

**IUCAA CENTRE FOR ASTRONOMY RESEARCH & DEVELOPMENT (ICARD)
CENTRE FOR MEGA PROJECTS IN MULTIWAVELENGTH ASTRONOMY**



**SCHOOL OF STUDIES IN PHYSICS & ASTROPHYSICS
PT. RAVISHANKAR SHUKLA UNIVERSITY, RAIPUR
CHHATTISGARH 492010 INDIA**

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International Workshop on
Science and Technology in Astronomy Research (STAR 2022)
(15 to 18 October 2022)

Report

IUCAA Centre for Astronomy Research & Development (ICARD) and Centre for Mega Projects in Multiwavelength Astronomy established at the School of Studies in Physics & Astrophysics, Pt. Ravishankar Shukla University (PRSU) Raipur jointly organized a four-day international workshop on “Science and Technology in Astronomy Research (STAR 2022)” from 15 to 18 October 2022 as a part of the celebration of “Azadi ka Amrit Mahotsav” and to mark the 50th Anniversary of the Department.

The Chief Guests of the Inaugural Ceremony were Prof. K.L. Verma (Vice Chancellor of PRSU, Raipur), Professor S.K. Pandey (Former Vice Chancellor of PRSU, Raipur), Mr. Vishwas Meshram (Joint Collector and Joint Director of Chhattisgarh Academy of Administration, Raipur), Prof. Nameeta Brahme (Head of the Department), and Priyanjali Patel from Universidad de Chile, Santiago. Prof. Verma appreciated the achievements of the department and promised to extend all possible help in its upliftment. Prof. Pandey, an alumnus of the department, spoke about its history and progress it has made in the last 50 years. He said that numerous Scientists, Professors, Teachers, Administrators, and important figures in society are products of this department, contributing at national and international level. Joint Collector, Mr Meshram, highlighting the astronomical public outreach activities done in the rural areas, explained how scientific temperament can be spread and superstition can be eradicated. The Head of the Department, Prof. Brahme, highlighted the Department's achievement and said that the department's popularity index is the highest in the PRSU.

In this workshop, there were 21 lectures of scientists and researchers, most of them being alumni of the department and currently working at national and international research centres. The participants got detailed information about the Universe, the development of astronomy, Giant Telescopes, Space Observatories, Supernova Explosion, the motion of celestial bodies, X-ray binaries, Black Holes, Gravitational waves, Dark Energy, Space Weather, Solar Physics, Extra-

Solar Planets, Galaxies, Cosmology, Python, other astronomical phenomenon and general Astronomy. They were also informed about the career and opportunities in the field of astronomy.

Four groups of students demonstrated the use of python in Astronomy by taking examples such as (1) PL relation and distance measurements, (2) the use of HR diagram in the Main-sequence fit method, (3) Hubble's expansion Law and age of the Universe, (4) Kepler's Law and Planetary motion.

Some students displayed their knowledge and art through Rangoli and painting competitions. Students who outperformed were rewarded. Sky watching program was organised in the evening times. Apart from the workshop participants, many nearby families, including kids, joined sky watching enthusiastically. It was a matter of curiosity for some participants to see the planets Saturn and Jupiter for the first time, and the response was overwhelming.

In the closing ceremony, Senior Prof. Y.M. Gupta, while explaining the hidden mysteries of astronomy, highlighted the mysteries yet to be understood and spoke about the importance of research.

The workshop was conducted in hybrid mode. There were 80 participants from the University and 20 Local Organizing Committee members including Scholars, Professors and Staff. Additional 135 participants from other Colleges/Universities joined online. In all, there were 235 participants. The entire programme was successfully conducted by Unnati Pandey, Shubham Padhi, Shrutika Tiwari, Kriparam Sahu and volunteers. Dr. N.K. Chakradhari, the convener of the program, said that the program was extremely valuable as it enhanced the knowledge of the students of Chhattisgarh and came to know about the future opportunities available for them in the field of astronomy.





