IUCAA
ISSN 0972-7647

KHAGOL
खगोल

Available online at http://ojs.iucaa.ernet.in

No. 81 January 2010

Editor : Swara Ravindranath (swara@iucaa.ernet.in)
Editorial Assistance : Manjiri Mahabal (mam@iucaa.ernet.in)

A quarterly bulletin of the Inter-University Centre for Astronomy and Astrophysics
(An autonomous institute of the University Grants Commission).

Contents...

The Twenty-first IUCAA Foundation Day

P. Balaram delivering the 21st IUCAA Foundation Day lecture

The twenty-first Foundation Day lecture was delivered by P. Balaram, Director, Indian Institute of Science, Bengaluru, on Chemical Analysis in the Age of Biology. The speaker emphasized on how analytical chemistry has transformed over the past two decades from an old, classical discipline to a vibrant area of research focused principally on biological problems. In a brief introduction, he highlighted on methods of X-ray crystallography, NMR spectroscopy, and a variety of imaging methods based on optical and vibrational spectroscopy, which have begun to provide a level of sensitivity and resolution, that has led to a renaissance in chemical analysis. The lecture focused on the applications of mass spectroscopy in biology. Specific applications to the identification of disease causing mutations in proteins, and the analysis of complex peptide libraries in natural venom were illustrated.

Congratulations to...

T. Padmanabhan, on being awarded with the ***Infosys Prize 2009*** for Physical Sciences by Infosys Science Foundation, Bengaluru.

Workshop on Galaxy Photometry

Workshop on Galaxy Photometry at MGU

A Workshop on Galaxy Photometry was held during October 30 to November 5, 2009 at the School of Pure and Applied Physics, Mahatma Gandhi University, Kottayam, Kerala. It was inaugurated by the Vice Chancellor Rajan Gurukkal, in the presence of V. C. Kuriakose from the IUCAA Reference Center at Kochi.

There were twenty-seven registered participants; students from various science and engineering colleges and teachers from colleges and higher secondary school. The workshop concentrated on various projects.

There were five resource persons from the region, mentoring the projects. In addition to the project lectures, there were several invited lectures by resource persons from various institutions (IUCAA, NCRA, RRI, ISRO, CUSAT, and St. Joseph's College, Bengaluru). Rajaram Nityananda (Director, NCRA) delivered the third lecture of the Frontier Lecture Series dedicated to the memory of G. V. Vijayagovindan, titled 'Galaxies: Today, Yesterday and the Day Before'.

In addition to the workshop lectures, there were two parallel sessions: (i) Payload Engineering from Aryabhatta to the Chandrayan by Ramakrishna Sharma from ISAC, Bengaluru, for 30 students from the Rajiv Gandhi Institute of Technology, Pampadi, and from the University Centre for Intellectual Property Rights. (ii) Astroinformatics by Ninan Sajeeth Philip (IUCAA Associate from St.Thomas College, Kozhencheri) for 50 students from the Computer Science and Bioscience departments of MGU. A special lecture on the Origin of Life, and also a Sky Watch programme was conducted by Arvind Paranjpye from IUCAA. It was very enthusiastically received by the participants and the university community. There was also an evening cultural program on the penultimate day of the workshop.

The various project groups are in touch with their mentors, and the work that started at the workshop will be completed during the extended sequel that will run up to three months. The coordinators of this workshop were K. Indulekha from MGU and Ninan Sajeeth Philip from IUCAA side.

Introductory Workshop on Astronomy and Astrophysics

An introductory workshop on Astronomy and Astrophysics was held at the Department of Physics, Panjab University, Chandigarh, during November 19 - 23 , 2009. The workshop was organized as a part of the celebrations of the International Year of Astronomy (IYA2009). Besides, the workshop was also conducted as a part of IUCAA's sustained support for the growth of Astronomy and Astrophysics in the country. The workshop was primarily sponsored by IUCAA, with a partial support from the Indian Space Research Organization (ISRO) Bengaluru. The main objective of workshop was to introduce the field of Astronomy and Astrophysics to a group of 35 B.Sc. and M.Sc. students from various institutes, colleges, and universities of North India. These students were selected from a total of 120 applicants.

