



**S N BOSE NATIONAL CENTRE  
FOR BASIC SCIENCES**

*Block JD, Sector III, Salt Lake, Kolkata 700 106*

## **DEPARTMENTAL SEMINAR**

# **Astrophysics and Cosmology**

**21<sup>st</sup> February, 2022**

**12.00PM**

**FERMION / ONLINE**



**SPEAKER**

**Prof. Ranjan Gupta, Professor, IUCAA, Pune**

**TITLE OF THE TALK**

**Laboratory Study of Regolith Analogues ~ relevance to recent  
Asteroid regolith sample return missions**

**ABSTRACT**

THE TALK DESCRIBES NEW STUDIES CARRIED OUT AT ASSAM UNIVERSITY, SILCHAR USING A GONIOMETER DEVELOPED IN COLLABORATION WITH IUCAA FOR REFLECTIVITY MEASUREMENTS OF PLANETARY REGOLITHS. HISTORICALLY, THIS EXPERIMENT WAS CONCEPTUALIZED DURING OUR EARLY VISITS (2000-2004) TO KOBE UNIVERSITY, KOBE, JAPAN WHERE T. MUKAI AND HIS TEAM WERE USING SIMILAR GONIOMETERS. THE SAMPLES OF REGOLITHS WERE OF INDUSTRIAL AND NATURAL ORIGIN AND SIMULATE THE KIND OF DUST EXPECTED TO BE ON PLANETARY SURFACES.

THE MEASUREMENTS MATCH QUITE WELL WITH MODEL ESTIMATES AND PROVIDE A PLATFORM TO REMOTELY INFER THE PHYSICAL PROPERTIES OF SOLAR SYSTEM REGOLITHS WHICH WILL BE VERY USEFUL FOR FUTURE LANDING MISSIONS ON PLANETS AND MINOR BODIES. THE TALK WOULD ALSO MENTION THE RELEVANCE TO RECENT ASTEROID REGOLITH SAMPLE RETURN MISSIONS.

**HOST FACULTY**

**Dr. Ramkrishna Das**

**Associate Professor & Seminar Coordinator, Astrophysics & Cosmology**

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