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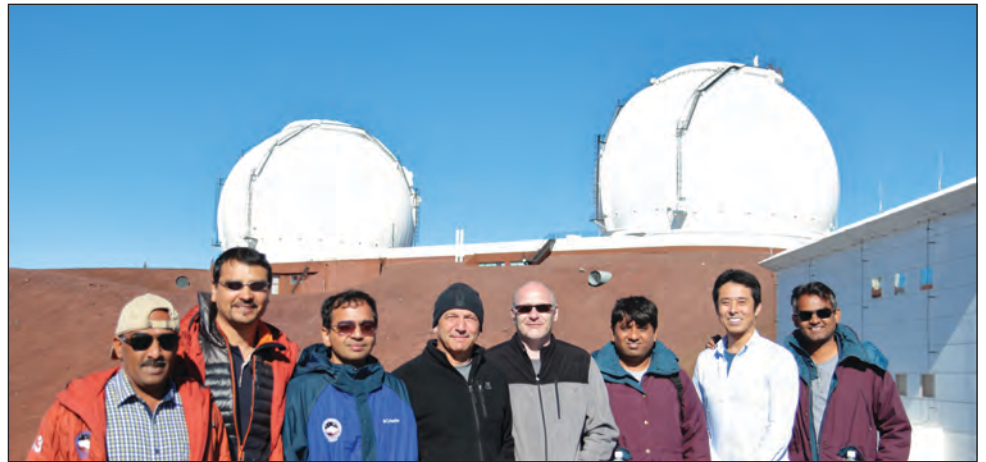
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THIRTY METER TELESCOPE

The Thirty Meter Telescope (TMT), a segmented mirror telescope with a 30-meter filled aperture, will be the world's most advanced ground-based telescope, operating at optical and infrared wavelengths. An international consortium of institutions in the USA, Canada, China, Japan and India is building the telescope. About 70% of India's contribution to the construction will be in kind. India's work share consists of both hardware and software. In software, India-TMT (Programme Director: B. Eswar Reddy; Associate Programme Director: A. N. Ramaprakash) is responsible for delivering the Observatory Software (OSW) and Telescope Control System (TCS).

The TCS is responsible for the coordination and control of various telescope subsystems. India-TMT is responsible for taking TCS through various project phases: (1) the preliminary design, (2) the final design, (3) the code and test, (4) the integration and test phase and finally, (5) the assembly, integration and verification at the telescope site.



TMT - TCS team at the W. M. Keck Observatory, Mauna Kea, Hawaii.

IUCAA, on behalf of India-TMT, is responsible for delivering the TCS to the TMT International Observatory (TIO). The first phase of the project started on April 5, 2016 with a kick-off meeting at IUCAA, India, and an Orientation Workshop (April 18 - 29, 2016) at TMT Project Office (PO), Pasadena, USA. As part of the workshop, the TCS team also visited the Keck and Subaru telescopes at Mauna Kea, Hawaii.

The first phase of the project focuses on a small representative subset of the TCS, both in terms of subsystem content and in terms of the type of work that will be needed for the subsequent project phases. This phase is about building a partnership between IUCAA, TMT PO and Oaces - Honeywell Automation India Limited. As part of this phase, the team will deliver (1) design of the Hardware Control Daemon (HCD) that interfaces between the TCS and the Mount Control System (MCS) of the telescope, (2) MCS simulator, (3) design document for the interface between TCS and the telescope enclosure, and (4) a detailed plan for all the subsequent project phases. This first phase is scheduled to finish by November 2016 with a detailed review of all the deliverables at IUCAA. The IUCAA members involved in the TMT - TCS project are Neeraj Gupta, Sujit Punnadi and A. N. Ramaprakash.