The workshop was inaugurated by the Vice Chancellor, Panjab University, R. C. Sobti. M. Gupta, Chairman, Department of Physics, gave introductory remarks on the workshop. He presented a brief overview of the department's academic activities. The inaugural talk on "The end state of the stars" was delivered by Ajit Kembhavi, Director, IUCAA, Pune. He also gave a popular evening lecture on "From Galileo to Einstein -A Journey over 400 Years". The popular lectures were attended by a wide audience, comprising of the workshop participants, students and faculty members from various departments of the university.

During the course of five days, eleven eminent researchers from various institutes and universities delivered lectures on a wide-range of topics in the field of Astronomy and Astrophysics. H. P. Singh, University of Delhi, familiarized the students with the basic stellar properties. Ranjan Gupta, IUCAA, Pune, gave lectures on the observational techniques and instruments. He also

Participants of the Introductory workshop on Astronomy and Astrophysics at Panjab University

delivered an evening popular lecture on modern telescopes. The concepts of coordinate system and telescope basics were taught by Vijay Mohan, IUCAA, Pune. P. S. Goraya, Punjabi University, discussed the properties and the nature of the interstellar medium. The physics of the stellar structure and evolution was presented by S. Sahijpal, Panjab University. N. Iqbal, Kashmir University, gave

lectures on the galaxies. A. Rawat also delivered a lecture on the nature and morphology of galaxies. The lectures on cosmology were delivered by T.R. Seshadri, University of Delhi. A. Ranade, Vigyan Prasar, and S. Deb, University of Delhi, gave lectures on Practical Astronomy, Solar eclipse, and Astronomy with small telescopes. They also conducted laboratory sessions on data analysis and assignments. The night sky watching activities with a 11" telescope were carried out by S. Sahijpal and his students.

The workshop concluded with a general discussion among the resource persons and the participants on the career opportunities and the scope of research in the field of Astronomy and Astrophysics. The students gave their feedback regarding the academic and organizational aspects of the workshop. The Coordinators of this workshop were S. Sahijpal from Panjab university and Ranjan Gupta from IUCAA.

National Workshop on Advances in Astronomy and Astrophysics

Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune, in collaboration with the Department of Physics, University of Kashmir, Srinagar, organized a 4-day ***National Workshop on Advances in Astronomy and Astrophysics***, at University of Kashmir, Srinagar during November 3 - 6, 2009. Among the more than one hundred registered participants of the workshop were college and university teachers; scientists from BARC (NPL), Zakura; faculty and researchers from NIT, Hazratbal; research scholars and M. Sc. Students from the host department.

With the underlying aim to expose the participants to the frontline areas of research in Astronomy and Astrophysics, a number of frontline topics, like Galaxy Formation (Swara Ravindranath, IUCAA), Physics of Black Holes (Ranjeev Misra, IUCAA), CMB (Tarun Souradeep, IUCAA), X-ray Astronomy (Gulab Dewangan, IUCAA), Cosmological N-body Simulations (Jasjeet S. Bagla, HRI, Allahabad), Cosmological Many-body Problem (Farooq Ahmad, University of Kashmir), etc., were covered. During the workshop, it was made amply clear that this was indeed the most exciting time for research in Astronomy and Astrophysics and, while many of the other fields were saturating, it was time to explore the prospect of pursuing an exciting career in Astronomy and Astrophysics.

