

Solar System – SSC Notes

1. Definition of Solar System

- Solar System: Sun + all celestial bodies gravitationally bound to it → planets, moons, comets, asteroids, meteoroids, dust & gas
- Importance: Provides light, heat, and energy essential for life on Earth

2. Components of Solar System

A. Sun

- Star at the center of the Solar System
- Composed of hydrogen (H) and helium (He)
- Provides heat & light, drives climate, seasons, photosynthesis

B. Planets

Type	Name	Features
Inner / Terrestrial Planets	Mercury, Venus, Earth, Mars	Rocky, small, dense, close to Sun, few moons
Outer / Gas Giants	Jupiter, Saturn, Uranus, Neptune	Large, gaseous, rings, many moons

- Dwarf Planets → Pluto, Ceres, Eris, Haumea, Makemake → Small, orbit Sun

C. Moons / Natural Satellites

- Orbit planets → Example: Earth → Moon, Jupiter → Ganymede, Europa
- Influence tides, stabilize planetary axis

D. Asteroids & Meteoroids

- Asteroids → Rocky, metallic bodies, mostly between Mars & Jupiter (Asteroid Belt)
- Meteoroids → Small rocks → Burn in atmosphere → Meteors (shooting stars)

E. Comets

- Ice, dust, frozen gases → Elliptical orbit around Sun
- Famous comets → Halley's Comet, Hale-Bopp

- Have coma (head) and tail → Tail points away from Sun

F. Kuiper Belt & Oort Cloud

- Kuiper Belt → Beyond Neptune → Dwarf planets, short-period comets
- Oort Cloud → Spherical shell at edge of Solar System → Source of long-period comets

G. Meteors, Meteorites & Meteor Showers

- Meteor → Shooting star → Burns in atmosphere
- Meteorite → Reaches Earth's surface
- Meteor Showers → Perseids, Leonids, Geminids

3. Important Facts for SSC

- Sun → Star, center of Solar System → Hydrogen + Helium
- 8 planets → Mercury → Neptune, Pluto = dwarf planet
- Moon → Earth's natural satellite
- Asteroid Belt → Between Mars & Jupiter
- Kuiper Belt → Beyond Neptune, icy bodies
- Oort Cloud → Source of long-period comets
- Famous comets → Halley, Hale-Bopp
- Meteor showers → Perseids (August), Leonids (November)

4. Indian Space Missions Related to Solar System

- Chandrayaan-1 & 2 → Moon exploration
- Mangalyaan (Mars Orbiter Mission) → Mars
- Aditya-L1 → Sun's corona study
- Astrosat → Observing stars, galaxies, black holes