TMT - TCS kick-off meeting at IUCAA

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INTRODUCTORY SUMMER SCHOOL IN ASTRONOMY AND ASTROPHYSICS



The biennial Introductory Summer School in Astronomy and Astrophysics for college and university students was held during May 16 to June 17, 2016 at IUCAA. The school introduced the students to Astronomy and Astrophysics through a series of lectures delivered by IUCAA faculty members and a few faculty members from other institutions, with topics ranging from basic concepts to cutting edge research. The school also included hands-on sessions managed by the students and post-docs of IUCAA, where different computing and astronomical data analysis techniques were demonstrated. Additionally, the IUCAA Public Outreach team organised a demonstration on science toys and a night sky watching programme. The participants were also taken a tour to the Giant Metrewave Radio Telescope (GMRT) operated by NCRA, Pune, and the IUCAA Girawali Observatory (IGO). The students were very enthusiastic throughout the school and actively participated in the lectures and hands - on sessions by engaging in lively discussions with the lecturers. The scientific, technical and administrative staff of IUCAA played a vital role in ensuring that the school ran smoothly.

Santosh Khadilkar, in particular, managed a significant part of the administrative work. The faculty coordinator for the school was Aseem Paranjape.

Congratulations to...

Tarun Souradeep has been elected as the **President of the Indian Association for General Relativity and Gravitation** for two years from March 2016.

Vacation Students' Programme



The Vacation Students' Programme (VSP), for students in their penultimate year of M.Sc. (Physics) or engineering degree course was held during May 16 to July 1, 2016. Exceptionally motivated final year B.Sc., and second year engineering students were also invited. This year, thirteen students participated in this programme. The participants attended about 50 lectures, dealing with a wide variety of topics in Astronomy and Astrophysics, given by the academic members of IUCAA. A one day visit to GMRT and IGO was arranged for the student to get exposure to large radio and optical telescopes. Students also did a project with one of the faculty members of IUCAA, and at the end of the programme, the students presented their work in individual seminar, attended by faculty members and others. R. Srikanand was the faculty coordinator of this programme.

ANNOUNCEMENTS OF THE FORTHCOMING EVENTS

Topical Course on Computational Statistics and Astro-Statistics

A Topical Course on Computational Statistics and Astro-Statistics will be organized at IUCAA, during January 2-13, 2017, and is meant for Ph.D. students from Indian universities and research institutes. This will give an excellent opportunities for them, who can use these techniques for their Ph.D. work, in particular, with large data handling of space borne missions. The course will be conducted by C.A.L. Bailer-Jones, MPIA, Heidelberg, Germany, and will have 14 sessions covering many aspects of Astro-Statistics. The students are

expected to bring their laptops with Linux and 'R' softwares pre-loaded, and there will be ample project sessions, where the students can present/discuss their own Ph.D. topic and use of these tools.

The last date to receive applications is **August 31, 2016**, by sending an e-mail to aocp@iucaa.in. Interested faculty members may send the names of their Ph.D. students (with their email ids) and a clear statement that the concerned student does not have any travel grants if they want to claim travel support from IUCAA.

Workshop on Introduction to Solar Astrophysics

The Department of Physics, M. A. College of Arts and Science, Kothamangalam, Kerala, jointly with IUCAA, will organise a Workshop on Introduction to Solar Astrophysics during November 30-December 2, 2016.

Even though solar astronomy is a subject of much relevance and importance, the latest developments in the field are not reaching the student community, because of not inclusion of the subject in under-graduate as well as post-graduate courses in many Indian universities. Also, besides engineering talent is required in building up the indigenous solar astronomy instruments poised to be made in future, there seems to be total absence of such aspects in the engineering curricula. In this scenario, the workshop aims to introduce the branch of solar astronomy to the under-graduate, engineering and post-graduate science students. The sessions will be organized so as to familiarize the participants with the current understanding and major challenges in the field of solar astrophysics along with lectures on different tools to observe the Sun. It is also planned to have demonstrations of analysis of observations gathered by the

most advanced solar telescope from space. The programme has an added significance in the light of Indian solar mission 'Aditya-L1', to be launched by 2020, for which IUCAA, along with ISRO and other institutions in the country, is building the Solar Ultraviolet Imaging Telescope (SUIT).

The outstation candidates will be provided free local hospitality. Limited travel support will be available for participants, if their institutions do not support them.

