



A REPORT ON  
25<sup>th</sup> National Conference on Condensed Matter Physics, Condensed Matter Days (CMDAYS17)

1. Name of the Extension Activity: **25<sup>th</sup> National Conference on Condensed Matter Physics, Condensed Matter Days (CMDAYS17)**
2. Duration, and Date: 03 Days, 29-31 August 2017
3. In collaboration with (*if any, mention the name of the organization or individual or others*): NA
4. Number of participating students: [*Please enclose the certified list of students*]
5. Number of resource persons (*if any*): 16 (Plenary Talk: 02, Invited Talk: 14)
6. Names, affiliation, and contact of resource persons: **Annexure-A** Attached
7. Summary of the event:

Condensed Matter Days is an annual event, a national conference in Condensed Matter Physics. The 25<sup>th</sup> edition CMDAYS17, was organised by Department of Physics, Tezpur University from August 29<sup>th</sup>-31<sup>st</sup>, 2017. In this event, nearly 150 participants from various parts of our country attended the event. There were 2 plenary talks (PT) and 14 invited talks (IT) from eminent scientists and subject experts as well as 30 oral and 65 poster presentations accommodated in the conference. In the inaugural session, the convener **Dr. D. Mohanta** gave the welcome speech.

CMDAYS17 was inaugurated by the Vice-Chancellor, Tezpur University, along with other dignitaries on the dais. A bi-lingual Souvenir was brought out as a part of the silver jubilee event (25<sup>th</sup> edition) and released during the inaugural session. The Vice-Chancellor, in his inaugural speech stressed upon the interdisciplinary nature of Condensed Matter Physics, which is one of the vibrant branch of physics that deals with diverse techniques and phenomena. He expressed his goodwill to the colleagues of Department of Physics, Tezpur University for organising CMDAYS17. With heartfelt wishes, he wished the conference a grand success. **Prof. A. Choudhury**, former VC of Gauhati University and former Pro-VC of Tezpur University chaired the first session.

The content details of two plenary talks are as given below.

The first plenary talk was from **Prof. Bikash K. Chakrabarti** from SINP, Kolkata. His topic was “**Econophysics of income and wealth**”. He explained income distribution analogy in kinetic theory of gases. He talked about inequalities in income and wealth distributions which have been a permanent feature of the societies in any civilization, and are characterized by universal laws. The first established theory of Condensed Matter systems, namely the century old kinetic theory for the gases, had long been identified as a possible tool to explore the origin of such inequalities. He discussed about such kinetic exchange formulations for social dynamics and indicated about the recent developments. He also discussed about the extension of the kinetic theory to collective opinion formation in societies.

The plenary talk 2 was delivered by **Prof. S.K. Dolui**, Department of Chemical Sciences, Tezpur University. He talked about “**Organic Photovoltaic Devices**”. He demonstrated the development of some metal/metal oxide and hybrid semiconducting nanoparticles using sol-gel method and their use as working electrode in Dye Sensitized Solar Cells (DSSCs). In recent times, polymer gel electrolyte offers a great deal of research as it possesses the properties of solid as well as liquid. The speaker described development of some counter electrode (CE) material as an alternative to platinum (Pt) CE in DSSCs. NiS anchored graphene/polyaniline nanocomposites and  $\alpha$ -MnO<sub>2</sub>/Carbon black binary complex are used as CE materials. A maximal efficiency as high as 5-6%, and with maximum V<sub>oc</sub> of 0.8 V and J<sub>sc</sub> of 12 mA cm<sup>-2</sup> could be recorded for the systems of DSSCs.

An invited talk was delivered by **Prof. Tarak Nath Dey**, IIT Guwahati on the topic “**Phase dependent electromagnetically induced transparency**”. The talk was interesting as it gave a novel scheme for



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coherent generation, control and manipulation of structured beams in a system of homogeneously broadened atomic vapor with atoms in a closed three-level  $\Lambda$ -configuration has been used to explain the recent experimental results of Radwell et al. He demonstrated how the coherent control field can be used to manipulate an azimuthal modulation of the absorption profile that is dictated by the phase and polarization structure of the probe beam. He also discussed the mechanism of efficient generation and manipulation of an optical beam which may have important applications in information science and optical communications.