The workshop was taken very seriously by the University of Kashmir. This was reflected by the fact that the Minister for Science and Technology from the Government of Jammu and Kashmir, Aga Ruhullah and Principal Secretary to the Chief Minister, Khursheed A. Ganai, were, respectively, the Chief Guest and the Guest of Honour on the inaugural function of the workshop. Their invitation was motivated by the fact that there was too little of investment in science in the region. This had an immediate positive effect. The Minister announced raising the financial support for organizing national workshops from a paltry Rs. 20,000 to Rs. one lakh, and for organizing an International Workshop/ Conference to Rs. 2 lakhs. He also announced a generous financial support for the Optical Observational Facility being developed at Gulmarg by Farooq Ahmad. The Principal Secretary to the Chief Minister promised to use his good offices to do whatever he can for scientific advancement in the region. The plight of the research students, being paid too little a fellowship, was addressed by Ranjeev Misra (Coordinator of the workshop) and the Vice-Chancellor of University of Kashmir, has already initiated steps to improve the situation.

A lecture-session at the workshop on Advances in Astronomy and Astrophysics, at University of Kashmir

Thus, while the workshop successfully fulfilled its primary objective of inspiring and updating the participants about the current research in Astronomy and Astrophysics, it triggered many more positive initiatives. The coordinators of this workshop were Manzoor A. Malik from University of Kashmir, and Ranjeev Misra from IUCAA.

Seminars

Listed below are the seminars and colloquia given at IUCAA during October - December 2009.

01.10.2009 Donald Lynden-Bell on *Is all motion relative?*; 02.10.2009 Maulik Parikh on *Fun with topology and relativity*; 23.10.2009 C. H. Ishwara-Chandra on *A deep search for high-redshift radio galaxies*; 12.11.2009 Maryam Arabsalmani on *Gravitational waves*; 12.11.2009 Golam Hossain on *Driving cosmic inflation on a bumpy road*; 19.11.2009 Soumen Basak on *Simulating weak lensing of CMB maps*; 08.12.2009 Hamsa Padmanabhan on *Aspects of electrostatics in a weak gravitational field*; Jaswant K. Yadav on *Fractal dimension as a quantifier of LSS clustering*; and 31.12.2009 Pradip Mukherjee on *Symmetries of the general topologically massive gravity in the Hamiltonian and Lagrangian formalisms.*

Colloquia

19.10.2009 Gerry Skinner on *The Swift / Bat hard X-ray survey*; 26.11.2009 Nobuyuki Kanda on *Japanese future gravitational wave projects on and off earth!*

International workshop on High Performance Computing in Observational Astronomy : Requirements and Challenges

Participants of the High Performance Computing workshop

An international workshop on High Performance Computing in Observational Astronomy: Requirements and Challenges was held at IUCAA during October 12 - 16, 2009. The meeting was organized jointly by C-DAC, IUCAA and NCRA. The aim of the meeting was to discuss computationally intensive techniques and new software approaches that were important for different branches of observational astronomy. Requirements for future large instruments including the Square Kilometre Array Radio Telescope, Giant Segmented Mirror Optical Telescopes, the Large Synoptic Survey Telescope, the ASTROSAT mission, the upgraded Giant Metrewave Radio Telescope and several others were addressed. There was enthusiastic participation from both academic institutions and the IT industry. The number of participants was about 150, including 45 from overseas.

The workshop had keynote lectures in the morning, reviewing the emerging computing requirements in various branches of astronomy and also the emerging technologies for high performance computing solutions. During the rest of the day, in-depth discussions were conducted on specific areas, such as radio interferometry, transient analysis, pulsar astronomy, coded mask imaging, data analysis for gravitational waves and cosmic microwave background, pipelines for large optical imaging and spectroscopic surveys, data streaming, storage and dissemination techniques as well as future computing, storage and network technologies.

It was clear from the presentations in this workshop that observational astronomy was poised to become a major area of HPC applications. For example, the planned Square Kilometre Array Radio Telescope will require 100 Petaflops of dedicated computing and several Exabytes of data storage to meet its regular operational requirements. Ideas of computing solutions appropriate for various applications were presented and debated upon. To keep the capital and operational costs in check, hybrid designs consisting of a mixture of FPGAs, GPUs and regular processors were widely preferred.

One of the most important outcomes of this workshop was the coming together of similar interest groups from different academic institutions as well as the industry. Ideas of many collaborations emerged, several of which are now being actively pursued. The workshop provided a platform to showcase the work going on in Indian academic institutions and IT industry to tackle some of the relevant computing challenges, which evoked wide interest among the large, upcoming international astronomy projects to enter into technical collaboration with India.

