

# National Space Science Symposium

## 2026

# PS-6

### Student Session

### Daily Schedule

Chairperson: **Dr. Praveen Kumar**, SPO, ISRO HQ, Bengaluru

Convener: **Dr. Harish Karnatak**, IIRS, Dehradun;

Co-convener: **Shri Himangshu Pandey**, ISTRAC, Bengaluru

Rapporteur: **Ms Prapti Mittal**, ISTRAC, Bengaluru

**Day-1 (23.02.2026)**

**Technical Session-1 (1500 - 1600 Hrs)**

**Theme:** From Earth Observation to Interplanetary Missions: Shaping the Future with Space Science

**Chair:** Dr. Praveen Kumar

**Co-Chair:** Ms Prapti Mittal

**Oral Presentation**

<b>SN</b>	<b>Abstract ID</b>	<b>Title of Abstract</b>	<b>First Author</b>
1	NSSS2026ABS903	Design And Analysis of a Cubesat Platform with Sintered Ndfeb Magnets for Active Decay Management	Sathiyavel C
2	NSSS2026ABS906	Optical Design and Analysis of Miniaturized Zoom Lenses for Remote Sensing Applications	Siba Prasad Pattnaik
3	NSSS2026ABS915	Optical Design and Analysis of a Widefield Reflective Imager For Remote Sensing Applications.	Ankit Kumar Pandey
4	NSSS2026ABS919	Machine learning based early prediction of solar flares using multi-payload data from Aditya-L1	Mrigna Narain
5	NSSS2026ABS953	Hydrated Minerals and Clay Minerals of Meridiani Planum, Mars: An Integrated Geomorphological and Spectral Analysis Using Multi-Resolution Orbital Datasets	Rozi Baishya
6	NSSS2026ABS954	Mineralogical Characterisation and Geomorphological Insights of Wapowski Crater	Sakthi Saravanan S

**Short Oral and Poster Presentations**

**Note:** The following abstracts are selected for short oral presentations. However, they will have to make a poster presentation as well on the same day.

<b>SN</b>	<b>Abstract ID</b>	<b>Title of Abstract</b>	<b>First Author</b>
1	NSSS2026ABS934	Modelling the Lower Earth Orbit (Leo) Space Debris using Python: Implications for Future	Ahamika Pattnaik

## **Day-2 (24.02.2026)**

### **Technical Session-2 (1215 - 1315 Hrs)**

**Theme:** From Earth Observation to Interplanetary Missions: Shaping the Future with Space Science and Human Space Exploration

**Chair:** Dr. Harish Karnatak

**Co-Chair:** Shri M Somorjit Singh

#### **Oral Presentation**

<b>SN</b>	<b>Abstract ID</b>	<b>Title of Abstract</b>	<b>First Author</b>
1	NSSS2026ABS966	Edge-AI enabled semantic compression for satellite image transmission	Hitesh Sunkari
2	NSSS2026ABS895	Cryogenic laser-based space debris mitigation and active removal system (CLDDDS)	N T Keerrthana
3	NSSS2026ABS939	A Study of Stars with Extragalactic Origin in the Stellar Halo of the Milky Way	Kshitij Chandrakar
4	NSSS2026ABS962	information centric networking (ICN) paradigm in satellite	Abi

#### **Short oral presentations**

**Note:** The following abstracts are selected for short oral presentations. However, they will have to make a poster presentation as well on the same day.

<b>SN</b>	<b>Abstract ID</b>	<b>Title of Abstract</b>	<b>First Author</b>
1	NSSS2026ABS895	Space junk and its effects on re-entry into the earth	Nishanth M
2	NSSS2026ABS935	Planetary data explorer: a web platform with a conversational interface	Harshal Paliwal
3	NSSS2026ABS929	Supplementation of controlled vitamin D through biodegradable oral dissolving strip using carboxymethyl nanocellulose	ADITHYA S R

### **Technical Session-3 (1500 - 1600 Hrs)**

**Theme:** Human Space Exploration and Interdisciplinary Approaches: Space Science Meets Life and Earth Sciences

**Chair:** Shri Himangshu Pandey

**Co-Chair:** Ms Prapti Mittal

#### **Oral Presentation**

<b>SN</b>	<b>Abstract ID</b>	<b>Title of Abstract</b>	<b>First Author</b>
1	NSSS2026ABS936	Integrated textile-based dual ecg/emg sensors for astronaut health monitoring	SREENIVASON A V

2	NSSS2026ABS892	Smart embedded life support system (selsa) for human space exploration and lunar suit environments	Peddireddy Akhila
3	NSSS2026ABS917	"Human adaptability in space through symbiotic micro-organisms"	Shreya Pandey
4	NSSS2026ABS941	Mars analog missions: NASA's CHAPEA and ISRO's HOPE	Avishi Gunjan Bidasaria
5	NSSS2026ABS926	InSight India	Sai Sidharth Parcha

### Short oral presentations

**Note:** The following abstracts are selected for short oral presentations. However, they will have to make a poster presentation as well on the same day.