The session started with the fourth invited talk delivered by **Prof. B.R Sekhar**, IoP Bhubaneswar on the topic “**Surface band structure of topological insulators: an ARPES perspective**” He talked about the studies of surface state (SS) bands in many Bi and Sb based binary Topological Insulators (TI) which are marred by significant contributions from their bulk states. He discussed about the results of their angle resolved photoelectron spectroscopy (ARPES) studies on some of the TIs focussing mainly on BSTS. He also discussed the density functional theory (DFT) results on similar systems. Signals of non-trivial topology of the surface state bands (SSB) and a strong warping of the Fermi surface (FS) are demonstrated with the help of ARPES data.

The next invited talk was delivered by **Prof. Krishnendu Sengupta**, IACS Kolkata on the topic “**Transport on topological insulator surfaces**”. In this talk, he provided a short introduction to topological insulators with emphasis on spin-momentum locking of Dirac electrons on their surface. This was followed by a discussion of transport of such spin-momentum locked Dirac electrons. In particular, he discussed the passage of such electrons through magnetic barriers and then showed that, they may lead to a magnetic switch for electric current through such junctions.

The next invited talk was given by **Prof. M.C. Mahato**, NEHU, Shillong on the topic “**Resonance oscillation of a damped driven simple pendulum**”. He discussed the results of their calculations of the resonance frequency of a damped driven simple pendulum along with the resulting amplitude of oscillations. The problem is equivalent to the study of motion of a damped particle in a sinusoidal potential driven by a time periodic sinusoidal force of small amplitude so that the particle always remains in the initial well of the sinusoidal potential.

The oral presentations were followed by the **valedictory session** presided by **Prof. Ramesh C. Deka**, Dept of ChemSci, Tezpur University. During the **valedictory session**, certificates were distributed to the participants, delegates and student participants spoke about their experiences regarding the overall conference. At the end, there was a vote of thanks by **Dr. D. Mohanta**, CMDAYS17. With this, the national conference **CMDAYS17** came to an end successfully with an announcement of CMDAYS18, for which Burdwan University was considered as the next venue.

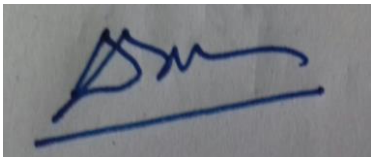
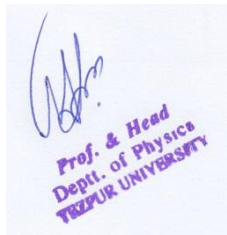
8. Photographs with captions, and dates: **No**



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website: www.tezu.ernet.in

9.

Signatures of Conveners/ Chair/ Coordinator/ In-charge	Signature and Seal of Head of Department/ Centre/ Cell
 <b>Name: Dr. D. Mohanta</b> <b>Designation: Associate Professor</b>	 <b>Name: Prof. M.K. Das</b> <b>Designation: HoD</b>
<b>Name:</b> <b>Designation:</b>	
<b>Name:</b> <b>Designation:</b>	



**A REPORT ON**  
**SERB School on “Observational Astronomy”**

1. Name of the Extension Activity: SERB School on “Observational Astronomy”
2. Duration, and Date: 25th October-14th November, 2017
3. In collaboration with (*if any, mention the name of the organization or individual or others*):  
SERB-DST
4. Number of participating students: [*Please enclose the certified list of students*] (list attached at the end of document)
5. Number of resource persons (*if any*): 18
6. Names, affiliation, and contact of resource persons:  
Prof. HP Singh, Delhi University  
Prof. Ranjan Gupta, IUCAA, Pune  
Prof. Dhruva Jyoti Saikia, NCRA-TIFR  
Prof. Durgesh Tripathi, IUCAA  
Prof. Dipankar Banarjee, IIA, Bangalore  
Prof. Shantanu Rastogi, Gorakhpur University  
Prof. B.G. Anandrao, PRL, Ahmedabad  
Prof. Sandeep Sahijpal, Panjab University  
Prof. Asoke K Sen, Assam University  
Prof. K.P Singh, TIFR, Mumbai  
Dr. Shweta Srivastava, PRL, Ahmedabad  
Prof. Biswajit Paul, RRI, Bangalore  
Dr. Sonali Sachdeva, IUCAA, Pune  
Dr. G.A. Ahmed, Tezpur University  
Dr. B.P. Sarma, Tezpur University  
Dr. K. Baruah, Tezpur University  
Dr. M.M. Devi, Tezpur University  
Dr. R. Gogoi, Tezpur University
7. Summary of the event:: Forty four (44) numbers of participants from different parts of India have been introduced to different areas of Astronomy and Astrophysics by experts in the field such as solar astrophysics, stellar evolution, galaxies, interstellar medium and related observational data among others. There were dedicated sessions for telescopes and instrumentation techniques with hands-on data analysis sessions and tutorials. There was also a laboratory visit session where light scattering experimental setups were demonstrated. In addition, the 14-inch telescope housed at the Tezpur University observatory was utilized for the benefit of all participants.
8. Photographs with captions, and dates:

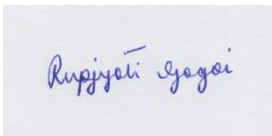
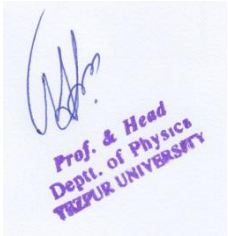


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**Group Photo of the event, 27<sup>th</sup> October, 2017**



Signatures of Conveners/ Coordinator/ In-charge	Chair/	Signature and Seal of Head of Department/ Centre/ Cell
 <b>Name: Dr. Rupjyoti Gogoi</b> <b>Designation: Assistant Professor</b>		  <b>Name: Prof. M.K. Das</b> <b>Designation: HoD</b>
<b>Name:</b> <b>Designation:</b>		
<b>Name:</b> <b>Designation:</b>		




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**List of participants:**

Name	Affiliation
Tame Achi	Rajiv Gandhi University, Itanagar
SoniNgadong	Rajiv Gandhi University, Itanagar
Siddhartha Phukan	Tezpur University, Tezpur
Angira Brahma	Assam Don Bosco University, Guwahati
DhrubaJyotiGogoi	Dibrugarh University, Dibrugarh
Jyatsnasree Bora	Dibrugarh University, Dibrugarh
ParvejReja Saleh	Gauhati University, Guwahati
RissnalinSyiemlieh	Gauhati University, Guwahati
GulafshaBegom Choudhury	Assam University, Silchar
Tejpreet Kaur	Panjab University, Chandigarh
LekhramSahu	Seth Phoolchand Agrawal Smriti college, Nawapara,Rajim
Vineet Kumar Mannaday	Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)
Rahul Kumar	JamiaMilliaIslamia, New Delhi
Dharm Veer Singh	JamiaMilliaIslamia, New Delhi
MohanaThara C	Christ University, Bengaluru
Vinod. K.T.	University Of Calicut, Trishur, Kerala
UnnikrishnanPotty S	Bishop Moore College, Mavelikara, Kerala
Dency V Panicker	St. Albert's College, Eranakulam, Kerala
Chetan Kachhara	Kohima Science College, Jotsoma
AbhisekMohapatra	National Institute of Technology Rourkela
Subhashree Swain	Pondicherry University, Puducherry
SathyanarayananKuzhikkatt	Amrita University,Amritanagar, Coimbatore
Gopala Krishna Varala	Osmania University, Hyderabad
Raghu Prasad M	Osmania University, Hyderabad
Rahul Kumar Anand	DDU Gorakhpur University, Gorakhpur
Manisha Yadav	University of Lucknow, Lucknow
DebasishMondal	University of Calcutta, West Bengal
Sandip Dutta	University of Burdwan, Burdwan
Banashree Sen	Jadavpur University, kolkata
Dr. Broja Gopal Dutta	RBC College, W.B State University, West Bengal
Makhanlal Nanda Goswami	Midnapore College, West Bengal
SangamPasayat	SONEPUR COLLEGE,SONEPUR
JayantaDey	Tripura University
MinakshiJassoria	Punjabi University
IpshitaBhasi	St. Albert's College, Eranakulam, Kerala
Pooja Sahu	Pt.Ravishankar Shukla University Raipur

  
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Poster for the event:



# SERB SCHOOL ON OBSERVATIONAL ASTRONOMY

25 OCTOBER – 14 NOVEMBER, 2017

**About :**  
The SERB school on "Observational Astronomy" is being held for the first time in the north eastern part of India. The school aims at providing the participants with information and hands on training on different topics of observational astronomy. The school will cover a wide range of astronomy and astrophysics topics like optical, ultraviolet, infrared, X-ray, radio astronomy and the techniques involved in observational astronomy.