Interested highly motivated under-graduate, engineering and post-graduate science students should send their applications by e-mail to Benoy M.D. (benoymdas@gmail.com) with a copy to the coordinator, Joe Jacob (drjoephysics@gmail.com) by **September 1, 2016**. The applications should contain the name, affiliation, contact address, mobile number, e-mail, present academic address and a write up (less than 250 words) justifying the application. A recommendation from the teacher or the head of the department also should be sent by e-mail. The selected candidates will be informed by **September 15, 2016**.

Workshop on Structure Formation in Standard Cosmology

The study of cosmological structure formation has been seeing unprecedented advances in the quality and quantity of data becoming available from various experiments and large surveys. This workshop will introduce the field of structure formation and the different ways in which one can contribute to the field, i.e., theoretical modelling, data analysis or simulations. The first half of the workshop lectures will brush up the knowledge of standard cosmology, and also introduce the basics of structure formation. The second half will focus on understanding the data we gather from various surveys, connecting it with the theoretical models of structure formation, and also analyzing this data through hand-on sessions. Prior to these sessions, participants will be given a primer on various statistical techniques. If time permits, there will be introduction to basics in running cosmological N-body simulation.

This workshop will be conducted during December 19 - 23, 2016, at BITS - Pilani, Hyderabad Campus, and is open to post-graduate and early Ph.D. students, and university and college teachers. Interested persons should send an application by e-mail to Rahul Nigam at nig.rahul@gmail.com, containing the applicant's name, affiliation, designation, contact details and a short write up on research interests, particularly mentioning any prior experience with computing/numerical techniques. Only limited travel funds are available for outstation candidates, and if required, they should request in the application. The last date for receiving the application is **September 1, 2016**, and selected candidates will be informed by **September 15, 2016**. Boarding and lodging for the period of the workshop will be provided by the host institute. The coordinators are Bivudutta Mishra (BITS - Pilani, Hyderabad Campus) and Aseem Paranjape (IUCAA), and the conveners are Rahul Nigam and P.K. Sahoo (both from BITS - Pilani, Hyderabad Campus).

Contact persons for the workshop are: Joe Jacob (drjoephysics@gmail.com), Benoy M.D. (benoymdas@gmail.com), and Durgesh Tripathi (durgesh@iucaa.in).

Announcements Continue...

Workshop on Stellar Astrophysics

Christ University, Bangalore will be organizing an IUCAA sponsored workshop on Stellar Astrophysics during February 2-4, 2017. The aim of the workshop is to give participants a thorough overview of the physics that governs the stars, and covering basic astronomical quantities, the physical characteristics of stars, stellar interiors, star formation and evolution. The goal of this workshop is to improve the proficiency of these fields while familiarizing with our current theoretical and observational understanding of stars. It is expected that the deliberations during the workshop will take the participants a step ahead in this direction. Workshop will cover different aspects of data reduction techniques used in photometry and spectroscopy. The workshop is open for post-graduate, early Ph.D. students, and university and college teachers.

Interested persons can send e-mail to paul.kt@christuniversity.in, with your name, affiliation, designation, contact details and a short write up on your research interests. The last date for receiving the application is **September 15, 2016**. Selected participants will be informed by **October 15, 2016**. Accommodation for all outstation participants has been arranged at the Christ University guest house from February 1st evening to February 4th evening. Limited travel fund is available for outstation participants, and they should clearly mention that they do not have travel grants for attending this workshop.

COLLOQUIA

01.04.2016 Rama Govindarajan on *Some aspects of the fluid dynamics of clouds*; 29.04.2016 Satyabrata Patnaik on *New materials for energy/information storage and transmission*; 05.05.2016 A.K. Sood on *Active matter: Flocking, sorting and heat engine*; 19.05.2016 Subhadeep De on *Atomic clock technologies for precise determination of "Time"*; 26.05.2016 Matthew Duez on *Numerical relativity and black hole-neutron star binaries: The early post-merger phase*.