SN	Abstract ID	Title of Abstract	First Author
1	NSSS2026ABS938	Human space exploration	Shubham Satyawali
2	NSSS2026ABS899	Low-cost infrared optical wireless communication system for real-time emg signal transmission	Bodireddy Jaswanth

### Technical Session-4 (1700 - 1800 Hrs)

**Theme:** Interdisciplinary Approaches: Space Science Meets Life and Earth Sciences & Next-Generation Space Missions: Moon, Mars, and Beyond

**Chair:** Dr D Chutia

**Co-Chair:** Ms. Prapti Mittal

#### Oral Presentation

SN	Abstract ID	Title of Abstract	First Author
1	NSSS2026ABS931	Dark matter density profiles in galaxies: constraints from neutron star merger rates	Shri Hari B.G
2	NSSS2026ABS951	Landslide spatial prediction using ai and geospatial technology for the nilgiris district of Tamil nadu,India	Amlan Pal
3	NSSS2026ABS958	AI-Driven Assessment of Liquefaction Probability in Shillong City Using Remote Sensing Data Inputs	Sananda MONDAL
4	NSSS2026ABS925	Search for Extraterrestrial Life Through the Cosmic Life Viability Metric	Telikicherla V R R S Sritodbhav
5	NSSS2026ABS937	Identifying halo stars in the milky way using apogee-dr17 stellar parameters: an exploratory and feature selection analysis	Swasti Mathur

6	NSSS2026ABS959	The silent sentinels: using earth's endolithic microbiomes as a predictive model for biosignature detection on mars	Niva Sharma
7	NSSS2026ABS891	Lunar Crater Detection from Chandrayaan-2 OHRC Data using Deep Learning	Twarita Kasabe

**Day-3 (25.02.2026)**

**Technical Session-5 (1215 - 1315 Hrs)**

**Theme:** Next-Generation Space Missions: Moon, Mars, and Beyond

**Chair:** Dr. K K Sarma

**Co-Chair:** Shri Himangshu Pandey

**Oral Presentation**

<b>SN</b>	<b>Abstract ID</b>	<b>Title of Abstract</b>	<b>First Author</b>
<b>1</b>	NSSS2026ABS910	Exploring the surface of Mars: advancements in rover technology	Ritesh Kumar Sharma
<b>2</b>	NSSS2026ABS918	Effect of geomagnetic storms on lunar exosphere	Soumyasree Guin
<b>3</b>	NSSS2026ABS921	Two-dimensional analysis, comparison, and improvement of the aerodynamic performance of high-camber aerofoils under martian atmospheric conditions	Girishankar Kanagaraj
<b>4</b>	NSSS2026ABS923	Mechanisms Shaping Space Missions for Tomorrow: An In-Depth Analysis of Future Technologies & Bio-Adaptations	Harsh Matlani
<b>5</b>	NSSS2026ABS928	A conceptual framework for autonomous lunar navigation and landing site analysis using chandrayaan imagery	B Kiran
<b>6</b>	NSSS2026ABS930	Astroedge ai: an offline wearable system for astronaut assistance in long-duration space missions	Adithyan S

**Short oral presentations**

**Note:** The following abstracts are selected for short oral presentations. However, they will have to make a poster presentation as well on the same day.

<b>SN</b>	<b>Abstract ID</b>	<b>Title of Abstract</b>	<b>First Author</b>
1	NSSS2026ABS932	Stellar engine	Radhakrishnan vadivel