**Course topics :**

- ❖ Observational data
- ❖ Telescopes and Instrumentation
- ❖ Sun and the Solar system
- ❖ Stellar structure and evolution
- ❖ Late stages of stellar evolution & compact objects
- ❖ Galaxies
- ❖ Interstellar Medium
- ❖ Data analysis lectures and hands on session

**Speakers:**

❖ Eminent astrophysicists working in different parts of the country will be invited for lectures and interactive sessions.

**Apply online at:**  
<https://goo.gl/forms/sW450gJlg3IU718R2>

**Important dates :**  
Application deadline:  
**15 July, 2017**  
Selected participants list:  
**25 July, 2017**

**Participation :**  
Applications are invited from research scholars, post-doctoral researchers, young faculty members from Universities, Institutes and Colleges having research experience in the above area for participation in the School. A few bright and research motivated M.Sc/M.Tech final year students may also be considered.  
**Number of participants will be limited to 40**  
Travel and local hospitality will be provided to all outstation participants (Masters - SL, Ph.D/Postdoc - 3AC, Faculty - 2AC).


**School Directors :**

- ❖ Prof. Ranjan Gupta  
IUCAA, Pune
- ❖ Dr. Rupjyoti Gogoi  
Tezpur University

Email :  
[astrophytu@gmail.com](mailto:astrophytu@gmail.com)

Sponsored By:  
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New Delhi, India.  
Website: [www.serb.gov.in](http://www.serb.gov.in)

Organized By:  
**Department of Physics**  
Tezpur University  
Napaam-784028, Assam.  
Website: [www.tezu.ernet.in/dphy](http://www.tezu.ernet.in/dphy)

  
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A REPORT ON  
Southampton IUCAA Training for Astronomical Research and Education (SITARE)

1. Name of the Extension Activity: Southampton IUCAA Training for Astronomical Research and Education (SITARE)
2. Duration, and Date: May 2-4, 2018.
3. In collaboration with (*if any, mention the name of the organization or individual or others*): University of Southampton, UK and IUCAA, Pune
4. Number of participating students: [*Please enclose the certified list of students*] (attached in the end of the document)
5. Number of resource persons (*if any*): 6
6. Names, affiliation, and contact of resource persons:  
Prof. Phil Charles, Southampton University, U.K.  
Prof. Ajit K. Kembhavi, IUCAA, Pune  
Prof. Ranjeev Misra, IUCAA, Pune  
Dr. Gazi A. Ahmed, Tezpur University  
Dr. Sonali Sachdeva, IUCAA, Pune  
Dr. Rupjyoti Gogoi, Tezpur University
7. Summary of the event: As part of the SITARE project, four workshops were conducted in different parts of India and Nepal, which targeted enthusiastic M.Sc. students of the region and inform them about front-end Astronomical research and opportunities. Then eight students were selected to visit University of Southampton in March 2019.
8. Photographs with captions, and dates:

Group Photo of SITARE, May 3, 2018



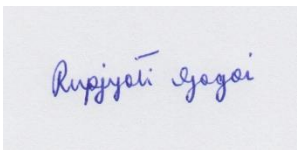
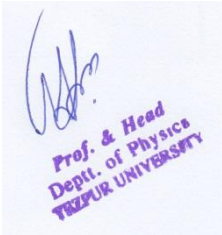




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Signatures of Conveners/ Chair/ Coordinator/ In-charge	Signature and Seal of Head of Department/ Centre/ Cell
 <b>Name: Dr RupjyotiGogoi</b> <b>Designation: Assistant Professor</b>	 <b>Name: Prof. M.K. Das</b> <b>Designation: HoD</b>
<b>Name: Dr Gazi Ameen Ahmed</b> <b>Designation: Associate Professor</b>	
<b>Name:</b> <b>Designation:</b>	



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**List of Participants**  
**Southampton IUCAA Training for Astronomical Research and Education**  
**(SITARE)**  
**May 2-4, 2018**


