छठी संगोष्ठी: उल्काभ, उल्का, उल्कापिंड: अंतरिक्ष से संदेशवाहक

6th Symposium on Meteoroids, Meteors & Meteorites: Messengers from Space

MetMeSS 2026

26th to 27th October 2026

Department of Geology & Geophysics, IIT Kharagpur, in partnership with Physical Research Laboratory, Ahmedabad

Venue: Kalidas Auditorium, IIT Kharagpur | All times in Indian Standard Time (IST)

Day 1: 26th October 2026, Monday

8:30 to 9:30	**Registration**	
Inaugural ceremony | 9:30 to 10:30		
9:30 to 9:35	Opening speech: Convenor, MetMeSS-6 (5 min)	**Dr. Sujoy Ghosh** Convenor, MetMeSS-6
9:35 to 9:40	**Lighting of the ceremonial lamp and Saraswati Vandana (5 min)**	
9:40 to 9:43	Address by the Head, Department of Geology & Geophysics (3 min)	**Prof. Sanghamitra Ray** Head, Department of Geology & Geophysics
9:43 to 9:48	Address by the Chairperson, Kalpana Chawla Space Technology Cell (5 min)	**Prof. Debarati Sen** Chairperson, Kalpana Chawla Space Technology Cell
9:48 to 9:51	Address by the Dean (Faculty) (3 min)	**Prof. Somesh Kumar** Dean (Faculty), IIT Kharagpur
9:51 to 9:54	Address by the Dean (Administration) (3 min)	**Prof. Kamal L. Panigrahi** Dean (Administration), IIT Kharagpur
9:54 to 9:58	Speech by the Convenor, MetMeSS-6 (4 min)	**Prof. Saibal Gupta** Convenor, MetMeSS-6
9:58 to 10:28	Inaugural talk by the Chief Guest (30 min)	**Prof. Anil Bhardwaj** Director, Physical Research Laboratory, Ahmedabad
10:30 to 10:40	**Group photograph**	
High tea: 10:40 to 11:00		
Session I: Early Solar System Processes & Organics *Session Chairs: Ramananda Chakrabarti and Nachiketa Rai*		
11:00 to 11:15	**Keynote talk:** From Galactic Matter to Planetesimals: Insights from Meteorites and Sample Returns	**Kuljeet Kaur Marhas** PRL Ahmedabad
11:15 to 11:25	Beyond the Solar Neighborhood: A New Perspective on Presolar Grain Origins	**Antariksha Mitra** PRL Ahmedabad
11:25 to 11:35	From Stardust to Supernovae: an Integrated 1D-3D Nucleosynthetic Mixing Framework for Tracing the Origin of Presolar Grains	**Divyadharsini R** PRL Ahmedabad
11:35 to 11:50	**Keynote talk:** Elemental and Oxygen Isotope Composition of CM Meteorite Constituents: Constraints on Origin of Solar System	**Gopalan Srinivasan** CSSEH Bhopal
11:50 to 12:00	Characterization of Nanoglobule-like Organics in Mukundpura (CM2): a Coordinated NanoSIMS-hrtem Study	**Shreeya Natrajan** PRL Ahmedabad
12:00 to 12:10	Nanoscale Carbon and Nitrogen Isotopic Anomalies in Insoluble Organic Matter from the Norton County Aubrite and Parsa Enstatite Chondrite: A NanoSIMS–HRTEM Study	**Neha** PRL Ahmedabad
12:10 to 12:25	**Keynote talk:** The Construct of Solar System: Deconstructed from High Precision 26Al-26Mg Systematics in Meteorites	**Ritesh Kumar Mishra** AMETEK India, Bengaluru
12:25 to 12:35	Origin and Evolution of Enigmatic Corundum Inclusions in the Bhuka IAB Iron Meteorite: Insights from ^{26}Al–^{26}Mg and Oxygen Isotope Systematics	**Ankit Prakash Singh** PRL Ahmedabad
12:35 to 12:50	**Invited talk:** Stable isotope variations of major elements in planet forming materials	**Yogita Kadlag** PRL Ahmedabad
12:50 to 13:00	C, H, and N isotopic studies of C2 and C1-type clasts from a polymict ureilite breccia.	**Subhasmita Swain** NISER Bhubaneswar
13:00 to 13:10	Unique olivine-rich volatile-rich C1 clasts in two polymict ureilites	**Subhasmita Swain** NISER Bhubaneswar
13:10 to 13:20	Oxygen Isotope Concentration of Carbonate and Olivine Grains within C1 and CM-like Clasts in Achondritic Breccia Meteorites.	**Neetha Thomas** IISER Berhampur
Lunch: 13:20 to 14:40		