IUCAA Public Outreach Initiatives in IYA 2009

Ashok Rupner and Samir Dhurde, from IUCAA, conducted the Scientific Toy Making and Telescope and Spectroscopy workshop for the educators at Priyadarshini Planetarium, Thiruvananathapuram, Kerala during October 26 - 28, 2009. There were about 20 participants. Also, there was a training session on use of telescopes, and a sky observation in Tirunelveli, Tamil Nadu.

V. C. Kuriakose, Coordinator, IUCAA Reference Centre, Cochin, invited Arvind Paranjpye to give a series of public talks on Astronomy during October 27 - 30, 2009. These talks were delivered at St Teresas College and Maharajas College, Ernakulam; and Newman College, Thodupuzha; Alphonsa College, Palai; Catholicate College, Pathanamathitta; St Thomas College, Kozhencherry; and Devamatha College, Kuraviangad. He also gave a talk on doing astronomical observations using small telescopes at Priyadarshini Planetarium, Thiruvananathapuram.

The second last in the series of Galileoscope and spectroscopy workshop was conducted at Shri Guru Ram Rai (P.G.) College,

Dehradoon, by Arvind Paranjpye during November 14 - 15, 2009. The workshop was coordinated by V. A. Bourai, Principal and Dinesh Singh, Sr. Lecturer of the College. There were 20 schools that participated in the workshop by sending two students and one teacher. Like other workshops, children made their telescopes and those were handed over to them at the conclusion of the workshop. The children also viewed the planet Jupiter and its moons, which were then available in the sky at dusk, just the way Galileo would have seen those 400 years ago.

Mini-workshop on CMB Related Research

A mini-workshop on CMB Related Research was organized at IUCAA during the period December 8 -10, 2009. The informally structured meeting brought together a group of cosmology researchers from University of KwaZulu-Natal, Durban, South-Africa, and interested researchers in India to explore and initiate research collaborations. The topics covered were CMB anisotropy, Galactic foreground, Sunyaev-Zeldovich effect and cluster physics and SZ clusters surveys (in conjunction with X-ray, optical, IR cluster surveys). The participants included, the group at Durban led by Kavilan Moodley, Subhabrata Majumdar's group at TIFR, Mumbai, L. Sriramkumar at HRI, Allahabad, and members of IUCAA interested in CMB research. The meeting turned out to have the appropriate format and size that enabled close interactions in the focus area of research. This meeting was coordinated by Subharthi Ray from Durban and Tarun Souradeep from IUCAA. There are plans to hold similar meeting in the future in other areas of A &A research to bring the researchers of India and South Africa closer through the ongoing exchange programme.

Participants of the Mini-workshop on CMB Related Research

Astronomy Workshop for school teachers from Ambegaon Taluka

A two day Astronomy Workshop was conducted for the teachers of primary schools from Ambegaon Taluka at the Science Centre of IUCAA during December 22 - 23, 2009. This was all women's workshop, in which 24 teachers participated. The theme of the workshop was to discuss teaching methods in astronomy taught in their schools. The teachers also carried out various hands on activities, such as finding north-south direction by observing the shadow of a vertical Gnomon. On the night of December 22, a live sky show was conducted on All India Radio, Pune Station, with the teachers participating in this programme. Arvind Paranjpye conducted the workshop with inputs from Samir Dhurde on sky watching. Vidula Mahiskar and Ashok Rupner did science teaching aids demonstrations.

Participants of the Astronomy Workshop for School Teachers

Global Stone Sculpture Workshop

Glimpses of the Global Stone Sculpture Workshop

A Global Stone Sculpture Workshop was organised at IUCAA for two weeks during November 23 - December 5, 2009, in which 9 European sculptors participated and carved on marble stone. They carved on the general theme of Galileo and Astronomy, in resonance with the International Year of Astronomy and have left behind 9 wonderful pieces of art that IUCAA can be proud of. On two afternoons, the sculptors also gave presentations on their overall work to a general audience.