Sl. No.	Name	Affiliation
1	KojTagyang	Rajiv Gandhi University, Arunachal Pradesh
2	Sraban Kumar Upadhyaya	Rajiv Gandhi University, Arunachal Pradesh
3	Keyisielungbe	Kohima Science College (Autonomous), Nagaland
4	VibeizotuoTetso	Kohima Science College (Autonomous), Nagaland
5	PunalembaLongkumer	Kohima Science College (Autonomous), Nagaland
6	RokokhonuoLinyu	Kohima Science College, Jotsoma, Nagaland
7	Antidong Jamir	Kohima Science College (Autonomous), Nagaland
8	Th. Ningthouba Singh	Manipur University, Manipur
9	Ch. Thomson Singh	Manipur University, Manipur
10	N. Punilkanta Meitei	Manipur University, Manipur
11	N. Ajay Singh	Manipur University, Manipur
12	Sh. Ningthemton	Manipur University, Manipur
13	M. Premjit Meitei	Manipur University, Manipur
14	Karnajit L.	Manipur University, Manipur
15	AmitjyotiDeka	NIT, Meghalaya, Meghalaya
16	NipanGoswami	NIT, Meghalaya, Meghalaya
17	HynniewkiPaslein	North Eastern Hills University, Meghalaya
18	EshaLyngdoh	North Eastern Hills University, Meghalaya
19	BhaskarGoswami	University of Science and Technology of Meghalaya, Meghalaya
20	Nazrin Yasmin	University of Science and Technology of Meghalaya, Meghalaya
21	SikhamaniSarma	University of Science and Technology of Meghalaya, Meghalaya
22	Chandrajit Das	University of Science and Technology of Meghalaya, Meghalaya
23	Sahil Ahmed	University of Science and Technology of Meghalaya, Meghalaya
24	Bikram Baruah	Assam Don Bosco University, Tapesia, Assam
25	Angelucy Evangel Myllem	Assam Don Bosco University, Tapesia, Assam
26	Lamattihun L Nonglait	Assam Don Bosco University, Tapesia, Assam
27	GautamBhuyan	Cotton University, Assam
28	AnamitraMahanta	Cotton University, Assam
29	Raktima Hazarika	Cotton University, Assam
30	Sabir Chetri	Cotton University, Assam
31	Hansatanu Roy	Dibrugarh University, Assam
32	TrishnaDoloi	Digboi College, Assam
33	DeepshikhaAich	Digboi College, Assam
34	Rashmi Bhattacharjee	Digboi College, Assam
35	MrinmayMedhi	Gauhati University, Assam
36	ParismitaKalita	Gauhati University, Assam
37	Nirmali Das	Gauhati University, Assam



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38	BhargabKakati	Gauhati University, Assam
39	PrarthanaGogoi	GauhatiUniversity, Assam
40	Dibyajyoti Bora	Gauhati University, Assam
41	MoonmeeSaikia	Sibsagar College, Assam
42	Akash Buragohain	Sibsagar College, Assam
43	ParagiyotiSut	Tezpur University, Assam
44	LakhyaJyoti Das	Tezpur University, Assam
45	Priyankush Ghosh	Tezpur University, Assam
46	Ranojit Barman	Tezpur University, Assam
47	ParashmoniKashyap	Tezpur University, Assam
48	ShamikDatta	Tezpur University, Assam
49	Somnath Das	Tezpur University, Assam
50	Sapta Sindhu Paul Chowdhury	Tezpur University, Assam
51	JyotirupSarma	Tezpur University, Assam
52	IndrajitSaha	Tezpur University, Assam

  
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Poster for the event:



# SITARE

## Southampton IUCAA Training for Astronomical Research and Education 2 - 4 May, 2018

**Sponsored by:**  
Science and Technology Facilities  
Council (STFC), United Kingdom (UK)



SITARE is a programme initiated by the Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune and the University of Southampton, UK. The objective of the programme is to motivate talented students to pursue a research career in astronomy, astrophysics (A&A) and related areas. To introduce students to these areas, workshops are being conducted in several centres in India and in Nepal. The first such workshop is being organized at the **Department of Physics, Tezpur University** during May 2-4, 2018. In the workshop, lecturers from IUCAA, the University of Southampton and Tezpur University will introduce participants to exciting areas of A&A. A small number of selected participants from the workshop will have the opportunity to attend an advanced workshop in IUCAA later in the year. Further, a small number of students selected from the IUCAA workshop will be able to visit the University of Southampton for a short period, with all expenses covered by the programme.

