

IUCAA, Pune

A THREE DAYS WORKSHOP



ESTD. 1944

MALDA COLLEGE, MALDA

ON

General Relativity, Cosmology and Gravitational Waves

January 08-10, 2026

Sponsored by

IUCAA, Pune

Organized by

ICARD

Department of Physics,
Malda College

**SCAN TO
REGISTER**



INVITED SPEAKERS



Prof. Farook Rahaman

IUCAA Associate
Professor
Dept. of Mathematics,
Jadavpur University



Dr. Sumanta Chakraborty

IUCAA Associate
Assistant Professor
School of Physical
Sciences, IACS, Kolkata



Dr. Apratim Ganguly

Scientist
IUCAA, Pune



Dr. Tanmoy Paul

Assistant Professor
Dept. of Physics,
Visva Bharati

Coordinators :

Dr. Shyam Das (ICARD, Malda College), Dr. Apratim Ganguly (IUCAA, Pune)



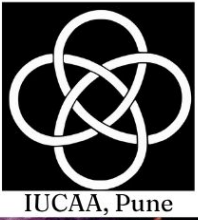
**Venue : ICARD, Department of Physics,
Malda College, Malda, West Bengal**



dasshyam321@gmail.com



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Register Now

Registration Deadline
25th October 2025

**No
Registration
Fees !!**

**Limited
Seats!**



Target Audience (Eligibility)

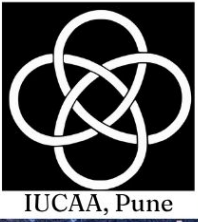
The workshop is intended for postgraduate students, PhD scholars, faculty members, postdoctoral researchers, and a select number of advanced undergraduate students with a demonstrated interest in astrophysics, cosmology, or gravitational wave science.



Mode of Selection

Interested participants must fill out the Google Form with their personal details, research interests, and reasons for wanting to attend the workshop. The selection process has been designed to match the workshop's goals, available seats, and expected outcomes, ensuring the most suitable candidates are chosen. A Scientific Organizing Committee (SOC) will carefully review all applications. Participants will be shortlisted based on their motivation, basic eligibility and familiarity with programming skills relevant to the workshop. Only 20 outstation participants and 15 local participants will be shortlisted.

Intimation to Shortlisted Candidates
31.10.2025



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Brochure



Theme of the Workshop

This three-day event, the Workshop on General Relativity, Cosmology, and Gravitational Waves, will introduce students to the foundational and emerging areas of general relativity, cosmology, and gravitational waves. The program combines core theoretical concepts with hands-on sessions, using a pedagogically robust approach to make advanced topics accessible and engaging.

The main goal of the workshop is to encourage students especially those from nearby institutions and underrepresented areas to pursue research in astrophysics and related areas.

The program is structured to begin with fundamental principles and gradually cover advanced topics, including the analysis of real data from gravitational wave observations.

Participants will benefit from lectures delivered by leading researchers in the field, tailored for students, as well as interactive sessions where students can learn data analysis techniques and computational tools.

This workshop is especially helpful in the context of the National Education Policy (NEP) 2020, which includes a research component in the final year of undergraduate studies. It is a great opportunity to make learning more data-driven and research-oriented by introducing the participants with exciting questions and real-world data analysis.

The workshop will be conducted in-person and will feature a blend of expert-led lectures, interactive discussions, and hands-on sessions focused on data analysis and computational methods. The format is designed to maximize participant engagement and to provide practical experience with the tools and techniques currently used in the field.

The event aims to create a collaborative space, where students and experts can enable meaningful exchanges and possibly start future collaborations in the field of astrophysics and cosmology.

Objectives of the event

- To introduce students, especially those from underrepresented regions to the exciting fields of astrophysics, cosmology, and gravitational wave research. The target will be to provide a comprehensive theoretical knowledge with practical applications.
- To spark interest amongst postgraduate/PhD students and motivate them to take up research in these advanced areas. The workshop will bring together enthusiastic students and experienced experts to share ideas, learn from one another, and build future collaborations.
- To require participants to complete and present a small project or research talk based on what they have learned throughout the workshop. This initiative aims to encourage them to pursue further research in this field.
- To support the goals of the National Education Policy (NEP) 2020 by providing early exposure to contemporary research topics to the final year undergraduate students. It will help students gain early exposure to modern research tools, updated curriculum content and practical applications in astrophysics and cosmology.

Expected Outcomes of the event

1. Participants will build a clear understanding of general relativity, cosmology, and gravitational waves.
2. They will gain familiarity with recent discoveries and modern research methods in astrophysics.
3. They will gain practical experience in basic data analysis techniques.
4. By completing and presenting a project, participants will enhance their ability to communicate scientific ideas and undertake independent research.

Key Discussions

- Introduction to STR and GTR
- Introduction to cosmology: Horizon problem and its resolution by inflation.
- Introduction to Gravitational-Wave Data Analysis.
- GW Searches and Parameter Estimation.
- Details of inflation and reheating mechanism.
- Introduction to the GWOSC tutorials.
- Probing the physics of inflation & reheating through Primordial GWs (and primordial magnetic fields).
- Testing General Relativity from GW observation.

