IUCAA
ISSN 0972-7647

KHAGOL
खगोल

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

No. 79 July 2009

Editor: T. Padmanabhan (nabhan@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)

Content.....

At the helm...

Dr. Anil Kakodkar

IUCAA is happy to announce that the President of IUCAA Council, Professor S. K. Thorat has appointed Dr. Anil Kakodkar as Chair, IUCAA Governing Board for another term of 3 years from August 21, 2009 and Professor Ajit Kembhavi as the new Director, who will take over from me on August 31, 2009 on my superannuation. Heartiest congratulations to both of them. The IUCAA family looks forward to their enlightened and imaginative leadership and guidance in taking IUCAA along a path of progress, with ever increasing slope, on the astronomy canvas.

Naresh Dadhich
Director

Professor Ajit Kembhavi

Congratulations to...

J. V. Narlikar on receiving the ***Swatantryaveer Savarkar Vidnyan Puraskar 2009,*** awarded by Swatantryaveer Savarkar Rashtriya Smarak, Mumbai.

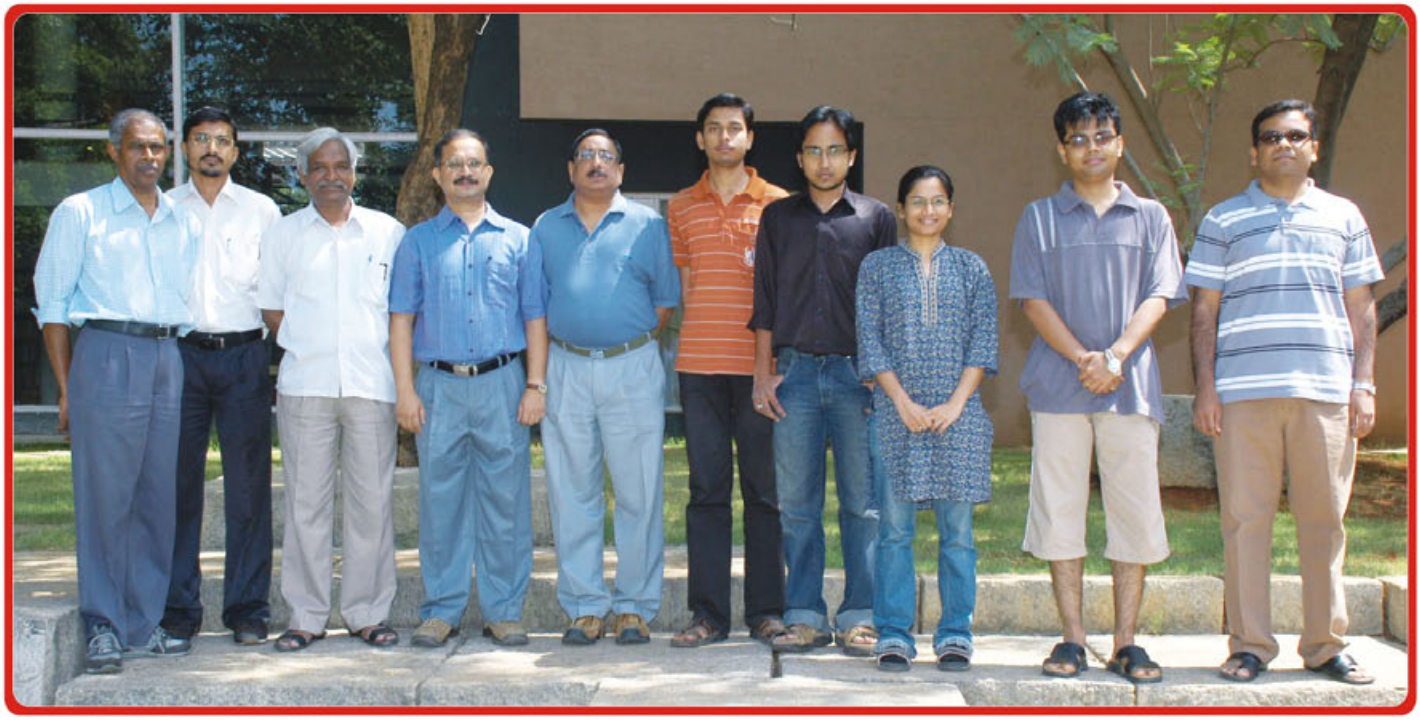
Ashok Rupner on being adjudged one of the winners of the Innovative Workshops at ***"Scifest Africa 2009"***, Grahamstown, South Africa.

