

COMMISSION 46: TEACHING OF ASTRONOMY (ENSEIGNEMENT DE L'ASTRONOMIE)

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1. INTRODUCTION

It should be reminded that astronomy education is important for two main reasons. First, because it affects the quality of the training of the next generation of astronomers; and second because it affects the general public's understanding and appreciation of what astronomers do.

Commission 46 is a commission somewhat out of the ordinary and can in some ways be considered as an extended arm of the Executive Committee of the IAU. National Committees or Adhering Bodies in each member country nominate one person per country to be the national representative to the Commission. The National Representative maintains liaison between the Commission and the home country, writes a national triennial report on the development of astronomy education and votes on financial matters. Other IAU astronomers, with a special interest in education, can become regular individual members of the Commission. Non-IAU members can be invited by the Commission to serve for one triennial term, which is renewable.

Commission 46 considers that one of its major duties is to contribute to the rise of astronomy in the developing countries. The International School for Young Astronomers, the Visiting Lecturer Program, the Travelling Telescope are examples of such activities administered by the Commission. These items are discussed in more detail below.

2. INTERNATIONAL SCHOOL FOR YOUNG ASTRONOMERS (ISYA)

One of the most important activities of the Commission is the International School for Young Astronomers (ISYA) with Professor Donat G. Wentzel as the secretary assisted by Michèle Gerbaldi; it is held twice during each triennial period. The dominant goal of ISYA is to advance astronomy in astronomically developing countries. This is accomplished by increasing the visibility of astronomy in the host country, creating science and astronomy infrastructure by seeking lecturers and participants from physics to help the local astronomers both from within the country as well from abroad. The isolation of individual participants is broken down by ISYA, partly through its socializing activities and its stipulation that participants must come from several neighbouring countries.

The 19th IAU-sponsored ISYA was held in China July 19 - August 8, 1992, as reported in IAU Bulletin 69 and Commission 46 Newsletter #36. The ISYA met for two weeks in Beijing and one week at Beijing Observatory's Xinglong Observing Station. There were 30 participants, including 13 Chinese, 3 from Korea, 2 each from Hong Kong,

India, Indonesia, Vietnam, 1 each from Russia, Ukraine, Turkey, Israel, Holland, USA; 9 of them women.

Beijing Observatory supported the local costs, with additional support from the Chinese Astronomical Society, Chinese National Natural Science Foundation, the Third World Academy of Sciences and the Chinese Academy of Sciences. Travel support was provided by the IAU, ICSU, and UNESCO. Since nearly all faculty and participants succeeded in obtaining low fares, a substantial number of participants could be offered travel support.

Participants' background ranged from just-finished bachelor's degrees to almost finished doctoral thesis, from small universities with essentially no astronomy resources to established research centers. Accordingly, the lectures ranged from simple and didactic presentations up to a graduate-level survey providing mainly "research flavor": G. S. D. Babu (India) on galactic structure, M. Gerbaldi (France) on stellar spectroscopy, Zhai Disheng (Beijing Observatory) on evaluation of light curves and models for binary stars, D. Wentzel (USA) on concepts of MHD and solar physics, Wang Jing-Xiu (Beijing Observatory) on solar magnetic observations, and G. Bisnovatyi-Kogan (Russia) on stellar interiors and evolution. Highlights for participants from small institutions were occasional friendly scientific debates among faculty. The lectures were supplemented by practical exercises, including two evenings of observing at Xinglong, and many other scientific and social activities.

All foreign faculty stayed the entire three weeks, so that all could get to know the background of the participants and there were ample opportunities to meet with the participants. All participants except one also stayed the entire period. The ISYA was conducted in English. Students at first too shy to talk English soon lost all hesitancy. They made good friends among participants from other countries, and some scientific collaborations have resulted.

The 20th ISYA is being organized for January 3 to 21 1994 in Pune, India, at the Inter-University Center for Astronomy and Astrophysics (IUCAA). Preliminary plans envisage the 21st ISYA in Egypt in October 1994.

The rules governing the planning of and reporting on an ISYA have been revised.

3. VISITING LECTURERS PROGRAM (VLP)

The Visiting Lecturers Program (VLP) is intended to provide a series of visiting lecturers to astronomically developing countries in which such an effort can help establish a longer-term astronomical establishment. The IAU is to provide the lecturers' travel and the host institution supports the lecturer while giving a course for which students receive regular academic credit. The coordinator of the VLP is Professor Donat. G. Wentzel.

Three such VLP have been authorized. For the VLP in Paraguay and Peru, the goal was one Spanish-speaking visitor per VLP per year, sufficiently frequently so that each visitor can build on the material of the previous lectures. This has not been possible.