SEMINARS

06.04.2016 Mayukh Pahari on *Accretion manifestations in X-ray binaries, new methods and AstroSat observations*; 06.04.2016 Labani Mallick on *Accretion disc/corona and jet emission from radio-loud narrow-line Seyfert 1 galaxy*; 15.04.2016 Arunima Banerjee on *Mass modelling of super-thin galaxies*; 25.04.2016 Sourav Bhattacharya on *Some general properties of rotating black holes in a generic F(R) gravity theory*; 27.04.2016 Sheelu Abraham on *Formation scenario of Lenticular galaxies: Stellar mass dependence of bulges*; 27.04.2016 Javed Rana on *An optimal method for scheduling observations of large sky error regions for finding optical counterparts to transients*; 28.04.2016 Remya Nair on *Probing synergy between ground and space based GW detectors, and using GW observations for cosmological parameter estimation*; 28.04.2016 Kabir Chakravarti on *Testing the performance of phenomenological waveform models in characterizing NS-BH binaries*; 04.05.2016 Satadru Bag on *Cosmological perturbations on the Phantom brane*; 06.05.2016 Bhooshan Gadre on *Efficient detection strategies for transient gravitational waves signals*; 06.05.2016 Anirban Ain on *Search for narrowband gravitational wave sources using data folding*; 10.05.2016 Mainpal Rajan on *UV/Optical emission variability of Seyfert type 1 AGNs*; 12.05.2016 Nidhi Pant on *Efficient and fast estimation of SI violation signal in CMB due to non-circular beam and complex scan*; 17.05.2016 MD. Wali Hossain on *Cosmology with scalar field*; 18.05.2016 Abhijeet Borkar on *The villain and its minions: SiO maser sources around the super-massive black hole in the galactic centre*; 02.06.2016 Shasvath Kapadia on *The detection of gravitational waves from compact binary inspirals*; 16.06.2016 Surajit Sen on *Mechanical energy transport through granular systems*.

NEEM SEMINARS

17.05.16 Rajesh Kumble Nayak on *GW150914: Testing theory of gravity with binary black hole merger*; 17.05.16 Sanjay B. Sarwe on *Gravitational collapse with equation of state*; 07.06.16 Harinder Pal Singh on *Remote observing with small telescope*; 07.06.16 Bikash Chandra Paul on *Emergent universe via wormhole*; 21.06.16 Shantanu Rastogi on *IRC +10216: A treasure trove of molecules*; 21.06.16 Sarbari Guha on *Some results in modified gravity theories*; 28.06.16 Sushant G. Ghosh on *Spinning black holes*; 28.06.16 Paniveni Udayashankar on *Super-granular physical parameters*.

Welcome to...



Konstantinos Kolokythas, who has joined IUCAA as a Post-doctoral Fellow. He has obtained his Ph.D. from the University of Birmingham, U.K. in July 2015, with research focusing on the evolution of galaxies in nearby groups by using low-frequency radio wavelengths. His current research includes a multi-wavelength study of optically selected groups of galaxies in order to characterise the radio-AGN population in groups, examine their impact on the intra-group gas and member galaxies, and the linking properties between star formation and Active Galactic Nuclei in galaxy groups.

PUBLIC OUTREACH ACTIVITIES

School Students' Summer Programmes

Ten students of classes 8 to 10 were selected to work on a project at IUCAA, and were guided by volunteering scientists, namely, Avyarthana Ghosh, Debajyoti Sarkar and Niladri Paul. In the spirit of true research, the students and guides have worked together on the phenomena on the Sun, critical mass for fission, Brownian motion, etc. The students were given access to the IUCAA library and the facilities at IUCAA's Science Exploratorium - the Mukhtangan Vidnyan Shodhika (MVS). The student teams presented their work during the week and submitted a report. This programme was conducted during April 4 - 15, 2016.



Zero Shadow Day

On specific days, when the latitude of a place is equal to the declination of the Sun, then exactly at the local noon, the sunrays are perpendicular on this latitude. The Sun is right overhead and shadow of a vertical object falls right below. This is referred as the Zero Shadow Day, and was celebrated at IUCAA on May 13, 2016, with many students from IUCAA and across the city came to view the experiments done at MVS.