कार्यक्रम विवरण

Day 1, 15/10/2022, Saturday

Time	Program
10:30 - 11:30 AM	Inaugural Session (Sir CV Raman Hall)
11:30 - 12:00 Noon	Group Photo, Tea
Session I	
12:00 - 01:30 PM	Lecture 1: Prof. S. K. Pandey, Former Vice Chancellor, PRSU Raipur <i>Amazing Universe</i>
01:30 - 02:15 PM	Break
Session II	
02:15 - 03:15 PM	Lecture 2: Dr. N.K. Chakradhari, PRSU Raipur <i>The legacy of Physics & Astrophysics, PRSU Raipur</i>
03:15-03:30 PM	Break
03:30 - 04:30 PM	Lecture 3: Ms. Priyanjali Patel, Universidad de Chile, Santiago <i>Python</i>
04:30 - 04:45 PM	Tea
Session III	
04:45 - 05:30 PM	Rangoli, Painting and Demonstration
Session IV	
6:00 PM	Sky watch : Jupiter's moon, Saturn ring etc.

Day 2, 16/10/2022, Sunday

Session V	
10:30 – 11:00 AM	Lecture 4: Ms. Shrutika Tiwari and Mr. Kripa Ram Sahu, PRSU Raipur <i>Template fitting on type Ia supernova light curves</i>
11:00 - 12:00 Noon	Lecture 5: Prof. D.K. Sahu, IIA Bengaluru (online) <i>Cosmic Explosions</i>
12:00 - 12:30 PM	Tea
12:30 - 01:30 PM	Lecture 6: Dr. Samridhi K. Paranjpe, Govt. Science College, Jabalpur <i>Understanding the Celestial movements</i>
01:30 - 02:15 PM	Break
Session VI	
02:15 - 03:15 PM	Lecture 7: Prof. Vivek Agrawal, ISRO Bengaluru (online) <i>AstroSat view of neutron star low-mass X-ray binaries</i>
03:15-03:30 PM	Break
03:30 - 04:30 PM	Lecture 8: Mr. Praveen Kumar, LIGO-Virgo Collaboration Spain (online) <i>Gravitational Wave Astronomy</i>
04:30 - 04:45 PM	Tea
Session VII	
4:45- 5:45 PM	Lecture 9: Ms. Nitya Pandey, Universidad de Chile (online) <i>Antarctica Expedition</i>

Day 3, 17/10/2022, Monday

Session VIII	
10:30 – 11:00 AM	Lecture 10: Ms. Pragati Sahu, GGU, Bilaspur <i>2017 Outburst of H1743-322</i>
11:00 - 12:00 Noon	Lecture 11: Prof. Gulab Dewangan, IUCAA, Pune (online) <i>AstroSat - India's first multi-wavelength space observatory</i>
12:00 - 12:30 PM	Tea
12:30 - 01:30 PM	Lecture 12: Prof. Sudhanshu Barway, IIA Bengaluru (online) <i>Data driven astronomy – Finding Features in Galaxies</i>
01:30 - 02:15 PM	Break
Session IX	
2:15 - 3:15 PM	Lecture 13: Prof. Padmakar Singh Parihar, IIA Bengaluru (online) <i>Giant Eyes to Heaven: A Story of Building Large Ground Based Optical Telescopes</i>
03:15-03:30 PM	Break
3:30 - 4:30 PM	Lecture 14: Prof. M.K. Patil, SRTMU, Nanded (online) <i>World of Galaxies</i>
4:30 - 4:45 PM	Tea
Session X	
4:45 - 5:45 PM	Lecture 15: Prof. P. Gandhi, University of Southampton, UK (online) <i>Black Holes (Popular Lecture)</i>

Day 4, 18/10/2022, Tuesday

Session XI	
10:15 – 11:00 AM	Lecture 16: Mr. Pravat Dangal, St. Joseph College Darjeeling <i>Timing and Spectral Data Analysis Techniques in X-ray Astronomy (online)</i>
11:00 - 12:00 Noon	Lecture 17: Prof. Nandita Srivastava, PRL Ahmedabad (online) <i>Solar Physics</i>
12:00 - 12:30 PM	Tea
12:30 - 01:30 PM	Lecture 18: Dr. Laxmikant Chaware, PRSU, Raipur <i>Growth of Astronomy & Astrophysics along with Science & Technology</i>
01:30 - 02:15 PM	Break
Session XII	
02:15 - 03:00 PM	Lecture 19: Dr. Parijat Thakur/Vineet Kumar Mannaday, GGU Bilaspur <i>Exo-planet</i>
03:00 - 03:45 PM	Lecture 20: Dr. Avinash Singh, Kalinga University, Raipur <i>Astrophysics and Cosmology</i>
03:45 - 04:15 PM	Lecture 21: Mr. Mahendra Verma, PRSU, Raipur <i>Structure in the Universe</i>
04:15-04:30 PM	Break
4:30-5:30 PM	Valedictory (Sir CV Raman Hall)
5:30 PM	Tea



