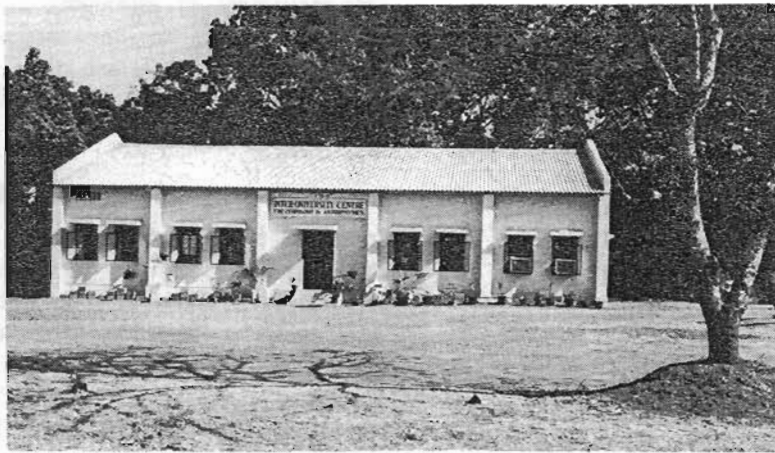


khagol

THE IUCAA BULLETIN

January 1990



ADITI - the first IUCAA building

IUCAA & ITS BULLETIN

The Inter-University Centre for Astronomy and Astrophysics (IUCAA) was set up by the University Grants Commission (UGC) as part of the national objective to nucleate and boost up the teaching and research in Astronomy and Astrophysics (A & A) within the university system. In recent years several new facilities in observational astronomy have come up in the country, or are in the process of completion: these efforts are in response to the urge to include A & A amongst the national thrust areas in science and technology. However, without a trained manpower, these efforts will not achieve their targets. Hence the UGC took a conscious decision to create an IUC in A & A: for, in the last analysis the source of manpower is to be found only in our university system.

What are the aims and objectives, modus operandi and other features of IUCAA? These details are found in IUCAA's Project Report published in July 1988. The progress made by IUCAA towards these objectives till 31.3.89 is given in its Annual Report. Both these publications are available from the Public Relations Officer of IUCAA.

IUCAA is a new experiment: it is only the second inter-university centre of its kind (the

first being the Nuclear Science Centre in Delhi). For it to succeed two basic requirements have to be met. First IUCAA has to have a small but academically well qualified core faculty and excellent facilities like a library, computers, laboratories etc. Secondly, the universities should look upon it as their own 'field station' to be used by their staff and students as part of their teaching and research programmes in A & A.

It is essential therefore for IUCAA to inform the university community and others about its various projects and facilities. To this end the IUCAA Bulletin, KHAGOL, is being launched. It will periodically publish information on its core developmental activities and its visitor programmes. It will invite participation and feedbacks from its readers through announcements of new and ongoing projects.

I therefore urge you to read, display and circulate the IUCAA Bulletin amongst your colleagues and friends and above all, respond to the various announcements in it. I will also welcome suggestions for improvement of IUCAA, whether solicited or otherwise.

Jayant Narlikar
Director, IUCAA

CORE ACTIVITIES

M.Sc. Teaching

To begin with we have started giving courses in astrophysics in the second year of M.Sc. Physics programme of Poona University. We strongly believe that IUCAA's faculty should actively participate in the teaching of astronomy and astrophysics in universities. A serious thought is being given to the question of how IUCAA should involve itself in the teaching of astronomy & astrophysics at the M.Sc. level in a way that is accessible to all the universities.

Graduate students

In August 1989 IUCAA selected on the basis of extensive interviews its first batch of three research students and is running graduate courses for them for the first year of their graduate programme. The first year is taken as a probationary one and the students are registered for a Ph.D. degree only after a satisfactory performance in the graduate school. These students are expected to clear the CSIR/UGC NET examination during this first year, if they have not already done so before selection. IUCAA will nationally advertise for the 1990 batch in the spring of this year. The selection will be made in late June/early July on the basis of a written test and interviews.

Post Doctoral Fellows

IUCAA also offers post doctoral fellowships of upto 5 years duration. The announcement for recruitment of post-docs is through circulars to all relevant institutes and universities as well as by advertisements in the national dailies and international journals. In addition post-docs under other schemes operated by the CSIR, TWAS etc. are also invited to work at IUCAA.

