



Aditya-L1 Mission Captures Solar Flare

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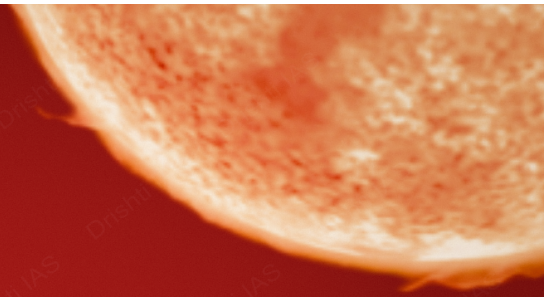
The [Aditya-L1 mission](#) has captured the **first-ever image of a solar flare 'kernel'** in the lower solar atmosphere using the **Solar Ultraviolet Imaging Telescope (SUIT) payload**.

- **Solar Observation:** SUIT detected an **X6.3-class solar flare**, one of the most intense solar eruptions, in the **Near Ultraviolet (NUV) wavelength (200-400 nm)**.
- **Solar Flares:** Solar flares are massive explosions on the Sun's atmosphere that release **energy, light, and high-speed particles** into space, often linked to **coronal mass ejections (CMEs)**.
 - Solar flares are classified into **A, B, C, M, and X categories**, with each class increasing 10-fold in energy. **X-class flares are the most powerful.**
- **Aditya-L1:** It is India's first **space-based solar observatory**, designed to study the Sun from the **Lagrange Point 1 (L1)** in a halo orbit. This is ISRO's second astronomy observatory-class mission after **AstroSat (2015)**.

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ADITYA-L1 MISSION



ABOUT

- India's 1st scientific expedition to study the Sun
- To be placed at halo orbit around **L1 Lagrange point**
- Launch date - 02 Sept, 2023
- Time to reach - **4 months**; Mission Life - **5 years**

FIELDS OF STUDY:

- **Sun's corona** (Visible and Near-infrared rays), **photosphere** (soft and hard X-ray) and **chromosphere** (UV)
- Solar emissions, solar winds and flares and **Coronal Mass Ejections** (CMEs)
- Carry out round-the-clock imaging of Sun

SIGNIFICANCE

- Solar weather/environment affects the weather of entire solar system
- Solar events help **understand space weather**
- **Tracking Earth-directed storms** can help predict their impact

LAUNCH VEHICLE

- PSLV-C57

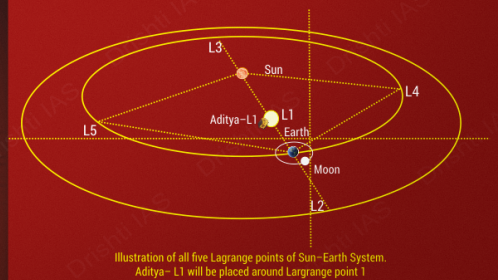
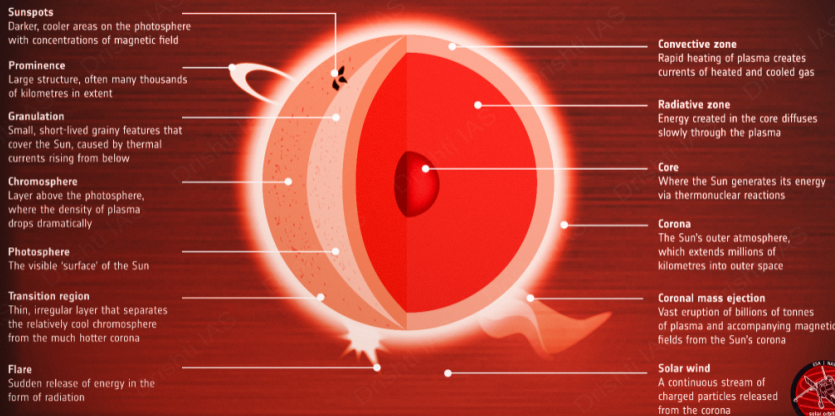
PAYLOADS:

- Visible Line Emission Coronagraph (VLEC) (**primary payload**)
- Solar Ultraviolet Imaging Telescope (SUIT)
- Solar Low Energy X-ray Spectrometer (SoLEXS)
- Aditya Solar wind Particle Experiment (ASPEX)
- High Energy L1 Orbiting X-ray Spectrometer (HELIOS)
- Plasma Analyser Package for Aditya (PAPA)
- Advanced Tri-axial High Resolution Digital Magnetometers

What are Lagrange Points?

- Named after Italian-French mathematician Joseph-Louis Lagrange
- Positions in space where gravitational forces of a two-body system (e.g. Sun & Earth) produce enhanced regions of attraction and repulsion
- Spacecrafts placed at L points consume lower fuel to remain in position
- L1 will provide ISRO continuous view of Sun without any occultation/ eclipses

ANATOMY OF THE SUN



Read more: [Aditya-L1 Mission](#), [Solar Coronal Holes](#)

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