



Aditya-L1 has commenced the collection of scientific data.

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September 18, 2023

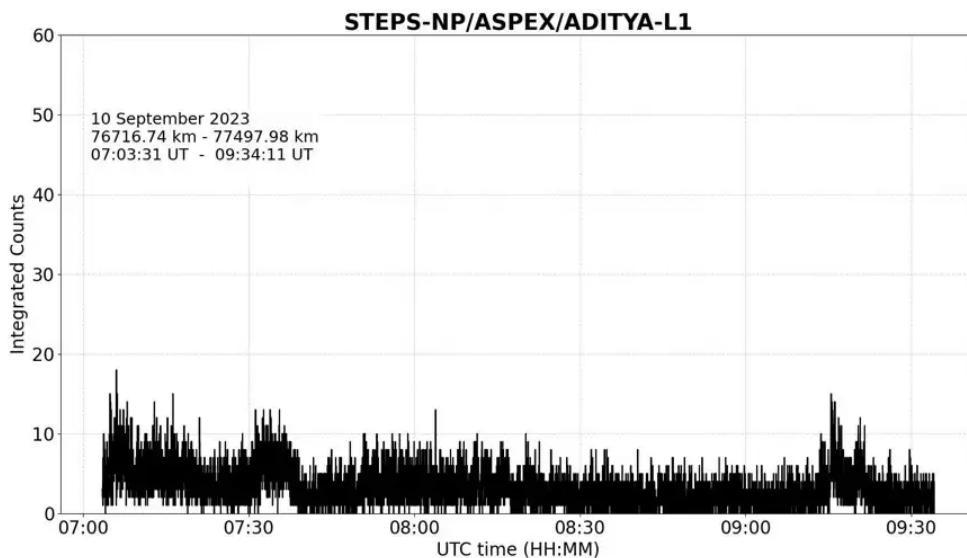
The Supra Thermal & Energetic Particle Spectrometer (STEPS) instrument, a part of the Aditya Solar Wind Particle EXperiment (ASPEX) payload, has begun the collection of scientific data.

STEPS comprises six sensors, each observing in different directions and measuring supra-thermal and energetic ions ranging from 20 keV/nucleon to 5 MeV/nucleon, in addition to electrons exceeding 1 MeV. These measurements are conducted using low and high-energy particle spectrometers. The data collected during Earth's orbits helps scientists to analyse the behaviour of particles surrounding the Earth, especially in the presence of the magnetic field of Earth.

STEPS was activated on September 10, 2023, at a distance greater than 50,000 km from Earth. This distance is equivalent to more than 8 times the Earth's radius, placing it well beyond Earth's radiation belt region. After completing the necessary instrument health checks, data collection continued until the spacecraft had moved farther than 50,000 km from Earth.

Each unit of STEPS is operating within normal parameters. A figure displays measurements depicting variations in the energetic particle environment within Earth's magnetosphere, collected by one of the units. These STEPS measurements will persist during the cruise phase of the Aditya-L1 mission as it progresses toward the Sun-Earth L1 point. They will continue once the spacecraft is positioned in its intended orbit. Data collected around L1 would provide insights into the origin, acceleration, and anisotropy of solar wind and space weather phenomena.

STEPS was developed by the Physical Research Laboratory (PRL) with support from the Space Application Centre (SAC) in Ahmedabad.



Variation in integrated counts over time recorded by one of the STEPS Sensors on September 10, 2023



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