VISITOR PROGRAMMES

Introductory Summer Schools

IUCAA proposes to hold summer schools to introduce highlights of A & A to students studying for B.Sc., B.Tech or M.Sc. courses. This activity will be in continuation of the earlier

Bangalore summer schools and will be undertaken in collaboration with the A & A groups in Bangalore. It is proposed that from this year onwards these schools will be held alternately at Pune and Bangalore. The idea is to communicate excitement in astronomy and astrophysics to students before they have made up their mind about the discipline which they wish to pursue. This summer the school will be held at Pune in June.

Inter-University Graduate Schools

In due course IUCAA proposes to organise graduate schools of 10 to 12 weeks duration for fresh Ph.D. students. In such a school students working for a Ph.D. in astronomy and astrophysics in different universities are brought together at IUCAA for a semester of courses by experts from all the astronomy institutes on the exciting and interesting problems in various disciplines.

Mini-Workshops

In a mini-workshop it is envisaged to bring together about a dozen active workers in a given area for a week for intense interaction and discussion. Two such workshops organised in 1989 have proven to be very successful. IUCAA proposes to organise about 4 such workshops during 1990-91 at various university campuses.

Advanced Mini-Workshops

The idea here is to organise a workshop of a limited number of active workers in a given discipline concentrated around the visit of a well-known expert in a given field. One such workshop was organised in July 1989, centered around the visit of Professor Abhay Ashtekar, distinguished Professor of Physics at the University of Syracuse. This experiment was first tried in December 1986 and it has proven very successful.

Indo-US Schools

In collaboration with the US astronomers it is proposed to organise, over a period of five years, two schools annually, one theoretical and the other observational, on selected topics in A&A. The proposal has been submitted to agencies coordinating the INDO-US collaborative programmes.

A typical school will have about 5 experts each from U.S. & India and about 40 participants. Its duration will be about 3 weeks.

ACADEMIC EVENTS AT IUCAA

Schools and Workshops

Schools and workshops will be frequently held at IUCAA once the infrastructure is ready. A small beginning has however already been made in this direction, as the list below shows :

July 1989

Professor Abhay Ashtekar, who is a Visiting Professor at IUCAA visited Pune during this period. An advanced mini-workshop on Quantum Gravity was held around his lectures.

September 1989

An Inter-University Graduate School on Gravitation & Cosmology was hosted by IUCAA. About forty students and eleven resource persons who participated in the School were housed on the beautiful campus of the Institute of Armament Technology.

December 1989

A workshop on Astronomical Instrumentation was held at IUCAA to formulate its Instrumentation Programme and plan its Instrumentation Laboratory. 34 participants from within India and 7 from abroad participated. The foreign participants included Professor Margaret Burbidge and Professor Geoffrey Burbidge of the Center for Astrophysics and Space Sciences, University of California at San Diego, Professor Shrinivas Kulkarni of the Astronomy Department at Caltech, Dr. Richard Green of the National Optical Astronomy Observatories, Tucson, Dr. Upendra Desai of the NASA Goddard Space Flight Centre and Dr. K. Sivanandan of the National Research Laboratory, Washington.

Colloquia and Seminars

IUCAA has instituted a colloquium where distinguished academics are invited to deliver talks on their fields of interest. These talks, held on Mondays, are meant to present a wide cross section of intellectual activity in the country and are open to the entire academic community. The first colloquium was given by Professor Madhav Gadgil on 16.10.89 and a special colloquium was given by Professor S. Chandrasekhar, who is also an Honorary fellow of IUCAA, on 16.12.89. The colloquia given in 1989 were:

Madhav Gadgil -

Diversity: cultural and biological.

Rajaram Nityananda -

Coherence in optics and astronomy.

S. Chandrasekhar -

How one may explore the physical content of general relativity?

IUCAA also arranges seminars by visiting scientists. Seminars given in 1989 by visitors to IUCAA were:

Tanmay Vachaspati -

The non-relativistic Coloumb problem on a cone.

Ram Sagar -

Variable interstellar extinction and the Pleiades problem in young open clusters.

Kameshwar Wali -

Supercollider - Why do we need it?

Leon Mestel -

Galactic magnetic fields.