Session II: Asteroids, Comets, Micrometeorites & Returned Samples *Session Chairs: Sujoy Ghosh and Kuljeet Kaur Marhas*		
14:40 to 14:55	**Keynote talk:** Meteorite Mineralogy and Indian Meteorite Fall	**Dipak Kumar Panda** PRL Ahmedabad
14:55 to 15:05	Deciphering Pre- and Post-Accretionary Processing of Organic Matter in Asteroidal Materials	**Rahul Kumar** IIT (ISM) Dhanbad
15:05 to 15:15	Phosphate mineralogy and fluid-assisted alteration in the Khalwat-Nimgaon L5 ordinary chondrite: Implications for S-Type asteroid parent bodies	**Garima Arora** PRL Ahmedabad
15:15 to 15:30	**Keynote talk:** Cosmic Ray Exposure Ages of Meteorites and Surface Exposure Systematics of Planetary Objects	**Ramakant R. Mahajan** PRL Ahmedabad
15:30 to 15:40	Neutron Signatures in Ordinary Chondrites	**Satvika Jaiswal** PRL Ahmedabad
15:40 to 15:50	Thermal Overprinting by Fusion Crust Controls Back-transformation of High-pressure Phases in the Katol L6 Chondrite	**Kishan Tiwari** IIT Kharagpur
Tea break: 15:50 to 16:05		
Session II: Asteroids, Comets, Micrometeorites & Returned Samples (contd.)		
16:05 to 16:20	**Keynote talk:** Shock Features in Ordinary Chondrites: Observations from the Geological Survey of India Archive	**Arindam Dutta** GSI Kolkata
16:20 to 16:30	Olivine-ringwoodite transformation mechanism in Bori L6 chondrite. Implication for slab rheology	**Rajesh Kumar Behera** IIT Kharagpur
16:30 to 16:40	Interpreting the Entry Conditions for the Development of Different Textures in Micrometeorites	**Vijay Pratap Singh** CSIR-NIO Goa
16:40 to 16:50	Evaluation Of Highly Oblique Impact Crater Near Luobusa Ophiolite Using, Numerical Models, Ultra High-Pressure Minerals and Tektites	**Mahesh Patil** SSRI Ahmedabad
16:50 to 17:00	Extraterrestrial Dust Influx and Biogeochemical Footprints: Constraints from Antarctic Ice and Central Indian Ocean Basin Records	**Vijay Pratap Singh** CSIR-NIO Goa
Session III: Differentiated Bodies: Asteroids, Moon, Mars *Session Chairs: Gopalan Srinivasan and Yogita Kadlag*		
17:00 to 17:15	**Keynote talk:** End Member Models in Planetesimal Formation: Constraints from Differentiated Meteorites	**Nachiketa Rai** IIT Roorkee
17:15 to 17:30	**Keynote talk:** Non-traditional Isotope Geochemistry of Planetary Materials	**Ramananda Chakrabarti** IISc Bengaluru
17:30 to 17:35	Audience questions and Session III discussion	**Session chairs**
Break and cultural programme set-up: 17:35 to 18:00		
Cultural programme: 18:00 to 20:00 *Kalidas Auditorium*		