A few selected students  
will get a chance to visit


## UNIVERSITY OF Southampton

Applications are invited only from 1st year M. Sc. Physics students studying in the North - Eastern States of India on or before **April 10, 2018**.  
**Apply online at :** <https://goo.gl/forms/YfBYLLG1Z017EXS12>  
Selected students from outside Tezpur will be provided their travel expenses (by bus or train upto AC III tier by the shortest route) and their stay and meals will be covered. Local students will be provided with meals during the day.

**Organized by:**  
Department of Physics, Tezpur University  
and the Inter-University Centre for  
Astronomy and Astrophysics (IUCAA), Pune.

**For queries please write to:**  
[astrophytu@gmail.com](mailto:astrophytu@gmail.com)

**Event coordinators:**  
IUCAA:  
Prof. Ajit Kembhavi  
Prof. Ranjaev Misra  
Tezpur University:  
Dr. Gazi Ameen Ahmed  
Dr. Rupjyoti Gogoi

  
Prof. & Head  
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A REPORT ON  
Webinar on “Exploring the life and times of Cosmic Dust in our local universe”

1. Name of the Extension Activity: Webinar on “Exploring the life and times of Cosmic Dust in our local universe”
2. Duration, and Date: 5<sup>th</sup> November, 2020
3. In collaboration with (if any, mention the name of the organization or individual or others): IUCAA Centre for Astronomy Research & Education (ICARD), Tezpur University
4. Number of participating students: [Please enclose the certified list of students] **ONLINE**
5. Number of resource persons (if any): 01
6. Names, affiliation, and contact of resource persons: Dr Gautam Saikia, IISc, Bengaluru
7. Summary of the event: Speaker introduced Interstellar Dust and explained how it plays a significant role in controlling our view of the universe. He also explained the importance of multi-wavelength astronomy.
8. Photographs with captions, and dates:

**Screenshot captured during the talk**

**MULTIWAVELENGTH OBSERVATORIES**

MULTIWAVELENGTH LAND & SPACE BASED OBSERVATORIES

Fig. : Multi-wavelength ground and space based observatories.

Credits: University of Chicago Digital Library.

**Aim:**  
To get a more **complete** picture of the Universe.

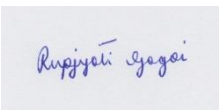
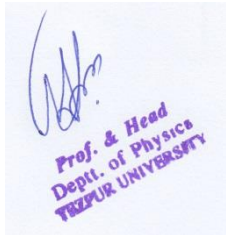
Exploring the life and times of Cosmic Dust      Gautam Saikia      Nov 5, 2020      14/25



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9.

Signatures of Conveners/ Chair/ Coordinator/ In-charge	Signature and Seal of Head of Department/ Centre/ Cell
 <b>Name: Dr Rupjyoti Gogoi</b> <b>Designation: Assistant Professor</b>	 <b>Name: Prof. M.K. Das</b> <b>Designation: HoD</b>
<b>Name:</b> <b>Designation:</b>	
<b>Name:</b> <b>Designation:</b>	



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Poster for the event:

**ICARD**

Webinar organised by,  
IUCAA Centre for Astronomy Research & Development, Tezpur University  
&  
Department of Physics, Tezpur University

**Date:**  
**5<sup>th</sup> Nov,**  
**2020**  
**Time:**  
**03:30 pm**

**Speaker: Dr. Gautam Saikia**

Dr. Gautam is an observational astrophysicist working as a post-doctoral researcher at the Indian Institute of Science (IISc), Bengaluru, India. He finished his Masters and PhD in Physics from Tezpur University.

**Title: Exploring the life and times of Cosmic Dust in our local universe**

The Milky Way Galaxy is home to not only us, but billions of stars we see in the night sky. Each astronomical object, such as a star within any galaxy emits radiation across multiple wavelength bands of the electromagnetic spectrum. The inter-stellar medium of our Galaxy is ~99% gas and ~1% dust, by mass. In this talk, we will take a closer look at how dust, even with such tiny fraction, plays an important role in controlling our view of the surrounding universe. We will also try to understand why multi-wavelength astronomy is the need of the hour, such that we gather a complete understanding of various astrophysical phenomenon occurring around us.