**Technical Session-6 (1500 - 1600 Hrs)**

**Theme:** Next-Generation Space Missions: Moon, Mars, and Beyond

**Chair:** Dr. Bijoy K Handique

**Co-Chair:**

**Oral Presentation**

<b>SN</b>	<b>Abstract ID</b>	<b>Title of Abstract</b>	<b>First Author</b>
1	NSSS2026ABS949	Autonomous ai-driven navigation system for interplanetary rovers: a unified framework for	Florence Solomon

		moon and mars exploration	
2	NSSS2026ABS952	Antrikshsutra “ the unbreakable communication thread	Sankalp Pandey
3	NSSS2026ABS967	Project Sudarshan: AI based trajectory optimization for spacecrafats and rockets	Parineeta
4	NSSS2026ABS897	AI optimized hybrid chemical electric propulsion for faster Mars transit missions	Raahul Badri
5	NSSS2026ABS900	A Polarimetric SAR“Thermal Infrared Fusion Framework for Predicting Lunar Surface Stability and Mobility Hazards for Future Exploration Missions	Rathinam Ramasamy
6	NSSS2026ABS913	Nuclear Thermal Rocket: Design Considerations and Efficiency Optimization for Deep-Space Explorations	Mahak

### Short oral presentations

**Note:** The following abstracts are selected for short oral presentations. However, they will have to make a poster presentation as well on the same day.

SN	Abstract ID	Title of Abstract	First Author
1	NSSS2026ABS902	A feasibility study of X-ray pulsar navigation (xnav) for autonomous cruise-phase navigation on isro's future interplanetary missions	Suresh Kumar M

### Technical session 7 (1700-1800hrs)

**Theme:** Next-Generation Space Missions: Moon, Mars, and Beyond & Space Station and Human Habitat Beyond Earth

**Chair:** Dr. Tirtha P Das

**Co-Chair:** Ms Prapti Mittal

#### Oral Presentation

SN	Abstract ID	Title of Abstract	First Author
1	NSSS2026ABS927	Modeling of aerobraking for Mars orbit insertion using realistic atmospheric model	Sumati Suhas Kulkarni
2	NSSS2026ABS961	Hybrid dust mitigation system for enhanced solar array performance on lunar and Martian surfaces	Yashasvi Chandrakant Patil
3	NSSS2026ABS898	Siting a sustainable lunar habitat at the shackleton crater rim	Vivek Yadav
4	NSSS2026ABS956	Photonics-assisted genomic monitoring of Indian crop microbe systems under simulated microgravity and altered atmospheric conditions	Chakrala B N Siddhartha

### **Short oral presentations**

**Note:** The following abstracts are selected for short oral presentations. However, they will have to make a poster presentation as well on the same day.

<b>SN</b>	<b>Abstract ID</b>	<b>Title of Abstract</b>	<b>First Author</b>
1	NSSS2026ABS922	Conceptual framework for integrating sustainable technologies into Indian human spaceflight programme	Vijay Raghavan
2	NSSS2026ABS960	Designing the Future on the Moon: Challenges and Opportunities for Permanent Human Habitation	Sure Bala Saran
3	NSSS2026ABS893	Space station and human habitat beyond earth	Hritik Rana

**Day-4 (26.02.2026)**

**Technical Session-8 (1215 - 1315 Hrs)**

**Theme:** Space Technology

**Chair:** Dr. Diganta Barman

**Co-Chair:** Dr. Jonali Goswami

**Oral Presentation**

<b>SN</b>	<b>Abstract ID</b>	<b>Title of Abstract</b>	<b>First Author</b>
1	NSSS2026ABS984	Analysis of solar irradiance pattern in India using Python based ML technique	Nidhi Mishra
2	NSSS2026ABS985	Machine learning algorithm to predict and improve the crop yield using the satellite data	Ritovas Bhattacharya
3	NSSS2026ABS971	Development of a Compact S-Band UAV-Borne Synthetic Aperture Radar (uSAR) using a Custom-Built Drone Platform for All-Weather Crop and Surface Monitoring	Anup Jyoti Sharma
4	NSSS2026ABS973	Probing the Hubble Tension: Supernovae Ia Constraints on Cosmic Expansion and the Age of the Universe	Bhaswat Sundar Das
5	NSSS2026ABS974	A study of potential for life in the subsurface oceans of icy moon: Europa	Nameirakpam Dhanapriya Devi

**Short oral presentations**

**Note:** The following abstracts are selected for short oral presentations. However, they will have to make a poster presentation as well on the same day.