Refresher Course in Astronomy and Astrophysics for College/University Teachers

Participants and Lecturers of the Refresher Course in Astronomy and Astrophysics

The Refresher Course in Astronomy and Astrophysics for college and university teachers was held during May 11 - June 12, 2009 at IUCAA. Participants were selected from all over India and twelve highly interested participants attended the course. The course introduced Astronomy and Astrophysics in the first week, and covered more advanced topics in the following weeks. An important aspect of the programme was the data analysis sessions, where the participants were given hands-on experience on the use of computers, astronomical data archives and virtual libraries. They also analysed photometric and spectroscopic data obtained with 2 m optical telescope at IUCAA Girawali Observatory (IGO). Majority of the lectures were delivered by the faculty members of IUCAA. The post-doctoral fellows and research scholars also delivered the lectures, and conducted lab sessions with enthusiasm. A few faculty members and visitors from outside IUCAA have also delivered lectures. The scientific and the administrative staff were of vital help in ensuring that the course ran smoothly. Gulab Dewangan was the faculty coordinator of the Refresher Course, and A. N. Ramaprakash assisted in the coordination. The participants also visited the IGO and the Giant Metrewave Radio Telescope (GMRT). At the end of the course, it was clear that the participants benefited substantially and were inspired to take up research and teaching in astronomy and astrophysics at their home institutions.

Vacation Students' Programme



Participants and Lecturers of the 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 11 - June 26, 2009. Exceptionally motivated final year B.Sc Students were also invited. This year, four students (two of whom were B.Sc.) participated in this programme. The participants attended about 50 lectures, dealing with a wide variety of topics in Astronomy and Astrophysics, given mostly by the members of IUCAA. They also did a project with one of the faculty members of IUCAA during this period. K. Subramanian was the faculty coordinator of this programme.

