



INTERNATIONAL SPACE OLYMPIAD

SYLLABUS 2024

PRELIMINARY LEVEL

1. The Earth

Atmosphere and layers. Orbit of Earth and Tilt of the axis. Everyday phenomenon - Rising and Setting of Sun and Other Stars. Yearly phenomenon - seasonal variation.

2. The Moon

Phases of the moon, Tides, Formation of the moon, Major Lunar missions.

3. The Solar System

Sun, Planets, Asteroids, Comets, Dwarf planets - Major features. Our nearest stars, Our galaxy, Local Group of Galaxy, Large Scale Structure of the Universe

INTERMEDIATE LEVEL

1. Astrophysics of stars

Sun- Energy source, Structure and Evolution. Stellar Evolution of high mass Stars - Supernova, Neutron stars and Black holes

2. Measurement in astrophysics

Distance Measurement – Cosmic Distance Ladder, Velocity – Dopler effect, Red and Blue Shifts, Chemical Composition – Dispersion and Spectra.

3. Cosmology

Hubble's law - Expanding Universe, Big Bang, Cosmic Microwave Background and Dark Energy

FINAL LEVEL

1. Space missions

Types of space missions- Fly-by, Impactor, Lander, Rover etc with Important Examples Types of satellites - by its orbit and by its use with important examples. Major space missions and satellites

2. Telescopes

Types of telescopes - Based on technology and based on observing wavelength

Space Telescopes - Major Space Telescopes

Neutrino observatories, Gravitational wave observatories, and cosmic ray observatories

Major observatories on earth.

3. History of Space Exploration

Important Space Missions- Manned Missions, Unmanned Missions. Important Space Agencies, Space Spin-offs.
