

The Stars:

-are giant ball of gases in space that shine through the darkness and are held together by the

force of gravitation.

- gases are hydrogen and helium.
- -luminous and stationary

Planets:

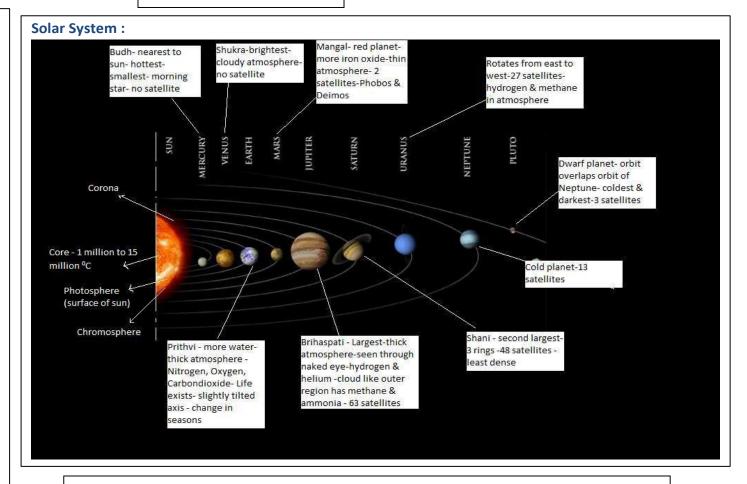
- is a large round heavenly body that orbits a star and shines with light reflected from the star.
- revolve around the sun in elliptical orbits and they also rotate about their own axes
- Non luminous and movable

Galaxy:

- -is a collection of billions of stars, gas and dust bound together by gravity
- -building blocks of universe
- -no fixed pattern or shape
- around 1011 galaxies in the universe
- -Milky way- Akashganga- spiral galaxy

Constellation:

- -is a collection of only a very few stars.
- -constellation appears to resemble an animal or human being in its shape
- -so far 88 known
- -Orion resembles a hunter- seen in winter-Ursa Major – great bear or Saptharishi- 7 major stars
- -scorpio seen in summer in northern hemisphere



Asteroids:

There is a large gap in between the orbits of the Mars and Jupiter. This gap is occupied by a large number of minor planets made up of rock which revolve around the sun. These are called asteroids. Ex. Ceres

Comets:

Comet is small body of ice and dust revolving around the sun in its elongated orbit.

When comet approaches the sun, it heats up and leaves behind a stream of hot glowing gases and dust particles seen as tail. Ex: Halley's comet

Meteors:

Made of rocks & metals – shooting stars – luminous when enters into earth's atmosphere and burns out on the way due to heat produced by friction

Meteorites:

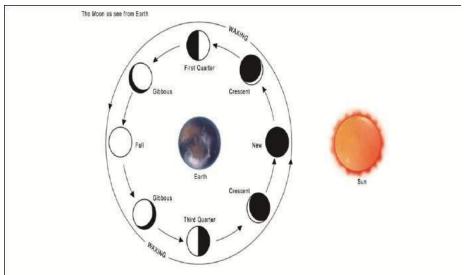
-some of longer meteors which do not burn completely and reaches earth surface are called meteorites – forms craters on earth's surface.

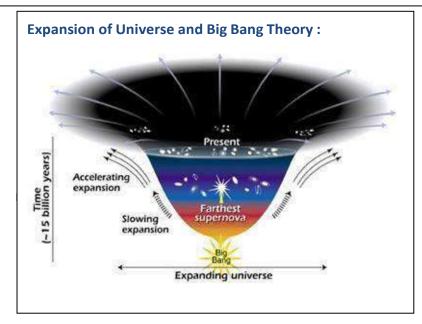
Moon: A natural satellite or moon is a non-luminous celestial body that orbits a planet

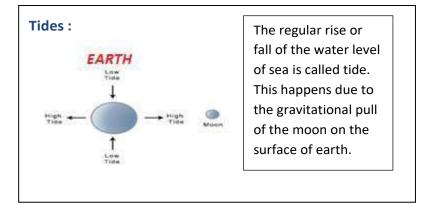
Surface of the moon shows these features:

- dusty and barren
- o deep craters
- o high mountains
- o no water
- o no atmosphere

Phases of Moon:







Artificial satellites

Manmade satellites that have a smaller orbit than natural satellites and used for weather forecasting, remote sensing, transmission of TV and radio signals and telecommunication e.g. INSAT, IRS, EDUSAT. The first Indian satellite was Aryabhatta

Measurement of distance in universe

- The distances are measured in light years and parsec
 - \circ 1 light year = 9.46 × 10¹² km
 - o 1 parsec = 3.26 light year