<b>SN</b>	<b>Abstract ID</b>	<b>Title of Abstract</b>	<b>First Author</b>
1	NSSS2026ABS986	Context -Aware computer vision enhancements for Illegal Mining Detection	Prashant Kauthekar
2	NSSS2026ABS987	Atomic recombination and the formation of the Cosmic Microwave Background spectrum	Sone Tayeng
3	NSSS2026ABS995	Climatology of monsoon rainfall over the NER of India using IMDAA reanalysis data	Nandini Gogoi
4	NSSS2026ABS991	Vikas-Sikhara (VS-1): A Monolithic, Topology-Optimised Aeropike Propulsion System for Enhanced PSLV Performance	Dawar Diganta J Kashyap
5	NSSS2026ABS980	Climate change, rocket launch, and its effect in the atmosphere	Thouchum Payal Chanu

**Technical Session-9 (1500 - 1600 Hrs)**

**Theme:** Space Technology

**Chair:** Shri Ramani K Das

**Co-Chair:** Shri Himangshu Pandey

**Oral Presentation**

<b>SN</b>	<b>Abstract ID</b>	<b>Title of Abstract</b>	<b>First Author</b>
1	NSSS2026ABS989	Ghost Satellites: Cyber-Deception for Securing Modern Satellite Constellations	Siddhartha Rajbongshi
2	NSSS2026ABS990	Active Space Debris Removal Using Tether-Based Capture and De-Orbiting Mechanisms	Dishita saikia
3	NSSS2026ABS978	A Data Assimilation Framework for Quantifying Martian Atmospheric Escape Uncertainty	Ishan Narayan Shukla
4	NSSS2026ABS979	Pineapple-Based Slope Reinforcement with Satellite-Sensor Early Warning for Multi-Hazard Disaster Prevention in Manipur Hills	Arpita Kumari
5	NSSS2026ABS976	Daily Variability of Ionospheric TEC Over North Eastern Region of India : Insights of the IRI Model	Vedika Sharma
6	NSSS2026ABS981	Timing Analysis of the Neutron Star 4U 1728-34 Using AstroSat Observations	Lalchhuanawmi Jinhlawng
7	NSSS2026ABS982	The Celestial Hunter: A Comparative Analysis of the Mizo Chhohhreibung and the Western Orion Constellation	Biakthansanga Ralte
8	NSSS2026ABS968	Transforming Space Debris into Space Assets through Robotic Orbital Recycling	Meghalina Chakraborty

**Short oral presentations**

**Note:** The following abstracts are selected for short oral presentations. However, they will have to make a poster presentation as well on the same day.

<b>SN</b>	<b>Abstract ID</b>	<b>Title of Abstract</b>	<b>First Author</b>
1	NSSS2026ABS996	A hybrid material as optical pre-seismic sensor for pre earthquake prediction: electro-mechano lunimoscence	Ashutosh Satapathy
2	NSSS2026ABS977	AI+Satellite System for Preventing Air Crashes	Happyiona Lyngdoh Mawphlang
3	NSSS2026ABS983	Adaptive Machine Learning-Driven Perovskite Solar Arrays for Resilient Spacecraft Power Systems	Tiya Jaman

**Day-5 (27.02.2026)**

**Technical Session-10 (1215 - 1315 Hrs)**

**Theme:** Space Technology

**Chair:** Dr Kasturi Chakraborty

**Co-Chair:** Dr Jenita M Nongkynrih

**Oral Presentation**

<b>SN</b>	<b>Abstract ID</b>	<b>Title of Abstract</b>	<b>First Author</b>
1	NSSS2026ABS969	Hybrid Electronic Module: Paving the Way for Long- Duration Spacecraft	Madhumita Deb
2	NSSS2026ABS992	Insights from the Observations of the DESI (DarkEnergy Spectroscopic Instrument)Survey	Bindu chettri
3	NSSS2026ABS993	Use of Nanostructured 2D Materials for Hydrogen Storage in Spacecraft Fuel Systems	Brikchana Karki
4	NSSS2026ABS979	Pineapple-Based Slope Reinforcement with Satellite-Sensor Early Warning for Multi-Hazard Disaster Prevention in Manipur Hills	Aabhash Mukherjee

**Short oral presentations**

**Note:** The following abstracts are selected for short oral presentations. However, they will have to make a poster presentation as well on the same day.

<b>SN</b>	<b>Abstract ID</b>	<b>Title of Abstract</b>	<b>First Author</b>
1	NSSS2026ABS970	HfO <sub>2</sub> Based Memristors as Potential Candidate towards Radiation-Tolerant and Thermally Stable Electronics for Deep Space Environments	Utsav Neogi
2	NSSS2026ABS988	Multi-Layer Radiation shielding Materials for Sustainable Human Settlement in Outer Space	Sayeed Mohammad Choudhury
3	NSSS2026ABS994	A Modular Fully Reusable Two-Stage Launch System with Autonomous Health-Aware Recovery for Rapid Space Access	Ishan Singh