For Peru, the internationally publicized unrest during the last several years has made it impossible to find any visitors. The VLP has been cancelled. Nevertheless, astronomy at Universidad Nacional Mayor de San Marcos has become active during the VLP and remains so. The better physics students have been drawn toward astronomy, two with Licentatura in Physics have a speciality in astrophysics, and three young astronomers are studying in Brazil. There is a Revista Peruana de Astronomia y Astrophysica, and ESA is offering a computer system.

The VLP in Paraguay at Universidad Nacional de Asuncion hosted Dr Armando Arellano Ferro from the National University of Mexico during September and October 1992. Additional support was provided by the Italian Dante Alighieri Society and Centro Latino Americano de Fisica, Brazil. Arellano Ferro gave a course on "optics and instrumentation" which included much fundamental astronomy and astrophysics. The photometer from the Travelling Telescope was used many evenings at a private observatory, and some students continued observing after the end of the course. Several former VLP students now teach astronomy in Paraguayan schools. One student is now continuing training in Mexico. Plans are under way for the next (and according to contract last) visiting lecturer during April - June 1994.

Since 1989 the China VLP has been dormant and no visiting lecturers have gone to China under IAU sponsorship and funding.

It is a pleasure to thank Don for the tremendous good work he is doing for astronomy education, in particular for both ISYA and VLP.

4. THE TRAVELLING TELESCOPE (TT)

The purpose of the Travelling Telescope (TT) is to provide astronomers, teachers and advanced students in the developing countries with practical training and experience in astronomy. It consists of a Celestron-8 telescope, instruments and accessories, in sturdy wooden shipping crates. John Percy is the project coordinator.

The instruments from the TT (photometer, spectrograph and camera) accompanied Armando Arellano Ferro to Paraguay for his VLP course on "Optics and Instrumentation in Astronomy" (see previous section). Eduardo Parini, a local amateur astronomer, generously made his Celestron-8 telescope available to the students and faculty of the VLP. Since autumn 1992, the students have been carrying out a program of photoelectric photometry of variable stars using the TT photometer. In the summer of 1993, a copy of the software package RPHOT, which takes, reduces, plots and analyzes photometric data was acquired. It was obtained for only a fraction of the normal price, thanks to the help and generosity of NOLTEN Software and OPTEC Inc. The package will be sent to Paraguay, and will become a permanent part of the TT instrumentation.

Sending only the instruments of the TT on an assignment is certainly simpler and cheaper than sending the telescope as well. Nevertheless, the complete TT package is available for ISYA's, VLP's etc. Applications for use of the TT should be sent to the President of Commission 46.

5. NEWSLETTER

The Commission publishes a newsletter approximately twice a year, which is mailed throughout the world. Between July 1990 and June 1993, the following issues have been published; #30 (November 1990), #31 (National Reports 1988-90; April 1991), #32 (Astronomy Educational Material Addendum 1988-90: Material in French and in Spanish; April 1991), #33 (September 1991), #34 (Astronomy Education and Instructional Aids; February 1992), #35 (August 1992) and #36 (February 1993).

Issue #34 and earlier were printed and distributed from Belgium, by Professor Leo Houziaux. It is a pleasure to thank Leo for this and his many other contributions to astronomy education. Issue #34 was an excellent 81 page compilation by Professor H. J. Augensen, made available to us by permission of Springer-Verlag, Heidelberg.

The newsletter is presently being edited, printed and distributed from Erindale Campus, University of Toronto, by Professor John R. Percy, who thanks his secretarial staff for doing most of the work.

The increasing cost of printing and mailing the newsletter requires the Commission to think very carefully about who should receive it; this will be a major topic for discussion by the Organizing Committee.

The newsletter welcomes any short items on astronomy which would be of broad interest to astronomy educators around the world.

6. IAU COLLOQUIUM #105 "THE TEACHING OF ASTRONOMY"

The proceedings of IAU Colloquium #105, sponsored by Commission 46, which were edited by Professors Jay M. Pasachoff and John R. Percy are now available in paperback, at a very reasonable cost, from Cambridge University Press.

This colloquium was extremely successful: the opportunity to gather 162 astronomers from 31 countries for four days of papers, panels and discussions was recognized as a valuable step toward worldwide interchange of ideas and experiences about teaching processes. Such an IAU-sponsored colloquium should be repeated at intervals: this will be another topic for discussion by the Organizing Committee.

7. MISCELLANEOUS

Thanks to Alan H. Batten, the chairman of the IAU Working Group for the Worldwide Development of Astronomy, and the financial support of IAU, a successful two-day meeting of schoolteachers from the Indian subcontinent, was organized in August 1993, in conjunction with the IAU Asian-Pacific Meeting in Pune, India. It is a pleasure to note that this meeting, similar to those organized by Commission 46 at each General Assembly, was held for the first time at a Regional Meeting, following the recommendations of our Commission.