

Advertisement for SUIT Payload Data Scientist (SPDS) at IUCAA

The Solar Ultraviolet Imaging Telescope (SUIT) is one of the payloads on board the Aditya-L1 mission of the Indian Space Research Organization (ISRO), scheduled to be launched in the first half of 2023. SUIT will observe the Sun in the wavelength range of 200-400 nm using 11 science filters tuned to probe different heights in the solar atmosphere, covering the photosphere and chromosphere. It will provide full and partial images of the Sun with a resolution of 0.7 arcsec/pixel. The temporal cadence can vary and can be as fast as 4s. The primary science goals of SUIT are to study the dynamic coupling of the magnetized solar atmosphere and energetics of solar flares and measure and monitor the spatially resolved solar spectral irradiance in the near ultraviolet wavelength range. Note that this is the first time this entire wavelength region will be probed, and full disk images will be obtained from space. Combining the SUIT observations with other payloads on board Aditya-L1, such as Solar Low Energy X-ray Spectrometer (SoLEXS), High Energy L1 Orbiting X-ray spectrometer (HEL1OS), and Visible Emission Line Coronagraph (VELC) will provide the multi-wavelength perspective of the solar atmosphere. SUIT observations can seamlessly be combined with those from Atmospheric Imaging Assembly (AIA) and Helioseismic and Magnetic Imager (HMI), both onboard Solar Dynamics Observatory (SDO), for coronal and photospheric magnetic field counterparts. SUIT observations further complement those taken by Extreme-Ultraviolet Imager (EUI) and Polarimetric and Helioseismic Imager (PHI) on board Solar Orbiter and the Interface Region Imaging Spectrometer (IRIS), including other observations from various ground-based telescopes such as DKIST and MAST. Combining these observations will provide the solar atmospheric observations in full glory and open a wider window for solar studies.

The Inter-University Centre for Astronomy and Astrophysics (IUCAA) Pune is the PI institute of SUIT. The SUIT payload data will be sent to IUCAA from the mission directorate for calibration and processing. Moreover, IUCAA will be responsible for preparing observation plans for the SUIT payload, closely connecting with the time allocation committee.

For this purpose, IUCAA is setting up the Payload Operation Centre (POC) for SUIT and aiming to hire personnel to coordinate these activities and study SUIT observations for science. The SUIT Payload Data Scientist (SPDS) will have other people working at the POC helping in this activity.

Responsibilities of the SPDS (not limited to):

1. Seamless working of the data pipeline and updates as and when required
2. Overall stewardship of the POC in coordination with the Principal Investigator
3. Defining the observation plan in coordination with the Principal Investigator and the Time Allocation Committee
4. Data management and transfer of processed data to ISRO
5. Studying various phenomena in the solar atmosphere

Essential Qualifications:

1. Ph.D. in observational solar physics or astronomy and astrophysics or other related areas
2. Programming using Python, IDL, C, and C++
3. Familiarity with management of large scientific data will be an added advantage
4. Publications in reputed journals of astronomy and astrophysics

Interested candidates should send their CV including a list of publications and a brief write-up (< 1 page) about the expertise relevant to the job and research plans using Aditya-L1 data (<2 pages) to the PIs (Prof Durgesh Tripathi (durgesh@iucaa.in) and Prof A N Ramaprakash (anr@iucaa.in) by 15/11/2022.

Interested candidates may get in touch with PIs for any further questions or clarification.

Duration and Start date: The position is available immediately and is for one year, extendable up to three years based on the performance. The position may be extended for two more years depending on the need, performance and availability of funds.

Nature of the Appointment and Salary: The selected candidates will be appointed with a full-time temporary contract. The salary will be INR 60,000 + 27% house rent allowance per month during the first three years. All other benefits are as per IUCAA norms.