International

Workshop



Science & Technology



1975

Prof. S.K. Pandey
Former Vice Chancellor
PRSU Raipur

1972

50 Years
in

Golden
Jubilee

2022



Prof. Poshak Gandhi
University of Southampton
UK



1995

Prof. G.C. Dewangan
IUCAA, Pune

Astronomy

2009

Mr. M. Verma
PRSU, Raipur

(STAR)

15-18 Oct, 2022



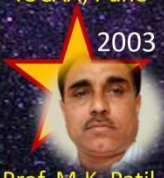
2004

Dr. S.K. Paranjpe
SC, Jabalpur



2018

Ms. Nitya Pandey
Santiago, Chile



2003

Prof. M.K. Patil
SRTMU, Nanded



1998

Prof. S. Barwey
IIA, Bengaluru



1991

Prof. D.K. Sahu
IIA, Bengaluru



2017

Ms. Priyanjali Patel
Santiago, Chile



2003

Mr. Praveen Kumar
LIGO-Virgo Collab. Spain



1998

Prof. Vivek Agrawal
ISRO, Bengaluru



1990

Prof. P.S. Parihar
IIA, Bengaluru



1995

Prof. Parijat Thakur
GGU, Bilaspur



1999

Dr. Laxmikant Chaware
PRSU, Raipur



Patron

Prof. K.L. Verma
Vice-Chancellor
PRSU, Raipur



1987

Prof. Nandita Srivastva
PRL, Ahmedabad



2018

Ms. Shrutika Tiwari
PRSU, Raipur



2010

Dr. Avinash Singh
KU, Raipur



2004

Dr. N.K. Chakradhari

Convener

Organized by

IUCAA Centre for Astronomy Research & Development (ICARD)

Centre for Mega Projects in Multi-wavelength Astronomy (CMPMA)

HoD



Prof. N. Brahme

School of Studies in Physics & Astrophysics,
Pt. R.S. University, Raipur, C.G., 492010



Prof DP Bisen, Prof AS Gour, Dr Laxmikant Chaware, Dr YK Mahipal, Dr CK Belodhiya
Mr Kripa Ram Sahu, Ms Shrutika.Tiwari, Mr Mahendra Verma, Mr Pravat Dangal

International STAR Workshop
Science & Technology

1972 Golden Jubilee 2022

in Astronomy Research
15 -18 October 2022

IUCAA Centre for Astronomy Research & Development (ICARD)
Centre for Mega Projects in Multi-wavelength Astronomy (CMPMA)
School of Studies in Physics & Astrophysics
Pt. Ravishankar Shukla University, Raipur, C.G., 492010



15 से स्टार 2022, देश-विदेश के वैज्ञानिक होंगे शामिल

भौतिकी एवं खगोल भौतिकी अध्ययन शाला के 50 वर्ष पूरे होने पर ऑनलाइन कार्यक्रम

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रायपुर. आजादी का अमृत महोत्सव के तहत भौतिकी एवं खगोल भौतिकी अध्ययन शाला रविवार के 50 वर्ष पूर्ण होने पर एक अंतरराष्ट्रीय कार्यशाला

स्टार 2022 का आयोजन 15 से 18 अक्टूबर को होने जा रहा है। यह कार्यक्रम हाइब्रिड मोड में होगा। स्थानीय रिसोर्स पर्सन फिजिकल तौर पर उपस्थित होंगे। राष्ट्रीय और अंतरराष्ट्रीय स्तर के वैज्ञानिक ऑनलाइन व्याख्यान देंगे। कार्यक्रम का लाइव प्रसारण यूट्यूब के माध्यम से होगा। कार्यक्रम मुख्य रूप से खगोल विज्ञान के क्षेत्र में विद्यार्थियों के कैरियर और अपॉर्चुनिटी पर केंद्रित है। इसके माध्यम से प्रतिभागियों का

ज्ञानवर्धन तो होगा ही, साथ ही राष्ट्रीय और अंतरराष्ट्रीय स्तर पर भविष्य में क्या-क्या संभावनाएं हैं तथा वहां पर कैसे पहुंचा जा सकता है यह भी जानने को मिलेगा। ज्ञात हो कि पिछले 50 वर्षों में भौतिकी एवं खगोल भौतिकी अध्ययन शाला से कई खगोल वैज्ञानिक तैयार हुए हैं और वे वर्तमान समय में देश-विदेश में अपनी सेवाएं दे रहे हैं। कार्यक्रम के प्रतिभागियों को उन सभी वैज्ञानिकों से रूबरू होने का अवसर प्राप्त होगा।

