

## **AstroSat Mission**

AstroSat is the first dedicated Indian astronomy mission aimed at studying celestial sources in X-ray, UV and limited optical spectral bands simultaneously, thus providing a space astronomy observatory which is operated by the Indian Space Research Organisation (ISRO). The satellite is at 650 km near-equatorial orbit with 6-degree orbital inclination. Currently, the second AO cycle proposals are being executed.

The details on the mission and payloads are available in the ISRO website. The technical details of payloads are described in the AstroSat Handbook.

A significant amount of AstroSat's observing time is made available to PIs of proposals. The availability of AstroSat time will be made through Announcements of Opportunity (AO). Electronic submission of proposals through AstroSat Proposal Processing System (APPS) software at ISSDC website will be required to submit a proposal in response to this AO. Submitted proposals will be reviewed by the AstroSat Time Allocation Committee (ATAC) and AstroSat Technical Committee (ATC) for scientific merit and technical feasibility.

The observations will be planned as per mission scheduling. The PI will be informed, after the completion of successful observation for the downloading of processed Level-1 data. After the 12 months proprietary period, which starts from the day Level-1 is made available to the PI, the archived data will be open to registered users and will be available in ISSDC.

This AO soliciting proposals for the third AO cycle is for Indian as well as international proposers as Principal Investigators (PIs) to utilise AstroSat observatory time. The observations will be carried out in the period between October 2017 to September 2018 (approximately one year).

All announcements regarding exact dates and proposal submission will be from the Indian Space Science Data Centre (ISSDC) website (<http://www.issdc.gov.in>) and AstroSat Science support Cell (ASC) websites (<http://astrosat-ssc.iucaa.in/>).

## **1. Data processing, data rights and publication**

After the completion of observation, the raw data received will be converted to Level-1 data at Indian Space Science Data Center (ISSDC). ISSDC is responsible for governing the ingest, Quick look Display (QLD), processing (for level-0/1), archival (all levels, along with the auxiliary data) and dissemination of payload data. The data will be in standard FITS format.

Level-1 data can be downloaded from the ISSDC website by the payload teams or Principal Investigators (PIs) of the proposals for science analysis as well as to produce higher level data products. Sample data, software and utilities are provided in the ASC website.

The PI will be informed, after the completion of successful observation for downloading of processed Level-1 data. The standard pipeline software from Level-1 to Level-2 and any other higher level standard products will be made available to the PIs of proposals through ISSDC website.

### **1.1 Proprietary period**

There shall be a Proprietary period associated with observational data from all AstroSat instruments and in all phases and years after launch. This "proprietary period" would begin from the date the Level-1 data is made available to the payload teams and /or PIs of AO proposal.

During this proprietary period, the data will NOT BE USED by any persons or teams other than those who submitted the proposal(s) for the observations, except in cases where the PIs of proposals themselves involve such other persons.

The proprietary period for AO cycle data is 12 months. After the proprietary period, all data will be kept in ISSDC public archive which is accessible both nationally and internationally. It is the responsibility of the Payload Operation Centres (POCs) to provide Level-2 products with a quality report to ISSDC.

Target of Opportunity (ToO) observations which are taken from ToO observation time will be processed immediately to Level 1 data and will be placed in ISSDC archive. These data are non-proprietary and are open to public immediately after observation.

## 1.2 Data rights & obligations

The Principal Investigators (PIs) of all the proposals will have exclusive rights to all the data from the instruments he/ she has configured in the proposal amongst the co-aligned instruments (namely LAXPC, CZTI, SXT and twin telescope UVIT) for those fields that are observed with AstroSat against their proposals,

Data rights for other objects detected within the observed field of observation also belong to the PI of the proposal, unless they communicate not to have it. At present there is no way to separate target data and field data. The proposal PI may collaborate with payload teams (and vice versa) for analysis of data on field objects other than primary target.

The data rights of the instruments not configured by the PI will be made open for piggy back setting by payload teams. Such data will be provided to the payload teams and proprietary period remains the same as AO proposal, which is 12 months.

Any instrument team or PI has the right to reduce the proprietary period by sending an email to [astrosathelp@iucaa.in](mailto:astrosathelp@iucaa.in) with copy to ISSDC team ([issdc\\_team@istrac.gov.in](mailto:issdc_team@istrac.gov.in)) recommending for placing the data in ISSDC data archive before the end of the proprietary period.

## 1.3 Publication

The proposers shall make available the salient results of the data analysis to the scientific community through publication in appropriate journals. All the publications shall acknowledge the AstroSat data, by including a phrase “AstroSat -along with the name of the payload(s)” whose data is used for analysis/ interpretation in the abstract.

When publishing a paper using AstroSat data, please include the following acknowledgement.

***“This publication uses the data from the AstroSat mission of the Indian Space Research Organisation (ISRO), archived at the Indian Space Science Data Centre (ISSDC)”.***

If a user has used already published AstroSat results and carried out further interpretation or modeling, the following statement may be included in the acknowledgement.

***“The research is based (partially or to a significant extent) on the results obtained from the AstroSat mission of the Indian Space Research Organisation (ISRO), archived at the Indian Space Science Data Centre (ISSDC)”.***

ISRO may use any/all results that are derived from AstroSat data and published through academic papers in journals or any other publications by the user, for its own use, in its reports and publications with due reference/ acknowledgements to such journals and publications.