Join using : [meet.google.com/ikc-wczk-pgi](https://meet.google.com/ikc-wczk-pgi)  
Watch online : <https://youtu.be/LzA0J-4zhus>

**Organising Team**

**Prof. Nilakshi Das**  
Head, Department of Physics

**Dr. Rupjyoti Gogoi**  
Coordinator, ICARD,  
Tezpur University

**Dr. Moon Moon Devi**  
Webinar Coordinator

**Members:**  
All faculty members,  
Department of Physics,  
Tezpur University

Email: [astrophytu@gmail.com](mailto:astrophytu@gmail.com)

**Prof. & Head**  
**Dept. of Physics**  
**TEZPUR UNIVERSITY**



A REPORT ON  
Webinar on “Fantastic black holes and where to find them”

1. Name of the Extension Activity: Webinar on “Fantastic black holes and where to find them”
2. Duration, and Date: 9<sup>th</sup> November, 2020
3. In collaboration with (*if any, mention the name of the organization or individual or others*): IUCAA Centre for Astronomy Research & Education (ICARD), Tezpur University
4. Number of participating students: [*Please enclose the certified list of students*]: **ONLINE**
5. Number of resource persons (*if any*): 01
6. Names, affiliation, and contact of resource persons: Prof. Somak Raychaudhury, Director, IUCAA, Pune
7. Summary of the event: Speaker introduced the concept of black holes and explained the work of Nobel prize winners for Physics in the year 2019, namely Roger Penrose, Andrea Ghez and Reinhard Genzel.
8. Photographs with captions, and dates:

**Screenshot captured during the talk**

**Myths about Black holes**

- BHs are not cosmic vacuum cleaners: only inside the horizon is matter pulled inexorably inward
- Far away from a BH, gravity is **no different** than for any other object with the same mass
- If a BH were to replace the sun, the orbits of planets, asteroids, moons, etc., would be **unchanged** (though it would get really really cold).

Somak Raychaudhury

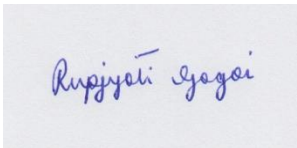




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Poster for the event:



**Webinar organised by,**  
**IUCAA Centre for Astronomy Research & Development, Tezpur University**  
**&**  
**Department of Physics, Tezpur University**

**Date: November 9th, 2020**  
**Time: 03:30 pm**

**Speaker: Prof. Somak Raychaudhury**

Somak Raychaudhury is the Director of the Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune. He graduated from Presidency College, University of Calcutta, with further studies at the University of Oxford, UK. After his PhD from the University of Cambridge, UK, he worked at the Harvard-Smithsonian Centre for Astrophysics, USA, where he also was part of the team that built the Chandra X-Ray Observatory for NASA. After teaching for over a decade at the University of Birmingham, UK, he returned to India as Head of Physics and Dean of Sciences at Presidency University, Kolkata, before he became Director of IUCAA. His research involves a wide range of topics in Cosmology and Astrophysics, from the ground and from Space.


**Organising Team**  
*Prof. Nilakshi Das*  
Head, Department of Physics  
*Dr. Rupjyoti Gogoi*  
Coordinator, ICARD, Tezpur University  
*Dr. Moon Moon Devi*  
Webinar Coordinator

**Members:**  
All faculty members,  
Department of Physics,  
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Email: [astrophytu@gmail.com](mailto:astrophytu@gmail.com)

**Title: Fantastic black holes and where to find them**

Black holes are the most extreme environments in nature, where the force of gravity is so strong that even light cannot escape. Since we observe the rest of the Universe through light, black holes must be directly unobservable. Theories of stellar evolution predict that black holes of various masses must be everywhere in the Universe. In the last decade, direct evidence of black holes have been found in many ways. This year's Nobel prize in Physics has been awarded for both theoretical work on understanding these exotic objects (Roger Penrose) and detecting and characterising the supermassive black hole at the core of our Galaxy (Andrea Ghez and Reinhard Genzel). The speaker will discuss their work, and the connection with past, present and future research and opportunities in India.

**Join using : [meet.google.com/rny-npea-acm](https://meet.google.com/rny-npea-acm)**  
**Watch online : <https://youtu.be/YOE2hvTob-s>**

  
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