PRSU's SoS in Physics & Astrophysics to organize international workshop on STAR - Times of India

TNN | Oct 11, 2022, 12.22 PM IST

RAIPUR: The School of Studies in Physics & Astrophysics, Pt Ravishankar Shukla University (PRSU), Raipur, will organize an international golden jubilee workshop on Science & Technology in Astronomy Research (STAR) 2022 from October 15 to 18 to mark the 50 years of establishment of the department and celebrate 'Azadi Ka Amrit Mahotsav.

The four-day workshop will be held in hybrid mode. The local expert/resource persons will be present physically, while other national and international resource persons will interact with the participants online. It will be streamed live on an online platform so that the teachers and students of outstation colleges can also reap the benefits.

The workshop is primarily focused on the objective of providing information on the careers and opportunities in the field of Astronomy and Astrophysics. There will be many popular lectures as well.

The participants will gain knowledge as well as will come to know about the various places to work and carry out research in future. The department was established in 1972 with the hard work of eminent astrophysicists, Late Prof. R K Thakur, Late Prof. D K Chakravarty, Prof. A K Sapre and former vice chancellor Prof. S K Pandey.

In the last 50 years, many Astronomy Scientists and Researchers have been produced from the Chhattisgarh region. They all are well placed at the national/international level. The participants of the workshop will be able to interact with some of these eminent Astrophysicists in this workshop.

THE TIMES OF INDIA

PRSU to conduct workshop on Astronomy from Oct 15

TNN | Oct 12, 2022, 08.27 AM IST

Raipur: The School of Studies in Physics & Astrophysics, Pt Ravishankar Shukla University (PRSU), Raipur, will organize an international golden jubilee workshop on Science & Technology in Astronomy Research (STAR) 2022 from October 15 to 18 to mark the 50 years of establishment of the department and celebrate Azadi Ka Amrit Mahotsav.

The four-day workshop will be held in hybrid mode. The local expert/resource persons will be present physically, while other national and international resource persons will interact with the participants online. It will be streamed live on an online platform so that the teachers and students of outstation colleges can also reap the benefits. The workshop is primarily focused on the objective of providing information on the careers and opportunities in the field of Astronomy and Astrophysics. There will be many popular lectures as well. The participants will gain knowledge as well as will come to know about the various places to work.

छत्तीसगढ़

प्रदेश का खबरदार अखबार

खगोल विज्ञान पर 15 से तीन दिनी कार्यशाला रविवि में

10-Oct-2022

रायपुर, 10 अक्टूबर। रविशंकर विश्वविद्यालय, रायपुर के 50 वर्ष पूर्ण होने पर एक अंतरराष्ट्रीय कार्यशाला "Science & Technology in Astronomy Research" का आयोजन 15 से 18 तक होगा। यह कार्यक्रम हाइब्रिड मोड में होगा, स्थानीय रिसोर्स पर्सन भौतिक रूप से उपस्थित होंगे तथा अन्य राष्ट्रीय और अंतरराष्ट्रीय स्तर के वैज्ञानिक ऑनलाइन व्याख्यान देंगे। कार्यक्रम का लाइव प्रसारण यूट्यूब के माध्यम से होगा, जिससे अन्य महाविद्यालयों के शिक्षक और विद्यार्थी भी इस कार्यक्रम में भाग ले सकेंगे। कार्यक्रम मुख्य रूप से खगोल विज्ञान के क्षेत्र में विद्यार्थियों के कैरियर और अपॉर्चुनिटी पर केंद्रित है। इसके माध्यम से प्रतिभागियों का ज्ञान वर्धन तो होगा ही, साथ ही राष्ट्रीय और अंतरराष्ट्रीय स्तर पर भविष्य में क्या-क्या संभावनाएं हैं तथा वहां पर कैसे पहुंचा जा सकता है यह भी जानने को मिलेगा। ज्ञात हो कि पिछले 50 वर्षों में भौतिकी एवं खगोल भौतिकी अध्ययन शाला से अनेकों खगोल वैज्ञानिक तैयार हुए हैं और वे वर्तमान समय में देश विदेश में अपनी सेवाएं दे रहे हैं।