IUCAA Seminars

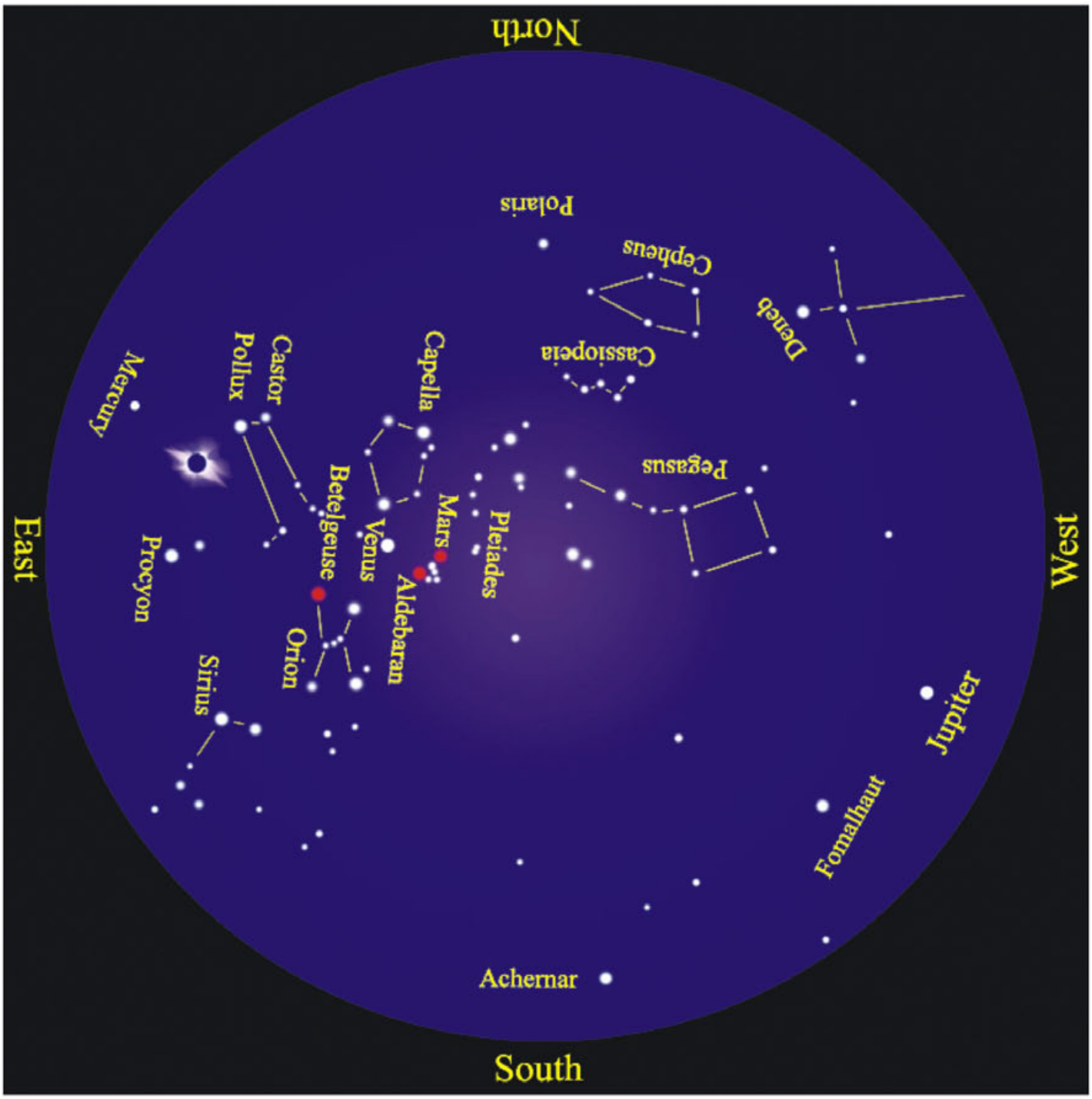
08.04.2009 Satish Chand Abbi on The Bosonic effects in laser Raman spectroscopy; 15.04.2009 Sergey V. Chervon on Exact inflation and calculation of cosmological parameters; 22.04.2009 J. Maharana on S-duality and string cosmology; 30.04.2009 Sourav Sur on Crossing the cosmological constant barrier with multifield K-essence/quintessence; 11.06.2009 Harsha Raichur on Determining the orbital parameters of Be-star x-ray binaries; 23.06.2009 Siddharth Malu on Fizeau beam combination for CMB polarization instruments; 24.06.2009 Kuntal Misra on Dust and gas in the local environment of gamma ray bursts; 24.6.2009 Pasquier Noterdaeme on Quasars probing galaxies; 25.6.2009 Rajdeep M. Chatterjee on Radiation from a collimated relativistic fireball; Vikram Kisan Khaire on Astrophysical turbulence; Nimisha Kumari on Influence of black holes on the cores of galaxies; Siddartha S. Verma on Measurement of focal ratio degradation in optical fibres used in astronomy ; 25.6.2009 Radouane Gannouji on Dark energy and modified gravity; and 29.6.2009 Kinjal Banerjee on Looking for Casimir effect in polymer quantization.

School Students' Summer Programme - 2009

Various activities during the School Students' Summer Programme

The annual School Students' Summer Programme was held from April 20 to May 29, 2009. Thirty students of class VIII and IX were invited to work on a project for a week at IUCAA. During the period, starting every Monday, teams of 2-6 students were guided on scientific projects by volunteering scientists. In the spirit of true research, the students and guides worked together unfettered by a set syllabus and time schedules. The students were given access to the library and the facilities of Science Exploratorium - the Muktangan Vidnyaan Shodhika, such as the library, computer section and workshop. To give a finishing touch to their project, on the last working day of every batch, the student teams made presentations about the work they did during the week and submitted a report. This year, the students carried out projects under the supervision of Dipankar Bhattacharya, Jayant Narlikar, Gaurang Mahajan, and Samir Dhurde.

The projects were diverse, covering wide range of topics, from optics to geo-synchronous satellites to soil-testing of IUCAA. Some students estimated the latitudes of various places seeing the IUCAA Foucault pendulum. A team made a collection of soil samples around IUCAA to find out various facts about geology and suggested changes in soil acidity of Newton's Apple tree in their report. Others studied the laws of optics and delved into calculus before they do it in school. Besides the team project, the students also had time for joint activities at MVS such as solving puzzles, making scientific toys, exploring the IUCAA Science Park and the new Organic Waste Converter Plant, etc.