Summer Astronomy Camp



School students of classes 8, 9, and 10, who were nominated by their respective schools, were invited to IUCAA for 5 days camp to get an overview of Astronomers' tools via IUCAA developed content and experiments. The topics covered ranged from simple geometry and statistics to optics and spectroscopy. The importance of observations and accurate measurements in science was highlighted, by measuring the diameter of a mustard seed, working of

Samrat Yantra as well as estimating the ratio of the distance to the Sun to its diameter. Sky watching practise using star maps was a hot favourite activity with students spending an evenings at MVS. Throughout the camp, effort was taken to clarify misconceptions, and to give a better understanding of the motives of science. The days were interspersed with viewing fun videos and science toy making.

The camp was coordinated by Samir Dhurde and Sonal Thorve, with experimental devices prepared by Maharudra Mate. Considerable teaching help was provided by the outreach interns Jui Kulkarni, Parikshit Biswas, Tushar Purohit and Vinita Deshmukh. Academics from IUCAA, namely, Abhishek Parida, A.N. Ramaprakash, Aseem Paranjape and Niladri Paul also interacted with the students. Totally, 135 students attended this camp, and conducted during April 25 - May 20, 2016.

Regular events at Mukhtangan Vidnyan Shodhika, IUCAA

MVS staff conducted 16 Science Toys workshops, 04 Basic Astronomy workshops, 06 campus visits and 10 public sky watching sessions with an approximate reach to 1500 people.

Transit of Mercury - May 9, 2016



IUCAA Scipop played a big role in the nationwide campaign, initiated by the Astronomical Society of India (ASI), to observe the Transit of Mercury. This is a rare event and Samir Dhurde was the coordinator for the web-based registrations and mapping of locations on the Indian map so that anyone interested could find their closest observation point. This received wide response from amateur astronomers and NGOs across the country, with observations being done at 250 places and seven webcasts taking place. The event thus reached at least 100,000 people.

Outreach during ASI meeting



IUCAA has helped to organise a Teacher Training workshop at Srinagar, Jammu and Kashmir, during the Astronomical Society of India (ASI) meeting held at the University of Kashmir (UoK), during May 5-7, 2016. The workshop was attended by 55 teachers from various districts of Jammu and Kashmir. Ten teachers were selected by the Director of Education to get trained in using 4 inch telescopes. A Transit of Mercury observation event was also coordinated by the ASI-POEC with assistance from Samir Dhurde, and UoK students and staff. The Chief Minister of Jammu and Kashmir was present at the event. IUCAA students presented 5 posters on Careers in Astronomy, which drew a crowd of students from the UoK. Samir Dhurde along with Semmin Rubab from NIT, Srinagar, also hosted a live sky watching radio programme on All India Radio, Kashmir, which was a unique event in that region.

A special session on Careers in Astronomy was held for students from various colleges in Srinagar at the Islamiya College of Science and Commerce, where ISRO scientist, S. Seetha along with Ajit Kembhavi, Avyarthana Ghosh and Varun Bhalerao from IUCAA interacted with the participants.

Workshop on Basic Astronomy and Use of Automated Telescopes

This collaborative workshop for the students of the Birla Institute of Technology and Science (BITS) - Pilani, Goa Campus, was held at this institute. The programme contents ranged from discussions on the basics of telescopes, mounts and sky coordinate systems to field observations with a 11 inch telescope owned by the host institute. Special topics covered were detecting asteroids and their astrometry and DSLR based study of variable stars. A full night imaging of a variable star with plotting of light curves was done remotely via a

telescope setup in Pune, due to the sky being cloudy in Goa. The prompt and experienced help of all the members of Jyotirvidyan Parisanstha (JVP), Pune, who were involved in this workshop, was worth mentioning.