Day 2: 27th October 2026, Tuesday

Session III: Differentiated Bodies: Asteroids, Moon, Mars (contd.)		
9:00 to 9:10	Petrography of the Polymict Ureilite Northwest Africa (NWA) 15112: Clast Diversity and Implications for Reduction and Impact Processing	**Aishanya Sharma** IIT Roorkee
9:10 to 9:20	Late homogenization of mantle sources recorded by 182W isotope signatures from the Singhbhum Craton	**Arathy Ravindran** IISER Thiruvananthapuram
9:20 to 9:35	**Keynote talk:** Diversity of Lunar Feldspathic Highland Crust: the View After CHANDRAYAAN-3	**Dwijesh Ray** PRL Ahmedabad
9:35 to 9:45	How Did Some Basalts on the Moon Become So Rich in Titanium?	**Himela Moitra** IIT Kharagpur
9:45 to 9:55	Identification and Characterization of Previously Unidentified Events from Apollo Passive Seismic Data	**Omkar Kumar Gupta** PRL Ahmedabad
Session IV: Space Weathering, Meteors, Atmosphere & Ionosphere *Session Chairs: Satadru Bhattacharya and Bhalamurugan Sivaraman*		
9:55 to 10:10	**Keynote talk:** The PAH problem in the ISM, Bottom-up or Top-down	**Bhalamurugan Sivaraman** PRL Ahmedabad
10:10 to 10:20	Mid-infrared Spectroscopic investigation of a sample of asteroids	**V. Venkataraman** SPL VSSC Thiruvananthapuram
10:20 to 10:30	Pulsed Laser Irradiation of Three CM Chondrites: Micrometeorite related Space Weathering on Organic-rich Asteroids	**Swarna Prava Das** NISER Bhubaneswar
10:30 to 10:40	Solar- and Cosmic Ray Tracks in Regolith Breccia Meteorites	**Neetha Thomas** IISER Berhampur
Tea break: 10:40 to 11:00		
Session IV: Space Weathering, Meteors, Atmosphere & Ionosphere (contd.)		
11:00 to 11:10	Stony meteorites at hypervelocities in Venusian atmosphere, An experimental approach	**Arijit Roy** PRL Ahmedabad & IIT Kharagpur
Session V: Planetary Analogues *Session Chairs: Saibal Gupta and To be announced*		
11:10 to 11:20	Role of Fluid into the Origin of Ancient LIP Rhyolite and Large Granitoid: Implications for Martian Silicic Rocks	**Sarajit Sensarma** University of Lucknow
11:20 to 11:30	Combined Radiogenic K–CA and RB–SR Isotopic Age Constraints of the Dhala Impact Structure, India	**Gaurav Singh Papola** IISc Bengaluru
11:30 to 11:45	**Keynote talk:** Significance of Terrestrial Analogues for Lunar Exploration: Insights from the Sittampundi Anorthosite Complex, India	**Rajesh V. J.** IIST Thiruvananthapuram
11:45 to 11:55	Evaporative Polygons: An Indication of Transient Brine Activity on Mars	**Angana Samanta** IIT Bombay
11:55 to 12:05	3D printing of space bricks and radiation shield using planetary analogues	**Thirukumaran Venugopal** Chikkaiah Govt. College, Erode
12:05 to 12:20	**Invited talk:** Laboratory Studies for Planetary Science: Developing a New Experimental Facility at SINP, Kolkata, India	**Sankhabrata Chandra** SINP Kolkata
Lunch: 12:20 to 14:00		
Session V: Planetary Analogues (contd.)		
14:00 to 14:10	Extremophile microbiomes hosted in planetary analogue sites across the Indian subcontinent	**Diptangshu Dey** IIT Kanpur
14:10 to 14:20	Biosignature Preservation in Travertine Deposits from Tapovan Hotspring, Uttarakhand: Implications for Mars	**Pallabi Das** PRL Ahmedabad
Session VI: Planetary Remote Sensing & Instrumentation *Session Chairs: Dwijesh Ray and Rajesh V. J.*		
14:20 to 14:45	**Keynote talk:** Vis-IR Spectroscopy & Planetary Remote Sensing	**Satadru Bhattacharya** SAC ISRO Ahmedabad
14:45 to 14:55	MRO-HiRISE observations of aeolian characteristics at the Arkhangelsky crater on Mars	**Anirban Mandal** NIT Rourkela
14:55 to 15:05	Simulation of neutron and gamma spectra of Mars: Constraints on thickness of CO2 frost layer	**Debabrata Banerjee** PRL Ahmedabad
15:05 to 15:20	**Invited talk:** Chandrayaan-3 provides intriguing insights into thermophysics and geo-technical environment at lunar high-latitudes	**Karanam Durga Prasad** PRL Ahmedabad
15:20 to 15:30	3D Thermophysical Modelling of Martian Surface and Subsurface Temperatures: Validation Against In-Situ Observations	**Karanam Durga Prasad** PRL Ahmedabad

15:30 to 15:40	Design and Development of a Miniaturized Neutral and Ion Mass Spectrometer (NIMS) for Future Planetary Missions	**Sanjeev Kumar Mishra** PRL Ahmedabad
15:40 to 15:55	**Invited talk:** Chemical Fingerprints of Planetary Evolution	**Liton Majumdar** NISER Bhubaneswar
15:55 to 16:50	**Poster session with tea**	
Special keynote talks | Venus and planetary volcanism		
16:50 to 17:10	**Keynote talk:** Radiating Mafic Dyke Swarms: How Far Can They Go? Insights from Venus	**Hafida El Bilali** Carleton University, Ottawa
17:10 to 17:30	**Keynote talk:** Applying a Mantle Plume-Large Igneous Province-Mafic Dyke Swarm (MP-LIP-DS) Paradigm to Geological Mapping and Interpretation on Venus	**Richard Ernst** Carleton University, Ottawa (online presentation)
Concluding session | 17:30 to 18:00		
17:30 to 17:45	**Young Researcher Award presentation**	
17:45 to 17:55	**Discussion and feedback**	
17:55 to 18:00	**Vote of thanks**	
Gala dinner with families: 19:30 *Gargi-Maitree Foyer*		

Poster Presentations

Poster viewing: Tuesday, 27 October 2026, 15:55 to 16:50, with tea. Posters must be smaller than 1 m x 1 m, rectangular, preferably 4:3. Most keynote and invited talks are 15 minutes and contributed talks 10 minutes, including questions; the two Venus keynote talks on 27 October are 20 minutes each.