The map shows positions of stars and planets during the total solar eclipse on July 22, 2009. The map is made for the latitude and longitude of Patna, where most people are heading to. Brightness of stars is slightly exaggerated for the sake of clarity. Since the star maps are to be used in the direction of the sky the two directions (either north-south or east-west are flipped).

IUCAA International Year of Astronomy Programmes
G++ Galileoscope and Spectroscopy Workshops

As reported in the previous issue of Khagol, IUCAA in association with universities and other institutions is conducting telescope and spectroscopy workshops for school students. In the workshop, about 20 groups of two students and a teacher are invited to make a simple Galileoscope, using 45 mm achromatic lens, ramsdon eyepiece, and a 45 degree mirror. Galileoscope++ (two plus indicate that the telescope has an achromatic lens, a 45 degree mirror and is on a stand).

The workshops conducted were as follows.

April 1 -15: In association with the Physics Department, Utkal University, Bhubaneswar. The workshop was coordinated by Pushpa Khare.

April 11-12: In association with the Indian Institute of Science Education and Research, Kolkata. The workshop was coordinated by Narayan Banerjee.

April 20-21: In association with the IRC, Department of Physics, Cochin University of Science and Technology, Kochi. The workshop was coordinated by V. C. Kuriakose.

May 24 -25: In association with the Physics Department, North Bengal University, conducted at Silchar. The workshop was coordinated by B.C. Paul.

Pictures from Bhubaneswar, Kolkata, Kochi and Silchar

IUCAA Preprints

Listed below are the IUCAA preprints released during April to June 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

Pramoda Kumar Samal, Rajib Saha, Jacques Delabrouille, Simon Prunet, Pankaj Jain, Tarun Souradeep, *CMB polarization and temperature power spectra estimation using linear combination of WMAP 5-year maps*, IUCAA-10/09; S. B. Pandey, A. J. Castro-Tirado, M. Jelinek, Atish P. Kamble, K. Misra, A. N. Ramprakash, V. Mohan (et. al.), *Multi-wavelength observations of afterglow of GRB080319B and the modeling constraints*, IUCAA-11/09; N. Gupta, R. Srianand, P. Petitjean, P. Noterdaeme, and D. J. Saikia, *A complete sample of 21-cm absorbers at z ~ 1.3: Giant Metrewave Radio Telescope survey using Mg II systems,* IUCAA-12/09; Rajeev Kumar Jain, Pravabati Chingangbam, L. Sriramkumar, and Tarun Souradeep, *The tensor-to-scalar ratio in punctuated inflation*, IUCAA-13/09; Mudit K. Srivastava, Swapnil M. Prabhudesai, and Shyam N. Tandon, *Studying the imaging characteristics of Ultra Violet Imaging Telescope (UVIT) through numerical simulations*, IUCAA-14/09; and Sharanya Sur and Axel Brandenburg, *The role of the Yoshizawa effect in the Archontis dynamo*, IUCAA-15/09.

Visitors Expected

July

Shuvendu Chakraborty, Seacom Engg. College, West Bengal; Sushant Gupta, University of Lucknow; Jeena K., Calicut University; Jithesh V., Calicut University; N.K. Lohani, M.B. Government, P.G. College, Nainital; P.N. Pandita, NEHU, Shillong; Anirudh Pradhan, Hindu P.G. College, Ghazipur; Vandana Rai, Hindu P.G. College, Ghazipur; Anup K. Singha, Calcutta Inst. of Tech., West Bengal; Alexander Petrov, Sternberg Astron. Inst., Moscow; Paniveni Udayashankar, NIE, Institute of Technology, Mysore; Padmini Yadav, Hindu P.G. College, Ghazipur; Ronojoy Adhikari, IMSc., Chennai; Kavita Gangal, CBS, Mumbai; Kanti Jotania, M.S. University of Baroda, Gujarat; P. McCarthy, Observatories of Carnegie Institution of Washington USA; Matt Johns, Observatories of Carnegie Institution of Washington USA; B. E. Reddy, IIA; G.C. Anupama, IIA; Rakesh Mohan, IIA; A.K. Saxena, IIA; B.R. Prasad, IIA; Suresh Chandra, SRTMU, Nanded; B. K. Kumthekar, SRTMU, Nanded; T.P. Prabhu, IIA; S.R. Valluri, Univ. of Western Ontario, Canada; and P. N. Pandita, NEHU.