This workshop was conducted during March 8 - 12, 2016, and coordinated by Tarun Kumar Jha (BITS - Pilani, Goa Campus) and Samir Dhurde (IUCAA). The speakers were Bipash Dasgupta (Birla Planetarium, Kolkata) and Aniruddha Deshpande and Deepak Joshee

Half-day student interactions

Groups of students from Centre for Basic Sciences from Raipur, Aryabhat Foundation from Madhya Pradesh and Centre for Theoretical Physics, Jamia Milia Islamia from New Delhi visited MVS for interactions on March 10, April 6 and April 13, 2016 respectively. Sanjeev Dhurandhar (Emeritus Professor at IUCAA) interacted with the students. Samir Dhurde and Sonal Thorve conducted the sessions on Careers in Science and Astronomy.

Global Astronomy Month

On the occasion of Global Astronomy Month, April 2016, IUCAA has organised public sky watching events on April 15 and 18, 2016. More than 300 enthusiastic adults and children attended these events. The telescopes used were made at the Telescope Making Workshop at IUCAA. Amateur astronomers from Akashmitra volunteered to handle the telescopes, and identifying constellations and planets during the sessions.



VISITORS

(April- June 2016)

Rana Adhikari, Satyam Agarwal, Fazlay Ahmad, Gazi Ameen Ahmed, B. Rachith Aiyappa, Muhammed Amir, Atma Anand, Vijayalakshmi Anand, Aiswarya Andavan, Sioree Ansar, Rizwan Ul-Haq Ansari, Kalyani Bagri, Ayan Banerjee, Disha Bapat, Monmoyuri Baruah, Sudhanshu Barway, Prasad Basu, Federico Bernardini, Jay Vishwas Bhambure, Priya Bharali, Yash Bhargava, Sudipto Bhattacharjee, Parag Bhattacharya, Samarpita Bhattacharya, Sandip K. Bhattacharya, K.G. Biju, Ritabrata Biswas, Sujay Kr. Biswas, Mary Bosco, Atharv Chaba, Prashanta Chakraborty, Subenoy Chakraborty, Nabajit Chakravarty, Harish Chandra, Prasanta Char, Subhamoy Chatterjee, Suchetana Chatterjee, Surajit Chattopadhyay, Raghavendra Chaubey, Rudrani Kar Chowdhury, Haeun Chung, Denver D'souza, Abhishek Das, Indrani Das, Susmita Das, Dhurjati Prasad Datta, Subhadeep De, Tirna Deb, Uddeepta Deka, C.P. Dewan, Jishnu Dey, Mira Dey, Payaswinee Dhoke, P. P. Divakaran, Matthew D. Duez, Alankar Dutta, Moumita

Dutta, Savithri Ezhikode, Suraj Kamalakar Gaikwad, Sharad Gaonkar, Prerak Garg, B. Hareesh Gautham, Bhargav Sachin Ghanekar, Ritesh Ghosh, Shounak Ghosh, Sushant G. Ghosh, Rupjyoti Gogoi, Kishore Gopalakrishnan, Rama Govindarajan, Sarbari Guha, Anshu Gupta, Prateek Gupta, Sunil Simha H.S., K.P. Harikrishnan, S.N. Hasan, Sungwook Hong, Tanvir Hussain, K. Indulekha, Nirmal Iyer, Joe Jacob, Dhairyashil Jagadale, Sandhya Jagannathan, Jayant Jain, K. Jeena, Reju Sam John, Charles Jose, Stephy Jose, Kanti Jotania, Shasvath J. Kapadia, G.S. Khadekar, Rakesh Khanna, Shivan Khullar, Karri Koljonen, Dilip Krishnaswamy, Aishwarya Alok Kumar, Ankush Kumar, Jitendra Kumar, Kamesh Kumar, M. Senthil Kumar, Pravir Kumar, Suresh Kumar, Nandita Kumari, Richa Kundu, Pranshu Kurel, Badam Singh Kushvah, Mahith M., Arindam Mal, Siddharth Malu, Abhijit Mandal, Soma Mandal, Arun Mangalam, Neeraj Mathur, Daxal Hemendra Mehta, Anurag Mishra, Ashish Mishra, Bivudutta Mishra, Nishant Mittal, Azam Mofazzal, Ahmad Mohammad, Aditya Sow Mondal, Krishnanjan Mondal, Aritro Mukherjee, K.V. Muralidhar, P. Murugan, Himanshu Nagpure, Anupama Venugopalan Nair, Hemwati Nandan, Purnima Narayan, Khushbukumaree Jetendrabhai Nareeya, Rajesh Kumble Nayak, Muhammed Rafi P.V., Supratik Pal, S.K. Pandey, Sanjay Pandey, Shivam Pandey, Vihan Pandey, Mahadev Pandge, P.N. Pandita,