Session I: Early Solar System Processes & Organics		
P01	High resolution spectroscopy and laboratory astrochemistry @IIT Kharagpur	**Arijit Roy** Dept. of Chemistry, IIT Kharagpur
P02	ℓ-type Doubling in HC2n+1N and HC2n+1P Linear Molecules of Astrochemical Interest	**Ratul Paul** IIT Kharagpur
P03	Raman Spectroscopic Constraints on the Formation Conditions of Presolar Silicon Carbide Grains from the Murchison Meteorite	**Aadhya Tripathi** IISER Mohali
P04	Radiative Transfer Modeling of Molecular Line Profiles in the Hot Corino Proto-binary Ngc 1333 IRAS4A	**Bhalamurugan Sivaraman** PRL Ahmedabad
P05	Mineralogical, Chemical and Shock-Metamorphic Characterization of Chondrule Populations in the Dergaon H5 Chondrite	**Kalpana Singh Verma** IIT Roorkee
Session II: Asteroids, Comets, Micrometeorites & Returned Samples		
P06	Textural and Environmental Discrimination of Extraterrestrial and Terrestrial Spherules: Evidence from Central Indian Ocean Basin Sediments and Antarctic Cryoconite Sediments.	**Krishnaveni D** CSIR-NIO Goa
P07	Noble Gas Isotope Systematics of H Group Ordinary Chondrites	**Avadh Kumar** PRL Ahmedabad
P08	Spectral Signatures of Simulated Asteroid Regoliths: Linking Physical Properties to VNIR–SWIR Characteristics	**Sritama Das** IIT Kharagpur
P09	OH, Organics, and CO_2 in the Outer Solar System: A JWST/NIRSpec Spectral Investigation.	**Arnab Chatterjee** IIT Kharagpur
Session III: Differentiated Bodies: Asteroids, Moon, Mars		
P10	Late-stage Silicic Differentiation on Mars: Evidence from Si–Na–K-rich Mesostasis and Inclusions in the Shergotty Shergottite	**Manoj Jat** PRL Ahmedabad
P11	Reconstructing the Geological Past of Mars: Insights from Olivine Alteration in the Nakhlite Yamato-593	**Aditya Das** PRL Ahmedabad
P12	Textural Study of the Martian Meteorite - Shergotty	**Mahima Sharma** IIT Roorkee
P13	Petrographic and Mineralogical Insights into Winona and NWA 14344: Implications for Winonaite Petrogenesis	**Nishant Pandey** IIT Roorkee
P14	Probing the origin of Earth's apparent non-chondritic Mg isotope signature	**Soumyadip Haldar** IISER Kolkata
P15	Geochemical Insights into Basalt Weathering on Mars: a Case Study of Lyot Crater	**Sneha Bhowmik** IIT Kharagpur
P16	Spectral Anomalies and Possible Iron-meteorite Origins of FE-RICH Float Rocks at Jezero Crater, Mars: a Mastcam-z and Supercam Investigation.	**Subham Sarkar** IISc Bengaluru
Session IV: Space Weathering, Meteors, Atmosphere & Ionosphere		
P17	The Largest Peptide-like Molecule in the ISM- Propionamide in Astrochemical Icy Conditions	**Bhalamurugan Sivaraman** PRL Ahmedabad
Session V: Planetary Analogues		
P18	Geochemical Studies of Impact-melt Rocks from the Lonar Crater	**Anagha S M** PRL Ahmedabad
P19	Impact-melt spherules at Lonar crater, India, and Jezero crater, Mars: A Terrestrial Analogue perspective	**Himangshu Deka** PRL Ahmedabad
P20	Mineralogical signatures of basaltic laterites from India: Implications for Fe-rich alteration history on Mars	**Aindrila Mukherjee** PRL Ahmedabad
P21	Shock Driven Chemical Processing of Lunar Analogues	**Roshan Nath** GITAM Bengaluru
Session VI: Planetary Remote Sensing & Instrumentation		
P22	Studies on Interannual Variability of Argon in the Martian Atmosphere	**Shipra** PRL Ahmedabad
P23	Deep Learning Classification of Martian Impact Crater Degradation from CTX Imagery	**Saksham Badal** IIT (ISM) Dhanbad
P24	Can the Experimental Maturity Sequence Help to Locate Relatively Recent Brine Activity on Mars?	**Adrita Mukherjee** IIT Kharagpur
P25	Deep-Learning-Based Semantic Segmentation of Lunar Swirls	**Subhangini Soni** PRL Ahmedabad

P26	Integrated Assessment of Safe Landing Zones and Traverse Planning at the Lunar South Pole	**Suyash Sharma** IIST Thiruvananthapuram