The sculptors included Michael Dan Archer (UK), Moises Preto Paulo (Portugal), Suzel Galia (France), Louise Plant (England), Vincent Williams, Lena Kristrom, Yvonne Nimar, Stefano Beccari (all from Sweden), and Caroline Ruizeveld (The Netherlands). They participated under the informal banner of Global Stone Workshop, which was organised by Stefano Beccari. It all came about with the efforts of our sculptor friend, Sharad Kapuskar, who was a regular participant of such workshops. IUCAA would like to warmly thank all the sculptors for their wonderful sculptures, and Stefano, Sharad and IUCAA staff for all their organisational and logistics effort.

Mini-workshop on European and Indian Approaches to Calculus

IUCAA conducted a mini-workshop on the theme of "European and Indian Approaches to Calculus" , during November 17 - 18, 2009. The immediate impetus for the meeting was the visit of Alex Craik (University of St. Andrews) who has a strong interest in the history of the ideas and techniques running through the development of calculus in Europe, and the main aim was to explore its parallels with the earlier work on the calculus of trigonometric functions by the so-called Kerala school. Five scholars from outside IUCAA were invited to give lectures. The speakers included:

(i) Alex Craik (University of St. Andrews), (ii) Madhukar Mallayya (Mar Ivanios College, Thiruvananthapuram), (iii) Roddam Narasimha (Jawaharlal Nehru Centre, Bengaluru), (iv) S. G. Dani (TIFR, Mumbai), (v) Bhagyashree Bavare (Mumbai University), and (vi) P. P. Divakaran (IUCAA).

There were times for much animated discussions inside and outside the lecture hall, with good participation from faculty and students of IUCAA as well as several other interested people from Pune. On the whole, the workshop can be said to have given most participants a clearer idea of the originality of the Indian side of the story of calculus, the European side of it being much better known to most of us.

IUCAA Preprints

Listed below are the IUCAA preprints released during July to September 2009. These can be obtained from the IUCAA library (library@iucaa.ernet.in). The preprints can also be freely downloaded from <http://www.iucaa.ernet.in/~library/main.html>

Himan Mukhopadhyay, Hideyuki Tagoshi, Sanjeev Dhurandhar, and Nobuyuki Kanda, *Detecting gravitational waves from inspiraling binaries with a network of geographically separated detectors: coherent versus coincident strategies*, IUCAA-38/09; Rakesh K. Rai, and Shantanu Rastogi, *The scattering and extinction properties of nanodiamonds*, IUCAA-39/09; S. V. Dhurandhar, T. Souradeep et al., AIGO: *a southern hemisphere detector for the worldwide array of ground based interferometric gravitational wave detectors*, IUCAA-40/09; Suresh Chandra, Amit Kumar, and M.K. Sharma, *Anomalous absorption in thioformaldehyde*, IUCAA-41/09; P. Noterdaeme, R. Srianand, and V. Mohan, *Quasars probing intermediate redshift star-forming galaxies*, IUCAA-42/09; Jan Hamann, Arman Shafieloo, and Tarun Souradeep, *Features in the primordial power spectrum? A frequentist analysis*, IUCAA-43/09; Nidhi Joshi, S. Jhingan, Tarun Souradeep, and Amir Hajian, *Bipolar harmonic encoding of CMB correlation patterns*, IUCAA-44/09; and R. Guimara~es, R., P. Petitjean, et al. *Damped and sub-damped Lyman-alpha absorbers in z > 4 QSOs*, IUCAA-45/09.