Shubhonkar Paramanick, Abhishek Parida, R.M. Parmar, Jayshil Ashokkumar Patel, Rohankumar Maheshbhai Patel, Sanketbhai Ishvarbhai Patel, Amit Pathak, Jayanta Narayan Pati, K.D. Patil, M.K. Patil, Satyabrata Patnaik, Paste, B.C. Paul, Pramod Pawar, Khun Sang Phukon, Anna Pospieszalska, Ananta Charan Pradhan, Harsh Prajapati, B. Raghavendra Prasad, Sangeeta Pujari, Akhil Punia, Sanjay Puri, Frederick J. Raab, Bijoy Raha, Farook Rahaman, M. Xavier James Raj, Deepak Raj R., G. Nagendra Rao, Shantanu Rastogi, Katherine Rawlins, Diptanil Roy, Jayashree Roy, Namrata Roy, Sunder B. Sahayanathan, Anuradha Samajdar, Prasant Kumar Samantray, Saumyadip Samui, Shishir Sankhyayan, Somya S. Sarkar, Sanjay Sarwe, Sanjana Sekhar, T.R. Seshadri, Shiv Sethi, Parita Rajkumar Shah, Mohd. Shahalam, Nigar Shaji, H. Sharma, Joginder Sharma, Ramkishor Sharma, Swarnim Shashank, Gargi Shaw, Parisee Shirke, G.P. Singh, H.P. Singh, Narendra Singh, Neha Singh, Atreyee Sinha, A.K. Sood, Anupama Sreevalsan, K. V. Sriram, Annapurni Subramaniam, Prashant Sukumar, Jean Surdej, Avinash Surendran, Hareram Swain, Devika T., Rupali Talole, Amit Tamrakar, Gaurang Satish Tawde, Arun Thampan, Kartik Tiwari, Rishikesh Dutta Tiwary, S.K. Tripathy, Paniveni Udayashankar, Rashmi Uniyal, Sanil Unnikrishnan, Koushika V.P., Siddharth Vadnerkar, D.B. Vaidya, R. Venkateswaran, Aditya Vidhate, Aditya Vijaykumar, Yogesh Wadadekar, and

VISITORS EXPECTED

July 2016

Ritwick Banerjee, Bankura University, West Bengal; Sudipto Bhattacharjee, Jadavpur University, Kolkata; Sukanta Bhattacharya, West Bengal State University, Kolkata; Ritabrata Biswas, Bankura University, West Bengal; Maheswata Biswas, IEST, Shibpur, West Bengal; Archana Bora, Gauhati University, Guwahati; Payaswinee Dhoke, Dharampeth M.P. Deo Memorial Science College, Nagpur; Anjali Gupta, Columbus State Community College, USA.;

Karan Jani, Georgia Tech, USA; Nandita Kalita, Girijananda Choudhuri Institute of Management and Technology, Guwahati; Sanjeev Kalita, Gauhati University, Guwahati; Anil Kumar, M. M. H. College Ghaziabad; Nagendra Kumar, M. M. H. College Ghaziabad; Abhijit Mandal, Jadavpur University, Kolkata; Gabi Mehta, Pomona College, U.S.A.; Sowgat Muzahid, University of Pennsylvania, U.S.A.; Rahul Nigam, BITS Pilani, Hyderabad; Joe Philip Ninan, TIFR, Mumbai; Nupur Paul, Jadavpur University, West Bengal; Pramod Pawar, Swami Ramanand Teerth Marathwada University, Nanded; Anirudh Pradhan, GLA University, Mathura; Sayani Roy, IEST, Shibpur West Bengal; Anirban Saha, West Bengal State University, Kolkata; Parneli Saha, IEST, Shibpur West Bengal; Gautam Saiki, Tezpur University, Assam; Iftikar H. Sarada, Jadavpur University, West Bengal; Umang Sharma, Guru Gobind Singh Indraprastha Univ.,

Delhi; Neha Singh, Aliganj Lucknow; S. Sridhar, RRI, Bengaluru; Sharanya Sur, IIA, Bengaluru; and Sanjay Swain, NISER, Bhubaneswar.