August

Robert Botet, University of Paris; Edith Hadamsick, University of Paris; Aseem Paranjape, Mumbai; T. Singh, BHU, Varanasi; Sudhanshu Barway, SAAO, South Africa; and D.B. Vaidya, Gujarat.

About 100 persons are expected to attend the First IUCAA Reunion Meeting, to be held at IUCAA during August 11-14, 2009.

September

Souvik Ghose, NBU, Darjeeling; Bhola Ishwar, BRA Bihar University, Muzaffarpur; KSVS Narasimhan, Chennai; and Bhuvnesh Jain, University of Pennsylvania, USA.

Visitors (April - June 2009)

Yash Bhatnagar, Amey Gupta, Abhishek S. Parihar, Shirish Shakya, Anvita Abbi, Satish C. Abbi, B.R.S. Babu, Ajay Chaudhuri, Sergey Chervon, Kala Janan, Nimmy Jayesh, K. Jeena, V. Jithesh, Mahadev Swami, Ashok Vajpeyi, M. Vivek, Nitin Wadnerkar, Vineet K. Yadav, J. Maharana, Sourav Sur, Samarpita Bhattacharya, Ritabrata Biswas, Subenoy Chakaraborty, Suresh Chandra, Surajit Chattopadhyay, Laxmikant Chaware, Devdeep R. Choudhury, Ujjal Debnath, Sarbari Guha, K.P. Harikrishnan, Kanti Jotania, Ashwini Kale, Pushpa Khare, Amit Kumar, Nairwita Mazumdar, Anvar Shukrov, G.P. Singh, Jitesh Tripathi, Ganpat D. Patil, K.D. Patil, P.K. Srivastava, A.A. Usmani, Nidhi Joshi, Bhagvat K. Kumthekar, D. Narsimha, Daniel J. Carney, R.Tikekar, Asis Chattopadhyay, S.N.A. Jaaffrey, V.C. Kuriakose, S. Mukherjee, S.K. Pandey, B.C. Paul, N. Sajeeth Philip, T.R. Seshadri, H.P. Singh, Annapurni Subramanian, R. Bharuthram, Deepak Jain, Sanjay Jhingan, M. Vivek, Manjiri Bagchi, Swarnadeep Biswas, Archana Bora, Zafrul Hasan, Imran Mohd., Joe Jacob, Sanatan K. Nath, Patrick Petitjean, Subharthi Ray, S. Sahay, Tamal Sarkar, M. Sivakumar, Pranjal Trivedi, B.G. Anandrao, G. C. Anupama, Moncy John, Anoop Srivastava, Shruti Tripathi, Asis Chattopadhyay, Tanuka Chatterjee, C.S. Stalin, Jithu Cheeran, Subodh Sharma, Rajdeep Mohan Chatterjee, Vikram Kisan Khaire, Nimisha Kumari, Siddartha S. Verma, M.D. Benoy, Arun Harilal Bhinde, Abdul Kader, Raju Mathew T., Annie Rathnakumari E., Saroj Kumar Sahu, Pushpa Selvi M., Sandeep Kumar Soni, and M. Umadevi

... Farewell to

Tanushree Basu, who has joined the Physical Research Laboratory, Ahmedabad, as a Junior Research Fellow.

Know Thy Trees -14 **Arvind Gupta and Arvind Paranjpye**

YELLOW ELDER

Fam. Bignonaceae. Yellow Elder, Trumpet Flower

Next to the Foucault Pendulum in IUCAA, there is a door leading to the parking lot. As you exit the door and turn left or right you encounter a lovely specimen of the Yellow Elder. Its botanical name is Tecoma stans - Tecoma being its Mexican name and stans meaning erect.

Though a native to South America, Tecoma is now widely naturalized in tropical regions. Its handsome, yellow flowers and elegant foliage have made it a popular garden shrub. This small size tree retains its attractive appearance practically throughout the year. The bark is light brown and corky. The leaves have tapering points and serrated edges. They are smooth but not glossy. The end leaflet is usually the longest. The new leaves have a beautiful fresh colour, but after the dry season, they become dull and tired.

The clear yellow, trumpet shaped fragrant flowers appear in close, drooping clusters. The flowers hide amongst the branches, in and around the shrub. Inside, the throat is delicately etched with orange. The fruits appear in bunches of long, slender capsules, green at first, but later turning brownish.

The principal flowering season is during the cold weather, but most shrubs produce a few clusters throughout the year.

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/**