Roberto Terlevich -

Active galactic nuclei without black holes.

The IUCAA Journal Club provides an informal forum for discussing important research papers, work under completion, half baked ideas etc. The JC meets on Wednesdays.

FOUNDATION DAY LECTURE

The first lecture in this series instituted to celebrate IUCAA's Foundation Day was delivered on 29 December 1989 by Professor Govind Swarup on "The Search for a Cold Gaseous Phase of the Universe".

ASSOCIATESHIP PROGRAMME

This very important programme is described in detail in the Announcement at the end of this Bulletin.

THE SCIENTIFIC ADVISORY COMMITTEE MEETING

The SAC-IUCAA had its first meeting on December 15-16, 1989 and it was attended by Professors G.R. Burbidge and V. Radhakrishnan. The Committee's report and recommendations will be placed before the Governing Body of IUCAA for its deliberations and action.

MOU WITH UNIVERSITIES

IUCAA wishes to sign a Memorandum of Understanding (MOU) with any university interested in interacting with IUCAA. The broad framework of the MOU is being worked out and will be circulated to concerned universities after its form is approved by the Chairman, UGC.

THE CARDIFF CONNECTION

IUCAA has a collaboration in data analysis in gravitational wave detection with the gravity wave research group at the University of Wales, Cardiff. Two IUCAA post-doctoral fellows are at the moment in Cardiff, working on these frontier problems.

FACILITIES AT IUCAA

IUCAA has acquired a SUN computer network with image processing software. The system is rapidly growing into the most advanced one of its kind in the country. The network will provide a very sophisticated but easy-to-use computer environment to the core staff as well as to the visitors.

IUCAA's rapidly growing library already has over 2000 books and subscribes to about 50 journals in physics and A & A. Over the next 5 years the library should develop into a good resource centre for A & A.

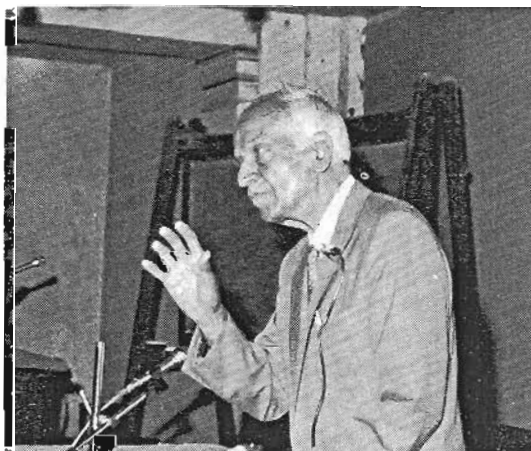
A Celestron 14" telescope is being ordered to be used for instrumentation testing, for teaching and for amateur astronomy.

The Instrumentation Laboratory of IUCAA is at the planning stage and it is expected that the basic infrastructure (manpower, instruments and space) will be set up during 1990. The laboratory is expected to be used extensively by the university community for experimental projects in A & A.

BUILDINGS

IUCAA took a deliberate decision to build staff housing first rather than the office building because houses can be used for offices whereas the reverse is not possible. The construction of Director's bungalow and twenty faculty houses which began in September 1989 is progressing well and is expected to be completed by September 1990. The work on the office buildings and the guest house is expected to commence in the first half of 1990 and to be completed in early 1992.

As a temporary measure IUCAA is operating in a shed named ADITI which houses the computing and communications systems and the administrative staff. The GMRT Centre has very kindly made five offices available to IUCAA's academic staff, as well as space for the IUCAA library.



Professor S. Chandrasekhar at IUCAA

ANNOUNCEMENTS

MINI-WORKSHOPS

Faculty members of universities are invited to submit ideas and/or specific proposals to In-charge, Visitor Programme, IUCAA under this scheme, the details of which are as follows :

Purpose

To bring together active research workers in some particular field of Astronomy and Astrophysics.

Number of participants

About 15 including 5 local participants.

Type of participants

Active workers or students seriously interested in research in the topic of the workshop. At least half the participants must be from the universities.

Duration

5 - 7 days.

Budget

This is a low budget activity that seeks to emphasise the academic aspects, rather than the social ones. The budget may be computed as per norms prevailing in the workshops sponsored by national agencies like UGC, DST, CSIR etc. The funds will be provided by IUCAA.