ORGANIZING COMMITTEE

PATRON

Dr. Manas Kr. Baidya, Principal, Malda College, Malda

CONVENORS

Dr. Shyam Das, Dept. of Physics, Malda College

Dr. Apratim Ganguly, IUCAA, Pune

SCIENTIFIC ORGANIZING COMMITTEE (SOC)

DR. APRATIM GANGULY, IUCAA; DR. SUMANTA CHAKRABORTY, IACS; PROF. FAROOK RAHAMAN, JU; DR. TANMOY PAUL, VISVA BHARATI; DR. UJJWAL SAHA, MALDA COLLEGE; DR. UTTAM K SARKAR, MALDA COLLEGE; MOUMITA DAS, MALDA COLLEGE; DR. SIDDARTH RAI, MALDA COLLEGE; DR. SHYAM DAS (CONVENOR), MALDA COLLEGE

LOCAL ORGANIZING COMMITTEE (LOC)

DR. UJJWAL SAHA, DR. UTTAM K SARKAR, DR. TAPAN KR MANDAL, DR. NARAYAN CH. SHAW, DR. SIDDARTH RAI, SRI BISHNU BHOWMIK, DR. ARUNAVA AGARWAL, DR. NIMESH DIYALI, SRI BULBUL MANDAL, SRI MRINMAY GOSWAMI, SRI TARASANKAR BAGCHI, SRI TANOY BHATTACHARYA, SRI GAUTAM KARMAKAR, SRI RAJA JHA, SMT. PAYEL MUKHERJEE

TREASURER: SRI AMAL CHANDRA MANDAL

ICARD, MALDA COLLEGE

ICARD, Malda College, a newly established centre, began its journey in November 2024, aiming to promote research and outreach in astronomy and astrophysics. Welcome to Malda College. Established on 23rd July 1944, Malda College is a premier government-sponsored, NAAC-accredited institution located in North Bengal. With a sprawling 52-acre green campus, the college serves over 6,000 students, offering undergraduate honours and general courses across 18 departments in Science, Arts, and Commerce. The college has implemented CBCS (UG from 2019, PG from 2018) and NEP (from 2023). Each teacher maintains a personal website linked to the departmental and central college sites. Modern teaching tools include 20 ICT-enabled classrooms and a self-developed Learning Management System (LMS). The Central Library, with around 50,000 books, uses "Koha" software for quick access and offers national and international e-journals through INFLIBNET. Science departments are equipped with advanced laboratories.

DEPARTMENT OF PHYSICS, MALDA COLLEGE

The Department of Physics, Malda College Established in 1948, the Department of Physics introduced B.Sc. (Pass) in 1959 and Honours in 1986. With an intake capacity of 55 students, it has 5 Honours labs, a general lab, and a Seminar Library with 1200 books. The department maintains a strong academic record and serves students from Malda and nearby districts.

INTER-UNIVERSITY CENTRE FOR ASTRONOMY AND ASTROPHYSICS (IUCAA)

Inter-University Centre for Astronomy and Astrophysics IUCAA, an autonomous institution under UGC, promotes research and development in astronomy and astrophysics across Indian universities. It serves as a centre of excellence through core academic programmes (research, PhD, workshops, GMRT access) and visitor programmes (teacher refresher courses, associate programmes, and university outreach).

HOW TO REACH MALDA

BY TRAIN: Malda is on the main line between Kolkata and New Jalpaiguri, served by numerous trains such as the Vande Bharat Express, Shatabdi Express, Gour Express, Kanchenjunga Express, Teesta Torsa Express, and Darjeeling Mail, to name a few.

BY ROAD : Malda is 347 km away from Kolkata towards the north and 256 km from Siliguri towards the south. The National Highway-34 passes through the District. NBSTC, SBSTC, CSTC buses and many privately operated buses ply between Kolkata and Malda. The buses, leaving from the Shahid Minar and the Ultadanga bus terminuses take about eight hours to complete the journey.

ACCOMMODATION

OUTSTATION PARTICIPANTS WILL BE PROVIDED ACCOMMODATION IN SHARED ROOMS/DORMITORY DURING THE 3-DAYS WORKSHOP (JANUARY 7TH NIGHT-JANUARY 10TH EVENING 2026). ACCOMMODATION WILL BE ARRANGED AT SWAMI VIVEKANANDA YUBA ABAS, RAMKRISHNA MISSION ROAD, P.O. & DIST- MALDA, PIN-732101. OR IN ANY LOCAL HOTELS.

MEALS



08.01.2026 : **BREAKFAST, LUNCH, DINNER**

09.01.2026 : **BREAKFAST, LUNCH, DINNER**

10.01.2026 : **BREAKFAST, LUNCH**

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NOTE : *Tea will be served twice daily during this workshop.*



Travel Assistance

Partial travel assistance in "Sleeper" class train fare covering the shortest route will be provided to the outstation participants only between your nearest station and Malda Town station depending on fund availability.

Note : **No Dearness Allowance (DA) will be provided to participants.**

SCAN TO VIEW
MALDA COLLEGE
ON GOOGLE MAPS



SCAN TO VIEW
SWAMI VIVEKANANDA
YUBA ABAS
ON GOOGLE MAPS



PLACES OF INTEREST



Malda is one of the most famous tourist destinations of West Bengal, known for its rich history and heritage. Popular attractions include Jagjivanpur, Adina Mosque, Ramkeli, Pirana Pir, Baroduari (Boro Sona Mosque), Dakhil Darwaja, Firoz Minar, and Ghika Mosque. Malda is also renowned for its delicious mangoes and mulberries.

