

# ASTROSAT

January 6, 2021

## About ASTROSAT

- ASTROSAT is **India's first dedicated multi wavelength space observatory**. This scientific satellite mission endeavours for a more detailed understanding of our universe.
- One of the unique features of **ASTROSAT mission is that it enables the simultaneous multi-wavelength observations of various astronomical objects with a single satellite**.
- ASTROSAT with a lift-off mass of about 1513 kg was launched into a 650 km orbit inclined at an angle of 6 deg to the equator by **PSLV-C30**
- ASTROSAT is designed to **observe the universe** in the Visible, Ultraviolet, low and high energy X-ray regions of the electromagnetic spectrum simultaneously **with the help of its five payloads**.
- Astrosat aims at understanding the high **energy processes in binary star systems containing neutron stars and black holes**, to estimate magnetic fields of neutron stars, to study star birth regions and high energy processes in star systems lying beyond the **Milky Way galaxy**.
- This mission has **put ISRO in a very exclusive club of nations** that have space-based observatories. Only the United States, European Space Agency, Japan and Russia have such observatories in space.

## The scientific objectives of ASTROSAT mission are:

- To understand high energy processes in binary star systems containing neutron stars and black holes
- Estimate magnetic fields of neutron stars

- Study star birth regions and high energy processes in star systems lying beyond our galaxy
- Detect new briefly bright X-ray sources in the sky
- Perform a limited deep field survey of the Universe in the Ultraviolet region