Visitors (October - December 2009)

Pranjal Trivedi, Anjan Ananda Sen, Gaveshna Gupta, N. Chandra, B. T. Ravishankar, John Hutchings, Saptarshi Mondal, G. K. Skinner, Bhuvnesh Jain, Santosh Vadawale, Ninan Sajeeth Philip, Eric Hivon, Kanti R. Jotania, V. Chinnappan, J. S. Bagla, Vasudha Bhatnagar, Christopher Harris, K.S. Dwarakanath, Arvind Nayak, M. Emre, B. Bulent Gucsav, Deniz Coker, F. Korhan Yelkenci, Pavan Chakraborty, Van Den Heever, Horrell Jasper, Stewart Gleadow, S. Ramakrishnan, V. N. Pandey, M. A. Malik, Jayashree Ray, Ashish Mahabal, G. C. Anupama, B. Eswar Reddy, Pankaj N., Vivek Gaikwad, Satyajit Roy, Proloy Banerjee, Santan Giri, Alokesh Ghosh, S. Bera, Pintu Kanthal, Rajat Kumar Khara, Abhirup Patra, Ranjit Kumar, Jithu Cheeran, Jithesh V., A. K. Sen, Abhishek Rawat, S. K. Pandey, Subir Bhattacharyya, A. R. Rao, Alireza Molainezhad, Ritabrata Biswas, Bhagyashree Bavare, Devraj Pawar, Tomaso Belloni, Teo Munoz Darias, Sara Motta, Joe Jacob, Y. Ravikiron, Golam M. Hossain, Christiana Birdie, Shiva Shankar, Sangamanatha Sasanur, Dipak Singh, S. Majumdar, Satej Khedekar, Anya Chaudhuri, Soumen Basak, S. G. Dani, Alex Craik, V. Madhukar Mallayya, Roddam Narasimha, Vinu V., Laxmikant Chaware, Vincent Williams, S. Kapuskar, Dan Archer, Louise Plant, Caroline Ruizeveld, Roberto Bricalli, Bassola Quinto, Suzel Galia, Lina Kristrom, Steffano Beccari, Moises Preto Paulo, N. Kanda, H. Tagoshi, Hirotaka Takahashi, K. Subramaniam, Sushant Ghosh, E. van den Heuvel, Alain Omont, Germani Cristiano,Vanessa Ross, Kavilan Moodley, M. Hilton, Carla Carvalho, Simon Muya Kasanda, Subharthi Ray, Jaswant Yadav, Hum Chand, Sourabh Nampalliwar, Darell Moodley, L. Sriramkumar, B. R. Iyer, Alireza Aghaee, Minu Joy, M. C. Radhakrishna, R. C. Sobti, T. R. Seshadri, Somak Raychaudhury, T. Hioki, Ayako Ono, Gaur Bhattacharya, Pradip Mukherjee, Nagendra Kumar, Shrikumar Banerjee, Karuna Joshi, K. P. Harikrishnan, A. A. Usmani, S. N. Borah, Vivek M., Jibitesh Dutta, Ujjal Debnath, Sarbari Guha, P. Balaram.

Visitors Expected

January : P. N. Pandita, NEHU, Shillong; Tarun Deep Saini, IISc; Shruti Tripathi, Gorakhpur University; Sravani, Osmania University; Shuvendu Chakraborty, Seacom Engineering College; N. G. Ibohol, Manipur Univ.; G. C. Anupama, IIA; Imran Mohd., Aligarh Muslim University; Rashid Haroon, Aligarh Muslim University; Rizwan Shahid Khan, Sukhadia University; Aurora Simionescu, KIPAC, USA; Norbert Werner, KIPAC, USA; P. Vevekananda Rao, Osmania Univ.; D. Ojha, TIFR; Joe Jacob, Newman College; Philippe Prugneil, Lyon Observatory, France; Prateek Sharma, Berkeley, USA; Martin Zimmerman; Switzerland; Theo Schaerer; Switzerland; Avas Khugaev, Institute of Nuclear Physics, Uzbekistan; Ranjan Sharma, St. Joseph's College, Darjeeling; Santanu Datta, Kalpana Chawla Centre for Space & Nano Sciences, Kolkata; Shukla Mukhopadhyay, Kalpana Chawla Centre for Space & Nano Sciences, Kolkata; Tanuka Chattopadhyay, D. B. College, Kolkata; T. K. Menon, University of British Columbia, Canada; S. N. Hasan, Osmania Univ.; Priya Hasan, Osmania Univ.; Surajit Chattopadhyay, Pailan College of Management & Technology, Kolkata; Devendra Lal, University of California, San Diego, USA; Wei Tou Ni, National Tsing Hua Univ.; Ninan Sajeeth Philip, St. Thomas College, Kerala; D. B. Vaidya, Gujarat; and Sharanya Sur, University of Heidelberg, Germany.