August 2016

Bobomurat Ahmedov, National University of Uzbekistan, Tashkent; Anirban Das, TIFR, Mumbai; Basudeb Dasgupta, TIFR, Mumbai; Prerak Garg, S. P. Pune University; Gurudatt Gaur, IIT Gandhinagar, Gujarat; Prateek Gupta, S. P. Pune University; Sourendu Gupta, TIFR, Mumbai; Rinku Jacob, The Cochin College, Kochi; Kanti Jotania, M.S. University of Baroda, Vadodara; Pradnya Pacharne, S. P. Pune University; Pranjal Sarma, Tezpur University, Assam; Arpita Trivedi, S. P. Pune University; and Sneha Upadhyay, S. P. Pune University.

September 2016

Raj Bali, University of Rajasthan, Jaipur.

Hello friends,

The following incident happened when I started bird watching a few years back. There is a huge open area near my house at Pimple Nilakh, which belongs to the Defence Department. Most of the land is grassland with some trees like Peepal, Ber, Babool, Khair, etc. I often used to go there for bird watching. One fine morning, when I was wandering there to enjoy the Nature, I found a domed grass nest on a Babool tree. It was beautifully built and was nearly impossible to locate the entrance. I never saw that type of nest in my life, and so I was excited to see the bird. I hid myself behind another tree and patiently waited till a pair of small birds arrived there (patience is very important in bird watching).

It was a beautiful sparrow-sized bird (10 -12 cm long). It had brown upperparts and a dark brown head. The under parts were white with dark scale markings. The bill was conical in shape, short and thick typical of grain eating birds.

Later, I found the name to be Scaly Breasted or Spotted Munia (*Lonchura Punctulata*). As the name suggests, the bird has distinct scale-like feather markings on the breast and belly. The female and male are similar, although male has darker markings on the underside and a darker throat than female. An endemic species of Asia, and this species has been introduced to other parts of the world. There are 11 sub-species which differ to some extent in size and colour. Munias are *Least Concerned* in IUCN list.



▲ Scaly Breasted Munia

Photo Courtesy : Bhalchandra Pujari



▲ Spotted Muniya's Nest

Photo Courtesy : Chaitanya Rajarshi

Munia feeds mainly on seeds, grains and small berries. In the bird feeders kept in the balcony and terrace of my house, they come in flock and feed on millets. The seeds of millets fall in pots/planters and grow, and now it has turned into a natural bird feeding millet field.

Munias build large domed structure nest using grass blades, bamboo or other

leaves preferably on a thorny short tree like Indian Plum (Ber) or Babool, Khair and sometimes under the roof space of a house.

They breed mainly from June - August. A clutch usually contains 4 to 6 eggs. Both sexes build the nest and incubate, and the eggs hatch in about two weeks.



▲ Spotted Munia with chicks

India is home to about 8 species of Munias, like scaly-breasted, green, silver bill, chestnut, etc.

In some countries, Munias are considered as a pest on grain crops. They are also caught for the pet trade.

So, go out and visit grassland for this beautiful bird. You may see them in a large flock, on overhead cables sitting side by side in close contact, twittering, whistling sharp alarm notes, flipping their tails and wings, cleaning each other. I am sure, you will enjoy the view.

Call for a Bird Photo: Readers of Know Thy Birds are invited, hereby, to submit photographs of birds taken by you. Selected photos will be published in this article with due credit. Please mail your photos to cvr@iucaa.in (Please mention "photos for KTB" in subject").

Wish You A Very
Happy Birding

Khagol (the Celestial Sphere)
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We welcome your responses at the following address:

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