Mini-workshop on Relativistic Astrophysics

A mini-workshop on relativistic astrophysics will be held at the Physical Research Laboratory, Navrangpura, Ahmedabad 380 009, during 5-11 November 1990. Active workers wanting to participate in the workshop should send a plain paper application and CV to Professor A. R. Prasanna at PRL by 8 March 1990. Selected persons will be sent invitations by the end of April 1990.

INSTRUMENTATION PROJECTS

Faculty members and students of universities who wish to participate in IUCAA's astronomical instrumentation projects may write to the In-charge, Instrumentation Laboratory, IUCAA. These projects can be conducted at IUCAA, or

at the concerned university, or in some combination of the two. The involvement of research students will be encouraged.

ASSOCIATESHIP PROGRAMME

Faculty members of a university or post-graduate department in a college, with research interest in Astronomy, Astrophysics, Gravitation Theory and other related areas are invited to apply to the Associateship Programme of IUCAA. Associates will be selected for a period of three years, during which they will visit IUCAA for long and short periods to develop their interest and expertise in the above areas, through any of the following means :

- the use of IUCAA's in-house facilities like the specialized library, advanced computing facilities etc. in implementing research projects already undertaken by the associate;
- discussion and collaboration with IUCAA's faculty, post-doctoral fellows and visiting experts;
- participation in observational programmes using national and international astronomical facilities, and in data reduction;
- participation in research and developmental projects in IUCAA's instrumentation laboratory;
- joint research projects with members of other universities or post-graduate colleges.

The associateship programme has been designed to promote mobility and to this end the travel and local living expenses of an Associate for these visits will be borne by IUCAA as per its rules. The associates will continue to carry out their existing commitments at their parent organisation. However, since IUCAA has been created by the UGC as a 'field station' for the universities, it is expected that those visiting IUCAA under this scheme will be treated as on duty by their respective organisations. Some of the academic programmes will be scheduled during university vacation periods.

Applications are invited for selection of the first batch of Associates, for the term 1 July 1990 to

30 June 1993. Interested persons should send their applications, along with their curriculum vitae, list of publications, and a brief write up on the work they wish to carry out as a part of the programme, to In-charge, Visitor Programmes, IUCAA, so as to reach him before February 20, 1990. A copy of the application should be forwarded to the same address through the candidates' Departmental or Institutional Heads. Applicants should also arrange to send confidential assessments of their work by two experts in their field. Successful applicants will be informed of their selection sometime after April 1, 1990.

INTER-UNIVERSITY COLLABORATIONS

Applications are invited from groups of two or more research workers for collaborative work amongst themselves to be carried out at IUCAA, or at the place of work of one of the persons in the group. The research workers should be normally situated in different universities, and should be in the process of active collaboration. IUCAA will provide them a place to meet, with all research facilities, where the collaborative work can be done.

The programme as described above will commence towards the end of 1990, when some guest accommodation will be available at IUCAA. As an interim measure, IUCAA will support visits between collaborators to each other's place of work for short durations. Applications for this programme, along with the information as required in the associateship programme may be sent to the In-charge, Visitor Programmes, IUCAA.

GOD AND THE SERC

We had this news from Leon Mestel who heard it from Hermann Bondi who presumably had it directly from GOD :

God applied for a research grant from the Science and Engineering Research Council to do further work on CREATION. His application was turned down on three counts, which were as follows :

- 1. It was a long time since God had last worked in this field.*
- 2. His experiments could not be repeated by any scientist since then.*
- 3. He did not publish his work in a refereed research journal but only in a book.*

VISITORS SOON EXPECTED AT IUCAA

January

Professor Bernard Schutz
Dr. Brian Meers
Dr. Alain Brillet

February

Professor Sir Hermann Bondi
Professor Geoffrey Burbidge

March

Professor William Fowler

HOW TO COMMUNICATE WITH IUCAA?

Post IUCAA, Post Bag 4
Ganeshkhind
Pune 411 007, India
Phone 0212-336413
Fax 0212-335760
Telex 0145658 GMRT IN
e-mail root%iucaa@shakti.uu.net
uunet!shakti!iucaa!root

note : to contact some specific person in IUCAA by e-mail, replace root in the above e-mail address by the first name of the person.