February : Jeena K., Calicut University; Jithesh V., Calicut University; Nawaf Nazir, NIT, Srinagar; and Soumyadip Samui, SISSA, Italy.

March : Mohd. Mehdi Kalam, Netaji Nagar College for Women, Kolkata; Raj Bali, Rajasthan Uniersity.; Roustam Zalaletdinov, National University of Uzbekistan; Sharam Abbassi, IPM, Iran; Saibal Ray, Govt. College of Engg. & Ceremaic Technology, Kolkata; Farook Rahman, Jadavpur University; and Kousik Chakaraborty, Govt. Training College, Hooghly.

Long Term Visitors

P. P. Divakaran (till October 2010); R. Tikekar (till May 2011); Ishwara Chandra, NCRA (till February 2010); N. Sajeeth Phillip (till January 2011).

SAFED BABUL

(Acacia leucophloea)

As one waits to receive a guest for the transport at the Akashganga Gate, one cannot help but to notice a moderate size tree that appears to be malformed and has crooked trunk with thorny black and trough look, at the right side of the path leading to the main building, is Acacia leucophloea. The tree is found in the arid regions of Indian subcontinent and southeast Asia and is native of Bangladesh, India, Indonesia, Myanmar, Nepal, Pakistan, Sri Lanka, Thailand, Vietnam.

The generic name 'acacia' comes from the Greek word 'akis', meaning point or barb and leucophloea from the Greek leukos (white), phloem (fibre, bast). We find its Sanskrit name as arimedah, shwet barhura and in Hindi it is called safed babul, safed kikkar, arinj, reonja.

Though it looks rough and thorny it is in fact a beautiful tree with vivid coloured leaves and conspicuous. Flowers are light-yellow to cream in colour and have mild scent. The tree has many usages like the tree is good for reforestation at poor soils in low rainfall areas. It is also suitable as a firebreak due to its fire resistance properties. .

The germinated seeds are cooked and eaten as a vegetable. The inner bark is used to make fish nets and rough rope. Its wood is strong, heavy, hard and seasons well and takes a good polish. The utilization of this species is limited, because its wood has irregular interlocked grain, a rough texture and is difficult to work on.

Greenish-yellow scented flowers (4-5mm) appear in dense panicles near the end of the branches. The tree remains leafless during winter and new leaves appear in March-April. It is planted as a shade tree in gardens.

Note : We conclude this column "Know Thy Trees" with this issue.

... Farewell to

Gauri V. Kulkarni, who has completed her tenure as a project Post-doctoral Fellow.

Gaurang Y. Mahajan, who has submitted his Ph.D. thesis to the University of Pune.

Siddharth S. Malu, who has joined the Raman Research Institute, Bengaluru, as a Post-doctoral Fellow.

Saumyadip Samui, who has joined the SISSA, Italy, as a Post-doctoral Fellow, to work on the Herschel project.

Sharanya Sur, who has joined the Institute for Theoretical Astrophysics, University of Heidelberg, Germany, as a Post-doctoral Fellow.

Welcome to ...

Bhaswati Bhattacharyya, who has joined as a Post-doctoral Fellow. Her areas of research are Pulsars : Search, Single Pulse Study, and Polarization.

Khagol **(the Celestial Sphere) is the quarterly bulletin of IUCAA**

We welcome your responses at the following address:

IUCAA, Post Bag 4, Ganeshkhind,
Pune 411 007, India

Phone **(020) 25691414; 25604100**

Fax **(020) 25604699**

email : publ@iucaa.ernet.in

Web page **: http://www.iucaa.ernet.in/**