रविवि के भौतिकी एवं खगोल भौतिकी अध्ययन शाला का आयोजन

ब्लैक होल, डार्क एनर्जी और स्पेस वेदर समेत सौर परिवार की दी रोचक जानकारी

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रायपुर रविवि के भौतिकी एवं खगोल भौतिकी अध्ययन शाला की ओर से चार दिवसीय साइंस एंड टेक्नोलॉजी इन एस्ट्रोनॉमी रिसर्च का आयोजन किया गया। मुख्य अतिथि कुलपति प्रोफेसर केसरी लाल वर्मा थे। अन्य अतिथियों में पूर्व कुलपति प्रोफेसर एस के पांडे, संयुक्त कलेक्टर विश्वास मेश्राम और चिली यूनिवर्सिटी सेटियागो से प्रियांजली पटेल उपस्थित थे। मेश्राम ने गांव-गांव में खगोल विज्ञान के क्षेत्र में हो रहे कार्यक्रम पर प्रकाश डालते हुए बताया कि कैसे इन कार्यक्रमों के माध्यम से लोगों के बीच वैज्ञानिक चेतना जगाई जा सकती है तथा कैसे अधविश्वसों को दूर किया जा सकता है। विभागाध्यक्ष प्रोफेसर नमिता ब्रम्हे ने कहा कि विभाग का लोकप्रियता सूचकांक विश्वविद्यालय



में सर्वोच्च स्थान पर है। कार्यशाला में देश-विदेश के वैज्ञानिकों तथा शोधार्थियों के 20 व्याख्यान हुए जिसमें से अधिकांश वैज्ञानिक तथा शोधार्थी विभाग से ही तैयार हुए हैं तथा वर्तमान में राष्ट्रीय तथा अंतरराष्ट्रीय स्तर के शोध केंद्रों में कार्य कर रहे हैं। कार्यक्रम में विद्यार्थियों को खगोल वैज्ञानिक बनने की ट्रेनिंग दी गई तथा यह भी बताया गया कि भविष्य में कहां-कहां पर खगोल विज्ञान के क्षेत्र में कार्य करने के अवसर उपलब्ध हैं।

इन टॉपिक्स पर हुई चर्चा

इसके अलावा विद्यार्थियों को खगोल विज्ञान का विकास, विशालकाय दूरबीन, आकाशीय दूरबीन, सुपरनोवा विस्फोट, आकाशीय पिंडों की गति, ब्लैक होल, डार्क एनर्जी, स्पेस वेदर, सौर परिवार के बाहर अन्य ग्रहों की उपस्थिति, आकाशगंगा विषयों पर ब्रह्मांड की विस्तृत जानकारी प्राप्त हुई। विद्यार्थियों ने अपने ज्ञान और कला को रंगोली तथा पेंटिंग के माध्यम से प्रदर्शित किया। उत्कृष्ट विद्यार्थियों को पुरस्कृत किया गया।

4-day international astronomy workshop organised at PRSU

TNN | Oct 21, 2022, 08:17 AM IST



Raipur: School of Studies (SoS) in Physics and Astrophysics, Pandit Ravishankar Shukla University (PRSU), Raipur, Chhattisgarh organised a four-day International Science and Technology Workshop in Astronomy, Research-STAR 2022 to make students know about the future opportunities available for them in the field of astronomy.

The experts explained the hidden mysteries of astronomy, highlighted the mysteries yet to be explored in the field and spoke about the importance of research during the workshop organised as a part of the celebration of Azadi Ka Amrit Mahotsav and to mark the 50th anniversary of the department.

There were 20 lectures of scientists and researchers across the country and abroad, most of whom are products of this department and are currently working in research centres at national and international levels. Students were given the training to become astrophysicists and were informed about the opportunities in the field of astronomy. Apart from that, students got detailed information about the Universe, the development of astronomy, Giant Telescopes, Space Observatories, Supernova Explosion, the motion of celestial bodies, Black Holes, Dark Energy, Space Weather, Extra-Solar Planets, galaxies and other astronomical phenomena.

The students displayed their knowledge and art through Rangoli and painting competitions. Students who outperformed were rewarded. Some student groups demonstrated the use of Python in Astronomy and a Skywatching program was also organized in the evening. Apart from the students of the department, nearby living people also joined enthusiastically.

PRSU vice chancellor Professor Kesari Lal Verma was the chief guest of the workshop while former vice chancellor of the university Professor S K Pandey, Chhattisgarh academy of administration joint director Vishwas Meshram and Priyanjali Patel from Universidad de Chile, Santiago were the key speakers.