

Solar Ultraviolet Imaging Telescope (SUIT)

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Solar Ultraviolet Imaging Telescope Latest News

The Solar Ultraviolet Imaging Telescope (SUIT) instrument onboard Aditya-L1 observed an X6.3-class solar flare recently, one of the most intense categories of solar eruptions.

About Solar Ultraviolet Imaging Telescope

- It is one of the remote sensing **payloads on board the Aditya-L1**, the **first dedicated solar mission of the Indian Space Research Organization (ISRO)**, that was launched on September 02, 2023.
- It was **developed by Pune's Inter-University Center for Astronomy and Astrophysics (IUCAA)** in close collaboration with various ISRO Centres.
- SUIT is designed to **provide near-simultaneous full-disk and region-of-interest images of the Sun at various heights, slicing through the photosphere and chromosphere.**
- It employs an array of **11 scientifically calibrated filters** (3 broad-band & 8 narrow-band) strategically positioned within the wavelength range of 200 to 400 nanometers.
- **Located at the first Lagrange point**, SUIT **observes the Sun 24x7**, without any interruption.

- The **primary scientific objective** of SUI is to **scrutinize** the dynamic interplay within the **magnetized solar atmosphere**, delving into the intricacies of energetic phenomena such as **jets, flares, filament evolution, and eruptions**.
- Furthermore, SUI, for the first time ever, will help scientists to measure and **monitor the spatially resolved solar spectral irradiance** within the wavelength range crucial to comprehend the intricacies of the **sun-climate relationship**.

What is a Solar Flare?

- A solar flare is a **sudden and intense burst of solar energy** from the Solar atmosphere.
- Flares are our **solar system's largest explosive events**.
- They are **seen as bright areas in the sun**, and they can last from **minutes to hours**.
- The phenomenon is **caused by the Sun's magnetic field**.
 - The **magnetic field** of the Sun is **very dynamic** in nature.
 - Sometimes they **suddenly snap and release intense bursts of energy** – like a powerful, short flash.
 - The energy is released in the **form of light/radiation** and high energy charged particles.
- Although solar flares can be visible in white light, they are often **more readily noticed via their bright X-ray and ultraviolet emissions**.
- **Effect of Solar Flare on Earth:**
 - The intense radiation emitted during a solar flare can **affect satellite communications, disrupt radio signals**, and even pose a **risk to astronauts** in space.
 - Additionally, the increased solar radiation can lead to **geomagnetic storms**, which may **impact power grids** and **cause auroras** (northern and southern lights) at lower latitudes.

Solar Ultraviolet Imaging Telescope FAQs

Q1. Who made the SUI telescope?

Ans. It was developed by Pune's Inter-University Center for Astronomy and Astrophysics (IUCAA).

Q2. How much did Aditya-L1 cost?

Ans. 3.78 billion Indian rupees (\$45.5 million)

Q3. What is the main purpose of Aditya-L1?

Ans. The main purpose of Aditya-L1 is to study the Sun, particularly its outermost layers, and understand its impact on space weather.

Source: [IE](#)

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